

Archive ENERGY STAR Multifamily New Construction Policy Record

How to Use This Document

EPA regularly receives partner questions and comments regarding various aspects of the program documents. This document is a record of the issues that have been received since the release of the last revision to the program documents. These issues are either pending resolution by EPA or have been resolved, sometimes resulting in modifications that will be incorporated into the next revision of the program documents. The primary purpose of this document is to allow all partners to have equal access to the latest policy issues and resolutions.

EPA intends to formally incorporate policy modifications into the next revision of the program documents. Those edits will then be enforced for projects permitted after a specified transition period, typically 60 days from the release of the revised program requirements. Partners may, at their discretion, use the determinations in this document immediately, in advance of the formal implementation dates. If they do so, they should be sure to document the permit dates of the affected projects and to include a copy of the policy record in the files retained by the Rater. Should the need arise, this will allow partners to demonstrate that they acted with the best information available.

Policy changes related to Supplemental Program Documents are all in the [Single-Family New Homes Policy Record](#).

Definitions

Each issue listed here is classified as a Change, Clarification, Refinement, Comment, or as an Issue Under Review. These are defined as follows:

- **Change** – The addition, deletion, or modification of a program requirement. A change will typically result from a partner question or feedback indicating that EPA's original intent is not being met or from changes in relevant standards (e.g., ENERGY STAR labeled product requirements, NAECA standards, IECC codes). A change is the most significant type of edit for partners because it is likely to change the way that partners comply with the program.
- **Clarification** – The clarification of a program requirement, typically resulting from a partner question indicating confusion or ambiguity. Clarifications are not intended to significantly change the scope of the program guidelines, but rather to clarify the original intent of the requirement. A clarification is secondary in importance to a change; it should not significantly alter the way that most partners comply with the program.
- **Refinement** – A minor revision, such as an improved choice of words, a grammatical correction, or a correction to a typographical error. A refinement is the least important type of edit; it should have no impact on the way that partners comply with the program.
- **Comment** – A comment provided by EPA in response to a question, which results in no change to the program documents. This may occur, for example, if the question can be answered by referring to already established policy. Aside from the partner asking the question, such comments will typically have no impact on the way that partners comply with the program.
- **Issue Under Review** – An issue that has been submitted and that EPA is still evaluating. Once EPA has evaluated the issue, it will offer a resolution and reclassify the issue using one of the four categories above.

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00109	10/30/2020	All National and Regional Program Requirements (Rev.01)	Refinement	<p>The term “Path” in reference to HVAC Grading and HVAC Commissioning options replaced with “Track”</p> <p>Issue: Confusion has arisen around the term “Path” in reference to the HVAC Grading and HVAC Credential options (e.g., “Path A – Dwelling Unit HVAC Grading” and “Path B – Dwelling Unit HVAC Commissioning”). This is because the term “Path” is also used to describe the options for meeting the performance target (i.e., Prescriptive Path, ERI Path, and ASHRAE Path).</p> <p>Resolution: To reduce confusion, all instances of the term “Path” in reference to the HVAC Grading and HVAC Commissioning options will be replaced with “Track” (e.g., “Path A” and “Path B” will be replaced with “Track A” and “Track B”, respectively), in all national and regional program documents.</p>
00110	10/30/2020	All National and Regional Program Requirements (Rev.01)	Refinement	<p>Verification Oversight Organization (VOO) replaced with Home Certification Organization (HCO)</p> <p>Issue: In 2019, EPA undertook a comprehensive update of the oversight recognition structure, including changing terminology from Verification Oversight Organization (VOO) to Home Certification Organization (HCO).</p> <p>Resolution: To accurately reflect current terminology, the term “Verification Oversight Organization” or “VOO” will be replaced in all program documents with “Home Certification Organization” or “HCO.” Additionally, to clarify the term the following Footnote will be added to the first instance of Home Certification Organization.</p> <p>“Home Certification Organizations (HCOs) are independent organizations recognized by EPA to implement an ENERGY STAR certification program for single-family and multifamily homes and apartments using an Energy Rating Index (ERI) compliance path. Learn more and find a current list of HCOs at www.energystar.gov/partner_resources/residential_new/working/other_participants/hco.”</p>

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				Finally, in some instances of the term “VOO” the phrase “Such as RESNET” was used to give an example of a VOO. Because a link to a current list of HCOs is now provided, the phrase “such as RESNET” will be removed in all program documents.
00111	10/30/2020	All National and Regional Program Requirements (Rev.01)	Refinement	Referencing ANSI / RESNET / ICC Std. 301 for definitions of generic terms “Rater” and Provider”
				<p>Issue: EPA previously clarified the that the generic terms “Rater” and “Provider” refer to industry-standard definitions within ANSI / RESNET / ICC Std. 301. To reflect this the following footnotes were added to program documents:</p> <p>“The term ‘Rater’ refers to the person(s) completing the third-party verification required for certification. The person(s) shall: a) be a Certified Rater, Approved Inspector, or an equivalent designation as determined by a VOO such as RESNET; and, b) have attended and successfully completed an EPA-recognized training class. See www.energystar.gov/newhomestraining.”</p> <p>“The term ‘Provider’ refers to an Approved Rating Provider that is a designee of a VOO such as RESNET.”</p> <p>EPA’s intent was that “Certified Rater”, “Approved Inspector”, and “Approved Rating Provider” are defined terms within ANSI / RESNET / ICC Std. 301. However, the footnote did not explicitly state that.</p>
				<p>Resolution: To clarify definitions, and ensure consistency with industry standards the phrase “as defined by ANSI / RESNET / IECC Standard 301” will be added after the standard-defined terms “Certified Rater”, “Approved Inspector”, and “Approved Rating Provider.”</p>
00112	10/30/2020	All National and Regional Program Requirements (Rev.01)	Refinement	Rename Certified Homes program to “ENERGY STAR Single-Family New Homes” program
				<p>Issue: Currently, both single-family homes and many low-rise multifamily homes can be certified through the ENERGY STAR Certified Homes program. However, most multifamily homes permitted on or after July 1, 2021 will only be eligible to be certified through the ENERGY STAR Multifamily New Construction (MFNC) program. The ENERGY STAR Certified</p>

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				<p>Homes program name should be updated to better reflect the home types that will be eligible to participate after this migration and to align with the structure of the MFNC program’s name.</p> <p>Resolution: To better reflect the revised eligibility of the ENERGY STAR Certified Homes program and align with the structure of the MFNC program name, all references to ENERGY STAR Certified Homes will be updated to “ENERGY STAR Single-Family New Homes”.</p>
00113	10/30/2020	All National and Regional Program Requirements (Rev.01)	Refinement	<p>“Effective Date” and “Transition Period End Date” replaced with adopted industry-standard terms</p> <p>Issue: Program documentation currently uses the terminology “Effective Date” and “Transition Period End Date” to reference when industry approved amendments are permitted and required to be used on any Dwelling Unit or Sleeping Unit by partners.</p> <p>EPA-recognized Home Certification Organizations (HCOs) have recently adopted new terminology, “Voluntary Compliance Date” and “Mandatory Compliance Date”, to refer to these implementation dates of industry approved amendments. In order to avoid confusion, and align with industry-standard terminology, documentation should be updated accordingly.</p> <p>Resolution: Because EPA-recognized HCO’s have adopted “Voluntary Compliance Date” and “Mandatory Compliance Date” in reference to implementation dates of industry approved amendments. The terms “Effective Date” and “Transition Period End Date” will be replaced in all program documents to the industry-standard terms “Voluntary Compliance Date” and Mandatory Compliance Date”.</p>
00204	07/29/2021	All National and Regional Program Requirements (Rev.02)	Comment	<p>Mandatory completion of EPA-approved training by Raters</p> <p>Issue: Partners have asked whether all Raters in an Energy Rating Company are required to complete an EPA-approved ENERGY STAR training course. Further, partners have asked whether the training requirement applies to Rating Field Inspectors (RFIs) operating within RESNET’s certification program.</p> <p>Resolution: All individuals completing the third-party verification required for ENERGY STAR certification, including the inspection of any measures on the Rater Field Checklist,</p>

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				<p>are required to successfully complete an EPA-recognized training course. This applies to both Certified Raters and Rating Field Inspectors (RFIs), the latter of which are recognized by RESNET as an equivalent designation. Only Certified Raters or RFIs who never verify ENERGY STAR measures are exempt from the training requirement.</p> <p>This training policy is already specified in the Partnership, Training, and Credentialing Requirements section as well as Footnote 7 of the National Program Requirements and, therefore, no changes to the program documentation are required. For partners who have misunderstood the policy, EPA is providing a grace period through January 1, 2022. By this date, all individuals completing verification of ENERGY STAR measures shall have successfully completed an EPA-recognized training. See www.energystar.gov/newhomestraining for a list of approved training providers.</p>
00301	07/06/2022	All National and Regional Program Requirements (Rev.02)	Refinement	Removing instances of “Standard” or “Std.” when referencing standards
				<p>Issue: The ENERGY STAR program generally, but not always, references standards by using the following syntax: [Certifying Body] [“Standard” or “Std.”] [Standard Number] (e.g., “ANSI / RESNET / ICC Std. 301”).</p> <p>However, there are some exceptions. For example, in reference to ASHRAE Standard 62.2-2013, the program uses the syntax: [Certifying Body] [Standard Number] (i.e., “ASHRAE 62.2-2013”). This streamlined syntax is also used by RESNET, which develops many of the standards that the ENERGY STAR program references. For example, RESNET references the same standard mentioned in the first sentence as “ANSI / RESNET / ICC 301”.</p>
				<p>Resolution: To improve conciseness and consistency, all instances of the phrase “Standard” or “Std.” will be removed from references to standards. For example, “ANSI / RESNET / ICC Standard 301” will be updated to “ANSI / RESNET / ICC 301”.</p>
00436	10/03/2022	National Program Requirements , Version	Refinement	Updating text related to buildings pursuing a specific Path
				<p>Issue: The document sometimes refers to buildings pursuing a specific path, e.g., the ASHRAE Path, as “ASHRAE Path projects” where it should refer to “buildings pursuing the ASHRAE Path.”</p>

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		1/1.1/ OR-WA 1.2 (Rev. 02)		Resolution: Where references are made to _____ Path Projects, it will be updated to “buildings pursuing the _____ Path”
00421	10/03/2022	All National and Regional Program Requirements (Rev.02)	Refinement	Reference to Version 1.2 added in program document names
				Issue: Version 1.2 of the National Program Requirements has been released, which utilizes the same mandatory requirements (i.e., checklists and builder requirements) as earlier versions of the program. Therefore, the header of these documents containing the mandatory requirements need to be updated to include a reference to Version 1.2 of the program. In addition, all program documents that reference these documents containing the mandatory requirements also need to be updated.
				Resolution: All documents containing the mandatory requirements for the national program (i.e., checklists and builder requirements), will be updated to include Version 1.2 in the header (e.g., National Rater Field Checklist, Version 1 / 1.1 / 1.2). In addition, all program documents that reference these documents containing the mandatory requirements will be updated to use the revised names.
00422	10/03/2022	All National and Regional Program Requirements (Rev.02)	Refinement	Mandatory Requirements for All Certified Multifamily Projects – Version added to all program document names
				Issue: The program documents listed in this section do not have Versions associated with them
				Resolution: All documents listed under this section will include the appropriate Version.
00114	10/30/2020	All National and Regional Program Requirements (Rev.01)	Clarification	Paragraph 2 – Defining timeline for adopting ANSI / RESNET / ICC 301 updates in alignment with the HCO framework
				Issue: The terms “Effective Date” and “Transition Period End Date” are currently used when defining the timeline for adopting ANSI / RESNET / ICC Standard 301 Addenda and Normative Appendices. Since the last Revision, the Home Certification Organization (HCO) framework has been completed, which addresses this topic. Therefore, the language in the ERI Target Procedure can be simplified by referencing the HCO framework.

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				<p>Resolution: In order to align with the HCO framework, Paragraph 2 will be updated as follows:</p> <p>“The ERI value shall be calculated using ANSI / RESNET / ICC Standard 301 including all Addenda and Normative Appendices, with new versions and Addenda implemented according to the schedule defined by the Home Certification Organization (HCO) that the building is being certified under, with approved exceptions listed at www.energystar.gov/ERIEExceptions.”</p>
00115	10/30/2020	All National and Regional Program Requirements (Rev.01)	Clarification	<p>Defining timeline for adopting ANSI / RESNET / ICC 301, ANSI / RESNET / ACCA 310, and ANSI / RESNET / ICC 380 updates in alignment with the HCO framework</p> <p>Issue: The terms “Effective Date” and “Transition Period End Date” are currently used when defining the timeline for adopting ANSI / RESNET / ICC Std. 301, ANSI / RESNET / ACCA Std. 310, and ANSI / RESNET / ICC Std. 380 Addenda and Normative Appendices.</p> <p>Since the last Revision, the Home Certification Organization (HCO) framework has been completed, which addresses this topic. Therefore, the language in these documents can be simplified by referencing the HCO framework.</p> <p>Resolution: In order to align with the HCO framework, Footnotes referring to the implementation of ANSI / RESNET / ICC Std. 301, ANSI / RESNET / ACCA Std. 310, and ANSI / RESNET / ICC Std. 380, will be updated as follows:</p> <ul style="list-style-type: none"> • “Path A – Dwelling Unit HVAC Grading shall not be used until an implementation schedule has been defined for ANSI / RESNET / ACCA Std. 310 by the Home Certification Organization (HCO) or Multifamily Review Organization (MRO) that the building is being certified under. Path A – Dwelling Unit HVAC Grading shall then use ANSI / RESNET / ACCA Std. 310 including all Addenda and Normative Appendices, with new versions and Addenda implemented according to the schedule defined by the HCO or MRO that the building is being certified under.” • “The ERI value shall be calculated using ANSI / RESNET / ICC Standard 301 including all Addenda and Normative Appendices, with new versions and Addenda implemented according to the schedule defined by the Home Certification Organization (HCO) or Multifamily Review Organization (MRO) that the building is

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				<p>being certified under, with approved exceptions listed at www.energystar.gov/ERIEExceptions.”</p> <ul style="list-style-type: none"> • “Ensure compliance with this requirement using ANSI / RESNET / ICC Std. 301 including all Addenda and Normative Appendices, with new versions and Addenda implemented according to the schedule defined by the Home Certification Organization (HCO) or Multifamily Review Organization (MRO) that the building is being certified under, with approved exceptions listed at www.energystar.gov/ERIEExceptions.” • “Duct leakage shall be determined and documented by a Rater using ANSI / RESNET / ICC Std. 380 including all Addenda and Normative Appendices, with new versions and Addenda implemented according to the schedule defined by the Home Certification Organization (HCO) or Multifamily Review Organization (MRO) that the building is being certified under.” • “The dwelling-unit ventilation air flow and local exhaust air flows shall be determined and documented by a Rater using ANSI / RESNET / ICC Std. 380 including all Addenda and Normative Appendices, with new versions and Addenda implemented according to the schedule defined by the Home Certification Organization (HCO) or Multifamily Review Organization (MRO) that the building is being certified under.”
00001	06/08/2019 Updated 11/01/2019	National Program Requirements, Version 1/1.1/OR-WA 1.2 California Program Requirements, Version 1.2	Clarification	Versions of supporting documents that are required for use
				Issue: It is anticipated that the various Excel-based supporting documents, such as the ASHRAE Path Calculator and Multifamily Workbook, will be updated on an as-needed basis, between the release of Program revisions. It is not currently clear which versions of those files are required to be submitted to the MRO for review.
				Resolution: While there currently is only one version of each of the Excel based files, once upgrades are made to the files, they will be uploaded online, on an as-needed basis. While Partners are encouraged to always use the newest versions available, unless otherwise specified, file updates between Program revisions will not be required. After a Program revision, project teams will be required to use the updated document based on the enforcement timeline set for the revision.

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				<p>This timeline will be noted in the National Program Requirements, as follows:</p> <p>“For the Excel-based ASHRAE Path Calculator and Multifamily Workbook, while Partners are encouraged to always use the newest versions available online, unless otherwise specified, file updates between Program revisions will not be required. After a Program revision, project teams will be required to use the updated document based on the enforcement timeline set for the revision”</p> <p>This timeline will be noted in the California Program Requirements, as follows:</p> <p>“For the Excel-based Multifamily Workbook, while Partners are encouraged to always use the newest versions available online, unless otherwise specified, file updates between Program revisions will not be required. After a Program revision, project teams will be required to use the updated document based on the enforcement timeline set for the revision”</p>
00500	10/03/2022	National Program Requirements , Version 1/1.1/ OR-WA 1.2 (Rev. 02)	Refinement	<p>National Program Requirements Separated by Version</p> <p>Issue: With the addition of Version 1.2, the National Program Requirements document is challenging to read for partners only using one version. The document should split into separate versions.</p> <p>Resolution: The addition of Version 1.2 increased the number of different ENERGY STAR Reference Designs as well as adding Version 1.2 specific notes. To improve clarity, the document will be split into 4 separate documents based on Version. Each will only have the specific relevant ENERGY STAR Reference Design and other notes and Exhibits. In Exhibit 4, a new line will be added to the first paragraph as follows:</p> <p>“The ASHRAE Path Performance Target for other Versions can be found at www.energystar.gov/mfnc.”</p> <p>For Version 1.2, since the ASHRAE target also depends on the Version, the beginning of the first sentence in the Mandatory Compliance Date will be revised as follows:</p> <p>“For the ERI and Prescriptive Paths, to To determine the program Version that a multifamily building is required to be certified under ...”</p>
00093	02/19/2020		Comment	<p>Revising building eligibility to include dormitories and residence halls</p>

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	Updated 04/30/2021	National Program Requirements, Version 1/ 1.1/ OR-WA 1.2		<p>Issue: A partner reached out to request that EPA reconsider its current eligibility rules, which do not allow “dormitories” to earn the ENERGY STAR through the Multifamily New Construction program. In addition, Partners have sought eligibility confirmation for buildings that provide non-transient housing, such as “single-room occupancies” or SRO’s, that have units that do not have a bathroom or a kitchen.</p> <p>Resolution: EPA agrees that “dormitories” and “residence halls” that were previously only eligible to pursue ENERGY STAR through the existing buildings program, should be allowed to earn the ENERGY STAR through the ENERGY STAR MFNC program. Units without bathrooms or kitchens meet the definition of sleeping unit in all Paths of the program.</p> <p>The 2nd bullet of the Eligibility Requirements of the National Program Requirements will be revised as follows:</p> <p>The following multifamily building types are eligible to participate in the ENERGY STAR Multifamily New Construction program:</p> <ul style="list-style-type: none"> • Any multifamily building with dwelling or sleeping units that is NOT a two-family dwelling ¹; OR • Mixed-use buildings, where dwelling units, <u>sleeping units</u>, and common space exceed 50% of the building square footage. Parking garage square footage is excluded from this calculation ^{1, 2}; OR • Townhouses, if following the requirements listed in Footnote 3. <p>Footnote 1 of the National Program Requirements, will be revised as follows:</p> <p>1. The term ‘building’ refers to a structure utilized or intended for supporting or sheltering any occupancy for a residential purpose; a structure with no dwelling or sleeping units connected to a structure with dwelling or sleeping units by less than 10% of its exterior wall area is not to be included in the ‘building’. A dwelling unit, as defined by the 2012 IECC, is a single unit that provides complete independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking, and sanitation. <u>For the ERI Path, the term ‘sleeping unit’ refers to a room or space in which people sleep, which can also include permanent provisions for living, eating, and either sanitation or kitchen facilities but not both. For the ASHRAE and Prescriptive Path, the term ‘sleeping unit’ refers to a room or</u></p>

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				<u>space in which people sleep, which does not meet the definition of ‘dwelling unit’.</u> The term ‘two-family’ dwelling refers to a detached building with 2 dwelling units.
00205	07/29/2021	National Program Requirements , Version 1/ 1.1/ OR-WA 1.2 (Rev. 02)	Comment	Continued implementation of Version 1 in Idaho
				Issue: Partners have questioned whether a Version 1.1 implementation date will be defined in response to the latest version of Idaho’s residential building energy code. This code, with an enforcement date of 1/1/2021, incorporates the 2018 IECC with substantive amendments.
				Resolution: The new code was determined to be less stringent than the 2018 IECC, and Version 1 was determined to offer meaningful savings over the new code. Because Version 1 continues to offer meaningful savings over Idaho’s new residential building energy code, it will continue to be implemented. A new version will not be implemented in Idaho until another state-level code update occurs or until EPA defines a new nationwide Version.
00206	07/29/2021	National Program Requirements , Version 1/ 1.1/ OR-WA 1.2 (Rev. 02)	Comment	Continued implementation of Version 1.1 in Florida
				Issue: Partners have questioned whether a new Version of the program requirements will be developed in response to the latest version of Florida’s residential building energy code. This code, with an effective date of 12/31/2020, incorporates the 2018 IECC with amendments.
				Resolution: The new code was determined to be less stringent than the 2018 IECC, and Version 1.1 was determined to offer meaningful savings over the new code. Because Version 1.1 continues to offer meaningful savings over Florida’s new residential building energy code, it will continue to be implemented. A new version will not be implemented in Florida until another state-level code update occurs or until EPA defines a new nationwide Version.
00209	07/29/2021	National Program Requirements , Version 1/	Comment	Continued implementation of Version 1.1 in Montana
				Issue: Partners have questioned whether a new Version of the program requirements will be developed in response to the latest version of Montana’s residential building energy code.

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		1.1/ OR-WA 1.2 (Rev. 02)		<p>This code, with an effective date of 02/13/2021, incorporates the 2018 IECC with amendments.</p> <p>Resolution: The new code was determined to be less stringent than the 2018 IECC, and National Version 1.1 was determined to offer meaningful savings over the new code. Because Version 1.1 continues to offer meaningful savings over Montana's new residential building energy code, it will continue to be implemented. A new Version will not be implemented in Montana until another state-level code update occurs or until EPA defines a new nationwide Version.</p>
00210	07/29/2021	National Program Requirements, Version 1/ 1.1/ OR-WA 1.2 (Rev. 02)	Comment	<p>Continued implementation of Version 1 in Tennessee</p> <p>Issue: Partners have questioned whether Version 1.1 of the program requirements will be implemented in response to the latest version of Tennessee's residential building energy code. This code, with an effective date of 07/16/2020, incorporates the 2018 IECC with amendments.</p> <p>Resolution: The new code was determined to be less stringent than the 2018 IECC, and an analysis determined that Version 1 offers meaningful savings over the new code. Because Version 1 continues to offer meaningful savings over Tennessee's new residential building energy code, it will continue to be implemented. Version 1.1 will not be implemented in Tennessee until another state-level code update occurs or until EPA defines a new nationwide Version.</p>
00253	03/17/2022	National Program Requirements, Version 1/ 1.1/ OR-WA 1.2 (Rev. 02)	Refinement	<p>Townhouse eligibility requirements</p> <p>Issue: It is not clear whether townhouses must use the National or Regional Single-Family New Homes Reference Design.</p> <p>Resolution: While townhouses are eligible for MFNC, the home must meet the ERI target from the relevant Single-Family New Homes Target Procedure. The townhouse ERI target would not change based on whether the townhouse is certified through SFNH or MFNC.</p> <p>Footnote 3 will be revised as follows:</p>

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				<p>“The term ‘townhouse’ refers to a single-family dwelling unit constructed in a group of three or more attached units in which each unit extends from the foundation to roof and with open space on at least two sides. Townhouses earning the ENERGY STAR through the Multifamily New Construction program must use the program documents described in Exhibit 2. They also must use the ERI Path of the Multifamily New Construction program as they are not eligible to use the Prescriptive Path or ASHRAE Path. However, the ENERGY STAR ERI Target for townhouses must be determined using Exhibit 1 of the relevant ENERGY STAR Single-Family New Homes Program Requirements.”</p>
00388	10/03/2022	National Program Requirements , Version 1/ 1.1/ OR-WA 1.2 (Rev. 02)	Refinement	<p>Eligibility Requirements – Referencing standard definition for townhouses</p>
				<p>Issue: A townhouse is defined but it does not reference the Standard as is referenced in the SFNH program.</p>
				<p>Resolution: To align with the SFNH program, the first sentence of Footnote 3 will be updated as follows:</p> <p>“The term ‘townhouse’, as defined by ANSI / RESNET / ICC 301, refers to a single-family dwelling unit constructed in a group of three or more attached units in which each unit extends from the foundation to roof and with open space on at least two sides.”</p>
00332	10/03/2022	National Program Requirements , Version 1/1.1/ OR-WA 1.2 (Rev. 02)	Refinement	<p>Eligibility Requirements Section – Rephrasing for consistency</p>
				<p>Issue: The phrasing of the eligibility requirements is inconsistent across program documents, potentially resulting in confusion.</p>
				<p>Resolution: For improved consistency and clarity, the eligibility requirements will be rephrased as follows:</p> <p>“The following multifamily building types are eligible to participate in the ENERGY STAR Multifamily New Construction (MFNC) program:</p> <ul style="list-style-type: none"> Any multifamily building with dwelling or sleeping units that is NOT a two-family dwelling; OR

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				<ul style="list-style-type: none"> Mixed-use buildings, where dwelling units and common space exceed 50% of the building square footage. Parking garage square footage is excluded from this calculation; OR Townhouses, if following the requirements listed in Footnote 3. <p>Townhouses are also eligible to participate in earn the ENERGY STAR through the ENERGY STAR Single-Family New Homes program, which is a certification program for single-family detached homes and two-family dwellings. For more information, visit: www.energystar.gov/newhomesrequirements. In addition, multifamily buildings with permit dates prior to July 1, 2021, may be eligible to participate in earn the ENERGY STAR through the Single-Family New Homes or Multifamily High Rise programs. For more information, visit: www.energystar.gov/mfhr/eligibility.”</p>
00367	10/03/2022	National Program Requirements , Version 1/1.1/ OR-WA 1.2 (Rev. 02)	Refinement	<p>Eligibility Requirements – Referencing “dwelling” instead of “two-family dwelling” and other standard definitions</p> <p>Issue: The MFNC eligibility uses ‘two-family dwelling’ which is not consistent with the SFNH eligibility. In addition, the ‘sleeping unit’ definition does not currently reference the ANSI / RESNET / ICC 301 definition.</p> <p>Resolution: To align with the SFNH program, the Eligibility Requirements will be updated as follows:</p> <p>“The following multifamily building types are eligible to participate in the ENERGY STAR Multifamily New Construction program:</p> <ul style="list-style-type: none"> Any multifamily building with dwelling or sleeping units that is NOT a two-family dwelling (e.g., not a single-family home or a duplex) ¹; OR Mixed-use buildings, where dwelling units, sleeping units, and common space exceed 50% of the building square footage. Parking garage square footage is excluded from this calculation ²; OR Townhouses, if following the requirements listed in Footnote 3. <p>Townhouses are also eligible to earn the ENERGY STAR through the ENERGY STAR Single-Family New Homes program, which is a certification program for <u>dwellings (e.g.,</u></p>

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				<p>single-family homes, duplexes) and townhouses single-family detached homes and two-family dwellings. 1”</p> <p>The end of Footnote 1 will be revised as follows to include ANSI / RESNET / ICC 301 references:</p> <p>“A dwelling unit, as defined by <u>ANSI / RESNET / ICC 301</u>the 2012 IECC, is a single unit that provides complete independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking, and sanitation. The term A ‘sleeping unit’, refers to as defined by ANSI / RESNET / ICC 301, is a room or space in which people sleep, which can also include permanent provisions for living, eating, and either sanitation or kitchen facilities but not both. A ‘dwelling’, as defined by ANSI / RESNET / ICC 301, is any building that contains one or two dwelling units used, intended, or designed to be built, used, rented, leased, let or hired out to be occupied, or that are occupied for living purposes. The term ‘two-family’ dwelling refers to a detached building with 2 dwelling units. For the purposes of eligibility, hotels, motels, and <u>senior care facilities</u> are not considered multifamily buildings. For more information visit: https://www.energystar.gov/partner_resources/residential_new/program_reqs/mfnc_building_eligibility”</p>
00353	10/03/2022	National Program Requirements , Version 1 / 1.1/ OR-WA 1.2 (Rev.02)	Clarification	<p>Eligibility Requirements Section – Buildings undergoing gut rehab eligible to participate</p> <p>Issue: This program document does not clearly state that existing buildings (e.g., buildings undergoing a gut rehabilitation) are eligible to participate in the program. This intent has been conveyed through EPA’s website and in several alternative compliance options included in the Mandatory Requirements (e.g., National Water Management System Requirements) but should be more clearly stated directly in the program requirements.</p> <p>Resolution: The following sentence will be added to the Eligibility Requirements Section, and a new supplemental guidance document on this topic will be created and linked to via a new alias:</p>

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				<p>“While primarily intended for new construction, existing buildings (e.g., undergoing a gut rehabilitation) are also eligible to participate in the ENERGY STAR Multifamily New Construction program, with guidance available at: www.energystar.gov/GutRehabGuidance.”</p>
00359	10/03/2022	National Program Requirements, Version 1 / 1.1/ OR-WA 1.2 (Rev.02)	Clarification	<p>Eligibility Requirements – Clarifying the definition of a building</p> <p>Issue: Given that the program requires all dwelling units in a ‘building’ to be certified, partners have asked what defines a ‘building’. For example, would an individual townhouse be considered the ‘building’ or the entire row of attached townhouses.</p> <p>Resolution: EPA agrees that the term building can be better defined.</p> <p>Footnote 1 will be revised as follows:</p> <p><u>“The term ‘building’ refers to a structure utilized or intended for supporting or sheltering any occupancy for a residential purpose; a structure with no dwelling or sleeping units connected to a structure with dwelling or sleeping units by less than 10% of its exterior wall area is not to be included in the ‘building’; that encompasses dwelling/sleeping units and (if present) common spaces, sharing one or more of the following attributes: a common street address, a common entrance or exit, central/shared mechanical systems, or structurally interdependent wall or roof systems. Attached structures such as townhouses and 4-story two-unit structures (commonly referred to as “2-over-2s”) may be considered separate buildings if they are divided by a vertical fire separation wall from the foundation to the roof sheathing and share none of the other attributes listed above. A skyway or a breezeway that connects two structures is not considered a common entrance or exit. A dwelling unit, as defined by the 2012 IECC, is a single unit that provides complete independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking, and sanitation. The term ‘sleeping unit’ refers to a room or space in which people sleep, which can also include permanent provisions for living, eating, and either sanitation or kitchen facilities but not both. The term ‘two-family’ dwelling refers to a detached building with ² dwelling units. For the purposes of eligibility, hotels, motels, and senior care facilities are not considered multifamily buildings. For more information visit:</u></p>

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				https://www.energystar.gov/partner_resources/residential_new/program_reqs/mfnc_building_eligibility.
00375	10/03/2022	National Program Requirements , Version 1 / 1.1/ OR-WA 1.2 (Rev.02)	Clarification	Eligibility Requirements – Mixed use buildings without dwelling or sleeping units are not eligible
				Issue: Partners have asked whether amenity buildings such as a pool house or gym without dwelling or sleeping units are eligible for certification and whether they must meet the program requirements. While the eligibility section indicates only multifamily buildings with dwelling units and sleeping units are eligible, and the Rater Design Review and Rater Field Checklists note that the buildings without dwelling units are not subject to the Checklist requirements, the eligibility for mixed use buildings does not specify only mixed- use buildings <u>with dwelling or sleeping units</u> .
				Resolution: Buildings that do not contain dwelling or sleeping units are not eligible for certification under MFNC. Similarly, as noted in the Rater checklists, where common spaces are in separate buildings without dwelling or sleeping units they are not subject to the program requirements. To clarify the intent, the eligibility section will be updated as follows: “The following multifamily building types are eligible to participate in the ENERGY STAR Multifamily New Construction program: <ul style="list-style-type: none"> • Any multifamily building with dwelling or sleeping units that is NOT a two-family dwelling ¹; OR • <u>Any mixed-use buildings with dwelling or sleeping units</u>, where the dwelling units, sleeping units, and common space exceed 50% of the building square footage. Parking garage square footage is excluded from this calculation ^{1,2}; OR • Townhouses, if following the requirements listed in Footnote 3.” A new sentence will be added to the beginning of Footnote 1 as follows: “Buildings that do not contain dwelling or sleeping units are not eligible for certification under MFNC.”
00302	10/03/2022	National Program	Clarification	Credentialing and Oversight – Raters must be operating under an MRO or HCO when completing verification

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		<p>Requirements, Version 1 / 1.1/ OR-WA 1.2 (Rev.02)</p>		<p>Issue: In the ENERGY STAR Certification Process section, it is not explicitly stated that Raters must operate under HCO or MRO oversight for the entirety of the verification process. It is also unclear what happens for buildings that switch Paths and need to switch oversight organizations.</p> <p>Resolution: The intent is that Raters must operate under HCO or MRO oversight for the entirety of the verification process. While EPA recommends that Rater have contacted their oversight organization during design, at the latest the building must be under MRO oversight prior to the first inspection. EPA recognizes there may be some limited circumstances where this is not practical, such as if a building is switching from the ERI to the ASHRAE or Prescriptive Paths. For such circumstances, it is within the MRO discretion to allow for an exemption from this requirement.</p> <p>The Energy Rating Company paragraph of Partnership, Training, and Credentialing Requirements will be revised as follows:</p> <ul style="list-style-type: none"> • “Energy Rating Companies (e.g., rater companies and Providers ⁶) are required to sign an ENERGY STAR Partnership Agreement, which can be found at www.energystar.gov/homesPA, and operate under either a Home Certification Organization (HCO) or a Multifamily Review Organization (MRO). Learn more and find a current list of HCOs at www.energystar.gov/hco and MROs at www.energystar.gov/mro. • [Line break added] Raters ⁷ are required to complete EPA-recognized training, which can be found at www.energystar.gov/mftraining. “ <p>In Step 1 of the ENERGY STAR Certification Process will also be revised as follows: The certification process offers three paths to meet the performance target. Each has varying levels of flexibility to select a custom combination of measures for each building:</p> <ol style="list-style-type: none"> a. “Prescriptive Path: The units and common spaces meet or exceed all the prescriptive items in the National Rater Design Review and Field Checklists which align with the minimum requirements set in the ENERGY STAR Multifamily Reference Design, Exhibit 1. As described in Exhibit 3, buildings in states that have adopted the residential 2012, 2015, or 2018 IECC, or an equivalent code will follow Version 1.1 of the Reference Design, buildings in Oregon (OR) and Washington (WA) will follow the OR and WA Version 1.2 of

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				<p>the Reference Design, buildings in states that have adopted the residential 2021 IECC will follow Version 1.2, and otherwise buildings will follow Version 1. <u>Buildings following 1a must be certified through an MRO. EPA recommends that Raters identify their MRO during the design stage, but at the latest, the building must be under MRO oversight prior to the first inspection. MROs have limited discretion to grant an exemption to this policy (e.g., when a building switches Paths).</u></p> <p>b. ERI Path: Each unit is equivalent in performance to the minimum requirements of the ENERGY STAR Multifamily Reference Design, Exhibit 1, as assessed through energy modeling, and the common spaces meet or exceed the prescriptive requirements in the National Rater Design Review and Field Checklists which align with the minimum requirements set in Exhibit 1. As described in Exhibit 3, buildings in states that have adopted the residential 2012, 2015, or 2018 IECC, or an equivalent code will follow Version 1.1 of the Reference Design, buildings in OR and WA will follow the OR and WA Version 1.2 of the Reference Design, buildings in states that have adopted the residential 2021 IECC will follow Version 1.2 of the Reference Design, and otherwise buildings will follow Version 1. <u>Buildings following 1b must be certified through an HCO. ...</u></p> <p>c. ASHRAE Path: The building meets or exceeds the ASHRAE performance target, which is dependent on the commercial state energy code and baseline chosen, as described in Exhibit 4. <u>Buildings following 1c must be certified through an MRO. EPA recommends that Raters identify their MRO during the design stage, but at the latest, the building must be under MRO oversight prior to the first inspection. MROs have limited discretion to grant an exemption to this policy (e.g., when a building switches Paths). ...</u></p> <p>All ENERGY STAR certifications are subject to the oversight of a Multifamily Oversight Organization which include HCOs or Multifamily Review Organizations (MROs). All ERI Path projects must be overseen by an HCO and all ASHRAE and Prescriptive Path projects must be overseen by an MRO. MRO information can be found at www.energystar.gov/mro.</p>
00002	06/08/2019	National Program Requirements, Version 1/1.1/OR-WA 1.2	Refinement	<p>Updating file name from “Performance Path” Calculator to “ASHRAE Path” Calculator</p> <p>Issue: Partners have questioned why the MFNC program references a “Performance Path Calculator” when following the “ASHRAE Path”. There is no “Performance Path” option, as there was in the MFHR program.</p> <p>Resolution: EPA agrees that the file naming causes unnecessary confusion and will replace the references to “Performance Path Calculator” with “ASHRAE Path Calculator” within the</p>

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				Program Documents in Rev01. In the interim, the Excel files have been uploaded to the website using the new terminology.
00013	11/01/2019	National Program Requirements, Version 1/ 1.1/ OR-WA 1.2	Change	<p>Version of Approved Software Rating Tool to use</p> <p>Issue: Raters need to know whether there are restrictions on using the ERI Path for units in buildings above 5 stories.</p> <p>Resolution: The Rater is responsible to confirm when an EPA-recognized VOO allows an ERI to be calculated for units in buildings above 5 stories. The Rater must also then choose an Approved Software Rating tool that has a version capable of calculating the ERI in accordance with ANSI / RESNET/ ICC 301-2019, prior to using that software version on units in buildings above 5 stories.</p> <p>The note in 1b of the ENERGY STAR Certification Process will be revised in Rev01 as follows:</p> <p>“Note: The ERI path will be available for buildings that exceed five stories on October 1, 2019. After this date, Raters must use an Approved Software Rating Tool that has been updated to ANSI / RESNET / ICC Std. 301-2019 to use the ERI path for buildings that exceed five stories.”</p> <p>The last sentence of step 1b of the ENERGY STAR Certification Process will be revised as follows:</p> <p>“An EPA-recognized Verification Oversight Organization (VOO)’s Approved Software Rating Tool shall automatically determine the ENERGY STAR ERI Target, which is the highest ERI value that each rated home may achieve to earn the ENERGY STAR.”</p>
00467	10/03/2022	National Program Requirements , Version 1 / 1.1/ OR-WA 1.2 (Rev.02)	Clarification	<p>ENERGY STAR Certification Process Section – Retention of documents</p> <p>Issue: This Section currently states, in part, that the Rater is required to keep electronic or hard copies of the completed and signed National Rater checklists and the National HVAC Design Report.</p> <p>However, with the introduction of Track A into the program requirements, the National HVAC Design Report will not be completed for every certified project. For projects certified using Track A, an HVAC design report compliant with ANSI / RESNET / ACCA / ICC 310 and the ENERGY STAR National HVAC Design Supplement to Std. 310 for Dwellings & Units, must</p>

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				<p>be collected for each dwelling unit. For all common spaces using HVAC Grading, an HVAC design report compliant with ANSI / RESNET / ACCA / ICC 310 must be collected, and where applicable, the ENERGY STAR National HVAC Design Supplement to Std. 310 for Common Spaces & Central Systems must also be collected for records. Only projects certified using Track B must collect the National HVAC Design Report.</p> <p>The National HVAC Functional Testing Checklist must also be collected for all systems, While systems using ANSU / RESNET / ACCA / ICC 310 do not need to complete Section 2 and 3 of that Checklist, Section 5 must still be completed for all systems. The Functional Testing Checklist does not need to be collected when completed by a contractor credentialed by an H-QUITO.</p> <p>Resolution: To clarify which documents must be retained when using Track A and Track B, this Section will be updated as follows:</p> <p>“Upon completion of construction, the Rater is required to keep electronic or hard copies of the completed and signed National Rater checklists. <u>In addition, for buildings using Track A, the Rater is required to keep for each dwelling unit and each graded common space an HVAC design report compliant with ANSI / RESNET / ACCA / ICC 310. The Rater must also keep a National HVAC Design Supplement to Std. 310 for Dwellings & Units for each dwelling unit, and, where applicable, the National HVAC Design Supplement to Std. 310 for Common Spaces & Central Systems. For buildings using Track B, the Rater is required to keep the National HVAC Design Report, and, Finally, when the FT Agent is not a HVAC Credentialed Contractor, the National HVAC Functional Testing Checklists for all systems must be kept.</u>”</p>
00496	10/03/2022	National Program Requirements , Version 1 / 1.1/ OR-WA 1.2 (Rev.02)	Clarification	<p>Certification Process – Remove old reference to five story cut off for ERI Path</p> <p>Issue: In Step 1 there is a note that buildings over five stories may use the ERI Path after October 1, 2019. Since that date has passed, this reference should be removed. In addition, it notes that software must be updated to ANSI 301-2019, but software can also be updated to a more recent edition as well.</p> <p>Resolution: To clarify the intent, the Note in Step 1b will be revised as follows:</p> <p>“Note: The ERI path will be available for buildings that exceed five stories on October 1, 2019. After this date, Raters must use an Approved Software Rating Tool that has been updated to ANSI / RESNET / ICC Std. 301-2019 <u>or later</u> to use the ERI Path for buildings that exceed five stories.”</p>

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00497	10/03/2022	National Program Requirements , Version 1 / 1.1/ OR-WA 1.2 (Rev.02)	Clarification	<p>Certification Process – Step 6 RESNET Guidelines for Multifamily Energy Ratings may be used as sampling guidance for common spaces</p> <p>Issue: Footnote 7 notes that sampling is able to be used when allowed by the HCO or MRO the building is being certified under if an HCO-approved sampling protocol is followed. It also notes that “Where a sampling protocol does not sufficiently describe methodology for multifamily projects, use the RESNET Guidelines for Multifamily Energy Ratings, available at www.resnet.us/blog/resnet-adopts-guidelines-for-multifamily-energy-ratings”. It is not clear when those Guidelines may be used.</p> <p>Resolution: The intent is to follow an HCO-approved sampling protocol for all sampling where permitted by the HCO or MRO the building is being certified under. However, for common spaces a dwelling-unit specific protocol may not be sufficient. The RESNET Guidelines for Multifamily Energy Ratings, available at www.resnet.us/blog/resnet-adopts-guidelines-for-multifamily-energy-ratings/, are able to be used for common spaces. Since this is an HCO-approved sampling protocol, this sentence is not needed within the document. To reduce confusion, this sentence will be removed.</p> <p>Footnote 7 will be revised as follows:</p> <p>The term ‘Rater’ refers to the person(s) completing the third-party verification required for certification. The person(s) shall: a) be a Certified Rater, Approved Inspector, as defined by ANSI / RESNET / IECC Standard 301, or an equivalent designation as determined by an HCO or MRO; and, b) have attended and successfully completed an EPA-recognized training class. See www.energystar.gov/mftraining.</p> <p>Raters who operate under an MRO or an HCO with a Sampling Protocol are permitted to verify the minimum rated features of the building and to verify any Checklist Item designated “Rater Verified” using an HCO-approved sampling protocol. Where a sampling protocol does not sufficiently describe methodology for multifamily projects, use the RESNET Guidelines for Multifamily Energy Ratings, available at www.resnet.us/blog/resnet-adopts-guidelines-for-multifamily-energy-ratings/. No parties other than Raters are permitted to use sampling, with the exception of the Functional Testing Checklist. Functional Testing Agents, except the installing contractor, may follow the sampling protocol described in the MFNC HVAC Functional Testing Checklist Sampling Protocols. All other items shall be verified for each certified building. For example, no builder verified items are permitted to be verified using a sampling protocol.</p>

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00395	10/03/2022	National Program Requirements , Version 1/1.1/ OR-WA 1.2 (Rev. 02)	Refinement	Step 1 and Mandatory Compliance Date section – revise implementation timeline language
				Issue: Currently, Step 1a and 1b and the first paragraph of the Mandatory Compliance Date section references rationale for implementing all National Versions of the ENERGY STAR Multifamily New Construction Program, which would not be accurate after the national transition to Version 1.1. Additionally, it may improve consistency to use the language in the Effective Date section in the regional program requirements documents, which are more generic and do not provide rationale for implementing other Versions.
				Resolution: In order to improve consistency and accuracy, the second sentence of Step 1a and 1b will be deleted. In addition, the first paragraph of the Mandatory Compliance Date section will be revised to align with the implementation timeline language of the regional program requirements documents as follows: “For the ERI and Prescriptive Paths, to determine the program Version and Revision that a building is required to be certified under, look up the location and permit date of the building in Exhibit 3. Program requirements for other locations can be found at www.energystar.gov/mfnc .”
00472	10/03/2022	National Program Requirements , Version 1 / 1.1/ OR-WA 1.2 (Rev.02)	Clarification	Certification Process Step 1 and 2 – Clarifying mandatory Rater Design Review and Rater Field Checklist Items
				Issue: In Step 1 and 2, there are references to meeting the ‘prescriptive’ items in the National Rater Design Review and Field Checklists. For the ERI and ASHRAE Path, these are specified only ‘for common spaces’. Since there are mandatory items on the checklists that are required for all paths in both dwelling units and common spaces, it is confusing to refer to some of them as ‘prescriptive’ since they do apply outside of the ‘Prescriptive’ Path.
				Resolution: The program is designed such that there are three options to meeting the performance target and each are a varying mix of mandatory and modeled measures. In the “Prescriptive” Path, all of the efficiency measures are prescribed either directly in the National Rater Design Review and Rater Field checklists or in the Reference Design. In the ERI Path, common spaces follow similar requirements as the Prescriptive Path, but there are fewer mandatory or “prescriptive” measures required in the dwelling unit, and a less stringent backstop on other efficiency measures in the dwelling unit. In the ASHRAE Path, relative to the ERI Path, there are fewer mandatory or “prescriptive” measures in the common spaces, as well as a less stringent backstop on some common space measures.

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				<p>Regardless of the Path, the National Rater Design Review and Field Checklists have efficiency requirements included that are mandatory for all paths, and as noted above requirements that are more stringent for certain paths.</p> <p>In the Prescriptive and ERI Path, some of the prescriptive levels are set in the Reference Design.</p> <p>To reduce confusion in the National Program Requirements, the first sentences of Step 1a, and 1b, and Step 2 will be revised as follows:</p> <p>Step 1a “Prescriptive Path: The units and common spaces meet or exceed all the prescriptive items in the National Rater Design Review and Field Checklists, which align with <u>include</u> meeting the minimum requirements set in the ENERGY STAR Multifamily Reference Design, Exhibit 1.”</p> <p>Step 1b “ERI Path: Each unit is equivalent in performance to the minimum requirements of the ENERGY STAR Multifamily Reference Design, Exhibit 1, as assessed through energy modeling, and the common spaces building meets or exceeds the prescriptive requirements in the National Rater Design Review and Field Checklists, which align with <u>include</u> meeting the minimum requirements set in Exhibit 1 <u>for common spaces</u>.”</p> <p>Step 2 “a. Prescriptive Path: Meet or exceed the prescriptive requirements specified in the National Rater Design Review and Field Checklists. b. ERI Path: Meet or exceed the prescriptive requirements specified in the National Rater Design Review and Field Checklists for common spaces. Using the same software program specified in Step 1, configure the preferred set of efficiency measures for the unit to be certified and verify that the resulting ERI meets or exceeds the ENERGY STAR ERI Target, as determined in Step 1. c. ASHRAE Path: Meet or exceed the prescriptive requirements specified in the National Rater Design Review and Field Checklists for common spaces. ...”</p>

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00380	10/03/2022	National Program Requirements , Version 1 / 1.1/ OR-WA 1.2 (Rev.02)	Change	<p>Step 6 and 7 – Allowing conditional certification of units prior to building certification</p> <p>Issue: Since all of the dwelling units and common spaces in a building must be certified, partners have asked whether individual units within the building may be certified as they are completed, or if they need to wait to certify them until the building is complete. Partners have noted that it is common to finish up certain floors and close out with homebuyers before the units on other floors are completed.</p> <p>Resolution: The intent of the MFNC is to certify the building when the verification for all dwelling units and common spaces is complete. EPA recognizes that partners may want to be able to provide certificates to homebuyers prior to completion of the building. Therefore, EPA has developed a new process to allow a conditional certification approach under the ERI path. At the Provider’s discretion, individual dwelling units may be conditionally certified prior to the building completion if the following process is observed:</p> <ul style="list-style-type: none"> <li>i. The Provider must generate a Conditional ENERGY STAR Certification Disclosure letter to be included with the label and certificate for the homebuyer of each conditionally certified unit. <li>ii. Once verification on all dwelling units and common spaces is complete, and the whole building is certified, the Provider must generate an ENERGY STAR Certification Confirmation letter for the builder to deliver to the applicable homebuyers. <p>In the event that any dwelling unit or common space in the building is ultimately unable to be verified, the building will not be able to earn certification; the Provider must decertify any conditionally certified units; and the builder must notify the applicable homebuyers.</p> <p>The second paragraph of Step 6 will be revised as follows: “The Rater must review all items on the National Rater checklists <u>for the whole building</u>. Raters are expected to use their experience and discretion to verify that the overall intent of each inspection checklist item has been met (i.e., identifying major defects that undermine the intent of the checklist item versus identifying minor defects that the Rater may deem acceptable).”</p>

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				<p>Step 7 will be revised as follows:</p> <p><u>“Once verification on all units and common spaces is complete, submit the whole building to the HCO or MRO for final certification (see alternative below). Upon completion of construction,</u> The Rater is required to keep electronic or hard copies of the completed and signed National Rater checklists, the National HVAC Design Report and, when the FT Agent is not a HVAC Credentialed Contractor, the National HVAC Functional Testing Checklist. the Rater is required to keep electronic or hard copies of the completed and signed National Rater checklists, the National HVAC Design Report and, when the FT Agent is not a HVAC Credentialed Contractor, the National HVAC Functional Testing Checklist. Additionally, the following steps are required:</p> <ol style="list-style-type: none"> a. ERI Path: submit the building to project to the HCO for final certification and follow the HCO’s certification and oversight procedures (e.g. quality assurance, recordkeeping, and reporting). <u>Generally, buildings must be submitted for certification after verification on all units and common spaces is complete. Alternatively, at the discretion of the Provider, individual dwelling units may be conditionally certified prior to the building completion if the following process is observed:</u> <ol style="list-style-type: none"> i. <u>The Provider must generate a Conditional ENERGY STAR Certification Disclosure letter to be included with the label and certificate for the homebuyer of each conditionally certified unit.</u> ii. <u>Once verification on all dwelling units and common spaces is complete, and the whole building is certified, the Provider must generate an ENERGY STAR Certification Confirmation letter for the builder to deliver to the applicable homebuyers.</u> <p><u>In the event that any dwelling unit or common space in the building is ultimately unable to be verified, the building will not be able to earn certification; the Provider must decertify any conditionally certified units; and the builder must notify the applicable homebuyers.</u></p> <p>ASHRAE and Prescriptive Path: <u>submit the building to the MRO for final certification with the specified specific documentation must be submitted updated based on as-built conditions to an MRO for their review and approval.</u> These documents include the Multifamily Workbook; the Rater Field Checklist, unless included in the Multifamily Workbook; the HVAC Functional Testing Checklists; construction documents; photo documentation; and for ASHRAE projects, the ASHRAE Path Calculator and either the modeling file or input and output files.</p>

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				<p>For PHIUS+ certified projects choosing the alternative modeling option in the ASHRAE Path, in lieu of submitting the APC and modeling files, documentation is instead provided that demonstrates achievement of the required source energy per person and certification from PHIUS. For multifamily projects with multiple buildings, each building must demonstrate compliance with the program requirements, but can be documented using one Multifamily Workbook per project. For ASHRAE Path projects, where buildings are identical, only one set of modeling files and ASHRAE Path Calculator are required to be submitted. At the discretion of the ASHRAE modeler, connected buildings may be modeled as one building or separate buildings.”</p>
00219	08/27/2021	National Program Requirements , Version 1/ 1.1/ OR-WA 1.2 (Rev. 02)	Change	<p>Alternative for projects certified to phius core 2021 or phius zero 2021</p> <p>Issue: The current National Program Requirements states in the “Exception” to the ASHRAE Path that “PHIUS+ certified” projects can use an alternative source energy target of 6,500 kWh/person per year, in lieu of an ASHRAE 90.1 based performance target. Policy record 00107 clarifies that “PHIUS+ certified” includes: “PHIUS+ Core, PHIUS+ 2015, and PHIUS+ 2018”. PHIUS issued their Phius 2021 Certification Guidebook in July 2021 and all new projects will be required to use this certification guidebook as of January 1, 2022. Partners have asked whether projects certified as “phius core 2021” and “phius zero 2021” are eligible for this “Exception”. Partners have also asked if the target of 6,500 kWh/person per year remains the same, given that phius core 2021 established moving source energy targets, based on building density and used a different source energy conversion factor.</p> <p>Resolution: ENERGY STAR developed this alternative to provide a streamlined path for projects certifying to PHIUS Standards by removing any additional energy modeling effort. ENERGY STAR remains committed to that intent and the ASHRAE Path exception will apply to projects certifying as “phius core 2021” and “phius zero 2021”. Given the change in source energy target, and a preliminary analysis of the change, ENERGY STAR will temporarily establish a source energy target that is 10% less than that required for “phius core 2021”. This policy will be revisited when additional data is available that demonstrates phius core 2021 projects are similar in performance as ASHRAE Path projects that achieve 15% savings over ASHRAE 90.1-2016.</p> <p>Where “PHIUS+ certified” is referenced in the Exception in the National Program Requirements, it will be replaced with “certified as PHIUS+ CORE, 2015, or 2018”.</p>

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				<p>A sentence will also be added to the Exception as follows:</p> <p>Exception: For buildings that are <u>certified as PHIUS+ CORE, 2015, or 2018 certified</u>, achieving a specific source energy use of $\leq 6,500$ kWh/person per year, without renewables, is accepted in lieu of achieving the ASHRAE performance target. <u>For buildings that are certified as phius core 2021 or phius zero 2021, achieving 10% less than the phius core 2021 source energy criteria, without renewables, is accepted in lieu of achieving the ASHRAE performance target based on a baseline of ASHRAE 90.1-2016 or earlier.</u></p>
00396	10/03/2022	National Program Requirements , Version 1/1.1/ OR-WA 1.2 (Rev. 02)	Refinement	<p>Step 1 – ASHRAE performance target described in Exhibit 4</p>
				<p>Issue: Currently, Step 1c references rationale for the ASHRAE performance target, which is not be accurate after the addition of Version 1.1. This text should be removed and all the description should be kept in Exhibit 4</p>
				<p>Resolution: For conciseness and to improve accuracy, the first sentence of Step 1c will be revised as follows: “The building meets or exceeds the ASHRAE performance target, which is dependent on the commercial state energy code and baseline chosen, as described in Exhibit 4.”</p>
00425	10/03/2022	National Program Requirements , Version 1 / 1.1/ OR-WA 1.2 (Rev.02)	Clarification	<p>Step 6 – How to inspect modular multifamily buildings</p>
				<p>Issue: In the SFNH Program Requirements, it explains how to inspect modular homes. Since multifamily buildings may also be modular, this text should also be included in this document.</p>
				<p>Resolution: To clarify inspections for modular multifamily buildings, a sentence will be added to Step 6 as follows: “Using a Rater, verify that all requirements have been met in accordance with the Mandatory Requirements for All Certified Multifamily Projects and with the inspection procedures for minimum rated features in ANSI / RESNET / ICC Standard 301, Appendix B. ⁷ <u>For modular multifamily buildings, a Rater must verify any requirement in the plant not able to be verified on-site because a feature will be concealed prior to shipment.</u>”</p> <p>A new footnote will be added to Step 6 as follows: “A modular building is a prefabricated building that is made of multiple modules or sections that are manufactured and substantially assembled in a manufacturing plant. These pre-built</p>

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				sections are transported to the building site and constructed by a builder to meet all applicable building codes for site-built buildings.”
00504	10/03/2022	National Program Requirements , Version 1 / 1.1/ OR-WA 1.2 (Rev.02)	Clarification	Exhibit 1 – Where “ENERGY STAR” indicated, certified products must be used for prescriptive requirements
				Issue: In the Reference Design, “ENERGY STAR” is noted next to some products. While only the efficiency level is used to calculate the ENERGY STAR ERI target, for buildings pursuing the Prescriptive Path, ENERGY STAR certified products must be installed.
				Resolution: Where “ENERGY STAR” is noted in the Reference Design, when a building must meet the Reference Design requirements prescriptively, ENERGY STAR certified products must be installed. Footnote 11 will be revised as follows “Note that the efficiency levels of ENERGY STAR certified products aligned with these product specifications when this Version was first released. These efficiency features form the basis of the ENERGY STAR ERI target, regardless of any subsequent revisions to ENERGY STAR certified product specifications. EPA recommends, but does not <u>always</u> require, that current ENERGY STAR products be included in ENERGY STAR buildings. <u>For buildings pursuing the prescriptive path, where ‘ENERGY STAR’ is indicated, ENERGY STAR certification is required for these products.</u> For current ENERGY STAR products, visit www.energystar.gov/products .”
00485	10/03/2022	National Program Requirements , Version 1 / 1.1/ OR-WA 1.2 (Rev.02)	Clarification	Exhibit 1 – Reference Design is used for modeling and for prescriptive requirements
				Issue: Currently the Reference Designs in this Exhibit use the term “modeled” since they are used in modeling for the ERI target, but the values are also used as prescriptive requirements for dwelling units pursuing the Prescriptive Path and common spaces pursuing the ERI and Prescriptive Paths.
				Resolution: It is the intent for the Exhibit to both list the prominent measures modeled in the ERI software to calculate the ENERGY STAR ERI Target and also dictate minimum prescriptive levels needing to be met for the ERI and Prescriptive Paths. To make this intent more clear, the introductory text of the Exhibit will be revised as follows: <u>For buildings pursuing the ERI Path, the ENERGY STAR Multifamily Reference Design is the set of efficiency features modeled to determine the ENERGY STAR ERI Target for each unit pursuing certification. Therefore, while the features below are not mandatory in the units</u>

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				<p>for project pursuing the ERI Path, if they are not used then other measures will be needed to achieve the ENERGY STAR ERI Target. <u>The following features are mandatory within the common spaces as specified in the National Rater Design Review and Field Checklists and the Common Space Applicability Notes below.</u> In addition, note that the Mandatory Requirements for All Certified Multifamily Project, Exhibit 2, contain additional requirements such as total duct leakage limits, minimum allowed insulation levels, and minimum allowed fenestration performance. Therefore, EPA recommends that partners review the documents in Exhibit 2 prior to selecting measures. <u>Where HVAC systems are not listed in the Reference Design, see the ENERGY STAR ERI Target Procedures for how they are modeled and see National Rater Field Checklist Exhibit X for minimum efficiencies for systems serving common spaces.</u></p> <p>For projects pursuing the Prescriptive Path, the <u>ENERGY STAR Multifamily Reference Design</u> is the set of efficiency following features that are mandatory within the units and, as specified in the National Rater and Field Checklists and the Common Space Applicability notes below, <u>also mandatory within</u> the common spaces. For projects pursuing the ERI Path, the following features are mandatory within the common spaces as specified in the National Rater Design Review and Field Checklists.</p> <p>This Exhibit is not applicable for project pursuing the ASHRAE Path.</p> <p>In the Reference Design tables, where “modeled” was used, it will be revised to “meets” or will be removed.</p>
00296	07/06/2022	National Program Requirements , Version 1 / 1.1/ OR-WA 1.2 (Rev.02)	Change	<p>Exhibit 1 Common space insulation levels in the Reference Design</p> <p>Issue: The development of Version 1.2 increased the complexity of certain program requirements that already had differences across certifications paths. For common space insulation, keeping the variation across the paths in addition to the differences for versions and the option for residential or commercial code would potentially cause significant partner confusion.</p> <p>Resolution: To reduce complexity and confusion, all paths in the same Version will have the same insulation requirements for common spaces.</p>

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				<p>Item 1 of the Common Space Applicability Notes in Exhibit 1 will be updated as follows:</p> <p>Insulation levels for common spaces are determined by Item 3.2 in the Rater Design Review Checklist for all Paths and are not based on the ENERGY STAR Reference Design. For all Versions except National v1.2, common space insulation levels must meet or exceed the levels in the 2009 IECC Residential or Commercial chapter. For Version 1.2, common space insulation levels must meet or exceed the levels in the 2021 IECC Residential or Commercial chapter. Projects may only reference one chapter for all the common spaces in the building. When referencing the Commercial chapter, the required values should come from the “All Other” column and the row that corresponds to the building assembly (e.g., a building with steel-frame walls would use the value in the ‘Metal framed’ row).</p>
00487	10/03/2022	National Program Requirements , Version 1/1.1/ OR-WA 1.2 (Rev. 02)	Refinement	Exhibit 1, Version 1.1, improve conciseness
				Issue: The Version 1.1 table in Exhibit 1 included the climate zone within the cooling efficiency section which is redundant.
				Resolution: The Cooling equipment efficiency will be revised as follows: “GZ 4-8: 13 SEER AC”
00489	10/03/2022	National Program Requirements , Version 1 / 1.1/ OR-WA 1.2 (Rev.02)	Clarification	Exhibit 1 – Insulation requirements for common spaces found in Rater Design Review Checklist Item 3.2
				Issue: Due to the updates to the insulation requirements for common spaces noted in PR ID 00296, the Reference Design and the Common Space Applicability Notes should reference back to the National Rater Design Review Checklist.
				Resolution: To clarify that the insulation requirements for common spaces are determined by Item 3.2 of the National Rater Design Review Checklist, and not the Reference Design, Item 1 of the Common Space Applicability Notes will be further revised as follows: “Insulation levels for common spaces are determined by Item 3.2 in the Rater Design Review Checklist for all Paths and are not based on the ENERGY STAR Reference Design. <u>Per Item 3.2</u> , For all Versions except National v1.2, common space insulation levels must meet or exceed the levels in the 2009 IECC Residential or Commercial chapter. For Version 1.2, common space insulation levels must meet or exceed the levels in the 2021 IECC Residential or Commercial chapter. Projects may only reference one chapter for all the

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				<p>common spaces in the building. When referencing the Commercial chapter, the required values should come from the “All Other” column and the row that corresponds to the building assembly (e.g., a building with steel-frame walls would use the value in the ‘Metal framed’ row).”</p> <p>In addition, footnote 13 will be removed from the insulation requirements description within the Reference Design and the text will be revised as follows: “...For all other <u>common</u> spaces, refer to the Common Space Applicability Notes on page 4 for insulation levels <u>Item 3.2 of the National Rater Design Review Checklist for insulation levels.</u>”</p>
00486	10/03/2022	National Program Requirements , Version 1 / 1.1/ OR-WA 1.2 (Rev.02)	Clarification	<p>Exhibit 1 – Furnaces in common spaces meet Exhibit X requirements</p> <p>Issue: Exhibit 1 lists the efficiency levels for residential heating equipment. Per Exhibit X of the Rater Field Checklist, these efficiency levels apply to dwelling units using the Prescriptive Path. However, the efficiency for furnaces within common spaces is described within Exhibit X itself; not Exhibit 1. Since the label for the heating section is “Residential Heating Equipment (Where Provided) in Dwelling Units or Common Spaces”, it is not clear that this efficiency only applies to dwelling units.</p> <p>Resolution: To clarify where to find the efficiency for residential furnaces serving common spaces, “(common spaces see Exhibit X)” will be added after the listed efficiency for gas furnace where Exhibit 1 of this document is different from what is listed in Exhibit X of the Rater Field Checklist.</p>
00479	10/03/2022	National Program Requirements , Version 1/1.1/ OR-WA 1.2 (Rev. 02)	Refinement	<p>Exhibit 1 – Improve clarity of fenestration requirements</p> <p>Issue: The fenestration requirements for standard residential windows are labeled “Non-Class AW” but this is not a widely used term. In addition, the Class AW requirements are listed in a table and this should be referenced using the word “below”.</p> <p>Resolution: To improve clarity, the heading for dwelling unit windows will be revised as follows: For Version 1 and Oregon-Washington Version 1.2: “Dwelling unit windows and doors, unless Class AW, meet the following.” For Version 1.1 and 1.2:</p>

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				<p>“Dwelling unit ENERGY STAR windows and doors, unless Class AW, as illustrated below”</p> <p>The heading for Class AW and common space fenestration will be revised as follows: “Class AW and all common space fenestration meet [code specified based on Version] levels (Commercial fenestration U-Factor requirements) <u>below</u>.”</p>
00488	10/03/2022	National Program Requirements , Version 1 / 1.1/ OR-WA 1.2 (Rev.02)	Change	Exhibit 1 – Infiltration limits should be less than or equal to 0.30 CFM50/ft2
				Issue: In the reference design, the infiltration limit currently is set as < 0.30 CFM50/ft2 of enclosure, but in the National Rater Field Checklist Item 4.10 it states “Rater-measured compartmentalization is no greater than 0.30 CFM50 per square feet of dwelling unit enclosure area.” This Exhibit should be updated to allow 0.30 CFM50/ft2 of enclosure.
				Resolution: The intent was to have the requirement be less than or equal to 0.30 CFM50/ft2 of enclosure. The infiltration in all Reference Designs will be updated as follows: Infiltration rates modeled as follows: 0.30 CFM50/ft2 of enclosure
00289	05/12/2022	National Program Requirements , Version 1 / 1.1/ OR-WA 1.2 (Rev.02)	Change	ENERGY STAR Reference Design Mass Floor Insulation Levels
				Issue: The ENERGY STAR MFNC Reference Design has insulation levels for slab insulation, basement wall insulation, and framed floor insulation. The framed floor insulation is based on the commercial code requirements for wood-framed floors. An insulation level for mass floors was not included and there is a significant difference in the U-factor required for wood-framed floors and mass floors in the commercial code.
				Resolution: After review, EPA agrees that while wood floor assemblies are common in low-rise and single-family construction, in multifamily mid-rise and high-rise mass floors are also common. Therefore, EPA will add a new line for a mass floor assembly and clarify that the current floor assembly is for wood-framed floors. The ENERGY STAR Multifamily Reference Design, Version 1 will be updated as follows:

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				<table border="1"> <thead> <tr> <th>Climate Zone:</th> <th>CZ 1</th> <th>CZ 2</th> <th>CZ 3</th> <th>CZ 4</th> <th>CZ 4 C & 5</th> <th>CZ 6</th> <th>CZ 7</th> <th>CZ 8</th> </tr> </thead> <tbody> <tr> <td>Slab Insulation R-Value:</td> <td>0</td> <td>0</td> <td>0</td> <td>10</td> <td>10</td> <td>15</td> <td>15</td> <td>20</td> </tr> <tr> <td>Slab Insulation Depth (ft):</td> <td>0</td> <td>0</td> <td>0</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>Basement Wall Continuous Insulation R-Value:</td> <td>0</td> <td>0</td> <td>0</td> <td>7.5</td> <td>7.5</td> <td>7.5</td> <td>10</td> <td>12.5</td> </tr> <tr> <td>Wood Framed Floor U-Factor:</td> <td>0.282</td> <td>0.052</td> <td>0.033</td> <td>0.033</td> <td>0.033</td> <td>0.033</td> <td>0.033</td> <td>0.033</td> </tr> <tr> <td>Mass Floor U-Factor:</td> <td>0.322</td> <td>0.087</td> <td>0.087</td> <td>0.074</td> <td>0.064</td> <td>0.057</td> <td>0.051</td> <td>0.051</td> </tr> <tr> <td>Wall Assembly U-Factor:</td> <td>0.089</td> <td>0.089</td> <td>0.089</td> <td>0.089</td> <td>0.064</td> <td>0.051</td> <td>0.051</td> <td>0.036</td> </tr> <tr> <td>Ceiling Assembly U-Factor:</td> <td>0.027</td> <td>0.027</td> <td>0.027</td> <td>0.027</td> <td>0.027</td> <td>0.027</td> <td>0.027</td> <td>0.027</td> </tr> </tbody> </table> <p>The ENERGY STAR Multifamily Reference Design, Version 1.1 will be updated as follows:</p> <table border="1"> <thead> <tr> <th>Climate Zone:</th> <th>CZ 1</th> <th>CZ 2</th> <th>CZ 3</th> <th>CZ 4</th> <th>CZ 4 C & 5</th> <th>CZ 6</th> <th>CZ 7</th> <th>CZ 8</th> </tr> </thead> <tbody> <tr> <td>Slab Insulation R-Value:</td> <td>0</td> <td>0</td> <td>0</td> <td>10</td> <td>10</td> <td>15</td> <td>15</td> <td>20</td> </tr> <tr> <td>Slab Insulation Depth (ft):</td> <td>0</td> <td>0</td> <td>0</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>Basement Wall Continuous Insulation R-Value:</td> <td>0</td> <td>0</td> <td>0</td> <td>7.5</td> <td>7.5</td> <td>7.5</td> <td>10</td> <td>12.5</td> </tr> <tr> <td>Wood Framed Floor U-Factor:</td> <td>0.066</td> <td>0.033</td> <td>0.033</td> <td>0.033</td> <td>0.033</td> <td>0.033</td> <td>0.033</td> <td>0.033</td> </tr> <tr> <td>Mass Floor U-Factor:</td> <td>0.322</td> <td>0.087</td> <td>0.076</td> <td>0.074</td> <td>0.064</td> <td>0.057</td> <td>0.051</td> <td>0.051</td> </tr> <tr> <td>Wall Assembly U-Factor:</td> <td>0.064</td> <td>0.064</td> <td>0.064</td> <td>0.064</td> <td>0.064</td> <td>0.051</td> <td>0.051</td> <td>0.036</td> </tr> </tbody> </table>	Climate Zone:	CZ 1	CZ 2	CZ 3	CZ 4	CZ 4 C & 5	CZ 6	CZ 7	CZ 8	Slab Insulation R-Value:	0	0	0	10	10	15	15	20	Slab Insulation Depth (ft):	0	0	0	2	2	2	2	2	Basement Wall Continuous Insulation R-Value:	0	0	0	7.5	7.5	7.5	10	12.5	Wood Framed Floor U-Factor:	0.282	0.052	0.033	0.033	0.033	0.033	0.033	0.033	Mass Floor U-Factor:	0.322	0.087	0.087	0.074	0.064	0.057	0.051	0.051	Wall Assembly U-Factor:	0.089	0.089	0.089	0.089	0.064	0.051	0.051	0.036	Ceiling Assembly U-Factor:	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	Climate Zone:	CZ 1	CZ 2	CZ 3	CZ 4	CZ 4 C & 5	CZ 6	CZ 7	CZ 8	Slab Insulation R-Value:	0	0	0	10	10	15	15	20	Slab Insulation Depth (ft):	0	0	0	2	2	2	2	2	Basement Wall Continuous Insulation R-Value:	0	0	0	7.5	7.5	7.5	10	12.5	Wood Framed Floor U-Factor:	0.066	0.033	0.033	0.033	0.033	0.033	0.033	0.033	Mass Floor U-Factor:	0.322	0.087	0.076	0.074	0.064	0.057	0.051	0.051	Wall Assembly U-Factor:	0.064	0.064	0.064	0.064	0.064	0.051	0.051	0.036
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				Ceiling Assembly U-Factor: 0.027 0.027 0.027 0.027 0.021 0.021 0.021 0.021
00496	10/03/2022	National Program Requirements , Version 1 / 1.1/ OR-WA 1.2 (Rev.02)	Change	Exhibit 1 – Clarifying DHW requirements in common spaces for Oregon-Washington v1.2 and National v1.2
				<p>Issue: The Oregon-Washington v1.2 Reference Design has efficiency listed “For a home with” specific fuel water heating. It is not clear if this is a requirement for dwelling units and common spaces or just dwelling units. Under Version 1.2, the requirements for common spaces under the ERI Path do not align with the Reference Design requirements for the Prescriptive Path projects. These should be adjusted to align.</p> <p>Resolution: To clarify the efficiency requirements within the Reference Design for dwelling units and common spaces, the Reference Design for Oregon-Washington v1.2 will be revised as follows: “For a home <u>Dwelling units and common spaces</u> with gas or propane DHW fuel type: Tankless 0.91 EF. For a home with other DHW fuel type: <u>Dwelling units</u>: In CZ 4C & 5: Electric heat pump with 2.5 EF or 2.57 UEF; In CZ 6: Electric heat pump with 2.0 EF / UEF. <u>Common spaces: 0.95 EF</u>”</p> <p>The intent is for the same level of efficiency to be required in common spaces for both ERI and Prescriptive Paths. The Reference Design for National v1.2 will be revised as follows: “<u>Dwelling unit</u> DHW equipment meets the following applicable efficiency levels, dependent on fuel type: Gas: 0.90 UEF; Electric: 1.49 UEF <u>Common space DHW equipment meets the following applicable efficiency levels, dependent on fuel type: Gas: 0.90 UEF; Electric: 0.93 UEF</u>”</p>
00501	10/03/2022	National Program Requirements , Version 1 /	Change	Exhibit 1 – Common space lighting for Version 1.2 must be 90% LED
				<p>Issue: When developing Version 1.2, the Common Space Applicability notes stated that “90% of all exterior and common space fixtures must meet Tier II requirements.” This term was intended to convey that LED lighting was required. A Partner noted that the “Tier II” definition in ANSI/RESNET/ICC 301 also includes an “indoor fixture controlled by a motion</p>

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		1.1/ OR-WA 1.2 (Rev.02)		<p>sensor.” Given that other Items in the Rater Field Checklist already require automatic controls in some common spaces, it wasn’t clear if those controls could also be used with non-LED lighting to satisfy this requirement, since they are by definition “Tier II”.</p> <p>Resolution: The intent of requirement was to reference LED lighting and to use an established Standard for the definition. A Tier II fixture is defined by ANSI / RESNET / ICC Standard 301 as a “light fixture located in a Qualifying Light Fixture Location that contains LED lamps, an integrated LED fixture, an outdoor light fixture that is controlled by a photocell or an indoor fixture controlled by a motion sensor.” Given that non-LED fixtures could meet the requirements of “Tier II”, this Exhibit will be revised to better reflect the original intent. The sentence regarding Version 1.2 in Common Space Applicability Note 3 will be revised as follows: “For Version 1.2, 90% of all exterior and common space fixtures <u>must be integrated LED fixtures or contain LED lamps-meet Tier II requirements.</u>”</p>
00336	10/03/2022	National Program Requirements , Version 1/1.1/ OR-WA 1.2 (Rev. 02)	Refinement	<p>Exhibit 2 – Addition of program name to mandatory requirements for clarity</p> <p>Issue: This Exhibit contains the Mandatory Requirements that must be met for certification. Many of the document names referenced in this Exhibit (e.g., National Rater Field Checklist) are identical between the ENERGY STAR Single-Family New Homes (SFNH) program and ENERGY STAR Multifamily New Construction (MFNC) program, even though the requirements within the documents are program specific. Therefore, without specifying the program name, Partners may be confused about which requirements apply.</p> <p>Resolution: For improved clarity, the applicable program name will be added to the Exhibit as follows:</p> <ul style="list-style-type: none"> • Completion of <u>MFNC</u> National Rater Design Review Checklist • Completion of <u>MFNC</u> National Rater Field Checklist • Completion of <u>MFNC</u> National Water Management System Builder Requirements • Completion of an HVAC design report compliant with ANSI / RESNET / ACCA Std. 310, plus the <u>ENERGY STAR SFNH / MFNC National HVAC Design Supplement to Std. 310 for Dwellings & Units and the MFNC National HVAC Design Supplement to Std. 310 for Common Spaces & Central Systems</u>

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				<ul style="list-style-type: none"> Completion of <u>MFNC</u> National HVAC Design Report <p>Completion of <u>MFNC</u> National HVAC Functional Testing Checklist</p>
00418	10/03/2022	National Program Requirements , Version 1/1.1/ OR-WA 1.2 (Rev. 02)	Refinement	Exhibit 2 – Multiple design documents required to be collected for Track A
				<p>Issue: Policy Record #00336 revised this Exhibit by adding the final name of the ENERGY STAR supplements, called the “National HVAC Design Supplement to Std. 310 for Dwellings & Units” and “National HVAC Design Supplement to Std. 310 for Common Spaces & Central Systems”, as follows:</p> <p>“Completion of an HVAC design report compliant with ANSI / RESNET / ACCA Std. 310, plus the SFNH / MFNC National HVAC Design Supplement to Std. 310 for Dwellings & Units and the MFNC National HVAC Design Supplement to Std. 310 for Common Spaces & Central Systems”.</p> <p>Since each dwelling unit may have its own HVAC design report and National HVAC Design Supplement to Std. 310 for Dwellings & Units, both should be plural. Since the Supplement to Std. 310 for Common Spaces & Central Systems is for the building, it makes sense to list this document separately.</p>
				<p>Resolution: To clarify the documents required, this Exhibit will be further updated as follows:</p> <p>“•Completion of an HVAC design report(s) compliant with ANSI / ACCA / RESNET Std. 310, plus the ENERGY STAR SFNH / MFNC National HVAC Design Supplement(s) to Std. 310 for Dwellings & Units and</p> <p>•[Hard return added] Completion of the MFNC National HVAC Design Supplement to Std. 310 for Common Spaces & Central Systems, where applicable.”</p>
00442	10/03/2022	National Program Requirements , Version 1/1.1/ OR-WA 1.2 (Rev. 02)	Refinement	Exhibit 2 – Update “Path” to “Track”
				<p>Issue: The introduction to Exhibit 2 references two “paths” available instead of two “tracks”.</p>
				<p>Resolution: This update was missed in Revision 02.</p> <p>The introduction to Exhibit 2 will be updates as follows:</p>

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				<p>“Two tracks are provided for satisfying the mandatory requirements for all certified projects, Exhibit 2. Track A – HVAC Grading by Rater allows a Rater to utilize ANSI / RESNET / ACCA Std. 310¹⁴, a standard for grading the installation of residential HVAC systems serving individual spaces and a Functional Testing Agent to verify commercial and central systems. Track B – HVAC Testing by FT Agent utilizes a Functional Testing Agent for all systems. Either track may be selected, but all requirements within that track must be satisfied for the building to be certified.”</p>																		
00014	11/01/2019	National Program Requirements, Version 1/ 1.1/ OR-WA 1.2	Change	<p>Performance requirements for glazed entrance doors in common spaces</p> <p>Issue: The requirements for Class AW “windows” don’t seem to include glazed entrance doors, but there are no other requirements specified.</p> <p>Resolution: EPA’s intent was for the Class AW requirement to reference code requirements for “fenestration” as applicable.</p> <p>Each of the ENERGY STAR Multifamily Reference Designs will be revised to include a row specific to “Glazed Entrance Door U-factor”, with specific U-factors.</p> <p>Version 1:</p> <p>Exception: Class AW fenestration modeled to 2012 IECC levels (Commercial fenestration U-Factor requirements)</p> <table border="0"> <tr> <td>Climate Zone:</td> <td>CZ 1</td> <td>CZ 2</td> <td>CZ 3</td> <td>CZ 4</td> <td>CZ 4 C & 5</td> <td>CZ 6</td> <td>CZ 7</td> <td>CZ 8</td> </tr> <tr> <td>Glazed Entrance Door U-Factor:</td> <td>1.10</td> <td>0.83</td> <td>0.77</td> <td>0.77</td> <td>0.77</td> <td>0.77</td> <td>0.77</td> <td>0.77</td> </tr> </table> <p>Version 1.1:</p> <p>Exception: Class AW fenestration modeled to 2015 IgCC levels (Commercial fenestration U-Factor requirements)</p>	Climate Zone:	CZ 1	CZ 2	CZ 3	CZ 4	CZ 4 C & 5	CZ 6	CZ 7	CZ 8	Glazed Entrance Door U-Factor:	1.10	0.83	0.77	0.77	0.77	0.77	0.77	0.77
Climate Zone:	CZ 1	CZ 2	CZ 3	CZ 4	CZ 4 C & 5	CZ 6	CZ 7	CZ 8														
Glazed Entrance Door U-Factor:	1.10	0.83	0.77	0.77	0.77	0.77	0.77	0.77														

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				<p>Climate Zone: CZ 1 CZ 2 CZ 3 CZ 4 CZ 4 C & 5 CZ 6 CZ 7 CZ 8</p> <p>Glazed Entrance Door U-Factor: 1.05 0.79 0.73 0.73 0.73 0.73 0.73 0.73</p> <p>OR-WA Version 1.2:</p> <p>Exception: Class AW fenestration modeled to 2015 IgCC levels (Commercial fenestration U-Factor requirements)</p> <p>Climate Zone: CZ 4 C & 5 CZ 6</p> <p>Glazed Entrance Door U-Factor: 0.73 0.73</p> <p>Note 3 of the Common Space Applicability Notes of Exhibit 1 will be revised in Rev01 as follows:</p> <p>“3) Windows and glazed entrance doors are to meet or exceed the requirements specified for “Class AW” fenestration in the Reference Design.”</p>
00015	11/01/2019	<p>National Program Requirements, Version 1/1.1/OR-WA 1.2</p> <p>California Program Requirements, Version 1.2</p>	Change	<p>Ceiling fan requirements</p> <p>Issue: Partners have asked about the requirements to have ENERGY STAR certified ceiling fans included in the ENERGY STAR Multifamily Reference Design, with respect to both the ERI and Prescriptive Path. With respect to the ERI Path, there is confusion among software developers and users of the energy rating software of what gets modeled when the number of ceiling fans “present” in the Rated Home is less than the number of bedrooms + 1. The Target Procedures, as written, seem to imply that as long as one fan is “present”, the quantity of ceiling fans in the ENERGY STAR Multifamily Reference Design would be equal to the number of bedrooms plus one, which provides a cooling benefit but also a higher electricity use, compared to the Rated Home. With respect to the Prescriptive Path, there is a question of whether the requirements for ceiling fans should just align with the lighting requirements of the ENERGY STAR Multifamily Reference Design to allow some flexibility as the current</p>

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				<p>requirements could lead some developers to not specify ceiling fans with light kits, or to not specify them at all.</p> <p>Resolution: With respect to the ERI Path, EPA will clarify in Revision 02 of the ENERGY STAR Multifamily New Construction Target Procedures that the number of ceiling fans in the Reference Design shall be the same as in the Rated Home. Therefore, based on the clarification provided in ANSI 301-2019 related to ceiling fans, the fans will only be modeled in the ENERGY STAR Multifamily Reference Design when the total number of ceiling fans installed in the Rated Home is greater than or equal to the number of bedrooms plus one. The ceiling fans will retain the current efficiency of 122 CFM per Watt.</p> <p>EPA agrees that more flexibility can be provided in the Prescriptive Path. Providing ceiling fans with light kits provide both a cooling benefit and source of efficient lighting. Rather than be a standalone category, light fixtures in ceiling fans will count towards the 90% ENERGY STAR lighting requirements in the ENERGY STAR Reference Design. For projects following the Prescriptive Path, there will no longer be a requirement for all ceiling fans to be ENERGY STAR certified.</p> <p>In Revision 01, EPA will remove the reference to ‘ceiling fans’ from the Exhibits for Multifamily Reference Designs in the National Program Requirements and California Program Requirements.</p>
00016	11/01/2019	National Program Requirements, Version 1/ 1.1/ OR-WA 1.2	Change	<p>Updating Exhibit 3 Implementation Timeline</p> <p>Issue: While the Multifamily New Construction program is not required for use until permits on or after 1/1/2021, with the release of Rev01, a change is needed to the Implementation Timeline, for those choosing to participate prior to that date.</p> <p>Resolution: For projects seeking certification through ENERGY STAR MFNC, Exhibit 3 is revised as shown below, such that Rev01 documents must be used if permitted on or after 7/1/2020. Projects are still permitted to participate in the ENERGY STAR Certified Homes program or the ENERGY STAR Multifamily High Rise program, as long as the project meets the Eligibility Requirements defined within those programs and have permits prior to 1/1/2021.</p>

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				<p align="center">Exhibit 3: ENERGY STAR Multifamily New Construction Implementation Timeline</p> <table border="1"> <thead> <tr> <th>State / Territory</th> <th>Buildings Permitted⁴ On or After This Date Must Meet the Adjacent Version</th> <th>Multifamily New Construction Program Version</th> <th>Revision¹⁴</th> </tr> </thead> <tbody> <tr> <td>AL, AK, AZ, AR, CO, GA, GU, HI, IN, ID, KS, KY, LA, ME, MS, MO, NE, NH, NM, NMI, NC, ND, OH, OK, PA, PR, SC, SD, TN, USVI, UT, VA, WV, WI, WY</td> <td align="center">07-01-2020</td> <td align="center">National Version 1</td> <td align="center">Rev. 01</td> </tr> <tr> <td>CT, DC, DE, FL, IA, IL, MA, MD, MI, MN, MT, NJ, NV, NY, RI, TX, VT</td> <td align="center">07-01-2020</td> <td align="center">National Version 1.1</td> <td align="center">Rev. 01</td> </tr> <tr> <td align="center">OR, WA</td> <td align="center">07-01-2020</td> <td align="center">Oregon and Washington Version 1.2</td> <td align="center">Rev. 01</td> </tr> </tbody> </table>	State / Territory	Buildings Permitted ⁴ On or After This Date Must Meet the Adjacent Version	Multifamily New Construction Program Version	Revision ¹⁴	AL, AK, AZ, AR, CO, GA, GU, HI, IN, ID, KS, KY, LA, ME, MS, MO, NE, NH, NM, NMI, NC, ND, OH, OK, PA, PR, SC, SD, TN, USVI, UT, VA, WV, WI, WY	07-01-2020	National Version 1	Rev. 01	CT, DC, DE, FL, IA, IL, MA, MD, MI, MN, MT, NJ, NV, NY, RI, TX, VT	07-01-2020	National Version 1.1	Rev. 01	OR, WA	07-01-2020	Oregon and Washington Version 1.2	Rev. 01
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00233	02/04/2022	National Program Requirements, Version 1 / 1.1/ OR-WA 1.2 (Rev. 02)	Change	<p align="center">Exhibit 3 – National transition to v1.1</p> <p>Issue: EPA proposed transitioning all states with ENERGY STAR Single-Family New Homes (SFNH) Version 3.0 is still in effect to Version 3.1 due to the high percentage of homes already meeting or approaching the required Version 3.1 efficiency levels, the ability to increase program impacts, and to help ensure that ENERGY STAR maintains a performance premium even in “home rule” states. In alignment with this transition, EPA proposed transitioning MFNC Version 1.0 to Version 1.1 in those same states.</p> <p>EPA held a comment period on this issue from October 18, 2021 to November 15, 2021 and a majority of stakeholders expressed support for the national transition to v3.1, but with regard to the transition from MFNC Version 1.0 to 1.1, recommended extra time for the multifamily transition.</p> <p>As a result, EPA announced that the proposed implementation of Version 3.1 will go into effect for homes permitted on or after January 1, 2023 and the implementation of MFNC Version 1.1 will go into effect for buildings permitted on or after January 1, 2024.</p>																

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				<p>Resolution: To reflect this change, Exhibit 3 will be modified as follows:</p> <table border="1"> <thead> <tr> <th>State / Territory</th> <th>Buildings Permitted¹⁴ On or After This Date Must Meet the Adjacent Version & Revision</th> <th>Version</th> <th>Revision¹⁵</th> </tr> </thead> <tbody> <tr> <td>AL, AK, AZ, AR, CO, GU, HI, IN, ID, KS, KY, LA, MS, MO, NH, NMI, NC, ND, OH, OK, SC, SD, TN, VA, WV, WI, WY</td> <td>07-01-2020</td> <td>National Version 1</td> <td>Rev. 01</td> </tr> <tr> <td></td> <td>07-01-2021</td> <td>National Version 1</td> <td>Rev. 02</td> </tr> <tr> <td></td> <td>01-01-2024</td> <td>National Version 1.1</td> <td>Rev. 02</td> </tr> <tr> <td>CT, DC, DE, FL, IA, IL, MA, MD, MI, MN, MT, NJ, NV, NY, RI, TX, VT</td> <td>07-01-2020</td> <td>National Version 1.1</td> <td>Rev. 01</td> </tr> <tr> <td></td> <td>07-01-2021</td> <td>National Version 1.1</td> <td>Rev. 02</td> </tr> <tr> <td>GA, NM, UT</td> <td>07-01-2020</td> <td>National Version 1</td> <td>Rev. 01</td> </tr> <tr> <td></td> <td>07-01-2021</td> <td>National Version 1</td> <td>Rev. 02</td> </tr> <tr> <td></td> <td>07-01-2022</td> <td>National Version 1.1</td> <td>Rev. 02</td> </tr> <tr> <td>ME</td> <td>07-01-2020</td> <td>National Version 1</td> <td>Rev. 01</td> </tr> <tr> <td></td> <td>07-07-2021</td> <td>National Version 1</td> <td>Rev. 02</td> </tr> <tr> <td></td> <td>10-01-2022</td> <td>National Version 1.1</td> <td>Rev. 02</td> </tr> <tr> <td>NE</td> <td>07-01-2020</td> <td>National Version 1</td> <td>Rev. 01</td> </tr> <tr> <td></td> <td>07-01-2021</td> <td>National Version 1.1</td> <td>Rev. 02</td> </tr> <tr> <td>PA</td> <td>07-01-2020</td> <td>National Version 1</td> <td>Rev. 01</td> </tr> <tr> <td></td> <td>04-01-2021</td> <td>National Version 1.1</td> <td>Rev. 01</td> </tr> <tr> <td></td> <td>07-01-2021</td> <td>National Version 1.1</td> <td>Rev. 02</td> </tr> <tr> <td>OR, WA</td> <td>07-01-2020</td> <td>Oregon and Washington Version 1.2</td> <td>Rev. 01</td> </tr> </tbody> </table>	State / Territory	Buildings Permitted ¹⁴ On or After This Date Must Meet the Adjacent Version & Revision	Version	Revision ¹⁵	AL, AK, AZ, AR, CO, GU, HI, IN, ID, KS, KY, LA, MS, MO, NH, NMI, NC, ND, OH, OK, SC, SD, TN, VA, WV, WI, WY	07-01-2020	National Version 1	Rev. 01		07-01-2021	National Version 1	Rev. 02		01-01-2024	National Version 1.1	Rev. 02	CT, DC, DE, FL, IA, IL, MA, MD, MI, MN, MT, NJ, NV, NY, RI, TX, VT	07-01-2020	National Version 1.1	Rev. 01		07-01-2021	National Version 1.1	Rev. 02	GA, NM, UT	07-01-2020	National Version 1	Rev. 01		07-01-2021	National Version 1	Rev. 02		07-01-2022	National Version 1.1	Rev. 02	ME	07-01-2020	National Version 1	Rev. 01		07-07-2021	National Version 1	Rev. 02		10-01-2022	National Version 1.1	Rev. 02	NE	07-01-2020	National Version 1	Rev. 01		07-01-2021	National Version 1.1	Rev. 02	PA	07-01-2020	National Version 1	Rev. 01		04-01-2021	National Version 1.1	Rev. 01		07-01-2021	National Version 1.1	Rev. 02	OR, WA	07-01-2020	Oregon and Washington Version 1.2	Rev. 01
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00234	02/04/2022	National Program Requirements , Version 1 / 1.1/ OR-WA 1.2 (Rev. 02)	Change	Exhibit 3 – Implementation of Version 1.1 in Virginia																											
				<p>Issue: Virginia has adopted a more efficient residential energy code. As a result, once the new codes are fully implemented, Version 1 of the National Program Requirements will no longer provide meaningful savings relative to code-compliant noncertified homes in this state.</p>																											
				<p>Resolution: To continue to provide meaningful savings relative to non-certified homes, a Version 1.1 implementation date has been defined for Virginia. To reflect this change, Exhibit 3 will be modified as follows:</p>																											
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00207	07/29/2021	National Program Requirements , Version 1/ 1.1/ OR-WA 1.2 (Rev. 02)	Change	<p>Exhibit 3 - Implementation of Version 1.1 in Georgia</p> <p>Issue: Georgia has adopted a more efficient residential energy code. As a result, once the new codes are fully implemented, Version 1 of the National Program Requirements will no longer provide meaningful savings relative to code-compliant noncertified multifamily buildings in this state.</p> <p>Resolution: To continue to provide meaningful savings relative to non-certified multifamily buildings, a Version 1.1 implementation date has been defined for Georgia. To reflect this change, Exhibit 3 will be modified as follows:</p>																																																							

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00222	09/15/2021	National Program Requirements , Version 1/ 1.1/ OR-WA 1.2 (Rev. 02)		<p>Issue: Maine has recently adopted a more efficient residential energy code. As a result, once the new codes are fully implemented, Version 1 of the National Program Requirements will no longer provide meaningful savings relative to code-compliant noncertified multifamily buildings in this state.</p>																																									
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00208	07/29/2021	National Program Requirements , Version 1/ 1.1/ OR-WA 1.2 (Rev. 02)	Change	Exhibit 3 - Implementation of Version 1.1 in New Mexico											
				<p>Issue: New Mexico has adopted a more efficient residential energy code. As a result, once the new codes are fully implemented, Version 1 of the National Program Requirements will no longer provide meaningful savings relative to code-compliant noncertified multifamily buildings in the state.</p>											
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00211	07/29/2021	National Program Requirements , Version 1/ 1.1/ OR-WA 1.2 (Rev. 02)	Change	<p>Exhibit 3 - Implementation of Version 1.1 in Utah</p> <p>Issue: Utah has adopted a more efficient residential energy code. As a result, once the new codes are fully implemented, Version 1 of the National Program Requirements will no longer provide meaningful savings relative to code-compliant noncertified multifamily buildings in the state.</p> <p>Resolution: To continue to provide meaningful savings relative to non-certified multifamily buildings, a Version 1.1 implementation date has been defined for Utah. To reflect this change, Exhibit 3 will be modified as follows:</p>																																																

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PR, USVI	07-01-2020	National Version 1	Rev. 01																																																														
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00091	11/01/2019		Change	Source energy savings for ASHRAE path																																																													

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	<p>Updated 09/14/2020</p> <p>Updated 10/30/2020</p>	<p>National Program Requirements, Version 1/ 1.1/ OR-WA 1.2</p>		<p>Issue: Following modeling protocols in ASHRAE 90.1-2007 and 2010 Appendix G, the Baseline building is modeled with HVAC and DHW systems that are determined by the fuels used in the proposed design. Starting with ASHRAE 90.1-2013, the Baseline systems and fuel types are instead determined by climate zone and building type. This has caused differences in how fuels are treated across the different ENERGY STAR MFNC paths as the ASHRAE performance target is based on energy cost savings, which can be affected when switching fuels between Baseline and Proposed Design. Partners have asked whether the ASHRAE Path Performance Target can instead be calculated based on source energy savings, which is shown in the ASHRAE Path Calculator already, rather than on energy cost savings in order to reduce the penalties based on fuel selection.</p> <p>Resolution: In response to the change in baseline for the ASHRAE-based performance paths, EPA is updating its policy to ensure that all paths of the program continue to have a fuel neutral approach. Given industry initiatives to reduce the cost of both modeling and reviewing energy models by having a standard baseline approach, EPA will not adjust the baseline for the energy model. Instead, aligning with an expected informative appendix from ASHRAE and the approach used for other above-code programs, EPA will allow projects with a performance target based on ASHRAE 90.1-2013 or later to use a 15% cost energy savings target OR a 15% source energy savings target.</p> <p>An additional bullet will be added to Exhibit 4 of the National Program Requirements:</p> <p>“Performance Target for Projects Modeling using Appendix G from ASHRAE 90.1-2016: Projects using this approach to meet a performance target above ASHRAE 90.1-2013 or later, must meet a target of 15% energy cost savings OR 15% source energy savings when compared to the energy code under which the building is permitted.”</p> <p>While the most current edition of the ASHRAE Path Calculator AppG2016 (APC Version 1, Rev.02, Edition 1) calculates the source energy savings, it is based on a set of Building Performance Factors (BPF) that are not appropriate for this calculation. For projects with either a Proposed Design submittal received by and MRO for review on or before 11/30/2020, the source energy savings shown in the ASHRAE Path Calculator will be permitted. For submittals received after that date, the appropriate BPF will need to be used. This can be accomplished by sending the APC file to the ENERGY STAR inbox. The file will be updated with the new BPF and returned to the Rater. Alternately, the ASHRAE Path Calculator AppG2016 (APC Version 1, Rev. 02, Edition 2) will have the correct BPFs and may be used once it is available.</p>

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				This edition of the calculator will be required for any project under Revision 02 using a source energy target.
00491	10/03/2022	National Program Requirements , Version 1 / 1.1/ OR-WA 1.2 (Rev.02)	Change	Exhibit 4–Note regarding Addendum bm from ASHRAE 90.1-2013 is removed
				Issue: The explanatory note regarding Addendum bm is no longer needed since modeling to 90.1 – 2013 is not allowed.
				Resolution: A significant change to modeling was introduced through Addendum bm to ASHRAE 90.1 – 2013, to create a more static Baseline. That Addendum then became the basis of the Appendix G in ASHRAE 90.1 – 2016. While early in the program this Note provided useful context and rationale for not allowing it to be used, it is no longer needed. For conciseness this sentence will be deleted: “Note: Addendum bm from ASHRAE 90.1 - 2013 is not referenced since its content and the related excerpts that followed have been incorporated into Appendix G from ASHRAE 90.1 - 2016.”
00502	10/03/2022	National Program Requirements , Version 1 / 1.1/ OR-WA 1.2 (Rev.02)	Clarification	Exhibit 4 – ASHRAE Standard 90.1 Performance Based Compliance Form can be used with ASHRAE 90.1-2016 models
				Issue: Policy Record ID 108 notes that building models using Appendix G from ASHRAE 90.1-2016 may use the new ASHRAE 90.1 Performance Based Compliance Form and all projects modeling to ASHRAE 90.1-2019 must use the Compliance Form. The allowance to use the Compliance Form for ASHRAE 90.1-2016 models is not included in this document.
				Resolution: Exhibit 4 was updated in the draft of Version 1.2 to note that the Compliance Form must be used for buildings modeled using Appendix G from ASHRAE 90.1-2019. To clarify that buildings using the Appendix G from ASHRAE 90.1-2016 may also use the form, Exhibit 4 will be further revised as follows: “Appendix G version: For buildings pursuing performance targets based on ASHRAE 90.1-2007 or ASHRAE 90.1-2010, the building must use the Appendix G of the code corresponding to their Performance Target or Appendix G from ASHRAE 90.1-2016. Buildings pursuing targets based on ASHRAE 90.1-2013 or later must use Appendix G from ASHRAE 90.1-2016. Buildings using Appendix G from ASHRAE 90.1-2016 must use the ASHRAE Path Calculator_AppG2016 or the ASHRAE Standard 90.1 Performance Based Compliance Form and Simulation Guidelines_AppG2016 available on the Guidance

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				Documents page which can be found at www.energystar.gov/mfguidance . Buildings may not use Appendix G from ASHRAE 90.1-2016 if they are using the 20% or 25% Performance Target Options. Projects using Appendix G from ASHRAE 90.1-2019 must use the ASHRAE Standard 90.1 Performance Based Compliance Form. “
00492	10/03/2022	National Program Requirements , Version 1 / 1.1/ OR-WA 1.2 (Rev.02)	Change	<p>Exhibit 4–ASHRAE Path Performance Targets separated by Version</p> <p>Issue: With the addition of Version 1.2 and the national transition to Version 1.1, the ASHRAE Path Performance Targets are now dependent on the MFNC Version and this exhibit should be separated by Version.</p> <p>Resolution: To improve clarity, Exhibit 4 will be broken out by program version and revised as follows:</p> <p>To introduce the target for each Version, the following sentence will be added:</p> <p>“The ASHRAE Performance Targets described below are required for all buildings pursuing the ASHRAE Path in states under Version [Version number] as described in Exhibit 3.”</p> <p>Version 1: Additional revisions include:</p> <p>The bullet on Version 1.2 will be removed and the following sentence will be added to the end of the first paragraph:</p> <p>“Buildings using the ASHRAE Path in states that have adopted as the commercial code the 2021 IECC or ASHRAE 90.1-2019 will be required to meet a Performance Target of 15% energy cost savings when compared to ASHRAE 90.1-2016.”</p> <p>Version 1.1 and Oregon-Washington Version 1.2: Additional revisions include:</p> <p>The bullet on Version 1.2 will be removed and the first paragraph will be revised as follows:</p> <p>“Buildings using the ASHRAE Path in states that have adopted as the commercial code the 2012 IECC, 2015 IECC, 2018 IECC, 2021 IECC, ASHRAE 90.1-2010, ASHRAE 90.1-2013, ASHRAE 90.1-2016 or equivalent, will be required to meet a Performance Target of 15% energy cost savings when compared to the energy code under which the building is permitted (unless otherwise noted below). <u>Buildings using the ASHRAE Path in states that</u></p>

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				<p><u>have adopted as the commercial code the 2021 IECC or ASHRAE 90.1-2019 will be required to meet a Performance Target of 15% energy cost savings when compared to ASHRAE 90.1-2016. All other buildings must meet the national requirement of 15% over ASHRAE 90.1- 2007 if permitted prior to 1/1/2024, and 15% over ASHRAE 90.1- 2010 if permitted on or after 1/1/2024.</u></p> <p>Version 1.2: The text will be as follows:</p> <p>“These Performance Targets are required for all buildings pursuing the ASHRAE Path in states under Version 1.2 as described in Exhibit 3.</p> <p>The ASHRAE performance target is 15% over ASHRAE 90.1-2019 even if the state has not adopted the 2021 IECC or ASHRAE 90.1-2019 as the commercial code. Buildings must meet a target of 15% energy cost savings OR 15% source energy savings when compared to ASHRAE 90.1-2019.</p> <p>Appendix G from ASHRAE 90.1-2019 must be used, along with the <u>ASHRAE Standard 90.1 Performance Based Compliance Form</u> and Simulation Guidelines_AppG2016 available on the Guidance Documents page which can be found at www.energystar.gov/mfguidance. “</p>			
00480	10/03/2022	National Program Requirements , Version 1/1.1/ OR-WA 1.2 (Rev. 02)	Refinement	<p>Exhibit 4 – Add ASHRAE code to IECC in the state commercial code column</p> <p>Issue: Partners have been confused by the ASHRAE performance target table when their state adopts ASHRAE 90.1 and not the IECC as the commercial code.</p> <p>Resolution: The Table is meant to look up the state IECC option in the left row and look across to see what performance target options there are. If the state adopts ASHARE 90.1-2010, then the appropriate row is the 2012 IECC. This would be more clear if the ASHARE 90.1 code were listed with the IECC.</p> <p>The table will be revised to include the ASHRAE 90.1 code along with the IECC as follows:</p> <table border="1"> <tr> <td></td> </tr> <tr> <td style="text-align: center;">State Commercial Code</td> </tr> <tr> <td style="text-align: center;">2009 IECC / 90.1-2007</td> </tr> </table>		State Commercial Code	2009 IECC / 90.1-2007
State Commercial Code							
2009 IECC / 90.1-2007							

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				<table border="1"> <tr> <td>2012 IECC / 90.1-2010</td> </tr> <tr> <td>2015 IECC / 90.1-2013</td> </tr> <tr> <td>2018 IECC / 90.1-2016</td> </tr> <tr> <td>2021 IECC / 90.1-2019</td> </tr> </table>	2012 IECC / 90.1-2010	2015 IECC / 90.1-2013	2018 IECC / 90.1-2016	2021 IECC / 90.1-2019
2012 IECC / 90.1-2010								
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2021 IECC / 90.1-2019								
00493	10/03/2022	National Program Requirements , Version 1 / 1.1/ OR-WA 1.2 (Rev.02)	Clarification	<p>Step 3 and 7 – Moving list of documentation for MRO to new Exhibit 5</p> <p>Issue: Steps 3 and 7 have redundant lists of documents and notes about the documents that are difficult to interpret in a paragraph form. These should be moved to a table with notes in an Exhibit.</p> <p>Resolution: Exhibit 5 will be created with a list of the documents required for an MRO submission and the related notes. These will be deleted from Step 3 and 7b and a reference to the Exhibit will be added as follows:</p> <p>Step 3:</p> <p>“Upon completion of design, for ASHRAE and Prescriptive Path projects only, specific documentation <u>may be</u> submitted to an MRO for their review and approval <u>as described in Exhibit 5</u>. These documents include the Multifamily Workbook, with applicable portions completed; the Rater Design Review Checklist, unless included in the Multifamily Workbook; the HVAC Design Report; construction documents; and for ASHRAE project, the ASHRAE Path Calculator (APC) or ASHRAE Standard 90.1 Performance Based Compliance Form (APBC), and either the modeling file or input and output files. For PHIUS+ certified project choosing the alternative modeling option in the ASHRAE Path, in lieu of submitting the APC and modeling files, documentation is instead provided that demonstrates achievement of the required source energy per person and pre-certification from PHIUS. For multifamily projects with multiple buildings, each building must demonstrate compliance with the program requirements, but can be documented using one Multifamily Workbook and one HVAC Design Report per project. For ASHRAE Path projects, where buildings are identical, only one set of modeling files and ASHRAE Path Calculator are required to be submitted. At the discretion of the ASHRAE modeler, connected buildings may be modeled as one building or separate buildings. MROs may choose to implement alternative design review requirements. EPA strongly recommends submitting <u>this</u> documentation before construction; however,</p>				

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				<p>project teams may <u>instead</u> choose to submit the design documentation with the As-Built Submittal at final certification. <u>MROs may choose to implement alternative design review requirements</u>. For the Excel-based ASHRAE Path Calculator and Multifamily Workbook, while Partners are encouraged to always use the newest versions available online, unless otherwise specified, file updates between Program revisions will not be required. After a Program revision, project teams will be required to use the updated documents based on the enforcement timeline set for the revision.”</p> <p>Step 7b: “ASHRAE and Prescriptive Path: specific documentation must be submitted based on as-built conditions to an MRO for their review and approval, <u>as described in Exhibit 5</u>. These documents include the Multifamily Workbook; the Rater Field Checklist, unless included in the Multifamily Workbook; the HVAC Functional Testing Checklists; construction documents; photo documentation; and for ASHRAE projects, the ASHRAE Path Calculator or APBC and either the modeling file or input and output files. For PHIUS+ Final certified project choosing the alternative modeling option in the ASHRAE Path, in lieu of submitting the APC and modeling files, documentation is instead provided that demonstrates achievement of the required source energy per person and final certification from Phius. For multifamily projects with multiple buildings, each building must demonstrate compliance with the program requirements, but can be documented using one Multifamily Workbook per project. For ASHRAE Path projects, where buildings are identical, only one set of modeling files and ASHRAE Path Calculator are required to be submitted. At the discretion of the ASHRAE modeler, connected buildings may be modeled as one building or separate buildings.”</p> <p>Exhibit 5: “</p> <p style="text-align: center;">Exhibit 5: ASHRAE and Prescriptive Path MRO Documents</p> <p>The following documents must be submitted to the MRO. Those designated as ‘final only’ are only submitted at final certification.</p> <table border="1" style="width: 100%; margin-top: 10px;"> <tr> <td style="width: 50%; text-align: center;">Party Responsible</td> <td style="width: 50%; text-align: center;">Documents</td> </tr> </table>	Party Responsible	Documents
Party Responsible	Documents					

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				<table border="1"> <tr> <td colspan="2">Requirements Applicable to All Buildings</td> </tr> <tr> <td>Rater</td> <td> <ul style="list-style-type: none"> • Multifamily Workbook • MFNC National Rater Design Review Checklist, Version 1 / 1.1 / 1.2 • MFNC National Rater Field Checklist, Version 1 / 1.1 / 1.2 (Final only) • Construction Documents • Photo Documentation (Final only) </td> </tr> <tr> <td colspan="2">Requirements Applicable to ASHRAE Path</td> </tr> <tr> <td>ASHRAE Modeler</td> <td> <ul style="list-style-type: none"> • ASHRAE Path Calculator OR ASHRAE Standard 90.1 Performance Based Compliance Form • Modeling file OR model input and output files </td> </tr> <tr> <td colspan="2">Requirements Only Applicable to Track A – HVAC Grading by Rater¹⁴</td> </tr> <tr> <td>HVAC System Designer</td> <td> <ul style="list-style-type: none"> • HVAC design report(s) compliant with ANSI / ACCA / RESNET 310 • SFNH / MFNC National HVAC Design Supplement(s) to Std. 310 for Dwellings & Units, All Versions • MFNC National HVAC Design Supplement to Std. 310 for Common Spaces & Central Systems, All Versions, where applicable </td> </tr> <tr> <td>Functional Testing Agent</td> <td> <ul style="list-style-type: none"> • National HVAC Functional Testing Checklists, Version 1 / 1.1 / 1.2 </td> </tr> <tr> <td colspan="2">Requirements Only Applicable to Track B – HVAC Testing by FT Agent</td> </tr> <tr> <td>HVAC System Designer</td> <td> <ul style="list-style-type: none"> • MFNC National HVAC Design Report, Version 1 / 1.1 / 1.2 </td> </tr> <tr> <td>Functional Testing Agent</td> <td> <ul style="list-style-type: none"> • MFNC National HVAC Functional Testing Checklist, Version 1 / 1.1 / 1.2 (Final only) </td> </tr> </table> <p>Notes:</p> <ul style="list-style-type: none"> • For multifamily projects with multiple buildings, each building must demonstrate compliance with the program requirements, but can be documented using one Multifamily Workbook and one HVAC Design Report per project. • For buildings pursuing the ASHRAE Path, where buildings are identical, only one set of modeling files and ASHRAE Path Calculator are required to be submitted. At the discretion of the ASHRAE modeler, connected buildings may be modeled as one building or separate buildings. 	Requirements Applicable to All Buildings		Rater	<ul style="list-style-type: none"> • Multifamily Workbook • MFNC National Rater Design Review Checklist, Version 1 / 1.1 / 1.2 • MFNC National Rater Field Checklist, Version 1 / 1.1 / 1.2 (Final only) • Construction Documents • Photo Documentation (Final only) 	Requirements Applicable to ASHRAE Path		ASHRAE Modeler	<ul style="list-style-type: none"> • ASHRAE Path Calculator OR ASHRAE Standard 90.1 Performance Based Compliance Form • Modeling file OR model input and output files 	Requirements Only Applicable to Track A – HVAC Grading by Rater¹⁴		HVAC System Designer	<ul style="list-style-type: none"> • HVAC design report(s) compliant with ANSI / ACCA / RESNET 310 • SFNH / MFNC National HVAC Design Supplement(s) to Std. 310 for Dwellings & Units, All Versions • MFNC National HVAC Design Supplement to Std. 310 for Common Spaces & Central Systems, All Versions, where applicable 	Functional Testing Agent	<ul style="list-style-type: none"> • National HVAC Functional Testing Checklists, Version 1 / 1.1 / 1.2 	Requirements Only Applicable to Track B – HVAC Testing by FT Agent		HVAC System Designer	<ul style="list-style-type: none"> • MFNC National HVAC Design Report, Version 1 / 1.1 / 1.2 	Functional Testing Agent	<ul style="list-style-type: none"> • MFNC National HVAC Functional Testing Checklist, Version 1 / 1.1 / 1.2 (Final only)
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				<ul style="list-style-type: none"> For buildings choosing the Pplus alternative modeling option in the ASHRAE Path, in lieu of submitting the ASHRAE Path Calculator and modeling files, documentation is instead provided that demonstrates achievement of the required source energy per person and final certification from Pplus. For the Excel-based ASHRAE Path Calculator and Multifamily Workbook, while Partners are encouraged to always use the newest versions available online, unless otherwise specified, file updates between Program revisions will not be required. After a Program revision, Raters will be required to use the updated documents based on the enforcement timeline set for the revision. "
00107	09/14/2020 Updated 10/30/2020	National Program Requirements Version 1/ 1.1/ OR-WA 1.2 (Rev.01)	Change	<p>Alternative modeling pathway for PHIUS Certified projects</p> <p>Issue: While the ENERGY STAR Multifamily New Construction program offers a Prescriptive Path that does not require energy modeling, PHIUS certified projects are required to do extensive modeling for that program certification, in addition to meeting ENERGY STAR requirements. Partners have asked whether those PHIUS+ modeling results can be used toward demonstrating achievement of the ENERGY STAR MFNC Performance Target, without the extra cost of doing ASHRAE 90.1 or ERI modeling.</p> <p>Resolution: A 2018 NYSERDA report provides a modeling analysis which compares energy use per person calculated from WUFI with ASHRAE modeling savings for the same buildings. Based on an analysis of available of data, it was determined that achieving a source energy use per person of $\leq 6,500$ kWh/person per year, prior to the use of renewables, achieves at least 15% savings above ASHRAE 90.1-2016. Therefore, PHIUS+ Certified projects (PHIUS+ Core, PHIUS+ 2015, and PHIUS+ 2018) can follow the ASHRAE Path and instead use the PHIUS+ energy modeling results in lieu of modeling and calculating the performance above an ASHRAE 90.1 baseline. Projects must meet a performance target of 6,500 kWh/person per year without the use of renewables. All other requirements of the ASHRAE Path must be followed and the project must earn PHIUS+ certification.</p> <p>Projects must submit documentation, such as the WUFI Passive Source Energy Report, to show they have met the target along with precertification documentation from PHIUS at design and the PHIUS certificate at As-Built. The PHIUS tab must also be completed in the MF Workbook to document the source energy target, and the MF Workbook Lighting Tab must be completed in lieu of filling out the lighting information in the ASHRAE Path Calculator. The ASHRAE Path Calculator does not need to be completed.</p> <p>The National Program Requirements will be updated as follows:</p>

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				<p>Step 1c of the Certification Process will be updated to include the following:</p> <p>Exception: For buildings that are PHIUS+ certified, achieving a specific source energy use per person of $\leq 6,500$ kWh/person per year, without renewables, is accepted in lieu of achieving the ASHRAE performance target.</p> <p>Step 2c of the Certification Process will be updated to include the following:</p> <p>Exception: For buildings that are PHIUS+ certified and submitting the specific source energy use per person in lieu of meeting the ASHRAE Performance Target, calculations are done in accordance with PHIUS+ modeling protocols.</p> <p>Step 4 of the Certification Process will be updated as follows:</p> <p>Upon completion of design, for ASHRAE and Prescriptive Path projects only, specific documentation is submitted to an MRO for their review and approval. These documents include the Multifamily Workbook, with applicable portions completed; the Rater Design Review Checklist, unless included in the Multifamily Workbook; the HVAC Design Report; construction documents; and for ASHRAE projects, the ASHRAE Path Calculator and either the modeling file or input and output files. For PHIUS+ certified projects choosing the alternative modeling option in the ASHRAE Path, in lieu of submitting the APC and modeling files, documentation is instead provided that demonstrates achievement of the required source energy per person and pre-certification from PHIUS. MROs may choose to implement alternative design review requirements. While the For the Excel-based ASHRAE Path Calculator and Multifamily Workbook, while Partners are encouraged to always use the newest versions available online, unless otherwise specified, file updates between Program revisions will not be required. After a Program revision, project teams will be required to use the updated documents based on the enforcement timeline set for the revision.</p> <p>Step 7b of the Certification Process will be updated as follows:</p> <p>ASHRAE and Prescriptive Path: specific documentation must be submitted based on as-built conditions to an MRO for their review and approval. These documents include the Multifamily Workbook; the Rater Field Checklist, unless included in the Multifamily Workbook; the HVAC Functional Testing Checklists; construction documents; photo documentation; and for ASHRAE projects, the ASHRAE Path Calculator and either the modeling file or input and output files. For PHIUS+ certified projects choosing the</p>

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				alternative modeling option, documentation must be provided that demonstrates achievement of the required source energy per person and certification from PHIUS.
00017	11/01/2019	<p>National Program Requirements, Version 1/ 1.1/ OR-WA 1.2</p> <p>California Program Requirements, Version 1.2</p>	Change	<p>Integration of HVAC grading path</p> <p>Issue: A new standard is nearing finalization, ANSI / ACCA / RESNET Std. 310 - Standard for Grading the Installation of HVAC Systems. This standard will provide a pathway for Raters to complete an HVAC design review and assess the installation quality of unitary HVAC systems as Grade I, II, or III.</p> <p>For a project where this standard is used to determine that the installation quality of the applicable in-unit HVAC systems are Grade I or II, many of the HVAC-related requirements in the program will be satisfied. Therefore, a new compliance path within the MFNC program that leverages this new standard, upon completion, could offer multiple benefits. At the same time, the original path for satisfying the program’s HVAC design and installation requirements, which relies upon the use of a functional testing agent for dwelling unit HVAC Commissioning, could be maintained.</p> <p>This would allow partners to transition to the new compliance path as they are prepared to do so, and if they find value in the new path, while minimizing disruption to the certification process as the new path is deployed.</p> <p>Resolution: A compliance path (Path A – Dwelling Unit HVAC Grading) will be developed within the program for residential HVAC systems serving individual dwelling units that leverages the new ANSI / ACCA / RESNET Std. 310, upon completion, while maintaining the original path that relies upon a Functional Testing Agent (Path B – Dwelling Unit HVAC Commissioning). Specifically, the following edits will be made:</p> <ol style="list-style-type: none"> 1. A new paragraph will be added above Exhibit 2 to provide context for the two HVAC paths, as follows: “Two paths are provided for satisfying the mandatory requirements for all certified projects, Exhibit 2. Path A – Dwelling Unit HVAC Grading allows a Rater to utilize ANSI / RESNET / ACCA Std. 310 ¹³, a standard for grading the installation of residential HVAC systems serving individual Dwelling Units and a Functional Testing Agent to verify common spaces and central systems. Path B – Dwelling Unit HVAC Commissioning utilizes a Functional Testing Agent for all systems. Either path may be selected, but all requirements within that path must be satisfied for the building to be certified.”

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				<p>2. A new Footnote will be added after “ANSI / RESNET / ACCA Std. 310” in the paragraph above, to clarify when the new path can be used: “Path A – Dwelling Unit HVAC Grading shall not be used until an Effective Date has been defined by RESNET for ANSI / RESNET / ACCA Std. 310. Path A – Dwelling Unit HVAC Grading shall then use ANSI / RESNET / ACCA Std. 310 including all Addenda and Normative Appendices, with new versions and Addenda implemented according to the Effective Date and Transition Period End Date defined by RESNET. RESNET interpretations of Standard 310 shall also be followed.”</p> <p>3. Exhibit 2 will be rearranged to illustrate the requirements that must be satisfied for both paths, for Path A, and for Path B, as follows:</p> <p style="text-align: center;">Exhibit 2: Mandatory Requirements for All Certified Multifamily Projects</p> <table border="1"> <thead> <tr> <th>Party Responsible</th> <th>Mandatory Requirements</th> </tr> </thead> <tbody> <tr> <td colspan="2">Requirements Applicable to Path A & B</td> </tr> <tr> <td>Rater</td> <td> <ul style="list-style-type: none"> • Completion of National Rater Design Review Checklist • Completion of National Rater Field Checklist </td> </tr> <tr> <td>Builder or Developer</td> <td> <ul style="list-style-type: none"> • Completion of National Water Management System Requirements </td> </tr> <tr> <td colspan="2">Requirements Only Applicable to Path A - Dwelling Unit HVAC Grading ¹³</td> </tr> <tr> <td>HVAC System Designer</td> <td> <ul style="list-style-type: none"> • Completion of an HVAC design report compliant with ANSI / ACCA / RESNET Std. 310, plus the ENERGY STAR MFNC Supplement </td> </tr> <tr> <td>Functional Testing Agent</td> <td> <ul style="list-style-type: none"> • Completion of applicable sections of the National HVAC Functional Testing Checklist. Exempt from Sections 2 and 3 for Dwelling Unit HVAC as the Rater is the party responsible for assessing these systems installation quality in accordance with ANSI / RESNET / ACCA Std. 310 </td> </tr> <tr> <td colspan="2">Requirements Only Applicable to Path B – Dwelling Unit HVAC Commissioning</td> </tr> <tr> <td>HVAC System Designer</td> <td> <ul style="list-style-type: none"> • Completion of National HVAC Design Report </td> </tr> <tr> <td>Functional Testing Agent</td> <td> <ul style="list-style-type: none"> • Completion of National HVAC Functional Testing Checklist </td> </tr> </tbody> </table>	Party Responsible	Mandatory Requirements	Requirements Applicable to Path A & B		Rater	<ul style="list-style-type: none"> • Completion of National Rater Design Review Checklist • Completion of National Rater Field Checklist 	Builder or Developer	<ul style="list-style-type: none"> • Completion of National Water Management System Requirements 	Requirements Only Applicable to Path A - Dwelling Unit HVAC Grading ¹³		HVAC System Designer	<ul style="list-style-type: none"> • Completion of an HVAC design report compliant with ANSI / ACCA / RESNET Std. 310, plus the ENERGY STAR MFNC Supplement 	Functional Testing Agent	<ul style="list-style-type: none"> • Completion of applicable sections of the National HVAC Functional Testing Checklist. Exempt from Sections 2 and 3 for Dwelling Unit HVAC as the Rater is the party responsible for assessing these systems installation quality in accordance with ANSI / RESNET / ACCA Std. 310 	Requirements Only Applicable to Path B – Dwelling Unit HVAC Commissioning		HVAC System Designer	<ul style="list-style-type: none"> • Completion of National HVAC Design Report 	Functional Testing Agent	<ul style="list-style-type: none"> • Completion of National HVAC Functional Testing Checklist
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00018	11/01/2019	National Program Requirements, Version 1/1.1/OR-WA 1.2	Clarification	<p>Energy cost savings for ASHRAE path</p> <p>Issue: Partners have noted that the National Program Requirements does not specify whether the ASHRAE performance target is based on energy cost savings or if other options, such as source energy, are allowed.</p>																				

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				<p>Resolution: While the Simulation Guidelines describes the current Performance Target as being calculated using energy cost savings, it also suggests that EPA guidance may approve alternate units for use. This is not explicitly stated in the National Program Requirements. EPA will clarify this in 2c. of the Certification Process section and in Exhibit 4: ASHRAE Path Performance Targets in Rev01 by adding the following sentence:</p> <p>“The Performance Target is based on the units of energy cost unless specific EPA guidance approves alternate units for use.”</p>
00019	11/01/2019	National Program Requirements, Version 1/ 1.1/ OR-WA 1.2	Clarification	<p>Proposed Design and As-Built Submittals</p> <p>Issue: In steps 4 and 7 of the ENERGY STAR Certification Process, it is unclear which Multifamily Workbook tabs must be completed at the Design stage as compared to the As-Built stage, and whether the PDF version of the Rater checklists can be submitted instead.</p> <p>Resolution: EPA’s intent was to allow the PDF versions of the checklists to be submitted and agrees that the language could be more clear regarding which specific worksheets within the Workbook must be completed at the Design stage.</p> <p>Step 4 of the ENERGY STAR Certification Process will be revised in Rev01 as follows:</p> <p>“Upon completion of design, for ASHRAE and Prescriptive Path projects only, specific documentation must be submitted to an MRO for their review and approval. These documents include the Multifamily Workbook, with applicable portions completed; the Rater Design Review Checklist, unless included in the Multifamily Workbook; the HVAC Design Report; construction documents; and for ASHRAE projects, the ASHRAE Path Calculator and either the modeling file or input and output files.”</p> <p>Step 7b of the ENERGY STAR Certification Process will be revised in Rev01 as follows:</p> <p>“ASHRAE and Prescriptive Path: specific documentation must be submitted based on as-built conditions to an MRO for their review and approval. These documents include the Multifamily Workbook; the Rater Field Checklist, unless included in the Multifamily Workbook; the HVAC Functional Testing Checklists; construction documents; photo documentation; and for ASHRAE projects, the ASHRAE Path Calculator and either the modeling file or input and output files.”</p>

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00020	11/01/2019	<p>National Program Requirements, Version 1/ 1.1/ OR-WA 1.2</p> <p>California Program Requirements, Version 1.2</p>	Clarification	<p>Definition of “common spaces”</p> <p>Issue: Partners have noted that the footnote in the program documents, that explains what the term ‘common space’ means, is confusing with respect to determining eligibility, and applicability of requirements in certain spaces, such as commercial day-care facilities and common spaces on the property but not in the building being certified.</p> <p>Resolution: EPA agrees that this footnote could be revised to provide better clarity with respect to the intent of the program and the applicability of the requirements in certain spaces. Day-care facilities will be removed from the list since they are usually open to the public, not just building residents. It was also clarified that common spaces on the property, but not within the building, are not be included.</p> <p>Footnote 2 of the National and California Program Requirements will be revised in Rev01 as follows:</p> <p>2. The term ‘common space’ refers to any spaces in the building being certified that serve a function in support of the residential part of the building that is not part of a dwelling or sleeping unit. This includes spaces used by residents, such as corridors, stairs, lobbies, laundry rooms, exercise rooms, residential recreation rooms, and dining halls, as well as offices and other spaces used by building management, administration or maintenance in support of the residents.</p>
00021	11/01/2019	National Program Requirements, Version 1/ 1.1/ OR-WA 1.2	Clarification	<p>Footnote 5 - Overlap between code and ENERGY STAR</p> <p>Issue: Partners have asked whether all applicable energy efficiency code requirements must be met for a building to be certified. The Eligibility Requirements section of the program requirements states, in part, that compliance with these requirements is not intended to imply compliance with all local code requirements that may be applicable to the building to be built.</p> <p>However, some code requirements address efficiency features that are within the scope of the program. For example, the 2012 IECC has a mandatory infiltration limit for buildings subject to the Residential provisions. The program has a mandatory compartmentalization limit, but for all dwelling units, regardless of whether they are in Residential or Commercial buildings.</p>

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				<p>Other code requirements address efficiency features that are not within the scope of the program. For example, the 2012 IECC contains requirements for pool heaters and continuously burning pilot lights in fuel gas lighting systems. In contrast, the program does not have any requirements related to these features.</p> <p>It is unclear whether a Rater is only responsible for ensuring that all program requirements have been met for a building to be certified or if the Rater is also responsible for ensuring that all code requirements have been met prior to certification.</p> <p>Resolution: A Rater is only responsible for ensuring that all program requirements have been met for a building to be certified. While certification will result in compliance with many code requirements, a Rater is not responsible for ensuring that all code requirements have been met prior to certification. More details about the IECC code requirements that are, and are not, satisfied through certification can be found in fact sheets available here: www.energystar.gov/newhomesguidance.</p> <p>To clarify this intent, Footnote 5 will be revised as follows:</p> <p>“While certification will result in compliance with many code requirements, a Rater is not responsible for ensuring that all code requirements have been met prior to certification. For more information about how these program requirements help satisfy code requirements, visit: www.energystar.gov/newhomesguidance. In the event that a code requirement, a manufacturer’s installation instructions, or an engineering document conflicts with a requirement of the ENERGY STAR program (e.g., slab insulation is prohibited to allow visual access for termite inspections), then the conflicting requirement within these program requirements shall not be met. Certification shall only be allowed if the Rater has determined that no equivalent option is available that could meet the intent of the conflicting requirement (e.g., switching from exterior to interior slab edge insulation). Note that a home must still meet its ENERGY STAR ERI Target. Therefore, other efficiency measures may be needed to compensate for the omission of the conflicting requirement.”</p>
00022	11/01/2019	National Program Requirements, Version 1/ 1.1/ OR-WA 1.2	Clarification	<p>Applicability of requirements to parking garages</p> <p>Issue: Partners have noted confusion regarding the footnote in the program documents that describes parking garages and when parking garages are considered common space and whether all parking garages are subject to the requirements.</p>

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		California Program Requirements, Version 1.2		<p>Resolution: EPA's intent is for the requirements to apply to open and enclosed garages that are part of the building being certified and do not apply to separate parking structures or those where the energy costs are not the responsibility of the Owner/Developer (ie. commercial).</p> <p>Footnote 9 of the National Program Requirements and Footnote 8 of the California Program Requirements will be revised in Rev01 as follows:</p> <p>These requirements apply to all dwelling units, sleeping units, common spaces ², and garages (open or enclosed) in the building being certified, and where specified, parking lots. These requirements do not apply to commercial or retail spaces. These requirements do not apply to common spaces that are located in buildings on the property without any dwelling or sleeping units. These requirements do not apply to parking garages or lots where the cost of the energy use of the parking garage or lot is not the responsibility of the Builder/Developer, Building Owner or Property Manager.</p>
00023	11/01/2019	National Program Requirements, Version 1/ 1.1/ OR-WA 1.2 California Program Requirements, Version 1.2	Clarification	<p>Definition of generic term "Provider" with industry-standard definition</p>
				<p>Issue: Program documentation includes the generic term "Provider" without reference to the industry-standard definition.</p> <p>Resolution: Because EPA has a process by which additional Verification Oversight Organizations (VOOs) can operate using ANSI / RESNET / ICC Std. 301, a definition of "Provider" will be added based on the industry standard term Approved Rating Provider from ANSI / RESNET/ ICC Std. 301. For conciseness, the generic term "Provider" will be maintained within the body of the document and the following footnote will be added to define this generic term using the industry-standard term:</p> <p>"The term 'Provider' refers to an Approved Rating Provider that is a designee of a VOO such as RESNET."</p>
00452	10/03/2022	National Program Requirements , Version 1 /	Clarification	<p>Exhibit 1 –IECC Climate Zone designations to be used</p>
				<p>Issue: For improved consistency and clarity, Footnote 13 will be revised to specify which IECC Climate Zone designations are used to configure the ENERGY STAR Reference Design for this version of the program requirements.</p>

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		1.1/ OR-WA 1.2 (Rev.02)		<p>Resolution: The header of the Exhibit for Version 1.1 will be revised as follows: “Hot Climates (2012 IECC Zones 1,2,3)” and “Mixed and Cold Climates (2012 IECC Zones 4,5,6,7,8)”</p> <p>Footnote 13 will be revised as follows: “For buildings certifying to v1, 2009 IECC Climate Zone designations, as defined and illustrated in Section 301 of the code, are used to configure the ENERGY STAR Reference Design. For buildings certifying to v1.1 and OR-WA v1.2, 2012 IECC Climate Zone designations, as defined and illustrated in Section R301 of the code, are used to configure the ENERGY STAR Reference Design.”</p>
00024	11/01/2019	National Program Requirements, Version 1/ 1.1/ OR-WA 1.2 California Program Requirements, Version 1.2	Clarification	<p>Continued use of MFNC HVAC Design Report</p>
				<p>Issue: Due to the effort required to collect the MFNC HVAC Design Report, partners have asked whether previously collected Rev. 0 MFNC HVAC Design Reports can continue to be used after the release of the next Revision of the program requirements, so long as no aspect of the system design changes.</p> <p>Resolution: Because Revision 01 of the program checklists will not require collection of any additional information or impose any new requirements, and will maintain or increase compliance tolerances, a design documented using Rev. 0 of the National MFNC HVAC Design Report would, by definition, meet the requirements of Rev. 1. Therefore, previously collected Rev. 0 National MFNC HVAC Design Reports will be permitted to be used after the release of the next Revision of the program requirements, so long as no aspect of the building design changes. To reflect this change, Footnote 14 will be updated as follows: “Buildings certified under Rev. 01 of the program requirements are permitted to use any version of the MFNC National HVAC Design Report.”</p>
00413	10/03/2022	National Program Requirements , Version	Refinement	<p>Allowed use of ANSI / RESNET / ACCA Std. 310</p>
				<p>Issue: Footnote 14 states, in part, that ANSI / RESNET / ACCA / ICC 310 shall not be used until an implementation schedule has been defined by the HCO that the building is being certified under. This restriction was necessary at the time the footnote was added because</p>

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		1/1.1/ OR-WA 1.2 (Rev. 02)		<p>ANSI / RESNET / ACCA / ICC 310 was still being finalized and was not yet incorporated by reference into ANSI / RESNET / ICC 301. In addition, the one HCO approved at that time had to put training, reporting, and other components in place before the standard could be effectively used and overseen.</p> <p>At this time, ANSI / RESNET / ACCA / ICC 310 has been finalized and incorporated by reference into ANSI / RESNET / ICC 301. In addition, the one HCO that was approved at the time has put in place the necessary oversight structures for the new standard and defined an implementation date. Going forward, all HCO's will support the standard and all MROs will support the standard by 1/1/2024 which is when the next revision will be enforced.</p> <p>Resolution: As a result of these developments, the language in this Footnote can be streamlined as follows:</p> <p>“Track A – HVAC Grading shall not be used until an implementation schedule has been defined for ANSI / RESNET / ACCA Std. 310 by the HCO that the building is being certified under. Track A – HVAC Grading by Rater shall then use ANSI / RESNET / ACCA Std. 310 including all Addenda and Normative Appendices, with new versions and Addenda implemented according to the schedule defined by the HCO that the building is being certified under.”</p>
00481	10/03/2022	National Program Requirements , Version 1/ 1.1/ OR-WA 1.2 (Rev. 02)	Change	<p>All versions of the National HVAC Design Report allowed to be used</p> <p>Issue: Footnote 15 states that any version of the MFNC National HVAC Design Report may be used for Rev. 01 and Rev. 02 buildings. Rev. 03 buildings are also allowed to use any version of this report.</p> <p>Resolution: Footnote 15 will be revised as follows: “Buildings certified under Rev. 01, Rev. 02 and Rev. 03 of the program requirements are permitted to use any version of the MFNC National HVAC Design Report.”</p>
00025	11/01/2019	National Program Requirements, Version 1/ 1.1/ OR-WA 1.2	Refinement	<p>Energy Rating Companies (e.g. rater companies and Providers) partnership requirement</p> <p>Issue: The ENERGY STAR Certified Homes program implicitly requires that Energy Rating Companies (e.g. rater companies and Providers) sign an ENERGY STAR Partnership Agreement. However, this requirement is not explicitly included in program documentation.</p>

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		California Program Requirements, Version 1.2		<p>Resolution: The requirement that Energy Rating Companies sign an ENERGY STAR Partnership Agreement will be added to the Program Requirements by revising the third bullet in the Partnership, Training, and Credentialing Requirements section as follows:</p> <p>“Energy Rating Companies (e.g., rater companies and Providers) are required to sign an ENERGY STAR Partnership Agreement, which can be found at www.energystar.gov/homesPA, and Raters are required to complete EPA-recognized training, which can be found at www.energystar.gov/newhomestraining.”</p>
00026	11/01/2019	National Program Requirements, Version 1/1.1/OR-WA 1.2 California Program Requirements, Version 1.2	Refinement	<p>Step 6 of ENERGY STAR Certification Process - Reference added to Policy Record</p>
				<p>Issue: The “ENERGY STAR Certification Process” section guides Raters and their Providers to report issues in the event that they are not able to determine whether an item is consistent with the program’s intent. However, the section does not reference or direct partners to the Policy Record, a document that disseminates policy changes in a consistent matter that arise from partner questions.</p>
				<p>Resolution: To ensure that partners are aware of the Policy Record and able to access it to see the most up to date policy decisions prior to the release of a new Revision, the last paragraph in Step 6 will be revised as follows:</p> <p>“This will allow EPA to make formal policy decisions as partner questions arise and to disseminate these policy decisions through the <u>Policy Record</u> and the periodic release of revised program documents to ensure consistent application of the program requirements.”</p>
00027	11/01/2019	National Program Requirements, Version 1/ 1.1/ OR-WA 1.2	Refinement	<p>Exhibit 1, Removal of supplemental footnote</p>
				<p>Issue: This document identifies that the “version of ANSI / RESNET / ICC Std. 301 utilized by RESNET for HERS ratings” is used to model particular parameters of the ENERGY STAR Reference Design. While this supplemental information may be helpful for a small subset of partners, including language about modeling in this document rather than the ERI Target Procedure program documents may cause confusion and inadvertent misalignment between the two.</p>

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				<p>Resolution: To simplify this document and centralize all guidance regarding modeling of the ENERGY STAR Reference Design within the ERI Target Procedure program documents, Footnote 12 will be deleted.</p>
00028	11/01/2019	National Program Requirements, Version 1/ 1.1/ OR-WA 1.2	Refinement	<p>Improved clarity for Townhouses</p>
				<p>Issue: Raters and Software Providers have noted that the Program documents could be less confusing regarding how a Townhouse complies with MFNC rather than Certified Homes.</p>
				<p>Resolution: Townhouses are eligible for the MFNC program, but are limited to the ERI Path & must use the ENERGY STAR Reference Design for Certified Homes when determining their ERI Target.</p> <p>Footnote 3 of the National Program Requirements will be revised in Rev01 as follows:</p> <p>“3. The term ‘townhouse’ refers to a single-family dwelling unit constructed in a group of three or more attached units in which each unit extends from the foundation to roof and with open space on at least two sides. Townhouses earning the ENERGY STAR through the Multifamily New Construction program must use the program documents described in Exhibit 2. They also must use the ERI Path of the Multifamily New Construction program as they are not eligible to use the Prescriptive Path or ASHRAE Path. However, the ENERGY STAR ERI Target for townhouses must be determined using Exhibit 1 of the relevant ENERGY STAR <u>Certified Homes</u> National Program Requirements.”</p>
00029	11/01/2019	National Program Requirements, Version 1/ 1.1/ OR-WA 1.2	Comment	<p>Modeling Booster Pump energy</p>
				<p>Issue: Program implementers and modeling partners have asked whether booster pumps serving the domestic hot water system are required to be modeled when following the Performance Path, as specific guidance on how to model these pumps is not provided in Appendix G or the Simulation Guidelines.</p>
		California Program		<p>Resolution: While specific modeling guidance on these booster pumps is provided explicitly in the Simulation Guidelines for use with Appendix G from ASHRAE 90.1-2016, it is not explicitly mentioned in the Simulation Guidelines used with older versions. However, as per Appendix G,</p>

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		Requirements, Version 1.2		all end-use loads associated with the building are expected to be modeled as described in 90.1 Table G3.1 #1 Baseline and Proposed columns. This end-use should be explicitly modeled, regardless of which Appendix G is being used, as energy neutral or with savings/penalty, based on the efficiency of the booster pump system and associated controls specified/installed relative to the minimum requirements in 90.1 Sections 10.4.1 and 10.4.2.
00030	11/01/2019	National Program Requirements, Version 1/ 1.1/ OR-WA 1.2	Comment	Source energy savings for ASHRAE path
				Issue: Policy Record ID 00091 contains the most recent resolution of this issue. This issue (ID 00030) is only being retained to maintain a complete Policy Record. Partners have asked whether the ASHRAE Path Performance Target can instead be calculated based on source energy savings or site energy savings, rather than on energy cost savings.
				Resolution: Policy Record ID 00091 contains the most recent resolution of this issue. This issue (ID 00030) is only being retained to maintain a complete Policy Record. While the current requirements are that the Performance Target be calculated in accordance with ASHRAE 90.1 Appendix G, which is based on energy costs, EPA is reviewing this issue to determine if another basis, such as source or site energy, would be acceptable.
00092	02/19/2020	National Program Requirements, Version 1/ 1.1/ OR-WA 1.2	Clarification	Rounding the ASHRAE Performance Target
				Issue: A partner reached out for clarification regarding the rounding policy for the ASHRAE Performance Target.
				Resolution: Projects pursuing the ASHRAE Path may round to the nearest integer to meet the above-code energy savings required by the Performance Target.
00095	05/13/2020	National Program Requirements, Version 1/ 1.1/ OR-WA 1.2	Change	Exhibit 3 – Implementation of Version 1.1 in Pennsylvania
				Issue: Pennsylvania has recently adopted a more efficient residential energy code. As a result, once the new codes are fully implemented, Version 1 of the National Multifamily New Construction Program Requirements will no longer provide meaningful savings relative to code-compliant noncertified multifamily buildings in this state.

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				<p>Resolution: To continue to provide meaningful savings relative to non-certified multifamily buildings in states that have adopted more rigorous codes, a Version 1.1 implementation date has been defined for Pennsylvania. To reflect this change, Exhibit 3 will be modified as follows:</p> <table border="1"> <thead> <tr> <th>State / Territory</th> <th>Buildings Permitted ⁴ On or After This Date Must Meet the Adjacent Version</th> <th>Multifamily New Construction Program Version</th> <th>Revision ¹⁴</th> </tr> </thead> <tbody> <tr> <td>AL, AK, AZ, AR, CO, GA, GU, HI, IN, ID, KS, KY, LA, ME, MS, MO, NH, NM, NMI, NC, ND, OH, OK, PR, SC, SD, TN, USVI, UT, VA, WV, WI, WY</td> <td>07-01-2020</td> <td>National Version 1</td> <td>Rev. 01</td> </tr> <tr> <td>CA</td> <td>01-01-2021</td> <td>California Version 1.2</td> <td>Rev. 01</td> </tr> <tr> <td>CT, DC, DE, FL, IA, IL, MA, MD, MI, MN, MT, NJ, NV, NY, RI, TX, VT</td> <td>07-01-2020</td> <td>National Version 1.1</td> <td>Rev. 01</td> </tr> <tr> <td>OR, WA</td> <td>07-01-2020</td> <td>Oregon and Washington Version 1.2</td> <td>Rev. 01</td> </tr> <tr> <td rowspan="2">NE</td> <td>07-01-2020</td> <td>National Version 1</td> <td>Rev. 01</td> </tr> <tr> <td>07-01-2021</td> <td>National Version 1.1</td> <td>Rev. 01</td> </tr> <tr> <td rowspan="2">PA</td> <td>07-01-2020</td> <td>National Version 1</td> <td>Rev. 01</td> </tr> <tr> <td>04-01-2021</td> <td>National Version 1.1</td> <td>Rev. 01</td> </tr> </tbody> </table>	State / Territory	Buildings Permitted ⁴ On or After This Date Must Meet the Adjacent Version	Multifamily New Construction Program Version	Revision ¹⁴	AL, AK, AZ, AR, CO, GA, GU, HI, IN, ID, KS, KY, LA, ME, MS, MO, NH, NM, NMI, NC, ND, OH, OK, PR, SC, SD, TN, USVI, UT, VA, WV, WI, WY	07-01-2020	National Version 1	Rev. 01	CA	01-01-2021	California Version 1.2	Rev. 01	CT, DC, DE, FL, IA, IL, MA, MD, MI, MN, MT, NJ, NV, NY, RI, TX, VT	07-01-2020	National Version 1.1	Rev. 01	OR, WA	07-01-2020	Oregon and Washington Version 1.2	Rev. 01	NE	07-01-2020	National Version 1	Rev. 01	07-01-2021	National Version 1.1	Rev. 01	PA	07-01-2020	National Version 1	Rev. 01	04-01-2021	National Version 1.1	Rev. 01
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	07-01-2021	National Version 1.1	Rev. 01																																			
PA	07-01-2020	National Version 1	Rev. 01																																			
	04-01-2021	National Version 1.1	Rev. 01																																			
00096	05/13/2020	National Program Requirements, Version 1/ 1.1/ OR-WA 1.2	Change	<p>Exhibit 3 – Implementation of Version 1.1 in Nebraska</p> <p>Issue: Nebraska has recently adopted a more efficient residential energy code. As a result, once the new codes are fully implemented, Version 1 of the National Multifamily New Construction Program Requirements will no longer provide meaningful savings relative to code-compliant noncertified multifamily buildings in this state.</p> <p>Resolution: To continue to provide meaningful savings relative to non-certified multifamily buildings in states that have adopted more rigorous codes, a Version 1.1 implementation date has been defined for Nebraska. To reflect this change, Exhibit 3 will be modified as follows:</p>																																		

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ID	Log Date	Program Document	Classification	Topic			
				State / Territory	Buildings Permitted ⁴ On or After This Date Must Meet the Adjacent Version	Multifamily New Construction Program Version	Revision ¹⁴
				AL, AK, AZ, AR, CO, GA, GU, HI, IN, ID, KS, KY, LA, ME, MS, MO, NH, NM, NMI, NC, ND, OH, OK, PR, SC, SD, TN, USVI, UT, VA, WV, WI, WY	07-01-2020	National Version 1	Rev. 01
				CA	01-01-2021	California Version 1.2	Rev. 01
				CT, DC, DE, FL, IA, IL, MA, MD, MI, MN, MT, NJ, NV, NY, RI, TX, VT	07-01-2020	National Version 1.1	Rev. 01
				OR, WA	07-01-2020	Oregon and Washington Version 1.2	Rev. 01
				NE	07-01-2020	National Version 1	Rev. 01
					07-01-2021	National Version 1.1	Rev. 01
				PA	07-01-2020	National Version 1	Rev. 01
					04-01-2021	National Version 1.1	Rev. 01
00097	05/13/2020 Updated 10/30/2020	National Program Requirements, Version 1/ 1.1/ OR-WA 1.2 (Rev.01) California Program Requirements, Version 1.2 (Rev. 01)	Clarification	Proposed Design Submittal Requirements			
				Issue: Partners have noted that it is unclear in the ENERGY STAR Certification Process if the Proposed Design Submittal is required for certification.			
				Resolution: The Proposed Design Submittal (PDS) is highly recommended and encouraged, but <u>not required</u> to earn certification under the ENERGY STAR MFNC program. During a Design Review, a Multifamily Review Organization reviews the project design and, if applicable, ASHRAE model, for compliance with program requirements. Identifying issues at this stage enables the project team to make corrections before non-compliant building components are purchased or installed. However, the ENERGY STAR certification is ultimately based on meeting all the requirements at final construction. Failure to meet any of the requirements of the ENERGY STAR MFNC			

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ID	Log Date	Program Document	Classification	Topic
				<p>program in the As-Built Submittal (ABS) will result in the project not earning the ENERGY STAR certification.</p> <p>Similarly, projects moving from MFHR to MFNC are <u>not required</u> to submit a new Proposed Design Submittal. However, it is a strong recommendation that the project team submit for a design review. The mandatory requirements in MFNC are different than MFHR. The project will still need to submit all required design documents at the As-Built (i.e., the HVAC Design report and Rater Design Review Checklist).</p> <p>A new sentence will be added to the National Program Requirements and California Program Requirements Step 4 as follows:</p> <p style="padding-left: 40px;">“EPA strongly recommends submitting documentation before construction; however, project teams may choose to submit the design documentation with the As-Built Submittal. “</p>
00098	<p>05/13/2020</p> <p>Updated 06/03/2020</p>	<p>National Program Requirements, Version 1/ 1.1/ OR-WA 1.2</p> <p>Rater Design Review Checklist</p> <p>MF Workbook</p>	Change	<p>Meeting 2009 IECC Commercial Chapter Minimum Insulation Requirements</p> <p>Issue: A partner reached out for clarification regarding discrepancies between the U-factor and R-value tables in the 2009 IECC Commercial Chapter for wood-framed walls. Since project teams may use the R-value or the U-factor, it seems arbitrary to have a penalty when the U-factor is used.</p>

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Resolution: EPA agrees there is a discrepancy in the code requirements. Since project teams may use either table, in order to not penalize one option over another, EPA will allow project teams to use the U-factor of 0.064 (equivalent to the printed R-value) instead of the current U-factor of 0.051.

To be consistent with this allowance, the Version 1.0 reference design will also be updated to 0.064 instead of 0.051.

The ENERGY STAR Multifamily Reference Design, Version 1 will be updated as follows:

Climate Zone:	CZ 1	CZ 2	CZ 3	CZ 4	CZ 4 C & 5	CZ 6	CZ 7	CZ 8
Slab Insulation R-Value:	0	0	0	10	10	15	15	20
Slab Insulation Depth (ft):	0	0	0	2	2	2	2	2
Basement Wall Continuous Insulation R-Value:	0	0	0	7.5	7.5	7.5	10	12.5
Floor Assembly U-Factor:	0.282	0.052	0.033	0.033	0.033	0.033	0.033	0.033
Wall Assembly U-Factor:	0.089	0.089	0.089	0.064	0.064	0.051	0.051	0.036
Ceiling Assembly U-Factor:	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027

Footnote 8 of the Rater Design Review Checklist will be updated as follows:

8.

d. Where identifying insulation requirements from the commercial chapter of IECC, values from either the R-value or U-factor table may be used for compliance. When referencing the 2009 IECC, projects in Climate Zone 5 and Marine 4 may use U-0.064 for Group R wood-framed walls instead of the printed U-0.051.

The Multifamily Workbook will be updated to reflect this allowance.

The ENERGY STAR National ERI Target Procedure (ANSI 301-2014), Version 1 and the ENERGY STAR National ERI Target Procedure (ANSI 301-2019), Version 1 will be updated as follows:

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				<table border="1"> <tr> <td rowspan="6">Above-Grade Walls:</td> <td colspan="9">Interior and Exterior Construction Type: Wood frame</td> </tr> <tr> <td colspan="9">Gross Area: Same as Rated Unit ²</td> </tr> <tr> <td colspan="9">Solar Absorptance = 0.75</td> </tr> <tr> <td colspan="9">Emittance = 0.90</td> </tr> <tr> <td colspan="9">Insulation: ³</td> </tr> <tr> <td colspan="9"> <table border="1"> <tr> <td>Climate Zone:</td> <td>CZ 1</td> <td>CZ 2</td> <td>CZ 3</td> <td>CZ 4</td> <td>CZ 4 C & 5</td> <td>CZ 6</td> <td>CZ 7</td> <td>CZ 8</td> </tr> <tr> <td>Wall Assembly U-Factor:</td> <td>0.089</td> <td>0.089</td> <td>0.089</td> <td>0.064</td> <td>0.064</td> <td>0.051</td> <td>0.051</td> <td>0.036</td> </tr> </table> </td> </tr> </table>	Above-Grade Walls:	Interior and Exterior Construction Type: Wood frame									Gross Area: Same as Rated Unit ²									Solar Absorptance = 0.75									Emittance = 0.90									Insulation: ³									<table border="1"> <tr> <td>Climate Zone:</td> <td>CZ 1</td> <td>CZ 2</td> <td>CZ 3</td> <td>CZ 4</td> <td>CZ 4 C & 5</td> <td>CZ 6</td> <td>CZ 7</td> <td>CZ 8</td> </tr> <tr> <td>Wall Assembly U-Factor:</td> <td>0.089</td> <td>0.089</td> <td>0.089</td> <td>0.064</td> <td>0.064</td> <td>0.051</td> <td>0.051</td> <td>0.036</td> </tr> </table>									Climate Zone:	CZ 1	CZ 2	CZ 3	CZ 4	CZ 4 C & 5	CZ 6	CZ 7	CZ 8	Wall Assembly U-Factor:	0.089	0.089	0.089	0.064	0.064	0.051	0.051	0.036
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00102	07/10/2020	<p>National Program Requirements, Version 1/ 1.1/ OR-WA 1.2 (Rev. 01)</p> <p>California Program Requirements Version 1.2 (Rev. 01)</p>	Change	<p>Transition deadline for multifamily projects using Certified Homes and Multifamily High Rise</p> <p>Issue: Several partners have contacted EPA with concerns about the ENERGY STAR Multifamily New Construction (MFNC) transition deadline due to potential delays in permitting due to COVID-19. Specifically, there is concern that some projects that have been designed to and intended to be certified using the current ENERGY STAR Certified Homes specification may not be able to obtain their permits before the planned January 1, 2021 transition date to the new MFNC program.</p> <p>In addition, some partners have also expressed concern that the ENERGY STAR MFNC transition date now coincides with RESNET's transition to ANSI/RESNET/ICC 301-2019 and the required use of hourly data in modeling calculations. Both of these transitions have created uncertainty for some partners as they try to design their projects to meet the ENERGY STAR requirements.</p> <p>Resolution: EPA is extending the deadline for transitioning to ENERGY STAR MFNC by six months, from January 1, 2021 to July 1, 2021.</p> <ul style="list-style-type: none"> • Multifamily projects are eligible to participate in the existing ENERGY STAR Certified Homes program if they are permitted before July 1, 2021 or the Multifamily High Rise (MFHR) program if they have a permit application date before July 1, 2021. However, please note that projects 																																																																									

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				<p>that will be certified through the MFHR program must still submit their MFHR Project Application to an MRO before January 1, 2021, not July 1, 2021.</p> <ul style="list-style-type: none"> • Multifamily projects with three or more units permitted on or after July 1, 2021 are only able to earn ENERGY STAR certification under the ENERGY STAR Multifamily New Construction program. <p>Specifically, the Eligibility Requirements in the National Program Requirements and the California Program Requirements will be updated as follows:</p> <p>“In addition, multifamily buildings with permit dates prior to July 1, 2021, may be eligible to earn the ENERGY STAR through the Certified Homes or Multifamily High Rise programs. ⁴ For more information, visit: www.energystar.gov/mfhr/eligibility.”</p>
00116	10/30/2020	<p>National Program Requirements Version 1 / 1.1 (Rev.01)</p> <p>California Program Requirements Version 1.2 (Rev. 01)</p> <p>Building Eligibility Webpage</p>	Clarification	<p>Eligibility of Senior Care Facilities</p>
				<p>Issue: The MFNC eligibility tree states that assisted living and skilled nursing facilities are not eligible for MFNC. What is the definition of assisted living and skilled nursing? When these spaces are less than 50% of a multifamily building, do they need to meet the MFNC requirements?</p>
				<p>Resolution: These terms were used based on the definition of Senior Care Community from Portfolio Manager. These include nursing homes (skilled nursing facilities) and assisted living facilities. It does not include retirement communities that offer only independent living. More information Senior Care Communities is available here: https://portfoliomanager.energystar.gov/pm/glossary#SeniorCareCommunity</p> <p>When these spaces are less than 50% of the building, the project may be eligible for ENERGY STAR if more than 50% of the building is eligible multifamily space. When Senior Care Community space is part of a building going through MFNC, the Senior Care Community space must meet all MFNC program requirements.</p> <p>To clarify the definition of assisted living and skilled nursing, Footnote 1 of the National Program Requirements and California Program Requirements will be updated as follows:</p> <p>“The term ‘building’ refers to a structure utilized or intended for supporting or sheltering any occupancy for a residential purpose; a structure with no dwelling or sleeping units connected to a structure with dwelling or sleeping units by less than 10% of its exterior wall area is not to be included in the ‘building’. A dwelling unit, as defined by the 2012 IECC, is a single unit that provides complete independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking, and sanitation. The term ‘sleeping unit’ refers to</p>

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				<p>a room or space in which people sleep, which can also include permanent provisions for living, eating, and either sanitation or kitchen facilities but not both. The term ‘two-family’ dwelling refers to a detached building with 2 dwelling units. For the purposes of eligibility, hotels, motels, and <u>senior care facilities</u> are not considered multifamily buildings. For more information visit: https://www.energystar.gov/partner_resources/residential_new/program_reqs/mfnc_building_eligibility.”</p> <p>The eligibility webpage will be updated as follows:</p> <p>The second question in the eligibility tree will be updated to state:</p> <p>“Is the building a motel/hotel or senior care community?”</p> <p>A new Footnote will be added:</p> <p>“Assisted living and skilled nursing facilities that meet the definition of <u>Senior Care Communities</u> are not eligible for the MFNC program.”</p>
00117	10/30/2020	<p>National Program Requirements Version 1 / 1.1 (Rev.01)</p> <p>California Program Requirements Version 1.2 (Rev. 01)</p>	Clarification	Modeling multiple buildings using the ASHRAE Path
				<p>Issue: Partners have asked whether they can use the same ASHRAE model for multiple buildings in a project. Partners also wanted to know if each building needed to meet the performance target or if the average across the buildings in the project could be used.</p>
				<p>Resolution: Each building in a project must meet the ASHRAE performance target. Projects may use the same ASHRAE model for multiple buildings if they are identical buildings. If a project has buildings that are connected, the project may choose whether to model the building as a combined building or separate buildings.</p> <p>The following language will be added to Step 4 of the National Program Requirements:</p> <p>“For multifamily projects with multiple buildings, each building must demonstrate compliance with the program requirements, but can be documented using one Multifamily Workbook and one HVAC Design Report per project. For ASHRAE Path projects, where buildings are identical, only one set of modeling files and ASHRAE Path Calculator are required to be submitted. At the discretion of the ASHRAE modeler, connected buildings may be modeled as one building or separate buildings.”</p> <p>The following language will be added to Step 7 of the National Program Requirements:</p> <p>“For multifamily projects with multiple buildings, each building must demonstrate compliance with the program requirements, but can be documented using one</p>

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				<p>Multifamily Workbook per project. For ASHRAE Path projects, where buildings are identical, only one set of modeling files and ASHRAE Path Calculator are required to be submitted. At the discretion of the ASHRAE modeler, connected buildings may be modeled as one building or separate buildings.”</p> <p>The following language will be added to Step 3 of the California Program Requirements:</p> <p>“For multifamily projects with multiple buildings, each building must demonstrate compliance with the program requirements, but can be documented using one Multifamily Workbook and one HVAC Design Report per project.”</p> <p>The following language will be added to Step 7 of the California Program Requirements:</p> <p>“For multifamily projects with multiple buildings, each building must demonstrate compliance with the program requirements, but can be documented using one Multifamily Workbook per project.”</p>																							
00118	10/30/2020	<p>National Program Requirements Version 1 / 1.1 (Rev.01)</p> <p>Rater Design Review Checklist Version 1/1.1 (Rev.01)</p> <p>MF Workbook, Version 1</p>	Change	<p>Meeting 2009 IECC Commercial Chapter Minimum Insulation Requirements – CZ 4</p>																							
				<p>Issue: Referencing the IECC Commercial Chapter instead of the Residential Chapter allows the program to reference insulation for different building types. However, based on partner feedback and consideration of the overall difference in U-value comparing the residential and commercial codes, there is a significant adjustment in CZ 4 due to the wall insulation.</p>																							
				<p>Resolution: After review, EPA agrees that there was a more significant adjustment than intended for Version 1 in CZ 4 based on the differences between Residential and Commercial code. Rather than require the Group-R wall insulation level, in CZ4 for Version 1, EPA will allow project teams to use the U-factor of 0.089 (equivalent to the All-Other) instead of the current U-factor of 0.064.</p> <p>To be consistent with this allowance, the Version 1 reference design will also be updated to 0.089 instead of 0.064.</p> <p>The ENERGY STAR Multifamily Reference Design, Version 1 will be updated as follows:</p> <table border="1"> <thead> <tr> <th>Climate Zone:</th> <th>CZ 1</th> <th>CZ 2</th> <th>CZ 3</th> <th>CZ 4</th> <th>CZ 4 C & 5</th> <th>CZ 6</th> <th>CZ 7</th> <th>CZ 8</th> </tr> </thead> <tbody> <tr> <td>Slab Insulation R-Value:</td> <td>0</td> <td>0</td> <td>0</td> <td>10</td> <td>10</td> <td>15</td> <td>15</td> <td>20</td> </tr> <tr> <td>Slab Insulation Depth (ft):</td> <td>0</td> <td>0</td> <td>0</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> </tbody> </table>	Climate Zone:	CZ 1	CZ 2	CZ 3	CZ 4	CZ 4 C & 5	CZ 6	CZ 7	CZ 8	Slab Insulation R-Value:	0	0	0	10	10	15	15	20	Slab Insulation Depth (ft):	0	0	0	2
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				<table border="1"> <tr> <td>Basement Wall Continuous Insulation R-Value:</td> <td>0</td> <td>0</td> <td>0</td> <td>7.5</td> <td>7.5</td> <td>7.5</td> <td>10</td> <td>12.5</td> </tr> <tr> <td>Floor Assembly U-Factor:</td> <td>0.282</td> <td>0.052</td> <td>0.033</td> <td>0.033</td> <td>0.033</td> <td>0.033</td> <td>0.033</td> <td>0.033</td> </tr> <tr> <td>Wall Assembly U-Factor:</td> <td>0.089</td> <td>0.089</td> <td>0.089</td> <td>0.089</td> <td>0.064</td> <td>0.051</td> <td>0.051</td> <td>0.036</td> </tr> <tr> <td>Ceiling Assembly U-Factor:</td> <td>0.027</td> <td>0.027</td> <td>0.027</td> <td>0.027</td> <td>0.027</td> <td>0.027</td> <td>0.027</td> <td>0.027</td> </tr> </table> <p>Footnote 8d of the Rater Design Review Checklist will be updated as follows:</p> <p>“Where identifying insulation requirements from the commercial chapter of IECC, values from either the R-value or U-factor table may be used for compliance. When referencing the 2009 IECC, projects in Climate Zone 4 and Climate Zone 5/Marine 4 may use U-0.089 and U-0.064 respectively for Group R wood-framed walls instead of the printed U-0.064 and U-0.051.</p> <p>The Multifamily Workbook will be updated to reflect this allowance.</p> <p>The ENERGY STAR National ERI Target Procedure (ANSI 301-2014), Version 1 and the ENERGY STAR National ERI Target Procedure (ANSI 301-2019), Version 1 will be updated as follows:</p> <table border="1"> <tr> <td rowspan="7">Above-Grade Walls:</td> <td colspan="9">Interior and Exterior Construction Type: Wood frame</td> </tr> <tr> <td colspan="9">Gross Area: Same as Rated Unit ²</td> </tr> <tr> <td colspan="9">Solar Absorptance = 0.75</td> </tr> <tr> <td colspan="9">Emittance = 0.90</td> </tr> <tr> <td colspan="9">Insulation: ³</td> </tr> <tr> <td>Climate Zone:</td> <td>CZ 1</td> <td>CZ 2</td> <td>CZ 3</td> <td>CZ 4</td> <td>CZ 4 C & 5</td> <td>CZ 6</td> <td>CZ 7</td> <td>CZ 8</td> </tr> <tr> <td>Wall Assembly U-Factor:</td> <td>0.089</td> <td>0.089</td> <td>0.089</td> <td>0.089</td> <td>0.064</td> <td>0.051</td> <td>0.051</td> <td>0.036</td> </tr> </table>	Basement Wall Continuous Insulation R-Value:	0	0	0	7.5	7.5	7.5	10	12.5	Floor Assembly U-Factor:	0.282	0.052	0.033	0.033	0.033	0.033	0.033	0.033	Wall Assembly U-Factor:	0.089	0.089	0.089	0.089	0.064	0.051	0.051	0.036	Ceiling Assembly U-Factor:	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	Above-Grade Walls:	Interior and Exterior Construction Type: Wood frame									Gross Area: Same as Rated Unit ²									Solar Absorptance = 0.75									Emittance = 0.90									Insulation: ³									Climate Zone:	CZ 1	CZ 2	CZ 3	CZ 4	CZ 4 C & 5	CZ 6	CZ 7	CZ 8	Wall Assembly U-Factor:	0.089	0.089	0.089	0.089	0.064	0.051	0.051	0.036
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00119	10/30/2020	National Program Requirements Version 1 / 1.1 (Rev.01)	Refinement	Improving the layout of the Reference Design to clarify the version and common space requirements
				Issue: Partners have noted that it is difficult to see the version number for the Reference Design and that it is confusing where to find information about how the Reference Design applies to common spaces.
				<p>Resolution: To increase the visibility of the version, EPA will update the format of the Reference Design title.</p> <p>The current process to determine common space requirement from the Reference Design requires a Rater to go from the Reference Design table to footnote that directs them to the information in the page before the Reference Designs.</p> <p>To improve the layout, EPA will add more information directly into the Reference Design table as well as provide links to the Common Space Applicability Notes directly from the Reference Design.</p>
00120	10/30/2020	National Program Requirements Version 1 / 1.1 (Rev.01)	Change	Sampling in the HVAC Functional Testing Checklist
				Issue: Partners have asked whether any items on the Functional Testing Checklist may be verified using a sampling process when they are completed by a Functional Testing Agent that is not a credentialed contractor.
				<p>Resolution: The goal of the Functional Testing Checklist is for all projects to have properly installed HVAC systems. If the installing contractor performs the tests and inspections on all systems, EPA agrees that a sampling process should be allowed for verification by the Functional Testing Agent. To that end, EPA has developed sampling protocols for this purpose.</p> <p>If sampling of the items on the HVAC Functional Testing Checklist is pursued, it must be completed in accordance with these MFNC HVAC Functional Testing Checklist Sampling Protocols.</p> <p>As currently allowed, Raters may sample the Items that they are verifying according to an HCO-approved Sampling Protocol. In addition, these protocols require that when the Rater is using sampling to complete Section 5 for a shared VRF system, Raters must select units from a representative sample of the associated outdoor units.</p>
		California Program Requirements, Version 1.2 (Rev.01)		
				HVAC Functional Testing Checklist, Version 1/1.1 (Rev.01)

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				<p>Functional Testing Agents may sample Items in Section 2,3,4,5, and 6 according to the rules and restrictions in the MFNC HVAC Functional Testing Checklist Sampling Protocols. This includes the requirement that the installing contractor must perform the tests on 100% of the systems.</p> <p>When completing the Functional Testing Checklist, FT Agents may either retest or witness the installing contractor completing the tests. When sampling, the Protocols include rules for both of these options.</p> <p>In accordance with this allowance, the end of the second paragraph of Footnote 7 of the National Program Requirements and California Program Requirements will be updated as follows:</p> <p style="padding-left: 40px;">“No parties other than Raters are permitted to use sampling, <u>with the exception of the Functional Testing Checklist. Functional Testing Agents, except the installing contractor, may follow the sampling protocol described in the MFNC Functional Testing Checklist Sampling Protocols.</u> All other items shall be verified for each certified building. For example, no builder verified items are permitted to be verified using a sampling protocol.”</p> <p>The 3rd bullet of HVAC Functional Testing Agent Responsibilities will be updated as follows:</p> <p style="padding-left: 40px;">“Functional Testing checklists must include all HVAC systems in the building / project that serve the dwelling units, common spaces, and where applicable, parking garages, but may exclude systems solely serving commercial / retail spaces. Multiple checklists will be needed to document all HVAC systems in the building / project. <u>Except where items are verified by the installing contractor, items on the Functional Testing Checklist are permitted to be verified using MFNC HVAC Functional Testing Checklist Sampling Protocols.</u>”</p>
00121	10/30/2020	National Program Requirements Version 1 / 1.1 (Rev.01)	Change	<p>ENERGY STAR certification requirements for clothes washers and dryers and other appliances</p> <p>Issue: Under the ERI Path, ENERGY STAR clothes washers and dryers were included as part of the Reference Design. Due to how the ERI is calculated, this causes a significant penalty for unspecified washers and dryers or other scenarios where the Rater uses the default as the default is significantly worse than current federal standards. This also causes a more significant discrepancy from the ENERGY STAR Certified Homes target.</p>

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		<p>California Program Requirements, Version 1.2 (Rev.01)</p> <p>Rater Field Checklist, Version 1/1.1 (Rev.01)</p> <p>ERI Target Procedure, Version 1 (Rev.01) 2014, 2019</p> <p>ERI Target Procedure, Version 1.1 (Rev.01) 2014, 2019</p> <p>ERI Target Procedure, Version 1.2 (Rev.01) 2014, 2019</p>		<p>Partners have also asked what appliances and plumbing fixtures are required to meet the ENERGY STAR Reference Design requirements.</p> <p>Resolution: While EPA recommends all washers and dryers are ENERGY STAR certified, when modeled in the reference design the increase in stringency was larger than the EPA intent. Therefore, the clothes washer and dryer requirement will be removed from the Reference Design and Target Procedures for the ERI Path. However, in the Prescriptive Path washers and dryers will still need to be ENERGY STAR certified.</p> <p>In addition, Items 13.1 and 13.2 will be updated to specify the applicable appliances and plumbing fixtures so that teams do not need to reference the ENERGY STAR Reference Design.</p> <p>Exhibit 1 of the National Program Requirements will be updated as follows:</p> <p style="padding-left: 40px;">Common Space Applicability Note 5:</p> <p style="padding-left: 80px;">“Where an appliance type is not eligible for ENERGY STAR certification the appliance is exempt from this requirement. Where a bathroom faucet or aerator is not eligible for WaterSense certification, (e.g., public use lavatory faucets) the fixture is exempt from this requirement.”</p> <p>Lighting, Appliances & Fixtures, First Bullet for Version 1, 1.1 and 1.2</p> <p style="padding-left: 40px;">“ENERGY STAR refrigerators and dishwashers modeled.”</p> <p>The First bullet of the Lighting, Appliance & Fixtures section in Exhibit 1 of the California Program Requirements will be updated as follows:</p> <p style="padding-left: 40px;">“ENERGY STAR refrigerators and dishwashers modeled.”</p> <p>The Target Procedures will be updated as follows:</p> <p style="padding-left: 40px;">“Clothes Washer and Dryer: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301”</p> <p>Items 13.1 and 13.2 of the Rater Field Checklist will be updated as follows:</p> <p style="padding-left: 40px;">“13.1 Prescriptive Path: Installed appliances are ENERGY STAR certified. Installed bathroom faucets, bathroom aerators, and showerheads are WaterSense labeled. ⁷⁸”</p> <p style="padding-left: 40px;">“13.2 ERI Path: Where installed in common spaces, refrigerators and dishwashers are ENERGY STAR certified and showerheads are WaterSense labeled.”</p>
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				<p>Footnote 78 will be updated as follows:</p> <p>“Appliances include refrigerators, dishwashers, clothes washers, and clothes dryers. Where an appliance type is not eligible for ENERGY STAR certification, (e.g., commercial dryers) the appliance is exempt from this requirement. Where a bathroom faucet or aerator is not eligible for WaterSense certification, (e.g., public use lavatory faucets) the fixture is exempt from this requirement.”</p>
00122	10/30/2020	<p>National Program Requirements Version 1 / 1.1 (Rev.01)</p> <p>California Program Requirements Version 1.2 (Rev.01)</p>	Refinement	<p>Step 6 – Updated references to ANSI / RESNET / ICC Standard 301</p>
				<p>Issue: Step 6 of the ENERGY STAR Certification Process, currently references the “on-site inspection procedures for minimum rated features of an EPA-recognized VOO.” These procedures are now specified in appendix B of ANSI / RESNET / ICC Standard 301.</p>
				<p>Resolution: To ensure consistency with industry standards, Step 6 will be updated to refer to ANSI / RESNET / ICC Standard 310. To reflect this change the first sentence of Step 6 will be updated as follows:</p> <p>“Using a Rater, verify that all requirements have been met in accordance with the Mandatory Requirements for All Certified Multifamily Projects and with the on-site inspection procedures for minimum rated features of an EPA-recognized VOO in ANSI / RESNET / ICC Standard 301, Appendix B.”</p>
00123	10/30/2020	<p>National Program Requirements Version 1 / 1.1 (Rev.01)</p> <p>California Program Requirements Version 1.2 (Rev.01)</p>	Refinement	<p>Step 7 – Requirement to submit units to an HCO and follow other oversight protocols</p>
				<p>Issue: While Step 7 referenced the requirement to “register” units, it was identified that it did not explicitly mention the need to follow all oversight protocols of a Home Certification Organization (HCO). The appropriate reference to ensure all oversight protocols are followed is the ENERGY STAR Certification System, which establishes the certification policies and procedures required of an HCO.</p>
				<p>Resolution: To ensure consistency with the ENERGY STAR Certification System, Step 7 will be updated with a reference to the ENERGY STAR Certification System and examples of applicable oversight protocols.</p> <p>To reflect these changes the second to last sentence in the first paragraph of Step 7 will be updated as follows:</p> <p>“<u>submit the building / project to the HCO for final certification and follow the HCO’s certification and oversight procedures (e.g. quality assurance, recordkeeping, and</u></p>

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				reporting) register each unit in the building / project with the same EPA-recognized VOO.”
00124	10/30/2020	National Program Requirements Version 1 / 1.1 (Rev.01)	Refinement	Footnote 7 – Sampling protocols and providers
				<p>Issue: Partners identified that Footnote 7 refers to “sampling providers”, which is a term used by RESNET but not defined in an industry standard. It was also identified that Footnote 7 could be modified to more accurately reflect the ENERGY STAR Certification System, which establishes the specific eligibility criteria, policy requirements, and certification procedures required of a Home Certification Organization (HCO).</p>
				<p>Resolution: To ensure consistency with the ENERGY STAR Certification System, Footnote 7 will be revised to use the term “sampling protocol” instead of “sampling provider.”</p> <p>To reflect these changed Footnote 7 will be updated as follows:</p> <p>“Raters who operate under an MRO or an HCO with a Sampling Protocol Sampling Provider are permitted to verify the minimum rated features of the building and to verify any Checklist Item designated “Rater Verified” using an HCOVOO-approved <u>Sampling Protocol</u> sampling protocol for homes outside California, and the CEC approved sampling protocol for homes in CA. No parties other than Raters are permitted to use sampling. All other items shall be verified for each certified home. For example, no items on the HVAC Functional Testing Checklist are permitted to be verified using a sampling protocol.</p>
00193	12/14/2020	National Program Requirements Version 1 / 1.1 (Rev.01)	Clarification	Clarifying the applicability and meaning of ‘permit application date’
				<p>Issue: Footnote 4 of the National Program Requirements allows the Rater to define the ‘permit date’ as either the date that the permit was issued or the application date of the permit. This has raised two points of needed clarification. First, while Providers or Multifamily Oversight Organizations have discretion to estimate permit dates based on other construction schedule factors, Partners from NYC have noted that the process in NYC is different, and that prior to being able to apply for a permit and prior to the permit being issued, project teams submit their building plans to the Department of Buildings (DOB), for review and approval. It is this DOB plan examination review submission date, (i.e., “Date Filed”) that determines what energy code the project will be held to, in the event the code changes after their submission date, contingent upon the DOB ultimately approving the submission. Given that the review and approval can take some time after the submission date, Partners seek confirmation that this DOB plan examination review <u>submission</u> date (for plans that are ultimately approved) is a date that may</p>

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				<p>be used in lieu of permit or permit application date to determine their Performance Target, which Revisions are applicable, and in the short-term, their eligibility to remain in the MFHR Program, if they have Project Applications submitted on or before 12/31/2020. The 2nd point to clarify is whether this option to define permit date using other dates applies when determining eligibility to participate in the ENERGY STAR Single Family New Homes Program.</p> <p>Resolution: It is the intent of the ENERGY STAR MFNC program to allow the use of the relevant date that the local jurisdiction uses to determine the code that the building will be permitted under. In this case, in NYC, the DOB plan examination review submission date, (i.e., “Date Filed”) may be used as the “permit application date” contingent upon the DOB ultimately approving the project submission. This “Date Filed” can therefore be used as the “permit application date” when determining what Revision is applicable. Additionally, for ASHRAE Path projects, in the Local Code Exception of Exhibit 4, this “Date Filed” may be used as the “permit application date” when determining the Performance Target. And, finally, this “Date Filed” may be used when demonstrating eligibility to participate in the MFHR program. However, as described in the ENERGY STAR Single Family New Homes Policy Record (ID 00984), only a building permit date may be used when determining eligibility to participate in that program, instead of MFNC. The alternates described in Footnote 4 of the National Program Requirements for MFNC or Footnote 14 of the National Program Requirements for ENERGY STAR Single Family New Homes may not be used to determine program eligibility.</p>
00444	10/03/2022	California Program Requirements Version 1.2 (Rev.02)	Refinement	<p>Updating “Effective Date” and “Transition Period End Date” replaced with adopted industry-standard terms</p> <p>Issue: Under Rev. 02, per PR 00114, all National and Regional Program Documents updated to using the terminology “Mandatory Compliance Date,” but the California Program Requirements Version 1.2 did not incorporated this change.</p> <p>Resolution: This update was missed in the California Program Requirements, Version 1.2, Rev. 02.</p> <p>The term “Effective Date” will be replaced with “Mandatory Compliance Date.”</p>
00414	10/03/2022	California Program Requirements	Refinement	<p>Allowed use of ANSI / RESNET / ACCA Std. 310</p> <p>Issue: Footnote 10 states, in part, that ANSI / RESNET / ACCA / ICC 310 shall not be used until an implementation schedule has been defined by the HCO that the building is being certified under. This restriction was necessary at the time the footnote was added because</p>

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		Version 1.2 (Rev.02)		<p>ANSI / RESNET / ACCA / ICC 310 was still being finalized and was not yet incorporated by reference into ANSI / RESNET / ICC 301. In addition, the one HCO approved at that time had to put training, reporting, and other components in place before the standard could be effectively used and overseen.</p> <p>At this time, ANSI / RESNET / ACCA / ICC 310 has been finalized and incorporated by reference into ANSI / RESNET / ICC 301. In addition, the one HCO that was approved at the time has put in place the necessary oversight structures for the new standard and defined an implementation date. Going forward, all HCO's will support the standard and all MROs will support the standard by 1/1/2024, which is when the next revision will be enforced.</p> <p>Resolution: As a result of these developments, the language in this Footnote can be streamlined as follows: "Track A— HVAC Grading shall not be used until an implementation schedule has been defined for ANSI / RESNET / ACCA Std. 310 by the HCO that the building is being certified under. Track A – HVAC Grading by Rater shall then use ANSI / RESNET / ACCA Std. 310 including all Addenda and Normative Appendices, with new versions and Addenda implemented according to the schedule defined by the HCO that the building is being certified under."</p>
00415	10/03/2022	California Program Requirements Version 1.2 (Rev.02)	Refinement	<p>Allowed use of ANSI / RESNET / ACCA Std. 310</p> <p>Issue: Footnote 9 states, in part, that ANSI / RESNET / ACCA / ICC 310 shall not be used until an implementation schedule has been defined by the HCO that the building is being certified under. This restriction was necessary at the time the footnote was added because ANSI / RESNET / ACCA / ICC 310 was still being finalized and was not yet incorporated by reference into ANSI / RESNET / ICC 301. In addition, the one HCO approved at that time had to put training, reporting, and other components in place before the standard could be effectively used and overseen.</p> <p>At this time, ANSI / RESNET / ACCA / ICC 310 has been finalized and incorporated by reference into ANSI / RESNET / ICC 301. In addition, the one HCO that was approved at the time has put in place the necessary oversight structures for the new standard and defined an implementation date. Going forward, all HCO's will support the standard and all MROs will support the standard by 1/1/2024, which is when the next revision will be enforced.</p> <p>Resolution: As a result of these developments, the language in this Footnote can be streamlined as follows: "Track A— HVAC Grading shall not be used until an implementation schedule has been defined for ANSI / RESNET / ACCA Std. 310 by the HCO that the building is being certified under. Track A – HVAC Grading by Rater shall then use ANSI / RESNET / ACCA Std. 310 including all Addenda and Normative Appendices, with new versions and Addenda</p>

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				implemented according to the schedule defined by the HCO that the building is being certified under.”
00031	11/01/2019	California Program Requirements, Version 1.2	Change	Multifamily projects permitted to Title 24-2019
				Issue: Partners in California have noted that projects will be permitted to Title 24-2019 as of January 2020. It is currently not clear what version of the MFNC program applies to those projects.
				<p>Resolution: Until further notice, projects in California can use Version 1.2 regardless of being permitted to Title 24-2016 or 2019. For projects utilizing whole-building energy models, this results in a Performance Target of 10% savings above Title 24-2016, not Title 24-2019.</p> <p>Note 1a and 1b will be revised in Rev01 as follows:</p> <ul style="list-style-type: none"> a. For multifamily buildings that are less than 4 stories, where dwelling units are individually modeled, the performance target for each unit is defined as either a Compliance Total with $\geq 10\%$ savings above the Compliance Total of the Standard Design corresponding to the unit or a Delta Energy Design Rating (Delta EDR) of ≥ 3 points, as determined by a CEC-approved software program, in accordance with 2016 Building Energy Efficiency Standards. ⁸ On-site power generation may not be used to meet either of these above-code performance targets and must be demonstrated using the EDR score or Compliance Total that excludes photovoltaics. For projects in California that are permitted under the 2013 Building Energy Efficiency Standards, the performance target is 15%. b. For all other multifamily buildings, where the whole building is modeled, the performance target is defined as a Compliance Total with $\geq 10\%$ savings above the Compliance Total of the Standard Design corresponding to the building, as determined by a CEC-approved software program, in accordance with 2016 Building Energy Efficiency Standards. ⁸ On-site power generation may not be used to meet the above-code performance target, though it is permitted to be used to satisfy code. For projects in California that are permitted under the 2013 Building Energy Efficiency Standards, the performance target is 15%.
Eligibility Requirements – Referencing standard definition for townhouse				
00389	10/03/2022	California Program Requirements	Refinement	Issue: A townhouse is defined but it does not reference the Standard as is referenced in the SFNH program.

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		Version 1.2 (Rev.02)		<p>Resolution: To align with the SFNH program, the first sentence of Footnote 3 will be updated as follows: “The term ‘townhouse’, as defined by ANSI / RESNET / ICC 301, refers to is a single-family dwelling unit constructed in a group of three or more attached units in which each unit extends from the foundation to roof and with open space on at least two sides.”</p>
00390	10/03/2022	California Program Requirements Version 1.2 (Rev.02)	Refinement	<p>Eligibility Requirements – Referencing standard definition for townhouse</p>
				<p>Issue: A townhouse is defined but it does not reference the Standard as is referenced in the SFNH program.</p>
				<p>Resolution: To align with the SFNH program, the first sentence of Footnote 3 will be updated as follows: “The term ‘townhouse’, as defined by ANSI / RESNET / ICC 301, refers to is a single-family dwelling unit constructed in a group of three or more attached units in which each unit extends from the foundation to roof and with open space on at least two sides.”</p>
00354	10/03/2022	California Program Requirements Version 1.2 (Rev.02)	Clarification	<p>Eligibility Requirements Section – Buildings undergoing gut rehab eligible to participate</p>
				<p>Issue: This program document does not clearly state that existing buildings (e.g., buildings undergoing a gut rehabilitation) are eligible to participate in the program. This intent has been conveyed through EPA’s website and in several alternative compliance options included in the Mandatory Requirements (e.g., National Water Management System Requirements) but should be more clearly stated directly in the program requirements.</p>
				<p>Resolution: The following sentence will be added to the Eligibility Requirements Section, and a new supplemental guidance document on this topic will be created and linked to via a new alias: “<u>While primarily intended for new construction, existing buildings (e.g., undergoing a gut rehabilitation) are also eligible to participate in the ENERGY STAR Multifamily New Construction program, with guidance available at: www.energystar.gov/GutRehabGuidance.</u>”</p>
00360	10/03/2022	California Program Requirements Version 1.2 (Rev.02)	Clarification	<p>Eligibility Requirements – Clarifying the definition of a building</p>
				<p>Issue: Given that the program requires all dwelling units in a ‘building’ to be certified, partners have asked what defines a ‘building’. For example, would an individual townhouse be considered the ‘building’ or the entire row of attached townhouses.</p>

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				<p>Resolution: EPA agrees that the term building can be better defined.</p> <p>Footnote 1 will be revised as follows:</p> <p><u>“The term ‘building’ refers to a structure utilized or intended for supporting or sheltering any occupancy for a residential purpose; a structure with no dwelling or sleeping units connected to a structure with dwelling or sleeping units by less than 10% of its exterior wall area is not to be included in the ‘building’; that encompasses dwelling/sleeping units and (if present) common spaces, sharing one or more of the following attributes: a common street address, a common entrance or exit, central/shared mechanical systems, or structurally interdependent wall or roof systems. Attached structures such as townhouses and 4-story two-unit structures (commonly referred to as “2-over-2s”) may be considered separate buildings if they are divided by a vertical fire separation wall from the foundation to the roof sheathing and share none of the other attributes listed above. A skyway or a breezeway that connects two structures is not considered a common entrance or exit. A dwelling unit, as defined by the 2012 IECC, is a single unit that provides complete independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking, and sanitation. The term ‘sleeping unit’ refers to a room or space in which people sleep, which can also include permanent provisions for living, eating, and either sanitation or kitchen facilities but not both. The term ‘two-family’ dwelling refers to a detached building with ² dwelling units. For the purposes of eligibility, hotels, motels, and senior care facilities are not considered multifamily buildings. For more information visit: https://www.energystar.gov/partner_resources/residential_new/program_reqs/mfnc_building_eligibility.”</u></p>
00376	10/03/2022	California Program Requirements Version 1.2 (Rev.02)	Clarification	<p>Eligibility Requirements – Mixed use buildings without dwelling or sleeping units are not eligible</p>
				<p>Issue: Partners have asked whether amenity buildings such as a pool house or gym without dwelling or sleeping units are eligible for certification and whether they must meet the program requirements. While the eligibility section indicates only multifamily buildings with dwelling units and sleeping units are eligible, and the Rater Design Review and Rater Field Checklists note that the buildings without dwelling units are not subject to the Checklist requirements, the eligibility for mixed use buildings does not specify only mixed- use buildings <u>with dwelling or sleeping units</u>.</p>

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				<p>Resolution: Buildings that do not contain dwelling or sleeping units are not eligible for certification under MFNC. Similarly, as noted in the Rater checklists, where common spaces are in separate buildings without dwelling or sleeping units they are not subject to the program requirements.</p> <p>To clarify the intent, the eligibility section will be updated as follows:</p> <p>“The following multifamily building types are eligible to participate in the ENERGY STAR Multifamily New Construction program:</p> <ul style="list-style-type: none"> • Any multifamily building with dwelling or sleeping units that is NOT a two-family dwelling ¹; OR • <u>Any mixed-use buildings with dwelling or sleeping units</u>, where <u>the dwelling units, sleeping units, and common space exceed 50% of the building square footage. Parking garage square footage is excluded from this calculation ^{1, 2}</u>; OR • Townhouses, if following the requirements listed in Footnote 3.” <p>A new sentence will be added to the beginning of Footnote 1 as follows: “Buildings that do not contain dwelling or sleeping units are not eligible for certification under MFNC.”</p>
00368	10/03/2022	California Program Requirements Version 1.2 (Rev.02)	Refinement	<p>Eligibility Requirements – Referencing “dwelling” instead of “two-family dwelling” and other standard definitions</p>
				<p>Issue: The MFNC eligibility uses ‘two-family dwelling’ which is not consistent with the SFNH eligibility. In addition, the ‘sleeping unit’ definition does not currently reference the ANSI / RESNET / ICC 301 definition.</p>
				<p>Resolution: To align with the SFNH program, the Eligibility Requirements will be updated as follows:</p> <p>“The following multifamily building types are eligible to participate in the ENERGY STAR Multifamily New Construction program:</p> <ul style="list-style-type: none"> • Any multifamily building with dwelling or sleeping units that is NOT a two-family dwelling <u>(e.g., not a single-family home or a duplex)</u> ¹; OR • Mixed-use buildings, where dwelling units, sleeping units, and common space exceed 50% of the building square footage. Parking garage square footage is excluded from this calculation ²; OR

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				<ul style="list-style-type: none"> Townhouses, if following the requirements listed in Footnote 3. <p>Townhouses are also eligible to earn the ENERGY STAR through the ENERGY STAR Single-Family New Homes program, which is a certification program for <u>dwelling</u>s (e.g., single-family homes, duplexes) and townhouses single family detached homes and two-family dwellings.¹</p> <p>The end of Footnote 1 will be revised as follows to include ANSI / RESNET / ICC 301 references:</p> <p>“A dwelling unit, as defined by <u>ANSI / RESNET / ICC 301</u>the 2012 IECC, is a single unit that provides complete independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking, and sanitation. The term A ‘sleeping unit’, refers to as defined by ANSI / RESNET / ICC 301, is a room or space in which people sleep, which can also include permanent provisions for living, eating, and either sanitation or kitchen facilities but not both. A ‘dwelling’, as defined by ANSI / RESNET / ICC 301, is any <u>building that contains one or two dwelling units used, intended, or designed to be built, used, rented, leased, let or hired out to be occupied, or that are occupied for living purposes</u>. The term ‘two-family’ dwelling refers to a detached building with 2 dwelling units. For the purposes of eligibility, hotels, motels, and <u>senior care facilities</u> are not considered multifamily buildings. For more information visit: https://www.energystar.gov/partner_resources/residential_new/program_reqs/mfnc_building_eligibility”</p>
00333	10/03/2022	California Program Requirements Version 1.2 (Rev.02)	Refinement	Eligibility Requirements Section – Rephrasing for consistency
				Issue: The phrasing of the eligibility requirements is inconsistent across program documents, potentially resulting in confusion.
				<p>Resolution: For improved consistency and clarity, the eligibility requirements will be rephrased as follows:</p> <p>““The following multifamily building types are eligible to participate in the ENERGY STAR Multifamily New Construction (<u>MFNC</u>) program:</p> <ul style="list-style-type: none"> Any multifamily building with dwelling or sleeping units that is NOT a two-family dwelling; OR Mixed-use buildings, where dwelling units and common space exceed 50% of the building square footage. Parking garage square footage is excluded from this calculation; OR

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				<ul style="list-style-type: none"> Townhouses, if following the requirements listed in Footnote 3. <p>Townhouses are also eligible to participate in earn the ENERGY STAR through the ENERGY STAR Single-Family New Homes program, which is a certification program for single-family detached homes and two-family dwellings. For more information, visit: www.energystar.gov/newhomesrequirements. In addition, multifamily buildings with permit dates prior to July 1, 2021, may be eligible to participate in earn the ENERGY STAR through the Single-Family New Homes or Multifamily High Rise programs. For more information, visit: www.energystar.gov/mfhr/eligibility.”</p>
00468	10/03/2022	California Program Requirements Version 1.2 (Rev.02)	Clarification	ENERGY STAR Certification Process Section – Retention of documents for Track A
				<p>Issue: This Section currently states, in part, that the Rater is required to keep electronic or hard copies of the completed and signed National Rater checklists and the National HVAC Design Report.</p> <p>However, with the introduction of Track A into the program requirements, the National HVAC Design Report will not be completed for every certified project. For projects certified using Track A, an HVAC design report compliant with ANSI / RESNET / ACCA / ICC 310 and the ENERGY STAR National HVAC Design Supplement to Std. 310 for Dwellings & Units, must be collected for each dwelling unit. For all common spaces using HVAC Grading, an HVAC design report compliant with ANSI / RESNET / ACCA / ICC 310 must be collected, and where applicable, the ENERGY STAR National HVAC Design Supplement to Std. 310 for Common Spaces & Central Systems must also be collected for records. Only projects certified using Track B must collect the National HVAC Design Report.</p> <p>The National HVAC Functional Testing Checklist must also be collected for all systems, While systems using ANSU / RESNET / ACCA / ICC 310 do not need to complete Section 2 and 3 of that Checklist, Section 5 must still be completed for all systems. The Functional Testing Checklist does not need to be collected when completed by a contractor credentialed by an H-QUITO.</p>
				<p>Resolution: To clarify which documents must be retained when using Track A and Track B, this Section will be updated as follows:</p> <p>“Upon completion of construction, the Rater is required to keep electronic or hard copies of the completed and signed National Rater checklists. <u>In addition, for buildings using Track A, the Rater is required to keep for each dwelling unit and each graded common space an HVAC design report compliant with ANSI / RESNET / ACCA / ICC 310. The Rater must also keep a National HVAC Design Supplement to Std. 310 for Dwellings & Units for each dwelling unit, and, where applicable, the National HVAC Design Supplement to Std. 310 for Common Spaces & Central Systems. For buildings using Track B, the Rater is required to</u></p>

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				keep the National HVAC Design Report, and, Finally, when the FT Agent is not a HVAC Credentialed Contractor, the National HVAC Functional Testing Checklists <u>for all systems must be kept.</u> ”
00475	10/03/2022	California Program Requirements Version 1.2 (Rev.02)	Clarification	Certification Process Step 2 – Clarifying mandatory Rater Design Review and Rater Field Checklist Items
				Issue: In Step 2, there are references to meeting the ‘prescriptive’ items in the National Rater Design Review and Field Checklists ‘for common spaces’. Since there are mandatory items on the checklists that are required for all paths in both dwelling units and common spaces, it is confusing to include these phrases.
				<p>Resolution: The program is designed such that there are two options to meeting the performance target with a different mix of prescriptive and modeled measures. In the whole-building modeling there are fewer mandatory measures in the common spaces, as well as a less stringent backstop on some common space measures as compared to the dwelling-unit modeling.</p> <p>Regardless of the Path, the National Rater Design Review and Field Checklists have efficiency requirements included that are mandatory for all paths, and as noted above requirements that are more stringent for certain paths.</p> <p>To reduce confusion, the first sentences of Step 2a and 2b will be revised as follows:</p> <p>Step 2a</p> <p>“Dwelling Unit modeling (Step 1a): Configure the preferred set of efficiency measures for the unit to be certified and verify that the resulting performance meets or exceeds the applicable performance target, as determined in Step 1a. For common spaces, mMeet the prescriptive requirements specified in the National Rater Design Review and Field Checklists, which align with include meeting the minimum requirements set in Exhibit 1 for common spaces. Where the Checklists list different common space requirements for “ERI”, “ASHRAE”, or “Prescriptive”, select the requirements associated with “ERI”.”</p> <p>Step 2b</p> <p>“Whole-building modeling (Step 1b): Configure the preferred set of efficiency measures for the building to be certified and verify that the resulting performance meets or exceeds the applicable performance target, as determined in Step 1b. For common spaces, mMeet the prescriptive requirements specified in the National Rater Design Review and Field Checklists for common spaces. Where the Checklists list different common space requirements for “ERI”, “ASHRAE”, or “Prescriptive”, select the requirements associated with “ASHRAE”...”</p>
Certification Process Step 3 - RESNET Guidelines for Multifamily Energy Ratings may be used as sampling guidance for common spaces				

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00499	10/03/2022	California Program Requirements Version 1.2 (Rev.02)	Clarification	<p>Issue: Footnote 7 notes that sampling is able to be used when allowed by the HCO or MRO the building is being certified under if an HCO-approved sampling protocol is followed. It also notes that “Where a sampling protocol does not sufficiently describe methodology for multifamily projects, use the RESNET Guidelines for Multifamily Energy Ratings, available at www.resnet.us/blog/resnet-adopts-guidelines-for-multifamily-energy-ratings”. It is not clear when those Guidelines may be used.</p> <p>Resolution: The intent is to follow an HCO-approved sampling protocol for all sampling where permitted by the HCO or MRO the building is being certified under. However, for common spaces a dwelling-unit specific protocol may not be sufficient. The RESNET Guidelines for Multifamily Energy Ratings, available at www.resnet.us/blog/resnet-adopts-guidelines-for-multifamily-energy-ratings/, are able to be used for common spaces. Since this is an HCO-approved sampling protocol, this sentence is not needed within the document. To reduce confusion, this sentence will be removed.</p> <p>Footnote 7 will be revised as follows: “...Raters who operate under an MRO or an HCO <u>with a Sampling Protocol</u> are permitted to verify the minimum rated features of the building and to verify any Checklist Item designated “Rater Verified” using the an HCO or CEC-approved sampling protocol for projects in CA- Where a sampling protocol does not sufficiently describe methodology for multifamily projects, use the RESNET Guidelines for Multifamily Energy Ratings, available at www.resnet.us/blog/resnet-adopts-guidelines-for-multifamily-energy-ratings/. No parties other than Raters are permitted to use sampling. For example, no items on the National HVAC Design Report are permitted to be verified using a sampling protocol.</p>
00032	11/01/2019	California Program Requirements, Version 1.2	Change	<p>Proposed Design and As-Built Submittals</p> <p>Issue: In steps 4 and 7 of the ENERGY STAR Certification Process, Partners have questioned whether the ASHRAE Path Calculator needs to be completed for CA projects that are choosing the whole-building modeling path. It is also unclear which Multifamily Workbook tabs must be completed at the Design stage as compared to the As-Built stage, and whether the PDF version of the Rater checklists can be submitted instead.</p> <p>Resolution: Projects using the whole-building modeling path do not need to complete the ASHRAE Path Calculator. Instead, these projects must submit the complete California Compliance Report. For the workbook, EPA’s intent was to allow the PDF versions of the checklists to be submitted and agrees that the language could be more clear regarding which specific worksheets within the Workbook must be completed at the Design stage.</p>

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				<p>Step 4 of the ENERGY STAR Certification Process will be revised in Rev01 as follows:</p> <p>“Upon completion of design, for whole-building modeling projects, specific documentation must be submitted to an MRO for their review and approval. These documents include the California Compliance Report; the Multifamily Workbook, with applicable portions completed; the Rater Design Review Checklist, unless included in the Multifamily Workbook; the HVAC Design Report; construction documents, and either the modeling file or input and output files.”</p> <p>Step 7b of the ENERGY STAR Certification Process will be revised in Rev01 as follows:</p> <p>“Whole-building modeling: specific documentation must be submitted based on as-built conditions to an MRO for their review and approval. These documents include the California Compliance Report, the Multifamily Workbook, construction documents, photo documentation, and either the modeling file or input and output files.”</p>														
00033	11/01/2019	California Program Requirements, Version 1.2	Change	Performance Requirements for glazed entrance doors in Common Spaces														
				<p>Issue: The requirements for Class AW “windows” don’t seem to include glazed entrance doors, but there are no other requirements specified. Requirements for non-Class AW windows were not clear.</p>														
				<p>Resolution: EPA’s intent was for the Class AW requirement to cover all common area windows, regardless of whether they are designate “Class AW”, and also to reference code requirements for “fenestration” as applicable.</p> <p>The ENERGY STAR Multifamily Reference Designs for Common Spaces will be revised to include a row specific to “Glazed Entrance Door U-factor”, with specific U-factors.</p> <p>“Fenestration must meet or exceed 2015 IgCC levels (Commercial window fenestration U-Factor requirements).”</p> <table border="0"> <tr> <td>Climate Zone:</td> <td>CZ 1</td> <td>CZ 2</td> <td>CZ 3</td> <td>CZ 4</td> <td>CZ 4 C & 5</td> <td>CZ 6</td> <td>CZ 7</td> <td>CZ 8</td> </tr> <tr> <td>Glazed Entrance Door U-Factor:</td> <td>1.05</td> <td>0.79</td> <td>0.73</td> <td>0.73</td> <td>0.73</td> <td>0.73</td> <td>0.73</td> <td>0.73</td> </tr> </table>	Climate Zone:	CZ 1	CZ 2	CZ 3	CZ 4	CZ 4 C & 5	CZ 6	CZ 7	CZ 8	Glazed Entrance Door U-Factor:	1.05	0.79	0.73	0.73
Climate Zone:	CZ 1	CZ 2	CZ 3	CZ 4	CZ 4 C & 5	CZ 6	CZ 7	CZ 8										
Glazed Entrance Door U-Factor:	1.05	0.79	0.73	0.73	0.73	0.73	0.73	0.73										
Step 6 – How to inspect modular multifamily buildings																		
00426	10/03/2022		Clarification															

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		California Program Requirements Version 1.2 (Rev.02)		<p>Issue: In the SFNH Program Requirements, it explains how to inspect modular homes. Since multifamily buildings may also be modular, this text should also be included in this document.</p> <p>Resolution: To clarify inspections for modular multifamily buildings, a sentence will be added to Step 6 as follows: “Using a Rater, verify that all requirements have been met in accordance with the Mandatory Requirements for All Certified Multifamily Projects and with the inspection procedures for minimum rated features in ANSI / RESNET / ICC Standard 301, Appendix B. ⁷ <u>For modular multifamily buildings, a Rater must verify any requirement in the plant not able to be verified on-site because a feature will be concealed prior to shipment.</u>”</p> <p>A new footnote will be added to Step 6 as follows: “A modular building is a prefabricated building that is made of multiple modules or sections that are manufactured and substantially assembled in a manufacturing plant. These pre-built sections are transported to the building site and constructed by a builder to meet all applicable building codes for site-built buildings.”</p>
00382	10/03/2022	California Program Requirements Version 1.2 (Rev.02)	Refinement	<p>Step 6 and 7 – All units in the building must be certified together</p> <p>Issue: Since all of the dwelling units and common spaces in a building must be verified for the building to get certified, this could be more explicit in Step 6 and 7.</p> <p>Resolution: The intent of the MFNC is to certify the building when the verification for all dwelling units and common spaces is complete. The second paragraph of Step 6 will be revised as follows: “The Rater must review all items on the National Rater checklists <u>for the whole building</u>. Raters are expected to use their experience and discretion to verify that the overall intent of each inspection checklist item has been met (i.e., identifying major defects that undermine the intent of the checklist item versus identifying minor defects that the Rater may deem acceptable).”</p> <p>Step 7 will be revised as follows: <u>“Once verification on all units and common spaces is complete, submit the whole building to the HCO or MRO for final certification. Upon completion of construction,</u> The Rater is required to keep electronic or hard copies of the completed and signed National Rater checklists, the National HVAC Design Report and, when the FT Agent is not a HVAC Credentialed Contractor, the National HVAC Functional Testing Checklist. the Rater is required to keep electronic or hard copies of the completed and signed National Rater</p>

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				<p>checklists, the National HVAC Design Report and, when the FT Agent is not a HVAC Credentialed Contractor, the National HVAC Functional Testing Checklist. Additionally, the following steps are required:</p> <p>a. Dwelling Unit modeling: submit the building / project to the HCO for final certification and follow the HCO’s certification and oversight procedures (e.g. quality assurance, recordkeeping, and reporting).</p> <p>Whole-building modeling: submit the building to the MRO for final certification with the specified specific documentation must be submitted updated based on as-built conditions to an MRO for their review and approval.”</p>
00383	10/03/2022	<i>California Program Requirements Version 1.2 (Rev.02)</i>	Change	<p>Step 6 and 7 – Allowing conditional certification of units prior to building certification</p> <p>Issue: Since all of the dwelling units and common spaces in a building must be certified, partners have asked whether individual units within the building may be certified as they are completed, or if they need to wait to certify them until the building is complete. Partners have noted that it is common to finish up certain floors and close out with homebuyers before the units on other floors are completed.</p> <p>Resolution: The intent of the MFNC is to certify the building when the verification for all dwelling units and common spaces is complete. EPA recognizes that partners may want to be able to provide certificates to homebuyers prior to completion of the building. Therefore, EPA has developed a new process to allow a conditional certification approach under the ERI path. At the Provider’s discretion, individual dwelling units may be conditionally certified prior to the building completion if the following process is observed:</p> <p>i. The Provider must generate a Conditional ENERGY STAR Certification Disclosure letter to be included with the label and certificate for the homebuyer of each conditionally certified unit.</p> <p>ii. Once verification on all dwelling units and common spaces is complete, and the whole building is certified, the Provider must generate an ENERGY STAR Certification Confirmation letter for the builder to deliver to the applicable homebuyers.</p> <p>In the event that any dwelling unit or common space in the building is ultimately unable to be verified, the building will not be able to earn certification; the Provider must decertify any conditionally certified units; and the builder must notify the applicable homebuyers.</p> <p>The second paragraph of Step 6 will be revised as follows: “The Rater must review all items on the National Rater checklists <u>for the whole building</u>. Raters are expected to use their experience and discretion to verify that the overall intent of each inspection checklist item has been met (i.e., identifying major defects that</p>

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				<p>undermine the intent of the checklist item versus identifying minor defects that the Rater may deem acceptable).”</p> <p>Step 7 will be revised as follows:</p> <p><u>“Once verification on all units and common spaces is complete, submit the whole building to the HCO or MRO for final certification (see alternative below). Upon completion of construction, The Rater is required to keep electronic or hard copies of the completed and signed National Rater checklists, the National HVAC Design Report and, when the FT Agent is not a HVAC Credentialed Contractor, the National HVAC Functional Testing Checklist. the Rater is required to keep electronic or hard copies of the completed and signed National Rater checklists, the National HVAC Design Report and, when the FT Agent is not a HVAC Credentialed Contractor, the National HVAC Functional Testing Checklist. Additionally, the following steps are required:</u></p> <ol style="list-style-type: none"> a. Dwelling Unit modeling: submit the building / project to the HCO for final certification and follow the HCO’s certification and oversight procedures (e.g. quality assurance, recordkeeping, and reporting). <u>Generally, buildings must be submitted for certification after verification on all units and common spaces is complete. Alternatively, at the discretion of the Provider, individual dwelling units may be conditionally certified prior to the building completion if the following process is observed:</u> <ol style="list-style-type: none"> i. <u>The Provider must generate a Conditional ENERGY STAR Certification Disclosure letter to be included with the label and certificate for the homebuyer of each conditionally certified unit.</u> ii. <u>Once verification on all dwelling units and common spaces is complete, and the whole building is certified, the Provider must generate an ENERGY STAR Certification Confirmation letter for the builder to deliver to the applicable homebuyers.</u> <u>In the event that any dwelling unit or common space in the building is ultimately unable to be verified, the building will not be able to earn certification; the Provider must decertify any conditionally certified units; and the builder must notify the applicable homebuyers.</u> <p>Whole-building modeling: <u>submit the building to the MRO for final certification with the specified specific documentation must be submitted updated based on as-built conditions to an MRO for their review and approval. These documents include”</u></p>
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00490	10/03/2022	California Program Requirements Version 1.2 (Rev.02)	Clarification	Exhibit 1 – Insulation requirements for common spaces found in Rater Design Review Checklist Item 3.2
				Issue: Due to the updates to the insulation requirements for common spaces noted in PR ID 00296, the Reference Design should reference back to the National Rater Design Review Checklist.
				Resolution: To clarify that the insulation requirements for common spaces are determined by Item 3.2 of the National Rater Design Review Checklist, the Envelope section of the Reference Design will be further revised as follows: “Insulation must meet Quality Insulation Installation (QII) per California’s Building Energy Efficiency Standards levels and <u>meet Item 3.2 of the National Rater Design Review Checklist or exceed 2012 IECC commercial levels. The required values should come from the “All Other” column and the row that corresponds to the building assembly (e.g., a building with steel frame walls would use the value in the ‘Metal framed’ row).</u> ”
00443	10/03/2022	California Program Requirements Version 1.2 (Rev.02)	Refinement	Exhibit 2 – Update “Path” to “Track”
				Issue: The introduction to Exhibit 2 references two “paths” available instead of two “tracks”.
				Resolution: This update was missed in Revision 02. The introduction to Exhibit 2 will be updates as follows: “Two tracks are provided for satisfying the mandatory requirements for all certified projects, Exhibit 2. Track A – HVAC Grading by Rater allows a Rater to utilize ANSI / RESNET / ACCA Std. 310 ¹³ , a standard for grading the installation of residential HVAC systems serving individual spaces and a Functional Testing Agent to verify commercial and central systems. Track B – HVAC Testing by FT Agent utilizes a Functional Testing Agent for all systems. Either track may be selected, but all requirements within that track must be satisfied for the building to be certified.”
00337	10/03/2022	California Program Requirements Version 1.2 (Rev.02)	Refinement	Exhibit 2 – Addition of program name to mandatory requirements for clarity
				Issue: This Exhibit contains the Mandatory Requirements that must be met for certification. Many of the document names referenced in this Exhibit (e.g., National Rater Field Checklist) are identical between the ENERGY STAR Single-Family New Homes (SFNH) program and ENERGY STAR Multifamily New Construction (MFNC) program, even though the

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				<p>requirements within the documents are program specific. Therefore, without specifying the program name, Partners may be confused about which requirements apply.</p> <p>Resolution: For improved clarity, the applicable program name will be added to the Exhibit as follows:</p> <ul style="list-style-type: none"> • Completion of <u>MFNC</u> National Rater Design Review Checklist • Completion of <u>MFNC</u> National Rater Field Checklist • Completion of <u>MFNC</u> National Water Management System Builder Requirements • Completion of an HVAC design report compliant with ANSI / RESNET / ACCA Std. 310, plus the ENERGY STAR SFNH / MFNC National HVAC Design Supplement to Std. 310 for Dwellings & Units and the <u>MFNC National HVAC Design Supplement to Std. 310 for Common Spaces & Central Systems</u> • Completion of applicable sections of the <u>MFNC</u> National HVAC Functional Testing Checklist. Exempt from Sections 2 and 3 for Dwelling Unit HVAC as the Rater is the party responsible for assessing these systems installation quality in accordance with ANSI / RESNET / ACCA Std. 310 • Completion of <u>MFNC</u> National HVAC Design Report <p>Completion of <u>MFNC</u> National HVAC Functional Testing Checklist</p>
00508	11/10/2022	California Program Requirements Version 1.2 (Rev.02)	Clarification	<p>Exhibit 3 – Implementation timeline does not change with enforcement of new edition of CA Building Energy Efficiency Standards (BEES)</p> <p>Issue: Partners have asked whether the applicable Version and Revision changes for buildings with a pre-existing plan approval date when an AHJ begins enforcing a new edition of the BEES.</p> <p>For example, consider a development of townhouses being certified under the Multifamily New Construction program that has a plan approval date of May 1, 2022, for which the 2019 edition of the BEES is enforced. The AHJ begins enforcing the 2022 edition of the BEES for that development for townhouses that are permitted after January 1, 2023. Does the applicable Version and Revision change with enforcement of the new code?</p> <p>Resolution: EPA recognizes that the current policy is ambiguous about which Version and Revision is applicable when an AHJ begins enforcing a new edition of the BEES, after initial plan approval. At this time, EPA is clarifying that the Version and Revision that is applicable does not change with the enforcement of a new edition of the BEES. While new editions of</p>

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				<p>the BEES may trigger revisions to the plans, the original Plan Approval Date remains unchanged and is to be used to determine the applicable Version and Revision.</p> <p>With that said, EPA recognizes that the clarified policy may result in buildings being developed over an extended period of time that are not subjected to the latest Version of ENERGY STAR, even as codes continue to progress. For this reason, EPA intends to revisit how to define the implementation timeline for its California program requirements during the development of the next Version. At that time, EPA will also propose and seek partner feedback on revising the implementation timeline for Version 1.2 and 1.3 of its California program requirements.</p>				
00034	11/01/2019	California Program Requirements, Version 1.2	Change	Updating Exhibit 3 Implementation Timeline				
				<p>Issue: While the Multifamily New Construction program is not required for use until permits on or after 1/1/2021, with the release of Rev01, a change is needed to the Implementation Timeline, for those choosing to participate prior to that date.</p>				
				<p>Resolution: For projects seeking certification through ENERGY STAR MFNC, Exhibit 3 is revised as shown below, such that Rev01 documents must be used if permitted on or after 7/1/2020. Projects are still permitted to participate in the ENERGY STAR Certified Homes program or the ENERGY STAR Multifamily High Rise program, as long as the project meets the Eligibility Requirements defined within those programs and have permits prior to 1/1/2021.</p> <p>Exhibit 3: ENERGY STAR Multifamily New Construction Implementation Timeline for California</p> <table border="1"> <thead> <tr> <th style="background-color: #cccccc;">State / Territory</th> <th style="background-color: #cccccc;">Buildings With Plan Approval date and Permit Issue Date ⁴ On or After This Date Must Meet the Adjacent Version (See Footnote 4 for Definition & Exception⁴)</th> <th style="background-color: #cccccc;">Multifamily New Construction Program Version</th> <th style="background-color: #cccccc;">Revision¹⁴</th> </tr> </thead> <tbody> <tr> <td>CA</td> <td>07-01-2020</td> <td>California Version 1.2</td> <td>Rev. 01</td> </tr> </tbody> </table>	State / Territory	Buildings With Plan Approval date and Permit Issue Date ⁴ On or After This Date Must Meet the Adjacent Version (See Footnote 4 for Definition & Exception ⁴)	Multifamily New Construction Program Version	Revision ¹⁴
State / Territory	Buildings With Plan Approval date and Permit Issue Date ⁴ On or After This Date Must Meet the Adjacent Version (See Footnote 4 for Definition & Exception ⁴)	Multifamily New Construction Program Version	Revision ¹⁴					
CA	07-01-2020	California Version 1.2	Rev. 01					
Step 3 and 7 – Moving list of documentation for MRO to new Exhibit 4								

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00494	10/03/2022	California Program Requirements Version 1.2 (Rev.02)	Clarification	<p>Issue: Steps 3 and 7 have redundant lists of documents and notes about the documents that are difficult to interpret in a paragraph form. These should be moved to a table with notes in an Exhibit.</p> <p>Resolution: Exhibit 4 will be created with a list of the documents required for an MRO submission and the related notes. These will be deleted from Step 3 and 7b and a reference to the Exhibit will be added as follows:</p> <p>Step 3: “Upon completion of design, for whole-building modeling projects, specific documentation may be submitted to an MRO for their review and approval <u>as described in Exhibit 4</u>. These documents include the California Compliance Report; the Multifamily Workbook, with applicable portions completed; the Rater Design Review Checklist, unless included in the Multifamily Workbook; the HVAC Design Report; construction documents; and either the modeling file or input and output files. For multifamily projects with multiple buildings, each building must demonstrate compliance with the program requirements, but can be documented using one Multifamily Workbook and one HVAC Design Report per project. MROs may choose to implement alternative design review requirements. EPA strongly recommends submitting this documentation before construction; however, project teams may instead choose to submit the design documentation with the As-Built Submittal at final certification. MRO information can be found at www.energystar.gov/mro MROs may choose to implement alternative design review requirements. For the Excel-based Multifamily Workbook, while Partners are encouraged to always use the newest versions available online, unless otherwise specified, file updates between Program revisions will not be required. After a Program revision, project teams will be required to use the updated Workbook based on the enforcement timeline set for the revision.”</p> <p>Step 7b: “Whole-building modeling: specific documentation must be submitted based on as-built conditions to an MRO for their review and approval, <u>as described in Exhibit 4</u>. These documents include the California Compliance Report; the Multifamily Workbook; the Rater Field Checklist, unless included in the Multifamily Workbook; the HVAC Functional Testing Checklists; construction documents; photo documentation; and either the modeling file or input and output files. For multifamily projects with multiple buildings, each building must demonstrate compliance with the program requirements, but can be documented using one Multifamily Workbook per project.”</p>
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Exhibit 5:

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Exhibit 4: Whole-Building Modeling MRO Documents

The following documents must be submitted to the MRO. Those designated as 'final only' are only submitted at final certification.

Party Responsible	Documents
Requirements Applicable to All Buildings	
Rater	<ul style="list-style-type: none"> • Multifamily Workbook • MFNC National Rater Design Review Checklist, Version 1 / 1.1 / 1.2 • MFNC National Rater Field Checklist, Version 1 / 1.1 / 1.2 (Final only) • Construction Documents • Photo Documentation (Final only)
Requirements Applicable to Whole-Building Modeling	
Modeler	<ul style="list-style-type: none"> • California Compliance Report • Modeling file OR model input and output files
Requirements Only Applicable to Track A – HVAC Grading by Rater ¹⁴	
HVAC System Designer	<ul style="list-style-type: none"> • HVAC design report(s) compliant with ANSI / ACCA / RESNET 310 • SFNH / MFNC National HVAC Design Supplement(s) to Std. 310 for Dwellings & Units, All Versions • MFNC National HVAC Design Supplement to Std. 310 for Common Spaces & Central Systems, All Versions, where applicable
Functional Testing Agent	<ul style="list-style-type: none"> • National HVAC Functional Testing Checklists, Version 1 / 1.1 / 1.2
Requirements Only Applicable to Track B – HVAC Testing by FT Agent	
HVAC System Designer	<ul style="list-style-type: none"> • MFNC National HVAC Design Report, Version 1 / 1.1 / 1.2
Functional Testing Agent	<ul style="list-style-type: none"> • MFNC National HVAC Functional Testing Checklist, Version 1 / 1.1 / 1.2 (Final only)

Notes:

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				<ul style="list-style-type: none"> For multifamily projects with multiple buildings, each building must demonstrate compliance with the program requirements, but can be documented using one Multifamily Workbook and one HVAC Design Report per project. For the Excel-based Multifamily Workbook, while Partners are encouraged to always use the newest versions available online, unless otherwise specified, file updates between Program revisions will not be required. After a Program revision, Raters will be required to use the updated Workbook based on the enforcement timeline set for the revision. “
00035	11/01/2019	California Program Requirements, Version 1.2	Change	<p>Exception for determining program implementation date in California</p> <p>Issue: Partners in California have requested a change in the date used to determine which program version a building should be certified under in that state, for a specific subset of building plans. Currently, the plan approval date and permit issue date of a building determine the Version and Revision required.</p> <p>However, over the course of developing homes on a specific tract, it’s not uncommon for a builder to occasionally add new plan types to their previously-approved plan set, in response to market needs. Because these new plans will have a plan approval date later than the original set of plans approved for use in the tract, under the current policy these new plans may be required to meet a different version of the program requirements. Using a different program version for a subset of plans within a tract can result in unanticipated increased costs for partners and confusion among homebuyers about the varying efficiency features of the plans.</p> <p>Resolution: To address the challenges listed above, an exception will be added to the criteria for determining the implementation date in California such that if a new plan is added to a specific tract’s existing plan set, and the new plan is subject to the same version of the energy code as the existing plan set, then the ‘plan approval date’ will be considered to be the existing plan set’s original plan approval date.</p> <p>To reflect this change, the header of the second column in Exhibit 3 of the California Program Requirements, Version 3.2, will be changed as follows:</p> <p>“Buildings With Plan Approval Date and Permit Issue Date On or After This Date Must Meet the Adjacent Version & Revision (See Footnote 4 for Definition & Exception 4)”</p> <p>And Footnote 4 will be revised by adding a sentence to the end, as follows:</p> <p>“The Rater may define the ‘permit date’ as either the date that the permit was issued or the application date of the permit. In cases where permit or application dates are not available, Providers or Multifamily Oversight Organizations have discretion to estimate permit dates based on other construction schedule factors. These assumptions should be both defensible</p>

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				and documented. The ‘plan approval date’ is the date that a jurisdiction approves a building plan and its efficiency features for use on a specific lot or tract. As an exception, if a new plan is added to a specific tract’s existing plan set and the new plan is subject to the same version of the energy code as the existing plan set, then the ‘plan approval date’ is considered to be the existing plan set’s original plan approval date.”
00036	11/01/2019	California Program Requirements, Version 1.2	Refinement	Common Space Reference Design
				Issue: Since the “Reference Design” includes dwelling units and common spaces in the National Program Requirements, there is some confusion with the California Reference Design, since it does not apply to dwelling units.
				Resolution: To reduce confusion and make the intent more clear, Exhibit 1 will be revised in Rev01 as follows: “Exhibit 1: ENERGY STAR Multifamily Reference Design for Common Spaces” The title for the table in Exhibit 1 will be updated as follows: “ENERGY STAR Multifamily Reference Design for Common Spaces, California Version 1.2”
00505	10/03/2022	California Program Requirements Version 1.2 (Rev.02)	Clarification	Remove Footnote 12 referencing configuration of the Reference Design
				Issue: Footnote 12 discusses ENERGY STAR products as it relates to the configuration of the ENERGY STAR Reference Design. This information pertains to modeling characteristics for an ERI target and is not relevant in California.
				Resolution: Footnote 12 will be removed. In addition, the “ENERGY STAR” reference for the gas furnace will be removed since it was not the intent for the gas furnace to need to be ENERGY STAR certified.
00482	10/03/2022	California Program Requirements Version 1.2 (Rev.02)	Change	All versions of the National HVAC Design Report allowed to be used
				Issue: Footnote 14 states that any version of the MFNC National HVAC Design Report may be used for Rev. 01 and Rev. 02 buildings. Rev. 03 buildings are also allowed to use any version of this report.
				Resolution: Footnote 14 will be revised as follows: “Buildings certified under Rev. 01, Rev. 02 and Rev. 03 of the program requirements are permitted to use any version of the MFNC National HVAC Design Report.”

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00483	10/03/2022	California Program Requirements Version 1.3 (Rev.02)	Change	All versions of the National HVAC Design Report allowed to be used
				Issue: Footnote 15 states that any version of the MFNC National HVAC Design Report may be used for Rev. 01 and Rev. 02 buildings. Rev. 03 buildings are also allowed to use any version of this report.
				Resolution: Footnote 15 will be revised as follows: “Buildings certified under Rev. 01, Rev. 02 and Rev. 03 of the program requirements are permitted to use any version of the MFNC National HVAC Design Report.”
00445	10/03/2022	California Program Requirements Version 1.3 (Rev.02)	Refinement	Updating “Effective Date” and “Transition Period End Date” replaced with adopted industry-standard terms
				Issue: Under Rev. 02, per PR 00114, all National and Regional Program Documents updated to using the terminology “Mandatory Compliance Date,” but the California Program Requirements Version 1.3 did not incorporated this change.
				Resolution: This update was missed in the development of California Program Requirements, Version 1.3, Rev. 02. The term “Effective Date” will be replaced with “Mandatory Compliance Date.”
00334	10/03/2022	California Program Requirements Version 1.3 (Rev.02)	Refinement	Eligibility Requirements Section – Rephrasing for consistency
				Issue: The phrasing of the eligibility requirements is inconsistent across program documents, potentially resulting in confusion.
				Resolution: For improved consistency and clarity, the eligibility requirements will be rephrased as follows: “The following multifamily building types are eligible to participate in the ENERGY STAR Multifamily New Construction (MFNC) program: <ul style="list-style-type: none"> Any multifamily building with dwelling or sleeping units that is NOT a two-family dwelling; OR

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				<ul style="list-style-type: none"> Mixed-use buildings, where dwelling units and common space exceed 50% of the building square footage. Parking garage square footage is excluded from this calculation; OR Townhouses, if following the requirements listed in Footnote 3. <p>Townhouses are also eligible to participate in earn the ENERGY STAR through the ENERGY STAR Single-Family New Homes program, which is a certification program for single-family detached homes and two-family dwellings. For more information, visit: www.energystar.gov/newhomesrequirements.</p>
00355	10/03/2022	California Program Requirements Version 1.3 (Rev.02)	Clarification	Eligibility Requirements Section – Buildings undergoing gut rehab eligible to participate
				<p>Issue: This program document does not clearly state that existing buildings (e.g., buildings undergoing a gut rehabilitation) are eligible to participate in the program. This intent has been conveyed through EPA’s website and in several alternative compliance options included in the Mandatory Requirements (e.g., National Water Management System Requirements) but should be more clearly stated directly in the program requirements.</p>
				<p>Resolution: The following sentence will be added to the Eligibility Requirements Section, and a new supplemental guidance document on this topic will be created and linked to via a new alias:</p> <p><u>“While primarily intended for new construction, existing buildings (e.g., undergoing a gut rehabilitation) are also eligible to participate in the ENERGY STAR Multifamily New Construction program, with guidance available at: www.energystar.gov/GutRehabGuidance.”</u></p>
00361	10/03/2022	California Program Requirements Version 1.3 (Rev.02)	Clarification	Eligibility Requirements – Clarifying the definition of a building
				<p>Issue: Given that the program requires all dwelling units in a ‘building’ to be certified, partners have asked what defines a ‘building’. For example, would an individual townhouse be considered the ‘building’ or the entire row of attached townhouses.</p>
				<p>Resolution: EPA agrees that the term building can be better defined.</p> <p>Footnote 1 will be revised as follows:</p> <p>“The term ‘building’ refers to a structure utilized or intended for supporting or sheltering any occupancy for a residential purpose; a structure with no dwelling or</p>

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				<p><u>sleeping units connected to a structure with dwelling or sleeping units by less than 10% of its exterior wall area is not to be included in the ‘building’ that encompasses dwelling/sleeping units and (if present) common spaces, sharing one or more of the following attributes: a common street address, a common entrance or exit, central/shared mechanical systems, or structurally interdependent wall or roof systems. Attached structures such as townhouses and 4-story two-unit structures (commonly referred to as “2-over-2s”) may be considered separate buildings if they are divided by a vertical fire separation wall from the foundation to the roof sheathing and share none of the other attributes listed above. A skyway or a breezeway that connects two structures is not considered a common entrance or exit. A dwelling unit, as defined by the 2012 IECC, is a single unit that provides complete independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking, and sanitation. The term ‘sleeping unit’ refers to a room or space in which people sleep, which can also include permanent provisions for living, eating, and either sanitation or kitchen facilities but not both. The term ‘two-family’ dwelling refers to a detached building with ² dwelling units. For the purposes of eligibility, hotels, motels, and <u>senior care facilities</u> are not considered multifamily buildings. For more information visit: https://www.energystar.gov/partner_resources/residential_new/program_reqs/mfnc_building_eligibility.”</u></p>
00377	10/03/2022	California Program Requirements Version 1.3 (Rev.02)	Clarification	<p>Eligibility Requirements – Mixed use buildings without dwelling or sleeping units are not eligible</p>
				<p>Issue: Partners have asked whether amenity buildings such as a pool house or gym without dwelling or sleeping units are eligible for certification and whether they must meet the program requirements. While the eligibility section indicates only multifamily buildings with dwelling units and sleeping units are eligible, and the Rater Design Review and Rater Field Checklists note that the buildings without dwelling units are not subject to the Checklist requirements, the eligibility for mixed use buildings does not specify only mixed- use buildings <u>with dwelling or sleeping units</u>.</p>
				<p>Resolution: Buildings that do not contain dwelling or sleeping units are not eligible for certification under MFNC. Similarly, as noted in the Rater checklists, where common spaces are in separate buildings without dwelling or sleeping units they are not subject to the program requirements.</p>

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				<p>To clarify the intent, the eligibility section will be updated as follows:</p> <p>“The following multifamily building types are eligible to participate in the ENERGY STAR Multifamily New Construction program:</p> <ul style="list-style-type: none"> • Any multifamily building with dwelling or sleeping units that is NOT a two-family dwelling ¹; OR • <u>Any mixed-use buildings with dwelling or sleeping units</u>, where <u>the</u> dwelling units, sleeping units, and common space exceed 50% of the building square footage. Parking garage square footage is excluded from this calculation ^{1,2}; OR • Townhouses, if following the requirements listed in Footnote 3.” <p>A new sentence will be added to the beginning of Footnote 1 as follows:</p> <p>“Buildings that do not contain dwelling or sleeping units are not eligible for certification under MFNC.”</p>
00369	10/03/2022	California Program Requirements Version 1.3 (Rev.02)	Refinement	<p>Eligibility – Referencing “dwelling” instead of “two-family dwelling” and other standard definitions</p>
				<p>Issue: The MFNC eligibility uses ‘two-family dwelling’ which is not consistent with the SFNH eligibility. In addition, the ‘sleeping unit’ definition does not currently reference the ANSI / RESNET / ICC 301 definition.</p>
				<p>Resolution: To align with the SFNH program, the Eligibility Requirements will be updated as follows:</p> <p>“The following multifamily building types are eligible to participate in the ENERGY STAR Multifamily New Construction program:</p> <ul style="list-style-type: none"> • Any multifamily building with dwelling or sleeping units that is NOT a two-family dwelling (e.g., not a single-family home or a duplex) ¹; OR • <u>Mixed-use buildings</u>, where dwelling units, sleeping units, and common space exceed 50% of the building square footage. Parking garage square footage is excluded from this calculation ²; OR • Townhouses, if following the requirements listed in Footnote 3. “

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				<p>Townhouses are also eligible to earn the ENERGY STAR through the ENERGY STAR Single-Family New Homes program, which is a certification program for <u>dwelling</u>s (e.g., <u>single-family homes</u>, duplexes) and <u>townhouses</u> single-family detached homes and two-family dwellings.¹</p> <p>The end of Footnote 1 will be revised as follows to include ANSI / RESNET / ICC 301 references:</p> <p>“A dwelling unit, as defined by <u>ANSI / RESNET / ICC 301</u>the 2012 IECC, is a single unit that provides complete independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking, and sanitation. The term A ‘sleeping unit’, refers to as defined by ANSI / RESNET / ICC 301, is a room or space in which people sleep, which can also include permanent provisions for living, eating, and either sanitation or kitchen facilities but not both. A ‘dwelling’, as defined by ANSI / RESNET / ICC 301, is any building that contains one or two dwelling units used, intended, or designed to be built, used, rented, leased, let or hired out to be occupied, or that are occupied for living purposes. The term ‘two-family’ dwelling refers to a detached building with 2 dwelling units. For the purposes of eligibility, hotels, motels, and <u>senior care facilities</u> are not considered multifamily buildings. For more information visit: https://www.energystar.gov/partner_resources/residential_new/program_reqs/mfnc_building_eligibility”</p>
00469	10/03/2022	California Program Requirements Version 1.3 (Rev.02)	Clarification	<p>ENERGY STAR Certification Process Section – Retention of documents for Track A</p> <p>Issue: This Section currently states, in part, that the Rater is required to keep electronic or hard copies of the completed and signed National Rater checklists and the National HVAC Design Report.</p> <p>However, with the introduction of Track A into the program requirements, the National HVAC Design Report will not be completed for every certified project. For projects certified using Track A, an HVAC design report compliant with ANSI / RESNET / ACCA / ICC 310 and the ENERGY STAR National HVAC Design Supplement to Std. 310 for Dwellings & Units, must be collected for each dwelling unit. For all common spaces using HVAC Grading, an HVAC design report compliant with ANSI / RESNET / ACCA / ICC 310 must be collected, and where applicable, the ENERGY STAR National HVAC Design Supplement to Std. 310 for Common Spaces & Central Systems must also be collected for records. Only projects certified using Track B must collect the National HVAC Design Report.</p>

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				<p>The National HVAC Functional Testing Checklist must also be collected for all systems, While systems using ANSU / RESNET / ACCA / ICC 310 do not need to complete Section 2 and 3 of that Checklist, Section 5 must still be completed for all systems. The Functional Testing Checklist does not need to be collected when completed by a contractor credentialed by an H-QUITO.</p> <p>Resolution: To clarify which documents must be retained when using Track A and Track B, this Section will be updated as follows: “Upon completion of construction, the Rater is required to keep electronic or hard copies of the completed and signed National Rater checklists. <u>In addition, for buildings using Track A, the Rater is required to keep for each dwelling unit and each graded common space an HVAC design report compliant with ANSI / RESNET / ACCA / ICC 310. The Rater must also keep a National HVAC Design Supplement to Std. 310 for Dwellings & Units for each dwelling unit, and, where applicable, the National HVAC Design Supplement to Std. 310 for Common Spaces & Central Systems. For buildings using Track B, the Rater is required to keep the National HVAC Design Report, and, Finally, when the FT Agent is not a HVAC Credentialed Contractor, the National HVAC Functional Testing Checklists for all systems must be kept..”</u></p>
00304	10/03/2022	California Program Requirements Version 1.3 (Rev.02)	Clarification	<p>Step 1 - Raters must be operating under an MRO or HCO when completing verification</p>
				<p>Issue: In the Partnership section it states that Energy Rating Companies must operate under an HCO or MRO but it does not explain what it means to operate under an MRO.</p>
				<p>Resolution: While EPA recommends that Rater have contacted their oversight organization during design, at the latest the building must be under MRO oversight prior to the first inspection. EPA recognizes there may be some limited circumstances where this is not practical, such as if a building is switching from the dwelling unit modeling path to the whole-building modeling Path. For such circumstances, it is within the MRO discretion to allow for an exemption from this requirement.</p> <p>In Step 1 of the ENERGY STAR Certification Process a new sentence will be added to the end of “b” as follows: <u>EPA recommends that Raters identify their MRO during the design stage, but at the latest, the building must be under MRO oversight prior to the first inspection. MROs have limited discretion to grant an exemption to this policy (e.g., when a building switches Paths)</u></p>
00476	10/03/2022	California Program Requirements	Clarification	<p>Certification Process Step 2 – Clarifying mandatory Rater Design Review and Rater Field Checklist Items</p>
				<p>Issue: In Step 2, there are references to meeting the ‘prescriptive’ items in the National Rater Design Review and Field Checklists ‘for common spaces’. Since there are mandatory</p>

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		Version 1.3 (Rev.02)		<p>items on the checklists that are required for all paths in both dwelling units and common spaces, it is confusing to include these phrases.</p> <p>Resolution: The program is designed such that there are two options to meeting the performance target with a different mix of prescriptive and modeled measures. In the whole-building modeling there are fewer mandatory measures in the common spaces, as well as a less stringent backstop on some common space measures as compared to the dwelling-unit modeling.</p> <p>Regardless of the Path, the National Rater Design Review and Field Checklists have efficiency requirements included that are mandatory for all paths, and as noted above requirements that are more stringent for certain paths.</p> <p>To reduce confusion, the first sentences of Step 2a and 2b will be revised as follows:</p> <p>Step 2a</p> <p>“Dwelling Unit modeling (Step 1a): Configure the preferred set of efficiency measures for the unit to be certified and verify that the resulting performance meets or exceeds the applicable performance target, as determined in Step 1a. For common spaces, mMeet the prescriptive requirements specified in the National Rater Design Review and Field Checklists, which align with include meeting the minimum requirements set in Exhibit 1 for common spaces. ... Where the Checklists list different common space requirements for “ERI”, “ASHRAE”, or “Prescriptive”, select the requirements associated with “ERI”....”</p> <p>Step 2b</p> <p>“Whole-building modeling (Step 1b): Configure the preferred set of efficiency measures for the building to be certified and verify that the resulting performance meets or exceeds the applicable performance target, as determined in Step 1b. For common spaces, mMeet the prescriptive requirements specified in the National Rater Design Review and Field Checklists for common spaces.... Where the Checklists list different common space requirements for “ERI”, “ASHRAE”, or “Prescriptive”, select the requirements associated with “ASHRAE”....”</p>
00495	10/03/2022	California Program Requirements	Clarification	<p>Step 3 and 7 – Moving list of documentation for MRO to new Exhibit 4</p> <p>Issue: Steps 3 and 7 have redundant lists of documents and notes about the documents that are difficult to interpret in a paragraph form. These should be moved to a table with notes in an Exhibit.</p>

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		<p>Version 1.3 (Rev.02)</p>		<p>Resolution: Exhibit 4 will be created with a list of the documents required for an MRO submission and the related notes. These will be deleted from Step 3 and 7b and a reference to the Exhibit will be added as follows:</p> <p>Step 3: “Upon completion of design, for whole-building modeling projects, specific documentation may be submitted to an MRO for their review and approval <u>as described in Exhibit 5</u>. These documents include the California Compliance Report; the Multifamily Workbook, with applicable portions completed; the Rater Design Review Checklist, unless included in the Multifamily Workbook; the HVAC Design Report; construction documents; and either the modeling file or input and output files. For multifamily projects with multiple buildings, each building must demonstrate compliance with the program requirements, but can be documented using one Multifamily Workbook and one HVAC Design Report per project. MROs may choose to implement alternative design review requirements. EPA strongly recommends submitting <u>this</u> documentation before construction; however, project teams may <u>instead</u> choose to submit the design documentation with the As-Built Submittal at final certification. MROs may choose to implement alternative design review requirements. For the Excel-based Multifamily Workbook, while Partners are encouraged to always use the newest versions available online, unless otherwise specified, file updates between Program revisions will not be required. After a Program revision, project teams will be required to use the updated Workbook based on the enforcement timeline set for the revision.”</p> <p>Step 7b: “Whole-building modeling: specific documentation must be submitted based on as-built conditions to an MRO for their review and approval, <u>as described in Exhibit 5</u>. These documents include the California Compliance Report; the Multifamily Workbook; the Rater Field Checklist, unless included in the Multifamily Workbook; the HVAC Functional Testing Checklists; construction documents; photo documentation; and either the modeling file or input and output files. For multifamily projects with multiple buildings, each building must demonstrate compliance with the program requirements, but can be documented using one Multifamily Workbook per project.”</p> <p>Exhibit 5: “</p>
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				<p style="text-align: center;">Exhibit 4: Whole-Building Modeling MRO Documents</p> <p>The following documents must be submitted to the MRO. Those designated as 'final only' are only submitted at final certification.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Party Responsible</th> <th>Documents</th> </tr> </thead> <tbody> <tr> <td colspan="2" style="text-align: center;">Requirements Applicable to All Buildings</td> </tr> <tr> <td>Rater</td> <td> <ul style="list-style-type: none"> • Multifamily Workbook • MFNC National Rater Design Review Checklist, Version 1 / 1.1 / 1.2 • MFNC National Rater Field Checklist, Version 1 / 1.1 / 1.2 (Final only) • Construction Documents • Photo Documentation (Final only) </td> </tr> <tr> <td colspan="2" style="text-align: center;">Requirements Applicable to Whole-Building Modeling</td> </tr> <tr> <td>Modeler</td> <td> <ul style="list-style-type: none"> • California Compliance Report • Modeling file OR model input and output files </td> </tr> <tr> <td colspan="2" style="text-align: center;">Requirements Only Applicable to Track A – HVAC Grading by Rater ¹⁴</td> </tr> <tr> <td>HVAC System Designer</td> <td> <ul style="list-style-type: none"> • HVAC design report(s) compliant with ANSI / ACCA / RESNET 310 • SFNH / MFNC National HVAC Design Supplement(s) to Std. 310 for Dwellings & Units, All Versions • MFNC National HVAC Design Supplement to Std. 310 for Common Spaces & Central Systems, All Versions, where applicable </td> </tr> <tr> <td>Functional Testing Agent</td> <td> <ul style="list-style-type: none"> • National HVAC Functional Testing Checklists, Version 1 / 1.1 / 1.2. </td> </tr> <tr> <td colspan="2" style="text-align: center;">Requirements Only Applicable to Track B – HVAC Testing by FT Agent</td> </tr> <tr> <td>HVAC System Designer</td> <td> <ul style="list-style-type: none"> • MFNC National HVAC Design Report, Version 1 / 1.1 / 1.2 </td> </tr> <tr> <td>Functional Testing Agent</td> <td> <ul style="list-style-type: none"> • MFNC National HVAC Functional Testing Checklist, Version 1 / 1.1 / 1.2 (Final only) </td> </tr> </tbody> </table> <p>Notes:</p> <ul style="list-style-type: none"> • For multifamily projects with multiple buildings, each building must demonstrate compliance with the program requirements, but can be documented using one Multifamily Workbook and one HVAC Design Report per project. 	Party Responsible	Documents	Requirements Applicable to All Buildings		Rater	<ul style="list-style-type: none"> • Multifamily Workbook • MFNC National Rater Design Review Checklist, Version 1 / 1.1 / 1.2 • MFNC National Rater Field Checklist, Version 1 / 1.1 / 1.2 (Final only) • Construction Documents • Photo Documentation (Final only) 	Requirements Applicable to Whole-Building Modeling		Modeler	<ul style="list-style-type: none"> • California Compliance Report • Modeling file OR model input and output files 	Requirements Only Applicable to Track A – HVAC Grading by Rater ¹⁴		HVAC System Designer	<ul style="list-style-type: none"> • HVAC design report(s) compliant with ANSI / ACCA / RESNET 310 • SFNH / MFNC National HVAC Design Supplement(s) to Std. 310 for Dwellings & Units, All Versions • MFNC National HVAC Design Supplement to Std. 310 for Common Spaces & Central Systems, All Versions, where applicable 	Functional Testing Agent	<ul style="list-style-type: none"> • National HVAC Functional Testing Checklists, Version 1 / 1.1 / 1.2. 	Requirements Only Applicable to Track B – HVAC Testing by FT Agent		HVAC System Designer	<ul style="list-style-type: none"> • MFNC National HVAC Design Report, Version 1 / 1.1 / 1.2 	Functional Testing Agent	<ul style="list-style-type: none"> • MFNC National HVAC Functional Testing Checklist, Version 1 / 1.1 / 1.2 (Final only)
Party Responsible	Documents																									
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Rater	<ul style="list-style-type: none"> • Multifamily Workbook • MFNC National Rater Design Review Checklist, Version 1 / 1.1 / 1.2 • MFNC National Rater Field Checklist, Version 1 / 1.1 / 1.2 (Final only) • Construction Documents • Photo Documentation (Final only) 																									
Requirements Applicable to Whole-Building Modeling																										
Modeler	<ul style="list-style-type: none"> • California Compliance Report • Modeling file OR model input and output files 																									
Requirements Only Applicable to Track A – HVAC Grading by Rater ¹⁴																										
HVAC System Designer	<ul style="list-style-type: none"> • HVAC design report(s) compliant with ANSI / ACCA / RESNET 310 • SFNH / MFNC National HVAC Design Supplement(s) to Std. 310 for Dwellings & Units, All Versions • MFNC National HVAC Design Supplement to Std. 310 for Common Spaces & Central Systems, All Versions, where applicable 																									
Functional Testing Agent	<ul style="list-style-type: none"> • National HVAC Functional Testing Checklists, Version 1 / 1.1 / 1.2. 																									
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HVAC System Designer	<ul style="list-style-type: none"> • MFNC National HVAC Design Report, Version 1 / 1.1 / 1.2 																									
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				<ul style="list-style-type: none"> For the Excel-based Multifamily Workbook, while Partners are encouraged to always use the newest versions available online, unless otherwise specified, file updates between Program revisions will not be required. After a Program revision, Raters will be required to use the updated Workbook based on the enforcement timeline set for the revision. “
00427	10/03/2022	California Program Requirements Version 1.3 (Rev.02)	Clarification	Step 6 – How to inspect modular multifamily buildings
				Issue: Step 6 includes a reference to modular homes instead of buildings. In the SFNH Program Requirements, it also defines modular homes and this text should be included in this document.
				<p>Resolution: The sentence about modular housing in Step 6 will be revised as follows: “For modular homes multifamily buildings, a Rater must verify any requirement in the plant not able to be verified on-site because a feature will be concealed prior to shipment.”</p> <p>A new footnote will be added to Step 6 as follows: “A modular building is a prefabricated building that is made of multiple modules or sections that are manufactured and substantially assembled in a manufacturing plant. These pre-built sections are transported to the building site and constructed by a builder to meet all applicable building codes for site-built buildings.”</p>
00503	10/03/2022	California Program Requirements Version 1.3 (Rev.02)	Refinement	Exhibit 1 – IECC Climate Zone designations to be used
				Issue: For improved consistency and clarity, Footnote 10 will be revised to align with the text from Version 1.2.
				<p>Resolution: Footnote 10 will be revised as follows: “2021 IECC climate zones, as defined and illustrated in Section R301 of the code. Note that some locations have shifted to a different climate zone in the 2021 IECC compared to prior editions.”</p>
00338	10/03/2022	California Program Requirements Version 1.3 (Rev.02)	Refinement	Exhibit 2 – Addition of program name to mandatory requirements for clarity
				<p>Issue: This Exhibit contains the Mandatory Requirements that must be met for certification. Many of the document names referenced in this Exhibit (e.g., National Rater Field Checklist) are identical between the ENERGY STAR Single-Family New Homes (SFNH) program and ENERGY STAR Multifamily New Construction (MFNC) program, even though the requirements within the documents are program specific. Therefore, without specifying the program name, Partners may be confused about which requirements apply.</p>

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				<p>Resolution: For improved clarity, the applicable program name will be added to the Exhibit as follows:</p> <ul style="list-style-type: none"> • Completion of <u>MFNC</u> National Rater Design Review Checklist, Version 1 / 1.1 • Completion of <u>MFNC</u> National Rater Field Checklist, Version 1 / 1.1 (Where requirements are differentiated by Version, the requirements for National v1.2 must be followed) • Completion of <u>MFNC</u> National Water Management System Builder Requirements, Version 1 / 1.1 • Completion of an HVAC design report compliant with ANSI / RESNET / ACCA Std. 310, plus the <u>ENERGY STAR SFNH / MFNC</u> National HVAC Design Supplement to <u>Std. 310</u> for Dwellings & Units and, if applicable, the <u>MFNC</u> National HVAC Design Supplement to <u>Std. 310</u> for Common Spaces & Central Systems • Completion of applicable sections of the <u>MFNC</u> National HVAC Functional Testing Checklist. Exempt from Sections 2 and 3 for Dwelling Unit HVAC as the Rater is the party responsible for assessing these systems installation quality in accordance with ANSI / RESNET / ACCA Std. 310 • Completion of <u>MFNC</u> National HVAC Design Report, Version 1 / 1.1 <p>Completion of <u>MFNC</u> National HVAC Functional Testing Checklist, Version 1 / 1.1</p>
00509	11/10/2022	California Program Requirements Version 1.3 (Rev.03)	Clarification	<p>Exhibit 3 – Implementation timeline does not change with enforcement of new edition of CA Building Energy Efficiency Standards (BEES)</p>
				<p>Issue: Partners have asked whether the applicable Version and Revision changes for buildings with a pre-existing plan approval date when an AHJ begins enforcing a new edition of the BEES.</p> <p>For example, consider a development of townhouses being certified under the Multifamily New Construction program that has a plan approval date of May 1, 2022, for which the 2019 edition of the BEES is enforced. The AHJ begins enforcing the 2022 edition of the BEES for that development for townhouses that are permitted after January 1, 2023. Does the applicable Version and Revision change with enforcement of the new code?</p>
				<p>Resolution: EPA recognizes that the current policy is ambiguous about which Version and Revision is applicable when an AHJ begins enforcing a new edition of the BEES, after initial plan approval. At this time, EPA is clarifying that the Version and Revision that is applicable does not change with the enforcement of a new edition of the BEES. While new editions of</p>

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				<p>the BEES may trigger revisions to the plans, the original Plan Approval Date remains unchanged and is to be used to determine the applicable Version and Revision.</p> <p>With that said, EPA recognizes that the clarified policy may result in buildings being developed over an extended period of time that are not subjected to the latest Version of ENERGY STAR, even as codes continue to progress. For this reason, EPA intends to revisit how to define the implementation timeline for its California program requirements during the development of the next Version. At that time, EPA will also propose and seek partner feedback on revising the implementation timeline for Version 1.2 and 1.3 of its California program requirements.</p>
00506	10/03/2022	California Program Requirements Version 1.3 (Rev.02)	Clarification	Remove Footnote 10 referencing configuration of the Reference Design
				Issue: Footnote 10 discusses ENERGY STAR products as it relates to the configuration of the ENERGY STAR Reference Design. This information pertains to modeling characteristics for an ERI target and is not relevant in California.
				Resolution: Footnote 10 will be removed.
00484	10/03/2022	Caribbean Program Requirements , Version 1 (Rev.02)	Change	All versions of the National HVAC Design Report allowed to be used
				Issue: Footnote 16 states that any version of the MFNC National HVAC Design Report may be used for Rev. 01 and Rev. 02 buildings. Rev. 03 buildings are also allowed to use any version of this report.
				Resolution: Footnote 16 will be revised as follows: “Buildings certified under Rev. 02 and Rev. 03 of the program requirements are permitted to use any version of the MFNC National HVAC Design Report.”
00335	10/03/2022	Caribbean Program Requirements , Version 1 (Rev.02)	Refinement	Eligibility Requirements Section – Rephrasing for consistency
				Issue: The phrasing of the eligibility requirements is inconsistent across program documents, potentially resulting in confusion.
				Resolution: For improved consistency and clarity, the eligibility requirements will be rephrased as follows:

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				<p>“The following multifamily building types are eligible to participate in the ENERGY STAR Multifamily New Construction (MFNC) program:</p> <ul style="list-style-type: none"> Any multifamily building with dwelling or sleeping units that is NOT a two-family dwelling; OR Mixed-use buildings, where dwelling units and common space exceed 50% of the building square footage. Parking garage square footage is excluded from this calculation; OR Townhouses, if following the requirements listed in Footnote 3. <p>Townhouses are also eligible to <u>participate in</u> earn the ENERGY STAR through the ENERGY STAR Single-Family New Homes program, which is a certification program for single-family detached homes and two-family dwellings. Multifamily buildings 5 stories or less may be eligible for to participate in the ENERGY STAR Single-Family New Homes program. For more information, visit: www.energystar.gov/newhomesrequirements. In addition, multifamily buildings with a MFHR Project Application submitted prior to January 1, 2021 and a permit date prior to July 1, 2021, may be eligible <u>to participate in</u> earn the ENERGY STAR through the Multifamily High Rise program. For more information, visit: www.energystar.gov/mfhr/eligibility.”</p>
00370	10/03/2022	Caribbean Program Requirements, Version 1 (Rev.02)	Refinement	<p>Eligibility – Referencing “dwelling” instead of “two-family dwelling” and other standard definitions</p> <p>Issue: The MFNC eligibility uses ‘two-family dwelling’ which is not consistent with the SFNH eligibility. In addition, the ‘sleeping unit’ definition does not currently reference the ANSI / RESNET / ICC 301 definition.</p> <p>Resolution: To align with the SFNH program, the Eligibility Requirements will be updated as follows:</p> <p>“The following multifamily building types are eligible to participate in the ENERGY STAR Multifamily New Construction program:</p> <ul style="list-style-type: none"> Any multifamily building with dwelling or sleeping units that is NOT a two-family dwelling <u>(e.g., not a single-family home or a duplex)</u> ¹; OR <u>Mixed-use buildings</u>, where dwelling units, sleeping units, and common space exceed 50% of the building square footage. Parking garage square footage is excluded from this calculation ²; OR Townhouses, if following the requirements listed in Footnote 3. “ <p>Townhouses are also eligible to earn the ENERGY STAR through the ENERGY STAR Single-Family New Homes program, which is a certification program for <u>dwellings</u> <u>(e.g.,</u></p>

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				<p>single-family homes, duplexes) and townhouses single-family detached homes and two-family dwellings. 1“</p> <p>The end of Footnote 1 will be revised as follows to include ANSI / RESNET / ICC 301 references:</p> <p>“A dwelling unit, as defined by ANSI / RESNET / ICC 301 <u>the 2012 IECC</u>, is a single unit that provides complete independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking, and sanitation. The term A ‘sleeping unit’, refers to as defined by ANSI / RESNET / ICC 301, is a room or space in which people sleep, which can also include permanent provisions for living, eating, and either sanitation or kitchen facilities but not both. <u>A ‘dwelling’, as defined by ANSI / RESNET / ICC 301, is any building that contains one or two dwelling units used, intended, or designed to be built, used, rented, leased, let or hired out to be occupied, or that are occupied for living purposes. The term ‘two-family’ dwelling refers to a detached building with 2 dwelling units.</u>”</p>
00391	10/03/2022	Caribbean Program Requirements , Version 1 (Rev.02)	Refinement	<p>Eligibility Requirements – Referencing standard definition for townhouse</p>
				<p>Issue: A townhouse is defined but it does not reference the Standard as is referenced in the SFNH program.</p>
				<p>Resolution: To align with the SFNH program, the first sentence of Footnote 3 will be updated as follows:</p> <p>“The term ‘townhouse’, as defined by ANSI / RESNET / ICC 301, <u>refers to</u> is a single-family dwelling unit constructed in a group of three or more attached units in which each unit extends from the foundation to roof and with open space on at least two sides.”</p>
00356	10/03/2022	Caribbean Program Requirements , Version 1 (Rev.02)	Clarification	<p>Eligibility Requirements Section – Buildings undergoing gut rehab eligible to participate</p>
				<p>Issue: This program document does not clearly state that existing buildings (e.g., buildings undergoing a gut rehabilitation) are eligible to participate in the program. This intent has been conveyed through EPA’s website and in several alternative compliance options included in the Mandatory Requirements (e.g., National Water Management System Requirements) but should be more clearly stated directly in the program requirements.</p>
				<p>Resolution: The following sentence will be added to the Eligibility Requirements Section, and a new supplemental guidance document on this topic will be created and linked to via a new alias:</p>

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				<p>“While primarily intended for new construction, existing buildings (e.g., undergoing a gut rehabilitation) are also eligible to participate in the ENERGY STAR Multifamily New Construction program, with guidance available at: www.energystar.gov/GutRehabGuidance”</p>
00362	10/03/2022	Caribbean Program Requirements , Version 1 (Rev.02)	Clarification	<p>Eligibility Requirements – Clarifying the definition of a building</p>
				<p>Issue: Given that the program requires all dwelling units in a ‘building’ to be certified, partners have asked what defines a ‘building’. For example, would an individual townhouse be considered the ‘building’ or the entire row of attached townhouses.</p>
				<p>Resolution: EPA agrees that the term building can be better defined. Footnote 1 will be revised as follows:</p> <p style="padding-left: 40px;"> “The term ‘building’ refers to a structure utilized or intended for supporting or sheltering any occupancy for a residential purpose; a structure with no dwelling or sleeping units connected to a structure with dwelling or sleeping units by less than 10% of its exterior wall area is not to be included in the ‘building’. <u>that encompasses dwelling/sleeping units and (if present) common spaces, sharing one or more of the following attributes: a common street address, a common entrance or exit, central/shared mechanical systems, or structurally interdependent wall or roof systems. Attached structures such as townhouses and 4-story two-unit structures (commonly referred to as “2-over-2s”) may be considered separate buildings if they are divided by a vertical fire separation wall from the foundation to the roof sheathing and share none of the other attributes listed above. A skyway or a breezeway that connects two structures is not considered a common entrance or exit.</u> A dwelling unit, as defined by the 2012 IECC, is a single unit that provides complete independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking, and sanitation. The term ‘sleeping unit’ refers to a room or space in which people sleep, which can also include permanent provisions for living, eating, and either sanitation or kitchen facilities but not both. The term ‘two-family’ dwelling refers to a detached building with ² dwelling units. For the purposes of eligibility, hotels, motels, and <u>senior care facilities</u> are not considered multifamily buildings. For more information visit: https://www.energystar.gov/partner_resources/residential_new/program_reqs/mfnc_building_eligibility.”</p>
<p>Eligibility Requirements – Mixed use buildings without dwelling or sleeping units are not eligible</p>				
00378	10/03/2022	Caribbean Program Requirements	Clarification	<p>Issue: Partners have asked whether amenity buildings such as a pool house or gym without dwelling or sleeping units are eligible for certification and whether they must meet the program requirements. While the eligibility section indicates only multifamily buildings with</p>

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		, Version 1 (Rev.02)		<p>dwelling units and sleeping units are eligible, and the Rater Design Review and Rater Field Checklists note that the buildings without dwelling units are not subject to the Checklist requirements, the eligibility for mixed use buildings does not specify only mixed- use buildings <u>with dwelling or sleeping units</u>.</p> <p>Resolution: Buildings that do not contain dwelling or sleeping units are not eligible for certification under MFNC. Similarly, as noted in the Rater checklists, where common spaces are in separate buildings without dwelling or sleeping units they are not subject to the program requirements.</p> <p>To clarify the intent, the eligibility section will be updated as follows:</p> <p>“The following multifamily building types are eligible to participate in the ENERGY STAR Multifamily New Construction program:</p> <ul style="list-style-type: none"> • Any multifamily building with dwelling or sleeping units that is NOT a two-family dwelling ¹; OR • <u>Any mixed-use buildings with dwelling or sleeping units</u>, where <u>the</u> dwelling units, sleeping units, and common space exceed 50% of the building square footage. Parking garage square footage is excluded from this calculation ^{1, 2}; OR • Townhouses, if following the requirements listed in Footnote 3.” <p>A new sentence will be added to the beginning of Footnote 1 as follows: “Buildings that do not contain dwelling or sleeping units are not eligible for certification under MFNC.”</p>
00379	10/03/2022	Caribbean Program Requirements , Version 1 (Rev.02)	Clarification	<p>Eligibility Requirements – hotels, motels and senior care facilities</p> <p>Issue: The National Program Requirements note that hotels, motels, and senior care facilities are not considered ‘multifamily buildings’ for the purposes of eligibility but this was inadvertently left out of the Caribbean eligibility.</p> <p>Resolution: The eligibility should align with the national eligibility. Two new sentences will be added to the end of Footnote 1 as follows:</p> <p>“For the purposes of eligibility, hotels, motels, and senior care facilities are not considered multifamily buildings. Visit: https://www.energystar.gov/partner_resources/residential_new/program_reqs/mfnc_building_eligibility for more information.”</p>

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00303	10/03/2022	Caribbean Program Requirements , Version 1 (Rev.02)	Clarification	<p>Credentialing and Oversight – Raters must be operating under an MRO or HCO when completing verification</p> <p>Issue: In the ENERGY STAR Certification Process section, it is not explicitly stated that Raters must operate under HCO or MRO oversight for the entirety of the verification process. It is also unclear what happens for buildings that switch Paths and need to switch oversight organizations.</p> <p>Resolution: The intent is that Raters must operate under HCO or MRO oversight for the entirety of the verification process. While EPA recommends that Rater have contacted their oversight organization during design, at the latest the building must be under MRO oversight prior to the first inspection. EPA recognizes there may be some limited circumstances where this is not practical, such as if a building is switching from the ERI to the ASHRAE or Prescriptive Paths. For such circumstances, it is within the MRO discretion to allow for an exemption from this requirement.</p> <p>The Energy Rating Company paragraph of Partnership, Training, and Credentialing Requirements will be revised as follows:</p> <ul style="list-style-type: none"> • “Energy Rating Companies (e.g., rater companies and Providers ⁶) are required to sign an ENERGY STAR Partnership Agreement, which can be found at www.energystar.gov/homesPA, and operate under either a Home Certification Organization (HCO) or a Multifamily Review Organization (MRO). Learn more and find a current list of HCOs at www.energystar.gov/hco and MROs at www.energystar.gov/mro. • <u>[Line break added]</u> Raters ⁷ are required to complete EPA-recognized training, which can be found at www.energystar.gov/mftraining. “ <p>In Step 1 of the ENERGY STAR Certification Process sentences will be added to the end of “a” as follows: <u>“Buildings following 1a must be certified through an HCO.”</u></p> <p>In Step 1 of the ENERGY STAR Certification Process the following sentences will be added to “b”: <u>Buildings following 1b must be certified through an MRO. EPA recommends that Raters identify their MRO during the design stage, but at the latest, the building must be under MRO oversight prior to the first inspection. MROs have limited discretion to grant an exemption to this policy (e.g., when a building switches Paths)</u></p>
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00498	10/03/2022	Caribbean Program Requirements , Version 1 (Rev.02)	Clarification	<p>Certification Process Step 3 - RESNET Guidelines for Multifamily Energy Ratings may be used as sampling guidance for common spaces</p> <p>Issue: Footnote 9 notes that sampling is able to be used when allowed by the HCO or MRO the building is being certified under if an HCO-approved sampling protocol is followed. It also notes that “Where a sampling protocol does not sufficiently describe methodology for multifamily projects, use the RESNET Guidelines for Multifamily Energy Ratings, available at www.resnet.us/blog/resnet-adopts-guidelines-for-multifamily-energy-ratings”. It is not clear when those Guidelines may be used.</p> <p>Resolution: The intent is to follow an HCO-approved sampling protocol for all sampling where permitted by the HCO or MRO the building is being certified under. However, for common spaces a dwelling-unit specific protocol may not be sufficient. The RESNET Guidelines for Multifamily Energy Ratings, available at www.resnet.us/blog/resnet-adopts-guidelines-for-multifamily-energy-ratings/, are able to be used for common spaces. Since this is an HCO-approved sampling protocol, this sentence is not needed within the document. To reduce confusion, this sentence will be removed.</p> <p>Footnote 9 will be revised as follows:</p> <p>Raters who operate under an MRO or an HCO with a Sampling Protocol are permitted to verify the minimum rated features of the building and to verify any Checklist Item designated “Rater Verified” using an HCO-approved sampling protocol. Where a sampling protocol does not sufficiently describe methodology for multifamily projects, use the RESNET Guidelines for Multifamily Energy Ratings, available at www.resnet.us/blog/resnet-adopts-guidelines-for-multifamily-energy-ratings/. No parties other than Raters are permitted to use sampling. For example, no items on the National HVAC Design Report are permitted to be verified using a sampling protocol.</p>
00428	10/03/2022	Caribbean Program Requirements , Version 1 (Rev.02)	Refinement	<p>Step 3 – Modular multifamily buildings instead of homes</p> <p>Issue: Step 3 and the related footnote describe modular buildings and homes. To be consistent with the National Program Requirements this will be updated to modular multifamily buildings and buildings.</p> <p>Resolution: The sentence about modular housing in Step 3 will be revised as follows: “For modular <u>multifamily</u> buildings, a Rater must verify any requirement in the plant not able to be verified on-site because a feature will be concealed prior to shipment.”</p> <p>Footnote 10 will be revised as follows: “A modular home <u>home</u> building is a prefabricated home <u>home</u> building that is made of multiple modules or sections that are manufactured and substantially assembled in a manufacturing plant.</p>

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				These pre-built sections are transported to the building site and constructed by a builder to meet all applicable building codes for site-built homes buildings.”
00381	10/03/2022	Caribbean Program Requirements, Version 1/1.1 (Rev.02)	Change	<p>Step 3 and 4 – Allowing conditional certification of units prior to building certification</p> <p>Issue: Since all of the dwelling units and common spaces in a building must be certified, partners have asked whether individual units within the building may be certified as they are completed, or if they need to wait to certify them until the building is complete. Partners have noted that it is common to finish up certain floors and close out with homebuyers before the units on other floors are completed.</p> <p>Resolution: The intent of the MFNC is to certify the building when the verification for all dwelling units and common spaces is complete. EPA recognizes that partners may want to be able to provide certificates to homebuyers prior to completion of the building. Therefore, EPA has developed a new process to allow a conditional certification approach under the ERI path. At the Provider’s discretion, individual dwelling units may be conditionally certified prior to the building completion if the following process is observed:</p> <ol style="list-style-type: none"> i. The Provider must generate a Conditional ENERGY STAR Certification Disclosure letter to be included with the label and certificate for the homebuyer of each conditionally certified unit. ii. Once verification on all dwelling units and common spaces is complete, and the whole building is certified, the Provider must generate an ENERGY STAR Certification Confirmation letter for the builder to deliver to the applicable homebuyers. <p>In the event that any dwelling unit or common space in the building is ultimately unable to be verified, the building will not be able to earn certification; the Provider must decertify any conditionally certified units; and the builder must notify the applicable homebuyers.</p> <p>The second paragraph of Step 3 will be revised as follows:</p> <p>“...The Rater must review all items on the National Rater checklists <u>for the whole building</u>. Raters are expected to use their experience and discretion to verify that the overall intent of each inspection checklist item has been met (i.e., identifying major defects that undermine the intent of the checklist item versus identifying minor defects that the Rater may deem acceptable). ...”</p> <p>Step 4 will be revised as follows:</p>

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				<p><u>“Once verification on all units and common spaces is complete, submit the whole building to the HCO or MRO for final certification (see alternative below). Finally, the following steps are required:</u></p> <p>a. <u>ERI Path: submit the building to the HCO for final certification and follow the HCO’s certification and oversight procedures (e.g. quality assurance, recordkeeping, and reporting).</u></p> <p><u>Generally, buildings must be submitted for certification after verification on all units and common spaces is complete. Alternatively, at the discretion of the Provider, individual dwelling units may be conditionally certified prior to the building completion if the following process is observed:</u></p> <p>i. <u>The Provider must generate a Conditional ENERGY STAR Certification Disclosure letter to be included with the label and certificate for the homebuyer of each conditionally certified unit.</u></p> <p>ii. <u>Once verification on all dwelling units and common spaces is complete, and the whole building is certified, the Provider must generate an ENERGY STAR Certification Confirmation letter for the builder to deliver to the applicable homebuyers.</u></p> <p><u>In the event that any dwelling unit or common space in the building is ultimately unable to be verified, the building will not be able to earn certification; the Provider must decertify any conditionally certified units; and the builder must notify the applicable homebuyers.</u></p> <p>MRO Prescriptive Path: <u>submit the building to the MRO for final certification with the Multifamily Workbook; the Caribbean Rater Field Checklist, construction documents; and photo documentation.”</u></p>
00213	08/17/2021	<i>Caribbean Program Requirements, Version 1/1.1 (Rev.02)</i>	Change	<p>Exhibit 1: ENERGY STAR Multifamily Reference Design– New envelope measure and PTAC allowance</p> <p>Issue: Partners have requested to use PTACs instead of mini-splits for cooling when cooling is not the main energy efficiency measure given procurement and maintenance challenges on the islands. Partners have also requested to use an improved envelope as a savings measure.</p> <p>Resolution: EPA agrees that additional packages may also achieve the ENERGY STAR performance target of at least 10% better than code. Based on partner feedback, EPA</p>

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				<p>created an envelope savings package for concrete construction which includes the following criteria:</p> <ul style="list-style-type: none"> • $\geq R-7.5$ wall insulation • $\geq R-38$ roof deck insulation • Window SHGC ≤ 0.25 <p>This package also requires that the project include mechanical cooling in all bedrooms.</p> <p>EPA also evaluated whether to allow cooling using PTACs instead of mini-splits. While mini-splits have significantly more potential for energy savings, EPA recognizes that there are challenges with use in multifamily projects on the islands. Since the energy savings are realized if high efficiency PTACs are used instead of mini-splits, EPA will allow this option to be used except for projects using Measure C: Bedroom Mini/Multi-Split HVAC. Where PTACs are used, they must meet an efficiency of ≥ 11.6 EER and Item 9.1 of Caribbean Rater Field Checklist, "Mini-Split HVAC System Pre-Installation Details" is still required.</p> <p>The Caribbean Program Requirements will be updated to include a new Measure D as well as the allowance for PTACs instead of mini-splits. Exhibit 1 will be updated as follows:</p> <p style="text-align: center;">Exhibit 1: ENERGY STAR Multifamily Reference Design</p> <p>The ENERGY STAR Multifamily Reference Design is the set of efficiency features required to be used to construct an ENERGY STAR Certified Multifamily Building in the Caribbean. Note that Measure A: Solar Water Heater, Measure B: Dwelling Unit Heat Pump Water Heaters, Measure C: Bedroom Mini/Multi-Split HVAC, or Measure D: Envelope Improvements must be selected and used in combination with all measures in the Envelope, Windows, & Doors section and Lighting & Appliances section. No tradeoffs are allowed. In addition, note that the Mandatory Requirements for All Certified Multifamily Projects, Exhibit 2, contain additional requirements such as prescriptive air sealing requirements and mini/multi-split wiring requirements.</p> <p>Cooling Equipment & Water Heating Equipment</p> <p>At least one of the following four measures shall be selected and met:</p> <ul style="list-style-type: none"> • Measure A: Solar Water Heater - DHW equipment shall include a solar water heater system with a Solar Fraction $\geq 87\%$. ¹¹ No space cooling is required if Measure A is selected, but if any space cooling is provided for dwelling units or common spaces, it must be provided using mini- or multi-split AC's or HP's ≥ 15 SEER OR PTACs with ≥ 11.6 EER. A single mini-split head is permitted to serve one or more bedrooms using up to 10 ft. of ductwork per head. • Measure B: Dwelling Unit Heat Pump Water Heater -DHW equipment serving dwelling units shall be an integrated heat pump water heater (HPWH) installed within the dwelling unit in a space with a volume of at least 1,000 ft³. The decibel rating on the HPWH must be less than or equal to 48 dba. No space cooling is required if Measure B is selected, but if any space cooling is provided for
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				<p>dwelling units or common spaces, it must be provided using mini/multi-split AC's or HP's ≥ 15 SEER OR PTACs with ≥ 11.6 EER. A single mini-split head is permitted to serve one or more bedrooms using up to 10 ft. of ductwork per head.</p> <ul style="list-style-type: none"> • Measure C: Bedroom Mini/Multi-Split HVAC – Mini/multi-split AC's or HP's ≥ 15 SEER, each with ≤ 10 ft. of ductwork, shall serve all bedrooms. No space cooling is required outside of bedrooms, but <u>if</u> any space cooling is provided outside bedrooms, it must be provided using mini/multi-split AC's or HP's ≥ 15 SEER. A single mini-split head is permitted to serve one or more bedrooms using up to 10 ft. of ductwork per head. • Measure D: Envelope Improvements – <ul style="list-style-type: none"> ○ Dwelling unit and common space wall insulation shall be ≥ R-7.5. ○ Roof deck insulation shall be ≥ R-38. ○ Windows in all dwelling units and common spaces shall meet the following specifications: <table border="1"> <tr> <td>Window U-Value:</td> <td>≤ 0.85</td> </tr> <tr> <td>Window SHGC:</td> <td>≤ 0.25</td> </tr> </table> ○ Mini/multi-split AC's or HP's ≥ 15 SEER, each with ≤ 10 ft. of ductwork, OR PTACs with ≥ 11.6 EER shall serve all bedrooms. No space cooling is required outside of bedrooms, but <u>if</u> any space cooling is provided outside bedrooms, it must be provided using mini/multi-split AC's or HP's ≥ 15 SEER OR PTACs with ≥ 11.6 EER. A single mini-split head is permitted to serve one or more bedrooms using up to 10 ft. of ductwork per head. 	Window U-Value:	≤ 0.85	Window SHGC:	≤ 0.25
Window U-Value:	≤ 0.85							
Window SHGC:	≤ 0.25							
00218	08/27/2021	<p>Rater Design Review Checklist, Version 1/1.1 (Rev.02)</p> <p>National Program Requirements, Version 1/ 1.1/ OR-WA 1.2 (Rev. 02)</p> <p>California Program Requirements Version 1.2 (Rev. 02)</p>	Change	High-performance insulation				
				<p>Issue: Partners have noted that for residential projects the MFNC insulation requirements do not always align with the code since the values are from the commercial chapter. This creates additional processing time to determine compliance over a residential baseline. Can projects choose to use the residential chapter for the insulation requirements instead of the commercial chapter?</p>				
				<p>Resolution: When designing the MFNC insulation levels, the commercial chapter was used in order to allow different building types to select more appropriate insulation requirements. However, based on partner feedback, EPA agrees that projects can choose to use either a residential or a commercial baseline. Projects must choose one chapter to reference for each item, and may not decide to reference the wall insulation levels from one chapter but the ceiling insulation levels from another. This flexibility will extend for Rater Design Review Checklist Items 3.1.2, 3.2.1, and 3.2.2.</p> <p>Items 3.1.2 and 3.2.2 for both Track A and B will be updated as follows:</p> <p>3.1.2: ERI and ASHRAE only: Specified ceiling ⁶, wall ⁷, floor, and slab-on-grade insulation levels meet or exceed values from either the 2009 IECC Residential chapter or the “Group R” column in the Commercial chapter. ^{8, 9, 10}</p>				

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				<p>3.2.2 ASHRAE only: Specified ceiling ⁶, wall ⁷, floor, and slab-on-grade insulation levels meet or exceed the values from either the 2009 IECC Residential chapter or the “All Other” column in the Commercial chapter. ^{8, 9, 10}</p> <p>Footnote 8 will be updated as follows:</p> <p>The following exceptions apply:</p> <ol style="list-style-type: none"> a. For ceilings with attic spaces, R-30 shall satisfy the requirement for R-38 and R-38 shall satisfy the requirement for R-49 wherever the full height of uncompressed insulation at the lower R-value extends over the wall top plate at the eaves. This exemption shall not apply if the alternative calculations in e) are used; b. For ceilings without attic spaces, that are not roofs with insulation above deck, R-30 shall satisfy the requirement for any required value above R-30 if the design of the roof / ceiling assembly does not provide sufficient space for the required insulation value. This exemption shall be limited to 20% of the total insulated ceiling area. This exemption shall not apply if the alternative calculations in e) are used; c. Common spaces following the ENERGY STAR Multifamily Reference Design should use the version of IECC specified and, where choosing the Commercial chapter, use the “All Other” column of either the commercial R-value or U-factor tables. To identify the assembly insulation requirement, use the row of the table that best corresponds to that assembly. Unlike Prescriptive Path dwelling units, the common spaces do not need to follow the row corresponding to a wood-framed building. d. Where identifying insulation requirements from the IECC, values from either the R-value or U-factor table may be used for compliance. When referencing the 2009 IECC Commercial chapter, projects in Climate Zone 4 and Climate Zone 5/Marine 4 may use U-0.089 and U-0.064 respectively for Group R wood-framed walls instead of the printed U-0.064 and U-0.051. e. An alternative total UA calculation may also be used to demonstrate compliance, as follows: A total building thermal envelope UA that is less than or equal to the total UA resulting from meeting the individual assembly U-factors also complies. The performance of all components (i.e., roofs, walls, floors, slabs-on-grade, and fenestration) can be traded off using the UA approach. Note that Items 1.5, 1.6, and 3.1 through 3.7 of the National Rater Field Checklist shall be met regardless of the UA tradeoffs calculated. The UA calculation shall be done using a method consistent with the ASHRAE Handbook of Fundamentals and shall include the thermal bridging effects of framing materials. The calculation for a steel-frame envelope assembly shall use the ASHRAE zone method or a method providing equivalent results, and not a series-parallel path calculation method. <p>A new footnote will be added to Items 3.1.2, 3.2.1, and 3.2.2 as follows:</p> <p>For each Item, when referencing either IECC Residential or Commercial, all building components subject to that Item shall meet or exceed the residential levels or all building components shall meet or exceed the commercial levels. It is not permitted to choose the Residential chapter for one building component within an Item and the Commercial chapter for another building component within the same Item. However, it is permitted to choose the IECC residential levels for Item 3.1.2 and choose the IECC commercial levels for Item 3.2.2 (or vice versa).</p>
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				<p>The Common Space Applicability Notes in the National Program Requirements will be updated as follows:</p> <p>When using the Reference Design for common space measures as specified in the National Rater Design Review and Rater Field Checklist, the following notes apply.</p> <p>1) Insulation levels for common spaces in Version 1 and Version 1.1 are not the values shown in the Reference Design. For Version 1, common space insulation levels must meet or exceed the levels in the 2009 IECC Residential or Commercial chapter. For Version 1.1, common space insulation levels must meet or exceed the levels in the 2012 IECC Residential or Commercial chapter. Projects may only reference one chapter for the building. When referencing the Commercial chapter, the required values should come from the “All Other” column and the row that corresponds to the building assembly (e.g., a building with steel-frame walls would use the value in the ‘Metal framed’ row).</p> <p>The Common Space Reference Design in the California Program Requirements will be updated as follows:</p> <table border="1"> <tr> <td>Envelope & Windows</td> </tr> <tr> <td> <ul style="list-style-type: none"> Insulation must meet Quality Insulation Installation (QII) per California’s Building Energy Efficiency Standards levels and meet or exceed 2012 IECC residential or commercial levels. Projects must use all the values from one chapter. When referencing the Commercial chapter, the required values should come from the “All Other” column and the row that corresponds to the building assembly (e.g., a building with steel-frame walls would use the value in the ‘Metal framed’ row).¹ </td> </tr> </table>	Envelope & Windows	<ul style="list-style-type: none"> Insulation must meet Quality Insulation Installation (QII) per California’s Building Energy Efficiency Standards levels and meet or exceed 2012 IECC residential or commercial levels. Projects must use all the values from one chapter. When referencing the Commercial chapter, the required values should come from the “All Other” column and the row that corresponds to the building assembly (e.g., a building with steel-frame walls would use the value in the ‘Metal framed’ row).¹
Envelope & Windows						
<ul style="list-style-type: none"> Insulation must meet Quality Insulation Installation (QII) per California’s Building Energy Efficiency Standards levels and meet or exceed 2012 IECC residential or commercial levels. Projects must use all the values from one chapter. When referencing the Commercial chapter, the required values should come from the “All Other” column and the row that corresponds to the building assembly (e.g., a building with steel-frame walls would use the value in the ‘Metal framed’ row).¹ 						
00003	06/08/2019	Rater Design Review Checklist, Version 1 / 1.1	Refinement	<p>High-Performance Fenestration Footnote 4</p> <p>Issue: Partners have noted an incorrect reference to items “a) through d), above”, when describing the exclusion for PHIUS+ or PHI certified buildings with triple-glazed window assemblies.</p> <p>Resolution: EPA has confirmed that the reference was incorrect. As a result, the last sentence in Footnote 4 of the Rater Design Review Checklist will be revised as follows:</p> <p>“In PHIUS+ or PHI certified buildings, where triple-glazed window assemblies with thermal breaks / spacers between the panes are used, such windows meet the intent of Items 2.1 and 2.2 and shall be excluded when assessing compliance of i) through iii), above.”</p>		
00037	11/01/2019		Change	IAQ concerns in units adjacent to parking garages		

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		Rater Design Review Checklist, Version 1/1.1		<p>Issue: Partners have asked why the program requires CO sensors in the parking garages, but not within the dwelling units adjacent to the parking garages.</p> <p>Resolution: EPA recommends but does not require CO alarms installed in each sleeping zone. The CO sensors on the garage exhaust fans are an energy-efficiency measure rather than an IAQ measure. The following change will be made in Rev01 documents to address this concern:</p> <p>Item 5.1.6 will include a footnote that states:</p> <p>“For dwelling or sleeping units adjacent to garages, EPA recommends, but does not require, carbon monoxide (CO) alarms installed in a central location in the immediate vicinity of each separate sleeping zone and according to NFPA 720”</p>
00474	10/03/2022	Rater Design Review Checklist, Version 1/1.1 (Rev.02)	Clarification	<p>Clarifying mandatory Items by Path</p> <p>Issue: The headings on some Items refer to a specific Path. The other Items do not have a designation and it should be clarified those are required for all Paths.</p> <p>Resolution: The program is designed such that there are three options to meeting the performance target and each are a varying mix of mandatory and modeled measures. In the “Prescriptive” Path, all of the efficiency measures are prescribed either directly in the National Rater Design Review and Rater Field checklists or in the Reference Design. In the ERI Path, common spaces follow similar requirements as the Prescriptive Path, but there are fewer mandatory or “prescriptive” measures required in the dwelling unit, and a less stringent backstop on other efficiency measures in the dwelling unit. In the ASHRAE Path, relative to the ERI Path, there are fewer mandatory or “prescriptive” measures in the common spaces, as well as a less stringent backstop on some common space measures.</p> <p>Regardless of the Path, the National Rater Field Checklist and this Checklist have efficiency requirements included that are mandatory for all paths, and as noted above requirements that are more stringent for certain paths.</p> <p>For example, the Item may say “Prescriptive Path:” or “ASHRAE only”. Where it says “Prescriptive Path” it is only required for that Path. Where it says “ASHRAE only, that option may only be used by the ASHRAE Path. This is not an indication that only the Items with this text apply to those Paths. All Items without a label are mandatory for all Paths.</p> <p>To reduce confusion in the Checklists, a sentence will be added to Footnote 1 that states: “These requirements apply to all Paths, unless otherwise specified.”</p>

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00038	11/01/2019	Rater Design Review Checklist, Version 1/1.1	Change	<p>Integration of HVAC grading path</p> <p>Issue: A new standard is nearing finalization, ANSI / ACCA / RESNET Std. 310 - Standard for Grading the Installation of HVAC Systems. This standard will provide a pathway for Raters to complete an HVAC design review and assess the installation quality of unitary HVAC systems as Grade I, II, or III.</p> <p>For a project where this standard is used to determine that the installation quality of the applicable in-unit HVAC systems are Grade I or II, many of the HVAC-related requirements in the program will be satisfied. Therefore, a new compliance path within the MFNC program that leverages this new standard, upon completion, could offer multiple benefits. At the same time, the original path for satisfying the program’s HVAC design and installation requirements, which relies upon the use of a functional testing agent for dwelling unit HVAC Commissioning, could be maintained.</p> <p>This would allow partners to transition to the new compliance path as they are prepared to do so, and if they find value in the new path, while minimizing disruption to the certification process as the new path is deployed.</p> <p>Resolution: A compliance path (Path A – Dwelling Unit HVAC Grading) will be developed within the program for residential HVAC systems serving individual dwelling units that leverages the new ANSI / ACCA / RESNET Std. 310, upon completion, while maintaining the original path that relies upon a Functional Testing Agent (Path B – Dwelling Unit HVAC Commissioning). Specifically, the following edits will be made:</p> <ol style="list-style-type: none"> <li>1. The existing requirements will be rebranded as the requirements that must be completed if pursuing Path B – Dwelling Unit HVAC Commissioning and moved to the second page of the document. <li>2. A new table will be added to the first page and branded as the requirements that must be completed if pursuing Path A – Dwelling Unit HVAC Grading. The first three sections of this table will contain identical requirements to the Path B table. The fourth section will reference the design review required by ANSI / RESNET / ACCA Std. 310, plus require ENERGY STAR-specific design documentation and design criteria, as follows:
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				<p style="text-align: center;">If pursuing Path A – Dwelling Unit HVAC Grading, complete this page.³</p> <p>Project Name: _____ Number of Units: _____ Permit Date: _____ Project Address: _____ City: _____ State: _____</p> <table border="1"> <thead> <tr> <th>1. Partnership Status</th> <th>Must Correct</th> <th>Rater Verified</th> </tr> </thead> <tbody> <tr> <td>1.1 Rater has verified and documented that builder or developer has an ENERGY STAR partnership agreement using www.energystar.gov/partnerlocator. Builder name: _____ Developer name: _____</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>1.2 ASHRAE Only: Rater has verified that modeler is listed in the online directory using www.energystar.gov/ASHRAEdirectory. 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Path A – Dwelling Unit HVAC Grading shall not be used until an Effective Date has been defined by RESNET for ANSI / RESNET / ACCA Std. 310. Path A – Dwelling Unit HVAC</p>	1. Partnership Status	Must Correct	Rater Verified	1.1 Rater has verified and documented that builder or developer has an ENERGY STAR partnership agreement using www.energystar.gov/partnerlocator . Builder name: _____ Developer name: _____	<input type="checkbox"/>	<input type="checkbox"/>	1.2 ASHRAE Only: Rater has verified that modeler is listed in the online directory using www.energystar.gov/ASHRAEdirectory . Modeler name: _____ (Not required for projects in California)	<input type="checkbox"/>	<input type="checkbox"/>	2. 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				Grading shall then use ANSI / RESNET / ACCA Std. 310 including all Addenda and Normative Appendices, with new versions and Addenda implemented according to the Effective Date and Transition Period End Date defined by RESNET. RESNET interpretations of Standard 310 shall also be followed.”
00039	11/01/2019	Rater Design Review Checklist, Version 1/1.1	Change	Performance Requirements for glazed entrance doors in Common Spaces
				Issue: The requirements for Class AW “windows” don’t seem to include glazed entrance doors, but there are no other requirements specified.
				<p>Resolution: EPA’s intent was for the Class AW requirement to reference code requirements for “fenestration” as applicable.</p> <p>The third column of the table in Footnote 4 of the Rater Design Review Checklist will be revised to state: “Dwelling unit windows and doors that are classified as “Class AW”</p>
00040	11/01/2019	Rater Design Review Checklist, Version 1/1.1	Clarification	California energy modeler orientation for whole-building Path
				Issue: Partners have asked whether an energy modeler using the whole-building California path needs to take the ASHRAE modeler orientation and be listed in the directory.
				<p>Resolution: Modelers in California are not required to complete the ASHRAE modeler orientation nor are they required to be listed in the directory. While these requirements appear correctly in the National and California Program Requirements documents, to reduce confusion when the Rater is completing the Rater Design Review Checklist Item 1.2 for a project in California, this will be explicitly stated in Rev01 of that checklist as follows:</p> <p>“ASHRAE Only: Rater has verified that modeler is listed in the online directory using www.energystar.gov/ASHRAEdirectory “</p> <p>Modeler name: _____ (Not required for projects in California)</p>
00041	11/01/2019	Rater Design Review Checklist, Version 1/1.1	Clarification	Applicability of requirements to parking garages
				Issue: Partners have noted confusion regarding the footnote in the program documents that describes parking garages and when parking garages are considered common space and whether all parking garages are subject to the requirements.

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				<p>Resolution: EPA’s intent is for the requirements to apply to open and enclosed garages that are part of the building being certified and do not apply to separate parking structures or those where the energy costs are not the responsibility of the Owner/Developer (ie. commercial).</p> <p>The first two sentences of Footnote 1 will be revised in Rev01 as follows:</p> <p>This Checklist applies to all dwelling units, sleeping units, common spaces ², and garages (open or enclosed) in the building being certified, and where specified, parking lots. These requirements do not apply to parking garages or lots where the cost of the energy use of the parking garage or lot is not the responsibility of the Builder/Developer, Building Owner or Property Manager.</p>
00042	11/01/2019	Rater Design Review Checklist, Version 1/1.1	Clarification	<p>Definition of “common spaces”</p>
				<p>Issue: Partners have noted that the footnote in the program documents, that explains what the term ‘common space’ means, is confusing with respect to determining eligibility, and applicability of requirements in certain spaces, such as commercial day-care facilities and common spaces on the property but not in the building being certified.</p>
				<p>Resolution: EPA agrees that this footnote could be revised to provide better clarity with respect to the intent of the program and the applicability of the requirements in certain spaces. Day-care facilities will be removed from the list since they are usually open to the public, not just building residents. It was also clarified that common spaces on the property, but not within the building, are not be included.</p> <p>Footnote 2 will be revised in Rev01 as follows:</p> <p>2. The term ‘common space’ refers to any spaces in the building being certified that serve a function in support of the residential part of the building that is not part of a dwelling or sleeping unit. This includes spaces used by residents, such as corridors, stairs, lobbies, laundry rooms, exercise rooms, residential recreation rooms, and dining halls, as well as offices and other spaces used by building management, administration or maintenance in support of the residents.</p>
00416	10/03/2022	Rater Design Review Checklist,	Refinement	<p>Allowed use of ANSI / RESNET / ACCA Std. 310</p>
				<p>Issue: Footnote 1 states, in part, that ANSI / RESNET / ACCA / ICC 310 shall not be used until an implementation schedule has been defined by the HCO that the building is being certified under. This restriction was necessary at the time the footnote was added because</p>

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		Version 1/1.1 (Rev.02)		<p>ANSI / RESNET / ACCA / ICC 310 was still being finalized and was not yet incorporated by reference into ANSI / RESNET / ICC 301. In addition, the one HCO approved at that time had to put training, reporting, and other components in place before the standard could be effectively used and overseen.</p> <p>At this time, ANSI / RESNET / ACCA / ICC 310 has been finalized and incorporated by reference into ANSI / RESNET / ICC 301. In addition, the one HCO that was approved at the time has put in place the necessary oversight structures for the new standard and defined an implementation date. Going forward, all HCO's will support the standard and all MROs will support the standard by 1/1/2024, which is when the next revision will be enforced.</p> <p>Resolution: As a result of these developments, the language in this Footnote can be streamlined as follows: “Track A – HVAC Grading shall not be used until an implementation schedule has been defined for ANSI / RESNET / ACCA Std. 310 by the HCO that the building is being certified under. Track A – HVAC Grading by Rater shall then use ANSI / RESNET / ACCA Std. 310 including all Addenda and Normative Appendices, with new versions and Addenda implemented according to the schedule defined by the HCO that the building is being certified under.”</p>
00393	10/03/2022	Rater Design Review Checklist, Version 1/1.1 (Rev.02)	Refinement	<p>Item 1.1 – Website URL updated</p> <p>Issue: The URL in Item 1.1 currently leads to the Partner Locator page. The URL should be updated to direct to the Residential Builders/Developers and Energy Rating Companies page so that project teams can more easily verify whether a builder has an ENERGY STAR partnership agreement.</p> <p>Resolution: The URL in Item 1.1 of the National Rater Design Review Checklist will be updated to direct to the Residential Builders/Developers and Energy Rating Companies page. Because the URL is long, the alias www.energystar.gov/ResPartnerDirectory will be used to direct to the appropriate page.</p>
00434	10/03/2022	Rater Design Review Checklist, Version 1/1.1 (Rev.02)	Refinement	<p>Item 1.2 - Improve conciseness</p> <p>Issue: The first sentence went on to a second line.</p> <p>Resolution: The first sentence in Item 1.2 will be updated as follows: “ASHRAE Only: Rater has verified that modeler is listed in the online directory; using www.energystar.gov/ASHRAEdirectory.”</p>

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00441	10/03/2022	Rater Design Review Checklist, Version 1/1.1 (Rev.02)	Refinement	<p>Item 2 – Improve clarity of fenestration requirements</p> <p>Issue: Common space windows are only compared to the Class AW windows in the reference design but this is not included in the checklist Item. Also, the fenestration requirements are different for National v1.2 as compared to the other versions. It may be confusing to have all of the requirements combined in the same table.</p> <p>Resolution: To improve clarity, Item 2.2.1 will be updated to include “for Class AW windows”, the headers for the fenestration table will be updated to differentiate between residential windows and “Class AW” windows, and the fenestration table will be split into two. Item 2.2.1 will be revised as follows: “ERI and Prescriptive: Specified fenestration meets or exceeds ENERGY STAR MF Reference Design requirements <u>for Class AW windows.</u>” The beginning of Footnote 5 will be revised as follows: “All windows, doors and skylights must meet or exceed the U-factor and SHGC requirements specified in the <u>Tables 1 or 2</u> below.” The fenestration tables in Footnote 5 will be updated as follows:</p> <p>Table 1: All Versions except National v1.2:</p> <table border="1"> <thead> <tr> <th></th> <th>Residential Dwelling unit doors and windows that are (i.e., not classified “Class AW”*)</th> <th>Structural Dwelling unit windows and doors that are classified as “Class AW”* and all skylights</th> <th>Common Space †</th> </tr> </thead> <tbody> <tr> <td>ERI</td> <td>2009 IECC Table 402.1.1 ⁶</td> <td>2009 IECC Table 502.3 ⁶</td> <td>ENERGY STAR MF Reference Design – for Class AW</td> </tr> <tr> <td>ASHRAE</td> <td>2009 IECC Table 402.1.1 ⁶</td> <td>2009 IECC Table 502.3 ⁶</td> <td>2009 IECC Table 502.3 ⁶</td> </tr> <tr> <td>Prescriptive</td> <td>ENERGY STAR MF Reference Design</td> <td>Windows and Doors: ENERGY STAR MF Reference Design – for Class AW Skylights: 2012 IECC Table 402.3 ⁶</td> <td>ENERGY STAR MF Reference Design – for Class AW</td> </tr> </tbody> </table> <p>Table 2: National v1.2</p> <table border="1"> <thead> <tr> <th></th> <th>Residential Dwelling unit doors and windows</th> <th>Structural Dwelling unit windows and doors that</th> <th>Common Space †</th> </tr> </thead> </table>		Residential Dwelling unit doors and windows that are (i.e., not classified “Class AW”*)	Structural Dwelling unit windows and doors that are classified as “Class AW”* and all skylights	Common Space †	ERI	2009 IECC Table 402.1.1 ⁶	2009 IECC Table 502.3 ⁶	ENERGY STAR MF Reference Design – for Class AW	ASHRAE	2009 IECC Table 402.1.1 ⁶	2009 IECC Table 502.3 ⁶	2009 IECC Table 502.3 ⁶	Prescriptive	ENERGY STAR MF Reference Design	Windows and Doors: ENERGY STAR MF Reference Design – for Class AW Skylights: 2012 IECC Table 402.3 ⁶	ENERGY STAR MF Reference Design – for Class AW		Residential Dwelling unit doors and windows	Structural Dwelling unit windows and doors that	Common Space †
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					ERI	2021 IECC Table 402.1.2 ⁶	2021 IECC Table C402.4 ⁶	ENERGY STAR MF Reference Design – for Class AW		
					ASHRAE	2021 IECC Table 402.1.2 ⁶	2021 IECC Table C402.4 ⁶	2021 IECC Table C402.4 ⁶		
					Prescriptive	ENERGY STAR MF Reference Design	Windows and Doors: ENERGY STAR MF Reference Design – for Class AW Skylights: 2012 IECC Table 402.3 ⁶	ENERGY STAR MF Reference Design – for Class AW		
00448	10/03/2022	Rater Design Review Checklist, Version 1/1.1 (Rev.02)	Refinement	Item 2 – Align with SFNH language for exceptions						
				Issue: For fenestration requirements, the SFNH National Rater Design Review Checklists refers to “exceptions” whereas this checklist refers to “exemptions”						
				Resolution: To align with SFNH, the phrase “The following exemptions apply” in Footnote 5 will be updated to “The following exceptions apply”						
00440	10/03/2022	Rater Design Review Checklist, Version 1/1.1 (Rev.02)	Refinement	Item 3 – Improve clarity of insulation requirements						
				Issue: The insulation requirements vary by path, location in the building and Version. It would be more clear if they were also displayed in table format similar to the fenestration requirements.						
				<p>Resolution: To improve clarity, tables will be added to visually display the insulation requirements.</p> <p>The beginning of Footnote 8 will also be revised as follows: “To comply with Items 3.1 and 3.2, specified ceiling, wall, floor, and slab-on-grade insulation must meet or exceed the levels in Tables 3 or 4 below based on location, Path, and the program version used to certify the building.”</p> <p>The new sentence added from PR 00287 regarding steel-framing will be moved from the top of the footnote to a note below the Tables.</p> <p>Table 3: All Versions Except National v1.2:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;"></th> <th style="width: 25%;">Dwelling Unit Options</th> <th style="width: 25%;">Common Space Options</th> </tr> </thead> <tbody> <tr> <td style="height: 20px;"></td> <td></td> <td></td> </tr> </tbody> </table>						Dwelling Unit Options
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00450	10/03/2022	Rater Design Review Checklist, Version 1/1.1 (Rev.02)	Change	<p>Item 3.1 – Allowance for insulation on top of slab in new construction</p> <p>Issue: Item 3.1 requires the specified total building thermal envelope UA to meet one of several options. Footnote 9 clarifies when slab insulation is required to be part of the thermal envelope and provides an allowance to install insulation on top of the slab. Partners have asked whether this allowance can be applied to new construction.</p> <p>Resolution: The option to install insulation on top of the slab will be extended to all buildings. While slab edge insulation is generally the most cost-effective strategy, and remains the best practice recommended by EPA, this allowance will provide a backup compliance pathway that may be useful in special circumstances.</p> <p>The last two sentences of Footnote 9 will be revised as follows: “Alternatively, the thermal break is permitted to be created using ≥ R-3 rigid insulation on top of an existing the slab (e.g., in a building undergoing a gut rehabilitation). In such cases, up to 10% of the slab surface is permitted to not be insulated (e.g., for sleepers, for sill plates). Insulation installed on top of slab shall be covered by a durable floor surface (e.g., hardwood, tile, carpet).”</p>																									
00297	07/06/2022	Rater Design Review Checklist, Version 1/1.1 (Rev.02)	Clarification	<p>Items 3.1 and 3.2 – Minimum insulation levels exceptions</p> <p>Issue: Footnote 8 lists exceptions to the minimum insulation levels described in Items 3.1 and 3.2. However, some of the items are not actually exceptions. In addition, it is not clear for the Residential Chapter what the requirements are for steel-framed buildings.</p>																									

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				<p>Resolution: Footnote 8 will be reorganized for clarity. The allowance to use either the U-factor or R-value will be moved to the top of the footnote outside of the list of exceptions. In addition, guidance for steel-framed buildings using the Residential Chapter will be added.</p> <p>Footnote 8 will be revised as follows:</p> <p><u>Where identifying insulation requirements from the IECC, values from either the R-value or U-factor table may be used for compliance. When referencing the R-value from the Residential chapter, steel-frame components must use the table for steel-frame ceilings, walls, and floors.</u></p> <p>The following exceptions apply:</p> <ol style="list-style-type: none"> For ceilings with attic spaces, R-30 shall satisfy the requirement for R-38 and R-38 shall satisfy the requirement for R-49 wherever the full height of uncompressed insulation at the lower R-value extends over the wall top plate at the eaves. This exemption shall not apply if the alternative calculations in e) are used; For ceilings without attic spaces, that are not roofs with insulation above deck, R-30 shall satisfy the requirement for any required value above R-30 if the design of the roof / ceiling assembly does not provide sufficient space for the required insulation value. This exemption shall be limited to 20% of the total insulated ceiling area. This exemption shall not apply if the alternative calculations in e) are used; Common spaces following the ENERGY STAR Multifamily Reference Design should use the version of IECC specified and the “All Other” column of either the commercial R-value or U-factor tables. To identify the assembly insulation requirement, use the row of the table that best corresponds to that assembly. Unlike Prescriptive Path dwelling units, the common spaces do not need to follow the row corresponding to a wood-framed building. Where identifying insulation requirements from the commercial chapter of IECC, values from either the R-value or U-factor table may be used for compliance. When referencing the 2009 IECC, projects in Climate Zone 4 and Climate Zone 5/Marine 4 may use U-0.089 and U-0.064 respectively for Group R wood-framed walls instead of the printed U-0.064 and U-0.051. An alternative total UA calculation may also be used to demonstrate compliance, as follows: A total building thermal envelope UA that is less than or equal to the total UA resulting from meeting multiplying the individual assembly U-factors also complies. The performance of all components (i.e., roofs, walls, floors, slabs-on-grade, and fenestration) can be traded off using the UA approach. Note that Items 1.5, 1.6, and 3.1 through 3.7 of the National Rater Field Checklist shall be met regardless of the UA tradeoffs calculated. The UA calculation shall be done using a method consistent with the ASHRAE Handbook of Fundamentals and shall include the thermal bridging effects of framing materials. The calculation for a steel-frame envelope assembly shall use the ASHRAE zone method or a method providing equivalent results, and not a series-parallel path calculation method.
00125	10/30/2020	Rater Design Review Checklist,	Clarification	<p>Item 3.1 and 3.2 – Location of High-Performance Insulation</p> <p>Issue: Partners have noted that in multifamily buildings, there are exterior envelope assemblies but also interior envelope assemblies that may be adjacent to spaces of varying space conditioning (i.e., stairwells, garages, corridors, adjacent buildings, etc). It is not entirely</p>

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		Version 1/1.1 (Rev.01)		<p>clear which envelope assemblies the ENERGY STAR program requirements for High-Performance Insulation apply to. Additionally, there are multiple types of ceilings that could be better described in order to understand where specifically the ceiling insulation requirements apply.</p> <p>Resolution: Building envelope assemblies adjacent to exterior or ambient/ground conditions, where significant heat loss may occur, are required to be insulated by energy codes. The intent of Item 3.1 and 3.2 are to ensure a minimum performance value for these insulated envelope assemblies, when they are part of the <i>building thermal envelope</i>.</p> <p>While Footnote 6 is clear that insulation is not required for adiabatic ceilings, it is also not required for ceilings adjacent to other unconditioned or semi-conditioned spaces that are within the building thermal envelope, but not truly “adiabatic”. To provide additional clarity, additional examples of ceiling types that are subject to this requirement are being added as follows, which align with similar language in the Rater Field Checklist:</p> <p style="padding-left: 40px;">“All insulated ceiling surfaces, regardless of slope (e.g., cathedral ceilings, tray ceilings, conditioned attic roof decks, flat ceilings, sloped ceilings), must meet the requirements for ceilings, unless the ceiling is adiabatic, such as the insulated or uninsulated ceiling between two dwelling units in a multistory building. Where the term “ceiling” is used, the component insulation levels for “roofs” shall be used”.</p> <p>While Footnote 7 is explicit about the insulation requirements applying to walls “adjacent to other buildings”, it was not the intent to require insulation at interior walls “adjacent to unconditioned spaces within the building”. To provide greater clarity, that text will be struck from Footnote 7 and it will be revised as follows:</p> <p style="padding-left: 40px;">“Items 3.1 and 3.2 are applicable to walls that are adjacent to other buildings, the exterior, or a garage.”</p>
00295	07/06/2022	Rater Design Review Checklist, Version 1/1.1 (Rev.02)	Change	<p>Item 3.2 – ERI and Prescriptive Path common space insulation levels</p> <p>Issue: The development of Version 1.2 increased the complexity of certain program requirements that already had differences across certifications paths. For common space insulation, keeping the variation across the paths in addition to the differences for versions and the option for residential or commercial code would potentially cause significant partner confusion.</p>

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				<p>Resolution: To reduce complexity and confusion, all paths in the same Version will have the same insulation requirements for common spaces.</p> <p>Item 3.2 will be revised as follows:</p> <p>3.2 Common space: Either the Residential chapter or the “All Other” column in the Commercial chapter of the 2009 IECC or, for National v1.2, the 2021 IECC. See exception in Footnote 9. ¹²</p> <p>Item c from Footnote 8 will be removed.</p>
00478	10/03/2022	Rater Design Review Checklist, Version 1/1.1 (Rev.02)	Refinement	<p>Item 3.4 – Adding “US Territory”</p>
				<p>Issue: Item 4b.2.2 only references “County & State” and does not include a reference to US Territory.</p>
				<p>Resolution: The intent was to include US Territories.</p> <p>Item 4b.2.2 will be revised as follows:</p> <p>“Cooling season and heating season outdoor design temperatures used in loads (3.4) are within the limits defined for the State and County, <u>or US Territory</u>, where the building will be built, or the designer has provided an allowance from EPA to use alternative values. All limits are published at www.energystar.gov/hvacdesigntemps. Note that revised (i.e., 2019 Edition) limits are required to be used for all HVAC Design Reports generated after 07/01/2020.”</p>
00043	11/01/2019	Rater Design Review Checklist, Version 1/1.1	Clarification	<p>Guidance on how to determine conditioned floor area and window area</p>
				<p>Issue: Items 4.2.4 and 4.2.5 currently do not include guidance on how a Rater should calculate “Conditioned Floor Area” and “Window Area”, which could cause inadvertent discrepancies between the values determined by them and by HVAC designers on the HVAC Design Report.</p>
				<p>Resolution: Raters are required to calculate these values using ANSI / RESNET / ICC Standard 301-2019.</p> <p>A new footnote will be added to Item 4.2.4 as follows:</p> <p>“Conditioned Floor Area for the dwelling unit to be certified shall be calculated in accordance with the definition in ANSI / RESNET / ICC Standard 301-2019.”</p> <p>A new footnote will be added to Item 4.2.5 as follows:</p>

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				<p>“Window area for the dwelling unit to be certified shall be calculated in accordance with the on-site inspection protocol provided in Normative Appendix B of ANSI / RESNET / ICC Standard 301-2019.”</p>
00044	11/01/2019	Rater Design Review Checklist, Version 1 / 1.1	Clarification	<p>Required insulation levels</p>
				<p>Issue: Partners have asked whether projects have a choice to meet insulation levels in the ENERGY STAR Reference Design or the 2009 IECC Table 502.2(1) based on Footnote 7.</p>
				<p>Resolution: The intent of the requirement is to meet the level specified in the applicable requirement in Section 3 High Performance Insulation. Footnote 7 provides options for meeting those levels. EPA agrees that the first sentence of Footnote 7 is confusing and Footnote 7 will be revised as follows:</p> <p>“The following exceptions apply:</p> <ul style="list-style-type: none"> a. For ceilings with attic spaces, R-30 shall satisfy the requirement for R-38 and R-38 shall satisfy the requirement for R-49 wherever the full height of uncompressed insulation at the lower R-value extends over the wall top plate at the eaves. This exemption shall not apply if the alternative calculations in e) are used; b. For ceilings without attic spaces, that are not roofs with insulation above deck, R-30 shall satisfy the requirement for any required value above R-30 if the design of the roof / ceiling assembly does not provide sufficient space for the required insulation value. This exemption shall be limited to 20% of the total insulated ceiling area. This exemption shall not apply if the alternative calculations in e) are used; c. Common spaces following the ENERGY STAR Multifamily Reference Design should use the version of IECC specified and the “All Other” column of either the commercial R-value or U-factor tables. To identify the assembly insulation requirement, use the row of the table that best corresponds to that assembly. Unlike Prescriptive Path dwelling units, the common spaces do not need to follow the row corresponding to a wood-framed building. d. Where identifying insulation requirements from the commercial chapter of IECC, values from either the R-value or U-factor table may be used for compliance. e. An alternative total UA calculation may also be used to demonstrate compliance, as follows:

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				<p>A total building thermal envelope UA that is less than or equal to the total UA resulting from meeting the individual assembly U-factors also complies. The performance of all components (i.e., roofs, walls, floors, slabs-on-grade, and fenestration) can be traded off using the UA approach. Note that Items 1.5, 1.6, and 3.1 through 3.7 of the National Rater Field Checklist shall be met regardless of the UA tradeoffs calculated. The UA calculation shall be done using a method consistent with the ASHRAE Handbook of Fundamentals and shall include the thermal bridging effects of framing materials. The calculation for a steel-frame envelope assembly shall use the ASHRAE zone method or a method providing equivalent results, and not a series-parallel path calculation method.”</p>
00311	07/06/2022	Rater Design Review Checklist, Version 1/1.1 (Rev.02)	Change	<p>Item 4 – Rater verification of non-applicable items</p> <p>Issue: Raters have indicated challenges in completing the Rater Design Review Checklist given that some items are not applicable to the building or are exempt from review in the HVAC Design Report, yet there is no “NA” column as is available in the Rater Field Checklist. The only option is for the Rater to leave the item blank or mark as “Rater Verified”, even if the item is not present.</p> <p>Resolution: EPA agrees that the Rater Design Checklist would be improved by adding a column for “N/A”.</p> <p>In addition, in Section 4b, Review of ENERGY STAR MFNC National HVAC Design Report, to provide more clarity on how a Rater should complete this section when systems are exempt from the load calculation requirements that are subject to Rater review, Item 4b.1 will be revised as follows:</p> <p>4b.1 National HVAC Design Report(s) collected for records, with no <u>applicable</u> Items left blank.</p> <p>The last sentence from Footnote 13 will be made into a new footnote attached to Item 4b.1 and revised as follows:</p> <p>The Rater is only responsible for verifying that the designer has not left any <u>applicable</u> items blank on the National HVAC Design Report and for verifying the discrete objective parameters in Item 4b.2 of this Checklist, not for verifying the accuracy of every input on the National HVAC Design Report.</p> <p>The new footnote added in PR 00229 attached to Item 4b.1 will be revised as follows:</p> <p>For Track B systems that are documented using the SFNH HVAC Design Report, where room-by-room loads are calculated using Unabridged ACCA Manual J v8 <u>and where occupant gains and non-occupant gains are not reported,</u> Items 4b.2.3 and 4b.2.8 may be marked “N/A”.</p>

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				<p>A new footnote will be added to Item 4b.2 as follows: <u>Where the HVAC designer has checked the “N/A” box in Section 3 of the National HVAC Design Report, the Rater shall confirm that all dwelling unit heating and cooling systems are exempt (i.e., non-ducted mini-splits or multi-splits, PTAC, or PTHP), and mark “N/A” for Items 4b.2.2-4b.2.10.</u></p>
00227	10/28/2021	<p><i>Rater Design Review Checklist, Version 1/1.1 (Rev.02)</i></p>	Refinement	<p>Item 4a & 4a.1 – Updated reference to program document name</p>
				<p>Issue: This section is titled “Review of ANSI / RESNET / ACCA Std. 310 HVAC Design Report with ENERGY STAR MFNC Supplement”. This Item requires that an “HVAC design report compliant with ANSI / RESNET / ACCA Std. 310 representing all applicable systems, with the ENERGY STAR MFNC supplement, [be] collected for records, with no Items left blank”. The new template for the ENERGY STAR supplement has recently been completed and is now in two parts, called the “National HVAC Design Supplement to Std. 310 for Dwellings & Units” and the “National HVAC Design Supplement to Std. 310 for Common Spaces & Central Systems”. The reference to this document in the Item should be updated with its final name.</p> <p>Resolution: This section and Item will be updated to use the final name of the new program document, as follows:</p> <p>4a “Review of ANSI / RESNET / ACCA Std. 310 HVAC Design Report with ENERGY STAR Supplements”</p> <p>4a.1 “HVAC design report(s) compliant with ANSI / RESNET / ACCA Std. 310, with the “ENERGY STAR National HVAC Design Supplement to Std. 310 for Dwellings & Units”, for all graded systems, and if applicable, the “National HVAC Design Supplement to Std. 310 for Common Spaces & Central Systems” collected for records, with no Items left blank”.</p>
00419	10/03/2022	<p>Rater Design Review Checklist, Version 1/1.1 (Rev.02)</p>	Clarification	<p>Item 4a.1 – Multiple design documents required to be collected for Track A</p>
				<p>Issue: This Item requires that an “HVAC design report compliant with ANSI / RESNET / ACCA Std. 310 representing all applicable systems, with the ENERGY STAR MFNC supplement, [be] collected for records, with no Items left blank”. Policy Record #00227 revised this Item by adding the final name of the ENERGY STAR supplements, called the “National HVAC Design Supplement to Std. 310 for Dwellings & Units” and “National HVAC Design Supplement to Std. 310 for Common Spaces & Central Systems”, as follows: “HVAC design report(s) compliant with ANSI / RESNET / ACCA Std. 310, with the ENERGY STAR National HVAC Design Supplement to Std. 310 for Dwellings & Units, and if</p>

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				<p>applicable, the National HVAC Design Supplement to Std. 310 for Common Spaces & Central Systems collected for records, with no Items left blank”.</p> <p>For consistency with other references to program document names, and for conciseness, it would be appropriate to remove the phrase “ENERGY STAR” from this Item. In addition, the word “with” may imply that the first two documents are a single integrated design document when in fact they are two separate sets of documents. Since each HVAC design report may have its own National HVAC Design Supplement to Std. 310 for Dwellings & Units, ‘Supplement’ should be plural. Since common spaces may or may not use these documents, and the Supplement to Std. 310 for Common Spaces & Central Systems is required for the building if there are any applicable systems, it also makes sense to separate the requirements into separate sub-items.</p>
				<p>Resolution: The intent is that two separate sets of design documents must be collected for each dwelling unit: a) the HVAC design report(s) compliant with ANSI / RESNET / ACCA / ICC 310 and b) the ENERGY STAR National HVAC Design Supplement(s) to Std. 310 for Dwellings & Units. An HVAC design report compliant with ANSI / RESNET / ACCA / ICC 310 must be collected for any common spaces using ANSI / RESNET / ACCA / ICC 310. For buildings with any common space or central systems, the ENERGY STAR National HVAC Design Supplement to Std. 310 for Common Spaces & Central Systems must also be collected. To clarify this intent, this Item will be further updated as follows:</p> <p>“4a.1 <u>The following documentation</u> collected for records, with no items left blank.</p> <p>4a.1.1 <u>For all dwelling units,</u> HVAC design report(s) compliant with ANSI / RESNET / ACCA Std. 310, with and the ENERGY STAR National HVAC Design Supplement(s) to Std. 310 for Dwellings & Units for all graded systems.</p> <p>4a.1.2 <u>For common spaces using ANSI / RESNET / ACCA 310,</u> HVAC design report(s) compliant with ANSI / RESNET / ACCA 310.</p> <p>4a.1.3 and, if applicable, the National HVAC Design Supplement to Std. 310 for Common Spaces & Central Systems.”</p>
00228	10/28/2021	Rater Design Review Checklist, Version 1/1.1 (Rev.02)	Change	<p>Item 4a.1 – Allowance to collect SFNH HVAC Design Report in lieu of HVAC Design Supplement to Std. 310 for Dwellings & Units</p> <p>Issue: This Item requires that an “HVAC design report compliant with ANSI / RESNET / ACCA Std. 310, with the ENERGY STAR MFNC supplement, [be] collected for records, with no Items left blank”. The new template for the ENERGY STAR supplement has recently been completed and is called the “National HVAC Design Supplement to Std. 310 for Dwellings & Units”.</p>

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				<p>Until the new template has been integrated into HVAC design software, designers who want to complete the form must do so manually. However, a potential alternative to completing the supplement would be for the designer to complete the current ENERGY STAR SFNH National HVAC Design Report, which has already been automated in HVAC design software.</p> <p>Resolution: While the ENERGY STAR SFNH National HVAC Design Report does not have the exact same fields as the new supplement, it does contain all of the essential information. Therefore, collection of the ENERGY STAR SFNH National HVAC Design Report in lieu of the supplement will still enable the Rater to ensure that all program requirements have been met.</p> <p>While EPA recommends that designers use the supplement in lieu of the ENERGY STAR SFNH National HVAC Design Report, particularly as soon as it is programmed into design software, requiring in the interim that designers complete the supplement manually or wait until the programming is complete to use Track A is not warranted.</p> <p>It should be noted that a designer will need to complete the ENERGY STAR SFNH National HVAC Design Report for each HVAC system, whereas a single supplement can be completed for an entire dwelling or dwelling unit, including those with multiple HVAC systems. In addition, when using this allowance, for projects with central hydronic distribution systems, such as water-loop heat pumps on a shared loop, central exhaust systems serving dwelling units, or common space HVAC systems that are not using Track A, the ENERGY STAR National HVAC Design Supplement to Std. 310 for Common Spaces & Central Systems must still be collected.</p> <p>This new allowance will be reflected in a new footnote to Item 4a.1, as follows:</p> <p>“As an alternative, the ENERGY STAR SFNH National HVAC Design Report may be collected in lieu of the ENERGY STAR National HVAC Design Supplement to Std. 310 for Dwellings & Units. In such cases, at least two documents will still be collected – an HVAC design report compliant with ANSI / RESNET / ACCA Std. 310 plus the ENERGY STAR SFNH National HVAC Design Report. Note that for projects with more than one HVAC system, one ENERGY STAR SFNH National HVAC Design Report per system would need to be collected. For projects with central systems or common space systems that are not using Track A, the ENERGY STAR National HVAC Design Supplement to Std. 310 for Common Spaces & Central Systems must also be collected.”</p>
00357	10/03/2022		Clarification	Items 4a.1 - Recognition that some HVAC design Items may not be applicable

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		Rater Design Review Checklist, Version 1/1.1 (Rev.02)		<p>Issue: This Item requires the Rater to collect HVAC design documentation and verify that no Items have been left blank. However, partners have noted that some HVAC design Items may not be applicable to a building.</p> <p>For example, in Track A, a dwelling unit without a furnace would indicate “N/A” for the Furnace Section of the ENERGY STAR Single-Family New Homes / Multifamily New Construction National HVAC Design Supplement to Std. 310 for Dwellings & Units. PR 00311 already updated Item 4b.1 to add the word ‘applicable’.</p> <p>Resolution: To clarify that some HVAC design Items may not be applicable, Item 4a.1 will be revised as follows:</p> <p>“HVAC design report(s) compliant with ANSI / RESNET / ACCA Std. 310 representing all applicable systems, with the ENERGY STAR MFNC supplement, collected for records, with no <u>applicable</u> Items left blank.”</p>
00230	10/28/2021	Rater Design Review Checklist, Version 1/1.1 (Rev.02)	Clarification	<p>Item 4a.2 – Remove explicit reference to “Std. 310 Rater Design Review Checklist”</p> <p>Issue: Item 4a.2 explicitly references an “ANSI / RESNET / ACCA Std. 310 Rater Design Review Checklist” that must be completed for applicable housing types. While a standalone checklist such as this was originally envisioned to support the implementation of Std. 310, the design review criteria have instead been integrated into tools that encompass additional tasks required by Std. 310 (e.g., RESNET’s publicly-available Excel-based Data Tool). Furthermore, Raters are permitted to create and/or use other tools to assist them in complying with Std. 310, so a singular reference to a “Std. 310 Rater Design Review Checklist” is no longer appropriate.</p> <p>Resolution: Rather than explicitly reference a formal “ANSI / RESNET / ACCA Std. 310 Rater Design Review Checklist”, this Item will be clarified and generalized to convey that the design review criteria defined within Std. 310 must be met. Item 4a.2 will be updated as follows:</p> <p>“ANSI / RESNET / ACCA 310 design review criteria have been met for applicable housing type.”</p>
00524	12/16/2022	Rater Design Review Checklist, Version	Clarification	<p>Item 4a.3 & Item 4b.2.1 – Maximum ventilation rate when using continuous exhaust</p> <p>Issue: The Rater Design Review Checklist limits the dwelling-unit mechanical ventilation rate to 150% of the minimum airflow rates recommended by ASHRAE 62.2-2013 for buildings</p>

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		1/1.1/1.2 (Rev.03)		<p>pursuing the Prescriptive Path. For dwelling units using continuous exhaust systems to simultaneously meet dwelling-unit mechanical ventilation requirements and local mechanical exhaust requirements in bathrooms and kitchens, this maximum is a challenge to meet due to the minimum airflow rates required for continuous local mechanical exhaust.</p> <p>Resolution: The intent of this requirement in the Prescriptive Path is to provide a maximum ventilation rate that limits energy usage without sacrificing indoor air quality. Given the importance of providing minimum local exhaust at the rates recommended by ASHRAE 62.2-2013, the maximum should be revised.</p> <p>Footnote 15 will be revised as follows: “Raters may use this table to determine the maximum ventilation rate allowed. <u>Where the Exhaust Fan Type in Item 2b of the HVAC Design Report indicates “Continuous” for both Bathroom and Kitchen, the Rater may use this equation to determine the maximum ventilation rate allowed: 30 CFM x number of bathrooms + 75 CFM</u>”.</p>
00420	10/03/2022	Rater Design Review Checklist, Version 1/1.1 (Rev.02)	Clarification	<p>Section 4 – Clarifying applicability of Track A and Track B</p> <p>Issue: Items 4a.1 through 4a.3 apply to the review of the ANSI / RESNET / ACCA / ICC 310 HVAC Design Report and ENERGY STAR Supplement when Track A – HVAC Grading by Rater is chosen. Items 4b.1 and 4b.2 apply to the collection and review of the ENERGY STAR National HVAC Design Report when Track B – HVAC Testing by FT Agent is chosen. Further guidance is needed to clarify when these Items are applicable, particularly for a building with less common HVAC system types (e.g., a building with a boiler and a chiller or no air conditioner).</p> <p>Resolution: To be eligible to use Track A, the dwelling units in the building must have at least one system within the scope of ANSI / RESNET / ACCA / ICC 310. As a result, it is possible, and EPA’s intent, for Item 4a.1 (collection of complete design documentation) and 4a.2 (review of design documentation in accordance with ANSI / RESNET / ACCA / ICC 310) to be completed for any building pursuing Track A. Item 4a.3 is applicable for all Prescriptive Path buildings. The final checklist Items for Track A, Items 4a.4 – 4a.6 are only applicable for air conditioners or heat pumps up to 65 kBtuh. EPA’s intent is for these Items to be completed if any dwelling units contain an air conditioner or heat pump; otherwise, the Item is not applicable.</p> <p>To clarify this intent, Footnote 3 will be revised as follows:</p>

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				<p><u>To be eligible for Track A – HVAC Grading by Rater, dwelling units must have at least one unitary HVAC system including air conditioners or heat pumps up to 65 kBtuh, or furnaces up to 125 kBtuh (i.e., within the scope of ANSI / RESNET / ACCA 310).</u> Track A – HVAC Grading by Rater shall not be used until an implementation schedule has been defined for ANSI / RESNET / ACCA Std. 310 by the Home Certification Organization (HCO) or Multifamily Review Organization (MRO) that the building is being certified under. Track A – HVAC Grading by Rater shall then use ANSI / RESNET / ACCA Std. 310 including all Addenda and Normative Appendices, with new versions and Addenda implemented according to the schedule defined by the HCO or MRO that the building is being certified under <u>for all dwelling unit systems.</u></p> <p>In addition, a new Footnote will be added to the end of the header for Section 4a, as follows: “If pursuing Track A, all dwelling units must complete Items 4a.1.1 and 4a.2. Item 4a.3 shall be completed for dwelling units in buildings pursuing the Prescriptive Path. Items 4a.4 through 4a.6 shall be completed if any dwelling units in the building to be certified contain an air conditioner or heat pump; otherwise, ‘N/A’ shall be checked. All common space systems and central systems must be documented within the HVAC Design Supplement to Std. 310 for Common Spaces & Central Systems. Where a system type within the scope of ANSI / RESNET / ACCA 310 serves a single common space, it may also be verified for MFNC using the ANSI / RESNET / ACCA 310 process, and then Items 4a.1.2 and 4a.2 must be completed.”</p> <p>Finally, Items 4a.4 through 4a.6 will be revised to have “Dwelling Units:” at the start of each Item to clarify it is only applicable to dwelling units.</p> <p>For Track B, the MFNC ENERGY STAR National HVAC Design Report was designed to accommodate all systems, but the Rater’s review of load calculations are only applicable to dwelling unit air conditioners, heat pumps, and furnaces.</p> <p>As a result, it is EPA’s intent that Item 4b.1 (collection of the National HVAC Design Report) always be completed, with Sections 1, 2 and 4 of the National HVAC Design Report always completed and Sections 3 and 5 completed if applicable systems are in the building. It is EPA’s intent that 4b.2.1 (review of prescriptive ventilation rates) be completed for all Prescriptive Path projects and 4b.2.2 – 4b.2.10 (review of the design documentation in accordance with the criteria in these Items) be completed if applicable systems are in the dwelling units; otherwise, completion of the review is recommended, but not required.</p> <p>To help clarify this intent, a new Footnote will be added to the end of the header for Section 4b, as follows:</p>
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				<p>“If pursuing Track B, then Section 4b shall be fully completed if any dwelling unit contains split air conditioners, unitary air conditioners, air-source heat pumps, water-source (i.e., geothermal) heat pumps up to 65 kBtuh with forced-air distribution systems (i.e., ducts), or furnaces up to 225 kBtuh with forced-air distribution systems (i.e., ducts). For a building without any of these system types in the dwelling units, collection of the National HVAC Design Report is still required and for all Prescriptive Path projects the report must be reviewed per Item 4b.2.1, but EPA does not require that the report be reviewed per Item 4b.2.2 – 4b.2.10.”</p> <p>To clarify that Item 4b.2 review is for all dwelling units as grouped within the National HVAC Design Report, for Items 4b.2.3 through 4b.2.6 and 4b.2.9, the phrase “the dwelling unit to be certified” will be revised to “each dwelling unit to be certified.”</p>
00241	03/17/2022	Rater Design Review Checklist, Version 1/1.1 (Rev.02)	Clarification	<p>Item 4b.2.9 – Confirming that all configurations have load calcs documented</p> <p>Issue: When reviewing the HVAC Design report, Item 4b.2.9 states that just the “orientation” of the dwelling unit to be certified should be reviewed by the Rater. This is not aligned with what is stated in Footnote 26 of the HVAC Design Report, which instructs the designer to document the loads for each “configuration” that the dwelling unit might be built in, which includes orientation, as well as level and location within the building.</p> <p>Resolution: The intent of the program was for the Rater to review the HVAC Design report and confirm that sensible and total heat gain were documented for all of the configurations of the dwelling units to be certified, which aligns with what the HVAC Designer is instructed to do.</p> <p>Item 4b.2.9 will be revised as follows:</p> <p>“Sensible & total heat gain are documented (3.15, 3.17) for the configuration of the dwelling unit to be certified.”</p> <p>Footnote 22 will also be revised as follows, to better align with how the text is stated in the HVAC Design Report:</p> <p>“The Rater shall confirm that the designer has documented the loads for all the configurations (e.g., level, orientation) that the dwelling unit might be built in. For example, if a unit plan will only be built in a specific level and orientation (e.g., top-floor, facing South),</p>

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				then the designer only needs to document the loads for this one configuration. Orientation represents the direction that the front door of the dwelling unit is facing.”
00045	08/31/2019	Rater Design Review Checklist, Version 1 / 1.1	Refinement	Approved credential list for Functional Testing Agents (FTA)
				Issue: Partners have asked about other commissioning credentials that are not currently listed as a pre-approved credential for FTA’s, such as the Certified Commissioning Authority (CxA) credential from ACG (AABC Commissioning Group) and the process through which EPA would consider other credentials.
				Resolution: EPA has reviewed the certification and re-certification process for both ACG’s CxA and CxT (Certified Commissioning Technician) credentials and determined that they are equivalent to currently listed credentials and therefore will be added to the list. FTA’s with this credential may complete the Functional Testing Checklist upon completion of the online orientation. Partners may submit other equivalent commissioning credentials for EPA to consider. If approved, they will be listed <u>online</u> . Footnote 25 will be revised as follows: “Functional Testing Agents must hold an approved credential, as listed at www.energystar.gov/ftas , or must be a representative of the Original Equipment Manufacturer (OEM), or a contractor credentialed by an HVAC Quality Installation Training and Oversight Organization (H-QUITO), if not completing Sections 6 and higher. Functional Testing Agents may not be the installing contractor unless they are a credentialed contractor. An explanation of the credentialing process and links to H-QUITOs, which maintain lists of credentialed contractors, can be found at www.energystar.gov/findhvac . A directory of other FT Agents can be found at www.energystar.gov/mfnc/ftas .”
00046	11/01/2019	Rater Design Review Checklist, Version 1/1.1	Refinement	Version of National checklists must be completed in California, Oregon and Washington
				Issue: Partners have asked which version of the “National” checklists, referenced in Exhibit 2: Mandatory Requirements for All Certified Homes, must be completed.
				Resolution: The National checklists must be completed. To improve clarity, the checklist title will end with “..., Version 1 / 1.1 / 1.2”.

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00364	10/03/2022	Rater Design Review Checklist, Version 1/1.1 (Rev.02)	Clarification	<p>Footnote 1 – Clarifying the definition of a building</p> <p>Issue: Given that the program requires all dwelling units in a ‘building’ to be certified, partners have asked what defines a ‘building’. For example, would an individual townhouse be considered the ‘building’ or the entire row of attached townhouses.</p> <p>Resolution: EPA agrees that the term building can be better defined.</p> <p>Footnote 1 will be updated as follows:</p> <p>“This Checklist applies to all dwelling units, sleeping units, common spaces ², and garages (open or enclosed) in the building being certified, and where specified, parking lots. These requirements do not apply to parking garages or lots where the cost of the energy use of the parking garage or lot is not the responsibility of the Builder/Developer, Building Owner or Property Manager. This Checklist does not apply to commercial or retail spaces. This Checklist does not apply to common spaces that are located in buildings on the property without any dwelling or sleeping units. The term ‘sleeping unit’ refers to a room or space in which people sleep, which can also include permanent provisions for living, eating, and either sanitation or kitchen facilities but not both. Where the term ‘dwelling unit’ is used in this Checklist, the requirement is also required of ‘sleeping’ units. The term ‘building’ refers to a structure <u>that encompasses dwelling/sleeping units and (if present) common spaces, sharing one or more of the following attributes: a common street address, a common entrance or exit, central/shared mechanical systems, or structurally interdependent wall or roof systems. Attached structures such as townhouses and 4-story two-unit structures (commonly referred to as “2-over-2s”) may be considered separate buildings if they are divided by a vertical fire separation wall from the foundation to the roof sheathing and share none of the other attributes listed above. A skyway or a breezeway that connects two structures is not considered a common entrance or exit. utilized or intended for supporting or sheltering occupancy for a residential purpose; a structure with no dwelling or sleeping units connected to a structure with dwelling or sleeping units by less than 10% of its exterior wall area is not to be included in the ‘building’.</u>”</p>

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00371	10/03/2022	Rater Design Review Checklist, Version 1/1.1 (Rev.02)	Refinement	<p>Footnote 1– Updating the definition for sleeping unit</p> <p>Issue: The current definition for ‘sleeping unit’ does not reference ANSI / RESNET / ICC 301.</p> <p>Resolution: The definition of sleeping unit will be updated to reference ANSI / RESNET / ICC 301.</p> <p>The reference to sleeping units in Footnote 1 will be updated as follows: “The term A ‘sleeping unit’ refers to <u>as defined by ANSI / RESNET / ICC 301,</u> is a room or space in which people sleep, which can also include permanent provisions for living, eating, and either sanitation or kitchen facilities but not both. Where the term ‘dwelling unit’ is used in this Checklist, the requirement is also required of ‘sleeping’ units.”</p>
00363	10/03/2022	Rater Design Review Checklist, Version 1/1.1 (Rev.02)	Clarification	<p>Footnote1 – Clarifying the definition of a building</p> <p>Issue: Given that the program requires all dwelling units in a ‘building’ to be certified, partners have asked what defines a ‘building’. For example, would an individual townhouse be considered the ‘building’ or the entire row of attached townhouses.</p> <p>Resolution: EPA agrees that the term building can be better defined.</p> <p>Footnote 1 will be updated as follows:</p> <p>“This Checklist applies to all dwelling units, sleeping units, common spaces ², and garages (open or enclosed) in the building being certified, and where specified, parking lots. These requirements do not apply to parking garages or lots where the cost of the energy use of the parking garage or lot is not the responsibility of the Builder/Developer, Building Owner or Property Manager. This Checklist does not apply to commercial or retail spaces. This Checklist does not apply to common spaces that are located in buildings on the property without any dwelling or sleeping units. The term ‘sleeping unit’ refers to a room or space in which people sleep, which can also include permanent provisions for living, eating, and either sanitation or kitchen facilities but not both. Where the term ‘dwelling unit’ is used in this Checklist, the requirement is also required of ‘sleeping’ units. The term ‘building’ refers to a structure <u>that encompasses dwelling/sleeping units and (if present) common spaces, sharing one or more of the following attributes: a common street address, a common entrance or exit, central/shared mechanical systems, or structurally interdependent wall or roof systems. Attached structures such as townhouses and 4-story two-unit structures (commonly referred to as “2-over-2s”) may be considered separate buildings if they are divided by a vertical fire separation wall from the foundation to</u></p>

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				<p><u>the roof sheathing and share none of the other attributes listed above. A skyway or a breezeway that connects two structures is not considered a common entrance or exit, utilized or intended for supporting or sheltering occupancy for a residential purpose; a structure with no dwelling or sleeping units connected to a structure with dwelling or sleeping units by less than 10% of its exterior wall area is not to be included in the ‘building’.</u></p>												
00126	10/30/2020	Rater Design Review Checklist, Version 1/1.1 (Rev.01)	Change	<p>Footnote 5 – Performance requirements for skylights</p>												
				<p>Issue: The requirements for skylights are not specified in the table in Footnote 5.</p>												
				<p>Resolution: EPA’s intent was for skylights to be included in the table in Footnote 5. The requirements for skylights have been added to the middle column as follows:</p> <table border="1"> <thead> <tr> <th></th> <th>Dwelling unit doors and windows that are not classified “Class AW”**</th> <th>Dwelling unit windows and doors that are classified as “Class AW”** and all skylights</th> <th>Common Space †</th> </tr> </thead> <tbody> <tr> <td>ERI</td> <td>2009 IECC Table 402.1.1</td> <td>2009 IECC Table 502.3</td> <td>ENERGY STAR MF Reference Design – for Class AW</td> </tr> <tr> <td>ASHRAE</td> <td>2009 IECC Table 402.1.1</td> <td>2009 IECC Table 502.3</td> <td>2009 IECC Table 502.3</td> </tr> <tr> <td>Prescriptive</td> <td>ENERGY STAR MF Reference Design</td> <td>Windows and Doors: ENERGY STAR MF Reference Design – for Class AW Skylights: 2012 IECC Table 402.3</td> <td>ENERGY STAR MF Reference Design – for Class AW</td> </tr> </tbody> </table>		Dwelling unit doors and windows that are not classified “Class AW”**	Dwelling unit windows and doors that are classified as “Class AW”** and all skylights	Common Space †	ERI	2009 IECC Table 402.1.1	2009 IECC Table 502.3	ENERGY STAR MF Reference Design – for Class AW	ASHRAE	2009 IECC Table 402.1.1	2009 IECC Table 502.3	2009 IECC Table 502.3
	Dwelling unit doors and windows that are not classified “Class AW”**	Dwelling unit windows and doors that are classified as “Class AW”** and all skylights	Common Space †													
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Prescriptive	ENERGY STAR MF Reference Design	Windows and Doors: ENERGY STAR MF Reference Design – for Class AW Skylights: 2012 IECC Table 402.3	ENERGY STAR MF Reference Design – for Class AW													
00127	10/30/2020	Rater Design Review Checklist, Version 1/1.1 (Rev.01)	Clarification	<p>Clarifying the type and number of HVAC Design Reports permitted</p>												
				<p>Issue: Under the HVAC Designer Responsibilities, it states that only one HVAC Design Report should be completed, whether the report documents HVAC Design for one building or an entire project. It can be a challenge to document all the systems for a multi-building project in one report, even given the additional tables in Appendix A, and would provide better flexibility to project teams if they can complete more than one report. Additionally, the Certified Homes National HVAC Design Report has been populated by some HVAC design software, while the MFNC version has not yet been integrated into software. It would provide even more flexibility and reduce paperwork if projects are allowed to use the Certified Homes version of the HVAC Design report for the dwelling units.</p>												
				<p>Resolution: It was not the intent of the program to prevent HVAC Designers from documenting HVAC design per building, even in the case of a multi-building project, but rather to allow it. In</p>												

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				<p>the MFNC HVAC Design Report, the first bullet in the HVAC Designer Responsibilities will be edited to add the following sentence:</p> <p style="padding-left: 40px;">For projects with multiple buildings, one National HVAC Design Report per building or per project is permitted.</p> <p>EPA agrees that until the MFNC HVAC Design Report is integrated into software, it may be easier for a project to generate unit-level design reports through software and only fill out the additional items on the MFNC HVAC Design Report. For dwelling units, project teams may generate the Single-Family New Homes National HVAC Design Reports in lieu of providing that information in the MFNC HVAC Design Report. However, a MFNC HVAC Design Report must still be filled out for all projects and it must include the design information for all systems in the building that do not have a corresponding Single-Family New Homes National HVAC Design Report. In addition, for all dwelling units covered by a Single-Family New Homes National HVAC Design Report, Item 3.7 Total occupant gains and Item 3.13 Non-occupant internal gains must be completed on the MFNC HVAC Design Report. The Rater will also need to confirm that all of the appropriate design reports are accounted for and completed properly, including Section 4 and 5 unless exempted by the MFNC HVAC Design Report, and that the necessary items on the MFNC HVAC Design Report are completed. When the Rater completes the HVAC Design Report review, they need to use the corresponding items from the Single-Family New Homes National HVAC Design Report. These are noted below:</p> <p>MFNC Rater Design Review Checklist Items:</p> <ul style="list-style-type: none"> 4b.2.1 – use Item 2.3 from Certified Homes National HVAC Design Report 4b.2.2 – use Item 3.3 from Certified Homes National HVAC Design Report 4b.2.3 – use Item 3.4 from Certified Homes National HVAC Design Report and refer to MFNC HVAC Design report for Item 3.7 4b.2.4 – use Item 3.5 from Certified Homes National HVAC Design Report 4b.2.5 – use Item 3.6 from Certified Homes National HVAC Design Report 4b.2.6 – use Item 3.7 from Certified Homes National HVAC Design Report 4b.2.7 – use Items 3.9 and 2.3 from Certified Homes National HVAC Design Report 4b.2.8 – need to refer to MFNC HVAC Design report 4b.2.9 – use Items 3.10, 3.12 from Certified Homes National HVAC Design Report
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				<p>4b.2.10 – use Items 4.13 and 4.15 from Certified Homes National HVAC Design Report</p> <p>In addition, for Path A, project teams may similarly use multiple HVAC design reports that are compliant with ANSI / RESNET / ACCA Std. 310 to represent all applicable systems in conjunction with the ENERGY STAR MFNC supplement.</p> <p>Items 4a.1, 4b.1, 4b.2 and Footnote 13 of the Rater Design Review Checklist will be updated as follows:</p> <p>4a.1 HVAC design report(s) compliant with ANSI / RESNET / ACCA Std. 310 representing all applicable systems, with the ENERGY STAR MFNC supplement, collected for records, with no Items left blank.</p> <p>4b.1 National HVAC Design Report(s) collected for records, with no Items left blank.</p> <p>4b.2 National HVAC Design Report(s) reviewed by Rater for the following parameters (National MFNC HVAC Design Report Item # indicated in parenthesis):</p> <p>Footnote 13:</p> <p>The Rater shall collect <u>the National HVAC Design Report(s) per building / project. See Footnote 1 of the National HVAC Design Report for alternatives. Where using an ENERGY STAR Single-Family New Homes National HVAC Design Report, Rater must still review all Items under 4.2b. Regardless of whether the “unit-specific design”, “group design”, or “worst-case design” box has been checked in Item 3.2 of the National HVAC Design Report, the system design as documented on the National HVAC Design Report must fall within the tolerances in Item 4.2 for the unit to be certified. The Rater is only responsible for verifying that the designer has not left any items blank on the National HVAC Design Report and for verifying the discrete objective parameters in Item 4.2 of this Checklist, not for verifying the accuracy of every input on the National HVAC Design Report.</u></p> <p>Footnote 1 of the National HVAC Design Report will be updated as follows:</p> <p>This report shall represent system design for all unique unit plans, common spaces, and where applicable, parking garages. The term ‘common space’ refers to any spaces in the building being certified that serve a function in support of the residential part of the building that is not part of a dwelling or sleeping unit. This includes spaces used by residents, such as corridors, stairs, lobbies, laundry rooms, exercise rooms, residential recreation rooms, and dining halls, as well as offices and other spaces used by building management, administration or maintenance in support of the residents. <u>As an alternative, for dwelling units, project teams may instead choose to complete a</u></p>
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				<p>Single-Family New Homes National HVAC Design Report for each unique unit plan. For those unit plans, Items 3.7 and 3.13 of this Report would still need to be completed. Sections 4 and 5 must be completed in either Design Report unless exempted by this Report. All other systems, including all systems serving common spaces, must be documented in this Design Report. This report is designed to meet ASHRAE 62.1-2010 / 2013, ASHRAE 62.2-2010 / 2013, and ANSI / ACCA's 5 QI-2015 protocol, thereby improving the performance of HVAC equipment in new multifamily buildings when compared to multifamily buildings built to minimum code. However, these features alone cannot prevent all ventilation, indoor air quality, and HVAC problems (e.g., those caused by a lack of maintenance or occupant behavior). Therefore, system designs documented through the use of this report are not a guarantee of proper ventilation, indoor air quality, or HVAC performance.</p>
00128	10/30/2020	<p>Rater Design Review Checklist, Version 1/1.1 (Rev.01)</p> <p>Rater Field Checklist, Version 1/1.1 (Rev.01)</p> <p>HVAC Functional Testing Checklist, Version 1/1.1 (Rev.01)</p>	Clarification	<p>Limitations on the FT Agents' employment relationship to the installing contractor</p>
				<p>Issue: Partners have noted that the FT Agent is an individual, rather than a company, and have inquired whether the individual may verify items when the installing contractor is employed by the same company as the FT Agent.</p>
				<p>Resolution: The intent of the program was to limit installing contractors from verifying their own installations, unless they were a credentialed contractor. While the FT Agent is an individual, consistent with this intent, the FT Agent could not be employed by the same company that employs the installing contractor. Footnote 2 of the HVAC Functional Testing Checklist, Footnote 26 of the Rater Design Review Checklist and Footnote 43 of the Rater Field Checklist will be revised as follows:</p> <p style="padding-left: 40px;">“FT Agents may not be the installing contractor, <u>nor employed by the same company as the installing contractor</u>, unless they are a credentialed contractor.”</p>
00004	06/8/2019		Clarification	<p>Item 6.7 - Central Exhaust Leakage Test</p>

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	Updated 08/31/2019	Rater Field Checklist, Version 1 / 1.1 HVAC Design Report, Version 1 / 1.1		<p>Issue: Item 6.7 of the Rater Field Checklist indicates that “central exhaust systems that serve one or more dwelling units” shall be tested for duct leakage but is not explicit about whether this test applies to systems associated with clothes dryers.</p> <p>Resolution: This test was intended to be limited to central exhaust systems directly serving dwelling units, that either provide dwelling unit mechanical ventilation or local mechanical exhaust to bathroom and/or kitchens in accordance with ASHRAE 62.2. This test does not apply to central exhaust systems that provide exhaust for clothes dryers.</p> <p>As a result, the following sentence will be added to Footnote 47 of the Rater Field Checklist: “This test is not required of central exhaust systems serving clothes dryers.”</p>
00005	06/08/2019	Rater Field Checklist, Version 1 / 1.1	Clarification	<p>Item 13.1 - ENERGY STAR certified appliance requirement</p> <p>Issue: Item 13.1 of the Rater Field Checklist indicates that appliances in dwelling units must be ENERGY STAR certified. An appliance used often in multifamily dwelling units is a “laundry center”, which is a single piece of laundry equipment, with separate drums for clothes washing and clothes drying. This product category is only recently eligible to earn the ENERGY STAR and partners may have difficulty finding products that are certified.</p> <p>Resolution: While the ENERGY STAR Clothes Washer and Clothes Dryer specifications indicate that these laundry centers are eligible for certification, since the availability of certified models is still limited, EPA will recommend, but not require, that laundry centers meet Item 13.1 until EPA determines they are more widely available.</p>
00006	06/08/2019	Rater Field Checklist, Version 1 / 1.1	Clarification	<p>Item 6.7 - Central exhaust leakage test pressure</p> <p>Issue: Partners have noted that the RESNET Guidelines for Multifamily Energy Ratings, which are referenced for this central exhaust duct leakage test procedure, only provide guidance for testing between 50 and 100 Pa and that these systems can often have average operating pressures above 100 Pa or have varying pressures due to variable speed systems.</p> <p>Resolution: Compliance with this requirement can be met by testing at the same pressure as the design or average operating pressure and calculating the 25% or 30% leakage allowance based on the exhaust fan flow at that pressure. Where testing at the design or average</p>

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				<p>operating pressure is not feasible, testing at 50 Pa is permitted, however the following flow equation must be used to determine the leakage allowance at 50 Pa.</p> $CFM_{50} = CFM_{design} / [P_{design}^{(0.65)} / 50^{(0.65)}]$ <p>For example, a central exhaust system is designed for a 1,000 CFM exhaust fan and the MEP determines the design pressure (P_{design}) to be 100 Pa. If testing at rough-in at 100 Pa, the leakage allowance (CFM_{design}) is 250 CFM, or 25% of 1,000. If the Rater instead tests at 50 Pa, applying the equation results in a lower leakage allowance (159 CFM) at the lower pressure (50 Pa).</p> $CFM_{50} = 250 / [100^{(0.65)} / 50^{(0.65)}] = 159 \text{ CFM}_{50}$ <p>As a result, Footnote 47 of the Rater Field Checklist will be revised as follows:</p> <p>“For the purpose of computing leakage allowance, exhaust fan flow shall be the lesser of the rated fan flow and at rough-in, 133% of the sum of the design exhaust airflow of the dwelling units that are exhausted by that central fan or at final, 143% of the sum of the design exhaust airflow of the dwelling units that are exhausted by that central fan. Duct leakage shall be tested at the design or average operating pressure and—shall use the procedures in the <i>RESNET Guidelines for Multifamily Energy Ratings</i>. Where testing at the design or average operating pressure is not feasible, testing at 50 Pa is permitted, however the following flow equation must be used to determine the leakage allowance at 50 Pa.</p> $CFM_{50} = CFM_{design} / [P_{design}^{(0.65)} / 50^{(0.65)}]$ <p>No less than 50% of the ductwork, based on total linear feet, shall be tested. Where portions of ductwork are tested, rather than entire risers, the percentage of leakage allowed is based upon the design airflow of the dwelling units that are exhausted in that portion. Where failures occur, the percentage of total linear feet required to be tested increases by 10%. Where aerosol-based sealant is used on some but not all risers, the ductwork selected for testing must be representative of all sealing strategies used.”</p>
00007	06/08/2019	Rater Field Checklist, Version 1 / 1.1	Refinement	Incorrect Footnotes associated with Items 8.3, 9.1, and 9.1.1
				Issue: Partners have noted that certain footnotes were incorrectly associated with checklist items.
				Resolution: EPA has confirmed that Item 8.3 should reference Footnote 49 and not Footnote 48, that Item 9.1 should reference Footnote 59 and not Footnote 60, and that Item 9.1.1 should

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				reference Footnote 60 and not Footnote 61. As a result, the Rater Field Checklist will be revised accordingly in Rev01.
00047	11/01/2019	Rater Field Checklist, Version 1/1.1	Change	Integration of HVAC grading path
				<p>Issue: A new standard is nearing finalization, ANSI / ACCA / RESNET Std. 310 - Standard for Grading the Installation of HVAC Systems. This standard will provide a pathway for Raters to complete an HVAC design review and assess the installation quality of unitary HVAC systems as Grade I, II, or III.</p> <p>For a project where this standard is used to determine that the installation quality of the applicable in-unit HVAC systems are Grade I or II, many of the HVAC-related requirements in the program will be satisfied. Therefore, a new compliance path within the MFNC program that leverages this new standard, upon completion, could offer multiple benefits. At the same time, the original path for satisfying the program's HVAC design and installation requirements, which relies upon the use of a functional testing agent, could be maintained.</p> <p>This would allow partners to transition to the new compliance path as they are prepared to do so, and if they find value in the new path, while minimizing disruption to the certification process as the new path is deployed.</p>
				<p>Resolution: A compliance path (Path A – Dwelling Unit HVAC Grading) will be developed within the program for residential HVAC systems serving individual dwelling units that leverages the new ANSI / ACCA / RESNET Std. 310, upon completion, while maintaining the original path that relies upon a Functional Testing Agent (Path B – Dwelling Unit HVAC Commissioning). Specifically, the following edits will be made:</p> <ol style="list-style-type: none"> 1. Section 5 will be modified, first by rebranding the existing requirements in this section as the requirements that must be completed if pursuing Path B - Dwelling Unit HVAC Commissioning. In addition, three new requirements will be added to this section that must be completed if pursuing Path A – Dwelling Unit HVAC Grading. These three new requirements will define the Grade that the equipment must achieve for the home to be certified, specifically Grade I or II blower fan volumetric airflow, Grade I or II blower fan watt draw, and Grade I refrigerant charge, if the non-invasive procedure in ANSI / RESNET / ACCA Std. 310 is permitted to be used. The revised section will be as follows.

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				<table border="1"> <tr> <td colspan="2">HVAC System ³⁷</td> <td rowspan="2">Must Correct</td> <td rowspan="2">Rater Verified</td> </tr> <tr> <td colspan="2">5. Heating & Cooling Eqpt. – Complete Path A – Dwelling Unit HVAC Grading OR Path B – Dwelling Unit HVAC Commissioning ³⁸</td> </tr> <tr> <td rowspan="3">Path A ³⁹</td> <td>5a.1 Blower fan volumetric airflow is Grade I or II per ANSI / RESNET / ACCA Std. 310</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>5a.2 Blower fan watt draw is Grade I or II per ANSI / RESNET / ACCA Std. 310</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>5a.3 Refrigerant charge is Grade I per ANSI / RESNET / ACCA Std. 310. See Footnote 40 for exemptions. ⁴⁰</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td rowspan="3">Path B</td> <td>5b.1 HVAC manufacturer & model number on installed equipment matches either of the following (check box): ⁴¹</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/> National HVAC Design Report (4.6-4.9 & 4.25-4.26) <input type="checkbox"/> Written approval received from designer</td> <td></td> <td></td> </tr> <tr> <td>5b.2 External static pressure measured by Rater at contractor-provided test locations and documented below: ⁴² Return-Side External Static Pressure: _____ IWC. Supply-Side External Static Pressure: _____ IWC</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table> <p>2. A new Footnote will be added to the header of this section to clarify when the new path can be used and to require that all eligible unitary HVAC systems in the home meet these requirements: “39. Path A – Dwelling Unit HVAC Grading shall not be used until an Effective Date has been defined by RESNET for ANSI / RESNET / ACCA Std. 310. Path A – Dwelling Unit HVAC Grading shall then use ANSI / RESNET / ACCA Std. 310 including all Addenda and Normative Appendices, with new versions and Addenda implemented according to the Effective Date and Transition Period End Date defined by RESNET. RESNET interpretations of Standard 310 shall also be followed. For units following path A, all unitary HVAC Systems including air conditioners and heat pumps up to 65 kBtuh and furnaces up to 125 kBtuh serving individual dwelling or sleeping units shall comply with 5a.1 through 5a.3 for the building to be certified.”</p> <p>3. A new Footnote will also be added to Item 5a.3, providing an alternative when the non-invasive procedure in ANSI / RESNET / ACCA Std. 310 is not permitted to be used: “If the non-invasive procedure in ANSI / RESNET / ACCA Std. 310 is not permitted to be used during the final inspection of a home (i.e., due to the equipment type or to outdoor air temperatures that do not meet the requirements of the non-invasive method), then the home is permitted to be certified with a default refrigerant charge designation of Grade III. Note that in these circumstances, the weigh-in method procedure in ANSI / RESNET / ACCA Std. 310 may still be used to pursue a Grade I designation.”</p>	HVAC System ³⁷		Must Correct	Rater Verified	5. Heating & Cooling Eqpt. – Complete Path A – Dwelling Unit HVAC Grading OR Path B – Dwelling Unit HVAC Commissioning ³⁸		Path A ³⁹	5a.1 Blower fan volumetric airflow is Grade I or II per ANSI / RESNET / ACCA Std. 310	<input type="checkbox"/>	<input type="checkbox"/>	5a.2 Blower fan watt draw is Grade I or II per ANSI / RESNET / ACCA Std. 310	<input type="checkbox"/>	<input type="checkbox"/>	5a.3 Refrigerant charge is Grade I per ANSI / RESNET / ACCA Std. 310. See Footnote 40 for exemptions. ⁴⁰	<input type="checkbox"/>	<input type="checkbox"/>	Path B	5b.1 HVAC manufacturer & model number on installed equipment matches either of the following (check box): ⁴¹	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> National HVAC Design Report (4.6-4.9 & 4.25-4.26) <input type="checkbox"/> Written approval received from designer			5b.2 External static pressure measured by Rater at contractor-provided test locations and documented below: ⁴² Return-Side External Static Pressure: _____ IWC. Supply-Side External Static Pressure: _____ IWC	<input type="checkbox"/>	<input type="checkbox"/>
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00048	11/01/2019	Rater Field Checklist, Version 1/1.1	Change	<p>Measurement range for dwelling-unit and common space ventilation</p> <p>Issue: Partners have raised concerns regarding the measurement allowance in Item 7.2 and 7.3 that would allow measured ventilation rates to be less than the minimum rates recommended by ASHRAE 62.1 and 62.2-2010 for acceptable indoor air quality.</p> <p>Resolution: EPA agrees that for multifamily units this range could provide rates that are substantially less than the recommended rates. To maintain a range that accommodates the</p>																										

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				<p>practical limitations of systems achieving the design rates, Item 7.2 and 7.3 will be revised to still maintain the same ± 15 CFM or $\pm 15\%$ range, but to establish a new floor, equal to ASHRAE 62.1 and 62.2-2010.</p> <p>Therefore, compared to the current requirement, rater-measured ventilation will have a reduced range of flexibility unless the reported design values in Item 2.7 of the HVAC Design Report are higher than ASHRAE rates. As an example, if the ASHRAE 62.2-2010 rate is 40 CFM and the design value is 40 CFM, the rater-measured ventilation rate must be in the 40-55 CFM range since it cannot be below 40 CFM. If the design value is instead 55 CFM, rater-measured ventilation has the same 30 CFM range as currently allowed (40-70 CFM in this example).</p> <p>Item 7.2 and Footnote 48 will be revised as follows in Rev01:</p> <p>7.2 Rater-measured ventilation rate is within either ± 15 CFM or $\pm 15\%$ of dwelling unit design values (2.7), and meets or exceeds rates required by ASHRAE 62.2-2010 ⁴⁸</p> <p>The following sentence will be added to Footnote 48.</p> <p>“In Item 7.2, the dwelling-unit ventilation rates required by ASHRAE 62.2-2010 can be calculated using the Multifamily Workbook or the following equation: $0.01 \times \text{Conditioned Floor Area} + 7.5 \times (\text{number of bedrooms} + 1)$. Where local codes do not permit dwelling-unit ventilation to exceed ASHRAE 62.2-2010 rates, Rater-measured ventilation rate is permitted to be 0-15 CFM less than rates required by ASHRAE 62.2-2010”</p> <p>Item 7.3 will be revised as follows in Rev01:</p> <p>7.3 Measured ventilation rate is within either ± 15 CFM or $\pm 15\%$ of common space design values (2.9), and meets or exceeds rates required by ASHRAE 62.1-2010 (2.8) ⁴⁹</p>
00049	11/01/2019 Updated 10/30/2020	Rater Field Checklist, Version 1/1.1 (Rev.01) HVAC Design Report, Version 1/1.1 (Rev.01)	Change	Override control for dwelling-unit mechanical ventilation in townhouses
				<p>Issue: When developing the MFNC program to allow Townhouses to participate, EPA’s intent was to ensure that certain requirements from Certified Homes be retained. One of these items was the requirement for readily-accessible ventilation override control, which was not captured in the initial Rater Field Checklist. The intent is for all systems to have an override control; however, in townhouses it must also be readily accessible by the occupant. While this was noted in the HVAC Design Report it was not clear in the Rater Field Checklist.</p>
				<p>Resolution: Item 7.2 from Certified Homes will be added as Item 7.4 to the Rater Field Checklist in Rev. 01 and updated as follows in Rev. 02:</p>

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00050	11/01/2019	Rater Field Checklist, Version 1/1.1	Change	Measurement range allowed for common space exhaust in Item 8.3
				<p>Issue: Partners have noted that the MFNC program allows a measurement range for common space exhaust that is not currently allowed for dwelling unit local mechanical exhaust.</p>
				<p>Resolution: EPA recognizes that this was not intentional to deviate from the Certified Homes program stance on requiring these minimum exhaust rates to be achieved and demonstrated by field measurement. Since the exhaust design values are allowed to exceed the minimum rates required by ASHRAE 62.1, Item 8.3 will be clarified in Rev01 of the Rater Field Checklist as follows:</p> <p>“Measured exhaust rates are \geq ASHRAE 62.1 rates (2c)”</p> <p>To facilitate the rater's ability to verify the exhaust rate has been achieved, a new column will be added in section 2c of the HVAC Design Report will be modified in Rev01 so that the HVAC Designer documents the ASHRAE 62.1 rate in addition to the design value.</p>
00051	11/01/2019	Rater Field Test, Version 1 / 1.1	Change	Ceiling fan requirements
				<p>Issue: Partners have asked about the requirements to have ENERGY STAR certified ceiling fans included in the ENERGY STAR Multifamily Reference Design, with respect to both the ERI and Prescriptive Path. With respect to the ERI Path, there is confusion among software developers and users of the energy rating software of what gets modeled when the number of</p>

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				<p>ceiling fans “present” in the Rated Home is less than the number of bedrooms + 1. The Target Procedures, as written, seem to imply that as long as one fan is “present”, the quantity of ceiling fans in the ENERGY STAR Multifamily Reference Design would be equal to the number of bedrooms plus one, which provides a cooling benefit but also a higher electricity use, compared to the Rated Home. With respect to the Prescriptive Path, there is a question of whether ceiling fans with lights should instead fall under the lighting requirements of the ENERGY STAR Multifamily Reference Design to allow some flexibility as the current requirements could lead some developers to not specify ceiling fans with light kits, or to not specify them at all</p> <p>Resolution: With respect to the ERI Path, EPA will clarify in Revision 02 of the ENERGY STAR Multifamily New Construction Target Procedures that the number of ceiling fans in the Reference Design shall be the same as in the Rated Home. Therefore, based on the clarification provided in ANSI 301-2019 related to ceiling fans, the fans will only be modeled in the ENERGY STAR Multifamily Reference Design when the total number of ceiling fans installed in the Rated Home is greater than or equal to the number of bedrooms plus one. The ceiling fans will retain the current efficiency of 122 CFM per Watt.</p> <p>EPA agrees that more flexibility can be provided in the Prescriptive Path, just light for lighting. Providing ceiling fans with light kits provide both a cooling benefit and source of efficient lighting. Rather than be a standalone category, light fixtures in ceiling fans will count towards the 90% high efficacy lighting requirements in the ENERGY STAR Reference Design. For projects following the Prescriptive Path, there will no longer be a requirement for all ceiling fans to be ENERGY STAR certified.</p> <p>In Revision 01, Item 13.1 will be updated as follows:</p> <p>13.1 Prescriptive Path: Installed appliances and plumbing fixtures in dwelling units and common spaces meet the criteria in the ENERGY STAR Multifamily Reference Design.</p>
00052	11/01/2019	Rater Field Checklist, Version 1/1.1	Change	<p>IAQ concerns in units adjacent to parking garages</p> <p>Issue: Partners have asked why the program requires CO sensors in the parking garages, but not within the dwelling units adjacent to the parking garages.</p> <p>Resolution: EPA recommends but does not require CO alarms installed in each sleeping zone. The CO sensors on the garage exhaust fans are an energy-efficiency measure rather</p>

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				<p>than an IAQ measure. The following changes will be made in Rev01 documents to address this concern:</p> <p>Item 4.6 will include a footnote that states:</p> <p>“For dwelling or sleeping units adjacent to garages, EPA recommends, but does not require, carbon monoxide (CO) alarms installed in a central location in the immediate vicinity of each separate sleeping zone and according to NFPA 720”</p> <p>Item 4.10 will include a footnote that states:</p> <p>“Where a sampling protocol is permitted in accordance with Footnote 6 of the National Program Requirements, at least 20% of the dwelling or sleeping units adjacent to a parking garage shall be selected for testing.”</p>
00053	11/01/2019	Rater Field Checklist, Version 1/1.1	Clarification	<p>Thermal bridging requirements for buildings with steel or metal framing</p>
				<p>Issue: Footnote 26 for Item 3.7 of the Rater Field Checklist states that steel framed buildings must use 3.7.1. Partners have noted that this is a requirement buried in a footnote and should also be attached to the other two options to avoid confusion.</p>
				<p>Resolution: In Rev01 of the Rater Field Checklist, Footnote 26 will be attached to Items 3.7, 3.7.2 and 3.7.3, and in addition will be clarified to mean both steel and other metal framing.</p> <p>Footnote 26 will be revised as follows: “Walls and rim / band joists using steel or other metal framing shall meet the reduced thermal bridging requirements by complying with Item 3.7.1 of the Checklist and may not demonstrate compliance using item 3.7.2 or 3.7.3”</p> <p>Similarly, Item 3.7.3 will be clarified to only be applicable to wood-framed buildings, as shown below.</p> <p>“3.7.3 Option only for wood-framed walls either in CZ 1-3 OR ≤ 3 stories: ‘advanced framing’ details including all of the Items below:”</p>
00054	11/01/2019	Rater Field Checklist, Version 1/1.1	Clarification	<p>Garage mechanical exhaust</p>
				<p>Issue: In Item 8.4 of the Rater Field Checklist, it is not clear whether all parking garages, even ones serving townhouses and open garages, are required to install ventilation systems and equip with controls, or if the controls are just required if those types of systems are installed.</p>

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				<p>Resolution: The intent of the requirement was to require CO and NO2 sensors on exhaust systems when those systems are required by local code or by ASHRAE 62.1-2010.</p> <p>Item 8.4 will be revised in Rev01 as follows:</p> <p>“Where a garage exhaust ventilation system is installed, it is equipped with controls that sense CO and NO2.”</p>
00055	11/01/2019	Rater Field Checklist, Version 1/1.1	Clarification	<p>Extent of DHW pipe insulation</p>
				<p>Issue: Partners have noted that Item 11.4 and Footnote 65 are not clear whether they apply to DHW piping that is located outside the dwelling unit.</p>
				<p>Resolution: EPA’s intent with this requirement was to limit it to the DHW piping located within the dwelling unit and will revise Item 11.4 and Footnote 65 as follows in Rev01 of the Rater Field Checklist:</p> <p>“11.4 DHW piping located in the dwelling unit is insulated with a minimum of R-3⁷²</p> <p>72. In accordance with Section 7.4.3 of ASHRAE 90.1-2016, the following in-unit DHW piping requires insulation:...”</p>
00056	11/01/2019	Rater Field Checklist, Version 1/1.1	Clarification	<p>Applicability of requirements to parking garages</p>
				<p>Issue: Partners have noted confusion regarding the footnote in the program documents that describes parking garages and when parking garages are considered common space and whether all parking garages are subject to the requirements.</p>
				<p>Resolution: EPA’s intent is for the requirements to apply to open and enclosed garages that are part of the building being certified and do not apply to separate parking structures or those where the energy costs are not the responsibility of the Owner/Developer (ie. commercial). Common space lighting controls and garage lighting power density requirements only apply to shared parking garages, not garages that are only for a single unit such as a townhome.</p> <p>The first two sentences of Footnote 1 will be revised in Rev01 as follows:</p> <p>This Checklist applies to all dwelling units, sleeping units, common spaces ², and garages (open or enclosed) in the building being certified, and where specified, parking lots. These requirements do not apply to parking garages or lots where the cost of the energy use of the</p>

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				<p>parking garage or lot is not the responsibility of the Builder/Developer, Building Owner or Property Manager.</p> <p>The Local Mechanical Exhaust section header in the Rater Field Checklist will be updated as follows: “Common Space and Garage Mechanical Exhaust”</p> <p>Items 12.1.1, 12.1.2, 12.2, 12.3 will be updated as follows:</p> <p>“12.1.1 ERI and Prescriptive Path: All common spaces ² (including shared garages), except the building lobby and where automatic shutoff would endanger the safety of occupants, have occupancy sensors or automatic bi-level lighting controls installed and operation has been verified.”</p> <p>“12.1.2 ASHRAE path only: All common spaces ² (including shared garages), except the building lobby, corridors, and stairwells and where automatic shutoff would endanger the safety of occupants, have occupancy sensors or automatic bi-level lighting controls installed and operation has been verified.”</p> <p>“12.2 Common Space ² Lighting Power Density Maximum (except garages):”</p> <p>“12.3 Shared garages: Lighting power density does not exceed 0.24 W/ft².”</p>
00057	11/01/2019	Rater Field Checklist, Version 1/1.1	Clarification	<p>Shower compartments with multiple showerheads</p>
				<p>Issue: Partners have asked how to evaluate the “average flow rate” for a shower compartment for compliance with Item 13.3 when choosing the Prescriptive Path. The intent of the requirement implies that the “total” flow rate is needed, not the “average”.</p> <p>Resolution: EPA agrees that the intent of the requirement is to verify that the total flow rate of all showerheads operating simultaneously within the same compartment does not exceed 1.75 gpm. For example, 3 separate showerheads, that are each rated to provide 0.5 gpm at 80 psi, would sum to 1.5 gpm and meet the requirement.</p> <p>Item 13.3 will be revised as follows in Rev01:</p> <p>“Prescriptive Path: Shower compartments with multiple fixtures cannot be operated simultaneously OR the total flow rate per shower compartment must not exceed 1.75 gallons per minute, as rated at 80 psi.”</p>
00058	11/01/2019		Clarification	<p>Definition of “common spaces”</p>

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		Rater Field Checklist, Version 1/1.1		<p>Issue: Partners have noted that the footnote in the program documents, that explains what the term ‘common space’ means, is confusing with respect to determining eligibility, and applicability of requirements in certain spaces, such as commercial day-care facilities and common spaces on the property but not in the building being certified.</p> <p>Resolution: EPA agrees that this footnote could be revised to provide better clarity with respect to the intent of the program and the applicability of the requirements in certain spaces. Day-care facilities will be removed from the list since they are usually open to the public, not just building residents. It was also clarified that common spaces on the property, but not within the building, are not be included.</p> <p>Footnote 2 will be revised in Rev01 as follows:</p> <p>2. The term ‘common space’ refers to any spaces in the building being certified that serve a function in support of the residential part of the building that is not part of a dwelling or sleeping unit. This includes spaces used by residents, such as corridors, stairs, lobbies, laundry rooms, exercise rooms, residential recreation rooms, and dining halls, as well as offices and other spaces used by building management, administration or maintenance in support of the residents.</p>
00059	11/01/2019	Rater Field Checklist, Version 1/1.1	Clarification	<p>Version of Std. 301 and Std 380 to use during field inspections</p> <p>Issue: This document identifies that the “version of ANSI / RESNET / ICC Std. 301 utilized by RESNET for HERS ratings” should be followed when assessing compliance with insulation installation grades. It also identifies that the “version of ANSI / RESNET / ICC Std. 380 that is utilized by RESNET for HERS ratings” should be followed when measuring duct leakage, dwelling-unit ventilation air flow, and local exhaust air flows. Partners have also asked for further clarity on whether appendices of, and interpretations to, the standard should be followed, and when new versions and addenda should be implemented.</p> <p>Resolution: To clarify the program’s intent and improve consistency, Footnotes 7, 43, and 48 will be updated.</p> <p>Footnote 7 will be revised as follows:</p> <p>“Ensure compliance with this requirement using ANSI / RESNET / ICC Std. 301 including all Addenda and Normative Appendices, with new versions and Addenda implemented according to the Effective Date and Transition Period End Date defined by RESNET. RESNET interpretations of Standard 301 shall also be followed.”</p>

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				<p>Footnote 43 will be revised as follows:</p> <p>“Item 6.4 and 6.5 only apply to heating, cooling, and balanced ventilation ducts that only serve one dwelling unit. Duct leakage testing is not required if the ducts and air handler are in conditioned space and the total supply duct length of the system, including all supply trunks and branches, is ≤ 10 ft. Duct leakage shall be determined and documented by a Rater using ANSI / RESNET / ICC Std. 380 including all Addenda and Normative Appendices, with new versions and Addenda implemented according to the Effective Date and Transition Period End Date defined by RESNET. RESNET interpretations of Standard 380 shall also be followed.”</p> <p>Footnote 48 will be revised as follows:</p> <p>“The dwelling-unit ventilation air flow and local exhaust air flows shall be determined and documented by a Rater using ANSI / RESNET / ICC Std. 380 including all Addenda and Normative Appendices, with new versions and Addenda implemented according to the Effective Date and Transition Period End Date defined by RESNET. RESNET interpretations of Standard 380 shall also be followed.”</p>
00060	11/01/2019	Rater Field Checklist, Version 1/1.1	Clarification	<p>Definition of “stories”</p>
				<p>Issue: The Certified Homes and MFHR program had a definition for stories since it was needed to determine program eligibility. Item 3.7.3 also references “stories” but without a definition. Clarification is needed on whether it is the same definition as has been used in the past.</p>
				<p>Resolution: The intent of Item 3.7.3 is to allow ‘advanced framing’ to be used in construction where the techniques are feasible. To clarify that this technique is allowed where the wood framing is three stories or less, Footnote 29 will be revised in Rev01 as follows:</p> <p>“29. Rim / band joists are exempt from this requirement. For the purpose of this requirement, “≤ 3 stories” refers to any portion of the building elevation where the wood-framed walls do not exceed 3 stories in height. Partial floors that meet the definition of a mezzanine or loft, as defined by the 2012 IRC, do not count as a story.”</p>
00061	11/01/2019	Rater Field Checklist, Version 1/1.1	Refinement	<p>Intentionally designed details that meet 10% exemption for reduced thermal bridging</p>
				<p>Issue: Partners have asked whether “PTAC’s” were specifically identified as an intentionally designed detail that can be part of the 10% exempted from reduced thermal bridging or if PTHP’s were also intended to be included.</p>

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				<p>Resolution: EPA’s intent was to provide one example, without excluding other heating and cooling equipment that occupy exterior wall surface area. Footnote 24 of the Rater Field Checklist in Rev01 will be revised as follows:</p> <p>“Up to 10% of the total exterior wall surface area is exempted from the reduced thermal bridging requirements to accommodate intentional designed details (e.g., architectural details such as thermal fins, wing walls, brick returns, stone window sills, metal panels, or masonry fireplaces; structural details, such as fasteners (e.g., shelf angles, metal clips, z-girts, brick ties), projected balconies, and service openings (e.g., PTACs or PTHPs), but not steel columns or wall area occupied by intermediate floors).”</p>
00062	11/01/2019	Rater Field Checklist, Version 1/1.1	Refinement	<p>Alignment of exemptions for duct leakage testing with ANSI / RESNET / ICC Standards</p>
				<p>Issue: A question has arisen as to whether the two current program-specific exemptions to testing of duct leakage to the outdoors should be revised to align with policies contained in ANSI standards.</p> <p>ANSI / RESNET / ICC Standard 301-2019 contains an alternative to testing that has prerequisites that generally mirror the first program-specific exemption.</p> <p>ANSI / RESNET / ICC Standard 380-2019 contains an alternative to testing that generally mirrors the second program-specific exemption.</p>
				<p>Resolution: In order to improve alignment with available ANSI standards and the clarity of program requirements, Footnote 46 will be revised as follows:</p> <p>“Testing of duct leakage to the outdoors can be waived in accordance with the 2nd or 3rd alternative of ANSI / RESNET / ICC Std. 301, Table 4.2.2 (1), footnote (w). Alternatively, testing of duct leakage to outdoors can be waived in accordance with Section 5.5.2 of ANSI / RESNET / ICC Std. 380 if total duct leakage, at rough-in or final, is ≤ 4 CFM25 per 100 sq. ft. of conditioned floor area or 40 CFM25, whichever is larger. Guidance to assist partners with these alternatives, including modeling inputs, is available at www.energystar.gov/newhomesresources.”</p>
00063	11/01/2019		Refinement	<p>Improving the formatting of the Central Exhaust Leakage Test requirements</p>

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		Rater Field Checklist, Version 1/1.1		<p>Issue: Raters have noted that the formatting of the duct leakage test in Item 6.4 makes it easier to understand the requirements and options than the formatting used for the central exhaust duct leakage test in Item 6.7.</p> <p>Resolution: Item 6.7 will be split into two rows to match the formatting of the duct leakage tests in Item 6.4 and language will be added to make it more clear what is tested and what is not.</p> <p>6.7 Duct leakage of central exhaust systems that serve four or more dwelling units, meets one of the following two options:</p> <p>6.7.1 <u>Rough-in</u>: Tested including horizontal run outs, trunks, branches, and take-offs up to, but not including, the grilles, the leakage does not exceed 25% of exhaust fan flow.</p> <p>6.7.2 <u>Final</u>: Tested inclusive of all ductwork between the fan and the grilles, the leakage does not exceed 30% of exhaust fan flow.</p>
00064	08/31/2019	Rater Field Checklist, Version 1 / 1.1	Refinement	<p>Approved credential list for Functional Testing Agents (FTA)</p> <p>Issue: Partners have asked about other commissioning credentials that are not currently listed as a pre-approved credential for FTA's, such as the Certified Commissioning Authority (CxA) credential from ACG (AABC Commissioning Group) and the process through which EPA would consider other credentials.</p> <p>Resolution: EPA has reviewed the certification and re-certification process for both ACG's CxA and CxT (Certified Commissioning Technician) credentials and determined that they are equivalent to currently listed credentials and therefore will be added to the list. FTA's with this credential may complete the Functional Testing Checklist upon completion of the online orientation. Partners may submit other equivalent commissioning credentials for EPA to consider. If approved, they will be listed <u>online</u>.</p> <p>Footnote 38 will be revised as follows:</p> <p>"Functional Testing Agents must hold an approved credential, as listed at www.energystar.gov/ftas, or must be a representative of the Original Equipment Manufacturer (OEM), or a contractor credentialed by an HVAC Quality Installation Training and Oversight Organization (H-QUITO), if not completing Sections 6 and higher. Functional Testing Agents may not be the installing contractor unless they are a credentialed contractor. An explanation of the credentialing process and links to H-QUITOs, which maintain lists of credentialed</p>

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				<p>contractors, can be found at www.energystar.gov/findhvac. A directory of other FT Agents can be found at www.energystar.gov/mfnc/ftas.”</p> <p>Item 5.7 will also be reworded as follows:</p> <p>5.7 Rater has verified that Functional Testing Agent(s) (“FT Agent(s)”) completing the National HVAC Functional Testing Checklist(s), hold one of the required credentials and are listed on the appropriate online directory.⁴³</p> <p>Credential(s): _____</p> <p>FT Agent Name(s): _____</p>
00065	11/01/2019	Rater Field Checklist, Version 1 / 1.1	Refinement	Version of National checklists must be completed in California, Oregon and Washington
				Issue: Partners have asked which version of the “National” checklists, referenced in Exhibit 2: Mandatory Requirements for All Certified Homes, must be completed.
				Resolution: The National checklists must be completed. To improve clarity, the checklist title will end with “..., Version 1 / 1.1 / 1.2”.
00094	03/27/2020	Rater Field Checklist, Version 1 / 1.1	Refinement	Rater Field Checklist footnotes
				Issue: EPA identified several discrepancies in footnote references
				<p>Resolution: EPA confirmed that the references were incorrect. As a result, checklist items were updated as follows:</p> <p>Item 6.7.1 – Footnote updated from 52 to 53</p> <p>Item 6.7.2 – Footnote updated from 52 to 53</p> <p>Item 8.3 – Footnote updated from 54 to 55</p> <p>Item 12.2.1 – Updated to “See Footnote 75 for allowances.”</p> <p>Item 12.2.2 – Updated to “See Footnote 75 for allowances.”</p>

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00129	10/30/2020	Rater Field Checklist, Version 1/1.1 (Rev.01)	Clarification	Exhibit X – PTAC efficiency and efficiencies for systems not listed		
				<p>Issue: It was noted that the PTAC cooling efficiencies in Exhibit X of the Rater Field Checklist were less than the current federal minimum requirements for this equipment type and that the gas heating efficiencies were not listed.</p>		
				<p>Resolution: Exhibit X will be revised to align PTAC cooling efficiencies with federal minimums.</p> <table border="1"> <tr> <td>Packaged Terminal Air Conditioner (PTAC < 7 kBtu/h)</td> <td>11.9 EER</td> </tr> <tr> <td>Packaged Terminal Air Conditioner (PTAC > 15 kBtu/h)</td> <td>9.5 EER</td> </tr> <tr> <td>Packaged Terminal Air Conditioner (≥7 and ≤ 15 kBtu/h)</td> <td>14.0 – (0.300 X Cap/1000) EER</td> </tr> </table> <p>In addition to adding the missing efficiency, which is 80% for a gas-fired PTAC, the following note will be added to Exhibit X:</p> <p>“†For Equipment Types not listed here, minimum efficiencies shall be based on those listed in ASHRAE 90.1-2010”</p>	Packaged Terminal Air Conditioner (PTAC < 7 kBtu/h)	11.9 EER
Packaged Terminal Air Conditioner (PTAC < 7 kBtu/h)	11.9 EER					
Packaged Terminal Air Conditioner (PTAC > 15 kBtu/h)	9.5 EER					
Packaged Terminal Air Conditioner (≥7 and ≤ 15 kBtu/h)	14.0 – (0.300 X Cap/1000) EER					
00265	03/17/2022	Rater Field Checklist, Version 1/1.1 (Rev.02)	Change	Item 1.5.2 - Clarify insulation requirements above and below heated plenum		
				<p>Issue: Partners have noted confusion regarding the insulation requirements in Item 1.5.2 that apply to the top of a heated plenum since in some cases they overlap with the floor insulation requirements of Item 3.6. In addition, given the allowance in Footnote 16, Partners have asked whether that option can be used to meet Item 1.5.2.</p>		
				<p>Resolution: The intent of the requirement in Item 1.5.2 is to establish insulation requirements for conditions where Item 3.6 does not apply, such as when the space above the heated plenum is not a dwelling unit or common space but is ambient or ground conditions, commercial space, or some other unconditioned space which has no minimum “floor” insulation requirement.</p>		

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				<p>Item 1.5.2 will be revised as follows:</p> <p>1.5.2 Insulation at top of heated plenum meets Item 3.6 where applicable. Otherwise, meets or exceeds the R-value for mass floors from the “All Other” column of Table 502.2(1) of 2009 IECC</p> <p>In addition, similar to the allowance in Footnote 16, the following footnote will be added to allow an alternative method to comply with Item 1.5.2 and 1.5.3:</p> <p>“Where conditioned space is above the plenum, in lieu of insulating the top of the plenum, the bottom of the plenum may be used to comply with Items 1.5.2 and 1.5.3, if its insulation meets the requirements of Item 1.5.2 and, where applicable, Item 3.6. When using this alternative, the bottom of the plenum must meet all the requirements for floor insulation which include a fully-aligned air barrier as described in Footnote 16 and Grade I installation per Item 1.3.”</p>
00132	10/30/2020	Rater Field Checklist, Version 1/1.1 (Rev.01)	Clarification	<p>Item 1.5.3 – Extent and grading of plenum insulation</p> <p>Issue: Partners noted that the insulation requirement for heated plenums could be more clear that they only apply to heated plenums, not all plenums. Additionally, it was noted that Item 1.3 requires “all” insulation to achieve Grade I and none of the noted Alternatives apply to heated plenums.</p> <p>Resolution: It was not the program intent to have the plenum insulation requirements apply to plenums that are not heated, nor to require a Grade I insulation for the insulation at the bottom</p>

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				<p>of the heated plenum. The word “plenum” will be replaced with “heated plenum” in Items 1.5.1 - 1.5.3 and Footnote 10 will be revised as follows:</p> <p>The bottom of the <u>heated</u> plenum is permitted to be suspended ceiling tiles or other non-air barrier material. If fiberglass insulation is installed, it must be paper-faced. <u>This insulation shall achieve a Grade I or Grade II install.</u></p>
00133	10/30/2020	Rater Field Checklist, Version 1/1.1 (Rev.01)	Clarification	<p>Item 1.6.2 – Clarifying garage ceiling insulation requirements</p>
				<p>Issue: Partners have noted confusion regarding the ceiling insulation requirements for heated garages, since they may be in conflict with floor insulation requirements for the conditioned space directly above the garage or because the local code official doesn’t require insulation at the boundary between a conditioned space and heated garage.</p>
				<p>Resolution: The intent of the program was to permit garages to install space heating systems, but only if the garages are then insulated like semi-conditioned spaces. One of these insulation requirements is for the ceiling of the garage. This was originally intended to capture the scenario where a heated garage has exterior or ambient conditions above it. In this case, a minimum amount of insulation is needed. In the case where there is a conditioned space above, that space is subject to the floor insulation requirements in Item 3.1 & 3.2 of the Rater Design Review Checklist. Insulation is required even if the local code does not require it. Where a floor insulation requirement overlaps the ceiling requirement, the greater value shall be installed.</p>
00331	10/03/2022	Rater Field Checklist, Version 1/1.1 (Rev.02)	Change	<p>Item 3.4 – Allowance for insulation on top of slab in new construction</p>
				<p>Issue: Item 3.4 requires slab edge insulation aligned with the thermal boundary of the walls, though, exclusively for existing slabs (e.g., in a building undergoing gut rehabilitation), Footnote 19 provides an allowance to install insulation on top of the slab. Partners have asked whether this allowance can be applied to new construction.</p>
				<p>Resolution: The option to install insulation on top of the slab will be extended to all buildings. While slab edge insulation is generally the most cost-effective strategy, and remains the best practice recommended by EPA, this allowance will provide a backup compliance pathway that may be useful in special circumstances.</p> <p>Footnote 19 will be revised as follows:</p>

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				<p>“Alternatively, the thermal break is permitted to be created using \geq R-3 rigid insulation on top of an existing the slab (e.g., in a building undergoing a gut rehabilitation). In such cases, up to 10% of the slab surface is permitted to not be insulated (e.g., for sleepers, for sill plates). Insulation installed on top of slab shall be covered by a durable floor surface (e.g., hardwood, tile, carpet).”</p>
00386	10/03/2022	Rater Field Checklist, Version 1/1.1 (Rev.02)	Change	<p>Item 3.4 – Expanding monolithic slab edge insulation exemption to slabs with multiple pours that are structurally connected</p>
				<p>Issue: Partners have asked if a slab that is structurally similar to a monolithic slab, but is actually completed in more than one pour where the joists are connected, may also use the monolithic slab edge exemption.</p>
				<p>Resolution: EPA agrees that slabs with multiple pours where all the concrete is in direct contact and reinforced (e.g., with rebar) should be considered a monolithic slab for the purposes of this requirement.</p> <p>A new sentence will be added to the end of Exemption 2 of the Slab Edge Insulation Exemption Details document as follows:</p> <p>“Slabs with multiple pours may be considered monolithic and use this detail if all concrete is in direct contact and reinforced (e.g. with rebar) at the joints.”</p>
00178	11/12/2020	Rater Field Checklist, Version 1/1.1 (Rev.01)	Change	<p>Item 3.4 – Narrow exemption from slab insulation for certain unconditioned spaces</p>
				<p>Issue: Partners have presented EPA with various specific details that have presented challenges regarding the requirement in Climate Zone 4 and higher to insulate 100% of the slab edge when the slab is on grade, for which EPA has already provided exemptions. A Partner has recently asked for an exemption for a new detail.</p> <p>This Item generally requires that where an insulated wall separates an unconditioned space from the conditioned space of the building, slab insulation be installed at this interface to provide a thermal break between the conditioned and unconditioned slab.</p> <p>The detail in question involves a conditioned space such as a dwelling unit that has an adjacent occupiable space that is not itself conditioned space (i.e., an unconditioned corridor) but is within the thermal enclosure of the building, and the thermal enclosure is comparable to the rest of the building.</p> <p>Because the above-grade walls separating the dwelling units from the occupiable space are insulated, slab insulation would normally be required at this interface. However, due to the details of this project, a relatively small temperature gradient is expected between the corridor</p>

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				<p>and the dwelling units. Therefore, a thermal break at this interface would provide limited benefit compared to the additional effort and cost.</p> <p>Resolution: A new narrow exemption will be added to the Slab Edge Insulation Exemption Details document as follows:</p> <p>“Exempted Slab Edge Detail 4: Slabs that Separate Occupiable Space Within the Thermal Enclosure from Adjacent Conditioned Spaces</p> <p>Per Figures 4 & 5 [shown in the Slab Edge Insulation Exemption Details document], where a slab extends from conditioned space (e.g., a dwelling unit) to an adjacent occupiable space that is not conditioned space (e.g., an unconditioned corridor), insulation is not required to be provided at this boundary under the following conditions:</p> <ol style="list-style-type: none"> 1. The adjacent occupiable space is entirely within the thermal enclosure of the building, and, 2. The assemblies separating the occupiable space from either the outdoors or not-occupiable space meet both of the following: <ol style="list-style-type: none"> a. Except in California, the assemblies must meet the “Envelope, Windows, and Doors” requirements listed in the ENERGY STAR Reference Design Exhibit of the applicable national or regional program requirements (i.e., insulation levels; Grade I insulation; infiltration; windows; and doors). For the ENERGY STAR Multifamily New Construction program, the requirements are modified by bullets 2 and 3 in the Common Space Applicability Notes and must be followed, as well. <p style="margin-left: 40px;">In California, for the ENERGY STAR Single-Family New Homes program, which does not have an ENERGY STAR Reference Design, these attributes must be equal or better than the predominant performance values of the dwelling units. For the ENERGY STAR Multifamily New Construction program, the assemblies must meet or exceed the “Envelope & Windows” requirements listed in Exhibit 1 of the California Program Requirements.</p> b. The assemblies must meet Sections 1-4 of the ENERGY STAR National Rater Field Checklist, focusing on high-performance fenestration & insulation, fully-aligned air barriers, reduced thermal bridging, and air sealing. <p>Per ASHRAE 62.2-2010, the term “occupiable space” is defined as any enclosed space inside the pressure boundary and intended for human activities, including, but not limited to, all habitable spaces, toilets, closets, halls, storage and utility areas, and laundry areas. Garages are generally not occupiable space, per this definition, and shall not be counted as such for the purpose of this exemption.</p>
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				<p>This exemption is provided because the occupiable space is within the building’s thermal enclosure. Therefore, a relatively small temperature gradient is expected between the occupiable and conditioned space, and a thermal break at this interface would provide limited benefit compared to the additional effort and cost.</p> <p>Note that this policy does not apply to a slab that extends from conditioned space to an adjacent space that is not occupiable. For example, at the interface between a conditioned dwelling unit and a garage (which is not an occupiable space), both the assembly and the slab edge must be insulated.”</p>
00284	05/12/2022	Rater Field Checklist, Version 1/1.1 (Rev.02)	Clarification	<p>Items 3.4 and 3.5 – Clarifying intent and application of slab “on grade” edge insulation and alternatives for above-grade slab edges</p>
				<p>Issue: While Policy Record 00220 clarified the intent of Item 3.5 is to address above-grade concrete slab edges, it did not provide enough guidance in Item 3.4 or Item 3.5 to ensure Partners would recognize that elevated slab edges “at grade” without ground contact would also be expected to meet the same insulation requirements of “slab on grade” floor edges. The Footnotes are also not as clear as they could be and Partners would benefit from seeing exempted details as well as non-exempted details in the Slab Edge guidance document.</p>
				<p>Resolution: EPA agrees that while the intent was documented in the Policy Record, it should have been more clear in Item 3.4 and Item 3.5 and the applicable Footnotes.</p> <p>Item 3.4 and Footnote 19 and 20 will be revised as follows:</p> <p>3.4 For slabs on grade or at grade without ground contact in CZ 4-8, 100% of slab edge insulated to \geq R-5 at the depth specified by 2009 IECC Table 502.2(1) & aligned with the thermal boundary of the walls.</p> <p>19. Consistent with the 2009 IECC, slab edge insulation is required for slab-on-grade floors with a floor surface less than 24 inches below grade. Slab edge insulation is also required for slab floors with a floor surface less than 24 inches below grade, even if the slab itself is not in contact with the ground. Slab perimeter insulation shall extend to the top of the slab to provide a complete thermal break. If the top edge of the insulation is installed between the exterior wall and the edge of the interior slab, it shall be permitted to be cut at a 45-degree angle away from the exterior wall. Alternatively, the thermal break is permitted to be created using \geq R-3 rigid insulation on top of an existing slab (e.g., in a building undergoing a gut rehabilitation). In such cases, up to 10% of the slab surface is permitted to not be insulated (e.g., for</p>

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				<p>sleepers, for sill plates). Insulation installed on top of slab shall be covered by a durable floor surface (e.g., hardwood, tile, carpet).</p> <p>20. Where an insulated wall separates a garage, patio, courtyard, porch, or other unconditioned space from the conditioned space of the building, slab perimeter insulation shall also be installed at this interface to provide a thermal break between the conditioned and unconditioned slab, if the slab is in contact with the ground, ambient, or unconditioned space at that interface. Where specific details cannot meet this requirement, partners shall provide the detail to EPA to request an exemption prior to the building's certification. EPA will compile exempted details and work with industry to develop feasible details for use in future revisions to the program. A list of currently exempted and non-exempted details is available at: www.energystar.gov/slabeledge.</p> <p>Item 3.5 will also be revised as follows:</p> <p>For above-grade concrete slab edges (e.g., podiums, balconies) in CZ 4-8, 100% of slab edge insulated to $\geq R-5$ & aligned with the thermal boundary of the walls. At this boundary, for slabs resting on mass walls, insulation must extend ≥ 8 ft. below the bottom of the slab edge & for slabs resting on columns, the insulation must surround the column, at a depth of 4ft. Alternatives in Footnote 22. ^{21, 22}</p> <p>To separate clarifying footnotes from the alternatives in Footnote 21, this footnote will be revised as two footnotes and re-formatted to improve understanding:</p> <p>21. Item 3.5 does not apply to the repeated concrete floor perimeter edges of a multistory building as those are subject to Item 3.7.1. Where specific details cannot meet this requirement, partners shall provide the detail to EPA to request an exemption prior to the building's certification. EPA will compile exempted details and work with industry to develop feasible details for use in future revisions to the program. A list of currently exempted and non-exempted details is available at: www.energystar.gov/slabeledge.</p> <p>22. EPA has developed the following alternatives for projected slabs and podiums to comply with Item 3.5:</p>
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				<p>For projected slabs (e.g., podiums, balconies), where a minimum of R-5 slab edge insulation is not installed between conditioned space and the unconditioned projected slab, use one of the options below:</p> <p>a) Modify the UA calculation for the wall assembly that accounts for this projected slab when demonstrating compliance with Item 1.2.</p> <p>i) Where no insulation is installed, modify the UA calculation such that the area of the wall that is uninsulated due to the projected slab is calculated as 400% of that actual area. For example, for a projected slab without any thermal break that is 20 feet wide, and has a thickness of 1 foot, the area to be used in the UA calculation is 80 ft² instead of 20 ft².</p> <p>ii) Where insulation R-2 and greater is installed, the area is not required to be modified.</p> <p>b) Install minimum R-5 insulation, above and below the slab that extends horizontally for a minimum of 4 ft. When demonstrating compliance with Item 1.2, R-1 insulation may be associated with the area of the wall that is uninsulated due to the projected slab.</p> <p>For the following podium constructions, a minimum of 8ft is not required:</p> <p>a) Where podium wall is less than 8ft in height, insulation must instead be installed for the full height of the podium.</p> <p>b) For podiums that continue below-grade, insulate to a minimum of 8ft below the bottom of the slab edge, or to the depth below-grade specified for slab edge insulation by Table 502.2(1) of the 2009 IECC.</p> <p>c) Where a minimum of 4ft of insulation is installed on both interior and exterior surfaces of the wall.</p> <p>And finally, the Slab Edge Insulation Exemption Details document available at energystar.gov/slabeledge will be retitled to “Slab Edge Insulation Examples and Exemption Details” and both exempted details and examples of requests submitted that were not exempted, will be included.</p>
00130	10/30/2020	Rater Field Checklist,	Clarification	<p>Item 3.5 – Thermal breaks on projected balconies</p> <p>Issue: Item 3.5 of the Rater Field Checklist provides an alternative to the R-5 thermal break requirement for projected concrete balcony slabs without any thermal break installed. It is not</p>

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		Version 1/1.1 (Rev.01)		<p>currently clear what should be done for projected balcony slabs with a thermal break that is less than R-5.</p> <p>Resolution: For project teams providing some thermal break (R-2 and greater) at the boundary of the conditioned and unconditioned concrete slab of the balcony, the total UA compliance method is still required, but without increasing the area.</p> <p>The Rater Field Checklist Footnote 21 will be revised as follows:</p> <p>For projected balconies, install a minimum of R-5 slab edge insulation to provide a thermal break between conditioned space and the unconditioned projected balcony slab. Alternatively, a UA calculation for the wall assembly that accounts for this projected slab must be performed to demonstrate compliance with Item 1.2. For the purpose of this UA calculation, the area of the wall that is uninsulated due to the projected balcony is required to be calculated as 400% of that actual area. For example, for a projected balcony without any thermal break that is 20 feet wide, and has a thickness of 1 foot, the area to be used in the UA calculation is 80 ft² instead of 20 ft². For thermal breaks R-2 and greater, the area is not required to be modified. The distance the balcony projects from the building is not used in this calculation.</p>
00106	07/10/2020 Updated 10/30/2020	Rater Field Checklist, Version 1/ 1.1	Change	<p>Item 3.5 – Podium Insulation Requirements for Multi-Story Podiums and Columns</p> <p>Issue: Item 3.5 requires that in CZ 4-8 100% of the slab edge must be insulated to at least R-5; and for podiums, this slab edge insulation must span the full height of the podium wall. In order to comply, a two-story garage would need to insulate for both stories. Partners have asked if this was the intent of the requirement or if there are alternatives. It is also unclear how columns on the outside wall should be insulated.</p> <p>Resolution: EPA recognizes that there are diminishing returns to insulating the whole wall, and thus the requirement will be updated to require the wall to be insulated to a height of 8 feet, or the whole wall if the height is less than 8 feet. Energy modeling has also showed that insulating both sides of the wall with 4 feet of insulation will reduce thermal bridging more than insulating for 8 feet along the exterior of the podium wall. EPA will provide an alternative option for projects to insulate both the interior and exterior of the wall to 4 feet instead of the exterior to 8 feet. The requirement will be further amended to state that columns must be insulated on all sides for 4 feet. In addition, EPA recognizes that there are diminishing returns insulating below-grade walls. The requirement will be further amended to state that podium walls will be</p>

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				<p>insulated to 8 ft or to a minimum depth below grade determined by the depth of slab edge insulation required by the 2009 IECC.</p> <p>Specifically, the Item 3.5 and Footnote 21 will be updated as follows:</p> <p>“For elevated concrete slabs in CZ 4-8 (i.e., podiums and projected balconies, but not intermediate slab floor edges) 100% of the slab edge insulated to \geq R-5. For podiums, this insulation must extend for a minimum of 8ft below the bottom of the slab edge. <u>For columns, the insulation must surround the column, at a depth of 4ft.</u> Alternatives in Footnote 21. ²¹”</p> <p>“²¹ For projected balconies, install a minimum of R-5 slab edge insulation to provide a thermal break between conditioned space and the unconditioned projected balcony slab. Alternatively, a UA calculation for the wall assembly that accounts for this uninsulated projected slab must be performed to demonstrate compliance with Item 1.2. For the purpose of this UA calculation, the area of the wall that is uninsulated due to the projected balcony is required to be calculated as 400% of that actual area. For example, for a projected balcony that is 20 feet wide, and has a thickness of 1 foot, the area to be used in the UA calculation is 80 ft² instead of 20 ft². The distance the balcony projects from the building is not used in this calculation. For podiums that are less than 8ft in height, insulation must be installed for the full height of the podium. For podiums that continue below-grade, insulate to a minimum of 8ft below the bottom of the slab edge, or to the depth below-grade specified for slab edge insulation by Table 502.2(1) of the 2009 IECC. For podiums, where insulation is installed on both interior and exterior surfaces of the wall, insulation depth may be reduced to 4ft.”</p>
00285	05/12/2022	Rater Field Checklist, Version 1/1.1 (Rev.02)	Clarification	<p>Item 3.5 – Clarifying podium slab edge insulation exemptions</p> <p>Issue: Partners have asked whether the elevated slab edge insulation requirements apply in all situations. In some designs, floor insulation is installed above the slab, maintaining a continuous thermal boundary with the walls, such that the slab edge insulation would not be needed. Another podium design utilizes underside slab insulation, but through internal supports, is able to maintain continuous insulation directly at the vertical slab edge, in which case the minimum of 8ft of insulation along the exterior wall per Item 3.5 may not be needed.</p> <p>Resolution: The intent of the requirement in Item 3.5 was to mitigate heat loss at exposed concrete slab edges. The requirement to extend the slab edge insulation for some distance along the exterior wall was based on typical construction practice, where the podium is structurally supported by the exterior wall and a true thermal break is not typically possible at that interface. EPA agrees that where a design can provide a thermal break at that interface</p>

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				<p>or provide continuous insulation above the slab, the slab edge and exterior wall insulation should not be required.</p> <p>Footnote 20 will be revised as follows:</p> <p>Item 3.5 does not apply to the repeated concrete floor perimeter edges of a multistory building as those are subject to Item 3.7.1. <u>Item 3.5 also does not apply where floor insulation meeting the requirements of Item 3.6 is installed above the slab and provides a continuous thermal boundary where it intersects the wall.</u> Where specific details cannot meet this requirement, partners shall provide the detail to EPA to request an exemption prior to the building’s certification. EPA will compile exempted details and work with industry to develop feasible details for use in future revisions to the program. A list of currently exempted and non-exempted details is available at: www.energystar.gov/slabeledge.</p> <p>A new exception will be added to Footnote 21:</p> <p>For the following podium constructions, a minimum of 8ft is not required:</p> <p>For podiums where the horizontal slab is not in direct contact with the exterior wall and R-5 insulation is provided at the slab edge, continuous with the under-slab insulation. See energystar.gov/slabeledge for example.</p>
00195	04/30/2021	<i>Rater Field Checklist, Version 1/1.1 (Rev.02)</i>	Change	<p>Item 3.5 – Elevated slab edge exemptions</p> <p>Issue: In Item 3.4, there is a slab edge insulation requirement for “slabs on grade” and in Footnote 20, it states: “Where specific details cannot meet this requirement, partners shall provide the detail to EPA to request an exemption prior to the building’s certification. EPA will compile exempted details and work with industry to develop feasible details for use in future revisions to the program. A list of currently exempted details is available at: www.energystar.gov/slabeledge.” Item 3.5 has a similar requirement, but for “elevated concrete slabs” and there is no similar statement in the Footnote associated with Item 3.5. Are any exemptions permitted for this Item? For example, in MFNC with elevated concrete slabs, while the slab may not be monolithic, the same challenge exists at horizontal brick ledges.</p> <p>Resolution: EPA agrees that a similar statement is appropriate to be added to Footnote 21 which is associated with Item 3.5.</p> <p>In Rev.03, the following sentence will be added to Footnote 21.</p>

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				<p>“Where specific details cannot meet this requirement, partners shall provide the detail to EPA to request an exemption prior to the building’s certification. EPA will compile exempted details and work with industry to develop feasible details for use in future revisions to the program. A list of currently exempted details is available at: www.energystar.gov/slabeledge”</p> <p>In response to the specific exemption request, the Slab Edge Insulation Exemption Details document will be updated to include the following text and figure:</p> <p>Exempted Slab Edge Detail 3: Elevated Slabs with Brick Ledges</p> <p>Per Figure 3 [shown in the Slab Edge Insulation Exemption Details document], for a project pursuing certification through the ENERGY STAR Multifamily New Construction program, insulation is not required at the horizontal brick ledge of an elevated slab. However, the vertical surface on either side of the ledge shall be insulated.</p>
00401	10/03/2022	Rater Field Checklist, Version 1/1.1 (Rev.02)	Change	<p>Item 3.5 – Durable surface required for insulation installed above a slab</p> <p>Issue: While Policy Record 00284 provided additional guidance on the application of Item 3.5 and alternate options, the allowance for installing insulation above and below the horizontally projected slab inadvertently did not specify that a durable surface is required on top of the insulation where installed on top of the slab.</p> <p>Resolution: The alternative option in Footnote 22 described in PR 00284 will be revised as follows:</p> <p>“EPA has developed the following alternatives for projected slabs and podiums to comply with Item 3.5:</p> <p>For projected slabs (e.g., podiums, balconies), where a minimum of R-5 slab edge insulation is not installed between conditioned space and the unconditioned projected slab, use one of the options below:</p> <p>a) Modify the UA calculation for the wall assembly that accounts for this projected slab when demonstrating compliance with Item 1.2.</p> <p>i) Where no insulation is installed, modify the UA calculation such that the area of the wall that is uninsulated due to the projected slab is calculated as 400% of that actual area. For example, for a projected slab without any thermal break that is 20 feet wide, and has a thickness of 1 foot, the area to be used in the UA calculation is 80 ft² instead of 20 ft².</p> <p>ii) Where insulation R-2 and greater is installed, the area is not required to be modified.</p> <p>b) Install minimum R-5 insulation, above and below the slab that extends horizontally for a minimum of 4 ft. <u>Insulation installed on top of slab shall be covered by a durable floor surface.</u> When demonstrating compliance with Item 1.2, R-1 insulation</p>

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				<p>may be associated with the area of the wall that is uninsulated due to the projected slab.</p> <p>For the following podium constructions, a minimum of 8ft is not required:</p> <ul style="list-style-type: none"> d) Where podium wall is less than 8ft in height, insulation must instead be installed for the full height of the podium. e) For podiums that continue below-grade, insulate to a minimum of 8ft below the bottom of the slab edge, or to the depth below-grade specified for slab edge insulation by Table 502.2(1) of the 2009 IECC. <p>Where a minimum of 4ft of insulation is installed on both interior and exterior surfaces of the wall.</p>
00220	10/28/2021	Rater Field Checklist, Version 1/1.1 (Rev.02)	Change	<p>Item 3.5 and 3.6 – clarifying intent and application of alternatives in Footnote</p>
				<p>Issue: <u>Policy Record ID 00284 contains the most recent resolution of this issue.</u> In Rater Field Checklist, Items 3.5 and 3.6 apply to “elevated” concrete slabs, but there is no definition for “elevated” like there is for slab-on-grade in Item 3.4, so it is unclear what slabs are subject to the requirement. Also, Footnote 21 appears to be limited to projected balconies, however other concrete slab projections should have access to the same alternative, as well as those offered to columns in Footnote 22. Finally, the language in general is not entirely clear or consistent in its intent at reducing thermal bridging at this important interface.</p> <p>Resolution: <u>Policy Record ID 00284 contains the most recent resolution of this issue.</u> The EPA agrees that the language in this set of requirements and associated Footnotes could be improved to better reflect the intent, which is to reduce thermal bridging at concrete slabs.</p> <p>The intent for Item 3.5 was to insulate above grade concrete slab edges that are exposed to ambient conditions in order to reduce thermal bridging at this location. This was intended to be similar to the rationale for insulating slab-on-grade edges, which applies to slabs within 2’ of the surface, but does not apply to slabs that are further below grade. This is not intended to overlap with the insulation requirements for concrete slab edges that form the repeated floor perimeters in a multistory building as those are addressed by Item 3.7.1. It was also not intended to create a conflict with Footnote 22, which allows a UA penalty where columns support a podium.</p> <p>In Revision 03, Item 3.5 will be revised as follows:</p> <p>3.5 For above-grade concrete slab edges associated with podiums and projected balconies in CZ 4-8, 100% of the slab edge insulated to ≥ R-5. For podiums resting on columns or</p>

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				<p>mass walls at the slab edge interface, insulation must extend ≥ 8 ft. below the bottom of the slab. Alternatives in Footnote 21.</p> <p>In Revision 03, to expand the UA alternative to other projections, Footnote 21 will be revised as follows and will also include an insulation alternative, similar to Footnote 22:</p> <p>21. For projected slabs (i.e podiums, balconies), install a minimum of R-5 slab edge insulation to provide a thermal break between conditioned space and the unconditioned projected concrete slab. Alternatively, a UA calculation for the wall assembly that accounts for this projected slab must be performed to demonstrate compliance with Item 1.2. For the purpose of this UA calculation, the area of the wall that is uninsulated due to the projected slab is required to be calculated as 400% of that actual area. For example, for a projected slab without any thermal break that is 20 feet wide, and has a thickness of 1 foot, the area to be used in the UA calculation is 80 ft² instead of 20 ft². The distance the slab projects from the building is not used in this calculation. For thermal breaks R-2 and greater or where R-5 insulation, above and below the slab extends horizontally for a minimum of 4 ft., the area is not required to be modified.</p> <p>For podiums that are less than 8ft in height, insulation must be installed for the full height of the podium. For podiums that continue below-grade, insulate to a minimum of 8ft below the bottom of the slab edge, or to the depth below-grade specified for slab edge insulation by Table 502.2(1) of the 2009 IECC. For podiums, where insulation is installed on both interior and exterior surfaces of the wall, insulation depth may be reduced to 4ft.</p> <p>The intent for Item 3.6 was to require floor insulation beneath concrete slabs that are exposed to ambient or unconditioned spaces in order to maintain thermal comfort in the conditioned spaces above. Given that a total UA compliance path is often used to trade-off this floor insulation, this was made a mandatory program requirement that cannot be traded-off.</p> <p>In Revision 03, Item 3.6 will be revised as follows to better reflect this intent:</p> <p>3.6 For concrete slab floors in CZ 4-8 above ambient conditions, garages, or unconditioned spaces outside the thermal boundary, floor insulation meets the U-factor specified in Table 502.1.2 of the 2009 IECC for Group R when dwelling units are above the slab, and for 'All Other' when common space is above the slab.²²</p>
00197	04/30/2021		Clarification	Item 3.6 – Non-structural discontinuities in the floor/ceiling insulation

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		Rater Field Checklist, Version 1/1.1 (Rev.02)		<p>Issue: For elevated concrete slabs, Footnote 22 is clear that a UA modification is required for discontinuities in the floor insulation caused by “structural columns”. It is not clear whether other discontinuities are also subject to this modification.</p> <p>Resolution: While EPA recognizes that other discontinuities exist and could be similarly subject to the UA modification, the Footnote will not be revised to expand this requirement. Rather, in Rev.03, a sentence will be added to the Footnote that states: “While EPA recommends insulating vertically along other areas of discontinuity, such as where walls intersect the concrete slab; this is not required. These uninsulated areas of the floor are not subject to the UA modification, but must still be accounted for when calculating the floor U-factor.”</p>
00196	04/30/2021	Rater Field Checklist, Version 1/1.1 (Rev.02)	Change	<p>Item 3.6 – Structural columns with thermal breaks</p> <p>Issue: For elevated concrete slabs, Footnote 22 for Item 3.6 requires a significant penalty when calculating a floor U-factor to address the uninsulated area occupied by uninsulated structural columns that support the concrete slab. If the structural column has a thermal break, does the column have to be insulated for 4 ft vertically in order to avoid the UA penalty?</p> <p>Resolution: No. EPA acknowledges that this type of column would not be required to be insulated vertically in order to avoid the modification to the UA calculation. The floor U-factor should be based on the rated value of the thermal break and applied to the area of the floor occupied by the structural column.</p> <p>Footnote 22 will be revised in Rev.03 as follows: “Whether insulating from above or below the slab, thermal breaks must be accounted for when determining compliance with floor U-factors. Where structural columns without thermal breaks cause a discontinuity in the installed floor insulation, the UA calculation for the floor assembly must account for this uninsulated area of the floor. For the purpose of this UA calculation, the area of the floor that is uninsulated due to the structural columns is required to be calculated as 400% of that actual area. For example, for a 4’x4’ column, the area to be used in the UA calculation is 64 ft² instead of 16 ft². The height of the column is not used in this calculation. Alternatively, if the structural column is insulated for a minimum of 4 vertical feet, the modification to the UA calculation is not required, and the U-value of the column insulation shall be associated with the uninsulated area of the floor due to the column. If the</p>

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				structural column has a thermal break, the U-value of the thermal break shall be associated with the area of the floor occupied by the column.”
00298	07/06/2022	Rater Field Checklist, Version 1/1.1/1.2 (Rev.02)	Change	Item 3.6 – Applying column insulation to floor UA calculation
				<p>Issue: Structural columns supporting concrete slab floors create areas of the slab that are not insulated. Footnote 22 allows insulated columns to apply their insulation to the UA calculation for the floor area. A Partner questioned whether there was a minimum R-value required for this approach and whether a maximum R-value was intended. Additionally, the Partner questioned how the floor UA should be calculated where insulated structurally bearing <u>walls</u> were used rather than <u>columns</u>.</p>
				<p>Resolution: EPA agrees that there should be a minimum R-value required to utilize this option and it should be clearly specified in the Footnote. In addition, there should be a maximum R-value allowed in the floor UA calculation, given that the area is still uninsulated. Finally, until standardized guidance is available on how to account for all thermal bridges, even though insulated bearing walls would perform similarly to insulated columns, the modified floor UA and alternative is limited to <u>columns</u>.</p> <p>Footnote 22 will be revised as follows:</p> <p>22. Whether insulating from above or below the slab, thermal breaks must be accounted for when determining compliance with floor U-factors. Where structural columns without thermal breaks cause a discontinuity in the installed floor insulation, the UA calculation for the floor assembly must account for this uninsulated area of the floor. For the purpose of this UA calculation, the area of the floor that is uninsulated due to the structural columns is required to be calculated as 400% of that actual area. For example, for a 4’x4’ column, the area to be used in the UA calculation is 64 ft² instead of 16 ft². The height of the column is not used in this calculation. Alternatively, if the structural column is insulated for a minimum of <u>R-5 for 4 vertical feet</u>, the modification to the UA calculation is not required, and the U-value of the column insulation shall R-5 <u>may be associated with the uninsulated area of the floor that is uninsulated</u> due to the column. If the structural column has a thermal break, the <u>RU-value of the thermal break shall be associated with the area of the floor that is uninsulated due to occupied by</u> the column.</p> <p>While EPA recommends insulating vertically along other areas of discontinuity, such as where walls intersect the concrete slab; this is not required. These uninsulated areas of the</p>

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				<p>floor are not subject to the UA modification, but must still be accounted for when calculating the floor U-factor.</p> <p>In addition, for conciseness, Item 3.6 will be edited as follows, replacing “and for” with “&”:</p> <p>3.6 For concrete slab floors in CZ 4-8 above ambient conditions, garages, or unconditioned spaces outside the thermal boundary, floor insulation meets the U-factor specified in Table 502.1.2 of the 2009 IECC for Group R when dwelling units are above the slab, and for & ‘All Other’ when common space is above the slab.</p>
00131	10/30/2020	Rater Field Checklist, Version 1/1.1 (Rev.01)	Clarification	<p>Item 3.7 – Extent of Reduced Thermal Bridging Requirements between conditioned and unconditioned spaces</p>
				<p>Issue: Wall assemblies adjacent to exterior or ambient/ground conditions, where significant heat loss may occur, are required to be insulated by energy codes. The intent of Item 3.7 is to reduce thermal bridging at these insulated above-grade wall assemblies. In multifamily buildings, there are above-grade wall assemblies, that may be adjacent to unconditioned spaces of varying space conditioning, where some amount of heat loss and therefore thermal bridging may still occur (i.e., stairwells, garages, corridors, adjacent buildings, etc.). It is not entirely clear if the ENERGY STAR program intended the reduced thermal bridging requirements to apply to all unconditioned spaces.</p>
				<p>Resolution: The intent for these requirements is to apply to the building thermal envelope of the building, and not the interior spaces.</p> <p>To provide greater clarity, Item 3.7 will be revised as follows:</p> <p style="padding-left: 40px;">“At above-grade walls and rim / band joists separating conditioned space from the exterior, one of the following options used:”</p> <p>The first sentence of Footnote 23 will be revised as follows:</p> <p style="padding-left: 40px;">Item 3.7 is applicable to walls that are adjacent to other buildings.</p>
00135	10/30/2020	Rater Field Checklist, Version 1/1.1 (Rev.01)	Clarification	<p>Item 3.7.1 – Closed-cell spray foam considered rigid insulation</p>
				<p>Issue: Partners have asked if closed-cell spray polyurethane foam (CCSPF) could be used as continuous rigid insulation to meet reduced thermal bridging requirements.</p>

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				<p>Resolution: Once cured, CCSPF is considered rigid insulation. Therefore, it is permitted to be used to as continuous rigid insulation to meet reduced thermal bridging requirements, provided that it is continuous across all structural members without thermal bridges other than fasteners and service openings.</p>
00138	10/30/2020	Rater Field Checklist, Version 1/1.1 (Rev.01)	Clarification	<p>Item 3.7.1 – Extent of interior insulation for gut rehabilitation projects</p> <p>Issue: Partners have questioned which specific envelope locations are subject to meeting the continuous insulation requirements associated with Item 3.7, reduced thermal bridging for gut rehabilitation projects where it is not always feasible to insulate at floor perimeters or behind demising walls. Footnote 27 clearly states that continuous “interior” insulation may be used. It is not clear whether that means from floor to ceiling, even though the concrete floor that intersects the exterior wall remains uninsulated. It also is not clear regarding demising walls at the intersection of the exterior wall.</p> <p>Resolution: The program intent is that interior insulation is required from floor to ceiling as well as at the interface where the demising walls meet the exterior wall.</p> <p>Footnote 27 will be revised as follows:</p> <p style="padding-left: 40px;">In a building undergoing a gut rehabilitation, continuous interior insulation may be used in lieu of continuous exterior rigid insulation or insulated siding. <u>This alternative does not require continuous interior insulation where a floor intersects an exterior wall, it only requires it from floor to ceiling. Continuous interior insulation is required where the demising wall intersects the exterior wall; however, it may be exempted per Footnote 24.</u></p>
00212	08/17/2021	Rater Field Checklist, Version 1/1.1 (Rev.02)	Clarification	<p>Item 3.7.1 – Mineral wool considered rigid insulation</p> <p>Issue: Partners have asked if mineral wool insulation could be used as continuous rigid insulation to meet reduced thermal bridging requirements.</p>

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				<p>Resolution: Mineral wool can be considered 'rigid' because it has good structural integrity, even in its standard semi-rigid form. Therefore, it is permitted to be used as continuous rigid insulation to meet reduced thermal bridging requirements, provided that it is continuous across all structural members without thermal bridges other than fasteners and service openings.</p>
00269	03/17/2022	Rater Field Checklist, Version 1/1.1 (Rev.02)	Clarification	<p>Item 3.7.3- Remove text related to stud spacing that is not applicable to MFNC</p>
				<p>Issue: When developing the program requirements, text in Footnote 29 related to stud spacing was included. MFNC does not have a stud spacing requirement under Item 3.7.3.</p>
				<p>Resolution: This text was inadvertently included and is not relevant for MFNC and will be removed.</p> <p>Footnote 29 will be revised as follows:</p> <p>“Rim / band joists are exempt from this requirement. For the purpose of this requirement, “≤ 3 stories” refers to any portion of the building elevation where the wood-framed walls do not exceed 3 stories in height. Partial floors that meet the definition of a mezzanine or loft, as defined by the 2012 IRC, do not count as a story. All ‘advanced framing’ details shall be met except where the builder, architect, or engineer provides a framing plan that encompasses the details in question, indicating that structural members are required at these locations and including the rationale for these members (e.g., full-depth solid framing is required at wall corners or interior / exterior wall intersections for shear strength, a full-depth solid header is required above a window to transfer load to jacks studs, or additional jack studs are required to support transferred loads). The Rater shall retain a copy of the detail and rationale for their records, but need not evaluate the rationale to certify the building.”</p>
00214	08/17/2021	Rater Field Checklist, Version 1/1.1 (Rev.02)	Change	<p>Item 3.7.3 – Expanding the advanced framing option to CZ 4-5</p>
				<p>Issue: Partners have requested that the advanced framing option in Item 3.7.3 for wood-framed projects be extended to buildings of any height in CZ 4 and 5. Currently, the use of continuous insulation is the most commonly used compliance option for buildings >3 stories in these climate zones. However, several partners have expressed concerns about the associated cost of, and architectural changes required to, implement the continuous insulation strategy. Furthermore, they have indicated that the advanced framing details can be successfully integrated into buildings taller than 3 stories, which would create a more cost-effective compliance option.</p>

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				<p>When designing the Multifamily New Construction (MFNC) program, one primary goal was to merge the applicable requirements from the Certified Homes program, now named Single-Family New Homes (SFNH), and the Multifamily High-Rise (MFHR) program without increasing the overall the stringency of the requirements.</p> <p>However, EPA deviated from this general approach with regards to the advanced framing strategy of the reduced thermal bridging requirements. The advanced framing strategy was streamlined to only include the details most achievable in multifamily buildings, but was only permitted to be used for wood-framed walls either in CZ 1-3 or in buildings ≤ 3 stories. The strategy was not permitted to be used in buildings > 3 stories in CZ 4-8 due to the belief that these details would be difficult to incorporate into taller buildings and concerns about comfort and durability impacts.</p> <hr/> <p>Resolution: Because of the potential ability of partners to integrate the advanced framing details into buildings taller than 3 stories, and challenges expressed by partners about implementing the continuous insulation strategy, further analysis was completed to assess the performance impact of using the former strategy over the latter.</p> <p>After additional analysis in Climate Zone 4, EPA believes that the use of advanced framing instead of continuous insulation for wood-framed projects will not substantially impact the comfort or durability of the building. Therefore, the advanced framing strategy will be allowed to be used in Climate Zone 4 for buildings of any height.</p> <p>In Climate Zone 5, EPA believes that the impact will be similar, but that it's more feasible to mitigate any impact by the use of $\geq 5.5"$ framing depth with the wall cavity insulated $\geq R-20.0$. Therefore, the advanced framing strategy will be allowed to be used in Climate Zone 5 if paired with this improved wall assembly.</p> <p>Item 3.7.3 will be updated as follows:</p> <p>3.7.3 Option only for wood-framed walls either in CZ 1-5 OR ≤ 3 stories: 'advanced framing' details including all of the Items below: ^{26, 29}</p> <p style="padding-left: 40px;">3.7.3a Corners insulated $\geq R-6$ to edge, AND; ³⁰</p> <p style="padding-left: 40px;">3.7.3b Headers above windows & doors insulated $\geq R-3$ for 2x4 framing or equivalent cavity width, and $\geq R-5$ for all other assemblies (e.g., with 2x6 framing), AND; ³¹</p> <p style="padding-left: 40px;">3.7.3c Interior / exterior wall intersections insulated to same R-value as rest of exterior wall. ³²</p>
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				<p>3.7.3d In Climate Zone 5, for > 3 stories, ≥ 5.5” framing depth used with wall cavity insulated ≥ R-20.0.</p> <p>Overall, these changes are intended to ease the transition of projects from the SFNH program to the MFNC program, without substantially impacting the benefits of the program. EPA may continue to refine these requirements based upon partner feedback, building science research, and increasingly stringent codes.</p>
00286	05/12/2022	Rater Field Checklist, Version 1/1.1 (Rev.02)	Clarification	<p>Item 3.7.3 – Improving clarity of eligibility to use ‘advanced framing’</p>
				<p>Issue: While Policy Record 00214 expanded the option to use ‘advanced framing’ to more climate zones, Partners have found the phrasing of Item 3.7.3 hard to understand.</p>
				<p>Resolution: EPA agrees that Item 3.7.3 should be revised to ensure the eligibility requirements for using ‘advanced framing’ are clear and easy to understand.</p> <p>Item 3.7.3 will be revised as follows:</p> <p>For wood-framed walls in CZ 1-5 (all stories) & in CZ 6-8 (≤ 3 stories) only: ‘advanced framing’ details including all Items below:</p>
00277	05/12/2022	Rater Field Checklist, Version 1/1.1 (Rev.02)	Change	<p>Item 3.7.3d – Expand advanced framing detail to Climate Zone 4C</p>
				<p>Issue: The Item’s allowance for the advanced framing strategy to be used in Climate Zone 5 may need to be extended to Climate Zone 4C, due to the similar natures of these climate zones.</p>
				<p>Resolution: Due to the similar natures of Climate Zones 4C and 5, the Item will be extended to Climate Zone 4C and will be revised as follows:</p> <p>“3.7.3d In CZ 4C and 5, for > 3 stories, ≥ 5.5” framing depth used with wall cavity insulated ≥ R-20.0.”</p>
00423	10/03/2022	Rater Field Checklist, Version 1/1.1 (Rev.02)	Change	<p>Section 5 Track A – All equipment must match the HVAC Design Report, including common space systems not using ANSI / RESNET / ACCA 310</p>
				<p>Issue: Under Track A, all systems using ANSI / RESNET / ACCA 310 will confirm the equipment matches the design report through use of the Standard. However, there may be systems in the building such as common space systems that are not using ANSI / RESNET / ACCA 310. It has been the intent that all equipment match the HVAC Design Report, but</p>

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				<p>there isn't a check box for systems under Track A that are not using ANSI / RESNET / ACCA 310.</p> <p>Resolution: To clarify the intent that all equipment must match the applicable HVAC Design Report, a new Item will be added to Section 5 Track A as follows: <u>"HVAC manufacturer & model number on installed equipment matches the HVAC Design Report in compliance with ANSI / RESNET / ACCA 310 or the HVAC Design Supplement to Std. 310 for Common Spaces and Central Systems."</u></p> <p>To clarify that all systems using ANSI / RESNET / ACCA 310 will complete this verification as part of the standard, a new footnote will be added as follows:</p> <p>"While this verification is completed as part of ANSI / RESNET / ACCA 310, it must also be documented in this checklist."</p>
00139	10/30/2020	Rater Field Checklist, Version 1/1.1 (Rev.01)	Clarification	<p>Item 5b.1 – Clarification of requirements for installed equipment that is not exempted from HVAC Design Report</p> <p>Issue: Footnote 41 of Item 5b.1 currently addresses what to do if the installed equipment does not match the National HVAC Design Report (HVAC-D). However, it does not provide guidance in the rare case where the specified equipment was an exempted type, as defined in Footnote 20 of the HVAC-D, but the installed equipment is not exempted.</p> <p>In such cases, the Rater must re-review the Rater-D to ensure that all requirements have been met; specifically, that the previously exempted or non-applicable sections of the HVAC-D have been completed, and that the revised report meets the design tolerances in Section 4b of the Rater-D.</p> <p>Resolution: To clarify that additional items must be verified in the case where the specified HVAC equipment was an exempted type, but the installed equipment is not, a new sentence will be added after the first sentence of Footnote 41, as follows:</p> <p style="padding-left: 40px;">"If installed equipment does not match the National HVAC Design Report, then prior to certification the Rater shall obtain written approval from the designer (e.g., email, updated National HVAC Design Report) confirming that the installed equipment meets the requirements of the National HVAC Design Report. <u>In addition, the Rater shall verify that all installed equipment are still exempted types per Footnote 20 of the National HVAC Design Report or, if no longer an exempted type, shall re-review Section 4b of the National Rater Design Review Checklist to ensure compliance with</u></p>

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				all requirements (e.g., full completion of HVAC Design Report, HVAC design tolerances). In cases where the condenser unit is installed after the time of inspection by the Rater, the HVAC manufacturer and model numbers on installed equipment can be documented through the use of photographs provided by the <u>HVAC Contractor or Functional Testing Agent</u> after installation is complete.”
00134	10/30/2020	Rater Field Checklist, Version 1/1.1 (Rev.01)	Change	Item 5b.2 – Exemption from Rater-measured external static pressure for ducted multi-split systems
				Issue: Item 5b.2 of Path B, states that external static pressure shall be measured by a Rater at a contractor-provided test location and documented. Under the Certified Homes program, the contractor would create this test location when required to complete Section 3 of the HVAC Commissioning Checklist. They were not required to complete Section 3 for mini-split / multi-split systems, however those systems are not entirely exempt under the Multifamily New Construction program. It is unclear whether the program intended for the Rater to perform this measurement or to simply expand Section 3 to other systems when being commissioned by a qualified individual.
				Resolution: While it was intentional in MFNC to expand Section 3 of the HVAC Functional Testing Checklist to include multi-split systems such as shared VRF systems, where indoor HVAC fans with forced-air distribution are connected to a shared outdoor unit that exceeds 65,000 Btu/h, it was not the intent to expand the static pressure measurement to Raters within the Rater Field Checklist. To improve alignment with the ENERGY STAR Certified Homes program, where Raters are not required to conduct this measurement for mini / multi-splits, Footnote 42 will be updated as follows: “The Rater shall measure and record the external static pressure in the return-side and supply-side of the system using the contractor-provided test locations. However, at this time, the Rater need not assess whether these values are within a specific range to certify the dwelling unit. <u>The Rater is also not required to measure external static pressure for multi-split systems and may mark “N/A”.</u> ”
00215	08/17/2021	Rater Field Checklist, Version 1/1.1 (Rev.02)	Clarification	Items 5.4 and 5.5 – Electric resistance space heating restrictions
				Issue: Partners have asked whether the restriction on electric resistance heating in the MFNC program for the Prescriptive and ERI path is applicable to heating of ventilation supply air when the space served is otherwise not heated or has a separate primary heating system, such as a heat pump or a furnace, that complies with Exhibit X.

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				<p>Resolution: The intent of the restriction on electric resistance heating is to restrict the types of systems providing primary space heating. Electric resistance heat may be used to pre-heat outdoor supply air to a given space if the primary space heating system meets the applicable MFNC efficiency requirements in Exhibit X and the air heated by the electric resistance system is associated with a mechanical ventilation system.</p> <p>A footnote will be added to Items 5.4 and 5.5 of the Rater Field Checklist as follows:</p> <p>“These requirements apply to systems that provide primary space heating and cooling. Electric resistance limitations do not apply to systems dedicated to heating outdoor air supplied by a mechanical ventilation system, as long as the space served is primarily heated by a non-electric-resistance system that meets the efficiency requirements noted in Exhibit X.”</p>
00307	07/06/2022	Rater Field Checklist, Version 1/1.1 (Rev.02)	Change	<p>Items 5.4 and 5.5 – No limit on electric resistance space heating in stairwells and heated plenums</p>
				<p>Issue: Partners have asked whether the restriction on electric resistance heating in the MFNC program for the Prescriptive and ERI path is applicable to stairwells, garages, and heated plenums.</p>
				<p>Resolution: As noted in PR 00215, the intent of the restriction on electric resistance heating is to restrict the types of systems providing primary space heating. While it was intended for the limits to apply to systems providing space heating to parking garages, it was not intended to apply to heated plenums, where used for freeze protection and also restricted by Item 5.10. Given the intent, EPA agrees it would be acceptable to remove the limitation in stairwells, where the primary purpose of heating systems are also for pipe freeze protection.</p> <p>The phrase “and garages” will be added to Items 5.4, 5.5, and the ‘Electric resistance space heating’ requirements in Exhibit X.</p> <p>The new footnote from PR 00215 added to Items 5.4 and 5.5 will be revised as follows:</p> <p>These requirements apply to systems that provide primary space heating and cooling. Electric resistance limitations do not apply to systems dedicated to heating outdoor air supplied by a mechanical ventilation system, as long as the space served is primarily heated by a non-electric-resistance system that meets the efficiency requirements noted in Exhibit X. <u>Electric resistance limitations apply to garages, but do not apply to heated plenums</u></p>

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				meeting Item 5.10, or stairwells where automatic thermostatic controls prevent operation above 50°F.								
00216	08/17/2021	Rater Field Checklist, Version 1/1.1 (Rev.02)	Change	Item 5.4 and 5.5 – Exhibit X updates for DX-DOAS systems rated in ISMRE								
				Issue: Partners have asked what minimum efficiency metrics apply when Exhibit X of the Rater Field Checklist does not adequately address the specific HVAC system type and neither does ASHRAE 90.1-2010. In particular, what minimum efficiency applies to a DX-DOAS system serving common spaces, where there is no active space heating component and the primary function is to dehumidify outdoor air?								
				Resolution: A note in Exhibit X states: “For Equipment Types not listed here, minimum efficiencies shall be based on those listed in ASHRAE 90.1-2010.” While that was intended to provide efficiency metrics for systems not listed in Exhibit X, as systems are identified that are also not addressed by that ASHRAE Standard, ENERGY STAR will reference the earliest edition of ASHRAE 90.1 that includes that system type. Given that ASHRAE 90.1-2016, Table 6.8.1-15, provides minimum efficiency ratings for electrically operated DX-DOAS units, ENERGY STAR will allow those same efficiency ratings to be used, rather than applying the minimum efficiency metrics of similar equipment, such as an “air conditioner”. The following rows will be added to Exhibit X:								
				<table border="1"> <thead> <tr> <th>Equipment Type</th> <th>Minimum Efficiency</th> </tr> </thead> <tbody> <tr> <td>Air source DX-DOAS (dehumidification mode)</td> <td>4.0 ISMRE</td> </tr> <tr> <td>Air source DX-DOAS (heat pump, heating mode)</td> <td>2.7 IS COP</td> </tr> <tr> <td>Other DX-DOAS (e.g. water source)</td> <td>See ASHRAE 90.1-2016; Table 6.8.1-15</td> </tr> </tbody> </table>	Equipment Type	Minimum Efficiency	Air source DX-DOAS (dehumidification mode)	4.0 ISMRE	Air source DX-DOAS (heat pump, heating mode)	2.7 IS COP	Other DX-DOAS (e.g. water source)	See ASHRAE 90.1-2016; Table 6.8.1-15
Equipment Type	Minimum Efficiency											
Air source DX-DOAS (dehumidification mode)	4.0 ISMRE											
Air source DX-DOAS (heat pump, heating mode)	2.7 IS COP											
Other DX-DOAS (e.g. water source)	See ASHRAE 90.1-2016; Table 6.8.1-15											
00521	12/16/2022	Rater Field Checklist, Version 1/1.1/1.2 (Rev.03)	Change	Item 5.5 – Allowing electric-resistance space heating as a supplement to heat pumps								
				Issue: Item 5.5 states clearly that electric resistance space heating is not installed in dwelling units when following the Prescriptive Path. Given that prohibition, it can be challenging for project teams to select a heat pump that has no electric-resistance for auxiliary space heating or for defrost. Some Partners may also read this requirement to mean standalone electric resistance space heating, like baseboards, are prohibited, but								

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				<p>auxiliary heat to a heat pump is permitted. While it is understood that this limitation is removed in the modeling paths where this heating energy is captured by the model, some nominal allowance for electric resistance heating in dwelling units would remove a barrier to choosing the Prescriptive Path.</p> <p>Resolution: Standalone electric resistance space heating systems will continue to not be permitted in the Prescriptive Path. EPA recognizes that some amount of supplemental heating should be permitted where internal to a heat pump, when limited through proper controls.</p> <p>Footnote 47 will be revised as follows: “These requirements apply to systems that provide primary space heating and cooling. Heat pumps with internal supplemental electric space heating may use up to 3 kW of electric resistance heating per dwelling unit. This supplemental electric resistance heating may only be used when the heat pump cannot satisfy the thermostat setpoint or when the heat pump is operating in defrost mode. In addition, the programmable thermostat must include adaptive recovery technology. Electric resistance limitations do not apply to systems dedicated to heating outdoor air supplied by a mechanical ventilation system, as long as the space served is primarily heated by a non-electric-resistance system that meets the efficiency requirements noted in Exhibit X. Electric resistance limitations apply to garages, but do not apply to heated plenums meeting Item 5.11, or stairwells where automatic thermostatic controls prevent operation above 50°F.”</p> <p>This policy may be revisited to require additional requirements for heat pumps when new products or sizing guidance are available.</p>
00140	10/30/2020	Rater Field Checklist, Version 1/1.1 (Rev.01)	Clarification	Item 5.7 – Verifying Functional Testing Agents credentials
				Issue: Partners have asked how to verify that an FT Agent has the appropriate credential.
				Resolution: The ENERGY STAR Multifamily Team will review credentials prior to listing Functional Testing Agents on the online directory. The Rater can document the FT Agent has the appropriate credential and has completed orientation (if applicable) by documenting that they are listed in the appropriate online directory. This documentation can be a screenshot of the directory. To confirm the status of an FT Agent that is not listed in the directory, Raters may contact EPA at energystarhomes@energystar.gov .

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				<p>Item 5.7 and Footnote 43 of Rater-F will be revised as follows:</p> <p>“5.7 Rater has verified and documented that Functional Testing Agent(s) (“FT Agent(s)”) completing the National HVAC Functional Testing Checklist(s) hold one of the required credentials and completed orientation, if applicable..”</p> <p>43. Functional Testing Agents must hold an approved credential, as listed at www.energystar.gov/ftas, or must be a representative of the Original Equipment Manufacturer (OEM), or a contractor credentialed by an HVAC Quality Installation Training and Oversight Organization (H-QUITO), if not completing Sections 6 and higher. Functional Testing Agents may not be the installing contractor unless they are a credentialed contractor. An explanation of the credentialing process and links to H-QUITOs, which maintain lists of credentialed contractors, can be found at www.energystar.gov/findhvac. A directory of other FT Agents can be found at www.energystar.gov/ftas. Raters can confirm FT Agents have met the requirements by documenting they are listed in a directory. For Path A, a Functional Testing Agent is not needed to complete Sections 2 and 3 for unitary HVAC systems serving dwelling units that will be verified and graded by the Rater.</p>
00262	03/17/2022	Rater Field Checklist, Version 1/1.1 (Rev.02)	Change	Item 5.8 – Location of thermostatic controls for window ACs, PTACs & PTHPs
				<p>Issue: Partners have asked whether thermostatic controls that are integrated into the equipment such as PTACs, PTHPs, mini-splits, and window ACs meet the intent of Item 5.8, given those systems themselves are located on the “exterior wall”.</p>
				<p>Resolution: The intent of this requirement was to ensure residents in multifamily buildings had access to the thermostat that controls the heating and cooling system that serves their unit, and that those controls were not influenced by temperatures that are experienced close to the exterior surfaces of the unit. Given the prevalence of exterior wall mounted HVAC equipment in multifamily, such as mini-splits, window ACs, PTACs, and PTHPs, with integral thermostats, and to streamline the transition from SFNH to MFNC, this part of the requirement should be removed.</p> <p>Item 5.8 will be revised as follows:</p> <p>All heating and cooling systems serving a dwelling unit have thermostatic controls within the dwelling unit.</p>

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00507	10/03/2022	Rater Field Checklist, Version 1/1.1 (Rev.02)	Clarification	Item 5.9 – Requirements for stair and elevator shaft vents only apply where present
				Issue: Item 5.9 requires stair and elevator shaft vents to be equipped with motorized dampers that meet specific requirements. Partners have asked whether shaft vents must be installed, or if the requirement for dampers is only applicable if shaft vents are present.
				Resolution: Shaft vents are not required for ENERGY STAR certification, although they may be required by code. Dampers are only required if shaft vents are present in stairs or elevators. Item 5.9 will be revised as follows: “Where present, <u>Sstair</u> and elevator shaft vents <u>are</u> equipped with motorized dampers that are capable of being automatically closed during normal building operation and are interlocked to open as required by fire and smoke detection systems. Dampers are verified to be closed at the time of inspection.”
00283	05/12/2022	Rater Field Checklist, Version 1/1.1 (Rev.02)	Clarification	Items 5.12 through 5.15 – Clarify hydronic distribution requirements only apply to boilers serving multiple dwelling units
				Issue: It is not currently clear whether the hydronic distribution requirements apply to all hydronic distribution systems or just those that serve multiple dwelling or sleeping units.
				Resolution: The intent of the MFNC program was that these requirements would only apply to hydronic distribution systems that serve more than one unit and would not apply to hydronic systems serving a single dwelling or sleeping unit or only common spaces. The header for this section will be revised as follows: “Hydronic Distribution Requirements - Applies to heating or cooling systems serving more than one dwelling unit”.
00202	06/24/2021	Rater Field Checklist, Version 1/1.1 (Rev.02)	Clarification	Item 5.15 – Efficient pump motors
				Issue: Item 5.15 of the Rater Field Checklist requires efficient pump motors in certain cases. It references NEMA Premium™ motors but allows other motors as long as they “meet or exceed efficiency standards for NEMA Premium™ motors”. A Partner has asked whether IEC Classification motors of IE3, IE4, or IE5 may be used to satisfy this requirement.
				Resolution: IEC Classification motors of IE3, IE4, or IE5 do “meet or exceed efficiency standards for NEMA Premium™ motors” and therefore can be used to meet this

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				<p>requirement. In addition, other pump motors that meet or exceed these efficiency standards may also be used, even if not labeled as NEMA Premium™.</p> <p>In Revision 03, Item 5.15 will be edited to include a hyperlink to the efficiency standards:</p> <p>“For circulating pumps serving hydronic heating or cooling systems with three-phase motors, 1 horse-power or larger, motors meet or exceed <u>efficiency standards for NEMA Premium™</u> motors. If 5 horse-power or larger, also installed with variable frequency drives.”</p>
00225	09/15/2021	Rater Field Checklist, Version 1/1.1 (Rev.02)	Change	Item 6.2 – Pressure-balanced bedrooms
				<p>Issue: Partners have observed that the requirement for pressure-balanced bedrooms is substantially different in comparison to the prior SFNH and MFHR programs. It is unclear if this was intended or not.</p>
				<p>Resolution: When developing MFNC requirements, the intent was to maintain the same level of stringency in MFNC as SFNH and MFHR, without exceeding either where possible. Upon review of the text in Item 6.2, it is clear that the program intent was not achieved. The intent was to require all bedrooms in multifamily buildings to have pressure-balancing measures installed, as has been required in both SFNH and MFHR. The distinction in Item 6.2 was intended to not add the pressure differential test except in large bedrooms, since this was a new test for Developers who had participated in the MFHR program. This was not a new test for Townhouses that had participated in the SFNH program and it was not intended for MFNC to reduce stringency for Townhouses pursuing certification through MFNC, rather than SFNH.</p> <p>Item 6.2 will be revised as follows in the next program revision:</p> <p>6.2 All bedrooms provided with transfer grilles, jump ducts, dedicated return ducts, and/or undercut doors. Bedrooms with a design supply airflow ≥ 150 CFM (per Item 5.2 on the National HVAC Design Report) achieve a Rater-measured pressure differential ≥ -5 Pa and ≤ +5 Pa with respect to the main body of the dwelling unit when all air handlers are operating. Townhouses only: In addition, bedrooms with a design supply airflow < 150 CFM are</p>

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				specified to achieve a Rater-measured pressure differential ≥ -3 Pa and $\leq +3$ Pa. See Footnote 46 for test configuration.
00281	05/12/2022	Rater Field Checklist, Version 1/1.1 (Rev.02)	Clarification	Item 6.4 – Duct testing required for common spaces using HVAC grading
				Issue: All systems using Track A – HVAC Grading by Rater must achieve Grade I duct leakage, but duct leakage is not otherwise required for common spaces in MFNC. Should the Rater verify the duct testing limits have been met on the Rater Field Checklist for common space systems using Track A?
				Resolution: EPA agrees that for greater visibility, meeting the duct leakage limits for common space systems using Track A should be documented on the Rater Field Checklist. Item 6.4 will be revised as follows: “Rater-measured total duct leakage in dwelling units (and common spaces using ANSI / RESNET / ACCA 310) meets one of the following two options:”
00136	10/30/2020	Rater Field Checklist, Version 1/1.1 (Rev.01)	Clarification	Item 6.6 – Duct-sealing methods in duct systems serving common spaces
				Issue: Item 6.6 describes types of traditional duct-sealing methods that must be used for common spaces, but is not clear whether the requirement applies to ducts that are located in common space or that serve common spaces. It also does not list alternate duct-sealing methods, like those that use an internal aerosol-based sealant.
				Resolution: The intent was for the requirement to apply to ductwork serving common spaces and not ductwork serving dwelling units, but are located in common spaces. Additionally, newer technology being used for duct-sealing should be an allowed method. Item 6.6 will be revised as follows: Common Space: Supply, return, and exhaust ductwork and all plenums serving common spaces are sealed at all transverse joints, longitudinal seams, and duct wall penetrations with mastic, mastic tape, or internal aerosol-based sealant.
00137	10/30/2020	Rater Field Checklist,	Clarification	Item 6.7 – using measured fan flow to determine central exhaust leakage allowance
				Issue: Partners have noted that using the ‘rated’ airflow of a central exhaust fan to determine the percentage of leakage allowed may not be as simple or accurate as using a measured fan

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		Version 1/1.1 (Rev.01)		<p>airflow value. Additionally, Partners have noted that where it is not possible to measure the fan flow, it should be permitted to measure the sum of the airflows of all the exhaust grilles associated with the fan, since that value will always be less than if the fan itself was measured.</p> <p>Resolution: Allowing measured exhaust fan flow rather than rated is in alignment with the intent of the requirement. This option is still subject to the limit based on the design exhaust airflow for the units to prevent intentional system over-sizing to enable greater leakage allowance. The airflow may be measured at the fan itself or the sum calculated of all the airflows measured at the exhaust grilles associated with the fan.</p> <p>Footnote 53 will be revised as follows:</p> <p style="padding-left: 40px;">For the purpose of computing leakage allowance, exhaust fan flow shall be the lesser of the rated fan flow and at rough-in, 133% of the sum of the design exhaust airflow of the dwelling units that are exhausted by that central fan or at final, 143% of the sum of the design exhaust airflow of the dwelling units that are exhausted by that central fan. <u>Measured fan flow (either at the fan itself or the total airflow measured from all exhaust grilles served by the fan) may be used in lieu of the rated fan flow to determine the leakage allowance.</u></p>
				<div style="background-color: #cccccc; height: 20px; width: 100%;"></div>
				<div style="background-color: #cccccc; height: 20px; width: 100%;"></div>
				<div style="background-color: #cccccc; height: 20px; width: 100%;"></div> <p style="text-align: center; margin-top: 10px;">44.</p>

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				<p>8.4 Where an exhaust system is installed in a shared garage, it is equipped with controls that sense CO and NO2.</p> <p>Section 2c of the HVAC Design Report will be updated as follows:</p> <p><u>Shared</u> garage exhaust fan controls include CO and NO2 sensors.</p>
00144	10/30/2020	<p>Rater Field Checklist, Version 1/1.1 (Rev.01)</p> <p>HVAC Design Report, Version 1/1.1 (Rev.01)</p>	Change	<p>Rodent / insect screens for air inlets</p>
				<p>Issue: When developing the MFNC program, EPA’s intent was to ensure that certain requirements from Certified Homes be retained. One of these items was the requirement for rodent / insect screens on supply air inlets, which was only captured in the footnotes of the HVAC Design Report and not captured in the Rater Field Checklist.</p>
				<p>Resolution: Item 7.7.3 from Certified Homes will be added as checklist items to the Rater Field Checklist and HVAC Design Report as follows:</p> <p>“Inlet(s) are provided with rodent / insect screen with ≤ 0.5 inch mesh.”</p> <p>Footnote 11 of the HVAC Design Report will be updated as follows:</p> <p>“EPA requires rodent / insect screens with < 0.5 inch mesh to be installed at ventilation air inlets. Without proper maintenance, ventilation air inlet screens often become filled with debris. Therefore, EPA recommends, but does not require, that these ventilation air inlets be located so as to facilitate access and regular service by the building maintenance staff.”</p>
00145	10/30/2020	<p>Rater Field Checklist, Version 1/1.1 (Rev.01)</p> <p>Rater Design Review Checklist, Version 1/1.1 (Rev.01)</p>	Change	<p>HVAC Grading on residential systems installed in common spaces</p>
				<p>Issue: Path A – Dwelling Unit HVAC Grading is only allowed on residential systems serving dwelling units. Some projects may have all in-unit HVAC and the same type of system serving the office. It may be costly or a challenge to get an FT Agent to verify just that one system. Can HVAC Grading be allowed on residential systems that are within the scope of HVAC Grading but are serving common spaces?</p>
				<p>Resolution: The scope of ANSI / RESNET / ACCA Std. 310 is limited to residential systems serving dwelling units. If this standard is used for a residential system serving a common space, it would require the project team to go beyond the MFNC requirements in terms of documenting the load calculations in the Standard 310 HVAC Design Report and achieving Grade I or Grade II for total duct leakage. Ultimately, if the standard is used, then this would</p>

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				<p>meet the intent of the program requirement. Therefore, projects will be allowed to use HVAC Grading for residential systems serving common spaces provided they meet all of the requirements of HVAC Grading and the Path A requirements.</p> <p>The name of the Paths in all documents will be updated as follows:</p> <p>Path A – HVAC Grading by Rater</p> <p>Path B - HVAC Testing by FT Agent</p> <p>Footnote 38 and 39 of the Rater Field Checklist will be updated as follows:</p> <p>38. Two paths are provided for satisfying the mandatory requirements for all certified buildings, Exhibit 2. Path A – HVAC Grading by Rater allows a Rater to utilize ANSI / RESNET / ACCA Std. 310 ³⁹, a standard for grading the installation of residential HVAC systems, <u>for all applicable systems serving individual dwelling units or common spaces</u>, and a Functional Testing Agent to verify <u>commercial</u> and central systems. Path B – HVAC Testing by FT Agent utilizes a Functional Testing Agent for all systems. Either path may be selected, but all requirements within that path must be satisfied for the building to be certified.</p> <p>39. Path A –HVAC Grading by Rater shall not be used until an Effective Date has been defined by RESNET for ANSI / RESNET / ACCA Std. 310. Path A – HVAC Grading by Rater shall then use ANSI / RESNET / ACCA Std. 310 including all Addenda and Normative Appendices, with new versions and Addenda implemented according to the Effective Date and Transition Period End Date defined by RESNET. RESNET interpretations of Standard 310 shall also be followed. For Path A, unitary HVAC Systems including air conditioners and heat pumps up to 65 kBtuh and furnaces up to 125 kBtuh serving individual dwelling or sleeping units <u>or common spaces</u> shall comply with 5a.1 through 5a.3 for the building to be certified.</p> <p>Footnote 43 of the Rater Field Checklist will be updated as follows:</p> <p>1. Functional Testing Agents must hold an approved credential, as listed at www.energystar.gov/ftas, or must be a representative of the Original Equipment Manufacturer (OEM), or a contractor credentialed by an HVAC Quality Installation Training and Oversight Organization (H-QUITO), if not completing Sections 6 and higher. Functional Testing Agents may not be the installing contractor unless they are a credentialed contractor. An explanation of the credentialing process and links to H-QUITOs, which maintain lists of credentialed contractors, can be found at www.energystar.gov/findhvac. A directory of other FT Agents can be found at www.energystar.gov/ftas. For Path A, a Functional Testing Agent is not needed to complete Sections 2 and 3 for residential HVAC</p>
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				<p>systems serving dwelling units or common spaces that will be verified and graded by the Rater.</p> <p>Item 5.6.3 of the Rater Design Review Checklist will be updated as follows:</p> <p>“5.6.3 Verify that Functional Testing Agent(s) hold(s) credential required to complete the applicable sections of the National HVAC Functional Testing Checklist for all HVAC equipment in the building. For Path A, a Functional Testing Agent is not needed to complete Sections 2 and 3 for HVAC systems that will be verified and graded by the Rater.”²⁶”</p>
00146	10/30/2020	<p>Rater Field Checklist, Version 1/1.1 (Rev.01)</p> <p>HVAC Functional Testing Checklist, Version 1/1.1 (Rev.01)</p>	Change	<p>Indoor HVAC airflow alternate testing option for forced-air distribution systems with short duct runs and exemption from Rater-measured external static pressure test</p>
				<p>Issue: A Partner has asked whether forced-air distribution systems with short duct runs (i.e., ≤10 ft.) would be considered an HVAC system type that is exempted from the requirements of Section 3 of the checklist.</p>
				<p>Resolution: While it is still valuable to assess the installation of forced-air systems with short duct runs, other testing methods can be used to assess whether the system is performing properly when ductwork is limited. As an alternative way to assess system performance, the airflow from the supply and return registers and grilles may be measured in lieu of the blower fan airflow.</p> <p>A sentence will be added to the end of Footnote 5:</p> <p>“Systems where total supply duct length of the entire system, including the sum of all supply trunks and branches, is 10 ft or less, may complete Item 4.2 in lieu of Section 3.”</p> <p>Item 4.2 may be completed by a FT Agent or a Rater. Section 4 will be updated to include a Rater verified checkbox column.</p> <p>Item 4.2 will also be updated as follows:</p> <p>“4.2 Room-by-room airflows verified <u>by FT Agent or Rater</u> to be within the greater of ± 20% or 25 CFM of design airflow.”</p> <p>Footnote 42 of the Rater Field Checklist will also be updated to note that ductless and ducted systems less than 10 ft. in length are exempt from Rater-measured static pressure testing:</p>

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				<p>“The Rater shall measure and record the external static pressure in the return-side and supply-side of the system using the contractor-provided test locations. However, at this time, the Rater need not assess whether these values are within a specific range to certify the dwelling unit. <u>Ductless systems and systems with a total amount of supply ductwork or distribution building cavities ≤ 10 ft. in length are exempted from this requirement.</u>”</p>
00147	10/30/2020	<p>Rater Field Checklist, Version 1/1.1 (Rev.01)</p> <p>HVAC Design Report, Version 1/1.1 (Rev.01)</p>	Change	<p>Item 6.4 & 6.5 – Ventilation ducts connected to heating or cooling system must be tested for leakage; other ducts not subject to leakage tests must be inspected</p>
				<p>Issue: These Items generally require testing of duct leakage for heating, cooling, and balanced ventilation ducts serving one unit. One of the referenced Footnotes exempts balanced ventilation ducts from testing if they’re not connected to the space heating or cooling system, but instead requires a visual inspection. This Footnote also exempts systems that have short duct runs and are entirely within the Conditioned Space Volume from testing but does not state whether a visual inspection is required.</p> <p>Partners have asked how these requirements apply to ducts of other dwelling unit mechanical ventilation system types (e.g., supply ventilation systems). In addition, Partners have asked whether all systems exempted from testing are required to have a visual inspection.</p>
				<p>Resolution: While not stated in the Footnote, it was the intent of the program to require testing of any ventilation duct connected to the heating and cooling system serving the dwelling unit. Furthermore, the intent was to require visual inspection for any duct system exempted from testing. This intent will be clarified in Footnote 48 of the Rater Field Checklist, as follows:</p> <p style="padding-left: 40px;">“Items 6.4 and 6.5 generally apply to the ducts of space heating, space cooling, and dwelling unit mechanical ventilation systems.</p> <p>However, visual inspection is permitted in lieu of testing for the following system types: 1) a dwelling unit mechanical ventilation system not connected to the space heating or space cooling system, regardless of the number of dwelling units it serves; 2) a space heating or space cooling system for which the ducts and air handler are in conditioned space and the total supply duct length of the system, including all supply trunks and branches, is ≤ 10 ft; and 3) a space heating or space cooling system that serves more than one dwelling unit. In such cases, a Rater shall visually verify that all seams and connections are sealed with mastic or metal tape and all duct boots are sealed to floor, wall, or ceiling using caulk, foam, or mastic tape.</p> <p>For duct systems requiring testing, duct leakage shall be determined and documented by a Rater using ANSI / RESNET / ICC Std. 380 including all Addenda and Normative Appendices,</p>

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				<p>with new versions and Addenda implemented according to the Effective Date and Transition Period End Date defined by RESNET. RESNET interpretations of Standard 380 shall also be followed. Leakage limits shall be assessed on a per-system, rather than per-dwelling unit, basis.”</p> <p>This will also be updated in the HVAC Design Report. Footnote 43 will be updated as follows:</p> <p>“Item 6.5 generally applies to the ducts of space heating, space cooling, and dwelling unit mechanical ventilation systems. However, visual inspection is permitted in lieu of testing for the following system types: 1) a dwelling unit mechanical ventilation system not connected to the space heating or space cooling system, regardless of the number of dwelling units it serves; 2) a space heating or space cooling system for which the ducts and air handler are in conditioned space and the total supply duct length of the system, including all supply trunks and branches, is ≤ 10 ft; and 3) a space heating or space cooling system that serves more than one dwelling unit. In such cases, a Rater shall visually verify that all seams and connections are sealed with mastic or metal tape and all duct boots are sealed to floor, wall, or ceiling using caulk, foam, or mastic tape.”</p>
00181	11/12/2020	Rater Field Checklist, Version 1/1.1 (Rev.01)	Refinement	<p>Section 7 – Definition added for Dwelling-Unit Mechanical Ventilation System</p> <p>Issue: Partners have suggested several potential improvements to the dwelling unit mechanical ventilation system requirements. This Section header uses the term “Dwelling Unit Mechanical Ventilation System” but provides no definition. This term is defined within ANSI / RESNET / ICC 301-2019. Furthermore, this section applies to not just ventilation systems, but also to inlets connected to a ducted return of the HVAC system, regardless of intent. This could be emphasized within the header.</p> <p>Resolution: To improve clarity and conciseness of the program requirements, the Section header will be revised to read: “Dwelling-Unit & Common Space Mechanical Ventilation Systems (“Vent System”) & Inlets in Return Duct”.</p>

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				<p>In addition, a Footnote will be added with the definition of this term from ANSI / RESNET / ICC 301-2019, as follows:</p> <p>“As defined by ANSI / RESNET / ICC Std. 301-2019, a Dwelling Unit Mechanical Ventilation System is a ventilation system consisting of powered ventilation equipment such as motor-driven fans and blowers and related mechanical components such as ducts, inlets, dampers, filters and associated control devices that provides dwelling-unit ventilation at a known or measured airflow rate.”</p> <p>A second Footnote will be added to the header to emphasize that Item 7.5 applies to all inlets connected to a ducted return, as follows:</p> <p>“Item 7.5 applies to any outdoor air inlet connected to a ducted return of the dwelling unit HVAC system, regardless of its intended purpose (e.g., for ventilation air, make-up air, combustion air). This Item does not apply to HVAC systems without a ducted return.”</p>
00266	03/17/2022	Rater Field Checklist, Version 1/1.1 (Rev.02)	Change	Item 7.2 – Calculating ventilation rate for sleeping units
				<p>Issue: A Partner has questioned whether the ventilation rate determined by ASHRAE 62.2-2010 is appropriate for sleeping units, given that the equations are based on a ‘number of bedrooms’. Often in sleeping units, there are not multiple ‘bedrooms’, but there may still be multiple occupants.</p>
				<p>Resolution: EPA agrees that some modification to the ventilation rate calculation is warranted in order to determine the minimum ventilation rate for sleeping units in Item 7.2. Given that the number of bedrooms is used in the calculation as a proxy for the number of occupants, the calculation will be modified for sleeping units to instead allow the number of beds or occupants.</p> <p>Footnote 56 will be revised as follows:</p> <p>The dwelling-unit ventilation air flows and local exhaust air flows shall be determined and documented by a Rater using ANSI / RESNET / ICC Std. 380 including all Addenda and Normative Appendices, with new versions and Addenda implemented according to the schedule defined by the HCO or MRO that the building is being certified under. In Item 7.2, the dwelling-unit ventilation rates required by ASHRAE 62.2-2010 can be calculated using the Multifamily Workbook or the following equation: $0.01 \times \text{Conditioned Floor Area} + 7.5 \times (\text{number of bedrooms} + 1)$. For sleeping units, the following equation may be used: $0.01 \times \text{Conditioned Floor Area} + 7.5 \times (\text{number of beds or occupants})$. Where local codes do not</p>

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				permit dwelling-unit ventilation to exceed ASHRAE 62.2-2010 rates, Rater-measured ventilation rate is permitted to be 0-15 CFM less than rates required by ASHRAE 62.2-2010.
00312	07/06/2022	Rater Field Checklist, Version 1/1.1 (Rev.02)	Change	Item 7.3 – Rater verification of non-applicable items
				Issue: For some multifamily building configurations, common spaces may not be present. Item 7.3 is an example of a common space specific requirement where a “N/A” checkbox would be helpful.
				Resolution: EPA agrees that the Rater Field Checklist would be improved by replacing the dashed line with a checkbox in the “N/A” column for Item 7.3.
00273	03/17/2022	Rater Field Checklist, Version 1/1.1 (Rev.02)	Change	Item 7.3 – Temporary OA measurement alternative for common space PTAC/PTHPs
				Issue: In contrast to the ENERGY STAR MFHR program, the ENERGY STAR MFNC program references ASHRAE 62.1-2010 for common spaces rather than 2007. While most ventilation rates did not change, the criteria related to using natural ventilation changed substantially and was not highlighted as a key difference for Partners. This affects designs where PTAC or PTHP systems with outdoor air inlets are used in common spaces. These spaces generally relied on compliance with natural ventilation, given the challenges in measuring the outdoor airflow through these systems. Since this was not highlighted as a key difference, some Partners might not realize that these systems no longer comply with the MFNC program requirements.
				Resolution: While EPA recognizes that measuring supply airflow from PTAC and PTHP systems is challenging, ENERGY STAR will retain the reference to ASHRAE 62.1-2010 for common spaces. However, since this change may not have been clear to MFHR Partners specifying PTAC or PTHP systems with outdoor air inlets, EPA will provide an alternative to the measurement requirement for a limited time. In the next revision, a new footnote will be added to Item 7.3 as follows: For permits on or before 01/01/2024, where outdoor air is supplied via a PTAC or PTHP, in lieu of measurement, the design CFM shall meet or exceed the ventilation rates required by ASHRAE 62.1-2010 and the space served by the PTAC or PTHP shall have at least one operable window. For permits after 01/01/2024, PTAC and PTHP systems must meet both the runtime and measurement of outdoor air requirements of ASHRAE 62.1-2010 to be considered the mechanical ventilation system for that space. Where measurement of the

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				ventilation rate is not possible, another ventilation system shall be specified (e.g., ducted supply).
00182	11/12/2020	Rater Field Checklist, Version 1/1.1 (Rev.01)	Refinement	Item 7.4 – Improved example of ventilation control that must be labeled
				Issue: Partners have suggested several potential improvements to the dwelling unit mechanical ventilation system requirements. This Item requires that ventilation override controls be labeled if their function is not obvious. One example of a control that must be labeled is provided in the Item: “a standalone wall switch”. This example could be more clearly stated as “a toggle wall switch”.
				Resolution: To improve clarity of the program requirements, Item 7.4 will be revised, as follows: “Townhouses only: A readily-accessible ventilation override control installed and also labeled if its function is not obvious (e.g., a label is required for a toggle wall switch, but not for a switch that’s on the ventilation equipment).”
00180	11/12/2020	Rater Field Checklist, Version 1/1.1 (Rev.01)	Change	Item 7.5 – Enhanced requirements for ventilation inlets on return-side of HVAC system
				Issue: Partners have suggested several potential improvements to the dwelling unit mechanical ventilation system requirements. Currently, Item 7.5 requires in part that an outdoor air inlet connected to the return-side of the HVAC system be restricted when the system is “not in use”. The intent of this requirement is to restrict outdoor air when the ventilation system is in an off-cycle (which would not be applicable to continuous systems), and, if an occupant override has occurred. Furthermore, unless exempted under specific circumstances, the intent is for a motorized damper to be used to restrict this airflow. This Item currently lists a motorized damper as one example of a compliant strategy, but in fact it is the only strategy that has been identified to date. As currently written, partners may mistakenly believe that other damper types, such a barometric damper, would also meet this intent. However, this would be incorrect because a

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				<p>barometric damper could be pulled open even when ventilation was not desired, simply from the pressure of the HVAC fan.</p> <p>In short, the intent of this Item could be clearer. Furthermore, partners have observed that air inlets on the return-side might be used as a dedicated source of air for an exhaust ventilation system (e.g., bath exhaust fan paired with a return-side inlet). This would be acceptable if the inlet could: a) automatically restrict airflow during ventilation off-cycles and occupant overrides, and; b) not bring in significantly more outdoor air than is being exhausted, which could happen because the inlet is closer to the powerful HVAC fan than the bath fan.</p> <p>The one specific circumstance where an alternative compliance option may be warranted, in lieu of a motorized damper, is for an inlet on the return-side that meets the following: a) it's paired with a continuous exhaust ventilation system, and; b) a manual shutoff damper is readily-accessible, labeled as the override, and not used as a balancing damper.</p> <p>In multifamily buildings, many dwelling units use an exhaust ventilation system (e.g., bath fan with controller) as a low-cost way to comply with the program. With no dedicated source of outdoor air, more air may come from adjacent dwelling units than directly from outside. This alternative compliance option would not use excess HVAC fan energy, because it wouldn't control the HVAC fan. It would not over-ventilate, because its airflow rate would be measured or engineered (using a CAR damper) to not be significantly higher than the continuous exhaust vent system. And, it would provide a means to restrict outdoor air during override events using the manual shut-off damper.</p> <hr/> <p>Resolution: To improve clarity and expand the scope of this Item, it will be rewritten to capture these two requirements for return-side ventilation air inlets:</p> <ol style="list-style-type: none"> 1. Restrict airflow using a motorized damper during vent. off-cycle and occupant override. 2. Verify that the ventilation rate is ≤ 15 CFM or 15% above the design value at the highest HVAC fan speed. <p>Regarding the second requirement, the Rater will have already satisfied this if the inlet is part of the ventilation system verified in Item 7.2 (e.g., an inline fan connected to the return-side of the HVAC system). If not previously measured, this new requirement will ensure that the HVAC fan does not draw in significantly more outdoor air than the ventilation design.</p> <p>With that said, as an alternative to measuring the airflow for this situation, a Constant Airflow Regulating (CAR) damper will be permitted to be used. CAR dampers are designed to limit the airflow going through them to a known rate, up to a relatively high static pressure such as 0.8 IWC. Therefore, installing such a damper would ensure that the program's intent is met even without a measurement of the airflow.</p>
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				<p>Finally, an alternative compliance option for an inlet on the return-side on the HVAC system will be added, in lieu of a motorized damper, that meets the following: a) it's paired with a continuous exhaust ventilation system, and; b) a manual shutoff damper is readily-accessible, labeled as the override, and not used as a balancing damper</p> <p>To reflect these changes, Item 7.5 will be revised as follows:</p> <p>“7.5 For any outdoor air inlet connected to a ducted return of the dwelling unit HVAC system (Complete if present; otherwise check “N/A”):</p> <p style="padding-left: 40px;">7.5.1 Controls automatically restrict airflow using a motorized damper during vent. off-cycle and occupant override.</p> <p style="padding-left: 40px;">7.5.2 Rater-measured vent. rate is \leq 15 CFM or 15% above design value at highest HVAC fan speed. Alt. in Fn.59.”</p> <p>To emphasize that Item 7.5 applies to all inlets connected to a ducted return, a new Footnote will be added, as follows:</p> <p>“Item 7.5 applies to any outdoor air inlet connected to a ducted return of the dwelling unit HVAC system, regardless of its intended purpose (e.g., for ventilation air, make-up air, combustion air). This Item does not apply to HVAC systems without a ducted return.”</p> <p>To provide examples of when the airflow must be restricted on the return-side outdoor air inlet and to add the alternative compliance option, a new Footnote will be added to these items as follows:</p> <p>“For example, if an outdoor air inlet connected to a ducted return is used as a dedicated source of outdoor air for an exhaust ventilation system (e.g., bath fan), the outdoor airflow must be automatically restricted when the exhaust fan is not running and in the event of an override of the exhaust ventilation system.</p> <p>In dwelling / sleeping units in multifamily buildings, but not townhouses, automatic restriction of airflow is exempted if a manual shutoff damper is used with a continuous exhaust ventilation system and is readily-accessible, labeled as the override, and not used as a balancing damper.”</p> <p>To provide guidance on when and how to measure the airflow through the return-side outdoor inlet, and to add the alternative use of the CAR damper in lieu of measurement, a new Footnote will be added to these items as follows:</p> <p>“When assessing the ventilation rate, the highest HVAC fan speed applicable to ventilation mode shall be used (e.g., if the inlet only opens when the HVAC is in ‘fan-only’ mode, then test</p>
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				<p>in this mode). If the inlet has a motorized damper that only opens when the local mechanical kitchen exhaust is turned on, then testing is not required.</p> <p>When required, the ventilation airflow through the inlet shall be measured and documented by a Rater using ANSI / RESNET / ICC Std. 380 including all Addenda and Normative Appendices, with new versions and Addenda implemented according to the schedule defined by the HCO or MRO that the building is being certified under. As an alternative, measurement of the outdoor airflow can be waived if a Constant Airflow Regulating (CAR) damper with a manufacturer-specified maximum flow rate no higher than 15 CFM or 15% above the ventilation design value is installed on the inlet.”</p>
00179	11/12/2020	Rater Field Checklist, Version 1/1.1 (Rev.01)	Change	<p>Item 7.7 – Allowance for continuous return-side systems; integration of HVAC fan operation limitations</p>
				<p>Issue: Partners have suggested several potential improvements to the dwelling unit mechanical ventilation system requirements. Item 7.5 currently requires, in part, that no outdoor air inlets be connected to the return-side of the HVAC system, unless controls are installed to operate intermittently. The intent of this requirement is to limit energy consumption by not allowing continuous operation of the HVAC fan.</p> <p>When this requirement was first drafted, the only common ventilation system utilizing an inlet to the return-side of the HVAC system was one that used the HVAC fan itself as the primary ventilation fan. Since that time, the use of ventilation systems that don’t use the HVAC fan as the primary ventilation fan have become more commonplace (e.g., ERV’s, HRV’s, and inline fans). These should be allowed to be connected to the return-side of the HVAC system, even if running continuously.</p> <p>Furthermore, some ventilation systems have the ability to control the HVAC fan even when the ventilation system has its own fan (e.g., an inline fan might turn on the HVAC fan for mixing). Even in these cases, the HVAC fan should not run continuously, to limit energy consumption.</p>
				<p>Resolution: To allow continuously-operating ventilation systems that are connected to the return-side of the HVAC system to be used, the language in Item 7.5 regarding intermittent operation will be removed. Furthermore, to group all efficiency requirements related to the HVAC fan in one Item, to prohibit the ventilation system controller from continuously operating the HVAC fan (regardless of whether the HVAC fan is the primary ventilation fan), and to improve conciseness, Item 7.7 will be revised, as follows:</p>

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				<p>“7.7. If dwelling-unit Vent System controller operates the dwelling unit HVAC fan, then HVAC fan operation is intermittent and either the fan type is ECM / ICM (4.12) or the controls will reduce the run-time by accounting for HVAC system heating or cooling hours.”</p> <p>In addition, to emphasize that the use of a the ‘fan-on’ setting of a thermostat is prohibited from being used as the ventilation controller (because it would operate the HVAC fan continuously), a new Footnote will be added to Item 7.7 as follows:</p> <p>“Note that the ‘fan-on’ setting of a thermostat would not be an acceptable controller because it would continuously operate the HVAC fan.”</p>
00200	06/24/2021	Rater Field Checklist, Version 1/1.1 (Rev.02)	Change	Item 7.9 – NEMA Premium fan motors
				<p>Issue: Item 7.9 of the Rater Field Checklist requires fans (1 HP or larger) to be “installed with NEMA Premium motors”. In Item 5.15, however, pump motors only need to “meet or exceed efficiency standards for NEMA Premium™ motors”. A Partner has asked whether fan motors must be labeled NEMA Premium or if meeting or exceeding the NEMA Premium efficiency standards is sufficient, as it is for pump motors.</p>
				<p>Resolution:</p> <p>In Revision 03, Item 7.9 will be edited as follows:</p> <p>7.9 If central exhaust fans, ≤ 1 HP, are installed as part of the dwelling-unit mechanical ventilation system, then they are direct-drive, ECM, with variable speed controllers. If > 1 HP, their motors meet or exceed <u>efficiency standards for NEMA Premium™</u> motors.</p>

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00517	12/16/2022	Rater Field Checklist, Version 1/1.1 (Rev.03)	Change	<p>Item 8.1 – New allowance to use 50 CFM continuous kitchen exhaust for Dwelling Units and Sleeping Units</p> <p>Issue: Partners have noted several challenges with the current policy requiring ≥ 5 kitchen air changes per hour for continuous kitchen exhaust systems.</p> <p>Continuous kitchen exhaust systems provided through a central riser are often used in high-rise multifamily buildings due to spacing restrictions for wall exhausts, challenges designing intermittent systems in a central riser with a fixed shaft size but fluctuating airflow, and codes that either require make-up air if exhaust exceeds certain rates or require smoke/fire dampers for ducts that exceed certain sizes.</p> <p>The current policy presents pragmatic challenges and can result in excessive energy costs. The airflow rate equivalent to 5 kitchen air changes per hour is dependent on certain design elements that are not directly related to indoor air quality (e.g., the placement of cabinets). Therefore, calculations are required for each kitchen layout, often resulting in different required airflow rates for each dwelling unit. Furthermore, the resulting required airflow rate can sometimes exceed the whole-dwelling ventilation rate required by ASHRAE 62.2, when coupled with a continuous bathroom exhaust system, resulting in higher energy costs.</p> <p>Resolution: To simplify the policy, an alternative will be added allowing a fixed minimum continuous kitchen exhaust rate of 50 CFM for Dwelling and Sleeping Units in multifamily buildings (but not Townhouses). This new alternative rate will be accompanied by a requirement that the fan or intake grille be located within 10 ft. of the edge of the range, as measured horizontally on the plan.</p> <p>The 50 CFM minimum continuous rate aligns with the requirements for kitchens in private dwellings in the 2021 International Mechanical Code and equates to 5 kitchen air changes per hour for an approximately 70 sq. ft. kitchen with an 8.75 ft ceiling.</p> <p>To reflect this change, Item 8.1 will be revised as follows:</p> <table border="1"> <thead> <tr> <th colspan="2">Location</th> <th>Continuous Rate</th> </tr> </thead> <tbody> <tr> <td rowspan="2">8.1 Kitchen</td> <td>Airflow</td> <td>≥ 5 ACH, based on kitchen volume ^{74, 75} (Alternative in Fn. 74)</td> </tr> <tr> <td>Sound</td> <td>Recommended: ≤ 1 sone</td> </tr> </tbody> </table> <p>Footnote 74 will be revised as follows: “Where 5 ACH is selected, kitchen volume shall be determined by drawing the smallest possible rectangle on the floor plan that encompasses</p>	Location		Continuous Rate	8.1 Kitchen	Airflow	≥ 5 ACH, based on kitchen volume ^{74, 75} (Alternative in Fn. 74)	Sound	Recommended: ≤ 1 sone
Location		Continuous Rate										
8.1 Kitchen	Airflow	≥ 5 ACH, based on kitchen volume ^{74, 75} (Alternative in Fn. 74)										
	Sound	Recommended: ≤ 1 sone										

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				<p>all cabinets, pantries, islands, peninsulas, ranges / ovens, and the kitchen exhaust fan, and multiplying by the average ceiling height for this area. In addition, the continuous kitchen exhaust rate shall be ≥ 25 CFM, per 2009 IRC Table M1507.3, regardless of the rate calculated using the kitchen volume. Cabinet volume shall be included in the kitchen volume. <u>As an alternative to 5 ACH for Dwelling Units and Sleeping Units (but not Townhouses), 50 CFM of continuous exhaust is permitted to be used, regardless of kitchen volume. In such cases, the edge of the exhaust fan or intake grille shall be located within 10 ft of the edge of the range, as measured horizontally on the floor plan.</u></p>
00142	10/30/2020	Rater Field Checklist, Version 1/1.1 (Rev.01)	Change	<p>Item 8.1 & Fn. 64 - Alternative kitchen exhaust rate for additional select buildings</p> <p>Issue: Partners developing buildings with extremely tight enclosures and balanced whole-dwelling ventilation and local mechanical exhaust systems have previously expressed difficulty meeting the program requirements for local mechanical kitchen exhaust, and an allowance has been provided to use a continuous kitchen exhaust rate of 25 CFM per 2009 IRC Table M1507.3, if they are either a) PHIUS+ or PHI certified, or b) provide both dwelling-unit ventilation and local mechanical kitchen exhaust using a balanced system, and have a Rater-verified whole-building infiltration rate ≤ 0.05 CFM50 per sq. ft. of Enclosure Area, and a Rater-verified dwelling unit compartmentalization rate ≤ 0.30 CFM50 per sq. ft. of Enclosure Area if multiple dwelling units are present in the building.</p> <p>However, projects that pursue PHIUS+ or PHI certification but don't achieve the required infiltration limit of those programs are no longer eligible to use the 25 CFM kitchen exhaust allowance, even though they are still exceptionally tight. Because the final infiltration level is only known near project completion, it is not feasible at that point to change the kitchen exhaust strategy. As a result, projects are not permitted to be certified, despite meeting and likely exceeding all program requirements except for the allowance to use reduced kitchen exhaust.</p> <p>Resolution: The current allowance to use a continuous kitchen exhaust rate of 25 CFM will be extended to projects that meet an infiltration limit of ≤ 1.0 ACH50 and provide both whole-dwelling ventilation and local mechanical kitchen exhaust using a balanced system. To reflect this change, the second to last sentence of Footnote 64 will be revised as follows:</p> <p>“As an alternative to Item 8.1, dwelling units are permitted to use a continuous kitchen exhaust rate of 25 CFM per 2009 IRC Table M1507.3, if they are either a) PHIUS+ or PHI certified, or b) provide both dwelling-unit ventilation and local mechanical kitchen exhaust using a balanced</p>

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				system, and have a Rater-verified whole-building infiltration rate ≤ 1.0 ACH50 or ≤ 0.05 CFM50 per sq. ft. of Enclosure Area.”
00141	10/30/2020	Rater Field Checklist, Version 1/1.1 (Rev.01)	Clarification	Item 9.1 – Expanded options for making a filter in the attic accessible
				Issue: Footnote 66, referenced by Item 9.1, defines options for making a filter located in the attic accessible. Several additional options have been identified that would meet the original intent, including the use of a pull-down ladder, a door, or a wall access panel (e.g., through a knee wall). Adding these options would provide partners with more flexibility to meet the requirement cost-effectively.
				Resolution: Several additional options for making filters located in the attic accessible will be added to the last sentence in Footnote 66, as follows: “HVAC filters located in the attic shall be considered accessible to the occupant or building owner if either 1) drop-down stairs, a pull-down ladder, or door provide access to attic and a permanently installed walkway has been provided between the attic access location and the filter or 2) the filter location enables arm-length access from a portable ladder without the need to step into the attic and the height of the ceiling access panel or the bottom of the wall access panel where access is provided is ≤ 12 ft.
00246	03/17/2022	Rater Field Checklist, Version 1/1.1 (Rev. 02)	Clarification	Item 9.1 – Clarifying that building owner includes their maintenance staff
				Issue: Partners have suggested that wording in requirements and footnotes that reference “building owner” might be better understood in the context of multifamily buildings if they instead read “building maintenance staff”, as it would be unlikely for many of the service-related requirements to be performed by the building ‘owner’.
				Resolution: EPA agrees that this revision would better reflect the intent of the requirement. In Revision 03, Item 9.1 will be revised to read: 9.1 MERV 6+ filter(s) installed in each ducted mechanical system serving an individual dwelling unit and located to facilitate access & regular service by the occupant, building owner, or building maintenance staff. ⁷¹ In Revision 03, Footnotes 64 and 72 will be revised to read:

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				<p>64. Without proper maintenance, ventilation air inlet screens often become filled with debris. Therefore, EPA recommends, but does not require, that these ventilation air inlets be located so as to facilitate access and regular service by the building owner <u>or maintenance staff</u>.</p> <p>72. Based upon, ASHRAE 62.2-2010, ducted mechanical systems are those that supply air to an occupiable space with a total amount of supply ductwork exceeding 10 ft. in length and through a thermal conditioning component, except for evaporative coolers. Systems that do not meet this definition are exempt from this requirement. While filters are recommended for mini-split systems, HRV's, and ERV's, these systems, ducted or not, typically do not have MERV-rated filters available for use and are, therefore, also exempted under this version of the requirements. HVAC filters located in the attic shall be considered accessible to the occupant, building owner, <u>or building maintenance staff</u> if either 1) drop-down stairs, a pull-down ladder, or door provide access to attic and a permanently installed walkway has been provided between the attic access location and the filter or 2) the filter location enables arm-length access from a portable ladder without the need to step into the attic and the height of the ceiling access panel or the bottom of the wall access panel where access is provided is \leq 12 ft.</p>
00235	03/17/2022	Rater Field Checklist, Version 1/1.1 (Rev. 02)	Clarification	Item 9.1 & 9.1.2 – Combining two filtration-related Items into a single item for clarity
				Issue: Items 9.1 and 9.1.2 specify distinct, but related, filtration requirements. Item 9.1 requires MERV 6+ filter(s) that are located to facilitate access and regular service. Item 9.1.2 requires filter(s) to be located such that all return air and mechanically supplied outdoor air passes through them prior to conditioning. The intent of these related requirements could be clarified by combining the two Items into one.
				Resolution: To clarify and condense program requirements, the requirements from Item 9.1.2 will be incorporated into Item 9.1, and Item 9.1.2 will be deleted. The revised Item 9.1 will read as follows: “MERV 6+ filter(s) installed in each ducted mechanical system serving an individual dwelling unit, designed so all return and mechanically supplied outdoor air passes through filter(s) prior to conditioning, and located to facilitate access & regular service by the occupant or building owner.”
00264	03/17/2022	Rater Field Checklist,	Change	Item 10.1 – Combustion air requirements for mechanically drafted equipment
				Issue: Raters have questioned the extra requirement to calculate the minimum volume of combustion air for mechanically drafted furnaces, boilers, and water heaters in the MFNC

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		Version 1/1.1 (Rev.02)		<p>program, which was only a requirement for unvented combustion appliances in SFNH. Raters have also questioned the need to verify the operation of the combustion damper, which was also not a requirement in SFNH.</p> <p>Resolution: While EPA believes the calculation and damper verification has value, to ease the transition for Raters from SFNH to MFNC, the added requirements will be removed.</p> <p>Item 10.1 will be revised as follows:</p> <p>“10.1 Furnaces, boilers, and water heaters located within the building’s pressure boundary are mechanically drafted or direct-vented. Alternatives in Footnote 75. ^{73, 74, 75}”</p>
00528	05/01/2023	National Rater Field Checklist (Version 1 / 1.1, Rev. 02)	Change	<p>Items 11.1.1 and 11.2.2 – Allowance, for National Version 1 and National Version 1.1, to use 0.92 UEF for water heaters ≤ 50 gallons and ≤ 40 inches in height</p> <p>Issue: Partners have noted that there is a lack of availability of ‘low-boy’ water heaters 40 gallons or less at 0.93 UEF which is the efficiency required for water heaters following the Prescriptive Path under National Version 1 and National Version 1.1. This was not an issue when the water heaters were rated in EF. ‘Low-boy’ water heaters are commonly available at 0.92 UEF and are often used because tall water heaters will not fit, and it can be a challenge to redesign the utility closet to accommodate the tall water heater.</p> <p>Resolution: The intent of the 0.93 UEF value was to align with the current federal energy conservation standard for a 40-gallon ‘high’ draw pattern electric storage water heater, which converts to 0.95 EF based on the RESNET EF Calculator. Therefore, it was not expected that this measure would achieve savings in ENERGY STAR Certified buildings. Given the lack of availability of 0.93 UEF short water heaters, and the small difference in efficiency, EPA will allow 0.92 UEF water heaters to be used if the water heater rated storage volume is ≤ 50 gallons, and ≤ 40 inches in height.</p> <p>A new sentence will be added to Footnote 82 referenced by Item 11.1.1 as follows:</p> <p>“Alternatively, electric water heaters serving dwelling units in buildings following National Version 1 or National Version 1.1, or serving common spaces following any Version, are permitted to be rated at 0.92 UEF instead of 0.93 UEF if the water heater rated storage volume is ≤ 50 gallons and the water heater height is ≤ 40 inches.”</p>
00223	09/15/2021		Change	Items 11.2 & 11.2 – Minimum thermal efficiency for electric hot water equipment

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		Rater Field Checklist, Version 1/1.1 (Rev.02)		<p>Issue: In certain MFNC Paths, a minimum efficiency is applicable to hot water equipment. The current requirement indicates that 85% Et (thermal efficiency) is required where the equipment is not rated in EF or UEF. The 85% implies that the requirement is intended for fossil-fuel equipment, but there is no explicit minimum provided for electric hot water equipment, where not rated in EF or UEF.</p> <p>Resolution: The intent in Item 11.1 and 11.2 was to require a minimum thermal efficiency for fossil-fuel boilers or water heaters of 85%, where not rated in EF or UEF. A higher efficiency is necessary for electric equipment, consistent with the Multifamily Reference Design.</p> <p>In the next program revision, Items 11.1 and 11.2 will be revised as follows:</p> <p>11.1 Prescriptive Path: Hot water equipment rated in EF or UEF meet the efficiency levels specified in the ENERGY STAR Multifamily Reference Design. <u>If rated in Et, ≥95% if electric and ≥85% for other fuels.</u></p> <p>11.2 ERI: For hot water equipment serving common spaces but not dwelling units nor shared laundry: where rated in EF or UEF, meet the efficiency levels specified in the ENERGY STAR Multifamily Reference Design. <u>If rated in Et, ≥95% if electric and ≥85% for other fuels.</u></p>
00411	10/03/2022	Rater Field Checklist, Version 1/1.1 (Rev.02)	Change	<p>Item 11.3 – heat trap visual inspection allowance</p> <p>Issue: The current wording of the Item does not allow for the visual inspection of after-market heat traps, although this would meet the intent of the Item. Therefore, the Item should be reworded to explicitly allow for this.</p> <p>Resolution: In order to allow for visual inspection of after-market heat traps not present on the AHRI Certificate, the Item will be revised to read as follows:</p> <p><u>“11.3 For in-unit storage water heaters, confirm presence of heat trap by visual inspection or on AHRI Certificate confirms the presence of a heat trap.”</u></p>
00267	03/17/2022	Rater Field Checklist, Version 1/1.1 (Rev.02)	Change	<p>Item 11.4 – Removal of hot water pipe insulation requirement</p> <p>Issue: Partners have noted that hot water pipe insulation is a mandatory requirement in MFNC and not in Single-Family New Homes that can cause a challenge for project teams transitioning to the MFNC program.</p> <p>Resolution: Given the relative importance of the hot water heating load, the Reference Design was adjusted to reduce hot water energy use and mandatory items were included on</p>

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				<p>the Rater Field Checklist due to multifamily-specific challenges. While hot water pipe insulation is highly recommended, in order to streamline the transition to MFNC from the SFNH program, this requirement will be removed. Project teams can still get credit in the energy model for including hot water pipe insulation.</p> <p>Item 11.4 and Footnote 77 will be removed.</p>
00217	08/27/2021	Rater Field Checklist, Version 1/1.1 (Rev.02)	Change	Item 11.5 Rater-measured hot water delivery temperatures
				<p>Issue: Partners have asked whether it is necessary to test the hot water delivery temperature at both the faucet and the showerhead and if this includes all faucets and showerheads in the dwelling unit or just the ones closest or farthest from the hot water heater.</p>
				<p>Resolution: EPA agrees that the inherent value in testing the hot water delivery temperature can be achieved by testing just one faucet within the dwelling unit.</p> <p>In the next revision, Item 11.5 will be revised as follows:</p> <p>Item 11.5: Rater-measured delivery temperatures at faucets and showerheads do not exceed 125°F</p> <p>Footnote 78. To measure the delivery temperature, turn the hot water at any fixture <u>faucet</u> completely on and place a digital thermometer in the stream of water. Observe the thermometer and when no additional rise in temperature occurs after 10 seconds, confirm this temperature does not exceed 125°F</p>
00237	03/17/2022	Rater Field Checklist, Version 1/1.1 (Rev. 02)	Change	Item 12.1 - Common space lighting controls exemption
				<p>Issue: Partners have noted that certain rooms, such as a boiler room or mechanical room, should be exempted from the automatic lighting controls due to safety concerns, but it's not clear how to document this. Some have asked if corridors and stairwells qualify for this exemption in the ERI and Prescriptive Path, if automatic lighting shutoff poses a safety concern. And finally, Partners have asked how the Rater should document compliance for exempted spaces in the Checklist: mark "Rater Verified" or "N/A"?</p>
				<p>Resolution: EPA agrees that it is not clear what the project team needs to do to use the safety exemption allowance or how to demonstrate compliance, if automatic controls are not installed.</p>

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				<p>Items 12.1.1 and 12.1.2 will be revised as follows:</p> <p>ERI and Prescriptive Path: All common spaces ² (including shared garages), except the building lobby, mechanical equipment rooms, and where automatic shutoff would endanger the safety of occupants ⁸¹, have occupancy sensors or automatic bi-level lighting controls installed and operation has been verified</p> <p>ASHRAE Path only: All common spaces ² (including shared garages), except the building lobby, mechanical equipment rooms, corridors, and stairwells and where automatic shutoff would endanger the safety of occupants ⁸¹, have occupancy sensors or automatic bi-level lighting controls installed and operation has been verified.</p> <p>A new footnote will be added to Items 12.1.1 and 12.1.2 as follows:</p> <p>For common spaces or shared garages where automatic lighting controls are not installed due to safety concerns associated with automatic lighting shutoff, the architect or engineer must provide the specific location(s) where this concern is applicable. The Rater shall retain a copy of the email or letter that documents the location(s) for their records and check the box in the “Rater Verified” column. For Item 12.1.1, this exemption does not apply to corridors or stairwells; where safety is a concern in those spaces, the ASHRAE Path should be pursued.</p>
00282	05/12/2022	Rater Field Checklist, Version 1/1.1 (Rev.02)	Change	<p>Item 12.2 – Clarifying intent regarding Tier II light fixtures</p> <p>Issue: In response to Partner feedback, Policy Record 00274 was released that allows a percentage of “Tier II” light fixtures to be installed rather than needing to demonstrate compliance with the calculation of lighting power densities. A Partner noted that the “Tier II” definition also includes an “indoor fixture controlled by a motion sensor.” Given that other Items in the Rater Field Checklist already require automatic controls in some common spaces, it wasn’t clear if those controls could also be used with non-LED lighting to satisfy this Item, since they are “Tier II”.</p> <p>Resolution: The intent of Policy Record 00274 was to reference LED lighting and to use an established Standard for the definition. A Tier II fixture is defined by ANSI / RESNET / ICC Standard 301 as a “light fixture located in a Qualifying Light Fixture Location that contains LED lamps, an integrated LED fixture, an outdoor light fixture that is controlled by a photocell or an indoor fixture controlled by a motion sensor.” Given that non-LED fixtures could meet the requirements of “Tier II”, the Checklist will be revised to better reflect the original intent.</p>

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				<p>12.2 and 12.3 will be combined and moved after Item 12.4 Exterior lighting controls as noted in Policy Record 00274. This Item will be updated as follows:</p> <p>Common Spaces ² and Garages: 90% of installed lighting fixtures are integrated LED fixtures or contain LED lamps. See [New Footnote] for alternate options.</p> <p>“Tier II” was also referenced in Footnote 82 and will be revised as follows:</p> <p>For Prescriptive Path dwelling units, ENERGY STAR certified fixtures or light bulbs are required; however, the Rater is only responsible for verifying that the installed lighting meets the Tier I or Tier II definition specified in ANSI / RESNET / ICC 301. For locations outside the dwelling unit, as an alternative to ENERGY STAR certified fixtures or light bulbs, integrated LED fixtures or fixtures containing LED or fluorescent lamps are permitted.</p>
00274	03/17/2022	Rater Field Checklist, Version 1/1.1 (Rev.02)	Change	Items 12.2 and 12.3: Alternative to common space and garage LPD calculations
				<p>Issue: Policy Record ID 00282 contains the most recent resolution of this issue. Partners have noted that the documentation and in-field verification needed to support lighting power density calculations takes more time than verifying the efficiency of the fixtures as meeting Tier I or Tier II. Given the efficiency of Tier II fixtures, Partners have asked whether a percentage of Tier II fixtures can be installed in lieu of needing to demonstrate compliance with the lighting power densities.</p>
				<p>Resolution: Policy Record ID 00282 contains the most recent resolution of this issue. Tier II fixtures as defined by ANSI / RESNET / ICC Standard 301 (i.e., LEDs) are more available in a larger variety of options than when the program was initially developed. EPA agrees that given the efficiency of LEDs, installing 90% Tier II fixtures can be an alternative method for achieving the intent of the lighting power density requirements. Additionally, given partner feedback, EPA believes partners will select this option more often than the LPD calculation and so the LPD option will be moved to the footnotes as an alternate compliance option.</p> <p>Item 12.2 and 12.3 will be combined and moved after Item 12.4 Exterior lighting controls. This Item will be updated as follows:</p> <p>Common Space ² and Garages: 90% of lighting fixtures installed meet Tier II efficiency, as defined by ANSI / RESNET / ICC Standard 301. See [New Footnote] for alternate options.</p>

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				<p>A new footnote will be added as follows:</p> <p>As an alternative to the efficiency requirements in Item 12.2, installed lighting may instead meet the following lighting power allowances. In common spaces (except garages), for ERI and Prescriptive Path, total installed lighting power for the combined common spaces must not exceed ASHRAE 90.1-2007 allowances for those combined spaces, using the Space-by-Space or Building Area Method. For ASHRAE Path, total installed lighting power for the combined common spaces ² must not exceed ASHRAE 90.1-2007 allowances for those combined spaces, using the Space-by-Space or Building Area Method, by more than 20%. For all Paths, see Footnote 79 and 80 for allowances.</p> <p>In shared garages, installed lighting shall not exceed 0.24 W/ft².</p>
00257	03/17/2022	Rater Field Checklist, Version 1/1.1 (Rev.02)	Clarification	<p>Item 12.4 –Lighting Controls for individual dwelling unit exterior lighting</p>
				<p>Issue: Partners have asked whether exterior lighting controls are required for a light fixture over a townhouse entry door or other exterior lighting that is on the dwelling unit electric meter.</p>
				<p>Resolution: The intent of Item 12.4 is to require controls for shared exterior lighting, not lighting that is controlled by the dwelling unit resident.</p> <p>Item 12.4 will be revised as follows:</p> <p>“Exterior lighting controls: Fixtures, including parking lot fixtures, must include automatic switching on timers or photocell controls except fixtures intended for 24-hour operation, required for security, or associated with the electric meter for an individual dwelling unit.”</p>
00473	10/03/2022	Rater Field Checklist, Version 1/1.1/1.2 (Rev.02)	Clarification	<p>Clarifying mandatory Items by Path</p>
				<p>Issue: The headings on some Items refer to a specific Path. The other Items do not have a designation and it should be clarified those are required for all Paths.</p>
				<p>Resolution: The program is designed such that there are three options to meeting the performance target and each are a varying mix of mandatory and modeled measures. In the “Prescriptive” Path, all of the efficiency measures are prescribed either directly in the National Rater Design Review and Rater Field checklists or in the Reference Design. In the ERI Path, common spaces follow similar requirements as the Prescriptive Path, but there are fewer mandatory or “prescriptive” measures required in the dwelling unit, and a less stringent backstop on other efficiency measures in the dwelling unit. In the ASHRAE Path, relative to</p>

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				<p>the ERI Path, there are fewer mandatory or “prescriptive” measures in the common spaces, as well as a less stringent backstop on some common space measures.</p> <p>Regardless of the Path, the National Rater Design Review Checklist and this Checklist have efficiency requirements included that are mandatory for all paths, and as noted above requirements that are more stringent for certain paths.</p> <p>For example, the Item may say “Prescriptive Path:” or “ASHRAE only”. Where it says “Prescriptive Path” it is only required for that Path. Where it says “ASHRAE only, that option may only be used by the ASHRAE Path. This is not an indication that only the Items with this text apply to those Paths. All Items without a label are mandatory for all Paths.</p> <p>To reduce confusion in the Checklists, a sentence will be added to Footnote 1 that states: “These requirements apply to all Paths, unless otherwise specified.”</p>
00400	10/03/2022	Rater Field Checklist, Version 1/1.1/1.2 (Rev.02)	Clarification	<p>Exhibit X for v1.2 – Alternative minimum efficiencies limited to heat pumps, where HPWHs also used</p> <p>Issue: In Exhibit X for MFNC Version 1.2, there is an allowance for systems denoted with an asterisk to use the efficiencies in ASHRAE 90.1-2019 instead of the table in Exhibit X if dwelling units are served by heat pump water heaters. The text of the asterisk is not clear that it is only applicable to the systems denoted with the asterisk.</p> <p>Resolution: To clarify the intent, the applicable systems will instead be denoted with a “†” and the table note will be revised as follows: “*For buildings † Where domestic hot water is provided dwelling units are served by heat pump water heaters, the systems noted above with an † space-conditioning equipment may instead meet the efficiency listed in ASHRAE 90.1-2019. Use the efficiency values for “after 1/1/2023” where listed”</p>
00435	10/03/2022	Rater Field Checklist, Version 1/1.1/1.2 (Rev.02)	Refinement	<p>Items 1.5 and 1.6 – Not required for buildings pursuing the ASHRAE Path</p> <p>Issue: The text in Footnote 9 references “ASHRAE projects” when it should reference buildings pursuing the ASHRAE Path.</p> <p>Resolution: Footnote 9 will be revised as follows: “Compliance with Items 1.5 and 1.6 is not required for <u>buildings pursuing the ASHRAE projects Path</u>, but the energy used by the heating systems must be modeled following the requirements in the Simulation Guidelines, available at www.energystar.gov/mfguidance.”</p>
00392	10/03/2022		Clarification	Item 1.6.2 - Clarify insulation requirements above heated garage

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		Rater Field Checklist, Version 1/1.1/1.2 (Rev.02)		<p>Issue: Partners have noted confusion regarding the insulation requirements in Item 1.6.2 that apply to the top of a heated garage since in some cases they overlap with the floor insulation requirements of Item 3.6.</p> <p>Resolution: The intent of the requirement in Item 1.6.2 is to establish insulation requirements for conditions where Item 3.6 does not apply, such as when the space above the heated garage is not a dwelling unit or common space but is ambient or ground conditions, commercial space, or some other unconditioned space which has no minimum “floor” insulation requirement.</p> <p>Item 1.6.2 will be revised as follows: 1.6.2 Ceiling insulation meets Item 3.6 where applicable. Otherwise, meets or exceeds the R-value for mass floors from the “All Other” column of Table 502.2(1) of 2009 IECC</p>
00424	10/03/2022	Rater Field Checklist, Version 1/1.1/1.2 (Rev.02)	Clarification	<p>Section 5 – Applicability of Track A and Track B</p> <p>Issue: The last sentence of Footnote 39 states that for Track A, all unitary HVAC Systems including air conditioners and heat pumps up to 65 kBtuh and furnaces up to 125 kBtuh shall comply with 5a.1 through 5a.3 for the building to be certified. No parallel statement exists defining what HVAC system types Track B is applicable to. In addition, some of the text in Footnote 38 is redundant.</p> <p>Resolution: To clarify the intent of Section 5, Footnote 38 will be deleted and Footnote 39 updated as follows: <u>“To be eligible for Track A – HVAC Grading by Rater, dwelling units must have at least one unitary HVAC system including air conditioners or heat pumps up to 65 kBtuh, or furnaces up to 125 kBtuh (i.e., within the scope of ANSI / RESNET / ACCA Standard 310). Track A – HVAC Grading by Rater shall not be used until an implementation schedule has been defined for ANSI / RESNET / ACCA Std. 310 by the HCO or MRO that the building is being certified under. Track A – HVAC Grading by Rater shall then use ANSI / RESNET / ACCA Std. 310 including all Addenda and Normative Appendices, with new versions and Addenda implemented according to the schedule defined by the HCO or MRO that the building is being certified under for all dwelling units.”</u></p> <p>The last sentence of Footnote 39 will be moved to a new Footnote located at the end of the header for Section 5, as follows: “For Track A, all unitary HVAC Systems including air conditioners and heat pumps up to 65 kBtuh and furnaces up to 125 kBtuh serving dwelling units shall comply with 5a.1 through 5a.3 for the building to be certified. Common spaces with those systems may choose to use</p>

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				<p>ANSI / RESNET / ACCA 310 and complete Items 5a.1 through 5a.3, or complete Item 5a.4 and Sections 2 and 3 on the National HVAC Functional Testing Checklist.</p> <p>The last sentence of Footnote 43 will be revised as follows:</p> <p>“Functional Testing Agents must hold an approved credential, as listed at www.energystar.gov/ftas, or must be a representative of the Original Equipment Manufacturer (OEM), or a contractor credentialed by an HVAC Quality Installation Training and Oversight Organization (H-QUITO), if not completing Sections 6 and higher. Functional Testing Agents may not be the installing contractor, nor employed by the same company as the installing contractor, unless they are a credentialed contractor. An explanation of the credentialing process and links to H-QUITOs, which maintain lists of credentialed contractors, can be found at www.energystar.gov/findhvac. A directory of other FT Agents can be found at www.energystar.gov/ftas. Raters can confirm FT Agents have met the requirements by documenting they are listed in a directory. For Track A, a Functional Testing Agent is not needed to complete Sections 2 and 3 of the National HVAC Functional Testing Checklist do not need to be completed for residential HVAC systems using ANSI / ACCA / RESNET 310 and meeting Items 5a.1 – 5a.3 <u>residential HVAC systems using ANSI / ACCA / RESNET 310 and meeting Items 5a.1 – 5a.3</u> serving dwelling units or common spaces that will be verified and graded by the Rater.</p> <p>For Track B, Item 5b.1 is applicable for all systems. Item 5b.2 is applicable to split air conditioners, unitary air conditioners, air-source heat pumps, and water-source (i.e., geothermal) heat pumps up to 65 kBtuh with forced-air distribution systems (i.e., ducts) and to furnaces up to 225 kBtuh with forced-air distribution systems (i.e., ducts). All systems shall comply with 5b.1 and 5b.2, as applicable, for the building to be certified.</p> <p>If, based on the selected Track, an Item in Section 5 is not applicable to any systems in the building, the Rater shall mark ‘N/A’ for that Item.”</p>
00417	10/03/2022	Rater Field Checklist, Version	Refinement	<p>Allowed use of ANSI / RESNET / ACCA Std. 310</p> <p>Issue: Footnote 32 states, in part, that ANSI / RESNET / ACCA / ICC 310 shall not be used until an implementation schedule has been defined by the HCO that the building is being certified under. This restriction was necessary at the time the footnote was added because ANSI / RESNET / ACCA / ICC 310 was still being finalized and was not yet incorporated by</p>

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		1/1.1/1.2 (Rev.02)		<p>reference into ANSI / RESNET / ICC 301. In addition, the one HCO approved at that time had to put training, reporting, and other components in place before the standard could be effectively used and overseen.</p> <p>At this time, ANSI / RESNET / ACCA / ICC 310 has been finalized and incorporated by reference into ANSI / RESNET / ICC 301. In addition, the one HCO that was approved at the time has put in place the necessary oversight structures for the new standard and defined an implementation date. Going forward, all HCO's will support the standard and all MROs will support the standard by 1/1/2024, which is when the next revision will be enforced.</p> <p>Resolution: As a result of these developments, the language in this Footnote can be streamlined as follows: “Track A – HVAC Grading shall not be used until an implementation schedule has been defined for ANSI / RESNET / ACCA Std. 310 by the HCO that the building is being certified under. Track A – HVAC Grading by Rater shall then use ANSI / RESNET / ACCA Std. 310 including all Addenda and Normative Appendices, with new versions and Addenda implemented according to the schedule defined by the HCO that the building is being certified under. For Track A, all unitary HVAC Systems including air conditioners and heat pumps up to 65 kBtuh and furnaces up to 125 kBtuh shall comply with 5a.1 through 5a.3 for the home to be certified.”</p>
00315	07/22/2022	Rater Field Checklist, Version 1/1.1/1.2 (Rev.02)	Clarification	<p>Items 6.7, 7.8, and 7.9 – Clarifying applicability of requirements for HRVs and ERVs</p> <p>Issue: Items 6.7 and 7.9 state they are required for all ‘central exhaust’ systems. It is not clear whether central balanced systems, such as HRVs or ERVs, are also subject to these requirements, since they have both ‘central exhaust’ as well as central supply. In addition, item 7.8 states that ENERGY STAR certification is required for all “in-unit” bathroom and “in-line fans” but is similarly unclear whether this includes HRVs and ERVs.</p> <p>Resolution: ERVs and HRVs serving four or more dwelling units are considered ‘central exhaust’ systems as they provide exhaust. Therefore, Items 6.7 and 7.9 are applicable to the exhaust side of central ERVs and HRVs. The supply side of these balanced systems are not required to be tested for duct leakage and the supply fans are not subject to the efficiency requirements of Item 7.9.</p> <p>ERVs and HRVs are not currently eligible for ENERGY STAR certification. Therefore, Item 7.8 is not applicable for HRVs or ERVs at this time.</p> <p>The last sentence of Footnote 53 will be updated as follows:</p>

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				<p>This test is not required of central exhaust systems serving clothes dryers <u>but is required for the central exhaust portion of balanced systems such as HRVs and ERVs.</u></p> <p>Footnote 62 will be updated as follows:</p> <p>Bathroom fans with a rated flow rate \geq 500 CFM and <u>heat/energy recovery ventilation fans</u> are exempted from the requirement to be ENERGY STAR certified.</p>
00308	07/06/2022	Rater Field Checklist, Version 1/1.1/1.2 (Rev.02)	Clarification	<p>Item 7.2 and Item 7.3 - Reference more recent versions of ASHRAE 62.1 and 62.2</p> <p>Issue: Partners have asked if they are permitted to use more recent versions of ASHRAE 62.1 and 62.2, in addition to the 2010 and 2013 versions, and published addenda.</p> <p>Resolution: Because of the significant differences to the ASHRAE 62.1 and 62.2 standard that can occur due to the release of new addenda and new versions, it will be clarified that partners are permitted to, but are not required to, use more recent versions (i.e., ASHRAE 62.1 and 62.2-2016, 2019, or 2022) of the standard.</p> <p>To reflect this change, the Rater Field Checklist will be updated as follows:</p> <ul style="list-style-type: none"> Footnote 37 will be revised to say that the Checklist is "...designed to meet ASHRAE 62.1-2010 <u>or later</u>, ASHRAE 62.2-2010 <u>or later</u>..." Footnote 69 will be revised to say that "...the prescriptive duct sizing requirements in Table 5.3 of ASHRAE 62.2-<u>2010 or later</u> (any year) are permitted to be used..." Item 8.3 will be revised to say "Measured exhaust rates are \geq ASHRAE 62.1-<u>2010</u> rates (2c)." <p>All remaining references to "ASHRAE 62.2-2010" are simply definitions and will remain unchanged.</p>
				<p>Item 7.4 – Further clarifying override control label</p> <p>Issue: Item 7.4 requires a ventilation override control to be labeled, but it is not clear whether the circuit breaker may be used to meet this intent.</p> <p>Resolution: A properly labeled circuit breaker may be used as the ventilation override control.</p>
00403	10/03/2022	Rater Field Checklist, Version 1/1.1/1.2 (Rev.02)	Refinement	<p>Item 7.4 – Clarifying application for PTACs with outdoor air supply</p> <p>Issue: Item 7.4 requires a ventilation override control installed, but it is not clear whether this requirement applies for PTACs with outdoor air supply that is not used to meet ASHRAE 62.2 or 62.1 requirements.</p>

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		1/1.1/1.2 (Rev.02)		<p>Resolution: The intent of Item 7.4 is to require a ventilation override for all supply, balanced, or exhaust “Vent Systems.” If the PTAC outdoor air supply is listed on the HVAC Design Report as a Ventilation System, then it must have an override. If the supply is not listed on the HVAC Design Report, then Item 7.4 does not apply to the PTAC.</p>
00402	10/03/2022	Rater Field Checklist, Version 1/1.1/1.2 (Rev.02)	Refinement	<p>Item 7.4 – Reducing redundancy in Item text</p>
				<p>Issue: Item 7.4 requires a ventilation override control installed, but it repeats the requirement for townhomes.</p>
				<p>Resolution: To improve clarity and for conciseness, Item 7.4 will be revised as follows: 7.4 A ventilation override control installed and also labeled if its function is not obvious (e.g., a label is required for a toggle wall switch, but not for a switch that’s on the ventilation equipment). Townhouses only: A readily accessible <u>In addition, the ventilation override control installed and also labeled if its function is not obvious (e.g., a label is required for a toggle wall switch, but not for a switch that’s on the ventilation equipment). must be readily-accessible to the occupant.</u></p>
00238	10/03/2022	Rater Field Checklist, Version 1/1.1/1.2 (Rev.02)	Clarification	<p>Item 9.1 – clarifying that building owner includes their maintenance staff</p>
				<p>Issue: Partners have suggested that wording in requirements and footnotes that reference “building owner” might be better understood in the context of multifamily buildings if they instead read “building maintenance staff”, as it would be unlikely for many of the service-related requirements to be performed by the building ‘owner’.</p>
				<p>Resolution: EPA agrees that this revision would better reflect the intent of the requirement. In Revision 03, Item 9.1 will be revised to read: 9.1 MERV 6+ filter(s) installed in each ducted mechanical system serving an individual dwelling unit and located to facilitate access & regular service by the occupant, building owner, <u>or building maintenance staff.</u>⁷¹ In Revision 03, Footnotes 64 and 72 will be revised to read: 64. Without proper maintenance, ventilation air inlet screens often become filled with debris. Therefore, EPA recommends, but does not require, that these ventilation air inlets be located so as to facilitate access and regular service by the building owner <u>or maintenance staff.</u> 72. Based upon, ASHRAE 62.2-2010, ducted mechanical systems are those that supply air to an occupiable space with a total amount of supply ductwork exceeding 10 ft. in length and through a thermal conditioning component, except for evaporative coolers. Systems that do not meet this definition are exempt from this requirement. While filters are recommended for mini-split systems, HRV’s, and ERV’s, these systems, ducted or not, typically do not have MERV-rated filters available for use and are, therefore, also exempted under this version of</p>

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				the requirements. HVAC filters located in the attic shall be considered accessible to the occupant, building owner, or building maintenance staff if either 1) drop-down stairs, a pull-down ladder, or door provide access to attic and a permanently installed walkway has been provided between the attic access location and the filter or 2) the filter location enables arm-length access from a portable ladder without the need to step into the attic and the height of the ceiling access panel or the bottom of the wall access panel where access is provided is ≤ 12 ft.
00437	10/03/2022	Rater Field Checklist, Version 1/1.1/1.2 (Rev.02)	Refinement	Item 10.3 – Remove redundant reference to local mechanical exhaust
				Issue: Item 10.3 references meeting the requirements of local mechanical exhaust per Item 8.1. This reference is unnecessary as 8.1 is required regardless of the type of cooking equipment.
				Resolution: To improve conciseness, Item 10.3 will be revised as follows: “No unvented combustion appliances other than cooking ranges or ovens are located inside the building’s pressure boundary. For cooking ranges and ovens, local mechanical exhaust per Checklist Item 8.1 requirements must be met. ”
00439	10/03/2022	Rater Field Checklist, Version 1/1.1/1.2 (Rev.02)	Clarification	Items 11.1 and 11.2 – Reformatting hot water efficiency requirements with the addition of Version 1.2
				Issue: When adding in the new efficiencies for Version 1.2, the requirements are not as clear in the current format. They should be split into sub items to improve clarity.
				Resolution: To improve clarity, Items 11.1 and 11.2 will be revised into sub-items as follows: “11.1 Prescriptive Path: Hot Water Equipment <u>Minimum Efficiency Levels (must meet one of the following)</u> : 11.1.1 <u>Where rated in EF or UEF, meet or exceed the efficiency levels specified in the ENERGY STAR Multifamily Reference Design. Otherwise, meet or exceed 85% Et (95% Et if electric).</u> 11.1.2 <u>Where rated in Et or COP:</u> 11.1.2a <u>For all Versions except Nat’l v1.2, ≥ 95% Et if electric and ≥ 85% Et for other fuels.</u> 11.1.2b <u>For Nat’l v1.2, ≥ 2.0 COP for electric serving dwelling units, ≥ 95% Et for electric serving common spaces, and ≥ 90% Et for other fuels.</u> 11.2 <u>ERI Path: For Hot Water Equipment Min. Efficiency Levels for equipment serving common spaces but not dwelling units nor shared laundry:</u> 11.2.1 <u>For non-electric equipment: if where rated in EF or UEF, meet the efficiency levels specified in the ENERGY STAR Multifamily Reference Design.; Otherwise if rated in Et meet or exceed ≥85%, or for Nat’l v1.2 ≥ 90%Et.</u> ”

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				11.2.2 For electric equipment: ≥ 0.93 UEF, 0.95 EF or 95% Et. “
00293	07/06/2022	Rater Field Checklist, Version 1/1.1/1.2 (Rev.02)	Clarification	Item 14.1 – Defining building floor area
				Issue: Item 14.1 requires monthly or annual building-level energy consumption data for buildings 50,000 ft ² or larger. However, it does not define how to calculate the building area.
				<p>Resolution: To provide a consistent calculation of floor area, the definition of “Gloss Floor Area” used by ENERGY STAR Portfolio Manager shall be used to evaluate whether the requirement in Item 14.1 applies. Partners should consult the full <u>ENERGY STAR Portfolio Manager definition</u> for details but key aspects of the definition are:</p> <ul style="list-style-type: none"> - Measured from the outside surface of exterior walls - Includes common areas, stairwells, mechanical rooms, etc. - Excludes exterior spaces, balconies, parking, etc. <p>Therefore, Footnote 84 will be revised as follows:</p> <p>“<u>Building area shall be calculated according to Gross Floor Area as defined by ENERGY STAR Portfolio Manager, which specifies to measure from the outside surface of exterior walls and includes all areas inside the building and excludes parking areas. Refer to the ENERGY STAR Portfolio Manager Glossary for a complete definition.</u> Strategies include: an agreement with the utility companies to provide the aggregated building-level data, in a spreadsheet format or directly through Portfolio Manager; OR evidence that securing signed utility data release forms will be a mandatory component of all lease agreements; OR installation of a building-level energy monitor, data acquisition system, or utility-owned energy meter. If an energy monitor is installed, the builder shall provide the building operator with the manufacturer’s documentation and operations manual. EPA recommends, but does not require, that one of these strategies also be implemented in buildings 25,000-49,999 ft².”</p>
00372	10/03/2022	Rater Field Checklist, Version 1/1.1/1.2 (Rev.02)	Refinement	Footnote 1– Updating the definition for sleeping unit
				Issue: The current definition for ‘sleeping unit’ does not reference ANSI / RESNET / ICC 301.
				Resolution: The definition of sleeping unit will be updated to reference ANSI / RESNET / ICC 301.

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				<p>The reference to sleeping units in Footnote 1 will be updated as follows: “The term A ‘sleeping unit’ refers to <u>as defined by ANSI / RESNET / ICC 301, is a room or space in which people sleep, which can also include permanent provisions for living, eating, and either sanitation or kitchen facilities but not both. Where the term ‘dwelling unit’ is used in this Checklist, the requirement is also required of ‘sleeping’ units.”</u></p>
00372	10/03/2022	Rater Field Checklist, Version 1/1.1/1.2 (Rev.02)	Refinement	<p>Footnote 1– Updating the definition for sleeping unit</p>
				<p>Issue: The current definition for ‘sleeping unit’ does not reference ANSI / RESNET / ICC 301.</p>
				<p>Resolution: The definition of sleeping unit will be updated to reference ANSI / RESNET / ICC 301.</p> <p>The reference to sleeping units in Footnote 1 will be updated as follows: “The term A ‘sleeping unit’ refers to <u>as defined by ANSI / RESNET / ICC 301, is a room or space in which people sleep, which can also include permanent provisions for living, eating, and either sanitation or kitchen facilities but not both. Where the term ‘dwelling unit’ is used in this Checklist, the requirement is also required of ‘sleeping’ units.”</u></p>
00345	10/03/2022	Caribbean Rater Field Checklist, Version 1 (Rev.02)	Change	<p>Items 1.2, 1.3 and 2.3 - Reference more recent versions of ASHRAE 62.1 and 62.2</p>
				<p>Issue: Partners have asked if they are permitted to use more recent versions of ASHRAE 62.1 and 62.2, in addition to the 2010 and 2013 versions, and published addenda.</p>
				<p>Resolution: Because of the significant differences to the ASHRAE 62.1 and 62.2 standard that can occur due to the release of new addenda and new versions, it will be clarified that partners are permitted to, but are not required to, use more recent versions (i.e., ASHRAE 62.1 and 62.2-2016, 2019, or 2022) of the standard.</p> <p>To reflect this change, the Rater Field Checklist will be updated as follows:</p> <ul style="list-style-type: none"> Footnote 3 will be revised to say that the Checklist is “...designed to meet ASHRAE 62.1-2010 <u>or later</u>, ASHRAE 62.2-2010 or later...”. Footnote 22 will be revised to say that “...the prescriptive duct sizing requirements in Table 5.3 of ASHRAE 62.2-2010 <u>or later</u> are permitted to be used...”. Item 2.3 will be revised to say “Measured exhaust rates are ≥ ASHRAE 62.1-<u>2010</u> rates (2c).”

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				All remaining references to “ASHRAE 62.2-2010” are simply definitions and will remain unchanged.
00405	10/03/2022	Caribbean Rater Field Checklist, Version 1 (Rev.02)	Clarification	Item 1.4 – Reducing redundancy in Item text
				Issue: Item 1.4 requires a ventilation override control installed, but it repeats the requirement for townhomes.
				Resolution: To improve clarity and for conciseness, Item 1.4 will be revised as follows: 1.4 A ventilation override control installed and also labeled if its function is not obvious (e.g., a label is required for a toggle wall switch, but not for a switch that’s on the ventilation equipment). Townhouses only: A readily accessible <u>In addition, the ventilation override control installed and also labeled if its function is not obvious (e.g., a label is required for a toggle wall switch, but not for a switch that’s on the ventilation equipment). must be readily-accessible to the occupant.</u>
00406	10/03/2022	Caribbean Rater Field Checklist, Version 1 (Rev.02)	Clarification	Item 1.4 – Clarifying application for PTACs with outdoor air supply
				Issue: Item 1.4 requires a ventilation override control installed, but it is not clear whether this requirement applies for PTACs with outdoor air supply that is not used to meet ASHRAE 62.2 or 62.1 requirements.
				Resolution: The intent of Item 1.4 is to require a ventilation override for all supply, balanced, or exhaust “Vent Systems.” If the PTAC outdoor air supply is listed on the HVAC Design Report as a Ventilation System, then it must have an override. If the supply is not listed on the HVAC Design Report, then Item 1.4 does not apply to the PTAC.
00407	10/03/2022	Caribbean Rater Field Checklist, Version 1 (Rev.02)	Clarification	Item 1.4 – Further clarifying override control label
				Issue: Item 1.4 requires a ventilation override control to be labeled, but it is not clear whether the circuit breaker may be used to meet this intent.
				Resolution: A properly labeled circuit breaker may be used as the ventilation override control.
00393	10/03/2022	Caribbean Rater Field Checklist,	Refinement	Item 1.5 – Removal of superfluous “N/A” checkboxes
				Issue: For Items 1.5.1 and 1.5.2, the “N/A” checkboxes are superfluous because there is already an overarching “N/A” checkbox in Item 1.5, which is to be used for homes in which there are no outdoor air inlets connected to a ducted return of the HVAC system.

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		Version 1 (Rev.02)		Resolution: The “N/A” checkboxes in Items 1.5.1 and 1.5.2 will be removed.
00339	10/03/2022	Caribbean Rater Field Checklist, Version 1 (Rev.02)	Change	Item 1.9 – NEMA Premium fan motors
				Issue: Item 1.9 of the Rater Field Checklist requires fans (1 HP or larger) to be “installed with NEMA Premium motors”. In Item 5.15 of the National Rater Field Checklist, however, pump motors only need to “meet or exceed efficiency standards for NEMA Premium™ motors”. A Partner has asked whether fan motors must be labeled NEMA Premium or if meeting or exceeding the NEMA Premium efficiency standards is sufficient, as it is for pump motors.
				Resolution: In Revision 03, Item 1.9 will be edited as follows: 1.9 If central exhaust fans, ≤ 1 HP, are installed as part of the dwelling-unit mechanical ventilation system, then they are direct-drive, ECM, with variable speed controllers. If > 1 HP, their motors meet or exceed <u>efficiency standards for NEMA Premium™</u> motors.
00477	10/03/2022	Caribbean Rater Field Checklist, Version 1 (Rev.02)	Clarification	Item 1.10.1 – clarifying that building owner includes their maintenance staff
				Issue: Partners have suggested that wording in requirements and footnotes that reference “building owner” might be better understood in the context of multifamily buildings if they instead read “building maintenance staff”, as it would be unlikely for many of the service-related requirements to be performed by the building ‘owner’.
				Resolution: EPA agrees that this revision would better reflect the intent of the requirement. In Revision 03, Footnote 18 will be revised to read: 18. Without proper maintenance, ventilation air inlet screens often become filled with debris. Therefore, EPA recommends, but does not require, that these ventilation air inlets be located so as to facilitate access and regular service by the building owner <u>or maintenance staff</u> .
00342	10/03/2022	Caribbean Rater Field Checklist, Version 1 (Rev.02)	Change	Item 5.1 – Combustion air requirements for mechanically drafted equipment
				Issue: Raters have questioned the extra requirement to calculate the minimum volume of combustion air for mechanically drafted furnaces, boilers, and water heaters in the MFNC program, which was only a requirement for unvented combustion appliances in SFNH. Raters have also questioned the need to verify the operation of the combustion damper, which was also not a requirement in SFNH.

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				<p>Resolution: While EPA believes the calculation and damper verification has value, to ease the transition for Raters from SFNH to MFNC, the added requirements will be removed.</p> <p>Item 5.1 will be revised as follows:</p> <p>“5.1 Furnaces, boilers, and water heaters located within the building’s pressure boundary are mechanically drafted or direct-vented. Alternatives in Footnote 29.”</p>
00343	10/03/2022	Caribbean Rater Field Checklist, Version 1 (Rev.02)	Change	<p>Item 10.2 – Removal of Hot Water Pipe Insulation Requirement</p>
				<p>Issue: Partners have noted that hot water pipe insulation is a mandatory requirement in MFNC and not in Single-Family New Homes that can cause a challenge for project teams transitioning to the MFNC program.</p>
				<p>Resolution: Given the relative importance of the hot water heating load, the mandatory requirements were adjusted to reduce hot water energy use. While hot water pipe insulation is highly recommended, in order to streamline the transition to MFNC from the SFNH program, this requirement will be removed.</p> <p>Item 10.2 and Footnote 33 will be removed.</p>
00340	10/03/2022	Caribbean Rater Field Checklist, Version 1 (Rev.02)	Change	<p>Item 10.3 – Rater-measured hot water delivery temperatures</p>
				<p>Issue: Partners have asked whether it is necessary to test the hot water delivery temperature at both the faucet and the showerhead and if this includes all faucets and showerheads in the dwelling unit or just the ones closest or farthest from the hot water heater.</p>
				<p>Resolution: EPA agrees that the inherent value in testing the hot water delivery temperature can be achieved by testing just one faucet within the dwelling unit.</p> <p>In the next revision, Item 10.3 will be revised as follows:</p> <p>Item 10.3: Rater-measured delivery temperatures at faucets and showerheads do not exceed 125°F</p> <p>Footnote 34. To measure the delivery temperature, turn the hot water at <u>any faucet fixture</u> completely on and place a digital thermometer in the stream of water. Observe the</p>

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				thermometer and when no additional rise in temperature occurs after 10 seconds, confirm this temperature does not exceed 125°F
00341	10/03/2022	Caribbean Rater Field Checklist, Version 1 (Rev.02)	Change	Item 11.1 – Common Space Lighting Controls Exemption
				Issue: Partners have noted that certain rooms, such as a boiler room or mechanical room, should be exempted from the automatic lighting controls due to safety concerns, but it's not clear how to document this. Some have asked if corridors and stairwells qualify for this exemption, if automatic lighting shutoff poses a safety concern. And finally, Partners have asked how the Rater should document compliance for exempted spaces in the Checklist: mark "Rater Verified" or "N/A"?
				Resolution: EPA agrees that it is not clear what the project team needs to do to use the safety exemption allowance or how to demonstrate compliance, if automatic controls are not installed. Item 11.1.1 will be revised as follows: All common spaces ² (including shared garages), except the building lobby, mechanical equipment rooms, and where automatic shutoff would endanger the safety of occupants, have occupancy sensors or automatic bi-level lighting controls installed and operation has been verified A new footnote will be added to Items 1.1.1 as follows: For common spaces or shared garages where automatic lighting controls are not installed due to safety concerns associated with automatic lighting shutoff, the architect or engineer must provide the specific location(s) where this concern is applicable. The Rater shall retain a copy of the email or letter that documents the location(s) for their records and check the box in the "Rater Verified" column. This exemption does not apply to corridors or stairwells.
00344	10/03/2022	Caribbean Rater Field Checklist, Version 1 (Rev.02)	Change	Items 11.2 and 11.3 - Alternative to Common Space and Garage LPD Calculations
				Issue: Partners have noted that the documentation and in-field verification needed to support lighting power density calculations takes more time than verifying the efficiency of the fixtures as meeting Tier I or Tier II. Given the efficiency of Tier II fixtures, Partners have asked whether a percentage of Tier II fixtures can be installed in lieu of needing to demonstrate compliance with the lighting power densities.

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				<p>Resolution: LEDs are more available in a larger variety of options than when the program was initially developed. EPA agrees that given the efficiency of LEDs, installing 90% LED fixtures can be an alternative method for achieving the intent of the lighting power density requirements. Additionally, given partner feedback, EPA believes partners will select this option more often than the LPD calculation and so the LPD option will be moved to the footnotes as an alternate compliance option.</p> <p>Item 11.2 and 11.3 will be combined and moved after Item 11.4 Exterior lighting controls. This Item will be updated as follows:</p> <p>Common Spaces ² and Garages: 90% of lighting fixtures are integrated LED fixtures or contain LED lamps. See [New Footnote] for alternate options.</p> <p>A new footnote will be added as follows:</p> <p>“As an alternative to the efficiency requirements in Item 11.3, installed lighting may instead meet the following lighting power allowances. In common spaces (except garages), total installed lighting power for the combined common spaces must not exceed ASHRAE 90.1-2007 allowances for those combined spaces, using the Space-by-Space or Building Area Method. See Footnote 35 and 36 for allowances.</p> <p>In shared garages, installed lighting shall not exceed 0.24 W/ft².”</p>
00366	10/03/2022	Caribbean Rater Field Checklist, Version 1 (Rev.02)	Clarification	Footnote 1 – Clarifying the definition of a building
				<p>Issue: Given that the program requires all dwelling units in a ‘building’ to be certified, partners have asked what defines a ‘building’. For example, would an individual townhouse be considered the ‘building’ or the entire row of attached townhouses.</p>
				<p>Resolution: EPA agrees that the term building can be better defined.</p> <p>Footnote 1 will be updated as follows:</p> <p>“This Checklist applies to all dwelling units, sleeping units, common spaces ², and garages (open or enclosed) in the building being certified, and where specified, parking lots. These requirements do not apply to parking garages or lots where the cost of the energy use of the parking garage or lot is not the responsibility of the Builder/Developer, Building Owner or Property Manager. This Checklist does not apply to commercial or retail spaces. This Checklist does not apply to common spaces that are located in buildings on the property without any dwelling or sleeping units. The term ‘sleeping unit’ refers to a room or space in which people sleep, which can also include permanent provisions for living, eating, and either sanitation or</p>

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				<p>kitchen facilities but not both. Where the term ‘dwelling unit’ is used in this Checklist, the requirement is also required of ‘sleeping’ units. The term ‘building’ refers to a structure <u>that encompasses dwelling/sleeping units and (if present) common spaces, sharing one or more of the following attributes: a common street address, a common entrance or exit, central/shared mechanical systems, or structurally interdependent wall or roof systems. Attached structures such as townhouses and 4-story two-unit structures (commonly referred to as “2-over-2s”) may be considered separate buildings if they are divided by a vertical fire separation wall from the foundation to the roof sheathing and share none of the other attributes listed above. A skyway or a breezeway that connects two structures is not considered a common entrance or exit. utilized or intended for supporting or sheltering occupancy for a residential purpose; a structure with no dwelling or sleeping units connected to a structure with dwelling or sleeping units by less than 10% of its exterior wall area is not to be included in the ‘building’.</u>”</p>
00374	10/03/2022	Caribbean Rater Field Checklist, Version 1 (Rev.02)	Refinement	<p>Footnote 1– Updating the definition for sleeping unit</p> <p>Issue: The current definition for ‘sleeping unit’ does not reference ANSI / RESNET / ICC 301.</p> <p>Resolution: The definition of sleeping unit will be updated to reference ANSI / RESNET / ICC 301.</p> <p>The reference to sleeping units in Footnote 1 will be updated as follows: “The term A ‘sleeping unit’ refers to <u>as defined by ANSI / RESNET / ICC 301, is a room or space in which people sleep, which can also include permanent provisions for living, eating, and either sanitation or kitchen facilities but not both. Where the term ‘dwelling unit’ is used in this Checklist, the requirement is also required of ‘sleeping’ units.”</u></p>
00229	10/28/2021	<p><i>HVAC Design Report, Version 1 / 1.1 (Rev.02)</i></p> <p>Rater Design Review</p>	Change	<p>Streamlining the use of SFNH HVAC Design Reports for dwelling units</p> <p>Issue: <u>Policy Record ID 00311 contains the most recent resolution of this issue.</u> Partners have noted that they have many HVAC design reports for previous unit plans already created within residential load calculation software that auto-generates the ENERGY STAR SFNH National HVAC Design report. While Footnote 1 allows the use of the SFNH HVAC Design Report, it still requires asking the HVAC designer to provide the total occupant gains and non-occupant internal gains for each of those unit plans and manually document them in the <u>MFNC HVAC Design report.</u> The data can be challenging to collect on past plans and time-</p>

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		Checklist, Version 1/1.1 (Rev.02)		<p>consuming to enter manually. Given that these units had room-by-room loads calculated using residential load calculation software (Manual J), do they need to report those two additional Items when using the SFNH National HVAC Design Report?</p> <p>Resolution: <u>Policy Record ID 00311 contains the most recent resolution of this issue.</u> EPA agrees there are additional process challenges associated with going back to HVAC Designers to get more data and limited value in documenting these two data points when residential load calculation software is used. In order to ease the transition from the SFNH program to MFNC, EPA will update the criteria for project teams that are using the SFNH National HVAC Design Report for dwelling units and remove the requirement to additionally document occupant and non-occupant internal gains in the MFNC HVAC Design Report.</p> <p>Footnote 1 of the HVAC Design Report will be updated as follows:</p> <p>[...] As an alternative, for dwelling units, project teams may instead choose to complete a Single-Family New Homes National HVAC Design Report for each unique unit plan, <u>if room-by-room loads are calculated using Unabridged ACCA Manual J v8.</u> Sections 4 and 5 must be completed in either Design Report unless exempted by this Report. All other systems, including all systems serving common spaces, must be documented in this Design Report.</p> <p>A new footnote will be added to Items 4b.1, 4b.2.3 and 4b.2.8 of the Rater Design Review Checklist as follows:</p> <p>For Track B systems that are documented using the SFNH HVAC Design Report, where <u>room-by-room loads are calculated using Unabridged ACCA Manual J v8,</u> items 4b.2.3 and 4b.2.8 may be left blank.</p>
00412	10/03/2022	Caribbean Rater Design Review Checklist, Version 1 (Rev.02)	Clarification	<p>Addition of “N/A” column</p> <p>Issue: Raters have indicated challenges in completing this Checklist, given that some Items are not applicable to the building, yet there is no “N/A” column, as is available in the Caribbean Rater Field Checklist. Only Section 5 has an overall “N/A” box. Currently, the only options in such cases are for the Rater to leave the Item blank or mark it as “Rater Verified”.</p> <p>Resolution: A column will be added to the Checklist with checkboxes included for the specific Items or Sections that may not be applicable to a building being certified. In addition, for Item 4.2, two boxes will be added to select Option A or Option B in Item 4.2, and then an overarching “N/A” checkbox will be added for both 4.2a and 4.2b.</p>
00373	10/03/2022		Refinement	Footnote 1 – Updating the definition of a sleeping unit

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		Caribbean Rater Design Review Checklist, Version 1 (Rev.02)		<p>Issue: The current definition for ‘sleeping unit’ does not reference ANSI / RESNET / ICC 301.</p> <p>Resolution: The definition of sleeping unit will be updated to reference ANSI / RESNET / ICC 301.</p> <p>The reference to sleeping units in Footnote 1 will be updated as follows: “The term A ‘sleeping unit’ refers to as defined by ANSI / RESNET / ICC 301, is a room or space in which people sleep, which can also include permanent provisions for living, eating, and either sanitation or kitchen facilities but not both. Where the term ‘dwelling unit’ is used in this Checklist, the requirement is also required of ‘sleeping’ units.””</p>
00365	10/03/2022	Caribbean Rater Design Review Checklist, Version 1 (Rev.02)	Clarification	<p>Footnote1 – Clarifying the definition of a building</p> <p>Issue: Given that the program requires all dwelling units in a ‘building’ to be certified, partners have asked what defines a ‘building’. For example, would an individual townhouse be considered the ‘building’ or the entire row of attached townhouses.</p> <p>Resolution: EPA agrees that the term building can be better defined.</p> <p>Footnote 1 will be updated as follows:</p> <p>“This Checklist applies to all dwelling units, sleeping units, common spaces ², and garages (open or enclosed) in the building being certified, and where specified, parking lots. These requirements do not apply to parking garages or lots where the cost of the energy use of the parking garage or lot is not the responsibility of the Builder/Developer, Building Owner or Property Manager. This Checklist does not apply to commercial or retail spaces. This Checklist does not apply to common spaces that are located in buildings on the property without any dwelling or sleeping units. The term ‘sleeping unit’ refers to a room or space in which people sleep, which can also include permanent provisions for living, eating, and either sanitation or kitchen facilities but not both. Where the term ‘dwelling unit’ is used in this Checklist, the requirement is also required of ‘sleeping’ units. The term ‘building’ refers to a structure <u>that encompasses dwelling/sleeping units and (if present) common spaces, sharing one or more of the following attributes: a common street address, a common entrance or exit, central/shared mechanical systems, or structurally interdependent wall or roof systems. Attached structures such as townhouses and 4-story two-unit structures (commonly referred to as “2-over-2s”) may be considered separate buildings if they are divided by a vertical fire separation wall from the foundation to the roof sheathing and share none of the other attributes listed above. A skyway or a breezeway that connects two structures is not considered a common entrance or</u></p>

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				<p>exit, utilized or intended for supporting or sheltering occupancy for a residential purpose; a structure with no dwelling or sleeping units connected to a structure with dwelling or sleeping units by less than 10% of its exterior wall area is not to be included in the 'building'."</p>
00394	10/03/2022	Caribbean Rater Design Review Checklist (Version 1, Rev. 02)	Refinement	<p>Item 1.1 – Website URL updated</p>
				<p>Issue: The URL in Item 1.1 currently leads to the Partner Locator page. The URL should be updated to direct to the Residential Builders/Developers and Energy Rating Companies page so that project teams can more easily verify whether a builder has an ENERGY STAR partnership agreement.</p>
				<p>Resolution: The URL in Item 1.1 of the Caribbean & Pacific Rater Design Review Checklist will be updated to direct to the Residential Builders/Developers and Energy Rating Companies page. Because the URL is long, the alias www.energystar.gov/ResPartnerDirectory will be used to direct to the appropriate page.</p>
00451	10/03/2022	Caribbean Rater Design Review Checklist, Version 1 (Rev.02)	Change	<p>Item 2 – Rater verification of National HVAC Design Report</p>
				<p>Issue: The National HVAC Design Report Footnote 1 contains alternate options to the HVAC Design Report. In addition, when filling out the Design Report since “N/A” may cover an entire section, when the “N/A” box is checked, the rest of the items in that section may be blank.</p>
				<p>Resolution: To clarify that alternate options may be used for the Design Report and that the Rater must only check that no applicable items are blank, Footnote 4 will be revised as follows: “The Rater shall collect one National HVAC Design Report per building / project. See Footnote 1 of the National HVAC Design Report for alternatives. The Rater is only responsible for verifying that the designer has not left any <u>applicable</u> items blank on the National HVAC Design Report and for verifying the discrete objective parameters in Item 2.2 of this Checklist, not for verifying the accuracy of every input on the National HVAC Design Report.”</p>
00429	10/03/2022	Caribbean Rater Design	Change	<p>Item 2.2.1 – Remove requirement for dwelling unit ventilation to be <150% of ASHRAE 62.2-2013 requirements</p>

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		Review Checklist, Version 1 (Rev.02)		<p>Issue: This requirement to limit ventilation is not as impactful in the Caribbean given that most spaces are not conditioned and would therefore not incur an increase in energy use where over-ventilation occurs. This requirement is also not included in the SFNH program in the Caribbean.</p> <p>Resolution: Due to regional building practices and to align with the SFNH program, Item 2.2, 2.2.1, and Footnote 5 will be removed. Footnote 4 will be updated to remove the reference to Item 2.2.</p> <p>Footnote 4 will be updated as follows: “The Rater shall collect one National HVAC Design Report per building / project. The Rater is only responsible for verifying that the designer has not left any items blank on the National HVAC Design Report and for verifying the discrete objective parameters in Item 2.2 of this Checklist, not for verifying the accuracy of every input on the National HVAC Design Report.”</p>
00226	09/15/2021	<p><i>Caribbean Rater Field Checklist, Version 1 (Rev.02)</i></p> <p><i>Caribbean Rater Design Review Checklist, Version 1 (Rev.02)</i></p>	Change	<p>Item 4.1 – Motorized damper requirement for stair and elevator shaft vents</p> <p>Issue: The National MFNC Rater Field checklist has a requirement for motorized dampers at stairwell and elevator shaft vents, as a way to reduce energy loss through these otherwise open vents. Partners have pointed out that in the Caribbean, stairwells are not conditioned spaces so this requirement is not offering significant value compared to the added costs and complexity of installing motorized dampers to seal off these vents.</p> <p>Resolution: EPA agrees that this National requirement is not providing meaningful savings in this region and will remove Section 4 and Item 4.1 from the Caribbean Rater Field checklist in the next revision. In addition, references in the Rater Design Review Checklist to the re-numbered Sections will be revised.</p>
00438	10/03/2022	Caribbean Rater Design Review Checklist (Version 1, Rev. 02)	Refinement	<p>Item 5.3 – Remove redundant reference to local mechanical exhaust</p> <p>Issue: Item 5.3 references meeting the requirements of local mechanical exhaust per Item 2.1. This reference is unnecessary as 2.1 is required regardless of the type of cooking equipment.</p> <p>Resolution: To improve conciseness, Item 5.3 will be revised as follows: “No unvented combustion appliances other than cooking ranges or ovens are located inside the building’s pressure boundary. For cooking ranges and ovens, local mechanical exhaust per Checklist Item 2.1 requirements must be met.”</p>

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00066	11/01/2019	HVAC Design Report, Version 1/1.1	Change	Documenting Orientation of the Rated Units when calculating design loads
				Issue: The HVAC Design Report does not have space to document the orientation that was assumed when calculating the loads.
				<p>Resolution: EPA agrees that the Designer should document the orientation for which the loads were calculated in order to demonstrate compliance with the requirement in Footnote 22 which states “The designer is only required to document the loads for the orientation(s) that the dwelling unit might be built in.”</p> <p>The following item will be added in Rev01:</p> <p>3.14 Orientation (N, NE, E, SE, S, SW, W, NW): ²²</p>
00067	11/01/2019	HVAC Design Report, Version 1/1.1	Change	Override Control for Dwelling-Unit Mechanical Ventilation in Townhouses
				Issue: When developing the MFNC program to allow Townhouses to participate, EPA’s intent was to ensure that certain requirements from Certified Homes be retained. One of these items was the requirement for readily-accessible ventilation override control, which was not captured in the initial Rater Field Checklist.
				<p>Resolution: Item 2.16 of the HVAC Design Report will be updated as follows”</p> <p>“Specified controls allow the systems to operate automatically, without occupant intervention. In townhouses only, a readily-accessible ventilation override control is specified and also labeled if its function is not obvious (e.g., a label is required for a standalone wall switch, but not for a switch that’s on the ventilation equipment). In all other multi-family dwelling units, the override control is not required to be readily accessible to the occupant. However, in such cases, EPA recommends but does not require that the control be readily accessible to others (e.g., building maintenance staff) in lieu of the occupant.”</p>
00068	11/01/2019	HVAC Design Report, Version 1/1.1	Change	Measurement range allowed for common space exhaust in Item 8.3
				Issue: Partners have noted that the MFNC program allows a measurement range for common space exhaust that is not currently allowed for dwelling unit local mechanical exhaust.
				Resolution: EPA recognizes that this was not intentional to deviate from the Certified Homes program stance on requiring these minimum exhaust rates to be achieved and demonstrated

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				<p>by field measurement. Since the exhaust design values are allowed to exceed the minimum rates required by ASHRAE 62.1, Item 8.3 will be clarified in Rev01 of the Rater Field Checklist as follows:</p> <p>“Measured exhaust rates are \geq ASHRAE 62.1 rates (2c)”</p> <p>To facilitate the rater’s ability to verify the exhaust rate has been achieved, a new column will be added in section 2c of the HVAC Design Report will be modified in Rev01 so that the HVAC Designer documents the ASHRAE 62.1 rate in addition to the design value.</p>
00069	11/01/2019	HVAC Design Report, Version 1/1.1	Clarification	<p>Furnace sizing limits on common space systems</p>
				<p>Issue: Partners have asked whether the furnace sizing limit in Item 4.32 applies to furnaces not serving dwelling units.</p>
				<p>Resolution: Similar to Item 4.19, the intent had not been to require this limit on furnace sizing to systems other than furnaces serving individual dwelling units. Item 4.32 will be revised in Rev01 to include Footnote 19 as follows:</p> <p>“4.32 Meets furnace sizing limit: (see below for A, B, C, or N/A) ¹⁹”</p> <p>Footnote 19: “This section / item applies to split air conditioners, unitary air conditioners, air-source heat pumps, and water-source (i.e., geothermal) heat pumps up to 65 kBtuh with forced-air distribution systems and to furnaces up to 225 kBtuh with forced-air distribution system serving individual dwelling units. Forced-air distribution systems are those that supply air through ductwork exceeding 0 ft. in length. This section / item therefore does not apply to non-ducted systems, such as non-ducted mini-splits, multi-splits, PTHP’s, or PTAC’s.”</p>
00070	11/01/2019	HVAC Design Report, Version 1/1.1	Clarification	<p>Definition of “common spaces”</p>
				<p>Issue: Partners have noted that the footnote in the program documents, that explains what the term ‘common space’ means, is confusing with respect to determining eligibility, and applicability of requirements in certain spaces, such as commercial day-care facilities and common spaces on the property but not in the building being certified.</p>
				<p>Resolution: EPA agrees that this footnote could be revised to provide better clarity with respect to the intent of the program and the applicability of the requirements in certain spaces. Day-care facilities will be removed from the list since they are usually open to the public, not</p>

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				<p>just building residents. It was also clarified that common spaces on the property, but not within the building, are not be included.</p> <p>Text in Footnote 1 will be revised in Rev01 as follows:</p> <p>The term ‘common space’ refers to any spaces in the building being certified that serve a function in support of the residential part of the building that is not part of a dwelling or sleeping unit. This includes spaces used by residents, such as corridors, stairs, lobbies, laundry rooms, exercise rooms, residential recreation rooms, and dining halls, as well as offices and other spaces used by building management, administration or maintenance in support of the residents.</p>
00071	11/01/2019	HVAC Design Report, Version 1/1.1	Clarification	<p>Applicability of requirements to parking garages</p>
				<p>Issue: Partners have noted confusion regarding the footnote in the program documents that describes parking garages and when parking garages are considered common space and whether all parking garages are subject to the requirements.</p>
				<p>Resolution: EPA’s intent is for the requirements to apply to open and enclosed garages that are part of the building being certified and do not apply to separate parking structures or those where the energy costs are not the responsibility of the Owner/Developer (ie. commercial).</p> <p>Item 2c will be updated as follows:</p> <p>“Common Space and Garage Minimum Exhaust Rates”</p> <p>Footnote 1 will be revised in Rev01 as follows:</p> <p>“This report shall represent system design for all unique unit plans, common spaces, and where applicable, parking garages.”</p>
00072	11/01/2019	HVAC Design Report, Version 1/1.1	Clarification	<p>Guidance on how to determine conditioned floor area and window area</p>
				<p>Issue: Items 3.8 and 3.9 currently do not include guidance on how an HVAC designer should calculate “Conditioned Floor Area” and “Window Area”, which could cause inadvertent discrepancies between the values determined by them and by Raters.</p>
				<p>Resolution: While Raters are required to calculate these values using ANSI / RESNET / ICC Standard 301-2019, HVAC designers do not have an industry-standard definition to follow.</p>

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				<p>However, general guidance can be provided to the HVAC designers to inform them of how the Raters will calculate these values, to help ensure consistency.</p> <p>A new footnote will be added to Item 3.8 as follows:</p> <p>“The difference between the Conditioned Floor Area (CFA) used in the design and the actual dwelling unit to be certified must fall within the tolerance specified in Footnote 22, as verified by a Rater. Be advised, the Rater will calculate CFA using the definition in ANSI / RESNET / ICC Standard 301-2019, which defines this value, in part, as the floor area of the Conditioned Space Volume within a building or Dwelling Unit, not including the floor area of attics, crawlspaces, and basements below air sealed and insulated floors. See https://codes.iccsafe.org/content/chapter/16185/ for the complete definition.”</p> <p>A new footnote will be added to Item 3.9 as follows:</p> <p>“The difference between the window area used in the design and the actual dwelling unit to be certified must fall within the tolerance specified in Footnote 22, as verified by a Rater. Be advised, the Rater will calculate window area using the on-site inspection protocol provided in Normative Appendix B of ANSI / RESNET / ICC Standard 301-2019, which instructs the Rater to measure the width and height of the rough opening for the window and round to the nearest inch, and then to use these measurements to calculate window area, rounding to the nearest tenth of a square foot. See https://codes.iccsafe.org/content/chapter/16191/ for the complete protocol.”</p>
00073	11/01/2019	HVAC Design Report, Version 1/1.1	Refinement	Rater clarification
				<p>Issue: In most of the program documents, there is a footnote to clearly explain the role and qualifications of the Rater verifying the items in that Checklist. Since the HVAC Design Report and Water Management System Requirements do not contain items for the Rater, they do not have the footnote, but they do make references to a Rater. It would be useful to the HVAC Designer and Builder/Developer to understand who the Rater is, in the context of the specific checklist they are completing.</p>
				<p>Resolution: To provide consistent definitions, the following footnote will be added in Rev01:</p> <p>“The term ‘Rater’ refers to the person completing the third-party verification required for certification. The person(s) shall: a) be a Certified Rater, Approved Inspector, or an equivalent designation as determined by a Verification Oversight Organization or Multifamily Review Organization and, b) have attended and successfully completed an EPA-recognized training class. See www.energystar.gov/mftraining.”</p>

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00074	11/1/2019	HVAC Design Report, Version 1/1.1	Refinement	<p>Version of National checklists must be completed in California, Oregon and Washington</p> <p>Issue: Partners have asked which version of the “National” checklists, referenced in Exhibit 2: Mandatory Requirements for All Certified Homes, must be completed.</p> <p>Resolution: The National checklists must be completed. To improve clarity, the checklist title will end with “..., Version 1 / 1.1 / 1.2”.</p>
00148	10/30/2020	HVAC Design Report, Version 1 / 1.1 (Rev. 01)	Clarification	<p>Item 3.2 – Group design in multifamily building</p> <p>Issue: Item 3.2 allows a group design where one set of load calculations can be used to represent multiple but similar dwelling units. The footnote that describes this option does not provide sufficient details. It is also not clear how these loads are then used with respect to Section 4, since often the same equipment is used across many dwelling units, even those with different load calculations.</p> <p>Resolution: The intent of the group design in multifamily is to allow one set of load calculations for each unique configuration of a floorplan. For example, if a particular 2-bedroom unit will be built on each floor of a 20-story building, always facing South, the loads for only three “configurations” of this floorplan are needed (e.g., ground, middle, top), rather than all 20 of them. In order to provide greater clarity, Footnote 23 will be revised as follows:</p> <p>For each unique unit floorplan, document the loads for the configuration (e.g., level, orientation) that the dwelling unit might be built in. For example, if a unit plan will only be built in a specific level and orientation (e.g., top-floor, facing South), then the designer only needs to document the loads for this one configuration. Orientation represents the direction that the front door of the dwelling unit is facing. In Section 4, to calculate Cooling sizing % for each configuration of each unique floorplan, the same system may need to be duplicated in multiple columns.</p> <p>In Section 4, the intent is to list all unique Cooling and Heating Equipment. A particular make/model of equipment might be specified in multiple spaces, and therefore needs to be repeated in the columns provided in order to calculate the Sizing % in Item 4.18 for Cooling or Item 4.31 for Heating. In that situation, it is required to duplicate the ID, specify the space served in Item 4.5 (or 4.24), and enter the % in Item 4.18 (or 4.31), but it is not necessary to duplicate any of the other data that is the same.</p> <p>The header for Cooling and Heating Equipment in Section 4 will be edited to read:</p>

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				<p>“Complete all applicable items, noting “N/A” as needed; where the same Equipment ID is used in multiple spaces (columns), identical data is not required to be repeated and can be left blank; where cooling is not provided, check “N/A”. “</p> <p>“Complete all applicable items, noting “N/A” as needed; where the same Equipment ID is used in multiple spaces (columns), identical data is not required to be repeated and can be left blank; where heating is not provided, check “N/A”. “</p> <p>The instructions below that header will be edited to read:</p> <p>“List Cooling Equipment ID in the spaces to the right; <u>duplicating as needed for each unique space served:</u>”</p> <p>“List Heating Equipment ID in the spaces to the right; <u>duplicating as needed for each unique space served:</u>”</p>
00149	10/30/2020	HVAC Design Report Version, 1 / 1.1 (Rev. 01)	Clarification	Item 4.1 – Equipment sizing not covered by ACCA Manual S
				<p>Issue: Not all equipment used in multifamily buildings and documented in Section 4 is under the scope of ACCA Manual S, however, Item 4.1 requires that equipment be selected in accordance with that Manual and no alternative option is provided. It is not clear what equipment sizing selection rules apply to those other equipment that are outside the scope of ACCA Manual S. Also, there are scenarios where redundant heating equipment is installed for safety or the heating equipment is also providing hot water, thus leading to “over” sizing with respect to normal heating ranges.</p>
				<p>Resolution: While equipment sizing rules are important for consistency, a single procedure for equipment selection has not yet been identified for equipment outside the scope of Manual S or to accommodate these typical multifamily scenarios. In the interim, while ACCA Manual S cannot be required, the program requirement will be revised to allow other approaches, without limiting designers to a specific one. Item 4.1 will be edited to include a checkbox for “Other” and Footnote 30 will be edited as follows:</p> <p style="padding-left: 40px;">Equipment shall be selected using the maximum total heat gain and the total heat loss in Section 3 per ACCA Manual S, Second Edition, except that cooling ranges above ACCA Manual S limits are temporarily allowed, per Item 4.19, <u>and heating ranges above ACCA Manual S limits are allowed where heating and hot water are provided by the same equipment or where standby equipment is needed for redundancy, but only operate when the primary equipment is not operating.</u> For equipment outside the</p>

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				<u>scope of ACCA Manual S, “Other” may be indicated and the equipment sizing approach listed in the space provided.</u>
00150	10/30/2020	HVAC Design Report, Version 1 / 1.1 (Rev. 01)	Refinement	Recommendation for load calculations for exempted system types
				Issue: The MFNC requirements have some HVAC design requirements that deviate from Certified Homes; however, the same exemptions for load calculations, that exempt projects from providing load calculations where non-ducted systems are installed, like boilers or mini-splits, multi-splits, PTAC’s or PTHP’s remain. Should MFNC require load calculations for all systems?
				Resolution: Calculating heating and cooling loads ensures equipment can then be properly selected to meet that load, without being under- or over-sized. In alignment with Certified Homes, a recommendation has been added to Footnote 20 as follows: This section / item <u>is recommended, but not required</u> , for non-ducted systems, such as non-ducted mini-splits, multi-splits, PTHP’s, or PTAC’s.
00151	10/30/2020	HVAC Design Report, Version 1 / 1.1 (Rev. 01)	Change	Item 5.1 – Manual D requirement for Townhomes
				Issue: Townhomes are currently required to have room-by-room heating and cooling loads calculated, consistent with the requirement in the Certified Homes program. It would be consistent with that program if they were also required to have their ducts designed in accordance with Manual D, but it’s not clear in Item 5.1 if that is the case.
				Resolution: It was the intent of the MFNC program to retain consistent requirements in many cases for townhouses, which are eligible for certification under both Certified Homes and MFNC. It was not the intent to change the duct design requirement. Item 5.1 will be revised and the following text added for clarity, similar to the text in Item 3.1: “Townhouses only: Duct system must be designed per ACCA Manual D.”
00152	10/30/2020	HVAC Design Report, Version 1 / 1.1 (Rev. 01)	Clarification	Improved visibility of HVAC requirements in the HVAC Design Report
				Issue: Multiple items related to HVAC are verified by the Rater and are listed in the Rater Field Checklist. These are also listed on the HVAC Design Report, to ensure the HVAC Designer is aware of these requirements. Other similar HVAC-related items are inspected by the Functional Testing agent, but are not noted in the HVAC Design Report. It would benefit the

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				<p>HVAC Designer to be aware at the design stage of all the HVAC related inspections and tests that will occur so they can properly design to meet them.</p> <p>Resolution: While not all the items from the Functional Testing Checklist can be copied directly into the HVAC Design Report, high priority items were identified and will be added to the HVAC Design Report.</p> <p>Item 2.3 will be revised as follows:</p> <p style="padding-left: 40px;">2.3 Access points to measure airflow rate <u>and inspect outdoor air dampers</u> are provided and accessible by the Rater.</p> <p>A sentence will be added to Item 4.34 to match Item 5.2.6 of the Functional Testing Checklist: All heating and cooling systems serving a dwelling unit shall have thermostatic controls within the dwelling unit which are not located on exterior walls. <u>If more than one system provides heating or cooling to the same space, controls prevent simultaneous heating and cooling.</u></p> <p>Item 4.43 and 4.44 have been added to the Hydronic Distribution section:</p> <p style="padding-left: 40px;">4.43 If a variable speed pumping system is installed, system designed to prevent “dead-heading” and a method of water flow bypass is provided, such as a minimum flow bypass valve or 3-way valves on specific terminal units.</p> <p style="padding-left: 40px;">4.44 For shared boilers, chillers, and cooling towers, temperature and pressure gauges, air eliminator, expansion tank, and check valves are clearly shown on the drawings. A complete sequence of operations for all systems indicating recommendations for all setpoints is provided.</p> <p>Footnote 37 and 38 will be revised as follows:</p> <p style="padding-left: 40px;">37. Orientation-specific room-by-room design airflows are recommended, but not required, to distribute airflow proportional to load, thereby improving comfort and efficiency. <u>While air-balancing of supply registers and return grilles is not required to be completed as part of HVAC Functional Testing, it is recommended that ducted HVAC systems be designed such that they can be balanced in the field (i.e. provide proper access to any and all balancing dampers, provide ducting and grille layouts such that accurate air measurements can be taken).</u></p> <p style="padding-left: 40px;">38. Design HVAC fan airflow is the design airflow for the blower in CFM, as determined using the manufacturer’s expanded performance data. <u>The Functional Testing Agent is required to measure the HVAC fan airflow using the mode with the higher airflow, within ± 15% of design.</u></p>
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00153	10/30/2020	HVAC Design Report, Version 1 / 1.1 (Rev. 01)	Clarification	<p>Item 2.1 – Determining minimum ventilation rates per Section 4 of ASHRAE 62.2</p> <p>Issue: Item 2.1 requires the dwelling unit ventilation rates to meet the requirements of Section 4 of ASHRAE 62.2, however two rates are provided in that section, one using a table of airflow values and one that uses an equation to determine the airflow. It is not clear which of those rates is minimally required when they do not result in the same ventilation rate.</p> <p>Resolution: The HVAC Designer may choose to design dwelling unit ventilation to meet the rates determined using either the equation or table of values in Section 4 of ASHRAE 62.2 or as modified by the other sections, as allowed by ASHRAE 62.2., with the exception of 4.1.2.</p>
00189	11/12/2020	HVAC Design Report, Version 1 / 1.1 (Rev. 01)	Change	<p>Item 2.19 – Allowance for continuous return-side systems; integration of HVAC fan operation limitations</p> <p>Issue: Partners have suggested several potential improvements to the dwelling unit mechanical ventilation system requirements. Item 2.17 currently requires, in part, that no outdoor air inlets be connected to the return-side of the HVAC system, unless controls are installed to operate intermittently. The intent of this requirement is to limit energy consumption by not allowing continuous operation of the HVAC fan.</p> <p>When this requirement was first drafted, the only common ventilation system utilizing an inlet to the return-side of the HVAC system was one that used the HVAC fan itself as the primary ventilation fan. Since that time, the use of ventilation systems that don't use the HVAC fan as the primary ventilation fan have become more commonplace (e.g., ERV's, HRV's, and inline fans). These should be allowed to be connected to the return-side of the HVAC system, even if running continuously.</p> <p>Furthermore, some ventilation systems have the ability to control the HVAC fan even when the ventilation system has its own fan (e.g., an inline fan might turn on the HVAC fan for mixing). Even in these cases, the HVAC fan should not run continuously, to limit energy consumption.</p> <p>Resolution: To allow continuously-operating ventilation systems that are connected to the return-side of the HVAC system to be used, the language in Item 2.17 regarding intermittent operation will be removed. Furthermore, to group all efficiency requirements related to the HVAC fan in one Item, to prohibit the ventilation system controller from continuously operating the HVAC fan (regardless of whether the HVAC fan is the primary ventilation fan), and to improve conciseness, Item 2.19 will be revised, as follows:</p>

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				<p>“If dwelling-unit Vent System controller operates the dwelling unit HVAC fan, then HVAC fan operation is intermittent and either the fan type in Item 4.12 is ECM / ICM, or the controls will reduce the run-time by accounting for HVAC system is heating or cooling hours.”</p> <p>In addition, to emphasize that the use of a the ‘fan-on’ setting of a thermostat is prohibited from being used as the ventilation controller (because it would operate the HVAC fan continuously), a new Footnote will be added to Item 2.19 as follows:</p> <p>“Note that the ‘fan-on’ setting of a thermostat would not be an acceptable controller because it would continuously operate the HVAC fan.”</p>
00190	11/12/2020	HVAC Design Report, Version 1 / 1.1 (Rev. 01)	Change	<p>Item 2.17 – Enhanced requirements for ventilation inlets on return-side of HVAC system</p> <p>Issue: Partners have suggested several potential improvements to the dwelling unit mechanical ventilation system requirements. Currently, Item 2.17 requires in part that an outdoor air inlet connected to the return-side of the HVAC system be restricted when the system is “not in use”. The intent of this requirement is to restrict outdoor air when the ventilation system is in an off-cycle (which would not be applicable to continuous systems), and, if an occupant override has occurred.</p> <p>Furthermore, unless exempted under specific circumstances, the intent is for a motorized damper to be used to restrict this airflow. This Item currently lists a motorized damper as one example of a compliant strategy, but in fact it is the only strategy that has been identified to date. As currently written, partners may mistakenly believe that other damper types, such a barometric damper, would also meet this intent. However, this would be incorrect because a barometric damper could be pulled open even when ventilation was not desired, simply from the pressure of the HVAC fan.</p> <p>In short, the intent of this Item could be clearer. Furthermore, partners have observed that air inlets on the return-side might be used as a dedicated source of air for an exhaust ventilation system (e.g., bath exhaust fan paired with a return-side inlet). This would be acceptable if the inlet could: a) automatically restrict airflow during ventilation off-cycles and occupant overrides, and; b) not bring in significantly more outdoor air than is being exhausted, which could happen because the inlet is closer to the powerful HVAC fan than the bath fan.</p> <p>The one specific circumstance where an alternative compliance option may be warranted, in lieu of a motorized damper, is for an inlet on the return-side that meets the following: a) it’s</p>

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			<p>paired with a continuous exhaust ventilation system, and; b) a manual shutoff damper is readily-accessible, labeled as the override, and not used as a balancing damper.</p> <p>In multifamily buildings, many dwelling units use an exhaust ventilation system (e.g., bath fan with controller) as a low-cost way to comply with the program. With no dedicated source of outdoor air, more air may come from adjacent dwelling units than directly from outside. This alternative compliance option would not use excess HVAC fan energy, because it wouldn't control the HVAC fan. It would not over-ventilate, because its airflow rate would be measured or engineered (using a CAR damper) to not be significantly higher than the continuous exhaust vent system. And, it would provide a means to restrict outdoor air during override events using the manual shut-off damper.</p> <p>Resolution: To improve clarity and expand the scope of this Item, it will be rewritten to capture these two requirements for return-side ventilation air inlets:</p> <ol style="list-style-type: none"> 1. Restrict airflow using a motorized damper during vent. off-cycle and occupant override. 2. Rater verification that the ventilation rate is \leq 15 CFM or 15% above the design value at the highest HVAC fan speed. <p>Regarding the second requirement, the Rater will satisfy this if the inlet is part of the ventilation system verified in Item 7.2 of the National Rater Field Checklist (e.g., an inline fan connected to the return-side of the HVAC system). If not previously measured, this new requirement will ensure that the HVAC fan does not draw in significantly more outdoor air than the ventilation design.</p> <p>With that said, as an alternative to measuring the airflow for this situation, a Constant Airflow Regulating (CAR) damper will be permitted to be used. CAR dampers are designed to limit the airflow going through them to a known rate, up to a relatively high static pressure such as 0.8 IWC. Therefore, installing such a damper would ensure that the program's intent is met even without a measurement of the airflow.</p> <p>Finally, an alternative compliance option for an inlet on the return-side on the HVAC system will be added, in lieu of a motorized damper, that meets the following: a) it's paired with a continuous exhaust ventilation system, and; b) a manual shutoff damper is readily-accessible, labeled as the override, and not used as a balancing damper</p> <p>To reflect these changes, Item 2.17 will be revised as follows:</p> <p>"For any outdoor air inlet designed to connect to a ducted return of the HVAC system, specified controls automatically restrict airflow using a motorized damper during ventilation off-cycle and occupant override."</p>
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				<p>To emphasize three points regarding Item 2.17 a new Footnote will be added associated with Item 2.17 and section 2 in general. First, that Item 2.17 applies to all inlets connected to a ducted return. Second, to provide examples of when the airflow must be restricted on the return-side outdoor air inlet and to add the alternative compliance option. And third, to provide guidance on when and how the Rater measures the airflow through the return-side outdoor inlet, and to add the alternative use of the CAR damper in lieu of measurement. The new Footnote will read as follows:</p> <p>“Item 2.17 applies to any outdoor air inlet connected to a ducted return of the dwelling unit HVAC system, regardless of its intended purpose (e.g., for ventilation air, make-up air, combustion air). This Item does not apply to HVAC systems without a ducted return. For example, if an outdoor air inlet connected to a ducted return is used as a dedicated source of outdoor air for an exhaust ventilation system (e.g., bath fan), the outdoor airflow must be automatically restricted when the exhaust fan is not running and in the event of an override of the exhaust ventilation system.</p> <p>In dwelling / sleeping units in multifamily buildings, but not townhouses, automatic restriction of airflow is exempted if a manual shutoff damper is used with a continuous exhaust ventilation system and is readily-accessible, labeled as the override, and not used as a balancing damper.</p> <p>Note that a Rater will generally measure the ventilation rate at the highest HVAC fan speed applicable to ventilation mode (e.g., if the inlet only opens when the HVAC is in ‘fan-only’ mode, then test in this mode) to verify that it is \leq 15 CFM or 15% above design value. If the inlet has a motorized damper that only opens when the local mechanical kitchen exhaust is turned on, then testing is not required. As an alternative, measurement of the outdoor airflow can be waived if a Constant Airflow Regulating (CAR) damper with a manufacturer-specified maximum flow rate no higher than 15 CFM or 15% above the ventilation design value is installed on the inlet.”</p>
00191	11/12/2020	HVAC Design Report, Version 1 / 1.1 (Rev. 01)	Refinement	<p>Section 2 – Ventilation terminology aligned with ANSI / RESNET / ICC 301-2019</p> <p>Issue: Partners have suggested several potential improvements to the dwelling unit mechanical ventilation system requirements. Currently, this Section header uses the term “Dwelling Unit Mechanical Ventilation System” but provides no definition. This term is defined within ANSI / RESNET / ICC 301-2019. Furthermore, this section applies to not just ventilation systems, but also to inlets connected to a ducted return of the HVAC system, regardless of intent. This could be emphasized within the header.</p>

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				<p>Resolution: To improve clarity and conciseness of the program requirements, the Section header will be revised to read: “Dwelling-Unit & Common Space Mechanical Ventilation System Design (“Vent System”) & Inlets in Return Duct”.</p> <p>In addition, a Footnote will be added with the definition of this term from ANSI / RESNET / ICC 301-2019, as follows:</p> <p>“As defined by ANSI / RESNET / ICC Std. 301-2019, a Dwelling Unit Mechanical Ventilation System is a ventilation system consisting of powered ventilation equipment such as motor-driven fans and blowers and related mechanical components such as ducts, inlets, dampers, filters and associated control devices that provides dwelling-unit ventilation at a known or measured airflow rate.”</p> <p>A second Footnote will be added to the header to emphasize that Item 7.5 applies to all inlets connected to a ducted return, as follows:</p> <p>“Item 2.17 applies to any outdoor air inlet connected to a ducted return of the dwelling unit HVAC system, regardless of its intended purpose (e.g., for ventilation air, make-up air, combustion air). This Item does not apply to HVAC systems without a ducted return. For example, if an outdoor air inlet connected to a ducted return is used as a dedicated source of outdoor air for an exhaust ventilation system (e.g., bath fan), the outdoor airflow must be automatically restricted when the exhaust fan is not running and in the event of an override of the exhaust ventilation system.</p> <p>In dwelling / sleeping units in multifamily buildings, but not townhouses, automatic restriction of airflow is exempted if a manual shutoff damper is used with a continuous exhaust ventilation system and is readily-accessible, labeled as the override, and not used as a balancing damper.</p> <p>Note that a Rater will generally measure the ventilation rate at the highest HVAC fan speed applicable to ventilation mode (e.g., if the inlet only opens when the HVAC is in ‘fan-only’ mode, then test in this mode) to verify that it is \leq 15 CFM or 15% above design value. If the inlet has a motorized damper that only opens when the local mechanical kitchen exhaust is turned on, then testing is not required. As an alternative, measurement of the outdoor airflow can be waived if a Constant Airflow Regulating (CAR) damper with a manufacturer-specified maximum flow rate no higher than 15 CFM or 15% above the ventilation design value is installed on the inlet.”</p>
00309	07/06/2022		Change	Item 2.1 and Item 2.2 – Reference more recent versions of ASHRAE 62.1 and 62.2

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		HVAC Design Report, Version 1 / 1.1 (Rev.02)		<p>Issue: HVAC Designers have asked if they are permitted to use more recent versions of ASHRAE 62.1 and 62.2, in addition to the 2010 and 2013 versions, and published addenda.</p> <p>Resolution: Because of the significant differences to the ASHRAE 62.1 and 62.2 standards that can occur due to the release of new addenda and new versions, it will be clarified that HVAC designers are permitted to, but are not required to, use more recent versions (i.e., ASHRAE 62.1 and 62.2-2016, 2019, or 2022) of the standard.</p> <p>To reflect this change, the HVAC Design Report will be updated as follows:</p> <ul style="list-style-type: none"> • Footnote 1 will be revised to say that the report is “...designed to meet ASHRAE 62.1-2010 <u>or later</u>, ASHRAE 62.2-2010 <u>or later</u>...”. • Item 2.1 will be revised to state “Dwelling unit ventilation airflow design rate & run-time meet the requirements of Section 4 of ASHRAE 62.2⁷ - ____ [enter year]”. • Footnote 7 will be revised to say “...Designers are permitted, but not required, to use published addenda and/or more recent versions of the standard to assess compliance. The year of the standard that is used shall be listed in the space provided.” • Item 2.2 will be revised to state “Common space outdoor airflow design rate meet the requirements of Section 6 of ASHRAE 62.1⁸ - ____ [enter year]”. • Footnote 8 will be revised to say “...Designers are permitted, but not required, to use published addenda and/or more recent versions of the standard to assess compliance. The year of the standard that is used shall be listed in the space provided.” • The header for Item 2c ‘Common Space and Garage Minimum Exhaust Rates’ will be revised to read “System(s) are designed that mechanically exhaust air from each common space, as required by ASHRAE 62.1-2010 (or more recent versions later).” <p>All remaining references to “ASHRAE 62.2-2010” are simply definitions and will remain unchanged.</p>
00238	03/17/2022	HVAC Design Report, Version 1 / 1.1 (Rev. 02)	Change	<p>Item 2.2 – Clarification to allow ASHRAE Path buildings to exceed 62.1 rates</p> <p>Issue: A Partner questioned whether MFNC was intended to be different than MFHR, with respect to ASHRAE 62.1 ventilation rates. In MFHR, HVAC designers were permitted to over-ventilate spaces in Performance Path and take the energy penalty in the ASHRAE 90.1</p>

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				<p>energy model where the ventilation exceeded 150% of the required rates. It was only in the MFHR Prescriptive Path where they were prohibited from going over by more than 50%. In MFNC, it appears that all Paths are prohibited from exceeding rates by more than 50%.</p> <p>Resolution: It was not intentional to change this requirement for ASHRAE Path projects in MFNC.</p> <p>Item 2.2 will be revised as follows:</p> <p>2.2 Common space outdoor airflow design rate meet the requirements of Section 6 of ASHRAE 62.1⁸ 2010 2013. <u>ERI and Prescriptive Path Only: Rates shall not exceed 2013 rates by more than 50%.</u></p>
00351	10/03/2022	HVAC Design Report, Version 1 / 1.1 (Rev. 02)	Refinement	<p>Items 2.2 and 2.2 - Use “edition” in place of “version” when referencing ASHRAE 62.1 and 62.2</p>
				<p>Issue: The Single-Family New Homes National HVAC Design Report uses ‘edition’ when referring to different years of ASHRAE 62.2. To improve alignment, MFNC should also use ‘edition’.</p>
				<p>Resolution: Where ‘version’ is used to reference ASHRAE 62.1 or 62.2, it will be replaced by ‘edition’.</p>
00470	10/03/2022	HVAC Design Report, Version 1 / 1.1 (Rev.02)	Change	<p>Items 2.3, 2.8, and 2.9 – Temporary OA measurement alternative for common space PTAC/PTHPs</p>
				<p>Issue: In contrast to the ENERGY STAR MFHR program, the ENERGY STAR MFNC program references ASHRAE 62.1-2010 for common spaces rather than 2007. While most ventilation rates did not change, the criteria related to using natural ventilation changed substantially and was not highlighted as a key difference for Partners. This affects designs where PTAC or PTHP systems with outdoor air inlets are used in common spaces. These spaces generally relied on compliance with natural ventilation, given the challenges in measuring the outdoor airflow through these systems. Since this was not highlighted as a key difference, some Partners might not realize that these systems no longer comply with the MFNC program requirements.</p>
				<p>Resolution: While EPA recognizes that measuring supply airflow from PTAC and PTHP systems is challenging, ENERGY STAR will retain the reference to ASHRAE 62.1-2010 for common spaces. However, since this change may not have been clear to MFHR Partners specifying PTAC or PTHP systems with outdoor air inlets, EPA will provide an alternative to the measurement requirement for a limited time.</p>

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				In the next revision, a new footnote will be added to Items 2.3, 2.8, and 2.9 as follows: “For permits on or before 01/01/2024, where outdoor air is supplied to a common space via a PTAC or PTHP, in lieu of measurement, the design CFM shall meet or exceed the ventilation rates required by ASHRAE 62.1-2010 and the space served by the PTAC or PTHP shall have at least one operable window. For permits after 01/01/2024, PTAC and PTHP systems must meet both the runtime and measurement of outdoor air requirements of ASHRAE 62.1-2010 to be considered the mechanical ventilation system for that space. Where measurement of the ventilation rate is not possible, another ventilation system shall be specified (e.g., ducted supply).”
00294	07/06/2022	HVAC Design Report, Version 1 / 1.1 (Rev. 02)	Clarification	Item 2.8 & 2.9 – Clarifying unique common spaces should be reported separately
				Issue: In the HVAC Design Report, it is not clear what values are to be reported in Item 2.8 and 2.9 (cfm/ft ² or cfm). In addition, it is not clear if each individual common space is to be entered or if they can be grouped together when served by the same system or if they are the same space type, just on different floors. If each space is to be reported, it would be more convenient to use tools and files more typically used by HVAC Designers to demonstrate compliance with ventilation standards.
				Resolution: EPA agrees that this section of the HVAC Design Report should be clarified and alternate options to demonstrate compliance should be allowed. The intent in reporting these values is to confirm compliance as well as enable the Rater to confirm that the measured airflow (cfm) meets design as well as ASHRAE 62.1 requirements. This can be improved by edits to the two items and the addition of a footnote. Item 2.8 will be revised as follows: 2.8 Ventilation airflow required by ASHRAE 62.1 (CFM): Item 2.9 will be revised as follows: 2.9 Ventilation airflow designed (CFM): A footnote will be added as follows: List each individual common space separate from other spaces, such that when reporting airflow for Items 2.8 and 2.9, compliance for each space can be demonstrated. For example, list an office space separate from a community room, even if these spaces are served by the same system and even if the outdoor air rates required are the same. Similarly, where a space is repeated in the building, such as a corridor, report each space by floor (e.g., FL1

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				Corridor, FL2 Corridor). Rather than list these values in this report, as an alternative, the HVAC Designer is permitted to submit the values in a separate document or file.
00275	05/12/2022	HVAC Design Report, Version 1 / 1.1 (Rev. 02)	Change	Item 2.11 – Clarification related to documenting ventilation “system types”
				Issue: Using “in-unit” vs “central” to describe a ventilation system is confusing when the system serves common spaces.
				Resolution: The intent is for the HVAC Designer to document whether the ventilation system is serving one space or multiple spaces, within a unit or common spaces. This enables the Rater to recognize the number of spaces that will require airflow measurements. It is also helpful for the Rater to understand the quantity of a system that is installed. The description will be updated to better reflect this intent and the ordering will also be updated to further improve the work-flow. A new Item will be added after Item 2.13 as follows: “# installed in the building:” Item 2.11 will be moved after the new Item and will be revised as follows: “Spaces each fan serves (i.e., single, multiple)”
00408	10/03/2022	HVAC Design Report, Version 1 / 1.1 (Rev. 02)	Clarification	Item 2.16 – Further clarifying override control label
				Issue: Item 2.16 requires a ventilation override control to be labeled, but it is not clear whether the circuit breaker may be used to meet this intent.
				Resolution: A properly labeled circuit breaker may be used as the ventilation override control.
00409	10/03/2022	HVAC Design Report, Version 1 / 1.1 (Rev. 02)	Clarification	Item 2.16 – Clarifying application for PTACs with outdoor air supply
				Issue: Item 2.16 requires a ventilation override control installed, but it is not clear whether this requirement applies for PTACs with outdoor air supply that is not used to meet ASHRAE 62.2 or 62.1 requirements.
				Resolution: The intent of Item 2.16 is to require a ventilation override for all supply, balanced, or exhaust “Vent Systems.” If the PTAC outdoor air supply is listed on the HVAC Design Report as a Ventilation System, then it must have an override. If the supply is not listed on the HVAC Design Report, then Item 2.16 does not apply to the PTAC.
00192	11/12/2020		Refinement	Item 2.16 – Improved example of ventilation control that must be labeled

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		HVAC Design Report, Version 1 / 1.1 (Rev. 01)		<p>Issue: Partners have suggested several potential improvements to the dwelling unit mechanical ventilation system requirements. This Item requires that ventilation override controls be labeled if their function is not obvious. One example of a control that must be labeled is provided in the Item: “a standalone wall switch”. This example could be more clearly stated as “a toggle wall switch”.</p> <p>Resolution: To improve clarity of the program requirements, Item 2.16 will be revised, as follows: “Specified controls allow the systems to operate automatically, without occupant intervention. A ventilation override control is specified and also labeled if its function is not obvious (e.g., a label is required for a toggle wall switch, but not for a switch that’s on the ventilation equipment). In townhouses only, this control must be readily accessible to the occupant. In all other multifamily dwelling units, the override control is not required to be readily accessible to the occupant. However, in such cases, EPA recommends but does not require that the control be readily accessible to others (e.g., building maintenance staff) in lieu of the occupant.”</p>
00242	03/17/2022	HVAC Design Report, Version 1 / 1.1 (Rev. 02)	Clarification	<p>Item 2.17 – Motorized dampers required for all HVAC systems with outdoor air inlets</p> <p>Issue: HVAC Design Report Item 2.17 and Rater Field Checklist Item 7.5.1 are clear that a motorized damper is required only where outdoor air inlets are ducted into the return of an HVAC system. However, HVAC Functional Testing Checklist Item 5.2.4 states this more broadly: “Where OA dampers are installed, the damper closes when there is no call for ventilation or when fan is off.” This implies that outdoor dampers must be motorized for all HVAC systems, not just those with ducted returns. It is not clear if the motorized OA damper requirement applies to systems with non-ducted returns, like PTACs or PTHPs.</p> <p>Resolution: The intent of the program is that a motorized damper is installed to prevent outdoor air from entering the dwelling unit through the outdoor air inlet when there is no call for heating, cooling or ventilation, or when the occupant has used the override control. Therefore, it applies to all HVAC systems, with or without ducted returns.</p> <p>Item 2.17 will be revised as follows: For any outdoor air inlet designed to connect to the dwelling unit HVAC system, specified controls automatically restrict airflow using a motorized damper during ventilation off-cycle and occupant override.</p> <p>Footnote 6 will be revised as follows:</p>

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				Item 2.17 applies to any outdoor air inlet connected to the dwelling unit HVAC system, regardless of its intended purpose (e.g., for ventilation air, make-up air, combustion air). For example, if an outdoor air inlet connected to a ducted return is used as a dedicated source of outdoor air for an exhaust ventilation system (e.g., bath fan), the outdoor airflow must be automatically restricted when the exhaust fan is not running and in the event of an override of the exhaust ventilation system.
00346	10/03/2022	HVAC Design Report, Version 1 / 1.1 (Rev. 02)	Clarification	Items 2.17 through 2.21 – Addition of “N/A” box
				Issue: Items 2.17 through 2.21 in the HVAC Design Report are not applicable to all buildings, yet there is no “N/A” option for the Designer to indicate that.
				Resolution: The Designer needs to be able to indicate where certain requirements are not ‘Designer Verified’ because they are not applicable to the design. A “N/A” box will be added to these Items.
00317	10/03/2022	HVAC Design Report, Version 1 / 1.1 (Rev.02)	Change	Item 2.21 – NEMA Premium fan motors
				Issue: Item 2.21 requires fans (1 HP or larger) to be “installed with NEMA Premium motors”. In Item 4.42, however, pump motors only need to “meet or exceed efficiency standards for NEMA Premium™ motors”. A Partner has asked whether fan motors must be labeled NEMA Premium or if meeting or exceeding the NEMA Premium efficiency standards is sufficient, as it is for pump motors.
				Resolution: In Revision 03, Item 2.21 will be edited as follows: 2.21 If central exhaust fans, ≤ 1 HP, are installed as part of the dwelling-unit mechanical ventilation system, then they are direct-drive, ECM, with variable speed controllers. If > 1 HP, they are specified to meet or exceed efficiency standards for NEMA Premium™ motors.
00329	10/03/2022	HVAC Design Report, Version 1 / 1.1 (Rev. 02)	Clarification	Items 2.20, 2.21, and 6.8 – Clarifying applicability of requirements for HRVs and ERVs
				Issue: Items 2.21 and 6.8 state they are required for all ‘central exhaust’ systems. It is not clear whether central balanced systems, such as HRVs or ERVs, are also subject to these requirements, since they have both ‘central exhaust’ as well as central supply. In addition, item 2.20 states that ENERGY STAR certification is required for all “in-unit” bathroom and “in-line fans” but is similarly unclear whether this includes HRVs and ERVs.

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				<p>Resolution: ERVs and HRVs serving four or more dwelling units are considered 'central exhaust' systems as they provide exhaust. Therefore, Items 2.21 and 6.8 are applicable to the exhaust side of central ERVs and HRVs. The supply side of these balanced systems are not required to be tested for duct leakage and the supply fans are not subject to the efficiency requirements of Item 2.21.</p> <p>ERVs and HRVs are not currently eligible for ENERGY STAR certification. Therefore, Item 2.20 is not applicable for HRVs or ERVs at this time.</p> <p>The last sentence of Footnote 48 will be updated as follows:</p> <p><u>This test is not required of central exhaust systems serving clothes dryers but is required for the central exhaust portion of balanced systems such as HRVs and ERVs.</u></p> <p>Footnote 13 will be updated as follows:</p> <p>Bathroom fans with a rated flow rate \geq 500 CFM <u>and heat/energy recovery ventilation fans</u> are exempted from the requirement to be ENERGY STAR certified.</p>
00245	03/17/2022	HVAC Design Report, Version 1 / 1.1 (Rev. 02)	Change	<p>Item 3.1 – Addition of ASHRAE 183 load calculation software option</p>
				<p>Issue: Partners have asked whether software which meets ASHRAE Standard 183, which sets minimum requirements for load calculation methodologies, can be used to meet this Item.</p> <p>Resolution: This Standard is somewhat limited in scope and does not include low-rise multifamily buildings, but it is still complete, accurate, reputable, and widely-used enough to warrant its use, even for dwelling units in low-rise multifamily buildings. Therefore, load calculation methodologies which meet ASHRAE Standard 183 are allowed to be used for performing dwelling unit load calculations in Item 3.1, which will be revised to read as follows:</p> <p>“3.1 Loads calculated using: <input type="checkbox"/> Unabridged ACCA Manual J v8 <input type="checkbox"/> 2013/2017 ASHRAE Fundamentals <input type="checkbox"/> ASHRAE 183 <input type="checkbox"/> Other per AHJ”</p>
00347	10/03/2022	HVAC Design Report, Version 1 / 1.1 (Rev. 02)	Clarification	<p>Item 3.2 – Determining number of floorplans for Group Design option</p>
				<p>Issue: Raters and HVAC Designers have noted that there is insufficient guidance for the Group Design option and it would be beneficial for the HVAC Designer to have the same guidance as the Rater when determining which unit floorplans are 'similar' versus 'unique'.</p>

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				<p>Resolution: The HVAC Design report should offer HVAC Designers the same guidance that Raters use when grouping similar units for sampled energy ratings.</p> <p>Footnote 26 will be revised as follows:</p> <p>For each unique unit floorplan, document the loads for the configuration (e.g., level, orientation) that the dwelling unit might be built in. For example, if a unit plan will only be built in a specific level and orientation (e.g., top-floor, facing South), then the designer only needs to document the loads for this one configuration. <u>To determine whether a unit floorplan is “unique”, the guidance in ANSI 301-2019, Section 5.1.4.4.1 may be followed.</u> Orientation represents the direction that the front door of the dwelling unit is facing. In Section 4, to calculate Cooling sizing % for each configuration of each unique floorplan, the same system may need to be duplicated in multiple columns.</p>
00446	10/03/2022	HVAC Design Report, Version 1 / 1.1 (Rev. 02)	Refinement	Item 3.4 – Adding “US Territory”
				<p>Issue: Item 3.4 only references “County & State” and does not include a reference to US Territory.</p>
				<p>Resolution: The intent was to include US Territories.</p> <p>Item 3.4 will be revised as follows:</p> <p>“3.4 Outdoor design temperatures used in loads: (See Footnote 24 and www.energystar.gov/hvacdesigntemps.)^{25,27} County & State, or US Territory selected: _____ Cooling season: _____°F Heating season: _____°F”</p>
00243	03/17/2022	HVAC Design Report, Version 1 / 1.1 (Rev. 02)	Clarification	Item 3.14 – Clarify unit “orientation”
				<p>Issue: HVAC Designers are required to document inputs that affect heating and cooling loads calculated, including “Orientation”. This is intended to be the front door of the unit but designers may not see that explanation in the footnote.</p>
				<p>Resolution: In order to increase the visibility of the orientation being based on the unit entry door, Item 3.14 will include the word “door”.</p> <p>Item 3.14 will be revised as follows: “Door Orientation (N, NE, E, SE, S, SW, W, NW):²⁶”</p>
00240	03/17/2022		Clarification	Item 3.15 & 3.17 – Documenting sensible and total heat gain for all configurations

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		HVAC Design Report, Version 1 / 1.1 (Rev. 02)		<p>Issue: The HVAC Designer is instructed to document the loads in Item 3.15 and 3.17. In Footnote 26, it is clarified that the loads shall be for the “configuration” that the dwelling unit might be built in, which includes orientation, level, and location within the building. However, in Footnote 25, the instructions for these specific items only mention “orientation”.</p> <p>Resolution: The intent of the requirements was to require that the loads be calculated for all configurations the dwelling unit might be built in, consistent with the phrasing in Footnote 26.</p> <p>The second to last bullet of Footnote 25 will be revised as follows:</p> <p>“Items 3.15 & 3.17: The sensible & total heat gain are documented for the configuration of the dwelling unit to be certified.”</p>
00522	12/16/2022	HVAC Design Report, Version 1 / 1.1 / 1.2 (Rev. 03)	Change	<p>Item 4.2 – Allowing electric-resistance space heating as supplement to heat pumps</p> <p>Issue: Item 4.2 states clearly that electric resistance space heating is not installed in dwelling units when following the Prescriptive Path. Given that prohibition, it can be challenging for project teams to select a heat pump that has no electric-resistance for auxiliary space heating or for defrost. Some Partners may also read this requirement to mean standalone electric resistance space heating, like baseboards, are prohibited, but auxiliary heat to a heat pump is permitted. While it is understood that this limitation is removed in the modeling paths where this heating energy is captured by the model, some nominal allowance for electric resistance heating in dwelling units would remove a barrier to choosing the Prescriptive Path.</p> <p>Resolution: Standalone electric resistance space heating systems will continue to not be permitted in the Prescriptive Path. EPA recognizes that some amount of supplemental heating should be permitted where internal to a heat pump, when limited through proper controls.</p> <p>Footnote 36 will be revised as follows: “These requirements apply to systems that provide primary space heating and cooling. Heat pumps with internal supplemental electric space heating may use up to 3 kW of electric resistance heating per dwelling unit. This supplemental electric resistance heating may only be used when the heat pump cannot satisfy the thermostat setpoint or when the heat pump is operating in defrost mode. In addition, the programmable thermostat must include adaptive recovery technology. Electric resistance limitations do not apply to systems dedicated to heating outdoor air supplied by a mechanical ventilation system, as long as the space served is primarily heated by a non-</p>

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				<p>electric-resistance system that meets the efficiency requirements noted in Exhibit X. Electric resistance limitations apply to garages, but do not apply to heated plenums meeting Item 4.37, or stairwells where automatic thermostatic controls prevent operation above 50°F.”</p> <p>This policy may be revisited to require additional requirements for heat pumps when new products or sizing guidance are available.</p>
00320	10/03/2022	HVAC Design Report, Version 1 / 1.1 (Rev. 02)	Clarification	<p>Items 4.2 and 4.3 – Electric resistance space heating restrictions</p>
				<p>Issue: Partners have asked whether the restriction on electric resistance heating in the MFNC program for the Prescriptive and ERI path is applicable to heating of ventilation supply air when the space served is otherwise not heated or has a separate primary heating system, such as a heat pump or a furnace, that complies with Exhibit X.</p>
				<p>Resolution: The intent of the restriction on electric resistance heating is to restrict the types of systems providing primary space heating. Electric resistance heat may be used to pre-heat outdoor supply air to a given space if the primary space heating system meets the applicable MFNC efficiency requirements in Exhibit X and the air heated by the electric resistance system is associated with a mechanical ventilation system.</p> <p>A footnote will be added to Items 4.2 and 4.3 as follows:</p> <p>“These requirements apply to systems that provide primary space heating and cooling. Electric resistance limitations do not apply to systems dedicated to heating outdoor air supplied by a mechanical ventilation system, as long as the space served is primarily heated by a non-electric-resistance system that meets the efficiency requirements noted in Exhibit X.”</p>
00327	10/03/2022	HVAC Design Report, Version 1 / 1.1 (Rev.02)	Change	<p>Items 4.2 and 4.3 – No limit on electric resistance space heating in stairwells and heated plenums</p>
				<p>Issue: Partners have asked whether the restriction on electric resistance heating in the MFNC program for the Prescriptive and ERI path is applicable to stairwells, garages, and heated plenums.</p>
				<p>Resolution: As noted in PR 00320, the intent of the restriction on electric resistance heating is to restrict the types of systems providing primary space heating. While it was intended for the limits to apply to systems providing space heating to parking garages, it was not intended</p>

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				<p>to apply to heated plenums, where used for freeze protection and also restricted by Item 4.36. Given the intent, EPA agrees it would be acceptable to remove the limitation in stairwells, where the primary purpose of heating systems are also for pipe freeze protection.</p> <p>The phrase “and garages” will be added to Items 4.2 and 4.3.</p> <p>The new footnote from PR 00320 added to Items 4.2 and 4.3 will be revised as follows:</p> <p>These requirements apply to systems that provide primary space heating and cooling. Electric resistance limitations do not apply to systems dedicated to heating outdoor air supplied by a mechanical ventilation system, as long as the space served is primarily heated by a non-electric-resistance system that meets the efficiency requirements noted in Exhibit X. Electric resistance limitations apply to garages, but do not apply to heated plenums meeting Item 4.36, or stairwells where automatic thermostatic controls prevent operation above 50°F.</p>
00221	09/15/2021	HVAC Design Report, Version 1 / 1.1 (Rev. 02)	Clarification	<p>Item 4.10 – OEM-documentation allowance for systems other than air conditioners and heat pumps</p>
				<p>Issue: A Partner has asked whether Footnote 34 of the HVAC Design Report was intended to allow OEM-provided documentation of rated efficiency for all cooling equipment or just for air conditioners and heat pumps, as is currently stated.</p>
				<p>Resolution: It was the intent to allow non-AHRI rated efficiencies where AHRI is not available for all cooling equipment. This is evident in the Heating Equipment section, where Item 4.27 simply asks for the Listed efficiency, without asking for the AHRI Reference number.</p> <p>In the next program revision, Footnote 34 will be revised as follows and “AHRI” removed from Item 4.11 as well.</p> <p>4.10 AHRI reference #: ³⁴</p> <p>4.11 Listed efficiency:</p> <p>34. If an AHRI Reference # is not available, OEM-provided documentation shall be attached with the rated efficiency. For split air conditioners and heat pumps, the rated efficiency shall be for the specific combination of indoor and outdoor components of the air conditioner or heat pump, along with confirmation that the two components are designed to be used together.</p>

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00258	03/17/2022	HVAC Design Report, Version 1 / 1.1 (Rev. 02)	Clarification	Item 4.17 – Report maximum capacity of two-speed or variable-speed systems
				<p>Issue: Partners have asked what cooling capacity is intended to be reported for this Item when two-speed or variable-speed systems are specified. This value is subsequently used to calculate the cooling sizing % in Item 4.18.</p>
				<p>Resolution: The intent of the requirement has been to align with the procedures defined within ACCA Manual S, which directs designers to use the full capacity of the equipment when calculating the sizing %.</p> <p>This is done because at design conditions, the system is intended to be using full or close-to-full capacity. At temperatures below the design conditions, two-speed or variable-speed systems have the ability to modulate downwards, reducing their cooling capacity. This can optimize the efficiency of the equipment, reduce wear-and-tear, and improve the ability of the system to dehumidify during part-load conditions.</p> <p>If the lower capacity of these systems was listed in Item 4.17, and the sizing % calculated using this smaller number, then the system would have excess capacity unlikely to be used, while eliminating the potential efficiency, durability, and humidity-control benefits of such systems.</p> <p>To clarify the original intent of this Item, Footnote 35 will be revised as follows:</p> <p><u>“The full system capacity at design conditions, from OEM expanded performance data, shall be listed and shall include the capacity of all systems providing space cooling to the dwelling unit. For two-speed or variable-speed equipment, the full system capacity shall reflect the capacity at the maximum available compressor speed or when the compressor operates at the AHRI rating test speed, respectively.”</u></p>
00244	03/17/2022	HVAC Design Report, Version 1 / 1.1 (Rev. 02)	Clarification	Items 4.18 and 4.19 – Clarification of cooling sizing calculations
				<p>Issue: Item 4.18 includes a reference to Item 3.17, which is the heat gain for dwelling units which is not relevant to common spaces. In addition, Footnote 25 is attached to and references Item 4.18, but Item 4.19 should be referenced instead.</p>
				<p>Resolution: Item 4.18 applies to both dwelling units and common spaces. As such, the reference for the specific Item for heat gain will be removed in alignment with Item 4.31.</p>

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				<p>Footnote 25 was inadvertently associated with Item 4.18 when it should be attached to and reference Item 4.19.</p> <p>Items 4.18 and 4.19 will be revised as follows:</p> <p>“4.18 Cooling sizing % = Total capacity (Item 4.17) divided by Total Heat Gain of space(s) in Item 4.5:</p> <p>4.19 Meets cooling sizing limit: (see below for A, B, C, D or N/A) ^{23, 25} ”</p> <p>Footnote 25 will be updated as follows:</p> <p>“Check the box for “unit-specific design” if the design was created for the specific plan configuration (i.e., elevation, option, orientation, and county) of the unit to be certified. Check the box for “group design” if designs were created for unit plans that are repeated throughout the project / building with potentially different configurations (i.e., different elevations and/or orientations). Check the box for “worst-case design” if loads for the unit with the largest heat gain in the project / building are less than 18 kBtuh and are being used to represent all other units. Only one box may be checked. Regardless of the box checked, the system design as documented on this HVAC Design Report must fall within the following tolerances for the unit to be certified:</p> <ul style="list-style-type: none"> • Item 3.4: The outdoor design temperature used in loads are within the limits defined at www.energystar.gov/hvacdesigntemps. • Item 3.6: The number of occupants used in loads is within ± 2 of the dwelling unit to be certified. • Item 3.7: Total occupant gains used in loads shall not exceed 645 Btuh per occupant. • Item 3.8: The conditioned floor area used in loads is between 100 ft² smaller and 300 ft² larger than the dwelling unit to be certified. • Item 3.9: The window area used in loads is between 15 ft² smaller and 60 ft² larger than the dwelling unit to be certified, or for dwelling units with > 500 ft² of window area, between 3% smaller and 12% larger. • Item 3.10: The predominant window SHGC is within 0.1 of the predominant value in the dwelling unit to be certified. • Item 3.12: The mechanical ventilation rate used in loads is the same as the value in Section 2a for the given unit plan.
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				<ul style="list-style-type: none"> Item 3.13: The sum of the internal gains associated with lighting and appliances used in loads shall not exceed 3,600 Btuh. Items 3.15 & 3.17: The sensible & total heat gain are documented for the orientation of the dwelling unit to be certified. Item 4.19: The cooling sizing % is within the cooling sizing limit selected.”
00431	10/03/2022	HVAC Design Report, Version 1 / 1.1 (Rev. 02)	Change	Items 4.18 and 4.31: Exempting common space systems and some dwelling unit systems from calculating heating and cooling sizing %
				Issue: Systems such as mini-splits are exempt from Section 3 and therefore the total heat gain and total heat loss in Section 3 that are used to calculate the heating and cooling sizing percentage are not available. These systems should also be exempt from the calculation in Item 4.18 and 4.31. In addition, since a sizing limit has not been established for common space systems, they should also be exempt from calculating system sizing %.
				Resolution: Per Footnote 23, Section 3 is only applicable to split air conditioners, unitary air conditioners, air-source heat pumps, and water-source (i.e., geothermal) heat pumps up to 65 kBtuh with forced-air distribution systems and to furnaces up to 225 kBtuh with forced-air distribution system serving individual dwelling units. To limit the requirement to calculate sizing % to just these dwelling unit systems,, Footnote 23 will be added to Items 4.18 and 4.31.
00306	07/06/2022	HVAC Design Report, Version 1 / 1.1 (Rev.02)	Change	Adding AHRI reference number for heating equipment
				Issue: The AHRI number is not captured for heating equipment in the HVAC Design Report, but it is for cooling equipment.
				Resolution: EPA agrees that while the AHRI reference # may not be required in the SFNH Program for heating equipment other than heat pumps, the AHRI number for heating equipment in multifamily buildings can be more useful. A new Item will be added to the Heating Equipment section as follows: “AHRI reference #.” Footnote 34 will be updated as follows: “If an AHRI Reference # is not available, OEM-provided documentation shall be attached with the rated efficiency of the specific combination of indoor and outdoor components of the

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				air conditioner or heat pump, along with confirmation that the two components are designed to be used together. <u>If the AHRI Reference # is reported in Item 4.10 (e.g., heat pumps), the AHRI Reference # does not need to be listed again in Item 4.27.</u>
00313	07/22/2022	HVAC Design Report, Version 1 / 1.1 (Rev. 02)	Clarification	Items 4.28 – Report maximum heating capacity of two-stage and modulating furnaces
				Issue: Partners have asked what heating capacity is intended to be reported for this Item when two-stage or modulating systems are specified. These values are subsequently used to calculate the heating sizing percentage in Item 4.31.
				<p>Resolution: The intent of this requirement has been to align with the procedures defined within ACCA Manual S, which directs designers to use the full capacity of the equipment when calculating the sizing percentage.</p> <p>This is done because at design conditions, the system is intended to be using full or close-to-full capacity. At temperatures warmer than the design conditions, two-stage or modulating systems have the ability to modulate downwards, reducing their heating capacity. This can optimize the efficiency of the equipment, reduce wear-and-tear, and improve the comfort of the occupants.</p> <p>If the lower capacity of these systems was listed in Item 4.28, and the heating sizing percentage calculated using this smaller number, then the system would have excess capacity unlikely to be used, while eliminating the potential efficiency, durability, and comfort benefits of such systems.</p> <p>For shared boilers, where standby equipment is needed for redundancy, the capacity of the standby equipment does not need to be included in the full system capacity as they are not impacting sizing.</p> <p>To clarify the original intent of this Item, a new footnote will be added to Item 4.28 as follows: <u>“The full system capacity shall be listed. For two-stage and modulating furnaces, the full system capacity shall reflect the maximum output available. For shared boilers, the full system capacity may exclude standby equipment needed for redundancy.”</u></p>
00263	03/17/2022	HVAC Design Report,	Change	Item 4.30 – Combustion air damper for mechanically drafted boilers Issue: Raters have questioned why their Field Checklist included verifying the operation of a combustion damper, given that this is part of the Functional Testing Checklist.

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		Version 1 / 1.1 (Rev. 02)		<p>Resolution: EPA agrees that verification is the scope of the Functional Testing Agent, rather than the Rater. To improve visibility of this requirement for the HVAC Designer, Footnote 38 will be revised as follows:</p> <p>“Per the 2009 International Mechanical Code, a direct-vent furnace or boiler is one that is constructed and installed so that all air for combustion is derived from the outdoor atmosphere and all flue gases are discharged to the outside atmosphere; a mechanical draft system is a venting system designed to remove flue or vent gases by mechanical means consisting of an induced draft portion under non-positive static pressure or a forced draft portion under positive static pressure; and a natural draft system is a venting system designed to remove flue or vent gases under non-positive static vent pressure entirely by natural draft. Naturally drafted equipment is only allowed if located in a space outside the pressure boundary, where the envelope assemblies separating it from conditioned space are insulated and air-sealed. <u>For mechanically drafted boilers, make-up air sources must be mechanically closed when the boiler is not in operation.</u>”</p>
00260	03/17/2022	HVAC Design Report, Version 1 / 1.1 (Rev. 02)	Change	Item 4.34 – Location of thermostatic controls for window ACs, PTACs & PTHPs
				<p>Issue: Partners have asked whether thermostatic controls that are integrated into the equipment such as PTACs, PTHPs, mini-splits, and window ACs meet the intent of Item 5.8, given those systems themselves are located on the “exterior wall”.</p> <p>Resolution: The intent of this requirement was to ensure residents in multifamily buildings had access to the thermostat that controls the heating and cooling system that serves their unit, and that those controls were not influenced by temperatures that are experienced close to the exterior surfaces of the unit. Given the prevalence of exterior wall mounted HVAC equipment in multifamily, such as mini-splits, window ACs, PTACs, and PTHPs, with integral thermostats, and to streamline the transition from SFNH to MFNC, this part of the requirement should be removed.</p> <p>Item 4.34 will be revised as follows:</p> <p>All heating and cooling systems serving a dwelling unit shall have thermostatic controls within the dwelling unit. If more than one system provides heating or cooling to the same space, controls prevent simultaneous heating and cooling.</p>
00280	05/12/2022	HVAC Design Report,	Change	Item 4.34 – Remove requirement to limit simultaneous heating and cooling
				<p>Issue: HVAC Designers have questioned if verifying a code requirement to limit simultaneous heating and cooling is adding value to the ENERGY STAR MFNC program or if it can be removed.</p>

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		Version 1 / 1.1 (Rev. 02)		<p>Resolution: EPA agrees that the requirement is in code and could cause challenges for systems such as mini-splits which may be controlled by a remote. It also reflects a difference between SFNH and MFNC.</p> <p>To streamline the transition from SFNH to MFNC, in the next Revision, Item 4.34 will be removed.</p>
00323	10/03/2022	HVAC Design Report, Version 1 / 1.1 (Rev. 02)	Clarification	<p>Items 4.38 through 4.44 – Clarify hydronic distribution requirements only apply to boilers serving multiple dwelling units</p>
				<p>Issue: It is not currently clear whether the hydronic distribution requirements apply to all hydronic distribution systems or just those that serve multiple dwelling or sleeping units.</p>
				<p>Resolution: The intent of the MFNC program was that these requirements would only apply to hydronic distribution systems that serve more than one unit and would not apply to hydronic systems serving a single dwelling or sleeping unit or only common spaces.</p> <p>The header for this section will be revised as follows: “Hydronic Distribution Requirements - Applies to heating or cooling systems serving more than one dwelling unit”</p>
00318	10/03/2022	HVAC Design Report, Version 1 / 1.1 (Rev. 02)	Clarification	<p>Item 4.42 - Efficient pump motors</p>
				<p>Issue: Item 4.42 requires efficient pump motors in certain cases. It references NEMA Premium™ motors but allows other motors as long as they “meet or exceed efficiency standards for NEMA Premium™ motors”. A Partner has asked whether IEC Classification motors of IE3, IE4, or IE5 may be used to satisfy this requirement.</p>
				<p>Resolution: IEC Classification motors of IE3, IE4, or IE5 do “meet or exceed efficiency standards for NEMA Premium™ motors” and therefore can be used to meet this requirement. In addition, other pump motors that meet or exceed these efficiency standards may also be used, even if not labeled as NEMA Premium™.</p> <p>In Revision 03, Item 4.42 will be edited to include a hyperlink to the efficiency standards:</p> <p>“For circulating pumps serving hydronic heating or cooling systems with three-phase motors, 1 horse-power or larger, motors meet or exceed <u>efficiency standards for NEMA Premium™</u> motors. If 5 horse-power or larger, also installed with variable frequency drives.”</p>

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00231	02/04/2022	HVAC Design Report, Version 1 / 1.1 (Rev. 02)	Clarification	Item 4.44 – Improved visibility of requirements related to condensing boilers
				Issue: HVAC Functional Testing Checklist Item 7.2.8 requires that the return temperature is measured on shared condensing boilers and meets the design temperature needed to condense. This requirement may be useful for the HVAC designer to know but it is not currently on the HVAC Design Report.
				Resolution: The HVAC designer should know that this functional testing requirement exists so that the shared boilers can be designed to meet it. Item 4.44 will be revised as follows: “For shared boilers, chillers, and cooling towers, temperature and pressure gauges, air eliminator, expansion tank, and check valves are clearly shown on the drawings. A complete sequence of operations for all systems indicating recommendations for all setpoints is provided. For condensing boilers, design return temperature is indicated and system is designed to return water at a temperature that enables condensing.”
00447	10/03/2022	HVAC Design Report, Version 1 / 1.1 (Rev. 02)	Clarification	Item 5.2 – Design airflow summation requirement
				Issue: Item 5.2 states that room-by-room design airflows “should” sum to the mode with the higher Design HVAC fan airflow where as in SFNH the requirement states it “must” sum to the mode with the higher Design HVAC fan airflow.
				Resolution: The intent of Item is to require the airflow to sum to the higher Design HVAC fan airflow. In alignment with the SFNH program, Item 5.2 will be updated as follows: “Room-by-room design airflows documented below (which must sum to the mode with the higher Design HVAC fan airflow).”
00430	10/03/2022	HVAC Design Report, Version 1 / 1.1 (Rev. 02)	Clarification	Section 6: Update header to include central exhaust
				Issue: Under Section 6 there are two headers, one for dwelling units and one for common spaces. The requirements to test the central exhaust risers were included under common spaces since that is where the risers are located, but they actually serve dwelling units.
				Resolution: For additional clarity, the header will be updated as follows: “Common Space <u>and Central Exhaust</u> ”
00348	10/03/2022	HVAC Design Report, Version 1 / 1.1 (Rev. 02)	Refinement	Item 6.1 – Item review covers Items 6.2 through 6.8
				Issue: The check box for Item 6.1 indicates the designer has reviewed all of the duct quality installation requirements but it could be more clear which Items this includes.

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				<p>Resolution: To improve clarity, Item 6.1 will be updated as follows: “<u>All-Applicable</u> duct quality installation requirements <u>in Items 6.2 – 6.8</u> below have been included where applicable in the HVAC Design.”</p>
00239	10/03/2022	HVAC Design Report, Version 1 / 1.1 (Rev. 02)	Clarification	<p>Item 6.4 – clarifying that building owner includes their maintenance staff</p>
				<p>Issue: Partners have suggested that wording in requirements and footnotes that reference “building owner” might be better understood in the context of multifamily buildings if they instead read “building maintenance staff”, as it would be unlikely for many of the service-related requirements to be performed by the building ‘owner’.</p>
				<p>Resolution: EPA agrees that this revision would better reflect the intent of the requirement. In Revision 03, Item 6.4 will be revised to read: 6.4 MERV 6+ filter(s) specified for each ducted mech. system serving an individual dwelling unit and located to facilitate access & regular service by the occupant, building owner, <u>or building maintenance staff</u>. Filter access panel specified with a gasket or comparable sealing mechanism. All return air and mechanically supplied outdoor air designed to pass through filter prior to conditioning.</p>
00247	03/17/2022	HVAC Design Report, Version 1 / 1.1 (Rev. 02)	Clarification	<p>Item 6.4 – Clarifying that building owner includes their maintenance staff</p>
				<p>Issue: Partners have suggested that wording in requirements and footnotes that reference “building owner” might be better understood in the context of multifamily buildings if they instead read “building maintenance staff”, as it would be unlikely for many of the service-related requirements to be performed by the building ‘owner’.</p>
				<p>Resolution: EPA agrees that this revision would better reflect the intent of the requirement. In Revision 03, Item 6.4 will be revised to read: 6.4 MERV 6+ filter(s) specified for each ducted mech. system serving an individual dwelling unit and located to facilitate access & regular service by the occupant, building owner, <u>or building maintenance staff</u>. Filter access panel specified with a gasket or comparable sealing mechanism. All return air and mechanically supplied outdoor air designed to pass through filter prior to conditioning.</p>
00236	03/17/2022		Clarification	<p>Item 6.4 – Reordering filtration-related item to align with Rater Field Checklist changes</p>

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		HVAC Design Report, Version 1 / 1.1 (Rev. 02)		<p>Issue: Item 6.4 specifies filtration requirements in alignment with Items 9.1 & 9.1.2 of the Rater Field Checklist. Item 6.4 requires MERV 6+ filter(s) that are located to facilitate access and regular service and requires filter(s) to be located such that all return air and mechanically supplied outdoor air passes through them prior to conditioning. Items 9.1 & 9.1.2 on the Rater Field Checklist are being combined for clarity per ID 00235 and the language in Item 6.4 of the HVAC Design Report should be adjusted to match this update.</p> <p>Resolution: To align with updated to the Rater Field Checklist, Item 6.4 will read as follows: “MERV 6+ filter(s) specified for each ducted mechanical system serving an individual dwelling unit, designed so all return and mechanically supplied outdoor air passes through filter(s) prior to conditioning, and located to facilitate access & regular service by the occupant or building owner. Filter access panel specified with a gasket or comparable sealing mechanism.”</p>
00449	10/03/2022	HVAC Design Report Supplement for Central Systems and Common Spaces, Version 1 / 1.1 (Rev. 02)	Refinement	<p>Version in header should be “All Versions”</p> <p>Issue: The SFNH / MFNC National HVAC Design Supplement to Std. 310 for Dwellings & Units is for All Versions whereas this document is listed as “Version 1 / 1.1 / OR-WA 1.2”.</p> <p>Resolution: Since this document is applicable to all versions, the header will be revised to “All Versions”.</p>
00310	07/06/2022	HVAC Design Report Supplement for Central Systems and Common Spaces, Version 1 / 1.1 (Rev. 02)	Change	<p>Item 2.1– Reference more recent versions of ASHRAE 62.1</p> <p>Issue: HVAC Designers have asked if they are permitted to use more recent versions of ASHRAE 62.1, in addition to the 2010 and 2013 versions, and published addenda.</p> <p>Resolution: Because of the significant differences to the ASHRAE 62.1 standard that can occur due to the release of new addenda and new versions, it will be clarified that HVAC designers are permitted to, but are not required to, use more recent versions (i.e., ASHRAE 62.1-2016, 2019, or 2022) of the standard.</p> <p>To reflect this change, the HVAC Design Supplement for Common Spaces and Central Systems will be updated as follows:</p>

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				<ul style="list-style-type: none"> Footnote 5 will be revised to say “...Designers are permitted, but not required, to use published addenda and/or more recent versions of the standard to assess compliance. The year of the standard that is used shall be listed in the space provided.” Item 2.1 will be revised to state “Common space outdoor airflow design rate meet the requirements of Section 6 of ASHRAE 62.1⁸ - ____ [enter year]”. The header for Item 2b ‘Common Space and Garage Minimum Exhaust Rates’ will be revised to read “System(s) are designed that mechanically exhaust air from each common space, as required by ASHRAE 62.1-2010 (or later).”
00352	10/03/2022	HVAC Design Report Supplement for Central Systems and Common Spaces, Version 1 / 1.1 (Rev. 02)	Refinement	Item 2.1 – Use “edition” in place of “version” when referencing ASHRAE 62.1 and 62.2
				Issue: The Single-Family New Homes National HVAC Design Report uses ‘edition’ when referring to different years of ASHRAE 62.2. To improve alignment, MFNC should also use ‘edition.’
				Resolution: Where ‘version’ is used to reference ASHRAE 62.1 or 62.2, it will be replaced by ‘edition’.
00239	03/17/2022	HVAC Design Report Supplement for Central Systems and Common Spaces, Version 1 / 1.1 (Rev. 02)	Change	Item 2.1 – Clarification to allow ASHRAE Path buildings to exceed 62.1 rates
				Issue: A Partner questioned whether MFNC was intended to be different than MFHR, with respect to ASHRAE 62.1 ventilation rates. In MFHR, HVAC designers were permitted to over-ventilate spaces in Performance Path and take the energy penalty in the ASHRAE 90.1 energy model where the ventilation exceeded 150% of the required rates. It was only in the MFHR Prescriptive Path where they were prohibited from going over by more than 50%. In MFNC, it appears that all Paths are prohibited from exceeding rates by more than 50%.
				Resolution: It was not intentional to change this requirement for ASHRAE Path projects in MFNC. Item 2.1 will be revised as follows:

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				2.1 Common space outdoor airflow design rate meet the requirements of Section 6 of ASHRAE 62.1 ⁵ 2010 2013. <u>ERI and Prescriptive Path Only: Rates shall not exceed 2013 rates by more than 50%.</u>
00350	10/03/2022	HVAC Design Report Supplement for Central Systems and Common Spaces, Version 1 / 1.1 (Rev. 02)	Change	Section 2a – Access points to measure airflow rate of ventilation systems needed
				Issue: Item 2.3 from the National HVAC Design Report states that “Access points to measure airflow rate and inspect outdoor air dampers are provided and accessible by the Rater.” This requirement was inadvertently not included within this document even though it is applicable to common spaces and central systems.
				Resolution: A new Item will be added to Section 2a as follows: “Access points to measure airflow rate and inspect outdoor air dampers are provided and accessible by the Rater.”
00325	10/03/2022	HVAC Design Report Supplement for Central Systems and Common Spaces, Version 1 / 1.1 (Rev. 02)	Clarification	Item 2.2 & 2.3 – Clarifying unique common spaces should be reported separately
				Issue: It is not clear what values are to be reported in Item 2.2 and 2.3 (cfm/ft2 or cfm). In addition, it is not clear if each individual common space is to be entered or if they can be grouped together when served by the same system or if they are the same space type, just on different floors. If each space is to be reported, it would be more convenient to use tools and files more typically used by HVAC Designers to demonstrate compliance with ventilation standards.
				Resolution: EPA agrees that this section of the HVAC Design Report should be clarified and alternate options to demonstrate compliance should be allowed. The intent in reporting these values is to confirm compliance as well as enable the Rater to confirm that the measured airflow (cfm) meets design as well as ASHRAE 62.1 requirements. This can be improved by edits to the two items and the addition of a footnote. Item 2.2 will be revised as follows: 2.2 Ventilation airflow required by ASHRAE 62.1 (CFM): Item 2.3 will be revised as follows:

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				<p>2.3 Ventilation airflow designed (CFM):</p> <p>A footnote will be added as follows:</p> <p>List each individual common space separate from other spaces, such that when reporting airflow for Items 2.2 and 2.3, compliance for each space can be demonstrated. For example, list an office space separate from a community room, even if these spaces are served by the same system and even if the outdoor air rates required are the same. Similarly, where a space is repeated in the building, such as a corridor, report each space by floor (e.g., FL1 Corridor, FL2 Corridor). Rather than list these values in this report, as an alternative, the HVAC Designer is permitted to submit the values in a separate document or file.</p>
00471	10/03/2022	HVAC Design Report Supplement for Central Systems and Common Spaces, Version 1 / 1.1 (Rev. 02)	Change	<p>Items 2.2 and 2.3 - Temporary OA measurement alternative for common space PTAC/PTHPs</p>
				<p>Issue: In contrast to the ENERGY STAR MFHR program, the ENERGY STAR MFNC program references ASHRAE 62.1-2010 for common spaces rather than 2007. While most ventilation rates did not change, the criteria related to using natural ventilation changed substantially and was not highlighted as a key difference for Partners. This affects designs where PTAC or PTHP systems with outdoor air inlets are used in common spaces. These spaces generally relied on compliance with natural ventilation, given the challenges in measuring the outdoor airflow through these systems. Since this was not highlighted as a key difference, some Partners might not realize that these systems no longer comply with the MFNC program requirements.</p>
				<p>Resolution: While EPA recognizes that measuring supply airflow from PTAC and PTHP systems is challenging, ENERGY STAR will retain the reference to ASHRAE 62.1-2010 for common spaces. However, since this change may not have been clear to MFHR Partners specifying PTAC or PTHP systems with outdoor air inlets, EPA will provide an alternative to the measurement requirement for a limited time.</p> <p>In the next revision, a new footnote will be added to the new Item added in PR 00350, and Items 2.2 and 2.3 as follows:</p> <p>“For permits on or before 01/01/2024, where outdoor air is supplied to a common space via a PTAC or PTHP, in lieu of measurement, the design CFM shall meet or exceed the ventilation</p>

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				rates required by ASHRAE 62.1-2010 and the space served by the PTAC or PTHP shall have at least one operable window. For permits after 01/01/2024, PTAC and PTHP systems must meet both the runtime and measurement of outdoor air requirements of ASHRAE 62.1-2010 to be considered the mechanical ventilation system for that space. Where measurement of the ventilation rate is not possible, another ventilation system shall be specified (e.g., ducted supply).”
00276	05/12/2022	HVAC Design Report Supplement for Central Systems and Common Spaces, Version 1 / 1.1 (Rev. 02)	Change	Item 2.7 – Document number of ventilation fans and edit language to align with HVAC Design Report
				Issue: Item 2.7 was adjusted from the HVAC Design Report during its development since “in-unit” was not appropriate for common spaces. Additional clarifications were included when updating the National HVAC Design Report such as adding the number installed in the building and editing the Item to be “Spaces each fan serves (i.e., single, multiple)” and these updates should also be included in the Supplement for Common Spaces and Central Systems.
				Resolution: The intent is for the HVAC Designer to document whether the ventilation system is serving one space or multiple spaces. This enables the Rater to recognize the number of spaces that will require airflow measurements. It is also helpful for the Rater to understand the quantity of a system that is installed. A new Item will be added after Item 2.6 as follows: “# installed in the building:” Item 2.7 will be revised as follows: “Spaces each fan serves (i.e., single, multiple)”
00410	10/03/2022	HVAC Design Report Supplement for Central Systems and Common Spaces, Version 1 / 1.1 (Rev. 02)	Clarification	Item 2.10 – Clarifying application for PTACs with outdoor air supply
				Issue: Item 2.10 requires a ventilation override control installed, but it is not clear whether this requirement applies for PTACs with outdoor air supply that is not used to meet ASHRAE 62.2 or 62.1 requirements.
				Resolution: The intent of Item 2.10 is to require a ventilation override for all supply, balanced, or exhaust “Vent Systems.” If the PTAC outdoor air supply is listed on the HVAC Design Report as a Ventilation System, then it must have an override. If the supply is not listed on the HVAC Design Report, then Item 2.16 does not apply to the PTAC.

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00328	10/03/2022	HVAC Design Report Supplement for Central Systems and Common Spaces, Version 1 / 1.1 (Rev. 02)	Change	<p>Items 4.2 – No limit on electric resistance space heating in stairwells and heated plenums</p> <p>Issue: Partners have asked whether the restriction on electric resistance heating in the MFNC program for the Prescriptive and ERI path is applicable to stairwells, garages, and heated plenums.</p> <p>Resolution: As noted in PR 00321, the intent of the restriction on electric resistance heating is to restrict the types of systems providing primary space heating. While it was intended for the limits to apply to systems providing space heating to parking garages, it was not intended to apply to heated plenums, where used for freeze protection and also restricted by Item 4.30. Given the intent, EPA agrees it would be acceptable to remove the limitation in stairwells, where the primary purpose of heating systems are also for pipe freeze protection.</p> <p>Item 4.2 will be revised as follows:</p> <p>“Prescriptive and ERI Path: Equipment serving common spaces <u>and garages</u> but not serving dwelling units meet the efficiency levels specified in Exhibit X of the National Rater Field Checklist. Also see Exhibit X for restrictions on electric space resistance.”</p> <p>The new footnote from PR 00321 added to Item 4.2 will be revised as follows:</p> <p>This requirement applies to systems that provide primary space heating and cooling. Electric resistance limitations do not apply to systems dedicated to heating outdoor air supplied by a mechanical ventilation system, as long as the space served is primarily heated by a non-electric-resistance system that meets the efficiency requirements noted in Exhibit X. <u>Electric resistance limitations apply to garages, but do not apply to heated plenums meeting Item 4.30, or stairwells where automatic thermostatic controls prevent operation above 50°F.</u></p>
00321	10/03/2022	HVAC Design Report Supplement for Central Systems and Common	Clarification	<p>Item 4.2 – Electric resistance space heating restrictions</p> <p>Issue: Partners have asked whether the restriction on electric resistance heating in the MFNC program for the Prescriptive and ERI path is applicable to heating of ventilation supply air when the space served is otherwise not heated or has a separate primary heating system, such as a heat pump or a furnace, that complies with Exhibit X.</p>

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		Spaces, Version 1 / 1.1 (Rev. 02)		<p>Resolution: The intent of the restriction on electric resistance heating is to restrict the types of systems providing primary space heating. Electric resistance heat may be used to pre-heat outdoor supply air to a given space if the primary space heating system meets the applicable MFNC efficiency requirements in Exhibit X and the air heated by the electric resistance system is associated with a mechanical ventilation system.</p> <p>A footnote will be added to Item 4.2 as follows:</p> <p>“This requirement applies to systems that provide primary space heating and cooling. Electric resistance limitations do not apply to systems dedicated to heating outdoor air supplied by a mechanical ventilation system, as long as the space served is primarily heated by a non-electric-resistance system that meets the efficiency requirements noted in Exhibit X.”</p>
00326	10/03/2022	HVAC Design Report Supplement for Central Systems and Common Spaces, Version 1 / 1.1 (Rev. 02)	Change	Adding AHRI reference number for heating equipment
				<p>Issue: The AHRI number is not captured for heating equipment in the HVAC Design Report, but it is for cooling equipment.</p>
				<p>Resolution: EPA agrees that while the AHRI reference # may not be required in the SFNH Program for heating equipment other than heat pumps, the AHRI number for heating equipment in multifamily buildings can be more useful.</p> <p>A new Item will be added to the Heating Equipment section as follows:</p> <p>“AHRI reference #:”</p> <p>Footnote 11 will be updated as follows:</p> <p>“If an AHRI Reference # is not available, OEM-provided documentation shall be attached with the rated efficiency of the specific combination of indoor and outdoor components of the air conditioner or heat pump, along with confirmation that the two components are designed to be used together. If the AHRI Reference # is reported in Item 4.9 (e.g., heat pumps), the AHRI Reference # does not need to be listed again in Item 4.23.”</p>
00259	03/17/2022		Clarification	Item 4.17 – Report maximum capacity of two-speed or variable-speed systems

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		HVAC Design Report Supplement for Central Systems and Common Spaces, Version 1 / 1.1 (Rev. 02)		<p>Issue: Partners have asked what cooling capacity is intended to be reported for this Item when two-speed or variable-speed systems are specified.</p> <p>Resolution: The intent of the requirement has been to align with the procedures defined within ACCA Manual S, which directs designers to use the full capacity of the equipment when calculating the sizing %.</p> <p>This is done because at design conditions, the system is intended to be using full or close-to-full capacity. At temperatures below the design conditions, two-speed or variable-speed systems have the ability to modulate downwards, reducing their cooling capacity. This can optimize the efficiency of the equipment, reduce wear-and-tear, and improve the ability of the system to dehumidify during part-load conditions.</p> <p>If the lower capacity of these systems was listed in Item 4.17, and the sizing % calculated using this smaller number, then the system would have excess capacity unlikely to be used, while eliminating the potential efficiency, durability, and humidity-control benefits of such systems.</p> <p>To clarify the original intent of this Item, Footnote 12 will be revised as follows:</p> <p><u>“The full system capacity at design conditions, from OEM expanded performance data, shall be listed and shall include the capacity of all systems providing space cooling to the dwelling unit. For two-speed or variable-speed equipment, the full system capacity shall reflect the capacity at the maximum available compressor speed or when the compressor operates at the AHRI rating test speed, respectively.”</u></p>
00432	10/03/2022	HVAC Design Report Supplement for Central Systems and Common Spaces, Version 1 / 1.1 (Rev. 02)	Change	<p>Items 4.17 and 4.27: Systems exempt from load calculations are exempt from heating and cooling sizing %</p> <p>Issue: Systems serving common spaces are exempt from load calculations and sizing restrictions. They should also be exempt from the calculation.</p> <p>Resolution: Since Items 4.17 and 4.27 are not required for systems serving common spaces, they will be removed from the supplement checklist.</p>
00314	07/22/2022		Clarification	<p>Items 4.24 – Report maximum heating capacity of two-stage and modulating furnaces</p>

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		HVAC Design Report Supplement for Central Systems and Common Spaces, Version 1 / 1.1 (Rev. 02)		<p>Issue: Partners have asked what heating capacity is intended to be reported for this Item when two-stage or modulating systems are specified.</p> <p>Resolution: The intent of this requirement has been to align with the procedures defined within ACCA Manual S, which directs designers to use the full capacity of the equipment when calculating the sizing percentage.</p> <p>This is done because at design conditions, the system is intended to be using full or close-to-full capacity. At temperatures warmer than the design conditions, two-stage or modulating systems have the ability to modulate downwards, reducing their heating capacity. This can optimize the efficiency of the equipment, reduce wear-and-tear, and improve the comfort of the occupants.</p> <p>If the lower capacity of these systems was listed in Item 4.24, and the heating sizing percentage calculated using this smaller number, then the system would have excess capacity unlikely to be used, while eliminating the potential efficiency, durability, and comfort benefits of such systems.</p> <p>For shared boilers, where standby equipment is needed for redundancy, the capacity of the standby equipment does not need to be included in the full system capacity as they are not impacting sizing.</p> <p>To clarify the original intent of this Item, a new footnote will be added to Item 4.24 as follows: <u>“The full system capacity shall be listed. For two-stage and modulating furnaces, the full system capacity shall reflect the maximum output available. For shared boilers, the full system capacity may exclude standby equipment needed for redundancy.”</u></p>
00322	10/03/2022	HVAC Design Report Supplement for Central Systems and Common Spaces, Version 1 / 1.1 (Rev. 02)	Change	<p>Item 4.26 – Combustion air damper for mechanically drafted boilers</p> <p>Issue: Raters have questioned why their Field Checklist included verifying the operation of a combustion damper, given that this is part of the Functional Testing Checklist.</p> <p>Resolution: EPA agrees that verification is the scope of the Functional Testing Agent, rather than the Rater. To improve visibility of this requirement for the HVAC Designer, Footnote 13 will be revised as follows:</p> <p>“Per the 2009 International Mechanical Code, a direct-vent furnace or boiler is one that is constructed and installed so that all air for combustion is derived from the outdoor atmosphere and all flue gases are discharged to the outside atmosphere; a mechanical draft</p>

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				<p>system is a venting system designed to remove flue or vent gases by mechanical means consisting of an induced draft portion under non-positive static pressure or a forced draft portion under positive static pressure; and a natural draft system is a venting system designed to remove flue or vent gases under non-positive static vent pressure entirely by natural draft. Naturally drafted equipment is only allowed if located in a space outside the pressure boundary, where the envelope assemblies separating it from conditioned space are insulated and air-sealed. <u>For mechanically drafted boilers, make-up air sources must be mechanically closed when the boiler is not in operation.</u>"</p>
00322	10/03/2022	HVAC Design Report Supplement for Central Systems and Common Spaces, Version 1 / 1.1 (Rev. 02)	Change	<p>Item 4.26 – Combustion air damper for mechanically drafted boilers</p>
				<p>Issue: Raters have questioned why their Field Checklist included verifying the operation of a combustion damper, given that this is part of the Functional Testing Checklist.</p>
				<p>Resolution: EPA agrees that verification is the scope of the Functional Testing Agent, rather than the Rater. To improve visibility of this requirement for the HVAC Designer, Footnote 13 will be revised as follows:</p> <p>“Per the 2009 International Mechanical Code, a direct-vent furnace or boiler is one that is constructed and installed so that all air for combustion is derived from the outdoor atmosphere and all flue gases are discharged to the outside atmosphere; a mechanical draft system is a venting system designed to remove flue or vent gases by mechanical means consisting of an induced draft portion under non-positive static pressure or a forced draft portion under positive static pressure; and a natural draft system is a venting system designed to remove flue or vent gases under non-positive static vent pressure entirely by natural draft. Naturally drafted equipment is only allowed if located in a space outside the pressure boundary, where the envelope assemblies separating it from conditioned space are insulated and air-sealed. <u>For mechanically drafted boilers, make-up air sources must be mechanically closed when the boiler is not in operation.</u>”</p>
00324	10/03/2022	HVAC Design Report Supplement for Central Systems and	Clarification	<p>Items 4.32 through 4.48 – Clarify hydronic distribution requirements only apply to boilers serving multiple dwelling units</p>
				<p>Issue: It is not currently clear whether the hydronic distribution requirements apply to all hydronic distribution systems or just those that serve multiple dwelling or sleeping units.</p>

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		Common Spaces, Version 1 / 1.1 (Rev. 02)		<p>Resolution: The intent of the MFNC program was that these requirements would only apply to hydronic distribution systems that serve more than one unit and would not apply to hydronic systems serving a single dwelling or sleeping unit or only common spaces.</p> <p>The header for this section will be revised as follows: “Hydronic Distribution Requirements - Applies to heating or cooling systems serving more than one dwelling unit”</p>
00319	10/03/2022	HVAC Design Report Supplement for Central Systems and Common Spaces, Version 1 / 1.1 (Rev. 02)	Clarification	<p>Item 4.36 - Efficient pump motors</p>
				<p>Issue: Item 4.36 requires efficient pump motors in certain cases. It references NEMA Premium™ motors but allows other motors as long as they “meet or exceed efficiency standards for NEMA Premium™ motors”. A Partner has asked whether IEC Classification motors of IE3, IE4, or IE5 may be used to satisfy this requirement.</p>
				<p>Resolution: IEC Classification motors of IE3, IE4, or IE5 do “meet or exceed efficiency standards for NEMA Premium™ motors” and therefore can be used to meet this requirement. In addition, other pump motors that meet or exceed these efficiency standards may also be used, even if not labeled as NEMA Premium™.</p> <p>In Revision 03, Item 4.36 will be edited to include a hyperlink to the efficiency standards:</p> <p>“For circulating pumps serving hydronic heating or cooling systems with three-phase motors, 1 horse-power or larger, motors meet or exceed <u>efficiency standards for NEMA Premium™</u> motors. If 5 horse-power or larger, also installed with variable frequency drives.”</p>
00232	02/04/2022	HVAC Design Report Supplement for Central Systems and Common Spaces, Version 1 / 1.1 (Rev. 02)	Clarification	<p>Item 4.38 – Improved visibility of requirements related to condensing boilers</p>
				<p>Issue: HVAC Functional Testing Checklist Item 7.2.8 requires that the return temperature is measured on shared condensing boilers and meets the design temperature needed to condense. This requirement may be useful for the HVAC designer to know but it is not currently on the HVAC Design Report. Item 4.38 was also missing the Item number.</p>
				<p>Resolution: The HVAC designer should know that this functional testing requirement exists so that the shared boilers can be designed to meet it.</p> <p>Item 4.38 will include the full Item number and the text will be revised as follows: “For shared boilers, chillers, and cooling towers, temperature and pressure gauges, air eliminator, expansion tank, and check valves are clearly shown on the drawings. A complete sequence of operations for all systems indicating recommendations for all setpoints is provided. For</p>

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				condensing boilers, design return temperature is indicated and system is designed to return water at a temperature that enables condensing.”
00349	10/03/2022	HVAC Design Report Supplement for Central Systems and Common Spaces, Version 1 / 1.1 (Rev. 02)	Refinement	Item 5.1 – Item review covers Items 5.2 through 5.5
				Issue: The check box for Item 5.1 indicates the designer has reviewed all of the duct quality installation requirements but it could be more clear which Items this includes.
				Resolution: To improve clarity, Item 5.1 will be updated as follows: “ <u>All-Applicable</u> duct quality installation requirements <u>in Items 5.2 – 5.5</u> below have been included where applicable in the HVAC Design.”
00330	10/03/2022	HVAC Design Report Supplement for Central Systems and Common Spaces, Version 1 / 1.1 (Rev. 02)	Clarification	Item 5.5 – Clarifying applicability of requirements for HRVs and ERVs
				Issue: Item 5.5 is required for all ‘central exhaust’ systems. It is not clear whether central balanced systems, such as HRVs or ERVs, are also subject to this requirement, since they have both ‘central exhaust’ as well as central supply.
				Resolution: ERVs and HRVs serving four or more dwelling units are considered ‘central exhaust’ systems as they provide exhaust. Therefore, Item 5.5 is applicable to the exhaust side of central ERVs and HRVs. The supply side of these balanced systems are not required to be tested for duct leakage. The last sentence of Footnote 16 will be updated as follows: <u>This test is not required of central exhaust systems serving clothes dryers but is required for the central exhaust portion of balanced systems such as HRVs and ERVs.</u>
00008	06/08/2019	HVAC Functional Testing Checklist, Version 1 / 1.1	Change	Approved credential list for Functional Testing Agents (FTA)
	Updated 08/31/2019			Issue: Partners have asked about other commissioning credentials that are not currently listed as a pre-approved credential for FTA’s, such as the Certified Commissioning Authority (CxA) credential from ACG (AABC Commissioning Group) and the process through which EPA would consider other credentials. Another partner asked whether Item 1.2 implied the HVAC Credential was always required.

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				<p>Resolution: EPA has reviewed the certification and re-certification process for both ACG’s CxA and CxT (Certified Commissioning Technician) credentials and determined that they are equivalent to currently listed credentials and therefore will be added to the list. FTA’s with this credential may complete the Functional Testing Checklist upon completion of the online orientation. Partners may submit other equivalent commissioning credentials for EPA to consider. If approved, they will be listed <u>online</u>. EPA will also remove the listing from the documents and refer to the online listing.</p> <p>The first bullet will be updated as follows:</p> <p>“The entity performing Functional Testing, the Functional Testing Agent (“FT Agent”), must be a contractor credentialed by an HVAC Quality Installation Training and Oversight organization (H-QUITO), or must hold an approved credential, as listed at www.energystar.gov/ftas, or must be a representative of the Original Equipment Manufacturer (OEM) to complete this checklist. A contractor credentialed by an H-QUITO is only permitted to complete Sections 1-5 of this checklist.”</p> <p>Item 1.2 will also be revised as follows:</p> <p>1.2 Functional Testing Agent Credential: _____ If a credentialed contractor, fill out applicable H-QUITO and ID Number: <input type="checkbox"/> ACCA <input type="checkbox"/> Advanced Energy ID Number: _____</p>
00009	06/08/2019	HVAC Functional Testing Checklist, Version 1 / 1.1	Refinement	Entities overseeing approved credentials for Functional Testing Agents
				Issue: Partners have asked which entities oversee some of the approved credentials listed in the Functional Testing Checklist and whether that information can be added and listed online.
				Resolution: EPA agrees that this information should be readily available and will add them to the <u>website</u> listing.
00075	11/01/2019	HVAC Functional Testing Checklist, Version 1/1.1	Change	Functional Testing Agent witnessing field-verification and testing
				Issue: A partner noted that Item 7.1.1 allows the Functional Testing agent to either conduct the test or witness the test being conducted by the installing contractor and has asked whether witnessing is permitted on other Checklist items too.
				Resolution: EPA holds the Functional Testing agent responsible for the items they mark as “Verified” on the Checklist. EPA has determined that they should be permitted to witness

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				<p>another professional conducting any of the required tests or inspections, rather than limited to that single item. The text from 7.1.1 will be removed and this sentence will be added to Rev01 of the HVAC Functional Testing Checklist:</p> <p>“An FT agent may conduct the test or inspection themselves, or witness the test or inspection being conducted by the installing contractor or other HVAC professional.”</p>
00076	11/1/2019	HVAC Functional Testing Checklist, Version 1 / 1.1	Change	<p>Sampling of Rater-verified Items on HVAC Functional Testing Checklist items</p>
				<p>Issue: Partners have asked whether Rater-verified items on the HVAC Functional Testing Checklist can be sampled. While the checklist says no items may be sampled, Raters have questioned why these items would be treated differently.</p>
				<p>Resolution: EPA aligned this checklist with the requirements for the HVAC Commissioning checklist which did not allow any sampling. The additional items in Section 5 were not included on the ENERGY STAR Certified Homes checklist. EPA agrees that items verified by a Rater in Section 5 on the HVAC Functional Testing Checklist may be sampled, provided that the Rater follow VOO or MRO-approved sampling protocols and these items are subject to VOO and MRO oversight.</p> <p>The third bullet of the Functional Testing Checklist will be revised as follows:</p> <p>“Functional Testing checklists must include all HVAC systems in the building / project that serve the dwelling units, common spaces, and where applicable, parking garages, but may exclude systems solely serving commercial / retail spaces. Multiple checklists will be needed to document all HVAC systems in the building / project. Only Rater-verified items on the Functional Testing Checklist are permitted to be verified using a sampling protocol.”</p>
00077	11/01/2019	HVAC Functional Testing Checklist, Version 1/1.1	Clarification	<p>Collection of HVAC Functional Testing Checklists</p>
				<p>Issue: Partners have noted that the process of signing and collecting Functional Testing Checklists is not clear when more than one FT Agent is verifying items for the same project.</p>
				<p>Resolution: The EPA recognizes that the intent was not originally clear and will revise as follows in Rev01 of the HVAC Functional Testing Checklist:</p> <p>“Functional Testing checklists must be completed and signed by an FT Agent. An FT Agent is permitted to complete just the specific sections of this checklist that pertain to their area of expertise. However, all applicable sections must be completed by an FT Agent, which may</p>

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				result in multiple checklists signed by multiple FT Agents. FT Agents shall only sign checklists that contain items that they have verified.”
00078	11/01/2019	HVAC Functional Testing Checklist, Version 1 / 1.1	Clarification	Definition of “common spaces”
				Issue: Partners have noted that the footnote in the program documents, that explains what the term ‘common space’ means, is confusing with respect to determining eligibility, and applicability of requirements in certain spaces, such as commercial day-care facilities and common spaces on the property but not in the building being certified.
				Resolution: EPA agrees that this footnote could be revised to provide better clarity with respect to the intent of the program and the applicability of the requirements in certain spaces. Day-care facilities will be removed from the list since they are usually open to the public, not just building residents. It was also clarified that common spaces on the property, but not within the building, are not be included. Text in Footnote 1 will be revised in Rev01 as follows: “The term ‘common space’ refers to any spaces in the building being certified that serve a function in support of the residential part of the building that is not part of a dwelling or sleeping unit. This includes spaces used by residents, such as corridors, stairs, lobbies, laundry rooms, exercise rooms, residential recreation rooms, and dining halls, as well as offices and other spaces used by building management, administration or maintenance in support of the residents.”
00079	11/01/2019	HVAC Functional Testing Checklist, Version 1 / 1.1	Clarification	Applicability of requirements to parking garages
				Issue: Partners have noted confusion regarding the footnote in the program documents that describes parking garages and when parking garages are considered common space and whether all parking garages are subject to the requirements.
				Resolution: EPA’s intent is for the requirements to apply to open and enclosed garages that are part of the building being certified and do not apply to separate parking structures or those where the energy costs are not the responsibility of the Owner/Developer (ie. commercial). The third bullet of the HVAC Functional Testing Agent Responsibilities in the Functional Testing Checklist will be revised in Rev01 as follows:

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				“Functional Testing checklists must include all HVAC systems in the building / project that serve the dwelling units, common spaces, and where applicable, parking garages, but may exclude systems solely serving commercial / retail spaces. Multiple checklists will be needed to document all HVAC systems in the building / project. No items on the Functional Testing Checklist are permitted to be verified using a sampling protocol.”
00080	11/01/2019	HVAC Functional Testing Checklist, Version 1/1.1	Refinement	Version of National checklists must be completed in California, Oregon and Washington
				Issue: Partners have asked which version of the “National” checklists, referenced in Exhibit 2: Mandatory Requirements for All Certified Homes, must be completed.
				Resolution: The National checklists must be completed. To improve clarity, the checklist title will end with “..., Version 1 / 1.1 / 1.2”.
00154	10/30/2020	HVAC Functional Testing Checklist, Version 1/1.1 (Rev.01)	Clarification	Scope of Section 6 with respect to VRF systems
				Issue: Section 6 is titled “VRF Outdoor Unit” and then states that “This section must be completed for all VRF outdoor units serving dwelling units or common spaces.” Since some mini-splits and multi-splits that serve dwelling units or common spaces use variable refrigerant flow (VRF) technology, it is not clear if this Section 6 was intended to apply to residential classified equipment that use VRF since they are exempt from the refrigerant charge tests in Section 2.
				Resolution: The intent of Section 6 was to provide functional testing requirements for non-residential grade (i.e., commercial) variable refrigerant flow (VRF) air-conditioners and heat pumps. It is not the intent of Section 6 to apply to residential equipment that utilizes VRF technology, that is currently exempt from Section 2 and 3. The header for Section 6 will be revised as follows: 6. Shared VRF Outdoor Units - This section must be completed for commercial-grade VRF outdoor units serving multiple dwelling units or common spaces.
00155	10/30/2020	HVAC Functional Testing Checklist,	Clarification	Clarifying the applicability of Functional Testing to “central” systems
				Issue: The word “central” is used a few times in the Functional Testing Checklist and it’s not always clear what the meaning of this word is, in the context of multifamily buildings.

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		Version 1/1.1 (Rev.01)		<p>Resolution: The word “central” has been reviewed and either deleted or replaced with “shared” in the Checklist, to provide greater clarity.</p> <p>In Section 7, the intent is to require Functional Testing for large, commercial-grade space heating boilers (over 300,000 BTU/h) that serve multiple dwelling units, and not require it for residential-grade boilers serving any number of units. Additionally, the intent is not to require Functional Testing for boilers that provide space heating to common spaces, but do not provide space heating to dwelling units. The header has been revised as follows:</p> <p style="padding-left: 40px;">7. Boilers - This section must be completed for all commercial-grade space heating boilers serving multiple dwelling units.</p> <p>In Section 3, for consistency, the phrase “central VRF” will be replaced with “shared VRF”:</p> <p>Mini-splits, ducted or non-ducted, are exempt; however, multi-split systems such as <u>shared VRF</u> systems, where indoor HVAC fans with forced-air distribution are connected to a shared outdoor unit that exceeds 65 kBtuh, are not exempt.</p>
00156	10/30/2020	HVAC Functional Testing Checklist, Version 1/1.1 (Rev.01)	Clarification	Reducing paperwork when signing Functional Testing Checklists
				<p>Issue: Under the HVAC Functional Testing Agent responsibilities, it describes how the FT Agent shall verify and sign the checklists and how that may result in numerous checklists for one building, especially if more than one FT Agent is verifying the items applicable to various systems present in the building. This is further complicated by the scenario where a Rater may be verifying the functional testing of residential systems in Section 5, that were otherwise tested by an FT Agent in Section 2 and/or 3. To reduce paperwork, is the Rater permitted to sign a checklist that has also been signed by an FT Agent, which combines the items they have verified into one checklist?</p>
				<p>Resolution: The intent of the Checklist was to allow both the FT Agent and Rater to sign the same checklist or sign separate checklists, whichever was more convenient, as long as each system was verified and documented. Footnote 1 will be revised as follows:</p> <p style="padding-left: 40px;">The checklist may be completed and signed by a Rater, rather than a Functional Testing Agent, if only Sections 1, 4, and 5 are applicable. <u>A Rater completing Section 5 or Item 4.2 for a system that is also being verified by a Functional Testing Agent, may sign the same checklist as the FT Agent.</u></p>
00157	10/30/2020		Clarification	Clarifying intent across multiple checklist items

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		<p>HVAC Functional Testing Checklist, Version 1/1.1 (Rev.01)</p>		<p>Issue: Partners have noted ambiguities in certain Functional Testing requirements that would benefit from improved language and consistency to ensure the intent is clearly understood as well as the verification method.</p> <p>Resolution: The Functional Testing Checklist has been reviewed and the following changes have been made:</p> <p>It was noted that certain items include a checkbox in addition to a field for user-entered data. It is not the intent to require both items to be completed. The checkbox will be removed from Items 6.1.1, 6.1.2, 6.1.4, 7.1.6, 7.1.7, 7.2.1, 7.3.1, 7.3.3, 9.1.2, and 9.3.1.</p> <p>The first sentence of the first bullet of the HVAC Functional Testing Agent Responsibilities will be updated as follows:</p> <p style="padding-left: 40px;">The entity <u>verifying</u> Functional Testing, the Functional Testing Agent (“FT Agent”), must be a contractor credentialed by an HVAC Quality Installation Training and Oversight organization (H-QUITO), or must hold an approved credential, as listed at www.energystar.gov/ftas, or must be a representative of the Original Equipment Manufacturer (OEM) to complete this checklist.</p> <p>The second bullet of the HVAC Functional Testing Agent Responsibilities will also be updated as follows:</p> <p style="padding-left: 40px;">FT Agents shall only sign checklists that contain items that they have verified. An FT Agent may mark <u>an item as 'verified'</u> by conducting the test or inspection themselves, or witness the test or inspection being conducted by the installing contractor or other HVAC professional. <u>Where a checkbox for “FT Agent Verified” is not provided, FT Agents should fill in all applicable data fields.</u></p> <p>Item 1.6 provides a space to describe the equipment being documented using this checklist, but without any specifics on how to distinguish between the same equipment that is used repeatedly in different units or spaces. Item 1.6 will be revised as follows:</p> <p style="padding-left: 40px;">1.6 Checklist applies to the following equipment (<u>include unit # as applicable</u>):</p> <p style="padding-left: 40px;">_____</p> <p>Item 7.2.2 has language regarding inspections of combustion air intake dampers for boilers, but it is not clear if this also applies to direct-vented boilers. Item 7.2.2 will be revised as follows:</p>
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				<p>7.2.2 <u>Where not direct-vented</u>, boiler combustion air intake dampers open / close with boiler operation.</p> <p>Items 7.2.10 and 9.2.5 both have language regarding measuring the minimum flow rate that needs to be maintained throughout the sequence of operation of the boiler or chiller, but insufficient guidance on the specific steps needed to mark it as “Verified”. A Footnote has been added that states the following:</p> <p style="padding-left: 40px;">This test can be marked “Verified” if the boiler or chiller does not shut off on low water or high temperature during sequence testing. Direct water flow measurements can be taken throughout testing but are not required.</p> <p>Footnote 1 references water-source heat pumps and lists geothermal as a specific type, but excludes water-loop heat pumps, which are common in multifamily. The third paragraph of the footnote will be revised as follows:</p> <p style="padding-left: 40px;">Sections 2, 3, and 4 of this Checklist generally apply to split air conditioners, unitary air conditioners, air-source heat pumps, and water-source (i.e., geothermal <u>or water-loop</u>) heat pumps up to 65 kBtuh with forced-air distribution systems (i.e., ducts) and to furnaces up to 225 kBtuh with forced-air distribution systems (i.e., ducts).</p>
00158	10/30/2020	HVAC Functional Testing Checklist, Version 1/1.1 (Rev.01)	Clarification	Improved alignment with code-compliant commissioning
				<p>Issue: Partners have noted certain Functional Testing requirements may exceed what is expected by local code and is creating an unexpected increase in cost and time, that may not provide significant benefit to the building that would justify the expense.</p>
				<p>Resolution: The Functional Testing Checklist has been reviewed and the following changes have been made:</p> <p>Item 5.2.1 has been revised to be more clear and consistent with code commissioning language:</p> <p>5.2.1 Measured zone temperature is within 5°F of zone temperature displayed on thermostat or sensor.</p> <p>Item 5.2.4 has been removed.</p> <p>Items 7.2.6 and 8.3.1 have been revised to reduce the number of cycles that have to be performed from 3 to 1.</p>

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				<p>7.2.6 Cycle the boilers on and off 1 time.</p> <p>8.3.1 Cycle the cooling tower pumps on and off 1 time.</p> <p>Multiple items were identified as being difficult or impossible to complete during the off-season. These were reviewed and the following new footnote attached to them:</p> <p>For seasonally dependent testing: Where temperature lock-outs or equipment safety lock-outs prevent systems from operating in the specified mode during functional testing, "N/A" may be checked. The builder or developer must then provide signed documentation acknowledging that components of the Functional Testing were not completed due to temperature lock-outs or equipment safety lock outs.</p> <p>In addition, in the Section header (when all items in the section would have the same issue) or the Item itself, the Functional Testing Agent must document what the outdoor temperature was and/or check-off whether the test was not completed due to equipment lock-out as follows: N/A due to ambient temperature ___ °F or equipment lock-out •</p>
00159	10/30/2020	HVAC Functional Testing Checklist, Version 1/1.1 (Rev.01)	Change	Refrigerant Charge Test Exemption for single-package systems
				<p>Issue: A Partner has asked whether a single-package system with short duct runs (i.e., ≤10 ft.) would be considered an HVAC system type that is exempted from the refrigerant charge requirements of the checklist.</p>
				<p>Resolution: Refrigerant charge testing would likely offer little value for a single-package system, whether ductwork is installed or not. Therefore, Section 2 will be revised to read as follows:</p> <p style="padding-left: 40px;">“This section must be completed for refrigerant-based systems with field-installed refrigerant piping or components (i.e., split air conditioners, air-source heat pumps, and water-source heat pumps), up to 65 kBtu/h, whether serving dwelling units or common spaces in the building. Ducted or non-ducted single-packaged systems (i.e., PTAC), mini-splits, or multi-splits are exempt from this section. When using the alternative OEM test procedure in Item 2.16, check “NA” for Items 2.1-2.15.”</p>
00384	10/03/2022	HVAC Functional Testing Checklist,	Clarification	Functional Testing Overview - When FT Agent is using sampling, documentation is collected from installing contractor that testing was completed on all systems
				<p>Issue: The HVAC Functional Testing Checklist Sampling Protocols require the installing contractor to do 100% testing in order for the FT Agent to use sampling. This important</p>

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		Version 1/1.1 (Rev.02)		<p>requirement is not indicted on the Checklist and there is nowhere to document this has been completed.</p> <p>Resolution: This is an important component of the Sampling Protocols and the verification that it has been met should be included on this checklist. In addition, the installing contractor must attest that they have completed the required testing on all systems subject to sampling. The contractor letter should indicate the units tested and the tests that were completed, but does not need to include any results from the tests.</p> <p>Where multiple installing contracting companies are used, they will each attest to the systems that they have tested, and the letters must together account for all of the systems undergoing sampling.</p> <p>A new Item will be added to the Functional Testing Overview as follows: Where sampling is used by the FT Agent, the installing contractor(s) have provided signed letter(s) attesting that they have completed testing on all systems in the building for the following Sections: " Section 2 " Section 3 " Section 5 " Section 6 " N/A</p>
00261	03/17/2022	<i>HVAC Functional Testing Checklist, Version 1/1.1 (Rev.02)</i>	Change	<p>Item 5.1.1 – Location of thermostatic controls for window ACs, PTACs & PTHPs</p> <p>Issue: Partners have asked whether thermostatic controls that are integrated into the equipment such as PTACs, PTHPs, mini-splits, and window ACs meet the intent of Item 5.8, given those systems themselves are located on the “exterior wall”.</p> <p>Resolution: The intent of this requirement was to ensure residents in multifamily buildings had access to the thermostat that controls the heating and cooling system that serves their unit, and that those controls were not influenced by temperatures that are experienced close to the exterior surfaces of the unit. Given the prevalence of exterior wall mounted HVAC equipment in multifamily, such as mini-splits, window ACs, PTACs, and PTHPs, with integral thermostats, and to streamline the transition from SFNH to MFNC, this part of the requirement should be removed.</p> <p>Item 5.1.1 will be revised as follows:</p> <p>Zone thermostat (or remote zone temperature sensor) in dwelling units installed in design location, within the zone being served.</p>

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00398	10/03/2022	HVAC Functional Testing Checklist, Version 1/1.1 (Rev.02)	Change	<p>Items 5.2.2 and 5.2.3 - Removing temperature measurement from functional testing of indoor / terminal units</p> <p>Issue: The temperature measurements for when systems are turned on or off do not have an associated limit or check. Measuring the temperature has limited value without a limit or range that is expected. This check is also not required when the ambient temperature is too low or high for the system to turn on. Recording the ambient temperature does not provide significant value and is extra documentation on top of the developer/builder acknowledgement.</p> <p>Resolution: The temperature measurement at the terminal unit allows the Rater or FT Agent to notice potential issues and adjust the system or alert the installing contractor. However, the main intent is to confirm the system is turning on and off appropriately. To streamline the Functional Testing, the temperature measurement is not required. Similarly, the intent of documenting the ambient temperature was to confirm the rationale for not performing the test. To streamline the Functional Testing, this temperature measurement is not required.</p> <p>Items 5.2.2 will be revised as follows: “System turns on when there is a call for heat and heating is provided. System turns off when the heating setpoint has been met. ⁷ N/A due to ambient temperature ____°F or equipment lock-out <input type="checkbox"/> For forced air systems: Measured discharge air temperature ____°F”</p> <p>Items 5.2.3 will be revised as follows: “System turns on when there is a call for cooling and cooling is provided. System turns off when the cooling setpoint has been met. ⁷ N/A due to ambient temperature ____°F or equipment lock-out <input type="checkbox"/> For forced air systems: Measured discharge air temperature ____°F”</p>
00399	10/03/2022	HVAC Functional Testing Checklist, Version 1/1.1 (Rev.02)	Clarification	<p>Items 5.2.2 and 5.2.3 – Clarifying N/A documentation</p> <p>Issue: It is not clear what needs to be filled out when “N/A” is selected for Items 5.2.2 and 5.2.3.</p> <p>Resolution: When N/A is selected, the reason must also be selected. There are two options, “due to high ambient temperature” and “equipment lock-out.” To clarify how to fill this out, the</p>

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				<p>statement related to being N/A will be moved to a separate line under the main 5.2.2 requirement.</p> <p>Item 5.2.2 will be revised as follows: “System turns on when there is a call for heat and heating is provided. System turns off when the heating setpoint has been met. ⁷ <u>If N/A, select the reason:</u> <input type="checkbox"/> due to <u>high</u> ambient temperature ____ °F or <u>OR</u> <input type="checkbox"/> equipment lock-out ☐ “</p> <p>Item 5.2.3 will be revised as follows: “System turns on when there is a call for cooling and cooling is provided. System turns off when the cooling setpoint has been met. ⁷ <u>If N/A, select the reason:</u> <input type="checkbox"/> due to <u>low</u> ambient temperature ____ °F or <u>OR</u> <input type="checkbox"/> equipment lock-out ☐ “</p>
00433	10/03/2022	HVAC Functional Testing Checklist, Version 1/1.1 (Rev.02)	Clarification	<p>Item 5.2.4 – Clarify motorized dampers must be installed where OA inlets are connected to the dwelling unit HVAC</p> <p>Issue: The intent of Item 5.2.4 is to verify that Item 2.17 in the National HVAC Design Report has been met. Item 5.2.4 requires the FT Agent to confirm OA dampers close when there is no call for ventilation, but it does not note that the damper must be installed and motorized when OA inlets are connected to the dwelling unit HVAC system.</p> <p>Resolution: Item 5.2.4 is only applicable when outdoor air inlets are connected to the dwelling unit HVAC system. When applicable, a motorized damper must be installed per Item 2.17 of the National HVAC Design Report. As part of functional testing, the FT agent must verify that the damper in fact closes when there is no call for ventilation or when the fan is off.</p> <p>To clarify what needs to be verified and confirmed and improve alignment with Item 2.17 of the National HVAC Design Report, Item 5.2.4 will be updated as follows: “Where OA dampers inlets are connected to the dwelling unit HVAC system, <u>installed a motorized</u> the damper is installed that closes when there is no call for ventilation or when fan is off.”</p>
				<p>Item 5.2.5 – Remove requirement to limit simultaneous heating and cooling</p>

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00279	05/12/2022	HVAC Functional Testing Checklist, Version 1/1.1 (Rev.02)	Change	<p>Issue: Functional testing agents have questioned if verifying a code requirement to limit simultaneous heating and cooling is adding value to the ENERGY STAR MFNC program or if it can be removed.</p> <p>Resolution: EPA agrees that the requirement is in code and could cause challenges for systems such as mini-splits which may be controlled by a remote. It also reflects a difference between SFNH and MFNC.</p> <p>To streamline the transition from SFNH to MFNC, in the next Revision, Item 5.2.5 will be removed.</p>
00278	05/12/2022	HVAC Functional Testing Checklist, Version 1/1.1 (Rev.02)	Change	<p>Allowing individuals to complete Functional Testing Checklist, under the oversight of Functional Testing Agent</p> <p>Issue: Functional Testing Agents that have completed the required orientation and provided proof of approved credentials have asked whether they must perform the on-site verification directly in order to sign the Checklist, or if it is allowable to send another employee of their company to perform the required verification under their oversight.</p> <p>Resolution: EPA did not intend for the verification process for ENERGY STAR to be significantly different from the current commissioning process for code compliance.</p> <p>Given that many FTA's currently allow individuals from their company to perform the on-site verification under their supervision, EPA will revise the FT Checklist to also align with this common practice.</p> <p>The second bullet of the HVAC Functional Testing Agent Responsibilities will be revised as follows:</p> <ul style="list-style-type: none"> • Functional Testing checklists must be completed and signed by an FT Agent. ¹ An FT Agent is permitted to complete just the specific sections of this checklist that pertain to their area of expertise. However, all applicable sections must be completed by an FT Agent, which may result in multiple checklists signed by multiple FT Agents. FT Agents shall only sign checklists that contain items that they have verified or have been verified under their oversight. An FT Agent may mark an item as 'verified' by conducting the test or inspection, or witness the test or inspection being conducted by the installing

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				<p>contractor or other HVAC professional. Where a checkbox for “FT Agent Verified” is not provided, FT Agents should fill in all applicable data fields.</p> <p>The following sentence will be added to Footnote 1:</p> <p>The items in this checklist may be marked as “FT Agent Verified” by an individual employed at the Company listed in Item 1.1, if performed under the oversight of the Functional Testing Agent signing this Checklist.</p>
00292	07/06/2022	<i>MFNC HVAC Functional Testing Checklist Sampling Protocols, Version 1/1.1/OR-WA 1.2</i>	Change	<p>Clarify options requirements</p>
				<p>Issue: Some confusion has arisen regarding whether the Options subsections contain prescriptive requirements or are merely “examples” of how to meet the requirements preceding them. EPA’s intent is the former, that both those preceding requirements and one of the two Options must be met in order to use sampling; therefore, this should be clarified in the document to reduce confusion.</p>
				<p>Resolution: In order to reduce confusion, the paragraph directly above Sampling Option 1 will be revised as follows:</p> <p><u>“In addition to the above rules, the Functional Testing (FT) Agent must follow the requirements in one of the two options, based on whether they choose to verify Functional Testing Checklist items directly, by re-testing and re-inspecting items that have already been tested or inspected by the installation contractor OR they choose to witness the tests or inspections as they are being conducted by the installation contractor.”</u></p>
00385	10/03/2022	MFNC HVAC Functional Testing Checklist Sampling Protocols, Version 1/1.1/OR-WA 1.2	Clarification	<p>Documentation - includes sampling data and a letter from the installing contractor(s)</p>
				<p>Issue: The HVAC Functional Testing Checklist Sampling Protocols require the installing contractor to do 100% testing in order for the FT Agent to use sampling. They also require the FT Agent to document their sampling approach. However, it is not clear what documentation is needed.</p>
				<p>Resolution: This is an important component of the Sampling Protocols and more guidance will be provided.</p> <p>The FT Agent must document at a minimum the number of systems that are being sampled, the number tested, and the number of failures. The installing contractor must also attest that they have completed the required testing on all systems subject to sampling. The contractor</p>

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				<p>letter should indicate the units tested and the tests that were completed, but does not need to include any results from the tests.</p> <p>Where multiple installing contracting companies are used, they will each attest to the systems that they have tested, and the letters must together account for all of the systems undergoing sampling.</p> <p>The second to last paragraph will be revised as follows: “As noted in the HVAC Functional Testing Checklist, under FT Agent responsibilities, upon concluding sampling of items on the HVAC Functional Testing Checklist, the FT Agent shall provide the completed and signed checklists to the builder / developer and the Rater for the systems they re-tested or witnessed. In addition, they must submit any sampling documentation to the Rater that demonstrates systems selected meet the requirements in these protocols, including any reports of failures. <u>This documentation must note at a minimum: the number of total applicable systems to be tested, the number of systems re-tested by the FT Agent or the number of tests witnessed by the FT Agent, and the number of failures. This data will be included in the Excel version of the HVAC Functional Testing Checklist. The installing contractor(s) must also provide signed letter(s) attesting that they have completed testing on all systems in the building for specific Sections of the checklist.</u> As noted above, the Rater is then responsible to ensure the minimum number of systems have been verified by the Functional Testing Agent, prior to the units / building earning ENERGY STAR certification.”</p>
00081	11/01/2019	Water Management System Requirements, Version 1/1.1	Refinement	Rater clarification
				<p>Issue: In most of the program documents, there is a footnote to clearly explain the role and qualifications of the Rater verifying the items in that Checklist. Since the HVAC Design Report and Water Management System Requirements do not contain items for the Rater, they do not have the footnote, but they do make references to a Rater. It would be useful to the HVAC Designer and Builder/Developer to understand who the Rater is, in the context of the specific checklist they are completing.</p>
				<p>Resolution: To provide consistent definitions, the following footnote will be added in Rev01:</p>

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				<p>“The term ‘Rater’ refers to the person(s) completing the third-party verification required for certification. The person(s) shall: a) be a Certified Rater, Approved Inspector, or an equivalent designation as determined by a Verification Oversight Organization or Multifamily Review Organization and, b) have attended and successfully completed an EPA-recognized training class. See www.energystar.gov/mftraining.”</p>
00082	11/01/2019	Water Management System Requirements, Version 1/1.1	Refinement	<p>Version of National checklists must be completed in California, Oregon and Washington</p>
				<p>Issue: Partners have asked which version of the “National” checklists, referenced in Exhibit 2: Mandatory Requirements for All Certified Homes, must be completed.</p>
				<p>Resolution: The National checklists must be completed. To improve clarity, the checklist title will end with “..., Version 1 / 1.1 / 1.2”.</p>
00160	10/30/2020	Water Management System Requirements, Version 1/1.1 (Rev.01)	Clarification	<p>Item 1.1 – All impermeable surfaces must meet slope requirements</p>
				<p>Issue: This Item references several specific examples of impermeable surfaces that must be sloped. However, the intent is that any impermeable surface should meet these slope requirements.</p>
				<p>Resolution: This Item will be revised so that it is broadly applicable to all impermeable surfaces, as follows:</p> <p style="padding-left: 40px;">“Impermeable surfaces (e.g., patio, porch, or plaza slabs; sidewalks; ramps; driveways), sloped \geq 0.25 in. per ft. away from building to edge of surface or 10 ft., whichever is less.”</p>
00161	10/30/2020	Water Management System Requirements, Version 1/1.1 (Rev.01)	Clarification	<p>Item 1.2 – All permeable surfaces must meet slope requirements</p>
				<p>Issue: This Item requires that the “final grade” must be sloped. However, the intent is that any permeable surface should meet these slope requirements.</p>
				<p>Resolution: This Item will be revised so that it is broadly applicable to all permeable surfaces, as follows:</p> <p style="padding-left: 40px;">“Back-fill has been tamped, and permeable surfaces sloped \geq 0.5 in. per ft. away from building for \geq 10 ft. Alternatives in Footnote.”</p>

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00256	03/17/2022	Water Management System Requirements , Version 1/1.1 (Rev.02)	Change	<p>Item 1.4 – Allow extruded polystyrene insulation to be used as a capillary break</p> <p>Issue: Currently, only polyethylene sheeting is permitted to be used as the capillary break beneath a concrete slab in crawlspace floors. This is in contrast to the allowance to use either extruded polystyrene insulation or polyethylene sheeting beneath other slab types, per Item 1.3.</p> <p>Because extruded polystyrene insulation is a material recognized by both EPA and DOE as a valid option for creating a capillary break under a concrete slab, it would be pertinent to allow builders to choose either material to meet the capillary break requirement for a crawlspace.</p> <p>Resolution: To provide this additional compliance option for crawlspaces, Item 1.4 will be revised as follows:</p> <p>1.4 Capillary break at all crawlspace floors using one of the following options:</p> <p>1.4.1 Concrete slab over one of the following materials:</p> <p>1.4.1a ≥ 6 mil polyethylene sheeting, lapped 6-12 in; OR,</p> <p>1.4.1b ≥ 1 in. extruded polystyrene insulation with taped joints.</p> <p>1.4.2 ≥ 6 mil polyethylene sheeting, lapped 6-12 in., & installed using one of the following:</p> <p>1.4.2a Lapped up each wall or pier and fastened with furring strips or equivalent; OR,</p> <p>1.4.2b Secured in the ground at the perimeter using stakes.</p>
00252	03/17/2022	Water Management System Requirements , Version 1/1.1 (Rev.02)	Clarification	<p>Item 1.6 – Replace the term “air permeable” with “vapor permeable”</p> <p>Issue: This Item limits the use of vapor retarders when “air permeable” insulation is used on exterior below-grade walls. EPA’s Indoor airPLUS program has a similar requirement but instead uses the term “vapor permeable” insulation.</p> <p>The intent of the two programs is the same, to limit the use of vapor retarders in below-grade walls when there is a potential for moisture to be trapped within the insulation (e.g., when the insulation is “air permeable” or, more accurately, “vapor permeable”). However, the use of different terms could potentially cause confusion.</p>

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				<p>Resolution: To more accurately reflect the original intent of the Item, and align with terminology used in the Indoor airPLUS program, Item 1.6 will be updated as follows:</p> <p>“Class 1 vapor retarder not installed on interior side of vapor permeable insulation in exterior below-grade walls.”</p> <p>Additionally Footnote 9 will be updated as follows:</p> <p>“The 2009 IRC defines Class I vapor retarders as a material or assembly with a rating of < 0.1 perm, using the desiccant method with Proc. A of ASTM E 96. The following materials are typically < 0.1 perm and shall not be used on the interior side of vapor permeable insulation in above-grade exterior walls in warm-humid climates or below-grade exterior walls in any climate: rubber membranes, polyethylene film, glass, aluminum foil, sheet metal, and foil-faced insulating / non-insulating sheathings. These materials can be used on the interior side of walls if vapor permeable insulation is not present (e.g., foil-faced rigid foam board adjacent to a below-grade concrete foundation wall is permitted).</p> <p>Note that this list is not comprehensive and other materials with a perm rating < 0.1 also shall not be used. Also, if mfr. spec’s for a product indicate a perm rating > 0.1, then it may be used, even if it is in this list. Also note that open-cell and closed-cell foam generally have ratings above this limit and may be used unless mfr. spec’s indicate a perm rating < 0.1. Several exemptions to these requirements apply:</p> <ul style="list-style-type: none"> • Class I vapor retarders, such as ceramic tile, may be used at shower and tub walls; • Class I vapor retarders, such as mirrors, may be used if mounted with clips or other spacers that allow air to circulate behind them.”
00162	10/30/2020	Water Management System Requirements, Version 1/1.1 (Rev.01)	Clarification	Item 1.7 – Requirement is to cover sump pit, not sump pump
				<p>Issue: This Item states that a cover for the “sump pump” must be mechanically attached with a full gasket seal or equivalent. In fact, it is the sump pit that should be covered, rather than the pump itself.</p>
				<p>Resolution: This Item will be revised to more clearly state the requirement that the sump pit must be covered, as follows:</p> <p>“Sump pit cover mechanically attached with full gasket seal or equivalent.”</p>

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00163	10/30/2020	Water Management System Requirements, Version 1/1.1 (Rev.01)	Clarification	<p>Item 1.8 – Compliance option is to discharge to a sump pit with a pump</p> <p>Issue: This Item states that one compliance option is to discharge the drain tile to a sump pump. However, the intent could be more clearly stated as a requirement to discharge to a sump pit with a pump, rather than directly to a pump.</p> <p>Resolution: This Item will be revised to more clearly state the intent of the requirement, as follows:</p> <p>“..discharge to outside grade (daylight) or to a sump pit with a pump.”</p>
00268	03/17/2022	<i>Water Management System Requirements, Version 1/1.1 (Rev.02)</i>	Clarification	<p>Item 2.1, Item 2.2 & Footnote 10 – Additional bond-break layer not needed behind anchored stone / masonry veneer</p> <p>Issue: Partners have asked whether a brick veneer with an air gap, which is an example of an anchored masonry veneer, is required to have an additional bond-break drainage plane, per Item 2.2.. The current language, which references “non-structural masonry cladding” does not distinguish between anchored and adhered veneers.</p> <p>Resolution: Item 2.2 was not intended to require anchored stone / masonry veneers to have an additional bond-break layer, because the air gap will provide the space required for the drainage plane to function.</p> <p>To improve clarity, Items 2.1 and 2.2, and associated Footnote 10, will be updated to use the terms “adhered stone / masonry veneer” and “anchored stone / masonry veneer”, which are defined in the 2018 International Residential Code (IRC). Item 2.1, Item 2.2, and Footnote 10 will be updated as follows:</p> <p>“2.1 Flashing at bottom of exterior walls, with weep holes included for <u>anchored stone / masonry veneer</u> and weep screed for <u>adhered stone / masonry veneer or stucco cladding</u> systems, or equivalent drainage system. ¹¹”</p> <p>“2.2 Fully sealed continuous drainage plane behind exterior cladding that laps over flashing in Item 2.1 and fully sealed at all penetrations. Additional bond-break drainage plane layer provided behind all stucco and non-structural masonry cladding <u>adhered stone / masonry veneer or stucco cladding</u> wall assemblies. ^{11, 12}”</p>

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				Footnote 11. “These Items not required for existing structural masonry walls (e.g., in a home undergoing a gut rehabilitation). Note this exemption does not extend to existing wall assemblies with <u>adhered or anchored stone / masonry veneers.</u> ”					
00010	06/08/2019 Updated 08/31/2019	ERI Target Procedure Version 1, Version 1.1, and OR-WA Version 1.2	Change	Applying the 15% reduction factor to the Compartmentalization Rate					
				Issue: Footnote 13 of the ERI Target Procedures Version 1 and 1.1 and Footnote 12 of the OR-WA Target Procedures Version 2 indicate that for “a Rated Unit with conditioned space below, <u>that does not indirectly use corridor air as the ventilation supply air,</u> the ENERGY STAR Multifamily Reference Design shall be configured with an infiltration rate of 0.255 cfm50/ft ² and software shall either automatically apply a 15% reduction to the compartmentalization results of the Rated Unit or instruct the Rater to apply the reduction.” Software developers have noted confusion related to the underlined phrase and the way the data is shown in the Exhibit.					
				Resolution: The intent of this footnote was to incorporate the same procedure currently permitted by the <i>RESNET Guidelines for Multifamily Energy Ratings</i> . EPA’s interpretation of the underlined portion refers to multifamily buildings with corridors that have over-sized their ventilation rate with the purpose of indirectly providing ventilation supply air to the dwelling units, either through undercuts to the dwelling unit entry door or infiltration through the walls adjacent to the corridor. Rated Units in buildings with these types of systems would not be eligible for the 15% reduction factor. However, the footnote was incorrectly written as the reduction factor was intended to still apply to the Reference Design. This will be corrected in Rev01, by revising the Exhibit and Footnote 13 as follows: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: left; border-bottom: 1px solid black;">Compartmentalization Rates:</th> </tr> <tr> <th style="text-align: left; border-bottom: 1px dashed black;">Floor Type:</th> <th style="text-align: center; border-bottom: 1px dashed black;">100% Conditioned Space Below</th> <th style="text-align: center; border-bottom: 1px dashed black;">All Other</th> </tr> </thead> <tbody> <tr> <td style="border-top: 1px solid black;">cfm50/ft² Enclosure Area ¹³</td> <td style="border-top: 1px solid black; text-align: center;">0.255</td> <td style="border-top: 1px solid black; text-align: center;">0.30</td> </tr> </tbody> </table>	Compartmentalization Rates:			Floor Type:	100% Conditioned Space Below
Compartmentalization Rates:									
Floor Type:	100% Conditioned Space Below	All Other							
cfm50/ft ² Enclosure Area ¹³	0.255	0.30							
00011	06/08/2019		Clarification	Duct Location in Version 1 Reference Design for Rated Units with some adiabatic ceiling					

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		ERI Target Procedure, Version 1		<p>Issue: Software developers have identified that certain configurations of Rated Units will have some portions of their ceiling that are 'Adiabatic' and some that are 'All Other'. The Version 1 Target Procedures are not clear if these mixed ceiling assemblies are considered 'All Other' with respect to determining the duct location in the Reference Design.</p> <p>Resolution: EPA has determined that the column currently labeled as "Adiabatic" is intended to mean "100% Adiabatic" and will update the Version 1 Target Procedures in Rev01.</p>
00012	06/08/2019	ERI Target Procedure, Version 1.1	Refinement	<p>Inconsistent equipment efficiency from Reference Design</p> <p>Issue: Partners have noted an inconsistency between the Target Procedure for Version 1.1 and the Reference Design for Version 1.1, which is shown in Exhibit 1 of the National Program Requirements.</p> <p>Resolution: EPA has confirmed that the correct equipment efficiencies for gas furnaces and AC units in Climate Zones 4 and 5 are those from Exhibit 1 of the National Program Requirements. As a result, values from the Heating and Cooling Systems sections of Exhibit 1 of the Target Procedure, Version 1.1 will be revised from 90 to 95 for "Gas Furn. AFUE" in CZ 4, 4C & 5 and from 15 and 14 to 13 for "AC SEER" in CZ 4, 4C & 5.</p>
00083	11/01/2019	ERI Target Procedure 2014, Version 1; Version 1.1; and OR-WA Version 1.2 ERI Target Procedure 2019, Version 1; Version 1.1; and OR-WA Version 1.2	Change	<p>Ceiling fan requirements</p> <p>Issue: Partners have asked about the requirements to have ENERGY STAR certified ceiling fans included in the ENERGY STAR Multifamily Reference Design. With respect to the ERI Path, there is confusion among software developers and users of the energy rating software of what gets modeled when the number of ceiling fans "present" in the Rated Home is less than the number of bedrooms + 1. The Target Procedures, as written, seem to imply that as long as one fan is "present", the quantity of ceiling fans in the ENERGY STAR Multifamily Reference Design would be equal to the number of bedrooms plus one, which provides a cooling benefit but also a higher electricity use, compared to the Rated Home.</p> <p>Resolution: With respect to the ERI Path, EPA will clarify in Revision 02 of the ENERGY STAR Multifamily New Construction Target Procedures that the number of ceiling fans in the Reference Design shall be the same as in the Rated Home. Therefore, based on the clarification provided in ANSI 301-2019 related to ceiling fans, the fans will only be modeled in the ENERGY STAR Multifamily Reference Design when the total number of ceiling fans</p>

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				installed in the Rated Home is greater than or equal to the number of bedrooms plus one. The ceiling fans will retain the current efficiency of 122 CFM per Watt.						
00101	07/10/2020	<p>ERI Target Procedure 2014, Version 1; and Version 1.1</p> <p>ERI Target Procedure 2019, Version 1; and Version 1.1</p> <p>National Program Requirements, Version 1/1.1/OR-WA 1.2</p>	Change	<p>Electric water heater efficiency for large tank sizes</p> <p>Issue: Most water heaters installed in multifamily apartments are 55 gallons or less. However, if a project upgrades to a heat pump water heater, a large tank size is often selected. The current reference design aligns with Federal Standards based on tank size, but does not give any credit for project teams that have invested in this water heater upgrade if they also increase the tank size above 55 gal.</p> <p>Resolution: EPA agrees that projects should get energy savings credit for selecting a heat pump water heater. The ENERGY STAR MFNC Reference Design will be updated to align with the federal standard for tanks 55 gal or less, regardless of tank size.</p> <p>Specifically, the ENERGY STAR Multifamily Reference Design for Version 1 and Version 1.1, will be updated as follows:</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="border-left: 1px solid black; border-right: 1px solid black; padding: 0 10px;">Electric:</td> <td style="padding: 0 10px;">≤ 0.95 EF (0.93 UEF)</td> </tr> </table> <p>The ENERGY STAR National ERI Target Procedure (ANSI 301-2014) for Version 1 and Version 1.1 and the ENERGY STAR National ERI Target Procedure (ANSI 301-2019) for Version 1 and Version 1.1 will be updated as follows:</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Electric Storage Tank Capacity:</th> <th style="text-align: left;">All Sizes</th> </tr> </thead> <tbody> <tr> <td>Electric DHW EF:</td> <td>0.95 EF</td> </tr> </tbody> </table>	Electric:	≤ 0.95 EF (0.93 UEF)	Electric Storage Tank Capacity:	All Sizes	Electric DHW EF:	0.95 EF
				Electric:	≤ 0.95 EF (0.93 UEF)					
				Electric Storage Tank Capacity:	All Sizes					
Electric DHW EF:	0.95 EF									
<p>Exhibit 1 – Clothes washer and dryer inputs updated</p> <p>Issue: With the adoption of ANSI/RESNET/ICC Standard 301-2019 Addendum A, the ENERGY STAR Reference Design Definition needs to be updated for clothes washers and dryers. The term AGC has been updated to GHWC. In addition, the Field Use Factor had been used for calculating dryer efficiency; however, calculations in Addendum A do not require use</p>										
00104	07/10/2020	ERI Target Procedure 2019, Version 1; and Version 1.2	Change							

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				<p>of this metric but do require use of the Label Cycles per Year. The gas dryer CEF also does not align with the ENERGY STAR dryer specification.</p> <p>Resolution: The clothes washer and dryer configurations will be updated to align with the ENERGY STAR 2018 or later default values in Addendum A and the ENERGY STAR dryer specification. Specifically, the rows for clothes washers and dryers in the Lighting, Appliances, & Internal Gains section will be updated as follows:</p> <p>“Clothes Washer: Use the ENERGY STAR values below, even if no clothes washer is installed or if the ratio of dwelling units to installed washers is more than 14. Exception: If installed clothes washer is not available as ENERGY STAR certified (e.g., top-loading commercial clothes washers, Combination All-In One Washer-Dryers), model the same as the Rated Unit clothes washer</p> <table border="1"> <thead> <tr> <th></th> <th>LER</th> <th>\$/kWh</th> <th>GHWC</th> <th>\$/therm</th> <th>CAPw</th> <th>IMEF</th> <th>LCY</th> </tr> </thead> <tbody> <tr> <td>ENERGY STAR</td> <td>152</td> <td>0.12</td> <td>12</td> <td>1.09</td> <td>4.2</td> <td>2.06</td> <td>312</td> </tr> </tbody> </table> <p>Clothes Dryer: CEF is 3.93 for electric and 3.48 for gas, even if no clothes dryer is installed. Exception: If installed clothes dryer is not available as ENERGY STAR certified (e.g., commercial clothes dryers, Combination All-In One Washer-Dryers), model the same as the Rated Unit clothes dryer”</p>		LER	\$/kWh	GHWC	\$/therm	CAPw	IMEF	LCY	ENERGY STAR	152	0.12	12	1.09	4.2	2.06	312
	LER	\$/kWh	GHWC	\$/therm	CAPw	IMEF	LCY													
ENERGY STAR	152	0.12	12	1.09	4.2	2.06	312													
00105	07/10/2020	ERI Target Procedure 2014, Version 1; Version 1.2	Change	<p>Exhibit 1 – Clothes dryer inputs updated</p> <p>Issue: The gas dryer CEF in the target procedure does not align with the ENERGY STAR dryer specification.</p> <p>Resolution: The CEF will be updated to align with the ENERGY STAR specification. The row for dryers in the Lighting, Appliances, & Internal Gains section will be updated as follows:</p> <p>“Clothes Dryer: Field Use Factor is 1.04 and CEF is 3.93 for electric and 3.48 for gas, even if no clothes dryer is installed. Exception: If installed clothes dryer is not available as ENERGY STAR certified (e.g., commercial clothes dryers, Combination All-In One Washer-Dryers), model the same as the Rated Unit clothes dryer”</p>																
00084	11/01/2019		Clarification	Reference Design Cooling System for homes with electric strip or baseboard heat																

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		<p>ERI Target Procedure Version 1, Version 1.1, and OR-WA Version 1.2</p>	<p>Issue: Partners have asked for clarification on how to configure the reference design according to the Heating and Cooling Systems Section in Exhibit 2 when the rated home contains both AC and electric strip or electric baseboard heat. The current language may cause confusion and lead some partners to incorrectly model the reference home with AC instead of heat pump equipment.</p> <p>Resolution: To improve clarity, and specify how to correctly model the Heating and Cooling Systems according to the Reference Design, the text in the Heating Systems and Cooling Systems Sections will be revised as follows in Rev01 of the Target Procedures (Version 1 and Version 1.1):</p> <p>Heating Systems:</p> <p>“System Type: Same as Rated Unit, except Reference Design shall be configured with air-source heat pump in CZ 1-6 where Rated Unit is modeled with air-source or ground-source heat pump, electric strip heat, or electric baseboard heat; and Reference Design shall be configured with ground-source heat pump in CZ 7 & 8 where Rated Home is modeled with air-source or ground-source heat pump, electric strip heat, or electric baseboard heat; applicable efficiency selected from below”</p> <p>Cooling Systems:</p> <p>“System Type: Same as Rated Unit, except Reference Design shall be configured with air-source heat pump in CZ 1-6 where Rated Unit is modeled with air-source or ground-source heat pump, electric strip heat, or electric baseboard heat; and Reference Design shall be configured with ground-source heat pump in CZ 7 & 8 where Rated Home is modeled with air-source or ground-source heat pump, electric strip heat, or electric baseboard heat; applicable efficiency selected from below”</p> <p>The text in the Heating Systems and Cooling Systems Sections will be revised as follows in Rev01 of the Target Procedures (OR-WA Version 1.2):</p> <p>Heating Systems:</p> <p>“System Type: Same as Rated Unit, except Reference Design shall be configured with air-source heat pump where Rated Unit is modeled with air-source or ground-source heat pump, electric strip heat, or electric baseboard heat; applicable efficiency selected from below”</p> <p>Cooling Systems:</p>
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				“System Type: Same as Rated Unit, except Reference Design shall be configured with air-source heat pump where Rated Unit is modeled with air-source or ground-source heat pump, electric strip heat, or electric baseboard heat; applicable efficiency selected from below”
00085	11/01/2019	ERI Target Procedure Version 1, Version 1.1, and OR-WA Version 1.2	Clarification	Version of Std. 301 to use when calculating ERI
				<p>Issue: These Target Procedures identify that the “version of ANSI / RESNET / ICC Std. 301 utilized by RESNET for HERS ratings” should be followed when configuring several parameters in the ENERGY STAR Reference Design. However, Partners have noted that it does not include an overarching statement about which implementation of Std. 301 to use when calculating the ENERGY STAR ERI Target. Partners have also asked for further clarity on whether appendices of and interpretations to the standard should be followed, when new versions and addenda should be implemented, and if any exceptions are allowed.</p> <p>Resolution: To clarify the program’s intent and improve consistency, the following language will be added to the second paragraph:</p> <p>“The ERI value shall be calculated using ANSI / RESNET / ICC Standard 301-2014 including all Addenda and Normative Appendices, with new versions and Addenda implemented according to the Effective Date and Transition Period End Date defined by RESNET. RESNET interpretations of Standard 301-2014 shall also be followed. Any exceptions shall be approved by EPA and reported at www.energystar.gov/ERIEExceptions.”</p> <p>With the addition of this overarching statement, Footnote 7 will be deleted.</p> <p>The following header will be added to these Target Procedures:</p> <p>National ERI Target Procedure for use with ANSI/RESNET/ICC 301-2014</p> <p>The following sentence will also be added to these Target Procedures:</p> <p>“The National ERI Target Procedure (ANSI 301-2019) must instead be used to determine the ENERGY STAR ERI Target when using ANSI / RESNET / ICC Standard 301-2019.”</p> <p>The Target Procedures for use with ANSI / RESNET / ICC Standard 301-2019 will be developed.</p>
00086	11/01/2019	ERI Target Procedure Version 1, Version 1.1, and	Refinement	Removal of extraneous text in Doors and Glazing Sections
				<p>Issue: The “Doors” and “Glazing” sections in Exhibit 1 contain rows and a footnote stating that the SHGC and U-factor specifications are based on ENERGY STAR Program Requirements</p>

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	Updated 10/30/2020	OR-WA Version 1.2		<p>for Residential Windows, Doors, and Skylights. These rows provide background information, but do not provide specific inputs to the Reference Design. Removing these details could reduce potential confusion and improve conciseness.</p> <p>Resolution: In order to prevent potential confusion and improve conciseness, the following row will be deleted under the “Doors” section of Exhibit 1:</p> <p>“U-factors and SHGC’s:”</p> <p>In addition, the following header will be deleted under the “Glazing” section of Exhibit 1:</p> <p>“Assembly U-factors and SHGC’s:”</p> <p>Lastly, Footnote 5 associated with these rows will be revised to read:</p> <p>“Note that the U-factor requirement applies to all fenestration while the SHGC only applies to the glazed portion.”</p>
00087	11/01/2019	ERI Target Procedure, Version 1, Version 1.1, and OR-WA Version 1.2	Refinement	<p>Improved clarity for Townhouses</p> <p>Issue: Raters and Software Providers have noted that the Program documents could be less confusing regarding how a Townhouse complies with MFNC rather than Certified Homes.</p> <p>Resolution: Townhouses are eligible for the MFNC program, but are limited to the ERI Path & must use the ENERGY STAR Reference Design for Certified Homes when determining their ERI Target.</p> <p>The first paragraph of each of the Target Procedures will be revised in Rev01 as follows:</p> <p>“This document provides detailed instructions for determining the ENERGY STAR ERI Target, the highest ERI value that each rated multifamily unit, excluding townhouses, may achieve to earn the ENERGY STAR. Note that, in addition to meeting the ENERGY STAR ERI Target for each unit, units shall also meet all Mandatory Requirements for All Multifamily New Construction Projects in Exhibit 2 of the National Program Requirements for ENERGY STAR Multifamily New Construction, Version 1 / 1.1 / OR-WA 1.2. While Townhouses are eligible to earn ENERGY STAR Multifamily New Construction certification by meeting their ENERGY STAR ERI Target and also meeting all Mandatory Requirements for All Multifamily New Construction Projects in Exhibit 2 of the National Program Requirements, the instructions for determining their ENERGY STAR ERI Target is in the National ERI Target Procedure for ENERGY STAR Certified Homes.”</p>

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00103	07/10/2020	ERI Target Procedure Version 1, Version 1.1, and OR-WA Version 1.2	Change	<p>Exhibit 1 – Dishwasher inputs updated</p> <p>Issue: With the adoption of ANSI/RESNET/ICC Standard 301-2019 Addendum A, the ENERGY STAR Reference Design Definition needs to be updated for dishwashers. Previously, Energy Factor was used to determine dishwasher efficiency; however, calculations in Addendum A require different metrics for inputs.</p> <p>Resolution: The dishwasher configuration will be updated to align with the default values in Addendum A for a standard-capacity and compact-capacity ENERGY STAR dishwasher. Specifically, the row for dishwashers in the Lighting, Appliances, & Internal Gains section will be updated as follows:</p> <p>“Capacity Same as Rated Unit, or Standard if no dishwasher in the Rated Unit</p> <p>For Standard capacity: LER = 270, GHWC = \$22.23, Elec\$ = \$0.12, Gas\$ = \$1.09, LCY = 208</p> <p>For Compact capacity: LER = 203, GHWC = \$14.20, Elec\$ = \$0.12, Gas\$ = \$1.09, LCY = 208”</p>
00164	10/30/2020	<p>ERI Target Procedure, Version 1 (Rev.01) 2014, 2019</p> <p>ERI Target Procedure, Version 1.2 (Rev.01) 2014, 2019</p>		<p>Exhibit 1 – Updates to clarify intent regarding ceilings and attics in MF Reference Design</p> <p>Issue: Software developers have noted confusion with respect to how the Target Procedures describe the ceiling and attic condition in the ENERGY STAR Multifamily Reference Design, especially as it relates to duct location.</p> <p>Resolution: Footnote 1 of the Target Procedures states “Where envelope building components do not exist in the Rated Unit, such as a foundation or slab, they should not be modeled in the ENERGY STAR Multifamily Reference Design. Where the envelope component is adiabatic in the Rated Unit, it shall also be adiabatic in the Multifamily Reference Design.”</p> <p>In Version 1, there is confusion caused by this Footnote since there is also a requirement to locate ducts in an attic where the ceiling is not “100% Adiabatic”, even though an “attic” may not “exist in the Rated Unit”.</p> <p>The intent of the program is for adiabatic boundaries to match in the ENERGY STAR Reference Design and Rated Unit.</p>

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				<p>Where a Rated Unit does not have an adiabatic ceiling, a vented attic space is intended to be modeled in the Reference Design, regardless of the type of “attic” or space that is above the Rated Unit. The ducts in the Reference Design are to be located in this attic.</p> <p>Where a Rated Unit has a 100% adiabatic ceiling, no vented attic space is created in the MF Reference Design and the ceiling in the MF Reference Design is also 100% adiabatic.</p> <p>Where a Rated Unit has both ceiling conditions, adiabatic and not, the ceiling that is not adiabatic would have a vented attic modeled above it in the MF Reference Design.</p> <p>Specifically, the MFNC Target Procedures will be updated as follows:</p> <p>Footnote 1 will be revised to read:</p> <p style="padding-left: 40px;">Any parameter not specified in this exhibit shall be identical to the value entered for the Rated Unit. Where envelope building components do not exist in the Rated Unit, such as a foundation or slab, they should not be modeled in the ENERGY STAR Multifamily Reference Design, <u>unless explicitly stated, such as vented attics where unvented attics are present in the Rated Unit or when needed to locate ducts.</u></p> <p>Footnote 7 will be added for added clarity:</p> <p style="padding-left: 40px;">A vented unconditioned attic shall only be modeled in the Multifamily Reference Design where attics (of any type) exist in the Rated Unit or when specified as the Duct Location in the Thermal Distribution Systems section of this Exhibit. Where the Rated Unit has more than one ceiling type, the ceiling area used to calculate the vent aperture area shall be the area of the ceiling that is exposed to exterior, under attics, and/or under other unconditioned common spaces. Where the Rated Unit is entirely located beneath another dwelling unit or conditioned common space, no attic is modeled in the Reference Design.</p> <p>The Ceilings row of Exhibit 1 will be revised to read:</p> <p style="padding-left: 40px;">“Ceilings, adjacent to Exterior or Unconditioned Space Volumes”</p> <p>And, finally, the row for Thermal Distribution Systems will be revised as shown:</p> <table border="1"> <thead> <tr> <th colspan="3" style="text-align: left;">Supply and Return Duct Locations shall be configured according to the number of stories & ceiling type of the Rated Unit using the table below</th> </tr> <tr> <th style="text-align: left;">Ceiling Type:</th> <th style="text-align: center;">100% Adiabatic Ceiling</th> <th style="text-align: center;">All Other Ceiling Combinations</th> </tr> </thead> <tbody> <tr> <td style="text-align: left;">One Story Unit:</td> <td style="text-align: center;">100% of Supply & Return Ducts in Conditioned Space</td> <td style="text-align: center;">100% of Supply & Return Ducts in Vented Attic</td> </tr> <tr> <td style="text-align: left;">Multi-story Units:</td> <td style="text-align: center;">100% of Supply & Return Ducts in Conditioned Space</td> <td style="text-align: center;">75% of Supply & Return Ducts in Vented Attic / 25% of Supply & Return Ducts in Conditioned Space</td> </tr> </tbody> </table>	Supply and Return Duct Locations shall be configured according to the number of stories & ceiling type of the Rated Unit using the table below			Ceiling Type:	100% Adiabatic Ceiling	All Other Ceiling Combinations	One Story Unit:	100% of Supply & Return Ducts in Conditioned Space	100% of Supply & Return Ducts in Vented Attic	Multi-story Units:	100% of Supply & Return Ducts in Conditioned Space	75% of Supply & Return Ducts in Vented Attic / 25% of Supply & Return Ducts in Conditioned Space
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Multi-story Units:	100% of Supply & Return Ducts in Conditioned Space	75% of Supply & Return Ducts in Vented Attic / 25% of Supply & Return Ducts in Conditioned Space														
00165	10/30/2020		Change	Exhibit 1 – Simplifying the language regarding duct location												

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		ERI Target Procedure, Version 1.1 (Rev.01) 2014, 2019		<p>Issue: The Target Procedures for Version 1.1 are clear that 100% of supply and return ducts should be modeled in conditioned space in the MF Reference Design. A table similar to Version 1 is repeated, but adds no value since it states the same information. Leaving the table may cause confusion for software developers implementing the Target Procedures.</p> <p>Resolution: The row for Thermal Distribution Systems will be revised and the redundant table removed.</p>
00166	10/30/2020	ERI Target Procedure, Version 1 (Rev.01) 2014, 2019		<p>Modeling U-factors for interior above-grade walls in the Reference Design</p> <p>Issue: In multifamily buildings, it is often not clear whether minimum insulation requirements apply to all above-grade walls or just those adjacent to the ambient or unconditioned spaces, like garages. It is therefore not clear what U-factor applies to these semi-interior walls when modeling the MFNC Reference Design.</p> <p>Resolution: While it is currently not clear in Exhibit 1 of the Target Procedures which types of above-grade walls shall be meet the U-factors listed, the program intent was to require those U-factors only for above-grade walls exposed to the exterior or to garages.</p> <p>The Above-Grade Walls row of Exhibit 1 will be revised to read:</p> <p style="text-align: center;">“Above-Grade Walls, adjacent to Exterior or Garage.”</p> <p>While Footnote 1 currently is clear that “Any parameter not specified in this exhibit shall be identical to the value entered for the Rated Unit”, this approach for these interior walls results in the Rated Home not seeing any benefit over the MFNC Reference Design for providing insulation that exceeds non-existent code requirements. Therefore, Footnote 1 will be revised as follows:</p> <p style="text-align: center;">“Where the envelope component is not adiabatic but is adjacent to a space other than those specified in the Building Component column of Exhibit 1, model as uninsulated.”</p>
		ERI Target Procedure, Version 1.1 (Rev.01) 2014, 2019		
		ERI Target Procedure, Version 1.2 (Rev.01) 2014, 2019		
00167	10/30/2020	ERI Target Procedure, Version 1 (Rev.01) 2019	Change	<p>Expanding the space types for ‘Floors Over Unconditioned Spaces’</p> <p>Issue: The current Target Procedures provide requirements for modeling the U-factors for ‘Floors Over Unconditioned Spaces’. With ANSI / RESNET / ICC 301-2019, there was an expansion of space types that a floor could be over. These should be added to the list to improve clarity and consistency in the Approved Energy Rating Software when determining</p>

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		<p>ERI Target Procedure, Version 1.1 (Rev.01) 2019</p> <p>ERI Target Procedure, Version 1.2 (Rev.01) 2019</p>		<p>whether the floor assembly in the MF Reference Design should be modeled with the U-factor listed in the Exhibit 1.</p> <p>Resolution: To better align with ANSI / RESNET / ICC 301-2019, Exhibit 1 of the Target Procedures for use with ANSI / RESNET / ICC 301-2019 will be revised to read:</p> <p style="padding-left: 40px;">“Floors Over Unconditioned Space <u>Volumes, Non-Freezing Space or outdoor environment:</u>”</p>
00168	10/30/2020	<p>ERI Target Procedure, Version 1.1 (Rev.01) 2014, 2019</p> <p>ERI Target Procedure, Version 1.2 (Rev.01) 2014, 2019</p>	Change	<p>Recognizing that attics may not be limited to top floor units</p> <p>Issue: A Partner noted that in four of the six Target Procedures, the Attics row of Exhibit 1 was modified to read “Top Floor Unit Attics”. While the Version 1 Target Procedures did not include this added text, this causes confusion in those cases where a mid-level unit may have an attic condition, due to setbacks in the floorplans of a multistory multifamily building, but not necessarily be located on the top floor of the building.</p> <p>Resolution: The Target Procedures will be revised to align with Version 1, by removing the “Top Floor Unit” text from the “Attics” row of Exhibit 1.</p>
00183	11/12/2020	<p>ERI Target Procedure, Version 1 (Rev.01) 2014</p>	Change	<p>Heating System & Cooling System Sections: Grade III installation quality</p> <p>Issue: With the development of ANSI / RESNET / ACCA 310, forced-air HVAC systems now have the ability to have their installation quality graded. As a result, the ERI Target Procedure needs to be updated to indicate how the forced-air HVAC systems specified within should be configured.</p> <p>Resolution: The forced-air HVAC systems will be configured with Grade III, so that the ENERGY STAR ERI target should remain approximately the same as before the implementation of ANSI / RESNET / ACCA 310. This is preferable to configuring the systems with Grade I or II; under that scenario, dwelling units using Track B would be required to select new efficiency measures to meet the new more stringent target, even though they’re satisfying the program’s requirement for quality-installed equipment.</p>

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				<p>To reflect this change, a new row will be added to the Heating Systems Section, as follows:</p> <p>“Installation Quality: For forced-air HVAC systems, Grade III airflow and watt draw; for air-source heat pumps, also Grade III ref. charge.”</p> <p>Similarly, the Cooling Systems Section will be updated to add a new row as follows:</p> <p>“Installation Quality: For forced-air HVAC systems, Grade III airflow and watt draw; for AC’s & air-source heat pumps, also Grade III ref. charge.”</p> <p>Because the Electric Auxiliary Energy of non-electric warm furnaces will be calculated using a new methodology under ANSI / RESNET / ACCA 310, which does not depend on capacity alone, the row in the Heating Systems Section that addresses this parameter will be revised by removing the phrase, “..using the capacity determined in this Section.”</p> <p>Because the capacity of forced-air HVAC systems will be degraded by a Grade III installation, the capacity of the system needs to account for this, rather than being selected strictly in accordance with ACCA Manual S. To reflect this, the following sentence will be added to the row in the Heating Systems and Cooling Systems Section that addresses this parameter:</p> <p>“For Forced-Air HVAC systems, degraded capacity from Grade III install. shall be accounted for using same methodology applied to Energy Rating Reference Home.”</p>
00464	10/03/2022	ERI Target Procedure, Version 1.1 (Rev.02) 2014	Refinement	<p>Heating Systems – Warm-air furnace</p> <p>Issue: The Electric Auxiliary Energy details reference non-electric warm furnaces and this is supposed to be non-electric warm-air furnaces.</p> <p>Resolution: The Electric Auxiliary Energy requirements under the Heating Systems section will be updated as follows:</p> <p>“For non-electric warm-air furnaces and non-electric boilers, the Electric Auxiliary Energy shall be determined in accordance with the methodology for the Energy Rating Reference Home in ANSI / RESNET / ICC Std. 301”</p>
				<p>Providing consistent conversions for space heating system efficiency ratings</p> <p>Issue: Currently, ANSI 301-2019 does not stipulate how Approved Software Rating Tools should convert the efficiency of space heating systems rated in thermal efficiency (Et), to AFUE, which is used in the Energy Rating Reference Home. This conversion is stipulated in the Simulation Guidelines used in the ASHRAE Path program of the MFNC program and should be consistent across all software and Paths.</p>
00305	07/06/2022	ERI Target Procedure, Version 1 (Rev.02) 2019 ERI Target Procedure,	Change	<p>Providing consistent conversions for space heating system efficiency ratings</p> <p>Issue: Currently, ANSI 301-2019 does not stipulate how Approved Software Rating Tools should convert the efficiency of space heating systems rated in thermal efficiency (Et), to AFUE, which is used in the Energy Rating Reference Home. This conversion is stipulated in the Simulation Guidelines used in the ASHRAE Path program of the MFNC program and should be consistent across all software and Paths.</p>

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		<p>Version 1.1 (Rev.02) 2019</p> <p>Oregon and Washington ERI Target Procedure, Version 1.2 (Rev.02) 2019</p> <p>ERI Target Procedure, Version 1.2 (Rev.02) 2019</p>		<p>Resolution: EPA agrees that the conversion from Et to AFUE should be consistent across all software and Paths.</p> <p>Footnote 9 will be revised as follows:</p> <p>For a Rated Unit without a heating system, the ENERGY STAR Multifamily Reference Design shall be configured with a 78% AFUE gas furnace system, unless the Rated Unit has no access to natural gas or fossil fuel delivery. In such cases, the ENERGY STAR Reference Multifamily Design shall be configured with a 7.7 HSPF air-source heat pump. <u>Where a furnace or boiler is the heating system for the Rated Unit and is rated in combustion efficiency (Ec), the thermal efficiency (Et) shall be modeled as Ec-2%. Where thermal efficiency (Et) is modeled, it shall be converted to AFUE using the following equation: $Et = 0.875 \times AFUE + 10.5\%$.</u></p>
00271	03/17/2022	<p>ERI Target Procedure, Version 1 (Rev. 02) 2019</p> <p>ERI Target Procedure, Version 1.1 (Rev. 02) 2019</p>	Clarification	<p>Heating Systems Section: Remove reference to furnaces on EAE line</p> <p>Issue: Currently, the Electric Auxiliary Energy (EAE) line of Exhibit 1: Heating Systems defines, in part, how to determine the Electric Auxiliary Energy (EAE) for non-electric warm furnaces.</p> <p>However, Addendum B of ANSI / RESNET / ICC 301-2019 reduced the system types that EAE applies to by removing non-electric furnaces. In lieu of such values, Addendum B configures this system type in accordance with ANSI / RESNET / ACCA 310.</p> <p>Therefore, the reference to non-electric warm furnaces in this line is no longer needed.</p> <p>Resolution: Due to the updates made in Addendum B of ANSI / RESNET / ICC 301-2019, the reference to non-electric warm furnaces in relation to EAE is no longer needed and will be removed. The EAE line of the Heating Systems section in Exhibit 1 will be updated as follows:</p> <p>“For non-electric boilers serving the Rater Unit and no other units, the Electric Auxiliary Energy shall be determined in accordance with the methodology for the Energy Rating Reference Home in ANSI / RESNET /ICC Std. 301.”</p>
				Exhibit 1 – Commercial electric service water heating systems

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00224	09/15/2021	<p>ERI Target Procedure, Version 1 (Rev.02) 2019</p> <p>ERI Target Procedure, Version 1.1 (Rev.02) 2019</p> <p>ERI Target Procedure, Version 1.2 (Rev.02) 2019</p>	Clarification	<p>Issue: When reviewing the Target Procedures for use with ANSI 301-2019, a software provider asked what efficiency should be modeled in the ENERGY STAR Multifamily Reference Design when the Rated Home is served by a commercial electric boiler. The current text states that “boilers or water heaters” use 85% Et and “electric water heaters” use 0.95 EF, but the text is silent on electric “boilers”.</p> <p>Resolution: The intent was to use an 85% Et boiler or water heater in the Reference Design when a fossil-fuel boiler or water heater was specified in the Rated Home. For electric systems, an EF was provided for “water heaters”, but the intent was for the same value to apply to “electric boilers”.</p> <p>In the next program revision, the Service Water Heating Systems row in Exhibit 1 of all three ANSI 301-2109 ERI Target Procedures will be revised as follows:</p> <p>System Type (when Rated Unit is served by a commercial system): Same as system serving the Rated Unit. For fossil-fuel boilers or water heaters, use 85% Et. For electric <u>boilers or water heaters</u>, use 0.95 EF.</p>
00456	10/03/2022	ERI Target Procedure, Version 1.2 (Rev.02) 2019	Change	<p>Exhibit 1 – ESRD configured with ASHP instead of GSHP in Climate Zone 7 and 8</p> <p>Issue: The Expanded ENERGY STAR Reference Design currently specifies a Ground-Source Heat Pump (GSHP) in CZ 7 and CZ 8, as opposed to the Air-Source Heat Pump (ASHP) that is specified in CZ 6. This results in very stringent ENERGY STAR ERI targets for these locations.</p> <p>Historically, ASHP’s have not been used in CZ 7 and 8. That has changed in recent years with the advent of cold-climate heat pumps, which are capable of meeting heating loads at low temperatures. Despite the high efficiency of these systems, homes are not able to achieve the ENERGY STAR ERI targets because they are not as efficient as a GSHP.</p> <p>Partners have asked if the ENERGY STAR Reference Design could be updated to specify an ASHP rather than a GSHP. This would create ENERGY STAR ERI targets for these locations that are more in line with the targets in other climate zones.</p> <p>Resolution: To create ENERGY STAR ERI Targets in CZ 7 and 8 that are more consistent with other Climate Zones, the Expanded ENERGY STAR Reference Design will be revised to specify a 9.2 HSPF / 16 SEER ASHP instead of a GSHP, within the Heating Systems and Cooling Systems sections. Where the Rated Unit is modeled with a GSHP, the ENERGY STAR Reference Design will still specify a GSHP to accommodate central GSHP as noted in</p>

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				<p>PR ID 203. The efficiency of the GSHP will also be revised in these climate zones to be 2.7 COP / 14 EER to align with the ASHP efficiency.</p> <p>In the Heating Systems section, the 'System Type' will be revised to read as follows: "System Type: Same as Rated Home, except Reference Design shall be configured with air-source heat pump in CZ 1-6 where Rated Unit is modeled with air source or ground source heat pump, electric strip heat, or electric baseboard heat; and Reference Design shall be configured with ground source heat pump in CZ 7 & 8 where Rated Unit is modeled with air source or ground source heat pump, electric strip heat, or electric baseboard heat; applicable efficiency selected from below." Finally, in the Cooling Systems section, the 'System Type' will be revised to read as follows: "System Type: Same as Rated Unit, except Reference Design shall be configured with air-source heat pump in CZ 1-6 where Rated Unit is modeled with air source or ground source heat pump, electric strip heat, or electric baseboard heat; and Reference Design shall be configured with ground source heat pump in CZ 7 & 8 where Rated Unit is modeled with air source or ground source heat pump, electric strip heat, or electric baseboard heat; applicable efficiency selected from below."</p>
00184	11/12/2020	ERI Target Procedure, Version 1 (Rev.01) 2019	Change	Heating System & Cooling System Sections: Grade III installation quality
				<p>Issue: With the development of ANSI / RESNET / ACCA 310, forced-air HVAC systems now have the ability to have their installation quality graded. As a result, the ERI Target Procedure needs to be updated to indicate how the forced-air HVAC systems specified within should be configured.</p>
				<p>Resolution: The forced-air HVAC systems will be configured with Grade III, so that the ENERGY STAR ERI target should remain approximately the same as before the implementation of ANSI / RESNET / ACCA 310. This is preferable to configuring the systems with Grade I or II; under that scenario, dwelling units using Track B would be required to select new efficiency measures to meet the new more stringent target, even though they're satisfying the program's requirement for quality-installed equipment.</p> <p>To reflect this change, a new row will be added to the Heating Systems Section, as follows: "Installation Quality: For forced-air HVAC systems, Grade III airflow and watt draw; for air-source heat pumps, also Grade III ref. charge." Similarly, the Cooling Systems Section will be updated to add a new row as follows:</p>

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				<p>“Installation Quality: For forced-air HVAC systems, Grade III airflow and watt draw; for AC’s & air-source heat pumps, also Grade III ref. charge.”</p> <p>Because the Electric Auxiliary Energy of non-electric warm furnaces will be calculated using a new methodology under ANSI / RESNET / ACCA 310, which does not depend on capacity alone, the row in the Heating Systems Section that addresses this parameter will be revised by removing the phrase, “..using the capacity determined in this Section.”</p> <p>Because the capacity of forced-air HVAC systems will be degraded by a Grade III installation, the capacity of the system needs to account for this, rather than being selected strictly in accordance with ACCA Manual S. To reflect this, the following sentence will be added to the row in the Heating Systems and Cooling Systems Section that addresses this parameter:</p> <p>“For Forced-Air HVAC systems, degraded capacity from Grade III install. shall be accounted for using same methodology applied to Energy Rating Reference Home.”</p>
00185	11/12/2020	ERI Target Procedure, Version 1.1 (Rev.01) 2014	Change	Heating System & Cooling System Sections: Grade III installation quality
				<p>Issue: With the development of ANSI / RESNET / ACCA 310, forced-air HVAC systems now have the ability to have their installation quality graded. As a result, the ERI Target Procedure needs to be updated to indicate how the forced-air HVAC systems specified within should be configured.</p>
				<p>Resolution: The forced-air HVAC systems will be configured with Grade III, so that the ENERGY STAR ERI target should remain approximately the same as before the implementation of ANSI / RESNET / ACCA 310. This is preferable to configuring the systems with Grade I or II; under that scenario, dwelling units using Track B would be required to select new efficiency measures to meet the new more stringent target, even though they’re satisfying the program’s requirement for quality-installed equipment.</p> <p>To reflect this change, a new row will be added to the Heating Systems Section, as follows:</p> <p>“Installation Quality: For forced-air HVAC systems, Grade III airflow and watt draw; for air-source heat pumps, also Grade III ref. charge.”</p> <p>Similarly, the Cooling Systems Section will be updated to add a new row as follows:</p> <p>“Installation Quality: For forced-air HVAC systems, Grade III airflow and watt draw; for AC’s & air-source heat pumps, also Grade III ref. charge.”</p> <p>Because the Electric Auxiliary Energy of non-electric warm furnaces will be calculated using a new methodology under ANSI / RESNET / ACCA 310, which does not depend on capacity</p>

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				<p>alone, the row in the Heating Systems Section that addresses this parameter will be revised by removing the phrase, “..using the capacity determined in this Section.”</p> <p>Because the capacity of forced-air HVAC systems will be degraded by a Grade III installation, the capacity of the system needs to account for this, rather than being selected strictly in accordance with ACCA Manual S. To reflect this, the following sentence will be added to the row in the Heating Systems and Cooling Systems Section that addresses this parameter:</p> <p>“For Forced-Air HVAC systems, degraded capacity from Grade III install. shall be accounted for using same methodology applied to Energy Rating Reference Home.”</p>
00186	11/12/2020	ERI Target Procedure, Version 1.1 (Rev.01) 2019	Change	<p>Heating System & Cooling System Sections: Grade III installation quality</p>
				<p>Issue: With the development of ANSI / RESNET / ACCA 310, forced-air HVAC systems now have the ability to have their installation quality graded. As a result, the ERI Target Procedure needs to be updated to indicate how the forced-air HVAC systems specified within should be configured.</p>
				<p>Resolution: The forced-air HVAC systems will be configured with Grade III, so that the ENERGY STAR ERI target should remain approximately the same as before the implementation of ANSI / RESNET / ACCA 310. This is preferable to configuring the systems with Grade I or II; under that scenario, dwelling units using Track B would be required to select new efficiency measures to meet the new more stringent target, even though they’re satisfying the program’s requirement for quality-installed equipment.</p> <p>To reflect this change, a new row will be added to the Heating Systems Section, as follows:</p> <p>“Installation Quality: For forced-air HVAC systems, Grade III airflow and watt draw; for air-source heat pumps, also Grade III ref. charge.”</p> <p>Similarly, the Cooling Systems Section will be updated to add a new row as follows:</p> <p>“Installation Quality: For forced-air HVAC systems, Grade III airflow and watt draw; for AC’s & air-source heat pumps, also Grade III ref. charge.”</p> <p>Because the Electric Auxiliary Energy of non-electric warm furnaces will be calculated using a new methodology under ANSI / RESNET / ACCA 310, which does not depend on capacity alone, the row in the Heating Systems Section that addresses this parameter will be revised by removing the phrase, “..using the capacity determined in this Section.”</p> <p>Because the capacity of forced-air HVAC systems will be degraded by a Grade III installation, the capacity of the system needs to account for this, rather than being selected strictly in</p>

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				<p>accordance with ACCA Manual S. To reflect this, the following sentence will be added to the row in the Heating Systems and Cooling Systems Section that addresses this parameter:</p> <p>“For Forced-Air HVAC systems, degraded capacity from Grade III install. shall be accounted for using same methodology applied to Energy Rating Reference Home.”</p>
00187	11/12/2020	ERI Target Procedure, Version 1.2 (Rev.01) 2014	Change	<p>Heating System & Cooling System Sections: Grade III installation quality</p>
				<p>Issue: With the development of ANSI / RESNET / ACCA 310, forced-air HVAC systems now have the ability to have their installation quality graded. As a result, the ERI Target Procedure needs to be updated to indicate how the forced-air HVAC systems specified within should be configured.</p>
				<p>Resolution: The forced-air HVAC systems will be configured with Grade III, so that the ENERGY STAR ERI target should remain approximately the same as before the implementation of ANSI / RESNET / ACCA 310. This is preferable to configuring the systems with Grade I or II; under that scenario, dwelling units using Track B would be required to select new efficiency measures to meet the new more stringent target, even though they’re satisfying the program’s requirement for quality-installed equipment.</p> <p>To reflect this change, a new row will be added to the Heating Systems Section, as follows:</p> <p>“Installation Quality: For forced-air HVAC systems, Grade III airflow and watt draw; for air-source heat pumps, also Grade III ref. charge.”</p> <p>Similarly, the Cooling Systems Section will be updated to add a new row as follows:</p> <p>“Installation Quality: For forced-air HVAC systems, Grade III airflow and watt draw; for AC’s & air-source heat pumps, also Grade III ref. charge.”</p> <p>Because the Electric Auxiliary Energy of non-electric warm furnaces will be calculated using a new methodology under ANSI / RESNET / ACCA 310, which does not depend on capacity alone, the row in the Heating Systems Section that addresses this parameter will be revised by removing the phrase, “..using the capacity determined in this Section.”</p> <p>Because the capacity of forced-air HVAC systems will be degraded by a Grade III installation, the capacity of the system needs to account for this, rather than being selected strictly in accordance with ACCA Manual S. To reflect this, the following sentence will be added to the row in the Heating Systems and Cooling Systems Section that addresses this parameter:</p>

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				<p>“For Forced-Air HVAC systems, degraded capacity from Grade III install. shall be accounted for using same methodology applied to Energy Rating Reference Home.”</p>
00188	11/12/2020	ERI Target Procedure, Version 1.2 (Rev.01) 2019	Change	<p>Heating System & Cooling System Sections: Grade III installation quality</p>
				<p>Issue: With the development of ANSI / RESNET / ACCA 310, forced-air HVAC systems now have the ability to have their installation quality graded. As a result, the ERI Target Procedure needs to be updated to indicate how the forced-air HVAC systems specified within should be configured.</p>
				<p>Resolution: The forced-air HVAC systems will be configured with Grade III, so that the ENERGY STAR ERI target should remain approximately the same as before the implementation of ANSI / RESNET / ACCA 310. This is preferable to configuring the systems with Grade I or II; under that scenario, dwelling units using Track B would be required to select new efficiency measures to meet the new more stringent target, even though they’re satisfying the program’s requirement for quality-installed equipment.</p> <p>To reflect this change, a new row will be added to the Heating Systems Section, as follows:</p> <p>“Installation Quality: For forced-air HVAC systems, Grade III airflow and watt draw; for air-source heat pumps, also Grade III ref. charge.”</p> <p>Similarly, the Cooling Systems Section will be updated to add a new row as follows:</p> <p>“Installation Quality: For forced-air HVAC systems, Grade III airflow and watt draw; for AC’s & air-source heat pumps, also Grade III ref. charge.”</p> <p>Because the Electric Auxiliary Energy of non-electric warm furnaces will be calculated using a new methodology under ANSI / RESNET / ACCA 310, which does not depend on capacity alone, the row in the Heating Systems Section that addresses this parameter will be revised by removing the phrase, “..using the capacity determined in this Section.”</p> <p>Because the capacity of forced-air HVAC systems will be degraded by a Grade III installation, the capacity of the system needs to account for this, rather than being selected strictly in accordance with ACCA Manual S. To reflect this, the following sentence will be added to the row in the Heating Systems and Cooling Systems Section that addresses this parameter:</p> <p>“For Forced-Air HVAC systems, degraded capacity from Grade III install. shall be accounted for using same methodology applied to Energy Rating Reference Home.”</p>
<p>Service Water Heating Systems Sections: No solar water heating included</p>				

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00249	03/17/2022	<p>ERI Target Procedure, Version 1 (Rev. 02) 2019</p> <p>ERI Target Procedure, Version 1.1 (Rev. 02) 2019</p>	Clarification	<p>Issue: The “Service Water Heating Systems” section of the ERI Target Procedures specifies the required system type for the ENERGY STAR Multifamily Reference Design as “conventional storage water heater” when residential systems are used in the Rated Unit and specifies “Same as the Rated Unit” if it is a commercial system. The procedures do not explicitly state that the Reference Design water heater should <u>not</u> be configured with a solar component, even if one is present in the Rated unit. Because of this ambiguity, developers of approved software rating tools may not configure this parameter consistently.</p> <p>Resolution: To avoid confusion and prevent potential inconsistencies in how the Reference Design is configured, the row for System Type in the “Service Water Heating Systems” section will be revised as follows:</p> <p>“System Type (when Rated Unit is served by a commercial system): Same as system serving the Rated Unit, with no solar heating. For boilers or water heaters, use 85% Et. For electric water heaters, use 0.95 EF</p> <p>System Type (when Rated Unit is served by a residential systems): Conventional storage water heater with no solar heating, with tank size equal to that of Rated Unit, unless Rated Unit uses instantaneous water heater in which case select 50 gallon tank for gas systems and 60 gallon tank for electric systems. Select applicable efficiency from below using tank size of Reference Design.”</p>
00248	03/17/2022	<p>ERI Target Procedure, Version 1 (Rev. 02) 2014</p> <p>ERI Target Procedure, Version 1.1 (Rev. 02) 2014</p>	Clarification	<p>Service Water Heating Systems Sections: No solar water heating included</p> <p>Issue: The “Service Water Heating Systems” section of the ERI Target Procedures specifies the required system type for the ENERGY STAR Multifamily Reference Design as “conventional storage water heater”. The procedures do not explicitly state that the Reference Design water heater should <u>not</u> be configured with a solar component, even if one is present in the Rated unit. Because of this ambiguity, developers of approved software rating tools may not configure this parameter consistently.</p> <p>Resolution: To avoid confusion and prevent potential inconsistencies in how the Reference Design is configured, the row for System Type in the “Service Water Heating Systems” section will be revised as follows:</p>

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				“Conventional storage water heater with no solar heating, with tank size equal to that of Rated Unit, unless Rated Unit uses instantaneous water heater in which case select 50 gallon tank for gas systems and 60 gallon tank for electric systems. Select applicable efficiency from below using tank size of Reference Design.”
00461	10/03/2022	ERI Target Procedure, Version 1.2 (Rev.02) 2019	Change	Exhibit 1 – Dehumidification system inputs
				<p>Issue: Currently, the ENERGY STAR Reference Design is configured with the same dehumidification system present in the Rated Home. This effectively means that dehumidifiers will neither help a home to achieve nor hinder a home from achieving the ENERGY STAR ERI Target.</p> <p>ANSI / RESNET / ICC 301-2019 Addendum B specifies for the first time how to configure dehumidification systems in the Energy Rating Reference Home. Partners have asked whether the ERI Target Procedure will be updated, such that homes using dehumidifiers can receive credit towards meeting the ENERGY STAR ERI Target.</p>
				<p>Resolution: The ENERGY STAR ERI Target Procedures generally allow for Minimum Rated Features in ANSI / RESNET / ICC 301 to contribute towards the ENERGY STAR ERI Target. Now that dehumidifiers have been added as a Minimum Rated Feature, they will be allowed to contribute, as well.</p> <p>In the current program requirements, a dehumidifier is not required to be included in a dwelling or dwelling unit and, in practice, dehumidifiers are only installed in a minority of units. To avoid increasing the program stringency for those who choose to install a dehumidifier, it is more appropriate to make available a credit for more efficient products, rather than a penalty for entry-level products. Therefore, the ENERGY STAR ERI Target Procedures will be updated to align with the configuration in ANSI / RESNET / ICC 301. In future versions of the program, EPA can consider whether to update the ENERGY STAR Reference Design with more efficient dehumidifiers.</p> <p>To reflect this change, a new row will be added to Exhibit 1: Expanded ENERGY STAR Reference Design Definition to address dehumidification systems. The new row will read as follows:</p> <p>“Type, capacity, efficacy, and dehumidistat setpoint same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC 301, when dehumidification system is present in Rated Unit; otherwise none.”</p>
00453	10/03/2022		Clarification	Exhibit 1 – 2009 IECC Climate Zone designations to be used

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		ERI Target Procedure, Version 1.1 (Rev. 02) 2019		<p>Issue: For improved consistency and clarity, a new Footnote will be added to specify which IECC Climate Zone designations are to be used to configure the ENERGY STAR Reference Design for this version of the program requirements.</p> <p>Resolution: A new Footnote will be added, referenced wherever there is a mention of “Climate Zone”, as follows: “2009 IECC Climate Zone designations, as defined and illustrated in Section 301 of the code, shall be used to configure the ENERGY STAR Reference Design in National Version 1”.</p>
00454	10/03/2022	ERI Target Procedure, Version 1.1 (Rev. 02) 2019	Clarification	<p>Exhibit 1 – 2012 IECC Climate Zone designations to be used</p> <p>Issue: For improved consistency and clarity, a new Footnote will be added to specify which IECC Climate Zone designations are to be used to configure the ENERGY STAR Reference Design for this version of the program requirements.</p> <p>Resolution: A new Footnote will be added, referenced wherever there is a mention of “Climate Zone”, as follows: “2012 IECC Climate Zone designations, as defined and illustrated in Section R301 of the code, shall be used to configure the ENERGY STAR Reference Design in National Version 1.1”.</p>
00515	11/10/2022	Oregon and Washington ERI Target Procedure, Version 1.2 (Rev. 03) 2014	Change	<p>Exhibit 1 – ENERGY STAR Reference Design configured without on-site power</p> <p>Issue: Partners have asked whether the ENERGY STAR Reference Design (ESRD) should be configured with On-Site Power Production (OPP) if such a system is present in the Rated Unit. Because OPP is not one of the building components listed in the Expanded ENERGY STAR Multifamily Reference Design Definition Exhibit and the document contains a footnote stating that “Any parameter not specified in this exhibit shall be identical to the value entered for the Rated Unit”, one might infer that it is EPA’s intent for the ESRD to be configured with OPP.</p> <p>Such a configuration would create unintended challenges because the related Program Requirements specify that “on-site power generation may not be used to meet the ENERGY STAR ERI Target”.</p> <p>Resolution: It is not EPA’s intent to make the ENERGY STAR ERI Target more stringent in cases where the Rated Unit has OPP. To align the ENERGY STAR ERI Target Procedure with EPA’s intent, a new row will be added to the end of the ENERGY STAR Multifamily Reference Design Definition Exhibit with the Building Component listed as “On-Site Power Production” and the Definition listed as “None”.</p>

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00250	03/17/2022	Oregon and Washington ERI Target Procedure, Version 1.2 (Rev.02) 2014	Clarification	<p>Service Water Heating Systems: No solar water heating included</p> <p>Issue: The “Service Water Heating Systems” section specifies the required system type as either an “instantaneous gas water heater” or “heat pump water heater” but does not explicitly state that the water heater should not be configured with a solar component, even if one is present in the Rated unit. Because of this ambiguity, developers of approved software rating tools may not configure this parameter consistently.</p> <p>Resolution: To avoid confusion and prevent potential inconsistencies in how the Reference Design is configured, the row for Fuel Type & System Type in the “Service Water Heating Systems” section will be revised as follows:</p> <p>“If Rated Unit uses a system with a gas or propane fuel type, model as instantaneous gas water heater with no solar heating. If Rated Unit uses a system with an oil, electric, or other fuel type, model as 60 gallon electric heat pump water heater with no solar heating. Select applicable efficiency from below.”</p>
00457	10/03/2022	ERI Target Procedure, Version 1 (Rev.02) 2014	Change	<p>Exhibit 1 - Dehumidification system inputs</p> <p>Issue: Currently, the ENERGY STAR Reference Design is configured with the same dehumidification system present in the Rated Home. This effectively means that dehumidifiers will neither help a dwelling unit to achieve nor hinder a dwelling unit from achieving the ENERGY STAR ERI Target.</p> <p>ANSI / RESNET / ICC 301-2019 Addendum B specifies for the first time how to configure dehumidification systems in the Energy Rating Reference Home. Partners have asked whether the ERI Target Procedure will be updated, such that dwelling units using dehumidifiers can receive credit towards meeting the ENERGY STAR ERI Target.</p> <p>Resolution: The ENERGY STAR ERI Target Procedures generally allow for Minimum Rated Features in ANSI / RESNET / ICC 301 to contribute towards the ENERGY STAR ERI Target. Now that dehumidifiers have been added as a Minimum Rated Feature, they will be allowed to contribute, as well.</p> <p>In the current program requirements, a dehumidifier is not required to be included in a dwelling or dwelling unit and, in practice, dehumidifiers are only installed in a minority of units. To avoid increasing the program stringency for those who choose to install a dehumidifier, it is more appropriate to make available a credit for more efficient products, rather than a penalty for entry-level products. Therefore, the ENERGY STAR ERI Target Procedures will be updated to align with the configuration in ANSI / RESNET / ICC 301. In</p>

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				<p>future versions of the program, EPA can consider whether to update the ENERGY STAR Reference Design with more efficient dehumidifiers.</p> <p>To reflect this change, a new row will be added to Exhibit 1: Expanded ENERGY STAR Reference Design Definition to address dehumidification systems. The new row will read as follows:</p> <p>“Type, capacity, efficacy, and dehumidistat setpoint same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC 301, when dehumidification system is present in Rated Unit; otherwise none.”</p>
00459	10/03/2022	ERI Target Procedure, Version 1 (Rev.02) 2019	Change	<p>Exhibit 1 – Dehumidification system inputs</p> <p>Issue: Currently, the ENERGY STAR Reference Design is configured with the same dehumidification system present in the Rated Home. This effectively means that dehumidifiers will neither help a home to achieve nor hinder a home from achieving the ENERGY STAR ERI Target.</p> <p>ANSI / RESNET / ICC 301-2019 Addendum B specifies for the first time how to configure dehumidification systems in the Energy Rating Reference Home. Partners have asked whether the ERI Target Procedure will be updated, such that homes using dehumidifiers can receive credit towards meeting the ENERGY STAR ERI Target.</p> <p>Resolution: The ENERGY STAR ERI Target Procedures generally allow for Minimum Rated Features in ANSI / RESNET / ICC 301 to contribute towards the ENERGY STAR ERI Target. Now that dehumidifiers have been added as a Minimum Rated Feature, they will be allowed to contribute, as well.</p> <p>In the current program requirements, a dehumidifier is not required to be included in a dwelling or dwelling unit and, in practice, dehumidifiers are only installed in a minority of units. To avoid increasing the program stringency for those who choose to install a dehumidifier, it is more appropriate to make available a credit for more efficient products, rather than a penalty for entry-level products. Therefore, the ENERGY STAR ERI Target Procedures will be updated to align with the configuration in ANSI / RESNET / ICC 301. In future versions of the program, EPA can consider whether to update the ENERGY STAR Reference Design with more efficient dehumidifiers.</p> <p>To reflect this change, a new row will be added to Exhibit 1: Expanded ENERGY STAR Reference Design Definition to address dehumidification systems. The new row will read as follows:</p> <p>“Type, capacity, efficacy, and dehumidistat setpoint same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC 301, when dehumidification system is present in Rated Unit; otherwise none.”</p>

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00462	10/03/2022	<i>Oregon and Washington ERI Target Procedure, Version 1.2 (Rev.02) 2014</i>	Change	<p>Exhibit 1 – Dehumidification system inputs</p> <p>Issue: Currently, the ENERGY STAR Reference Design is configured with the same dehumidification system present in the Rated Home. This effectively means that dehumidifiers will neither help a home to achieve nor hinder a home from achieving the ENERGY STAR ERI Target.</p> <p>ANSI / RESNET / ICC 301-2019 Addendum B specifies for the first time how to configure dehumidification systems in the Energy Rating Reference Home. Partners have asked whether the ERI Target Procedure will be updated, such that homes using dehumidifiers can receive credit towards meeting the ENERGY STAR ERI Target.</p> <p>Resolution: The ENERGY STAR ERI Target Procedures generally allow for Minimum Rated Features in ANSI / RESNET / ICC 301 to contribute towards the ENERGY STAR ERI Target. Now that dehumidifiers have been added as a Minimum Rated Feature, they will be allowed to contribute, as well.</p> <p>In the current program requirements, a dehumidifier is not required to be included in a dwelling or dwelling unit and, in practice, dehumidifiers are only installed in a minority of units. To avoid increasing the program stringency for those who choose to install a dehumidifier, it is more appropriate to make available a credit for more efficient products, rather than a penalty for entry-level products. Therefore, the ENERGY STAR ERI Target Procedures will be updated to align with the configuration in ANSI / RESNET / ICC 301. In future versions of the program, EPA can consider whether to update the ENERGY STAR Reference Design with more efficient dehumidifiers.</p> <p>To reflect this change, a new row will be added to Exhibit 1: Expanded ENERGY STAR Reference Design Definition for the States of Oregon and Washington to address dehumidification systems. The new row will read as follows: “Type, capacity, efficacy, and dehumidistat setpoint same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC 301, when dehumidification system is present in Rated Unit; otherwise none.”</p>
00460	10/03/2022	ERI Target Procedure, Version 1.1 (Rev.02) 2019	Change	<p>Exhibit 1 – Dehumidification system inputs</p> <p>Issue: Currently, the ENERGY STAR Reference Design is configured with the same dehumidification system present in the Rated Home. This effectively means that dehumidifiers will neither help a home to achieve nor hinder a home from achieving the ENERGY STAR ERI Target.</p>

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				<p>ANSI / RESNET / ICC 301-2019 Addendum B specifies for the first time how to configure dehumidification systems in the Energy Rating Reference Home. Partners have asked whether the ERI Target Procedure will be updated, such that homes using dehumidifiers can receive credit towards meeting the ENERGY STAR ERI Target.</p> <p>Resolution: The ENERGY STAR ERI Target Procedures generally allow for Minimum Rated Features in ANSI / RESNET / ICC 301 to contribute towards the ENERGY STAR ERI Target. Now that dehumidifiers have been added as a Minimum Rated Feature, they will be allowed to contribute, as well.</p> <p>In the current program requirements, a dehumidifier is not required to be included in a dwelling or dwelling unit and, in practice, dehumidifiers are only installed in a minority of units. To avoid increasing the program stringency for those who choose to install a dehumidifier, it is more appropriate to make available a credit for more efficient products, rather than a penalty for entry-level products. Therefore, the ENERGY STAR ERI Target Procedures will be updated to align with the configuration in ANSI / RESNET / ICC 301. In future versions of the program, EPA can consider whether to update the ENERGY STAR Reference Design with more efficient dehumidifiers.</p> <p>To reflect this change, a new row will be added to Exhibit 1: Expanded ENERGY STAR Reference Design Definition to address dehumidification systems. The new row will read as follows:</p> <p>“Type, capacity, efficacy, and dehumidistat setpoint same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC 301, when dehumidification system is present in Rated Unit; otherwise none.”</p>
00458	10/03/2022	ERI Target Procedure, Version 1.1 (Rev.02) 2014	Change	<p>Exhibit 1 - Dehumidification system inputs</p> <p>Issue: Currently, the ENERGY STAR Reference Design is configured with the same dehumidification system present in the Rated Home. This effectively means that dehumidifiers will neither help a dwelling unit to achieve nor hinder a dwelling unit from achieving the ENERGY STAR ERI Target.</p> <p>ANSI / RESNET / ICC 301-2019 Addendum B specifies for the first time how to configure dehumidification systems in the Energy Rating Reference Home. Partners have asked whether the ERI Target Procedure will be updated, such that dwelling units using dehumidifiers can receive credit towards meeting the ENERGY STAR ERI Target.</p> <p>Resolution: The ENERGY STAR ERI Target Procedures generally allow for Minimum Rated Features in ANSI / RESNET / ICC 301 to contribute towards the ENERGY STAR ERI Target. Now that dehumidifiers have been added as a Minimum Rated Feature, they will be allowed to contribute, as well.</p>

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				<p>In the current program requirements, a dehumidifier is not required to be included in a dwelling or dwelling unit and, in practice, dehumidifiers are only installed in a minority of units. To avoid increasing the program stringency for those who choose to install a dehumidifier, it is more appropriate to make available a credit for more efficient products, rather than a penalty for entry-level products. Therefore, the ENERGY STAR ERI Target Procedures will be updated to align with the configuration in ANSI / RESNET / ICC 301. In future versions of the program, EPA can consider whether to update the ENERGY STAR Reference Design with more efficient dehumidifiers.</p> <p>To reflect this change, a new row will be added to Exhibit 1: Expanded ENERGY STAR Reference Design Definition to address dehumidification systems. The new row will read as follows:</p> <p>“Type, capacity, efficacy, and dehumidistat setpoint same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC 301, when dehumidification system is present in Rated Unit; otherwise none.”</p>
00255	03/17/2022	<p>Oregon and Washington ERI Target Procedure, Version 1.2 (Rev.02) 2014</p> <p><i>Oregon and Washington ERI Target Procedure, Version 1.2 (Rev.02) 2019</i></p>	Refinement	<p>Townhouse eligibility requirements</p>
				<p>Issue: It is not clear if whether townhouses must use the National or Regional Single-Family New Homes Reference Design.</p>
				<p>Resolution: While townhouses are eligible for MFNC, the home must meet the ERI target from the relevant Single-Family New Homes Target Procedure. The townhouse ERI target would not change based on whether the townhouse is certified through SFNH or MFNC.</p> <p>The first paragraph will be revised as follows:</p> <p>“This document provides detailed instructions for determining the ENERGY STAR ERI Target, the highest ERI value that each rated multifamily unit, excluding townhouses, may achieve to earn the ENERGY STAR. Note that, in addition to meeting the ENERGY STAR ERI Target for each unit, units shall also meet all Mandatory Requirements for All Multifamily New Construction Projects in Exhibit 2 of the National Program Requirements for ENERGY STAR Multifamily New Construction, Version 1 / 1.1 / OR-WA 1.2. While Townhouses are eligible to earn ENERGY STAR Multifamily New Construction certification by meeting their ENERGY STAR ERI Target and also meeting all Mandatory Requirements for All Multifamily New Construction Projects in Exhibit 2 of the National Program Requirements, the instructions for determining their ENERGY STAR ERI Target is in the Oregon and Washington ERI Target Procedure for ENERGY STAR Single-Family New Homes.”</p>

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00516	11/10/2022	Oregon and Washington ERI Target Procedure, Version 1.2 (Rev. 03) 2019	Change	Exhibit 1 – ENERGY STAR Reference Design configured without on-site power
				<p>Issue: Partners have asked whether the ENERGY STAR Reference Design (ESRD) should be configured with On-Site Power Production (OPP) if such a system is present in the Rated Unit. Because OPP is not one of the building components listed in the Expanded ENERGY STAR Multifamily Reference Design Definition Exhibit and the document contains a footnote stating that “Any parameter not specified in this exhibit shall be identical to the value entered for the Rated Unit”, one might infer that it is EPA’s intent for the ESRD to be configured with OPP.</p> <p>Such a configuration would create unintended challenges because the related Program Requirements specify that “on-site power generation may not be used to meet the ENERGY STAR ERI Target”.</p>
				<p>Resolution: It is not EPA’s intent to make the ENERGY STAR ERI Target more stringent in cases where the Rated Unit has OPP. To align the ENERGY STAR ERI Target Procedure with EPA’s intent, a new row will be added to the end of the ENERGY STAR Multifamily Reference Design Definition Exhibit with the Building Component listed as “On-Site Power Production” and the Definition listed as “None”.</p>
00270	03/17/2022	Oregon and Washington ERI Target Procedure, Version 1.2 (Rev.02) 2019	Clarification	Heating Systems Section: Remove reference to furnaces on EAE line
				<p>Issue: Currently, the Electric Auxiliary Energy (EAE) line of Exhibit 1: Heating Systems defines, in part, how to determine the Electric Auxiliary Energy (EAE) for non-electric warm furnaces.</p> <p>However, Addendum B of ANSI / RESNET / ICC 301-2019 reduced the system types that EAE applies to by removing non-electric furnaces. In lieu of such values, Addendum B configures this system type in accordance with ANSI / RESNET / ACCA 310.</p> <p>Therefore, the reference to non-electric warm furnaces in this line is no longer needed.</p>
				<p>Resolution: Due to the updates made in Addendum B of ANSI / RESNET / ICC 301-2019, the reference to non-electric warm furnaces in relation to EAE is no longer needed and will be removed. The EAE line of the Heating Systems section in Exhibit 1 will be updated as follows:</p>

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				“For non-electric boilers serving the Rated Unit and no other units, the Electric Auxiliary Energy shall be determined in accordance with the methodology for the Energy Rating Reference Home in ANSI / RESNET /ICC 301.”
00466	10/03/2022	Oregon and Washington ERI Target Procedure, Version 1.2 (Rev.02) 2019	Refinement	Heating Systems – Warm-air furnace
				Issue: The Electric Auxiliary Energy details reference non-electric warm furnaces and this is supposed to be non-electric warm-air furnaces.
				Resolution: The Electric Auxiliary Energy requirements under the Heating Systems section will be updated as follows: “For non-electric warm-air furnaces and non-electric boilers, the Electric Auxiliary Energy shall be determined in accordance with the methodology for the Energy Rating Reference Home in ANSI / RESNET / ICC Std. 301”
00251	03/17/2022	Oregon and Washington ERI Target Procedure, Version 1.2 (Rev.02) 2019	Clarification	Service Water Heating Systems: No solar water heating included
				Issue: The “Service Water Heating Systems” section of the ERI Target Procedures specifies the required system type for the ENERGY STAR Multifamily Reference Design as either an “instantaneous gas water heater” or “heat pump water heater” when residential systems are used in the Rated Unit and specifies “Same as the Rated Unit” if it is a commercial system. The procedures do not explicitly state that the Reference Design water heater should not be configured with a solar component, even if one is present in the Rated unit. Because of this ambiguity, developers of approved software rating tools may not configure this parameter consistently.
				Resolution: To avoid confusion and prevent potential inconsistencies in how the Reference Design is configured, the row for Fuel Type & System Type in the “Service Water Heating Systems” section will be revised as follows: “Fuel Type & System Type (when Rated Unit is served by a commercial system): Same as system serving the Rated Unit, with no solar heating. For boilers or water heaters, use 85% Et. For electric water heaters, use 0.95 EF Fuel Type & System Type (when Rated Unit is served by a residential systems): If Rated Unit uses a system with a gas or propane fuel type, model as instantaneous gas water heater with no solar heating. If Rated Unit uses a system with an oil, electric, or other fuel type, model as 60 gallon electric heat pump water heater with no solar heating. Select applicable efficiency from below.”

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00463	10/03/2022	Oregon and Washington ERI Target Procedure, Version 1.2 (Rev.02) 2019	Change	Exhibit 1 – Dehumidification system inputs
				<p>Issue: Currently, the ENERGY STAR Reference Design is configured with the same dehumidification system present in the Rated Home. This effectively means that dehumidifiers will neither help a home to achieve nor hinder a home from achieving the ENERGY STAR ERI Target.</p> <p>ANSI / RESNET / ICC 301-2019 Addendum B specifies for the first time how to configure dehumidification systems in the Energy Rating Reference Home. Partners have asked whether the ERI Target Procedure will be updated, such that homes using dehumidifiers can receive credit towards meeting the ENERGY STAR ERI Target.</p>
				<p>Resolution: The ENERGY STAR ERI Target Procedures generally allow for Minimum Rated Features in ANSI / RESNET / ICC 301 to contribute towards the ENERGY STAR ERI Target. Now that dehumidifiers have been added as a Minimum Rated Feature, they will be allowed to contribute, as well.</p> <p>In the current program requirements, a dehumidifier is not required to be included in a dwelling or dwelling unit and, in practice, dehumidifiers are only installed in a minority of units. To avoid increasing the program stringency for those who choose to install a dehumidifier, it is more appropriate to make available a credit for more efficient products, rather than a penalty for entry-level products. Therefore, the ENERGY STAR ERI Target Procedures will be updated to align with the configuration in ANSI / RESNET / ICC 301. In future versions of the program, EPA can consider whether to update the ENERGY STAR Reference Design with more efficient dehumidifiers.</p> <p>To reflect this change, a new row will be added to Exhibit 1: Expanded ENERGY STAR Reference Design Definition for the States of Oregon and Washington to address dehumidification systems. The new row will read as follows: “Type, capacity, efficacy, and dehumidistat setpoint same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC 301, when dehumidification system is present in Rated Unit; otherwise none.”</p>
00455	10/03/2022	Oregon and Washington ERI Target Procedure,	Clarification	Exhibit 1 – 2012 IECC Climate Zone designations to be used
				<p>Issue: For improved consistency and clarity, a new Footnote will be added to specify which IECC Climate Zone designations are to be used to configure the ENERGY STAR Reference Design for this version of the program requirements.</p>

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		Version 1.2 (Rev.02) 2019		<p>Resolution: A new Footnote will be added, referenced wherever there is a mention of “Climate Zone”, as follows: “2012 IECC Climate Zone designations, as defined and illustrated in Section R301 of the code, shall be used to configure the ENERGY STAR Reference Design in Oregon and Washington Version 1.2”.</p>
00088	11/01/2019	Simulation Guidelines, Version 1	Change	<p>Modeling of measured ventilation rates in the As-Built</p> <p>Issue: There is a disconnect between the Rater Field Checklist Item 7.2 and 7.3 and the Simulation Guidelines which allows the measured ventilation rates to be within ± 15 CFM or $\pm 15\%$ of common space design values, but there’s a penalty for over-ventilation in the Simulation Guidelines.</p> <p>Resolution: EPA recognizes that even the best system that is designed to meet the minimum rates, may exceed them slightly when measured. The intent was not for that small amount to incur the over-ventilation penalty. The Simulation Guidelines will be updated in Rev01 as follows to allow the Baseline rates to be exceeded by 15 CFM or 15% before there is an over-ventilation penalty modeled.</p> <p>3.12.2.2 Dwelling Unit Mechanical Ventilation. The <i>Baseline Building Design dwelling unit mechanical ventilation</i> rates in all <i>dwelling units</i> shall be modeled using the same rates as the <i>Proposed Design</i>, except where the rates in the <i>Proposed Design</i> exceed the amount required by the building code or ASHRAE 62.2-2016 ($0.03 \times \text{Area} + 7.5 \times (\#BR + 1)$) by more than 15 cfm or 15%. In that case, the <i>Baseline Building Design</i> shall be modeled to reflect the greater of that required by either ASHRAE 62.2-2016 or the building code, plus 15 cfm or 15%, and will be less than the <i>Proposed Design</i>. Where using rates from the building code in the <i>Baseline Building Design</i>, documentation supporting those rates shall be submitted to an EPA-recognized Multifamily Review Organization (MRO) for review and approval.</p> <p>3.12.2.4 Common Spaces. When local or national codes allow the use of natural ventilation to maintain acceptable indoor air quality in <i>common spaces</i>, the lesser of ventilation rates specified on drawings or mechanical ventilation recommended by ASHRAE 62.1-2010, Table 6-1, without reliance on natural ventilation, shall be modeled in the Baseline. For mechanically ventilated <i>common spaces</i>, the <i>Baseline Building Design</i> outdoor air rates shall be modeled using the same rates as the <i>Proposed Design</i>, except where the rates in the <i>Proposed Design</i> exceed the amount required by the building code or ASHRAE 62.1-2016, by more than 15 cfm or 15%. In that case, the <i>Baseline Building Design</i> shall be modeled to reflect the greater of that required by either ASHRAE 62.1-2016 or the building code, plus 15 cfm or 15%, and will be less than the <i>Proposed Design</i>. Where using rates from the building code in the <i>Baseline Building Design</i>,</p>

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				<p>documentation supporting those rates shall be submitted to an EPA-recognized Multifamily Review Organization (MRO) for review and approval.</p> <p>3.12.3.5 Mechanical Ventilation Rates. The mechanical ventilation rates may differ between <i>Baseline Building Design</i> and <i>Proposed Design</i> if the <i>Proposed Design</i> has specified rates that exceed either the building code or ASHRAE 62 recommendations, resulting in the energy penalty associated with over-ventilating. Where the measured ventilation rate exceeds the design values by 15 cfm or 15%, as allowed in the Rater Field Checklist, there is no penalty for that small amount of over-ventilating.</p>
00169	10/30/2020	Simulation Guidelines	Clarification	<p>References to ASHRAE 90.1-2007 when using ASHRAE 90.1-2010</p>
				<p>Issue: The Simulation Guidelines allows the use of ASHRAE 90.1-2007 or 2010 but the text throughout the document most often references ASHRAE 90.1-2007. It is not clear if those are explicitly intended to match 2007, unless stated “or 2010,” which is also noted throughout the document.</p>
				<p>Resolution: The Simulation Guidelines have been reviewed and where the intent was to follow the specific edition of ASHRAE 90.1 (2007 or 2010) that is applicable, “(or 2010)” was added to each reference to ASHRAE 90.1-2007. Where the reference to ASHRAE 90.1-2007 was not changed in the 2010 edition, the reference was not changed. Only in Section 3.4.2, was each instance not changed, due to the current text that states: “The properties of the Baseline surfaces shall be determined as follows (using the corresponding sections from ASHRAE 90.1-2010 as needed:”</p>
00170	10/30/2020	Simulation Guidelines	Clarification	<p>Receptacle lighting in spaces other than dwelling units</p>
				<p>Issue: Both set of the Simulation Guidelines explicitly describe an approach for dwelling units, such that an average lighting power density can still be calculated when hardwired lighting is not installed to fully illuminate the entire space. There is no similar example for other spaces in the building.</p>
				<p>Resolution: While this approach was not intended to be only limited to dwelling units, it is a common practice in apartments and therefore the Simulation Guideline offers explicit guidance on calculating the lighting power density when plug-in or receptacle lighting is intended. This approach may be applied to other common spaces in the building and where receptacle lighting</p>

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				is intended in the Proposed Design, those areas shall use the same LPD as used in the Baseline or the reference edition of 90.1, as applicable.
00089	11/01/2019	Simulation Guidelines AppG 2016, Version 1	Change	Modeling of measured ventilation rates in the As-Built using 90.1-2016 Appendix G
				Issue: There is a disconnect between the Rater Field Checklist Item 7.2 and 7.3 and the Simulation Guidelines which allows the measured ventilation rates to be within ± 15 CFM or $\pm 15\%$ of common space design values, but there's a penalty for over-ventilation in the Simulation Guidelines.
				<p>Resolution: EPA recognizes that even the best system that is designed to meet the minimum rates, may exceed them slightly when measured. The intent was not for that small amount to incur the over-ventilation penalty. The Simulation Guidelines for use with ASHRAE 90.1-2016 Appendix G will be updated to allow the Baseline rates to be exceeded by 15 CFM or 15% before there is an over-ventilation penalty modeled.</p> <p><i>6.5.12.1 Baseline Building Design</i></p> <p>a. Ventilation in Dwelling Units</p> <p>Minimum <i>ventilation</i> outdoor air intake flow shall be the same as in the <i>proposed design</i> (<i>Appendix G</i>, Section G3.1.2.5), except where indicated otherwise in the following provisions. The baseline ventilation method (mechanical versus natural) and controls (continuous versus intermittent) must be modeled as specified for each application. The baseline local mechanical exhaust from bathrooms and kitchens, and the baseline dwelling-unit ventilation rate shall be modeled using the same rates as in the <i>Proposed Design</i>, without exceeding the minimum required by ASHRAE 62.2-2016 or the building code, whichever is greater, by more than 15 cfm or 15%.</p> <p>b. Ventilation in spaces other than dwelling units</p> <p>The <i>baseline</i> ventilation rate in common spaces shall be modeled using the same rates as in the <i>Proposed Design</i>, without exceeding the minimum required by ASHRAE 62.1-2016 or the building code, whichever is greater, by more than 15 cfm or 15%.</p>
Modeling energy savings for occupancy sensors				
00099	05/13/2020	Simulation Guidelines	Clarification	Issue: Due to a change in language in ASHRAE 90.1-2016 Appendix G compared to previous years, some Partners have questioned how to apply the occupancy sensor reduction percentage shown in Table G3.7 of Appendix G and whether it's applicable to all the lighting in

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	Updated 10/30/2020	Simulation Guidelines AppG 2016, Version 1		<p>the <u>space</u> or just applicable to the light <u>fixtures</u> directly controlled by the occupancy sensors. Additionally, Partners have asked if the lighting reduction can be modeled by reducing the lighting power or adjusting the lighting schedule.</p> <p>Resolution: EPA has determined that the reduction should be applied consistent with the approach in the Simulation Guidelines for prior years of Appendix G, which is to allow the reduction to be applied to all lighting in the <u>space</u>, and not just the fixtures directly controlled by the sensors. Reduced lighting power during unoccupied hours can be achieved with bilevel or multilevel light <u>fixtures</u> OR with occupancy sensors that activate select fixtures ON/OFF. Therefore, the occupancy sensor reduction should be fully available to both designs. When unoccupied and full OFF is not practical, the reduction is applicable to lighting in the entire space if the selected design strategy achieves at least one intermediate step between full ON and full OFF that provides 30-70% of full lighting power to that space.</p> <p>Further, both approaches to modeling the reduction are acceptable and Section 6.3.3.2 of the Simulation Guidelines for Appendix G 90.1-2016 will be revised as follows:</p> <p style="padding-left: 40px;">Other automatic lighting controls shall be modeled by adjusting lighting power or lighting schedule each hour by the occupancy sensor reduction factors in Appendix G Table G3.7, including the footnotes, and as described in Appendix G Table G3.1 No. 6 (h). Performance credit can be taken with bilevel or multilevel light fixtures or with occupancy sensors that activate select fixtures ON/OFF, as long as the selected design strategy achieves at least one intermediate step between full ON and full OFF that provides 30-70% of full lighting power to that space.</p> <p>Similarly, Section 3.6.3.6 of the Simulation Guidelines will be revised as follows:</p> <p style="padding-left: 40px;">3.6.3.6 The lighting power or schedule for the Proposed Design may be adjusted to account for non-mandatory lighting controls in common spaces or parking garages as described above. Performance credit can be taken either by reducing modeled Lighting Power Density (LPD) or by reducing lighting hours of operation, as described in Appendix G Table G3.1 Section 6g. Performance credit can be taken with bilevel or multilevel light fixtures or with occupancy sensors that activate select fixtures ON/OFF, as long as the selected design strategy achieves at least one intermediate step between full ON and full OFF that provides 30-70% of full lighting power to that space.</p>
00171	10/30/2020			Updating the BPF for use with ASHRAE 90.1-2019 projects

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		Simulation Guidelines AppG 2016, Version 1	Issue Under Review	<p>Issue: A Partner noted that the Simulation Guidelines had not yet been updated to recognize the use of ASHRAE 90.1-2019 and the associated Building Performance Factors are not yet listed.</p> <p>Resolution: The program intends to allow the use of the Simulation Guidelines for projects needing to use ASHRAE 90.1-2019 as their Baseline. As an interim step, the BPFs have been added, and the rest of the Simulation Guidelines will be revised more comprehensively at a later date.</p>
00172	10/30/2020	Simulation Guidelines AppG 2016, Version 1	Change	<p>Referencing ASHRAE 90.1-2016 rather than the PNNL report</p> <p>Issue: A Partner noted that a reference is being used to a PNNL report for an approach for calculating area-weighted BPFs in mixed use buildings and that the reference should be replaced with Section 4 of ASHRAE 90.1-2016.</p> <p>Resolution: The Simulation Guidelines will be revised as follows: <p style="text-align: center;">For mixed use buildings, the BPF shall be calculated as the area-weighted average of the building area types, as described in <u>Section 4</u> of ASHRAE Standard 90.1-2016.</p> </p>
00090	11/01/2019	Simulation Guidelines, Version 1 Simulation Guidelines AppG 2016, Version 1	Clarification	<p>Light power density allowance for seniors and/or visually impaired</p> <p>Issue: A Partner asked what documentation is needed to demonstrate eligibility to use the higher lighting power allowance for senior housing projects.</p> <p>Resolution: Both the current Simulation Guidelines explicitly allow senior housing and housing for the visually impaired to use higher lighting power allowances in the Baseline if designed to comply with the light levels in ANSI/IES RP-28, but do not describe how to demonstrate eligibility. Documentation shall be submitted to the Multifamily Review Organization such that they can confirm the type of building residents and that the lighting design is compliant with ANSI/IES RP-28. The following sentence will be added to both the Simulation Guidelines in Rev01: <p>“Documentation shall be provided to the MRO that demonstrates eligibility to use this allowance.”</p> </p>
00100	07/10/2020		Clarification	Townhouses using ASHRAE Path

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		<p>Simulation Guidelines, Version 1</p> <p>Simulation Guidelines AppG 2016, Version 1</p>		<p>Issue: A partner asked if they can certify a project exclusively comprised of townhomes using the ASHRAE path.</p> <p>Resolution: The ENERGY STAR MFNC Simulation Guidelines do not mention any restrictions on which low-rise building types may use the ASHRAE path. In addition, the eligibility section on the webpage describing the ASHRAE path states that the program is available for all attached residential new construction, except two-family dwellings without reference to any additional restrictions on the ASHRAE path. This may suggest to some partners that this path is available to all building types that are eligible for the MFNC program.</p> <p>It is not EPA's intent for such projects to be certified using the ASHRAE path. The Simulation Guidelines and ASHRAE path webpage will be clarified to add notes that Townhomes must use the ERI Path. Townhouse projects permitted after 7/10/20 must use the ERI path.</p> <p>Specifically, the Simulation Guidelines and Simulation Guidelines-Appendix G 90.1-2016 will state:</p> <p>While the scope of the ASHRAE 90.1 standard does not include low-rise multifamily buildings, low-rise residential buildings following the ASHRAE Path of the ENERGY STAR Multifamily New Construction program are permitted to follow the modeling protocols within Appendix G for purposes of demonstrating compliance with their Performance Target for ENERGY STAR certification. These projects must follow these Simulation Guidelines, including the noted modifications of the Appendix G protocols for low-rise buildings. Exception: Townhouses are not permitted to use the ASHRAE Path.</p> <p>The ENERGY STAR Multifamily New Construction ASHRAE Path Program Requirements webpage will add the following to the Eligibility box:</p> <p>"Townhouses must use the ERI path."</p>
00173	10/30/2020	Simulation Guidelines, Version 1	Clarification	<p>Modeling sleeping units as dwelling units</p> <p>Issue: While the program allows sleeping unit and dwelling units to earn ENERGY STAR Certification, where the building type meets the eligibility criteria, it is not clear in the Simulation Guidelines how these sleeping units should be modeled in the ASHRAE path. It was also noted that there isn't a definition in the Simulation Guidelines for sleeping units, if using the version</p>

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		Simulation Guidelines AppG 2016, Version 1		<p>for ASHRAE 90.1-2007 and 2010, and this definition was recently modified in Policy Record ID 00093.</p> <p>Resolution: In both Simulation Guidelines, the definition for sleeping unit will be revised to state:</p> <p><i>sleeping units:</i> A room or space in which people sleep, which does not meet the definition of <i>dwelling unit</i>. Such rooms and spaces that are also part of a <i>dwelling unit</i> are not <i>sleeping units</i>. <u>For the purpose of these Simulation Guidelines, model <i>sleeping units</i> in the same manner as <i>dwelling units</i>, unless otherwise specified, such as <i>local mechanical exhaust</i> requirements, which may not be applicable.</u></p> <p>In addition, the first sentence of the “common space” definition will be revised:</p> <p><i>Common Space:</i> any spaces within a building that serve a function in support of the residential part of the building that is not part of a <i>dwelling or sleeping unit</i>.</p>
00174	10/30/2020	Simulation Guidelines, Version 1 Simulation Guidelines AppG 2016, Version 1	Clarification	<p>Modeling assisted living units as residential space</p> <p>Issue: <u>Senior Care Facilities</u> often offer a mix of residential options including independent living along with some form of assisted living. When less than 50% of the units in a senior care facility are considered “skilled nursing” or “assisted living”, they are eligible to pursue ENERGY STAR MFNC Certification, if at least 50% of the building square footage is otherwise residential in nature (i.e., independent living units and other common space). For this mixed senior living community, it is not clear whether the skilled nursing and assisted living units are then modeled as “residential” or “nonresidential”.</p> <p>Resolution: While project teams are given the choice to include or exclude nonresidential spaces from the energy model, these skilled nursing and assisted living units should be modeled as part of the residential part of the building, when the building is eligible for certification. The definition of “residential” will be revised as follows:</p> <p><i>residential:</i> spaces in buildings used primarily for living and sleeping. Residential spaces include, but are not limited to, <i>dwelling units</i> or <i>sleeping units</i>. <u>This may include skilled nursing or assisted living units, when present in a building eligible for certification.</u></p>
00175	10/30/2020		Clarification	<p>Consistent use of “common spaces” and “garages”</p>

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		<p>Simulation Guidelines, Version 1</p> <p>Simulation Guidelines AppG 2016, Version 1</p>		<p>Issue: It was observed that the definition of “common spaces” was modified in the program checklists, such that “garages” were no longer included. This definition should be updated in the Simulation Guidelines for consistency.</p> <p>Resolution: This definition was updated such that the checklist requirements applicable to garages could be more easily distinguished from those required of common spaces. This definition will be revised in both of the Simulation Guidelines as follows and where modeling rules for “common spaces” are currently used in the document and should still apply to “garages”, that will be noted:</p> <p>common space: any spaces within a building that serves a function in support of the residential part of the building that is not part of a <i>dwelling or sleeping unit</i>. This includes spaces used by residents, such as corridors, stairs, lobbies, laundry rooms, exercise rooms, residential recreation rooms, and dining halls, as well as offices and other spaces used by building management, administration or maintenance in support of the residents.</p> <p>Nonresidential: spaces in mixed-use buildings other than <i>residential, common space, or residential parking garages</i>, such as commercial retail or office spaces that do not serve and support the residents. <u>Parking garages or lots where the cost of the energy use of the parking garage or lot is not the responsibility of the Builder/Developer, Building Owner or Property Manager, are considered nonresidential.</u></p> <p>In Section 3.5, Project Boundary, of the Simulation Guidelines for Appendix G 90.1-2016, the following sentence will be revised as follows:</p> <p style="padding-left: 40px;">The models shall include all <i>dwelling units, common spaces, and residential parking garages</i> in the building.</p>
00176	10/30/2020	<p>Simulation Guidelines, Version 1</p> <p>Simulation Guidelines AppG 2016, Version 1</p>	Change	<p>Recommended light levels differ from IESNA 10th Edition Handbook</p> <p>Issue: Table 1 of the Simulation Guidelines and Table 3 of the Simulation Guidelines Appendix G 90.1-2016 list recommended light levels which appear to be values that were calculated from data in the 10th edition. It appears that the corridor may be calculated incorrectly, as it differs from other spaces.</p> <p>Resolution: The 10th edition IESNA Handbook was reviewed and the footcandles for typical multifamily spaces were re-calculated. Table 1 and 3 of the Simulation Guidelines will be revised to add Laundry as a space type, with 20 as the recommended light level, and the recommended light level in corridors will be reduced from 10 footcandles to 5.</p>

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00198	04/30/2021	<p>Simulation Guidelines AppG 2016, Version 1 (Rev.02)</p>	Change	<p>Modeling low-rise multifamily buildings in the ASHRAE Path</p> <p>Issue: When following the ASHRAE Path, to model a low-rise multifamily building that is not currently within the scope of ASHRAE 90.1-2016 Appendix G, the Simulation Guidelines, AppG 2016, require that the Baseline instead be modeled with a wood-framed envelope rather than a steel-framed envelope. Models that deviate from the baseline of ASHRAE 90.1-2016 Appendix G are not able to take advantage of the standardized tools available for this version of the standard. Instead of changing the baseline, Partners have requested that the BPFs be changed so that the baseline model still complies with the standard.</p> <p>Resolution: EPA agrees that deviations from ASHRAE 90.1-2016 Appendix G should be limited and where possible adjustments to the BPFs should be made instead. The Baseline U-factors for wood-framing end up being more stringent for some locations and building types and less stringent for others and may not result in significant change to the overall BPFs. Therefore, custom BPFs will not be developed for wood-framed buildings. To streamline the program and reduce confusion, in Rev.03, EPA will remove the Exception in Section 6.1.1 and make the following changes in Section 2 (Purpose and Scope).</p> <p>“The ASHRAE 90.1 standard applies to a wide range of building types, and thus does not address certain characteristics commonly found in multifamily buildings with sufficient specificity to ensure that energy modeling results are consistent from one energy modeler to the next. While the scope of the ASHRAE 90.1 standard does not include low-rise multifamily buildings, low-rise residential buildings following the ASHRAE Path of the ENERGY STAR Multifamily New Construction program are permitted to follow the modeling protocols within Appendix G for purposes of demonstrating compliance with their Performance Target for ENERGY STAR certification. These projects must follow these Simulation Guidelines, including the noted modifications of the Appendix G protocols for low-rise buildings. Exception: Townhouses are not permitted to use the ASHRAE Path.”</p>
00287	05/12/2022	<p>Simulation Guidelines, Version 1 (Rev.02)</p> <p>Simulation Guidelines</p>	Change	<p>Section 3.6.1 and 6.3.3.1 – Establishing default LPD for spaces with LED lighting</p> <p>Issue: Partners have noted that the documentation and in-field verification needed to support lighting power density calculations takes more time than verifying the efficiency of the fixtures as LED. Given the efficiency of LED fixtures, Partners have asked whether a percentage of LED fixtures can be installed in lieu of needing to demonstrate compliance with the lighting power densities. In response to this, Policy Record 00274 and Policy Record 00282 were published, but for ASHRAE Path projects, these lighting power density</p>

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		AppG 2016, Version 1 (Rev.02)		<p>calculations are still needed, unless default LPDs are allowed that reflect typical values for LED lighting.</p> <p>Resolution: EPA agrees that corresponding default lighting power densities for these spaces that reflect installation of LED lighting are needed in order for Policy Record 00274 and Policy Record 00282 to provide the intended benefit for all Paths. Given that the lighting power densities in Section 9 of ASHRAE 90.1-2019 reflect 100% LED lighting, those values would be reasonable defaults.</p> <p>In the next Revision, both Simulation Guidelines will be revised to include the new sections as follows:</p> <p>Where 100% of lighting fixtures installed in a dwelling unit or common space are integrated LED fixtures or contain LED lamps, the lighting power density in the Proposed Design may be modeled using the lighting power densities specified for the applicable space in ASHRAE 90.1-2019, Section 9.6. For dwelling units, they may be modeled as 0.6 W/ft².</p> <p>This will be in 3.6.1.8 in the Simulation Guidelines and 6.3.3.1 f in the Simulation Guidelines for use with ASHRAE 90.1-2016 Appendix G.</p>
00299	07/06/2022	Simulation Guidelines, Version 1, Rev.02)	Change	<p>Conversions from AFUE and Ec to Et</p> <p>Issue: Unlike the MFNC Simulation Guidelines for use with ASHRAE 90.1-2016 Appendix G, the MFNC Simulation Guidelines used with ASHRAE 90.1-2007 and 2010 do not provide guidance on converting AFUE and combustion efficiencies for furnaces and boilers to thermal efficiency (Et).</p> <p>Resolution: Both Simulation Guidelines should contain the same guidance for converting to thermal efficiency.</p> <p>Section 3.8.4 will be revised to include the following:</p> <p><u>If the HVAC system efficiency for the <i>Baseline Building Design</i> or <i>Proposed Design</i> is given as AFUE or Ec and the Et rating is not available from manufacturer's data and the approved simulation tool does not automatically perform conversions to Et, the equivalent Et for the model must be calculated as follows:</u></p> <p style="text-align: center;">All Equipment: $Et = Ec - 2\%$</p> <p style="text-align: center;">For Furnaces: $Et = 0.0051427 * AFUE + 0.3989$</p>

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				<p>For Boilers (AFUE < 80%): $E_t = 0.100 \cdot AFUE + 72.5\%$</p> <p>For Boilers (AFUE ≥ 80%): $E_t = 0.875 \cdot AFUE + 10.5\%$</p>		
00288	05/12/2022	Simulation Guidelines, Version 1 (Rev.02)	Change	Credit for induction cooktops		
				<p>Issue: Partners have asked whether they can take credit for induction cooktops within the ASHRAE model.</p>		
				<p>Resolution: EPA agrees that induction cooktops should get credit in the ASHRAE model. In alignment with the ERI Path calculations under ANSI 301, induction cooktops will get 9% savings over standard electric cooking.</p> <p>The Load Source table will be updated as follows:</p> <table border="1"> <thead> <tr> <th>Load Source</th> <th>Energy Consumption</th> <th>Sensible/ Latent Load Fraction (4)</th> </tr> </thead> <tbody> <tr> <td>Cooking (2) (electric stove/range)</td> <td> <p>604 kWh/year <u>Baseline Building electricity usage</u></p> <p>604 kWh/year <u>Proposed Design electricity usage (resistance)</u></p> <p>550 kWh/year <u>Proposed Design electricity usage (induction)</u></p> </td> <td>0.40/0.30</td> </tr> </tbody> </table>	Load Source	Energy Consumption
Load Source	Energy Consumption	Sensible/ Latent Load Fraction (4)				
Cooking (2) (electric stove/range)	<p>604 kWh/year <u>Baseline Building electricity usage</u></p> <p>604 kWh/year <u>Proposed Design electricity usage (resistance)</u></p> <p>550 kWh/year <u>Proposed Design electricity usage (induction)</u></p>	0.40/0.30				
00201	06/24/2021	Simulation Guidelines, Version 1 (Rev.02)	Change	<p>Baseline SHW EF when in-unit tankless water heaters are specified</p> <p>Issue: For ASHRAE Path projects using ASHRAE 90.1-2007 or 2010 as the Baseline, it is not clear in the respective Appendix G's or in the Simulation Guidelines, what the Baseline SHW EF should be when the Proposed Design is a tankless system. Should the EF be determined based on the equations for storage systems or tankless systems in Table 7.8 of ASHRAE 90.1?</p> <p>Resolution: The intent of the ENERGY STAR program would be to allow energy savings for SHW systems that are inherently more efficient than storage SHW systems, rather than</p>		

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				<p>increasing the performance of the Baseline to reflect tankless systems, which would diminish the modeled savings from this design choice. This is more clear in ASHRAE 90.1-2013, where it states that ‘gas storage water heater’ shall be modeled in the Baseline.</p> <p>Therefore, for in-unit electric resistance <u>tankless</u> systems, ENERGY STAR will allow the Baseline to be modeled using the EF equation for electric storage water heaters, with V=40. For ASHRAE 90.1-2007, this results in a Baseline EF of 0.88. For ASHRAE 90.1-2010, this results in a Baseline EF of 0.92.</p> <p>For in-unit gas <u>tankless</u> systems, ENERGY STAR will allow the Baseline to be modeled using the EF equation for gas storage water heaters, with V=40, rather than the EF associated with the equation for instantaneous SHW systems in Table 7.8. For ASHRAE 90.1-2007, this results in a Baseline EF of 0.54. For ASHRAE 90.1-2010, this results in a Baseline EF of 0.59.</p> <p>In Revision 03, Section 3.9.1.2 of the Simulation Guidelines will be revised as follows to reflect this change:</p> <p>3.9.1.2 Baseline system efficiency shall meet the requirements in Section 7.4.2 of ASHRAE 90.1-2007 (or 2010). <u>Where tankless systems are specified in the Proposed Design, the Baseline EF shall be determined using equations for EF for storage water heaters, with a volume of 40 gallons.</u></p>
00272	03/17/2022	Simulation Guidelines, Version 1 (Rev.02)	Change	Section 3.12.2.1 – Aligning modeling guidance for baseline local exhaust rates
				<p>Issue: A Partner recognized an unintentional deviation in the MFNC Simulation Guidelines that allows higher Baseline dwelling unit local exhaust rates if using ASHRAE 90.1-2016 Appendix G compared to when using the Simulation Guidelines for older versions of Appendix G.</p>
				<p>Resolution: Given that the approach is consistent across the two Simulation Guidelines with other ventilation rates, EPA agrees that the approach for local exhaust rates should not be different based on which Appendix G is being used.</p> <p>The Simulation Guidelines, Section 3.12.2.1 will be revised as follows:</p> <p>3.12.2.1 Local Mechanical Exhaust. The Baseline Building Design local mechanical exhaust in all dwelling unit bathrooms and kitchens shall be modeled using the same rates as the Proposed Design, except where the rates in the Proposed Design are provided in excess of the amount required by the building code or ASHRAE 62.2-2013 (5ACH/100 CFM</p>

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				in kitchens and 20 CFM/50 CFM in bathrooms, where the continuous and intermittent rates are shown in that order). In that case, the Baseline Building Design shall be modeled to reflect the greater of that required by either ASHRAE 62.2-2013 or the building code, plus 15 cfm or 15%, without exceeding the Proposed Design.
00387	10/03/2022	Simulation Guidelines, Version 1 (Rev.02)	Clarification	Clarifying the source of make-up air for dwelling unit exhaust systems
				Issue: Modelers have noted that the Simulation Guidelines have clear guidance on the corridor ventilation rates that should be modeled in the Baseline when the Proposed Design has higher ventilation rates than are required by building code or ASHRAE 62.1. Higher ventilation rates are often used to provide ‘pressurization’ and to serve as an indirect source of make-up air to the dwelling unit exhaust systems. Modelers have noted that guidance is missing on how to model the make-up air <u>source</u> in the Proposed Design energy model.
				Resolution: The <u>source</u> of make-up air for a dwelling unit exhaust system should be modeled as coming from the exterior, unless the make-up air is mechanically supplied from an HVAC system, such as a MAU, ERV, HRV or DOAS, <u>directly</u> into the dwelling unit. A pressurized corridor that provides <u>indirect</u> make-up air to the dwelling units is not permitted to be considered the <u>source</u> of make-up air to the dwelling unit in the energy model.
				<p>The following sentence will be added to the end of Section 6.5.12.1b in the Simulation Guidelines for use with ASHRAE 90.1-2016 Appendix G:</p> <p>“In addition, where a source of make-up air is required to be entered in the software, the dwelling units in the <i>Baseline Building Design</i> shall be modeled with outdoor air from the exterior.”</p> <p>To provide similar guidance for the Proposed Design, the following sentence will be added as item “d” in Section 6.5.12.3 in the Simulation Guidelines for use with ASHRAE 90.1-2016 Appendix G:</p> <p>“Where a source of make-up air is required to be entered in the software, the source for dwelling units shall be the exterior, unless mechanically supplied and directly ducted to the dwelling unit from a specific source.”</p> <p>In the Simulation Guidelines for use with older ASHRAE 90.1 Standards, the following sentence will be added to the end of Section 3.12.2.4:</p> <p>“In addition, where a source of make-up air is required to be entered in the software, the dwelling units in the <i>Baseline Building Design</i> shall be modeled with outdoor air from the exterior”.</p>

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				<p>To provide similar guidance for the Proposed Design, the following sentence will be added to the end of Section 3.12.3.3 in the Simulation Guidelines for use with older ASHRAE 90.1 Standards:</p> <p>“Where a source of make-up air is required to be entered in the software, the source shall be the exterior, unless mechanically supplied and directly ducted to the dwelling unit from a specific source.”</p>
00300	07/06/2022	<p>Simulation Guidelines, Version 1 (Rev.02)</p> <p>Simulation Guidelines AppG 2016, Version 1 (Rev.02)</p>	Clarification	<p>Selecting energy rates in buildings with both residential and commercial rates</p>
				<p>Issue: The current Simulation Guidelines and ASHRAE 90.1 Appendix G do not provide guidance on which energy rates to use (residential or commercial) when both rates are applicable to the building.</p>
				<p>Resolution: EPA agrees that using the energy rates that apply to each space in the building will improve the accuracy of the energy cost savings that are calculated. However, this should be guidance to the modeler rather than a requirement.</p> <p>In the Simulation Guidelines, Section 3.16.1 Energy Rates will be revised as follows:</p> <p>Unless provided otherwise by EPA, per Appendix G, Section G2.4, use ‘either actual rates for purchased energy or state average energy prices published by DOE’s Energy Information Administration’ in energy simulations of <i>Baseline Building Design</i>, <i>Proposed Design</i>, and <i>As-Built</i> (www.eia.doe.gov). The same rate schedule must be used in all simulations. <u>While not required, where state average energy prices are offered for both residential and commercial, it is recommended that the price associated with the rate structure that is applicable to a space is modeled. Where only one energy price is modeled for the whole building, the rate structure associated with the highest consumption of that energy should be selected.</u></p> <p>In the Simulation Guidelines for use with ASHRAE 90.1-2016 Appendix G, Section 4 Energy Rates will be revised as follows:</p> <p>Unless provided otherwise by EPA, per <i>Appendix G</i>, Section G2.4.2, use either actual rates for purchased energy or state average energy prices published by DOE’s Energy Information Administration in energy simulations of <i>Baseline Building Design</i>, <i>Proposed Design</i>, and <i>As-Built</i> (www.eia.doe.gov). The selected source must be used for all fuels in the project. The rate schedule used in the <i>Baseline Building Design</i> must be the same as in simulations of the <i>Proposed Design</i> and <i>As-Built</i>. <u>While not required, where state average energy prices are offered for both residential and commercial, it is recommended that the price associated with the rate structure that is applicable to a space is modeled. Where only one energy price</u></p>

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				is modeled for the whole building, the rate structure associated with the highest consumption of that energy should be selected.
00177	10/30/2020	Simulation Guidelines, Version 1	Change	Unspecified in-unit lighting power density in ASHRAE 90.1-2016 Appendix G models
				Issue: An inconsistency was noted in the Simulation Guidelines used with ASHRAE 90.1-2016 Appendix G models, related to regulated and unregulated loads. Due to a change that results in dwelling unit lighting being treated as regulated, rather than unregulated, it was noted that unspecified dwelling unit lighting in the Proposed Design needed to be revised in order to reflect more currently available lighting technology and therefore a lower lighting power density of 0.6 W/ft ² .
				Resolution: Based on recent changes to Appendix G, which require modeling LPD of 0.6 W/ft ² in dwelling units where lighting is not specified, the last sentence of Section 6.3.3.1 a of the MFNC Simulation Guidelines for use with ASHRAE 90.1-2016 Appendix G will be updated as follows: “For rooms or portions of rooms with no specified hardwired lighting, in-unit lighting power density of 1.07 W/ft ² shall be modeled, except where the <i>reference edition of 90.1</i> is 2016, in which case 0.6 W/ft ² shall be modeled.” The Baseline LPD remains at 1.07 W/ft ² .
00108	09/14/2020 Updated 10/28/2021	ASHRAE Path Calculator AppG 2016, Version 1	Clarification	Use of ASHRAE 90.1 Standard 90.1 Performance Based Compliance Form
				Issue: DOE recently released a spreadsheet-based compliance form that meets the documentation requirements for ASHRAE 90.1-2016 and ASHRAE 90.1-2019 Appendix G. This tool helps the modeler establish simulation inputs for the baseline and proposed design models and includes a submittal checklist to ensure that all necessary supporting documentation is included in the submittal. It standardizes compliance documentation and simplifies submittal reviews. Can projects use this tool to report modeling results instead of the ASHRAE Path Calculator AppG 2016?
				Resolution: EPA worked with DOE to develop a customized version of this <u>Compliance Form</u> . Projects modeling to ASHRAE 90.1-2016 may now use Version 2.40 of the

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				<p>Compliance Form or later. EPA recommends project teams that are modeling to ASHRAE 90.1-2016 attend training on use of the Compliance Form.</p> <p>EPA anticipates that there will be a transition for project teams to switch to the Compliance Form and that the ASHRAE Path Calculator AppG 2016 will be retired. The timeline is under consideration.</p> <p>All projects that are modeling to ASHRAE 90.1-2019 will need to use the Compliance Form.</p>
00199	06/24/2021	ASHRAE Path Calculator, Version 1 (Rev.02.02)	Change	<p>Incorrect Baseline EF calculation for in-unit SHW for ASHRAE 90.1-2010 projects</p>
				<p>Issue: A mistake in the optional DHW Demand tab of the ENERGY STAR MFNC APC was identified. Partners using ASHRAE 90.1-2010 as their Baseline that use this optional tab for calculating Baseline EF for in-unit SHW systems, may be modeling lower EF's associated with ASHRAE 90.1-2007, rather than those required for ASHRAE 90.1-2010. For example, where a gas storage water heater would require a Baseline EF of 0.59, the MFNC APC DHW Demand tab calculates a Baseline EF of 0.54.</p>
				<p>Resolution: Given that MFNC project teams using the ASHRAE Path may have already begun the design process using the current Edition of the APC (V1, Rev.02, Edition 02), or prior editions which also contain this mistake, a grace period will be allowed prior to requiring that they update the EF to properly match ASHRAE 90.1-2010.</p> <p>For MFNC ASHRAE Path projects using ASHRAE 90.1-2010 as their Baseline for their Performance Target, the correct Baseline SHW EF values will be required to be modeled for projects with permit applications on or after August 31, 2021. In addition to updating the energy model, Revision 02 project teams can choose to switch to Edition 03 of the APC, OR keep the current APC file where there will be a discrepancy between what is modeled and what is in the optional table, OR send the APC file to EPA for it to be corrected. Alternatively, the current or prior APC files may be used and the EF can remain, but the ASHRAE 90.1-2007 Baseline will need to be fully modeled, not just SHW EF, and the corresponding higher Performance Target selected.</p>
00194	12/14/2020	Website	Change	<p>Functional Testing Agent credentials</p>
				<p>Issue: Partners have noted that often building commissioning and functional testing is completed by a Professional Engineer (PE) and not someone with commissioning-specific credentials. Many Authorities Having Jurisdiction allow PE's to perform the code required</p>

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				<p>commissioning. Can PE's be added to the list of credentials approved for completing the MFNC HVAC Functional Testing Checklist?</p> <p>Resolution: EPA will allow a Licensed Professional Mechanical Engineer that is a Mechanical Engineer to be a Functional Testing Agent and this credential has been added to the list of approved credentials. PE's that are mechanical engineers may complete the Functional Testing Checklist upon completion of the online orientation and notification to EPA. Partners may submit other equivalent commissioning credentials for EPA to consider. If approved, they will be listed online.</p>
00397	10/03/2022	All Program Documents	Refinement	<p>Using 'building' instead of 'project'</p> <p>Issue: Often 'project' has been used in the program requirements. However, the requirements are based on the building.</p> <p>Resolution: The term 'project' or 'building / project' will be updated to 'building' except where needed to describe situations with multiple buildings. The term 'project team' will be updated to "Rater" except where it refers to the HVAC designer. On the National HVAC Design Report and the HVAC Design Supplement to Std. 310 for Common Spaces and Central Systems, 'project team' will be updated to 'designer'.</p>