



# Continual Improvement in Quality Assurance

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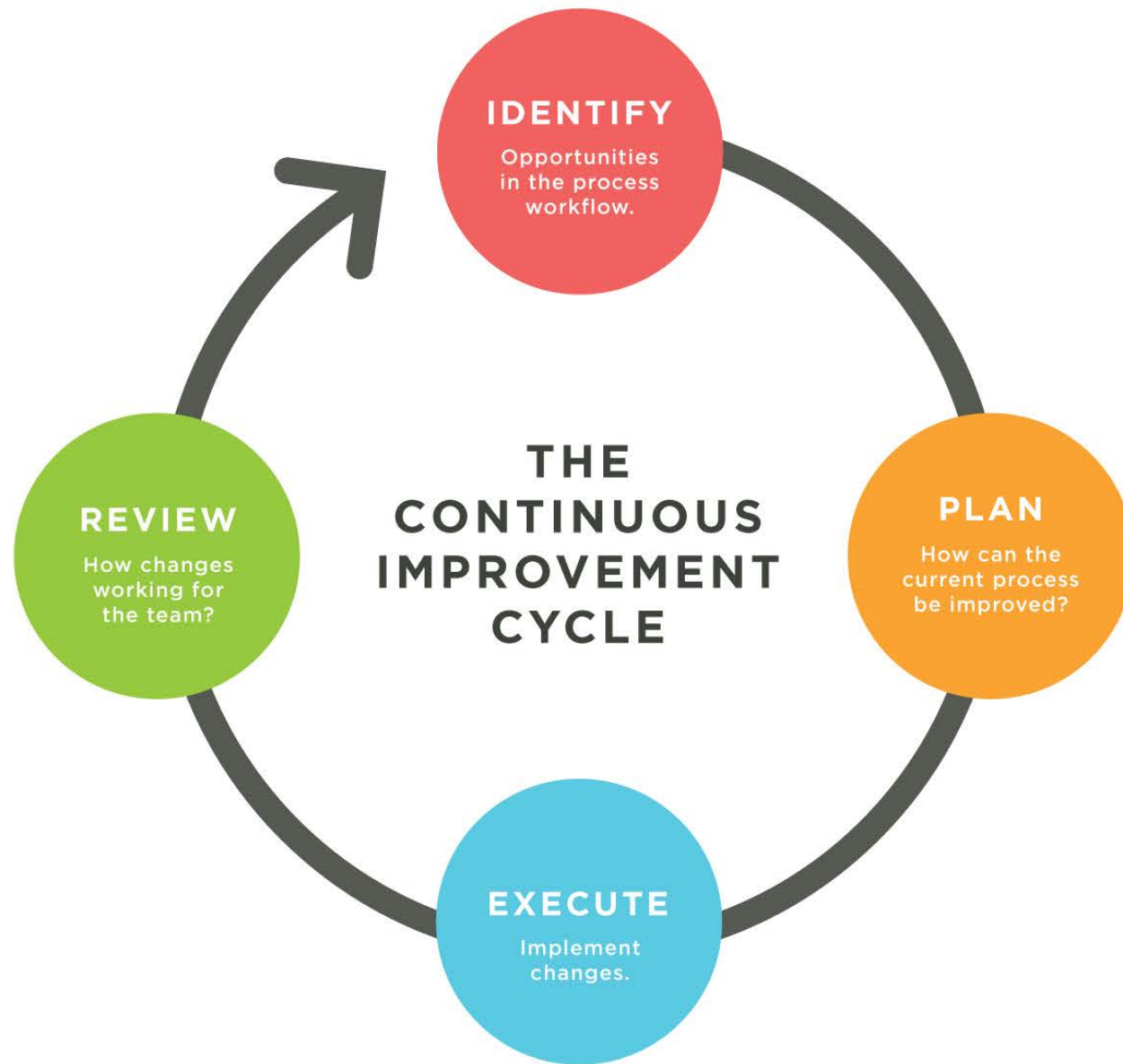
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# Agenda

- RaterPRO
- Homeowner Complaints
- Onsite Field Visits
- Field + File QA Checklist
- Policy on QA Program Efficiency & Effectiveness Improvements
- Utility QA Pilot Program
- Quarterly QAD Trainings
- Energy Modeling Designation
- Addendum N/Appendix B
- Addendum 30 Update
- Q & A

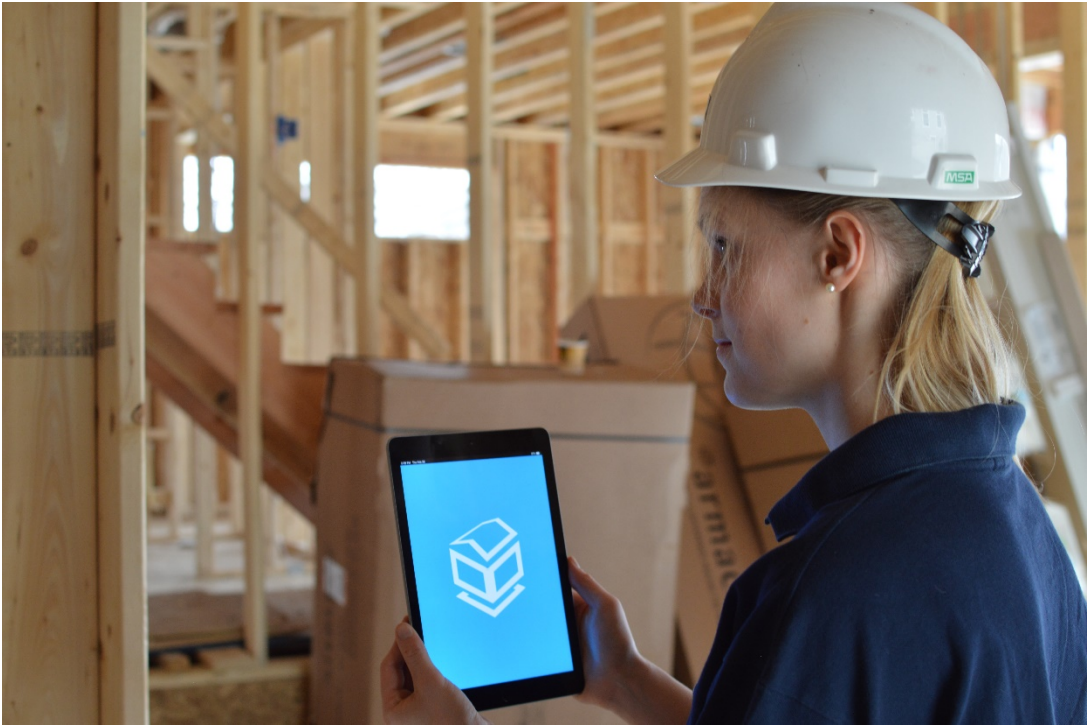
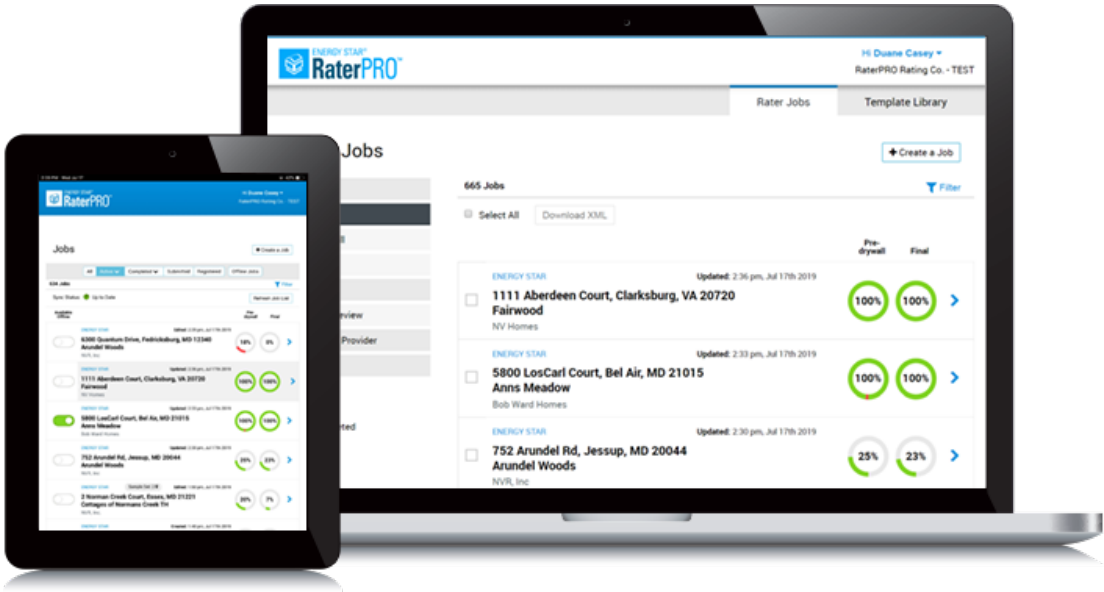


ENERGY STAR®  
**RaterPRO™**

**Version 1.0 Available Now!**



# ENERGY STAR® RaterPRO™





# Homeowner Complaints

# Homeowner Complaints Background

We all want every homeowner to love their ENERGY STAR home

## Current Process:

- Builders and providers are first and best way to address complaints
- RESNET-hosted complaint form leads to joint RESNET/EPA investigation
  - ~5-10 per year make it to this stage
- Usually results in separate (aligned) determination letters from RESNET and EPA

# Drawbacks of Current Process

- Scope of the investigation is not clearly defined
- Long, burdensome
- Results sometimes unsatisfactory to homeowners due to EPA's limited purview.

EPA does not have purview to compel home modifications, pursue financial compensation, or pursue criminal enforcement.

# Reframing ~~Homeowner Complaint Resolution~~ Certification Review

1. Builder/provider are still front line for ‘complaint resolution’
2. Ethical concerns still referred to RESNET
3. ENERGY STAR investigatory process reframed around only question for which EPA has purview:

**Should the home continue to carry the ENERGY STAR label?**

# Certification Review Process

- RESNET-hosted complaint form
- Eligibility Screening
- QAD from original provider completes Certification Review within 60 days
  - Based on ENERGY STAR QA checklist
  - Involves documentation review and site-visit
  - Focus is on the state of the house itself, not historical actions
  - CR will result in one of two outcomes:

Home **keeps**  
ENERGY STAR certification

ENERGY STAR certification  
is **revoked**

- Appeals: Homeowner has 60 days to provide a Certification Review report from another QAD. If conflicting, RESNET QA staff is final arbiter.

# Benefits and Tradeoffs

## Benefits

- Sets realistic expectations of possible outcomes
- Creates repeatable, predictable standard of review
- Review is comprehensive, foreclosing second bites at the apple
- Time-limited

## Tradeoffs

- Gives the benefit of the doubt to the original rating but is unforgiving when compliance threshold is crossed.

# Key Takeaways

- This is not a complaint resolution process. The opportunity for complaint resolution is provided by the builder and provider.
- Once Certification Review is invoked, it will run its course without stopping.

**Homeowner and builders:** Opportunity to find mutually-agreeable resolution is *before* Certification Review request is filed.

**Providers:** Opportunity to check paperwork or update rating is *before* Certification Review request is filed. Can actually complete CR paperwork and inspection before a CR is officially requested.

# Preview of 2020 QA Checklist



ENERGY STAR Certified Homes, Version 3 / 3.1 (Rev. 10)  
2020 Rater Quality Assurance and Certification Review Checklists

## Rater Quality Assurance Checklist

Home Address: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Documentation Collection	Yes	No	N/A	
Documentation of Confirmed or Sampled Energy Rating collected, showing that the ERI of the rated home meets or exceeds the ENERGY STAR ERI Target for the program version applicable at the time of certification.	<input type="checkbox"/>	<input type="checkbox"/>	-	
Rater Design Review Checklist collected, with no Items left blank	<input type="checkbox"/>	<input type="checkbox"/>	-	
Rater Field Checklist collected, with no Items left blank	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If item 5.1 is met using written approval from designer, that written approval is collected	<input type="checkbox"/>	<input type="checkbox"/>	-	
Rater name, rater inspection dates and rater initials are recorded	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If any Builder Verified Items are used, builder employee, builder inspection date and builder initials are recorded	<input type="checkbox"/>	<input type="checkbox"/>	-	
HVAC Design Report collected, with no Items left blank	<input type="checkbox"/>	<input type="checkbox"/>	-	
Rater Design Review Checklist				
3. High-Performance Insulation	Yes	No	Not Visible	N/A
3.1.2 If this option was used, specified insulation levels achieve $\leq 133\%$ of the total UA resulting from the U-factors in the 2009 IECC Table 402.1.3 per guidance in footnote 4d of the Rater Design Review Checklist.	<input type="checkbox"/>	<input type="checkbox"/>	-	<input type="checkbox"/>
4. Review of HVAC Design Report				
4.2 HVAC Design Report reviewed by Rater for the following parameters (HVAC Design Report Item # indicated in parenthesis):				
4.2.1 Cooling season and heating season outdoor design temperatures used in loads (3.3) are within the limits defined at <a href="http://energystar.gov/hvacdesignitems">energystar.gov/hvacdesignitems</a> for the State and County where the home is built or the designer has provided an allowance from EPA to use alternative values.	<input type="checkbox"/>	<input type="checkbox"/>	-	<input type="checkbox"/>
4.2.2 Number of occupants used in loads (3.4) is within $\pm 2$ of the home being reviewed	<input type="checkbox"/>	<input type="checkbox"/>	-	<input type="checkbox"/>
4.2.3 Conditioned floor area used in loads (3.5) is between 100 sq. ft. smaller and 300 sq. ft. larger than the home being reviewed	<input type="checkbox"/>	<input type="checkbox"/>	-	<input type="checkbox"/>
4.2.4 Window area used in loads (3.6) is between 15 sq. ft. smaller and 60 sq. ft. larger than the home being reviewed	<input type="checkbox"/>	<input type="checkbox"/>	-	<input type="checkbox"/>
4.2.6 Sensible, latent & total heat gain are documented (3.10 – 3.12) for the orientation of the home being reviewed	<input type="checkbox"/>	<input type="checkbox"/>	-	<input type="checkbox"/>
4.2.7 The difference between the maximum total heat gain across orientations and that of the orientation of the home being reviewed (3.12) is $\leq 6 \text{ kBtu/h}^2$	<input type="checkbox"/>	<input type="checkbox"/>	-	<input type="checkbox"/>
4.2.8 Cooling sizing % (4.13) is within the cooling sizing limit (4.15) selected by the HVAC designer	<input type="checkbox"/>	<input type="checkbox"/>	-	<input type="checkbox"/>
Rater Field Checklist				
1. High-Performance Fenestration & Insulation				
1.2 Accessible insulation meets or exceeds levels specified in Item 3.1 of the Rater Design Review Checklist, where Item 3.1 requires that ceiling, wall, floor, and slab insulation levels comply with one of the following options:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.1.1 Meets or exceeds 2009 IECC levels OR:	-	-	-	-

1. Now joint QA/CR checklist
2. Comprehensive
3. Documentation Collection section clarifies expected content of quality assurance data files.



# Certification Review Supplement



## ENERGY STAR Certified Homes, Version 3 / 3.1 (Rev. 10) 2020 Rater Quality Assurance and Certification Review Checklists

### Certification Review

#### Certification Review Process

RESNET initiates Certification Review requests in response to eligible homeowner inquiries. Once notified by RESNET, the Provider who certified the home is responsible for dispatching a Quality Assurance Designee (QAD) to complete a Certification Review within 60 days of the request by following these steps.

1. **Collect Documentation.** Collect all pertinent documentation using the Document Collection sections of the Rater Quality Assurance Checklist and Certification Review Supplement Checklist. Inability to collect a required documentation item constitutes a Certification Review failure, in which case proceed directly to Step 3: preparing the certification review report.
2. **Perform Home Inspection.** Coordinate a time with the homeowner to inspect the home. During that inspection, complete the remainder of the Rater Quality Assurance Checklist and Certification Review Supplement Checklist based on observations of the current state of the home.
3. **Prepare Certification Review Report.** Prepare a report that includes documented observations of the home's current state, a completed copy of this document, and a determination of whether the Certification Review passes or fails. Share a copy of the report with RESNET and the homeowner.

If the QAD determines that the Certification Review fails, the Provider shall withdraw the ENERGY STAR certification of the home.

If the QAD determines that the Certification Review passes, the homeowner ~~has the opportunity to~~ appeal the determination by presenting RESNET with a Certification Review Report prepared by a RESNET-accredited QAD within 60 days of notification of the original determination. In such cases, RESNET will make a final determination, which may require an inspection of the home by RESNET staff.

#### Guidance for Certification Reviews

This document should be used in conjunction with the ENERGY STAR Certified Homes National Program Requirements, Rater Design Review Checklist, Rater Field Checklist, HVAC Design Report, HVAC Commissioning Checklist, and Water Management System Builder Requirements. Additional program requirements may be inspected and included in the additional checklist items report above. Alternatives and exceptions in those documents, including those in the footnotes, should be considered where applicable. Where a program revision or policy record entry has lowered the stringency of a requirement, the most recent policy may be used, even if it was not in place at the time of original certification.

In general, the benefit of doubt should be given to the original rating unless it is definitively clear that a requirement was not met at time of certification. The QAD should apply judgment in accounting for natural, expected changes to construction materials over time, such as the settling of blown insulation. For example, for item 4.9 of the Rater Field Checklist, the focus should be on the *presence* of weatherstripping on doors rather than the current *efficacy* of the weatherstripping. The Certification Review Supplement Checklist modifies performance thresholds for certain checklist items to account for these types of natural changes.

1. Certification Review process
2. QAD guidance for completing Certification Reviews
3. Provision for destructive testing, at homeowner's discretion and expense

# Certification Review Supplement



ENERGY STAR Certified Homes, Version 3 / 3.1 (Rev. 10)  
2020 Rater Quality Assurance and Certification Review Checklists

## Certification Review Supplement Checklist

Documentation Collection	Yes	No	N/A	
<b>Rater Design Review Checklist:</b>				
Per 1.1, documentation collected that builder was an ENERGY STAR partner at the time of certification. If documentation is not available, contact <a href="mailto:energystarhomes@energystar.gov">energystarhomes@energystar.gov</a> for confirmation.	<input type="checkbox"/>	<input type="checkbox"/>	-	
Per 1.2, documentation collected that HVAC contractor held credential to complete the HVAC Commissioning Checklist at the time of certification or "N/A" is checked, indicating that all equipment is an exempted type. If documentation is not available, contact <a href="mailto:energystarhomes@energystar.gov">energystarhomes@energystar.gov</a> for confirmation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
HVAC Commissioning Checklist collected, with no items left blank	<input type="checkbox"/>	<input type="checkbox"/>	-	
[ERI Rating QA Placeholder]	<input type="checkbox"/>	<input type="checkbox"/>	-	
<b>Rater Field Checklist</b>				
<b>1. High-Performance Fenestration &amp; Insulation</b>				
1.2 If item 3.1 of the Rater Design Review Checklist was met using item 3.1.2, infiltration is permitted to meet the following levels: <sup>2</sup> 4 ACH50 in CZs 1,2    3.5 ACH50 in CZs 3,4    3 ACH50 in CZs 5,6,7    2.5 ACH50 in CZ 8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>6. Duct Quality Installation</b>				
6.2 QAD-measured pressure differential is permitted to meet $\leq 5$ Pa or, for bedrooms with a design airflow $\geq 150$ CFM, $\leq 8$ Pa. <sup>2</sup>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.4 QAD-measured total duct leakage is permitted to meet $\leq 12$ CFM25 per 100 sq. ft. of CFA or $\leq 120$ CFM or, for a duct system with three or more returns, $\leq 18$ CFM25 per 100 sq. ft. of CFA or $\leq 180$ CFM. <sup>2</sup>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.5 QAD-measured duct leakage to outdoors is permitted to meet $\leq 6$ CFM25 per 100 sq. ft. of CFA or $\leq 60$ CFM25. <sup>2</sup>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>7. Whole-House Mechanical Ventilation System</b>				
7.1 QAD-measured ventilation rate is permitted to be within $\pm 25$ CFM or $\pm 25\%$ of design value (2.3) <sup>2</sup>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.3 If outdoor intakes are connected to return side of the HVAC system, controls must be installed which are capable of operating intermittently & automatically based on a timer and restricting intake when not in use. As long as the controls are capable of meeting these criteria, it is permissible for the control's settings to differ at the time of certification review. <sup>2</sup>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>8. Local Mechanical Exhaust</b>				
Kitchen & bathroom exhausts systems are permitted to meet one of the following QAD-measured airflow standards: <sup>2</sup>				
<b>Location</b>	<b>Continuous Rate</b>	<b>Intermittent Rate</b>		
8.1 Kitchen <sup>1</sup>	$\geq 3$ ACH, based on kitchen volume	$\geq 60$ CFM and, if not integrated with range, also $\geq 3$ ACH based on kitchen volume		
8.2 Bathroom <sup>1</sup>	$\geq 12$ CFM	$\geq 30$ CFM		
<b>Water Management System Builder Requirements</b>				
<b>1. Water-Managed Site and Foundation</b>				
1.1 Patio slabs, porch slabs, walks, and driveways sloped $\geq 0.25$ in. per ft. away from home to edge of surface or 10 ft., whichever is less.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1. Additional non-rater requirements like the visible WMB requirements
2. Modified thresholds for performance tests, to account for natural changes over time
3. Modified requirements for settings subject to adjustment and items (like filters) subject to replacement



# Timeline

- **Today:** Draft *2020 Rater Quality Assurance and Certification Review Checklist* shared with attendees this morning. Send your feedback!
- **January 2020:** Final 2020 QA/CR checklist released.
- Training provided throughout 2020
- Due to rarity of complaints, unclear when first actual Certification Review will be. Support will be provided.



# RESNET

## Quality Assurance Initiatives

# Onsite Field Visits

- Beginning in 2018, 25% of providers are being visited by RESNET Staff to observe their QAD perform a field QA review
- By the end of 2019 half of providers will be visited
- The RESNET QA Team has learned a SO much doing the onsite visits
  - Areas where training is needed
  - Best Practices



# File and Field QA Checklist

- Will be a consistent evaluation tool for file and field QA reviews
- More granular than the 3% or 2 HERS index points current in the standard
- Vetted and tested by QADs
  - Many improvements have been made
  - Newest version follows along with the software inputs
- Will be required as part of Addendum 30

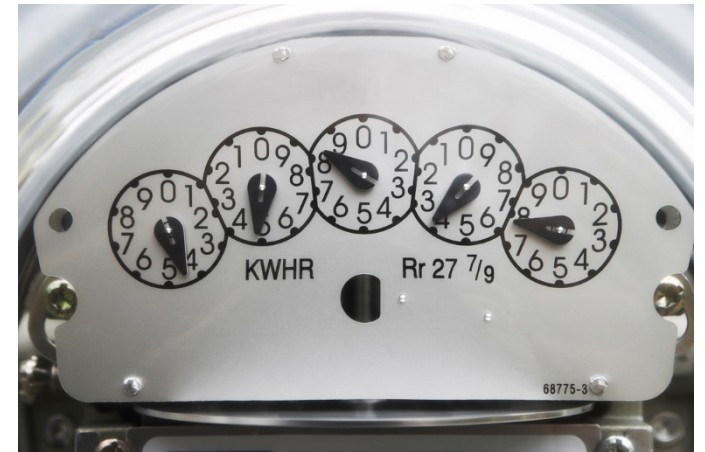


# RESNET Board Policy on QA Program Efficiency & Effectiveness Improvements

- Amend & Incentivize QA Efforts
  - Support performance based increases or reductions in QA stringency
  - Focus on both the quantity and quality of providers QA oversight and feedback to raters
- Improve internal policies for rating provider tracking & reporting to reduce the time burden of low-value QA activities
- Implement regular reporting from RESNET's automated QA tool to the rating provider and primary QAD in support of their ongoing QA activities

# Utility QA Pilot Program

- A pilot program with ICF Consulting is being developed to recognize the field QA reviews they conduct as part of their oversight of the two utility incentive programs
- This means that the field QA reviews they conduct on behalf of the utility program would count towards your annually required field QA reviews required by the RESNET Standards.



# Utility QA Pilot Program

- The purpose of the pilot is to identify and resolve any barriers to leveraging utility program QA with the intent of eliminating redundancy and reducing the field QA cost burden for Rating Providers. The goal of the pilot is to determine what issues exist in using the utility program reviews as the reviews required by RESNET while maintaining the RESNET Quality Assurance Program as the Gold Standard of the industry.
- The success of the pilot will determine if this may be used for other utility program implementers and RESNET Accredited Rating Providers.

# Utility QA Pilot Program

- Field QA reviews that were conducted starting in July will count for RESNET QA
- The pilot will run through December 2019
- We will evaluate and send a survey to see if changes are needed and if we want to continue the pilot through July 2020



# QAD Training

- Beginning in 2018, quarterly training webinars for QAD became required as part of their annual renewal
  - Trainings include topics from standards updates to areas noted in the field visits as needing more training
- The QA Team is now recording training videos in the field



# RESNET Forms Working Group on New HERS® Modeling Designation

The working group has been tasked at developing the following recommendations to the RESNET Board:

- The goal of the designation
- Name of designation
- Whether the designation is a certification of completion of training or a formal RESNET certification
- What training would be required
- Who would provide the required training

# Addendum N/Appendix B

- ANSI/RESNET/ICC 301-2014 Addendum N-2018 Normative Appendix B
  - Inspection Procedures for Minimum Rated Features
  - Record field inspections and performance tests by digital/electronic means
- If included in the Energy Rating and present in the Dwelling Unit, a minimum of one representative photo of Wall Assembly; Roof/Ceiling Assembly; and either Heating/Cooling Equipment, or Service Hot Water Equipment
  - Each photo and/or report shall be time/date stamped and geotagged.
- Applies to home permitted after July 1<sup>st</sup>
- RaterPro can be used for this!

# Quality Assurance- Addendum 30

- Addendum 30 is the changes to chapter one and nine of the RESNET Standards related to Quality Assurance
- Addendum has finally been approved and the effective date is January 1, 2020
- The transition period end date is July 1, 2020



# Effective Date and Transition Period

- **Transition Period-** The period of time beginning on the Effective Date, during which an amendment shall be allowed, but not required, to be used for any Dwelling Unit or Sleeping Unit.
- **Transition Period End Date-** The date that concludes the Transition Period. An amendment shall be required to be used for a Dwelling Unit or Sleeping Unit whose Building Permit Date is after this date.
- **Reminder-** If some of the standard is used ALL of it must be used

mark  your **Calendar**

# Big Changes from Addendum 30

- QA Delegates are going away
  - Everyone conducting QA reviews need to be a certified Quality Assurance Designee
- Pre-dry wall QA reviews are permitted
  - May replace 10%, but no more than 25% of required reviews
- Remote field QA reviews are permitted
  - Still need to complete one “live” QA annually
- Field and File QA Checklist will be a requirement for QA Reviews



# Q&A

