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1. If the program will be applied to both consumer and commercial/public infrastructure products, I would recommend specific requirements for each since the features and services required for the public facing infrastructure are significantly different.

Definitions:
3A) 2) (Line 31) Level 2 If there is a desire to be consistent with SAE J1772, Level 2 should not include 'greater than 16 amperes' If equipment was rated 208/240 V ac, 15A it would not fall under Level 1 or Level 2 in the EPA document. Suggest deleting 'greater than 16 amperes'. Since the focus appears as though it will be mostly on standby power, there is no need to exclude any specific voltage and current combination from the definitions or eligibility for the program. In any case, the statement 'and maximum output current greater than 16 amperes AC and less than 80 amperes…….should be changed since maximum does not mean 'between' two values, it means maximum.

2) (Line 63) Full Network Connectivity: I didn't understand 'The ability of the display to maintain network presence' Is this a cut and paste error? Should it be changed to 'EVSE'? Or is literally display what is meant? Are LED indicators considered a display?

5) b) (Line 78) Suggest moving 'ambient lighting ' to Tertiary function (out of Secondary Function) since it does not enable or enhance or supplement charging. Or just delete it from 5)b) if 'ambient lighting' is the same as 'area lighting' are the same since area lighting is mentioned as an example of tertiary function (in Line 85).

h) (new). (Line 83) Should we add the safety functions as a secondary function? Implementation of ground fault detection, ground monitoring, and isolation monitoring use power. However, depending on the implementation, these features may or may not be operating except during charging. Or are they considered the primary function since primary function can not operate independently without them? Same question for pilot signal.

4.1.1 (Line 158-159) The way this is worded, Tesla EVSE is excluded because it does not have a SAE J1772 coupler. It can operate SAE J1772 protocol however. The scope is not exactly consistent with the definitions which don't include mention of the coupler (Tesla has a proprietary coupler) Was this intended?

4.2.2 (Line 164) implies that Level 1 DC charging is included under the scope (<80 A dc). Was this intended? Or was the intent to exclude all DC charging at this time?

5)B) and 1) (line 180). Delete Table 1 and simply say UUT shall be operated at the highest rated voltage and frequency. Delete 1) (UUs that are not compatible with any …)

B) 2) (Line 182-185) Simplify to 'UUTs that are designed to operate at multiple voltage ranges (both Level 1 and Level 2) shall be tested separately.'

C) (Line 192-198) I would not specify requiring a specific plug and cord for the test apparatus. This does not ensure repeatability or safety. Not all equipment is plug and cord connected. Though insignificant in standby mode, the addition of the plug/receptacle interface adds significant power loss if tested at full power.

F) (Line 215) Cables: All power cables for the test shall be the default provided **or specified** by the manufacturer.

F) 1) (Line 216) Reference to NEC table 310(B)(16) is not constrained to provide the consistent gauge wire for a test setup. In the table, different insulation types and wire types and ratings have different ampacities for THE SAME wire gauge size depending on the wire type. And manufacturers can not specify the wire type because it depends on the installation circumstances. In testing, the only parameter important is the wire gauge size and length. Therefore, a specific column of the table could be chosen, for example the first column, types TW, UF, 60˚C rating, or other direction must be given.

2) AC Load c) Table 4 (line 248 and Line 494). Note that J1772 only specifies charging down to 8A. This may not be a real world test case. I realize this is a data gathering stage. I believe the data will show all losses are consistently the same across the output current and so only the ratio between the equipment operation and output will change since the equipment operation is likely the same steady state for any output current. The opportunities for Energy star are most likely found in the standby states since most of the losses during charging are based on the laws of physics, I^2R losses that will be very similar and depend almost entirely on current and wire gauge size and length (and other aspects of the power path, wire connections, relay losses, etc.).

H) Power Meter 1) b) (line 252) one channel to measure ground current. When I inquired about this during the Energy Star meeting I was told there was a concern about loads between one of the lines and ground. This practice is not allowed in any applicable safety standards. Therefore, there is no need need to burden the testing process with a power meter channel between a line and ground. If this is a concern, do a test at the beginning of the protocol to demonstrate there is only insignificant leakage current on the ground conductor, don't continuously dedicate a power meter channel to yield no data and increase the cost of the test set up.

d) Pilot Signal: (Line 254) There is no need to use a power meter channel to measure the control pilot characteristics. Why do this? When I asked at the meeting I was told that a concern was that in the event a mfg. rated the unit, for example at 32 A, but only piloted 30 A. Note even if this were true, it would not affect testing. The level 2 station has no way to control its output. That is entirely determined by the testing lab and test set up and load. In normal use it is the car that responds to the pilot signal by limiting the current it draws from the EVSE according to the pilot signal. A second concern I heard was what if the EVSE shut down at rated current. The answer to this concern is that it would be a test failure and the manufacturer should be contacted. Any power used by the pilot signal can be captured during power testing at the mains in the on state. In general, data is expensive and should not be collected unless there is a useful reason and a pass fail criteria and decision will be based on the data collected.

6.1 (A) (1) (Line 279) Simplify this to ' The UUT will be mounted per the manufacturer's installation instructions.' The note provided in Lines 282-284 appears to be trying to accommodate a portable EVSE/convenience cord, but this note won't be needed if the statement is simplified as above (delete "~~to a vertical surface or structure~~")

C) (Line 329) Room illuminance controls: Just wanted to confirm this applies to indicator LED's and that if the default setting was an Eco mode (rather than automatic controls) that would be the condition tested.

Note on line 339: Advertising and area lighting suggest more of a commercial product. Will there by separate requirements or modified requirement for commercial and public infrastructure products? Will commercial/public infrastructure products be in scope?

7.1 A) b) (Line 392) There is no need to measure power between ground and L. As mentioned previously, loads between line and ground are forbidden by the safety standards. Note that the NEC requires all EVSE to be 3rd party Listed, EPA might consider that all Energy Star EVSE must be 3rd party Listed as a requirement for Energy Star eligibility. There is a very small amount of power used to perform the ground impedance monitoring that could be delivered from either line or both. Rather than monitoring current in the ground line, one could confirm that the current in both of the two lines is identical, and if not, perform all the current measurements on the line with greater current (probably the difference would measured in micro-amps).

7.1 A) 4) (Lines 404-406) Delete. Surely a qualified lab technician at an accredited lab does not need to be instructed in such a matter as how to use a power meter and told to degauss the meter. Does the test procedure describe how to operate other instruments such as voltmeter, scope, etc.?

7.2 C)b) (Line 423) delete. Not needed as previously explained.
7.3 E) 1) b) (Line 437) Delete measurement of ground current.

7.3 E) w) B), and c) (Lines 441-442) Delete. No need to measure the control pilot peak dc voltage, frequency, and % duty cycle.

Lines 446, 447, delete measurement of ground current, pilot.

Note on line 463-467: SAE J1772 pilot signal can only go down to 6.9 A (percent duty cycle times 0.6 plus 0.9A per Table 4.5 of SAE J1772). Therefore, EVSE can not instruct a vehicle to draw less than 6.9 A

Note on Line 468-470. We should get input from auto OEM's. I don't think from an empirical standpoint that any vehicle ever draws less than 8 A. For maintenance modes, the car goes to 'sleep' rather than maintaining any sort of trickle charge.

Lines 477-488 Delete. Test per table 4. I'm not sure why this testing is necessary. The EVSE does not control available current other than signaling the car which is responsible for not drawing more than the current indicated via the pilot signal. If the EVSE shuts off at rated current, it should be a test failure and the manufacturer should be contacted. Is the Energy Star certification going to include certifying that the EVSE has a J1772 compliant pilot signal? J1772 does include allowance that the EVSE can open its contacts (but is not required to do so) if the piloted current is exceeded by more than 1 A up to 12 and 111% above 12A (My notes that reference J1772 are per the May 2015 proposed draft which was just voted on recently).

E) (Line 489-492) Delete. Accuracy of the measurement already specified and qualified personnel know how to operate their equipment.

Note (Lines 542-566) Energy Star should set performance goals, not dictate a specific name brand. There are competing standards and protocols that accomplish the same goals and it is important that the functional requirements and goals be established independently of a specific technology. It is possible that more than one protocol will emerge that will satisfy the functional needs of demand response, dynamic pricing, timing, etc.

Note (Line 569 -585) Vehicles will receive their power from a DC charger which may be powered by PV or other renewable source. Any device between those sources and the vehicle will comprise EVSE. In the future if vehicles are provided with an on-board inverter to supply power back to the grid, they will likely do so through an EVSE very similar to what is available today. The efficiency

7.4)4 d) Line 512: There is no need to measure power factor in any mode other than standby. It will always be 99.99% for a resistive load.

I didn't see instructions in Section 7 to measure the standby power. It could be the same as 7.4) 4) a)-d). except that for the case of standby power, c) should not be

instantaneous power because it will not capture all the conditions units may cycle through during standby, i.e., varying patterns of light output from indicators, occasional communication, etc. The measurement needs to be taken over a period of time (perhaps minutes) and the average should be reported.