the cooking product may be used in multiple installation conditions, install the appliance according to the built-in configuration. Completely assemble the product with all handles, knobs, guards, and similar components mounted in place. Position any electric resistance heaters and baffles in accordance with the manufacturer's instructions.

2.1.1 *Microwave ovens, excluding any microwave oven component of a combined cooking product.* Install the microwave oven in accordance with the manufacturer's instructions and connect to an electrical supply circuit with voltage as specified in section 2.2.1 of this appendix. Install the microwave oven also in accordance with Section 5, Paragraph 5.2 of IEC 62301 (Second Edition) (incorporated by reference; see § 430.3), disregarding the provisions regarding batteries and the determination, classification, and testing of relevant modes. A watt meter shall be installed in the circuit and shall be as described in section 2.6.1.1 of this appendix.

2.2 *Energy supply.*

2.2.1 *Electrical supply.*

2.2.1.1 *Voltage.* For microwave oven testing, maintain the electrical supply to the unit at 240/120 volts ±1 percent. Maintain the electrical supply frequency for all products at 60 hertz ±1 percent.

2.3 *Air circulation.* Maintain air circulation in the room sufficient to secure a reasonably uniform temperature distribution, but do not cause a direct draft on the unit under test.

2.4 *Ambient room test conditions*

2.4.1 *Standby mode and off mode ambient temperature.* For standby mode and off mode testing, maintain room ambient air temperature conditions as specified in Section 4, Paragraph 4.2 of IEC 62301 (Second Edition) (incorporated by reference; see § 430.3).

2.5 *Normal non-operating temperature.* All areas of the appliance to be tested must attain the normal non-operating temperature, as defined in section 1.7 of this appendix, before any testing begins. Measure the applicable normal non-operating temperature using the equipment specified in sections 2.6.2.1 of this appendix.

2.6 *Instrumentation.* Perform all test measurements using the following instruments, as appropriate:

2.6.1 *Electrical measurements.*

2.6.1.1 *Standby mode and off mode watt meter.* The watt meter used to measure standby mode and off mode power must meet the requirements specified in Section 4, Paragraph 4.4 of IEC 62301 (Second Edition) (incorporated by reference; see § 430.3). For microwave oven standby mode and off mode testing, if the power measuring instrument used for testing is unable to measure and record the crest factor, power factor, or maximum current ratio during the test measurement period, measure the crest factor, power factor, and maximum current ratio immediately before and after the test measurement period to determine whether these characteristics meet the requirements specified in Section 4, Paragraph 4.4 of IEC 62301 (Second Edition).

2.6.2 *Temperature measurement equipment.*

2.6.2.1 *Room temperature indicating system.* For the test of microwave ovens, the room temperature indicating system must have an error no greater than ±1 °F (±0.6 °C) over the range 65° to 90 °F (18 °C to 32 °C).

3. Test Methods and Measurements

3.1. *Test methods.*

3.1.1 *Microwave oven.*

3.1.1.1 *Microwave oven test standby mode and off mode power except for any microwave oven component of a combined cooking product.* Establish the testing conditions set forth in section 2, Test Conditions, of this appendix. For microwave ovens that drop from a higher power state to a lower power state as discussed in Section 5, Paragraph 5.1, Note 1 of IEC 62301 (Second Edition) (incorporated by reference; see § 430.3), allow sufficient time for the microwave oven to reach the lower power state before proceeding with the test measurement. Follow the test procedure as specified in Section 5, Paragraph 5.3.2 of IEC 62301 (Second Edition). For units in which power varies as a function of displayed time in standby mode, set the clock time to 3:23 and use the average power approach described in Section 5, Paragraph 5.3.2(a) of IEC 62301 (First Edition), but with a single test period of 10 minutes +0/−2 sec after an additional stabilization period until the clock time reaches 3:33. If a microwave oven is capable of operation in either standby mode or off mode, as defined in sections 1.9 and 1.8 of this appendix, respectively, or both, test the microwave oven in each mode in which it can operate.

3.2 *Test measurements.*

3.2.1 *Microwave oven standby mode and off mode power except for any microwave oven component of a combined cooking product.* Make measurements as specified in Section 5, Paragraph 5.3 of IEC 62301 (Second Edition) (incorporated by reference; see § 430.3). If the microwave oven is capable of operating in standby mode, as defined in section 1.9 of this appendix, measure the average standby mode power of the microwave oven, PSB, in watts as specified in section 3.1.1.1 of this appendix. If the microwave oven is capable of operating in off mode, as defined in section 1.8 of this appendix, measure the average off mode power of the microwave oven, POM, as specified in section 3.1.1.1.

3.3 *Recorded values.*

3.3.1 For microwave ovens except for any microwave oven component of a combined cooking product, record the average standby mode power, PSB, for the microwave oven standby mode, as determined in section 3.2.1 of this appendix for a microwave oven capable of operating in standby mode. Record the average off mode power, POM, for the microwave oven off mode power test, as determined in section 3.2.1 of this appendix for a microwave oven capable of operating in off mode.

[FR Doc. 2019–16892 Filed 8–8–19; 8:45 am]

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DEPARTMENT OF ENERGY

10 CFR Part 431

[EERE–2017–BT–STD–0021]

RIN 1904–AD90

Energy Conservation Program: Energy Conservation Standards for Unfired Hot Water Storage Tanks

AGENCY: Office of Energy Efficiency and Renewable Energy, Department of Energy.

ACTION: Request for information.

SUMMARY: The U.S. Department of Energy (''DOE'') is initiating an effort to determine whether to amend the current uniform national standard for unfired hot water storage tanks (''UFHWSTs''). Under the Energy Policy and Conservation Act of 1975, as amended, DOE must review this standard at least once every six years and publish either a notice of proposed rulemaking (''NOPR'') to propose an amended standard (or standards) for UFHWSTs or a notice of determination that the existing standard does not need to be amended. This request for information (''RFI'') seeks to solicit information from the public to help DOE determine whether an amended standard for UFHWSTs would result a significant energy savings and whether such a standard would be technologically feasible and economically justified. DOE welcomes written comments from the public on any subject within the scope of this document (including topics not raised in this RFI).

DATES: Written comments and information are requested and will be accepted on or before September 23, 2019.

ADDRESSES: Interested persons are encouraged to submit comments using the Federal eRulemaking Portal at *http://www.regulations.gov.* Follow the instructions for submitting comments. Alternatively, interested persons may submit comments, identified by docket number EERE–2017–BT–STD–0021, by any of the following methods:

1. *Federal eRulemaking Portal: http://www.regulations.gov.* Follow the instructions for submitting comments.

2. *Email: UnfiredCommercialWH2017STD0021@ee.doe.gov.* Include the docket number EERE–2017–BT–STD–0021 in the subject line of the message.

3. *Postal Mail:* Appliance and Equipment Standards Program, U.S. Department of Energy, Building Technologies Office, Mailstop EE–5B, 1000 Independence Avenue SW, Washington, DC 20585–0121.

Telephone: (202) 287–1445. If possible, please submit all items on a compact disc (CD), in which case it is not necessary to include printed copies.

4. *Hand Delivery/Courier:* Appliance and Equipment Standards Program, U.S. Department of Energy, Building Technologies Office, 950 L'Enfant Plaza SW, 6th Floor, Washington, DC 20024. Telephone: (202) 287–1445. If possible, please submit all items on a CD, in which case it is not necessary to include printed copies.

No telefacsimilies (faxes) will be accepted. For detailed instructions on submitting comments and additional information on this process, see section III of this document.

Docket: The docket for this activity, which includes **Federal Register** notices, comments, and other supporting documents/materials, is available for review at *http://www.regulations.gov.* All documents in the docket are listed in the *http://www.regulations.gov* index. However, some documents listed in the index, such as those containing information that is exempt from public disclosure, may not be publicly available.

The docket web page can be found at: *http://www.regulations.gov/#!docketDetail;D=EERE-2017-BT-STD-0021.* The docket web page contains instructions on how to access all documents, including public comments, in the docket. See section III of this document for information on how to submit comments through *http://www.regulations.gov.*

FOR FURTHER INFORMATION CONTACT:

Ms. Catherine Rivest, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Office, EE–5B, 1000 Independence Avenue SW, Washington, DC 20585–0121. Telephone: (202) 586–7335. Email: *ApplianceStandardsQuestions@ee.doe.gov.*

Mr. Eric Stas, U.S. Department of Energy, Office of the General Counsel, GC–33, 1000 Independence Avenue SW, Washington, DC 20585–0121. Telephone: (202) 586–5827. Email: *Eric.Stas@hq.doe.gov.*

For further information on how to submit a comment or review other public comments and the docket, contact the Appliance and Equipment Standards Program staff at (202) 287–1445 or by email: *ApplianceStandardsQuestions@ee.doe.gov.*

SUPPLEMENTARY INFORMATION:

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I. Introduction

A. Authority and Background

The Energy Policy and Conservation Act of 1975, as amended (''EPCA''),[1] Public Law 94–163 (42 U.S.C. 6291–6317, as codified), among other things, authorizes DOE to regulate the energy efficiency of a number of consumer products and certain industrial equipment. Title III, Part C[2] of EPCA, added by Public Law 95–619, Title IV, § 441(a), established the Energy Conservation Program for Certain Industrial Equipment, which sets forth a variety of provisions designed to improve energy efficiency. This equipment includes UFHWSTs, the subject of this RFI. (42 U.S.C. 6311(1)(K)) EPCA prescribed initial standards for this equipment. (42 U.S.C. 6313(a)(5)(F)–(G))

Under EPCA, DOE's energy conservation program consists essentially of four parts: (1) Testing, (2) labeling, (3) Federal energy conservation standards, and (4) certification and enforcement procedures. Relevant provisions of EPCA specifically include definitions (42 U.S.C. 6311), energy conservation standards (42 U.S.C. 6313), test procedures (42 U.S.C. 6314), labeling provisions (42 U.S.C. 6315), and the authority to require information and reports from manufacturers (42 U.S.C. 6316).

Federal energy efficiency requirements for covered equipment established under EPCA generally supersede State laws and regulations concerning energy conservation testing, labeling, and standards. (See 42 U.S.C. 6316(a) and (b); 42 U.S.C. 6297) DOE may, however, grant waivers of Federal preemption in limited instances for particular State laws or regulations, in accordance with the procedures and other provisions set forth under 42 U.S.C. 6316(b)(2)(D).

EPCA contains mandatory standards for commercial heating, air-conditioning, and water-heating equipment. (42 U.S.C. 6313(a)) Specifically, the statute sets standards for small, large, and very large commercial package air-conditioning and heating equipment, packaged terminal air conditioners (PTACs) and packaged terminal heat pumps (PTHPs), warm-air furnaces, packaged boilers, storage water heaters, instantaneous water heaters, and unfired hot water storage tanks (collectively referred to as ''covered ASHRAE equipment''). *Id.* In doing so, EPCA established standards that generally correspond to the efficiency levels in the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) Standard 90.1, ''Energy Standard for Buildings Except Low-Rise Residential Buildings,'' as in effect on October 24, 1992 (*i.e.,* ASHRAE Standard 90.1–1989), for each type of covered equipment listed in 42 U.S.C. 6313(a).

In acknowledgement of technological changes that yield energy efficiency benefits, Congress further directed DOE through EPCA to consider amending the existing Federal standard for each type of equipment listed, each time ASHRAE Standard 90.1 is amended with respect to such equipment. (42 U.S.C. 6313(a)(6)(A)) If ASHRAE Standard 90.1 is amended with respect to the standard levels or design requirements applicable under that standard to any covered ASHRAE equipment, not later than 180 days after the amendment of the standard, DOE must publish in the **Federal Register** for public comment an analysis of the energy savings potential of amended energy efficiency standards. (42 U.S.C. 6313(a)(6)(A)(i)) For each type of equipment, EPCA directs that if ASHRAE Standard 90.1 is amended, DOE must adopt amended energy conservation standards at the new efficiency level in ASHRAE Standard

[1] All references to EPCA in this document refer to the statute as amended through America's Water Infrastructure Act of 2018, Public Law 115–270 (Oct. 23, 2018).

[2] For editorial reasons, upon codification in the U.S. Code, Part C was redesignated Part A–1.

90.1, unless clear and convincing evidence supports a determination that adoption of a more-stringent efficiency level as a national standard would produce significant additional energy savings and be technologically feasible and economically justified.[3] (42 U.S.C. 6313(a)(6)(A)(ii)) If DOE decides to adopt as a national standard the efficiency levels specified in the amended ASHRAE Standard 90.1, DOE must establish such standard not later than 18 months after publication of the amended industry standard. (42 U.S.C. 6313(a)(6)(A)(ii)(I)) If DOE determines that a more-stringent standard is appropriate under the statutory criteria, DOE must establish such more-stringent standard not later than 30 months after publication of the revised ASHRAE Standard 90.1. (42 U.S.C. 6313(a)(6)(A)(ii)(II) and (B))

Although EPCA does not explicitly define the term ''amended'' in the context of what type of revision to ASHRAE Standard 90.1 would trigger DOE's obligation, DOE's longstanding interpretation has been that the statutory trigger is an amendment to the standard applicable to that equipment under ASHRAE Standard 90.1 that increases the energy efficiency level for that equipment. *See* 72 FR 10038, 10042 (March 7, 2007). In other words, if the revised ASHRAE Standard 90.1 leaves the energy efficiency level unchanged (or lowers the energy efficiency level), as compared to the energy efficiency level specified by the uniform national standard adopted pursuant to EPCA, regardless of the other amendments made to the ASHRAE Standard 90.1 requirement (*e.g.,* the inclusion of an additional metric), DOE has stated that it does not have the authority to conduct a rulemaking to consider a higher standard for that equipment pursuant to 42 U.S.C. 6313(a)(6)(A). *See* 74 FR 36312, 36313 (July 22, 2009) and 77 FR 28928, 28937 (May 16, 2012). However, DOE notes that Congress adopted amendments to these provisions related to ASHRAE Standard 90.1 equipment under the American Energy Manufacturing Technical Corrections Act (Pub. L. 112–210 (Dec. 18, 2012); ''AEMTCA''). In relevant part, DOE is prompted to act whenever ASHRAE Standard 90.1 is amended with respect to ''the standard levels or design requirements applicable under that standard'' to any of the enumerated types of commercial air conditioning, heating, or water heating equipment. (42 U.S.C. 6313(a)(6)(A)(i))

EPCA does not detail the exact type of amendment that serves as a triggering event. However, DOE has considered whether its obligation is triggered in the context of whether the specific ASHRAE Standard 90.1 requirement on which the most current Federal requirement is based is amended (*i.e.,* the regulatory metric). For example, if an amendment to ASHRAE Standard 90.1 changed the metric for the standard on which the Federal requirement was based, DOE would perform a crosswalk analysis to determine whether the amended metric under ASHRAE Standard 90.1 resulted in an energy efficiency level that was more stringent than the current DOE standard. Conversely, if an amendment to ASHRAE Standard 90.1 were to add an additional metric by which a class of equipment is to be evaluated, but did not amend the requirement that is in terms of the metric on which the Federal requirement was based, DOE would not consider its obligation triggered.[4]

In addition, DOE has explained that its authority to adopt an ASHRAE amendment is limited based on the definition of ''energy conservation standard.'' 74 FR 36312, 36322 (July 22, 2009). In general, an ''energy conservation standard'' is limited, per the statutory definition, to either a performance standard *or* a design requirement. (42 U.S.C. 6311(18)) Informed by the ''energy conservation standard'' definition, DOE has stated that adoption of an amendment to ASHRAE Standard 90.1 ''that establishes both a performance standard and a design requirement is beyond the scope of DOE's legal authority, as would be a standard that included more than one design requirement.'' 74 FR 36312, 36322 (July 22, 2009).

As noted, the ASHRAE Standard 90.1 provision in EPCA acknowledges technological changes that yield energy efficiency benefits, as well as continuing development of industry standards and test methods. Amendments to a uniform national standard provide Federal requirements that continue to reflect energy efficiency improvements identified by industry. Amendments to a uniform national standard that reflect the relevant amended versions of ASHRAE Standard 90.1 would also help reduce compliance and test burdens on manufacturers by harmonizing the Federal requirements, when appropriate, with industry best practices. This harmonization would be further facilitated by establishing not only consistent energy efficiency levels and design requirements between ASHRAE Standard 90.1 and the Federal requirements, but comparable metrics as well.

As stated previously, DOE has limited its review under the ASHRAE Standard 90.1 provisions in EPCA to the equipment class that was subject to the ASHRAE Standard 90.1 amendment. DOE has stated that if ASHRAE has not amended a standard for an equipment class subject to 42 U.S.C. 6313, there is no change that would require action by DOE to consider amending the uniform national standard to maintain consistency with ASHRAE Standard 90.1. See, 72 FR 10038, 10042 (March 7, 2007); 77 FR 36312, 36320–36321 (July 22, 2009); 80 FR 42614, 42617 (July 17, 2015).

In those situations where ASHRAE has not acted to amend the levels in Standard 90.1 for the equipment types enumerated in the statute, EPCA also provides for a 6-year-lookback to consider the potential for amending the uniform national standards. (42 U.S.C. 6313(a)(6)(C)) Specifically, pursuant to the amendments to EPCA under AEMTCA, DOE is required to conduct an evaluation of each class of covered equipment in ASHRAE Standard 90.1 ''every 6 years'' to determine whether the applicable energy conservation standards need to be amended. (42 U.S.C. 6313(a)(6)(C)(i)) DOE must publish either a notice of proposed rulemaking (NOPR) to propose amended standards or a notice of determination that existing standards do not need to be amended. (42 U.S.C. 6313(a)(6)(C)) In

[3] In determining whether a more-stringent standard is economically justified, EPCA directs DOE to determine, after receiving views and comments from the public, whether the benefits of the proposed standard exceed the burdens of the proposed standard by, to the maximum extent practicable, considering the following:

(1) The economic impact of the standard on the manufacturers and consumers of the products subject to the standard;

(2) The savings in operating costs throughout the estimated average life of the product compared to any increases in the initial cost or maintenance expense;

(3) The total projected amount of energy savings likely to result directly from the standard;

(4) Any lessening of the utility or the performance of the products likely to result from the standard;

(5) The impact of any lessening of competition, as determined in writing by the Attorney General, that is likely to result from the standard;

(6) The need for national energy conservation; and

(7) Other factors the Secretary considers relevant. (42 U.S.C. 6313(a)(6)(B)(ii))

[4] See the May 16, 2012, final rule for small, large, and very large water-cooled and evaporatively-cooled commercial package air conditioners, and VRF water-source heat pumps with cooling capacity less than 17,000 Btu/h, in which DOE states that ''if the revised ASHRAE Standard 90.1 leaves the standard level unchanged or lowers the standard, *as compared to the level specified by the national standard adopted pursuant to EPCA,* DOE does not have the authority to conduct a rulemaking to consider a higher standard for that equipment pursuant to 42 U.S.C. 6313(a)(6)(A). 77 FR 28928, 28929 (emphasis added). See also, 74 FR 36312, 36313 (July 22, 2009).

proposing new standards under the 6-year review, DOE must undertake the same considerations as if it were adopting a standard that is more stringent than an amendment to ASHRAE Standard 90.1. (42 U.S.C. 6313(a)(6)(C)(i)(II)) This is a separate statutory review obligation, as differentiated from the obligation triggered by an ASHRAE Standard 90.1 amendment. While the statute continues to defer to ASHRAE's lead on covered equipment subject to Standard 90.1, it does allow for a comprehensive review of all such equipment and the potential for adopting more-stringent standards, where supported by the requisite clear and convincing evidence. That is, DOE interprets ASHRAE's not amending Standard 90.1 with respect to a product or equipment type as ASHRAE's determination that the standard applicable to that product or equipment type is already at an appropriate level of stringency, and DOE will not amend that standard unless there is clear and convincing evidence that a more-stringent level is justified.

As discussed in the paragraphs immediately below, the standard for unfired hot water storage tanks in ASHRAE Standard 90.1 was last updated in October 1999. However, as noted previously, EPCA requires DOE to evaluate the applicable energy conservation standard for unfired hot water storage tanks every 6 years to determine whether it needs to be amended. (42 U.S.C. 6313(a)(6)(C)(i)) Thus, DOE is publishing this RFI to collect data and information to inform its decision consistent with its obligations under EPCA.

As noted previously, the initial Federal standards for UFHWSTs, established by EPCA, corresponded to the efficiency levels contained in the ASHRAE Standard 90.1–1989. On January 12, 2001, DOE amended the standards for UFHWSTs to be equivalent to the efficiency level in ASHRAE Standard 90.1 as revised in October 1999. 66 FR 3336 (''January 2001 final rule''). The January 2001 final rule established an insulation design requirement of a minimum R-value [5] of R–12.5. 66 FR 3336, 3356. This remains the current Federal standard (and the standard level specified in the most recent version of ASHRAE Standard 90.1). The current standard is located in title 10 of the Code of Federal Regulations (''CFR'') part 431, section 110 (10 CFR 431.110). DOE does not prescribe a test procedure for UFHWSTs; however, DOE's regulations define ''R-value,'' in part, as being determined using either ASTM International (''ASTM'') C177–13, ''Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus,'' or ASTM C518–15, ''Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.'' 10 CFR 431.102

B. Rulemaking Process

DOE must follow specific statutory criteria for prescribing amended standards for certain covered equipment. EPCA requires that any amended uniform national standard result in significant additional conservation of energy and be technologically feasible and economically justified. (42 U.S.C. 6313(a)(6)(C)(i)(II) and (B)) To determine whether a standard is economically justified, EPCA requires that DOE determine whether the benefits of the standard exceed its burdens by considering, to the maximum extent practicable, the following seven factors:

(1) The economic impact of the standard on manufacturers and consumers of the affected equipment subject to the standard;

(2) The savings in operating costs throughout the estimated average life of the covered equipment in the type (or class) compared to any increase in the prices, initial charges, or maintenance expenses for the covered equipment likely to result from the standard;

(3) The total projected amount of energy savings likely to result directly from the standard;

(4) Any lessening of the utility or the performance of the covered equipment likely to result from the standard;

(5) The impact of any lessening of competition, as determined in writing by the Attorney General, that is likely to result from the standard;

(6) The need for national energy conservation; and

(7) Other factors the Secretary of Energy (Secretary) considers relevant.

(42 U.S.C. 6313(a)(6)(B)(ii)(I)–(VII))

DOE fulfills these and other applicable requirements by conducting a series of analyses throughout the rulemaking process. Table I.1 shows the individual analyses that are performed to satisfy each of the requirements within EPCA.

TABLE I.1—EPCA REQUIREMENTS AND CORRESPONDING DOE ANALYSIS

EPCA requirement	Corresponding DOE analysis
Significant Energy Savings	• Energy and Water Use Determination. • Shipments Analysis. • National Impact Analysis.
Technological Feasibility	• Market and Technology Assessment. • Screening Analysis. • Engineering Analysis.
Economic Justification:	
1. Economic impact on manufacturers and consumers	• Manufacturer Impact Analysis. • Life-Cycle Cost and Payback Period Analysis. • Life-Cycle Cost Subgroup Analysis. • Shipments Analysis.
2. Lifetime operating cost savings compared to increased cost for the equipment.	• Mark-ups for Product Price Determination. • Energy and Water Use Determination. • Life-Cycle Cost and Payback Period Analysis.
3. Total projected energy savings	• Shipments Analysis. • National Impact Analysis.
4. Impact on utility or performance	• Screening Analysis. • Engineering Analysis.
5. Impact of any lessening of competition	• Manufacturer Impact Analysis.

[5] DOE defines ''R-value'' as the thermal resistance of insulating material as determined using ASTM C177–13 or C518–15 and expressed in (°F·ft²·h/Btu). 10 CFR 431.102.

TABLE I.1—EPCA REQUIREMENTS AND CORRESPONDING DOE ANALYSIS—Continued

EPCA requirement	Corresponding DOE analysis
6. Need for national energy and water conservation 7. Other factors the Secretary considers relevant	• Shipments Analysis. • National Impact Analysis. • Employment Impact Analysis. • Utility Impact Analysis. • Emissions Analysis. • Monetization of Emission Reductions Benefits. • Regulatory Impact Analysis.

As detailed throughout this RFI, DOE is publishing this document seeking input and data from interested parties to aid in the development of the technical analyses on which DOE will ultimately rely to determine whether (and if so, how) to amend the standards for UFHWSTs.

II. Request for Information and Comments

In the following sections, DOE has identified a variety of issues on which it seeks input to aid in the development of the technical and economic analyses regarding whether an amended uniform national standard for UFHWSTs may be warranted. Additionally, DOE welcomes comments on other issues relevant to this request for information that may not specifically be identified in this document. In particular, DOE notes that under Executive Order 13771, ''Reducing Regulation and Controlling Regulatory Costs,'' Executive Branch agencies such as DOE are directed to manage the costs associated with the imposition of expenditures required to comply with Federal regulations. See 82 FR 9339 (Feb. 3, 2017). Pursuant to that Executive Order, DOE encourages the public to provide input on measures DOE could take to lower the cost of its energy conservation standards rulemakings, recordkeeping and reporting requirements, and compliance and certification requirements applicable to UFHWSTs while remaining consistent with the requirements of EPCA.

A. Equipment Covered by This Process

This RFI covers equipment that meets the definition for ''unfired hot water storage tank,'' as codified at 10 CFR 431.102.[6] The definition for ''unfired hot water storage tank'' was most recently amended in a 2004 test procedure final rule for commercial water heating (CWH) equipment. 69 FR 61974 (Oct. 21, 2004). Specifically, DOE's regulations define ''unfired hot water storage tank'' as a tank used to store water that is heated externally, and that is industrial equipment. 10 CFR 431.102. UFHWSTs do not use energy (*i.e.,* UFHWSTs do not directly consume electricity or fossil fuel). (42 U.S.C. 6311(4)) Instead, the hot water stored by a UFHWST is supplied by a water heater or boiler that is paired with the UFHWST. Heat loss that occurs in a UFHWST does impact the energy consumption of the paired water heater or boiler.

Neither EPCA nor DOE's regulations include any storage volume criteria for UFHWSTs. Accordingly, UFHWSTs, regardless of storage volume, are subject to the current standard.

Issue A.1 DOE seeks comment on whether, in the context of its consideration of more-stringent standards, there have been sufficient technological or market changes for UFHWSTs since the most recent standards update that may justify a new rulemaking to consider more-stringent standards. Specifically, DOE seeks data and information that could enable the agency to determine whether DOE should propose a ''no new standard'' determination because a more-stringent standard: (1) Would not result in significant additional savings of energy; (2) is not technologically feasible; (3) is not economically justified; or (4) any combination of the foregoing.

Issue A.2 DOE requests comment on whether the definition for UFHWSTs requires any revisions—and if so, how the definition should be revised. DOE also requests feedback on whether any sub-category definitions should be added, and if so, DOE seeks specific input on what terms would be needed and how to define these terms.

Issue A.3 DOE requests comment on whether additional product definitions are necessary to close any potential gaps in coverage between product types. DOE also seeks input on whether such products currently exist in the market or whether they are being planned for introduction.

B. Market and Technology Assessment

The market and technology assessment that DOE routinely conducts when analyzing the impacts of a potential new or amended standard provides information about the UFHWST industry that will be used in DOE's analysis throughout the rulemaking process. DOE uses qualitative and quantitative information to assess the past and present industry structure and market characteristics. DOE identifies manufacturers, estimates market shares and trends, addresses regulatory and non-regulatory initiatives intended to improve energy efficiency or reduce energy consumption, and explores the potential for efficiency improvements in the design and manufacturing of UFHWSTs. To this end, DOE reviews product literature, industry publications, and company websites. Additionally, DOE considers conducting interviews with manufacturers to improve its assessment of the market and available technologies for UFHWSTs.

1. Equipment Classes

When evaluating and establishing energy conservation standards, DOE may divide covered equipment into equipment classes by the type of energy used, or by capacity or other performance-related features that justify a different standard. In making a determination whether capacity or other performance-related feature justifies a different standard, DOE must consider such factors as the utility of the feature to the consumer and other factors DOE deems appropriate.

For UFHWSTs, the current standard at 10 CFR 431.110 is applicable to a single equipment class covering all UFHWSTs.

Issue B.1 DOE requests feedback on whether any division of UFHWSTs into separate equipment classes is warranted, and whether it would impact equipment utility by eliminating any performance-related features or reduce any compliance burdens.

2. Technology Assessment

In analyzing the feasibility of potential new or amended energy conservation standards, DOE uses information about existing and past

[6] The statute defines ''unfired hot water storage tank'' as a tank used to store water that is heated externally. (42 U.S.C. 6311(12)(C))

technology options and prototype designs to help identify technologies that manufacturers could use to meet and/or exceed a given set of standards under consideration. In consultation with interested parties, DOE intends to develop a list of technologies to consider in its analysis. DOE's current standard for UFHWSTs is a prescriptive requirement for minimum tank insulation R-value. Therefore, only technology options that improve tank insulation R-value would be applicable for analyzing more-stringent tank insulation R-value requirements. However, DOE also seeks input on other technologies that can reduce heat loss of UFHWSTs, including those that do not improve R-value.

As described in section II.C of this RFI, some technologies may be removed from consideration during a subsequent screening analysis. The resulting list of technologies that are considered by DOE would be used to establish the maximum technologically feasible design. DOE conducted preliminary market research by examining manufacturer equipment literature and public technical literature (*e.g.,* reports, journal articles, or presentations) which identified the specific technology options listed subsequently. DOE will consider these technologies along with any others identified during the analysis following the RFI, and the rulemaking process should it determine that a rulemaking is necessary.

- Improved insulation R-value
  - Increased insulation thickness
  - Foam insulation
  - Advanced insulation types
    - Aerogel
    - Vacuum panels
    - Inert gas-filled panels
- Pipe and fitting insulation
- Greater coverage of tank surface area with foam insulation (*e.g.,* tank bottom)

Issue B.2 DOE seeks information related to these or other technologies that reduce heat loss. Specifically, DOE is interested in comments regarding the applicability of such technologies to the current market, the associated costs, concerns with incorporating them into UFHWSTs (*e.g.,* impacts on utility, potential safety concerns, manufacturing/production/implementation issues), and how these technologies would reduce the heat loss of UFHWSTs.

C. Screening Analysis

The purpose of the screening analysis is to evaluate the technologies that improve equipment efficiency (or in the present case, reduce heat loss) to determine which technologies will be eliminated from further consideration and which will be passed to the engineering analysis for further consideration.

DOE determines whether to eliminate certain technology options from further consideration based on the following criteria:

(1) *Technological feasibility.* Technologies that are not incorporated in commercial products or in working prototypes will not be considered further.

(2) *Practicability to manufacture, install, and service.* If it is determined that mass production of a technology in commercial products and reliable installation and servicing of the technology could not be achieved on the scale necessary to serve the relevant market at the time of the compliance date of the standard, then that technology will not be considered further.

(3) *Impacts on equipment utility or equipment availability.* If a technology is determined to have significant adverse impact on the utility of the equipment for significant subgroups of consumers, or result in the unavailability of any covered equipment type with performance characteristics (including reliability), features, sizes, capacities, and volumes that are substantially the same as equipment generally available in the United States at the time, it will not be considered further.

(4) *Adverse impacts on health or safety.* If it is determined that a technology will have significant adverse impacts on health or safety, it will not be considered further.

10 CFR part 430, subpart C, appendix A, 4(a)(4) and 5(b).

Technology options identified in the technology assessment are evaluated against these criteria using DOE analyses and inputs from interested parties (*e.g.,* manufacturers, trade organizations, and energy efficiency advocates). Technologies that pass through the screening analysis are referred to as ''design options'' in the engineering analysis. Technology options that fail to meet one or more of the four criteria are eliminated from consideration.

Additionally, DOE notes that the four screening criteria do not directly address the proprietary status of technology options. DOE only considers potential efficiency levels achieved through the use of proprietary designs in the engineering analysis if they are not part of a unique pathway to achieve that efficiency level (*i.e.,* if there are other non-proprietary technologies capable of achieving the same efficiency level).

Issue C.1 DOE requests feedback on what impact, if any, the four screening criteria described in this section would have on each of the technology options identified in section II.B.2 of this RFI. Similarly, DOE seeks information regarding how these same criteria would affect any other technology options not already identified in this document with respect to their potential use in UFHWSTs.

D. Engineering Analysis

The engineering analysis estimates the cost-efficiency relationship of equipment at different levels of reduced heat loss (''efficiency levels'').[7] This relationship serves as the basis for the cost-benefit calculations for commercial consumers, manufacturers, and the Nation. In determining the cost-efficiency relationship, DOE estimates the increase in manufacturing production cost (''MPC'') associated with reducing the heat loss of equipment above the baseline, up to the maximum technologically feasible (''max-tech'') efficiency level for each equipment class.

DOE historically has used the following three methodologies to generate incremental manufacturing costs and establish efficiency levels (''ELs'') for analysis: (1) The design-option approach, which provides the incremental costs of adding to a baseline model design options that will improve its efficiency; (2) the efficiency-level approach, which provides the relative costs of achieving increases in energy efficiency levels, without regard to the particular design options used to achieve such increases; and (3) the cost-assessment (or reverse engineering) approach, which provides ''bottom-up'' manufacturing cost assessments for achieving various levels of increased efficiency, based on detailed cost data for parts and materials, labor, shipping/packaging, and investment for models that operate at particular efficiency levels.

1. General Approach

In order to develop the cost-efficiency relationship for UFHWSTs, DOE anticipates that it will structure its engineering analysis using both a reverse-engineering (or cost-assessment) and a catalog teardown approach. The catalog-teardown approach relies on a

[7] While the UFHWSTs standard addresses heat loss through establishing a minimum level of insulation, for the purpose of this analysis, the levels of improvement are referred to generally as ''efficiency levels.''

teardown analysis of representative units at the baseline efficiency level and higher efficiency levels up to the maximum technologically feasible designs. A teardown analysis (or physical teardown) determines the production cost of a product by disassembling the product ''piece-by-piece'' and estimating the material and labor cost of each component. A catalog teardown approach uses published manufacturer catalogs and supplementary component data to estimate the major physical differences between equipment that has been physically disassembled and similar equipment. These two methods would be used together to help DOE estimate the manufacturer production cost of equipment at various efficiency levels.

Issue D.1 DOE requests feedback on the planned approach for the engineering analysis.

2. Representative Equipment

As previously stated, DOE intends to perform a teardown analysis on a set of models with ''representative'' characteristics to estimate the cost-efficiency relationship for UFHWSTs. DOE plans to conduct teardowns at specific storage volumes (referred to as representative storage volumes) that are the most common on the market, and extrapolate those results for the entire market. Based on a survey of models currently on the market, DOE has preliminarily determined the most common characteristics of UFHWSTs in order to identify a representative unit(s). In particular, DOE examined the number of UFHWST models available at distinct rated storage volumes and identified the most common storage volumes on the market as 80 and 119 gallons. DOE is also aware that UFHWSTs can be either vertical or horizontal tanks and recognizes that the tank orientation may affect heat losses from the tank and placement of ports. Based on its market assessment, DOE has found that vertical tanks are more common than horizontal tanks and that horizontal tanks do not have sufficiently different characteristics from vertical tanks to necessitate separate analysis of representative horizontal units. Finally, DOE is aware that the number and location of ports can affect standby heat losses; therefore, DOE may consider a representative configuration of ports.

Issue D.2 DOE requests feedback on the appropriate representative storage volume to use for analysis of UFHWSTs, whether more than one representative storage volume is warranted, and on whether 80 and/or 119 gallons would be appropriate.

Issue D.3 DOE requests comment on whether a vertical tank orientation should be considered representative for the UFHWST market. Such comments may include, but need not be limited to, data as to the fraction of UFHWST shipments that are horizontal tanks, and on whether this fraction depends on storage volume. DOE seeks feedback on whether horizontal tanks have any differences or limitations regarding insulation thickness relative to vertical tanks. DOE also requests comment on whether there is a difference in the utility provided by a vertical tank, as compared to a horizontal tank, that should be considered when identifying representative equipment.

Issue D.4 DOE requests comment on whether there is a configuration of ports (*i.e.,* number and location), or a limited set of port configurations, that is most common for UFHWSTs and that would, therefore, be appropriate to analyze as part of the representative unit(s) in the engineering analysis. DOE further seeks feedback on whether this representative configuration would depend on storage volume.

3. Baseline Efficiency Level

DOE selects a baseline model as a reference point against which any changes resulting from potential new or amended standards can be measured. The baseline model represents the characteristics of common or typical equipment. Typically, a baseline model is one that meets the current minimum standard and provides basic consumer utility.

DOE uses baseline models for comparison in several phases of the analyses, including the engineering analysis, life-cycle cost (''LCC'') analysis, payback period (''PBP'') analysis, and national impact analysis (''NIA''). In the engineering analysis, to determine the changes in price to the commercial consumer that result from amended standards, DOE compares the price of a baseline model to the price of a model at each higher efficiency level.

Consistent with this analytical approach, DOE tentatively plans to consider the current minimum standard (which went into effect October 29, 2003) to establish the baseline efficiency level. The current standard is a prescriptive minimum insulation requirement (R-value of 12.5). 10 CFR 431.110.

Issue D.5 DOE requests feedback on whether using the current established standard for UFHWSTs is an appropriate baseline efficiency level for DOE to apply in evaluating whether to amend the current standard for this equipment. DOE requests data and suggestions to evaluate the baseline efficiency level in order to better evaluate amending the standard for this equipment.

Issue D.6 DOE requests comment on the insulation types and thicknesses typically used in UFHWSTs with R–12.5 tank insulation (*i.e.,* at the current baseline level). DOE also seeks feedback on whether any models with R–12.5 insulation use only fiberglass insulation, and if so, what the maximum feasible R-value is for insulation of UFHWSTs with fiberglass.

4. Maximum Available and Maximum Technologically Feasible Efficiency Levels

As part of DOE's analysis, the maximum available efficiency level is the highest-efficiency model currently available on the market. To identify efficiency levels (including the maximum available efficiency level) and technology options used above the R–12.5 baseline for UFHWSTs, DOE conducted a survey of the UFHWST market, including manufacturer catalogs and other publicly-available literature. Many models are advertised as having a tank insulation R-value that ''meets or exceeds'' R–12.5, without specifying the exact R-value. DOE only identified two model lines for which the manufacturer advertises specific insulation R-values above the R–12.5 baseline, which were advertised as having R–12.9 and R–16 insulation. The product literature for models with these higher insulation R-values identifies the insulation as polyurethane foam insulation but does not provide the insulation thickness.

DOE defines a max-tech efficiency level to represent the theoretical maximum possible efficiency if all available technology options are incorporated in a model. In many cases, the max-tech efficiency level is not commercially available because it is not economically feasible. However, DOE seeks to determine the max-tech level for purposes of its analyses.

Issue D.7 DOE seeks comment on what the range of tank insulation R-values is for the UFHWST market. Such comments may include, but need not be limited to, whether there are models on the market with tank insulation R-values other than R–12.5, R–12.9, and R–16. Further, DOE seeks feedback on the insulation types and thicknesses that typically correspond with any R-values higher than R–12.5.

Issue D.8 DOE requests comment on performance of UFHWSTs currently on the market, including, but not limited to, what the highest tank insulation R-value on the market is (*i.e.,* the maximum available level), and on what

insulation type(s) and thickness(es) typically correspond with this level. DOE also seeks input on whether the maximum available efficiency level is appropriate and technologically feasible for potential consideration as a possible standard for UFHWSTs—and if not, why not. Additionally, DOE seeks feedback on whether there are practical limitations (*e.g.,* shipping or installation concerns) on the thickness of tank insulation that can be applied to UFHWSTs.

Issue D.9 DOE seeks feedback on what design options would be incorporated at a max-tech efficiency level, and the heat losses associated with those levels. More specifically, DOE seeks comment on the theoretical maximum possible tank insulation R-value, and on what insulation type(s) and thickness(es) would correspond with this level. As part of this request, DOE also seeks information as to whether there are limitations on the use of certain combinations of design options.

5. Manufacturer Production Costs and Manufacturer Selling Price

As described at the beginning of this section, the main outputs of the engineering analysis are cost-efficiency relationships that describe the estimated increases in manufacturer production cost associated with higher-efficiency equipment.

Issue D.10 DOE requests feedback on how manufacturers would incorporate the technology options listed in section II.B.2 to increase the tank-insulation R-values in UFHWSTs beyond the baseline. This includes information on the order in which manufacturers would incorporate the different technologies to incrementally improve the R-value (or otherwise reduce the heat loss) of equipment. DOE requests feedback on whether increasing tank insulation R-value would lead to other design changes that would not occur otherwise. DOE is also interested in information regarding any potential impact of increased tank insulation R-value on a manufacturer's ability to incorporate additional functions or attributes in response to consumer demand.

Issue D.11 DOE seeks comment on the increase in MPC associated with incorporating each particular technology option. DOE also requests information on the investments necessary to incorporate specific technology options, including, but not limited to, costs related to new or modified tooling (if any), materials, engineering and development efforts to implement each technology option, and manufacturing/production impacts.

To account for manufacturers' non-production costs and profit margin, DOE applies a non-production cost multiplier (the manufacturer mark-up) to the MPC. The resulting manufacturer selling price (''MSP'') is the price at which the manufacturer distributes a unit into commerce. For a notice of proposed rulemaking for energy conservation standards (''ECS'') for certain classes of commercial water heating equipment published on May 31, 2016, DOE estimated a manufacturer mark-up of 1.41 for commercial electric storage water heaters. 81 FR 34440, 34497 (''May 2016 CWH ECS NOPR''). DOE's market assessment indicates that many manufacturers produce both UFHWSTs and electric storage water heaters and that these equipment categories share many design features. Additionally, some tanks designed for electric storage water heaters are used in UFHWST models (see discussion in section II.D.6 of this RFI). Therefore, DOE has tentatively concluded that the manufacturer mark-up for commercial electric storage water heaters is appropriate to apply for analysis of UFHWSTs.

Issue D.12 DOE requests feedback on whether a manufacturer mark-up of 1.41 is appropriate for UFHWSTs.

6. Additional Engineering Issues

Due to the need for ports and other openings for service/maintenance or repair, the entire surface of an UFHWST cannot be insulated with foam insulation, and, therefore, portions of the UFHWSTs currently on the market are insulated with fiberglass or uninsulated. Additionally, DOE research suggests that manufacturers may use a single tank design for multiple models and plug ports or other openings that are not designed to be used for a given model but that may be used for a similar model. In such cases where a single tank design is used for multiple models, plugged openings sometimes are not covered with tank foam insulation if the foam insulation is applied before any openings are plugged. Further, manufacturers may use a tank designed for electric storage water heaters as the tank for an UFHWST model by plugging the openings for electric resistance heating elements. Electric storage water heaters typically include gaps in tank foam insulation where each heating element and thermostat are located, and these gaps are often insulated with foam or fiberglass insulation inserts. DOE has also observed during testing and examination of water heaters and UFHWSTs that there sometimes are voids in the foam insulation that is applied to some UFHWSTs that form either during or after the foaming process.

Issue D.13 DOE requests comment on the current practices and limitations of foam insulation, including, but not limited to, the approximate fraction of the tank surface area that can typically be insulated with foam. Further, DOE seeks feedback on whether there is significant variation on the market of the fraction of the tank insulated with foam.

Issue D.14 DOE requests comment on the presence of plugged ports, such as how commonly UFHWSTs include plugged ports, and if included, how the plugged ports are insulated (*e.g.,* covered with foam insulation, fiberglass wrap, a fiberglass insert, or not insulated). Further, DOE requests comment on the extent to which electric storage water heater tanks are used for UFHWST models, and when used, how/whether the areas of the tank containing ports for resistance heating elements and thermostats are insulated.

Issue D.15 DOE requests comment on the extent to which voids form in foam insulation on UFHWSTs. Further, DOE seeks comment on the extent to which voids affect the standby losses of UFHWSTs.

In response to the May 9, 2016 CWH TP NOPR (81 FR 28588), several stakeholders stated that many UFHWSTs are customized for specific applications or installations. (Bradford White, Docket No. EERE–2014–BT–TP–0008–0021 at p. 5; AHRI, Docket No. EERE–2014–BT–TP–0008–0026 [8] at p. 12; A.O. Smith, Docket No. EERE–2014–BT–TP–0008–0027 at p. 4; Rheem, Docket No. EERE–2014–BT–TP–0008–0034 at p. 8). However, it is unclear what share of the market consists of custom models, and to what extent UFHWSTs are customized.

Issue D.16 DOE seeks comment on the customization of UFHWSTs, including but not limited to, information as to the fraction of UFHWST shipments that are custom models, and whether this fraction varies by storage volume; and which aspects are customized in UFHWSTs and whether aspects other than number and locations of ports are customized. DOE also seeks feedback on the extent to which the number and location of ports affect standby heat losses of UFHWSTs. Further, DOE seeks feedback on whether UFHWSTs included in publicly-available product literature can be

[8] Docket No. EERE–2014–BT–TP–0008 is available at *https://www.regulations.gov/docket?D=EERE-2014-BT-TP-0008.*

customized or if customizable models are not publicly advertised.

E. Mark-Ups Analysis

The mark-ups analysis develops appropriate mark-ups (*e.g.,* for wholesalers, mechanical contractors, general contractors) in the distribution chain and sales taxes to convert the manufacturer sales prices (MSP) derived in the engineering analysis to consumer prices, which are then used in the LCC and PBP analyses and other analyses. At each step in the distribution channel, companies mark up the price of the equipment to cover business costs and profit margin.

1. Distribution Channels

In generating end-user price inputs for the LCC analysis and the NIA, DOE must identify distribution channels (*i.e.,* how the equipment passes through the chain of commerce from the manufacturer to the customer), and estimate relative sales volumes through each channel. Two different markets exist for UFHWST systems: (1) Replacements and new owners,[9] and (2) new construction. DOE intends to use similar distribution channels as found in the May 2016 CWH ECS NOPR TSD.[10]

Replacement and New Owner

For replacement and new owner applications, manufacturers sell mainly to plumbing distributors. The main distribution path that DOE intends to consider is a plumbing distributor (*i.e.,* a wholesaler) who sells an UFHWST to a contractor, who then sells it to a consumer and installs it. The manufacturer may also utilize a manufacturer's representative to sell the equipment to a plumbing contractor, who then sells it to the commercial consumer. The manufacturer may sell the equipment to a retailer, who in turn may sell it to a plumbing contractor, who in turn sells it to a commercial consumer.

In addition, DOE plans to consider distribution channels where the manufacturer sells the UFHWST a wholesaler or retailer that then sells the equipment to the commercial or industrial consumer. DOE also plans to consider the distribution channel where the manufacturer sells a UFHWST directly to a commercial or industrial consumer through a national account. These three channels reflect those cases where the installation can be accomplished by site personnel.

In summary, DOE plans to characterize the replacement and new owner market distribution channels for UFHWST systems as follows:

Manufacturer → Wholesaler → Plumbing Contractor → Commercial Consumer
Manufacturer → Manufacturer's Representative → Plumbing Contractor → Commercial Consumer
Manufacturer → Retailer → Plumbing Contractor → Commercial Consumer
Manufacturer → Wholesaler → Commercial Consumer
Manufacturer → Retailer → Commercial Consumer
Manufacturer → National Account → Commercial Consumer

New Construction

The new construction distribution channel for UFHWST equipment includes an additional link in the chain—the general contractor. In most new construction applications, the UFHWST is part of the overall plumbing package installed by a plumbing contractor or, in the case of large building companies, by its own master plumber and crew. A plumbing contractor usually purchases the water heater from a plumbing distributor, and in this case, it is appropriate to include a contractor mark-up. In addition, similar to the replacement and new owner distribution channel, DOE plans to consider distribution channels where the manufacturer sells the UFHWST to a wholesaler or retailer that then sells the equipment to the commercial or industrial consumer, and the distribution channel where the manufacturer sells a UFHWST directly to a commercial or industrial consumer through a national account.

In the case of new construction, DOE plans to characterize the distribution channels as follows:

Manufacturer → Wholesaler → Plumbing Contractor → General Contractor → Commercial Consumer
Manufacturer → Manufacturer's Representative → Plumbing Contractor → General Contractor → Commercial Consumer
Manufacturer → Retailer → Plumbing Contractor → General Contractor → Commercial Consumer
Manufacturer → Wholesaler → General Contractor → Commercial Consumer
Manufacturer → Retailer → General Contractor → Commercial Consumer
Manufacturer → Wholesaler → Commercial Consumer
Manufacturer → Retailer → Commercial Consumer
Manufacturer → National Account → Commercial Consumer

Issue E.1 DOE seeks input from stakeholders on whether the distribution channels described above are appropriate for UFHWSTs and are sufficient to characterize this market.

Issue E.2 DOE seeks input on the equipment being distributed through the identified channels, including but not limited to, the percentage of equipment being distributed through the different distribution channels, and whether the share of equipment through each channel varies based on equipment capacity (storage volume).

2. Mark-Ups

To develop mark-ups for the parties involved in the distribution of the equipment, DOE plans to primarily utilize: (1) Form 10–K[11] from the main consumer water heater wholesalers[12] and retailers (for wholesalers and retailers); (2) the Heating, Air Conditioning & Refrigeration Distributors International (''HARDI'') 2013 Profit Report[13] (for wholesalers); (3) the latest U.S. Census Annual Retail Trade Survey data[14] (for retailers), and (4) U.S. Census Bureau 2012 Economic Census data[15] on the residential and commercial building construction industry (for retailers, general contractors, and mechanical contractors). DOE also plans to use the 2005 Air Conditioning Contractors of America's (''ACCA'') Financial Analysis

[9] New owners are defined as existing buildings that acquire a UFHWST for the first time during the analysis period.

[10] Department of Energy, Technical Support Document (TSD): Energy Efficiency Program for Consumer Products and Commercial and Industrial Equipment: Commercial Water Heating Equipment (May 2016) (Available at: *https://www.regulations.gov/document?D=EERE-2014-BT-STD-0042-0016*) (Last accessed April 4, 2019).

[11] U.S. Securities and Exchange Commission, *SEC 10–K Reports* (Available at: *https://www.sec.gov/*) (Last accessed April 4, 2019).

[12] Clear Seas Research, *2017 Top List—Premier Distributors—Plumbing, Heating, Cooling* (Available at: *https://clearseasresearch.com/product/2017-top-list-premier-distributors-plumbing-heating-cooling/*) (Last accessed April 4, 2019).

[13] Heating, Air Conditioning & Refrigeration Distributors International (HARDI), *2013 HARDI Profit Report,* (Available at: *http://hardinet.org/*) (Last accessed April 4, 2019).

[14] U.S. Census Bureau, *2017 Annual Retail Trade Survey Data* (Available at: *https://www.census.gov/programs-surveys/arts.html*) (Last accessed July 8, 2019). At the time this RFI was finalized, the 2017 Annual Retail Trade Survey was the most recent full data release.

[15] U.S. Census Bureau, *2012 Economic Census Data* (Available at: *https://www.census.gov/programs-surveys/economic-census.html*) (Last accessed April 4, 2019). Note that the 2017 Economic Census data are planned to be fully released by late 2020. Until that time, 2012 Economic Census remains the most recent full data release.

on the Heating, Ventilation, Air-Conditioning, and Refrigeration (''HVACR'') contracting industry [16] to disaggregate the mechanical contractor mark-ups into replacement and new construction markets. DOE does not currently have enough information to estimate separate mark-ups for manufacturer's representatives, so DOE plans to assume that the manufacturer's representative mark-up is the same as the wholesaler mark-up.

Issue E.3 DOE seeks recent data and recommendations regarding data sources to establish the mark-ups for the parties involved with the distribution of the UFHWST equipment.

F. Energy Use Analysis

As part of the rulemaking process, DOE conducts an energy use analysis to identify how equipment is used by commercial consumers, and thereby determine the energy savings potential of energy efficiency improvements. As discussed, UFHWSTs store hot water and do not directly consume fuel or electricity for the purpose of heating water, so any potential amendments to the standard target reducing standby loss associated with heat loss from the stored water. The energy use analysis would determine the annual energy consumption of water heaters and boilers due to standby loss of the paired UFHWSTs and to assess the energy savings potential of an amended UFHWST standard, as well as of other technologies that may be applied.

1. Sample Development

DOE intends to base the energy use analysis on key characteristics from the most current version of the Energy Information Administration's (''EIA'') Commercial Building Energy Consumption Survey (''CBECS'') [17] for the subset of commercial building types that use UFHWSTs. DOE also plans to include the industrial sector [18] using EIA's most current Manufacturing Energy Consumption Survey (''MECS'') [19] for the subset of sectors that use UFHWSTs. DOE also plans to look at the use of UFHWSTs in residential applications, for which it plans to include characteristics from EIA's most current Residential Energy Consumption Survey (''RECS'') [20] for a subset of building types (primarily multi-family buildings) that use UFHWSTs.

CBECS and RECS data include information on the physical characteristics of buildings, water heaters and boilers used, fuels used, energy consumption and expenditures, and other relevant characteristics. Neither CBECS nor RECS provide data on whether the building has an UFHWST. Also, MECS does not provide individual sample characteristics. Therefore, DOE intends to develop a methodology for adjusting its building sample to reflect buildings or industrial sectors that are more likely to include UFHWSTs based on the type of water heating and space heating equipment used in the building (for example if the building has a boiler or a commercial water heater). Based on the most current CBECS, MECS, and RECS data, DOE will develop a representative population of buildings for UFHWST equipment. In addition, DOE intends to review other data sets (*e.g.,* data from the 2016 Residential Building Stock Assessment for the Northwest,[21] 2014 Commercial Building Stock Assessment for the Northwest,[22] 2014 Industrial Facilities Site Assessment for the Northwest,[23] 2015 Residential Statewide Baseline Study of New York State,[24] 2006 California Commercial End-Use Survey,[25] and 2009 Residential Appliance Saturation Study [26]) to compare these to the CBECS, MECS, and RECS data for the corresponding region.

Issue F.1 DOE seeks input on the water heating equipment and associated fuels that are used to heat the water stored in UFHWSTs, including, but not limited to, information on the fractions of various space heating and water heating equipment that are associated with UFHWSTs, as follows: Gas-fired hot water boilers, electric hot water boilers, oil-fired hot water boilers, gas-fired steam boilers, electric steam boilers, oil-fired steam boilers, gas-fired storage water heaters, electric storage water heaters, oil-fired storage water heaters, gas-fired tankless water heaters, electric tankless water heaters, heat pump water heaters, solar water heater systems, and heat from other sources (such as industrial processes).

Issue F.2 DOE requests information on the installation applications of UFHWSTs, including, but not limited to the fraction of UFHWSTs that are installed in residential (primarily multi-family buildings), commercial, and industrial applications.

2. Energy Use Calculations

The relevant energy consumption is the site energy use associated with offsetting the standby losses incurred by the UFHWST(s) installed in the building. To determine the field standby loss of the UFHWSTs for the purposes of the energy use analysis, DOE intends to use a methodology based on the ''R-value'' defined by DOE's regulations of UFHWSTs.[27] DOE's methodology will convert the R-value to field standby losses based on tank sizes, tank set point temperature, and surrounding air temperature. The energy use will then be calculated in terms of the fuel type and efficiency of the water heating equipment used to offset the standby losses. DOE intends to also consider any degradation in the R-value over the lifetime of UFHWSTs.

Issue F.3 DOE requests relevant information, such as field or test energy use data, that could assist in the development of an energy use equation to determine field standby loss.

Issue F.4 DOE requests comment on the methodology for determining the standby loss for UFHWSTs based on the

[16] Air Conditioning Contractors of America (ACCA), *Financial Analysis for the HVACR* Contracting Industry (2005) (Available at: *https://www.acca.org/store*) (Last accessed April 4, 2019).

[17] Presently, the 2012 edition of CBECs is the most recent version. Energy Information Administration (EIA), 2012 Commercial Building Energy Consumption Survey (CBECS) (Available at: *http://www.eia.gov/consumption/commercial/*) (Last accessed April 4, 2019).

[18] Industrial sector includes non-manufacturing (agriculture, construction, and mining) and manufacturing sectors.

[19] Presently, the 2014 edition of MECS is the most recent version. Energy Information Administration (EIA), 2014 Manufacturing Energy Consumption Survey (MECS) (Available at: *http://www.eia.gov/consumption/manufacturing/*) (Last accessed April 4, 2019).

[20] Presently the 2015 edition of RECs is the most recent version. Energy Information Administration (EIA), 2015 Residential Energy Consumption Survey (RECS) (Available at: *http://www.eia.gov/consumption/residential/*) (Last accessed April 4, 2019).

[21] Northwest Energy Efficiency Alliance (NEEA), Residential Building Stock Assessment (2016) (Available at: *https://neea.org/data/residential-building-stock-assessment*) (Last accessed April 4, 2019).

[22] Northwest Energy Efficiency Alliance (NEEA), Commercial Building Stock Assessment (2014) (Available at: *https://neea.org/data/commercial-building-stock-assessments*) (Last accessed April 4, 2019).

[23] Northwest Energy Efficiency Alliance (NEEA), Industrial Facilities Site Assessment (2014) (Available at: *https://neea.org/data/industrial-facilties-site-assessment*) (Last accessed April 4, 2019).

[24] New York State Energy Research and Development Authority (NYSERDA), Residential Statewide Baseline Study of New York State (July 2015) (Available at: *https://www.nyserda.ny.gov/About/Publications/Building-Stock-and-Potential-Studies/Residential-Statewide-Baseline-Study-of-New-York-State*) (Last accessed April 4, 2019).

[25] California Energy Commission (CEC), 2006 California Commercial End-Use Survey (CEUS) (2006) (Available at: *http://www.energy.ca.gov/ceus/2006_enduse.html*) (Last accessed April 4, 2019).

[26] California Energy Commission (CEC), 2009 Residential Appliance Saturation Study (RASS) (2009) (Available at: *http://www.energy.ca.gov/appliances/rass/)* (Last accessed April 4, 2019).

[27] DOE defines ''R-value'' as the thermal resistance of insulating material as determined using ASTM C177–13 or C518–15 and expressed in (°F·ft²·h/Btu). 10 CFR 431.102.

R-value and the impact of ambient conditions, tank set-point temperature, and draw patterns.

Issue F.5 DOE seeks data and input on typical tank water temperatures for UFHWSTs used in various residential (primarily multi-family buildings), commercial, and industrial applications to establish the fraction of UFHWSTs storing water at different temperatures.

Issue F.6 DOE seeks input on what are typical storage volumes of UFHWSTs used in various residential (primarily multi-family buildings), commercial, and industrial applications, including, but not limited to the fraction of UFHWSTs at different storage volumes (*i.e.,* equal to or less than 120 gallons, greater than 120 gallons and equal to or less than 500 gallons, greater than 500 gallons).

Issue F.7 DOE requests comment on the installation location of UFHWSTs in the context of the ambient air temperature conditions, including, but not limited to, the fraction of UFHWSTs that are installed outdoors, in an indoor conditioned space, or an indoor unconditioned space.

Issue F.8 DOE requests comment and any data concerning the potential degradation in the R-value over the lifetime of UFHWSTs.

Issue F.9 To better understand the distribution of energy consumption load profiles, DOE seeks comment on the fraction of UFHWSTs that are installed in utility grid-enabled storage applications.

G. Life-Cycle Cost and Payback Period Analysis

DOE plans to conduct LCC and PBP analyses to evaluate the economic impacts on residential (primarily multi-family buildings), commercial, and industrial consumers of potential standards for UFHWSTs. The effect of new or amended standards on residential (primarily multi-family buildings), commercial, and industrial consumers usually involves a reduction in operating cost and an increase in purchase cost.

DOE intends to analyze the potential for variability by performing the LCC and PBP calculations on a representative sample of residential (primarily multi-family buildings), commercial, and industrial consumers. DOE plans to utilize the sample of buildings developed for the energy use analysis and the corresponding simulation results. DOE plans to model uncertainty in many of the inputs to the LCC and PBP analysis using Monte Carlo simulation and probability distributions. As a result, the LCC and PBP results will be displayed as distributions of impacts compared to the no-new-standards case (*i.e.,* the case without amended standards).

Inputs to the LCC and PBP analysis are categorized as: (1) Inputs for establishing the purchase expense, otherwise known as the total installed cost, and (2) inputs for calculating the operating costs. Each type of input is discussed in the paragraphs that follow.

1. Total Installed Cost

The primary inputs for establishing the total installed cost are the baseline customer price, incremental customer price increases resulting from a potential standard, and installation costs. Baseline prices and standard-level price increases will be determined by applying mark-ups to manufacturer selling price estimates and sales tax.

The installation cost is added to the customer price to arrive at a total installed cost. DOE intends to develop installation costs using the most recent RS Means data available.[28] DOE also intends to use regional labor costs to more accurately estimate installation costs by applying the appropriate regional labor cost from RS Means to each sampled household or building.

In conducting its analyses, DOE intends to utilize a basic installation plan that would apply to all UFHWSTs. For UFHWSTs in new installations, DOE plans to include costs such as adding water piping, putting the UFHWST in place, and additional set-up. For replacement cases, in addition to the costs considered for new installations, DOE also plans to include the installation cost associated with disconnecting and removing the old UFHWST, as well as removal/disposal and permit fees, if applicable. In addition, DOE intends to assess whether installation costs vary with insulation levels and storage volume.

Issue G.1 DOE seeks input on any available installation cost data for UFHWSTs. DOE also seeks input on the approach it intends to use to develop UFHWST installation costs.

Issue G.2 DOE seeks input on any additional costs associated with installing UFHWSTs. For example, DOE seeks feedback on any installation costs associated with potential space-constraint issues when the original UFHWST location is too small to accommodate the replacement UFHWST (particularly when installing a UFHWST with a lower heat loss that may have larger physical dimensions).

[28] RS Means, 2019 Mechanical Cost Data (Available at: *https://www.rsmeans.com/products/books/cost-books.aspx*) (Last accessed April 4, 2019).

2. Operating Costs

The primary inputs for calculating the operating costs of UFHWSTs are energy consumption, equipment efficiency, energy prices, maintenance and repair costs, equipment lifetime, and discount rates. Both equipment lifetime and discount rates are used to calculate the present value of future operating costs.

The relevant energy consumption is the site energy use associated with offsetting the standby losses incurred by the UFHWST(s) installed in the building. DOE intends to utilize the standby loss calculation methodology described in section II.F of this document to determine energy use to offset the UFHWST's standby losses.

Maintenance costs are expenses associated with ensuring continued operation of the covered equipment over time. DOE intends to develop maintenance costs using the most recent RS Means data available [29] and manufacturer literature. DOE intends to assess whether maintenance costs vary with equipment heat loss and storage volume. In addition, DOE plans to consider the cases in which the equipment is covered by service and/or maintenance agreements. More specifically, DOE intends to account for the maintenance cost associated with UFHWSTs being drained and flushed annually to minimize deposition of sediment, maintain operating efficiency, and prolong equipment life.

Issue G.3 DOE seeks comment as to whether UFHWST maintenance costs vary as a function of insulation level and storage volume, for the technology options listed in section II.B.2. DOE also requests any data or information on maintenance costs and seeks comment on the extent to which maintenance costs are covered by service and/or maintenance agreements.

Repair costs are expenses associated with repairing or replacing components of the covered equipment that have failed. DOE intends to develop maintenance costs using the most recent RS Means data available [30] and manufacturer literature. DOE intends to assess whether repair costs vary with insulation level and storage volume.

Issue G.4 DOE seeks comment as to whether UFHWST repair costs and frequency of repair vary as a function of insulation level and storage volume, for the technology options listed in section

[29] RS Means, 2019 Facilities Maintenance & Repair Cost Data (Available at: *https://www.rsmeans.com/products/books/cost-books.aspx*) (Last accessed April 4, 2019).

[30] RS Means, 2019 Facilities Maintenance & Repair Cost Data (Available at: *https://www.rsmeans.com/products/books/cost-books.aspx*) (Last accessed April 4, 2019).

II.B.2. DOE also requests any data or information on repair costs and seeks comment on the extent to which repair costs are covered by service and/or maintenance agreements. DOE is also interested in whether consumers simply replace the equipment when they fail as opposed to repairing them.

Equipment lifetime is the age at which a unit is retired from service. DOE intends to conduct a literature review of UFHWST lifetime data together with any stakeholder lifetime data to develop a Weibull probability distribution to characterize UFHWST lifetime.[31]

Issue G.5 DOE requests equipment lifetime data and information on whether equipment lifetime varies based on UFHWST storage volume, application, or insulation level.

DOE measures LCC and PBP impacts of potential standard levels relative to a no-new-standards case that reflects the likely market in the absence of amended standards. DOE plans to develop efficiency market shares (*i.e.,* the distribution of equipment shipments by insulation level) for the UFHWSTs, for the anticipated year in which compliance with any potential amended standards would be required. DOE is not aware of any data to estimate the market shares of different UFHWST insulation levels in the no-new-standards case. DOE is particularly interested in receiving such data. If no market share data become available, DOE intends to use data on the number of water heater models at different insulation levels, as reported in DOE's compliance certification database[32] and from manufacturer literature.

Issue G.6 DOE requests information on the UFHWSTs market, including but not limited to, the current UFHWSTs market share data by different by insulation levels; similar historic data; and information on expected future trends in the efficiency of UFHWSTs.

H. Shipments Analysis

DOE develops shipments forecasts of equipment to calculate the national impacts of potential amended standards on energy consumption, net present value (''NPV''), and future manufacturer cash flows. DOE shipments projections are based on available historical data broken out by equipment class, capacity, and efficiency. Current sales estimates allow for a more accurate model that captures recent trends in the market. However, DOE is not aware of any shipment data for UFHWSTs.

Issue H.1 DOE seeks historical shipments data for UFHWSTs, which may include shipments by storage volume capacity bins.

The shipments model will consider the UFHWSTs in the commercial, industrial, and residential (primarily multi-family buildings) market segments.

Issue H.2 DOE seeks comment, which may include historical data, on the fraction of UFHWST shipments by commercial, industrial, and residential (primarily multi-family buildings) market segments.

The shipments model will consider three market segments: (1) New buildings acquiring UFHWSTs; (2) existing buildings replacing old UFHWSTs; and (3) existing buildings acquiring new UFHWSTs for the first time.

Issue H.3 DOE seeks comment, which may include historical data, on the fraction of UFHWSTs shipments by new buildings, replacements, and new owner market segments.

A table of the types of data requested for historical shipments in Issues H.1, H.2, and H.3 can be found in Table II.1, Table II.2, and Table II.3.

TABLE II.1—HISTORICAL SHIPMENTS BY STORAGE VOLUME CAPACITY BINS

Storage volume (gallons)	Historical shipments (millions)									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Up to 249 gallons										
250 to 999 gallons										
Above 1000 gallons										
Total										

TABLE II.2—HISTORICAL SHIPMENTS BY COMMERCIAL, INDUSTRIAL, AND RESIDENTIAL MARKET SEGMENTS

Market segment	Historical shipments (millions)									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Commercial										
Industrial										
Residential *										
Total										

* Primarily muti-family buildings.

[31] A Weibull probability distribution is a continuous distribution function typically used in reliability engineering and equipment failure analysis. If the data are available, DOE also plans to take into account differences in UFHWST lifetime based on usage and application.

[32] U.S. Department of Energy, Compliance Certification Database: Unfired Hot Water Storage Tanks—Commercial (Available at *https://www.regulations.doe.gov/certification-data/products.html*) (Last accessed April 4, 2019).

TABLE II.3—HISTORICAL SHIPMENTS BY NEW BUILDINGS, REPLACEMENT, AND NEW OWNER MARKET SEGMENTS

Market segment	Historical shipments (millions)									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
New Buildings										
Replacements										
New Owners										
Total										

* Primarily multi-family buildings.

I. Manufacturer Impact Analysis

The purpose of the manufacturer impact analysis (''MIA'') is to estimate the financial impact of amended standards on manufacturers of UFHWSTs, and to evaluate the potential impact of such standards on direct employment and manufacturing capacity. The MIA includes both quantitative and qualitative aspects. The quantitative part of the MIA primarily relies on the Government Regulatory Impact Model (''GRIM''), an industry cash-flow model adapted for this analysis, with the key output being the industry net present value (''INPV''), which is used to assess the financial impact of a potential standard. The qualitative part of the MIA addresses the potential impacts of energy conservation standards on manufacturing capacity and industry competition, as well as factors such as equipment characteristics, impacts on particular subgroups of firms, and important market and product trends.

As part of the MIA, DOE intends to analyze impacts of amended energy conservation standards on subgroups of manufacturers of covered equipment, including small business manufacturers. DOE uses the applicable Small Business Administration's (''SBA'') small business size standards to determine whether manufacturers qualify as small businesses, which are listed by the applicable North American Industry Classification System (''NAICS'') code.[33] Manufacturing of UFHWSTs is classified under NAICS 333318, ''Other Commercial and Service Industry Machinery Manufacturing,'' and the SBA sets a threshold of 1,000 employees or less for a domestic entity to be considered as a small business. This employee threshold includes all employees in a business's parent company and any other subsidiaries.

One aspect of assessing manufacturer burden involves examining the cumulative impact of multiple DOE standards and the equipment-specific regulatory actions of other Federal agencies that affect the manufacturers of covered equipment. While any one regulation may not impose a significant burden on manufacturers, the combined effects of several existing or impending regulations may have serious consequences for some manufacturers, groups of manufacturers, or an entire industry. Assessing the impact of a single regulation may overlook this cumulative regulatory burden. In addition to energy efficiency standards, other regulations can significantly affect manufacturers' financial operations. Multiple regulations affecting the same manufacturer can strain profits and lead companies to abandon product lines or markets with lower expected future returns than competing products. For these reasons, DOE conducts an analysis of cumulative regulatory burden as part of its rulemakings pertaining to appliance efficiency.

Issue I.1 To the extent feasible, DOE seeks company names and contact information for domestic or foreign-based companies that manufacture UFHWSTs for the U.S. market.

Issue I.2 DOE identified small businesses as a subgroup of manufacturers that could be disproportionally impacted by amended standards. DOE requests company names and contact information of small businesses, as defined by the SBA's size threshold, which manufacture UFHWSTs in the United States. In addition, DOE requests comment on any other manufacturer subgroups that could be disproportionally impacted by amended standards for UFHWSTs. DOE also requests feedback on any potential approaches that could be considered to address impacts on manufacturers, including small businesses.

Issue I.3 DOE requests information regarding the impact of cumulative regulatory burden on manufacturers of UFHWSTs associated with: (1) Other DOE standards applying to different products that these manufacturers may also make and (2) product-specific regulatory actions of other Federal agencies. DOE also requests comment on its methodology for computing cumulative regulatory burden and whether there are any flexibilities it can consider that would reduce this burden while remaining consistent with the requirements of EPCA.

In comments submitted to DOE in response to the May 2016 CWH TP NOPR, several stakeholders stated that there are small manufacturers that make UFHWSTs, but that do not manufacture other types of CWH equipment. (Bradford White, Docket No. EERE–2014–BT–TP–0008–0021 at p. 7; A.O. Smith, Docket No. EERE–2014–BT–TP–0008–0027 at p. 16; Raypak, Docket No. EERE–2014–BT–TP–0008–0028 at p. 2; Rheem, Docket No. EERE–2014–BT–TP–0008–0034 at p. 8)

Issue I.4 DOE requests comment on the fraction of UFHWST shipments that are manufactured by small manufacturers who do not manufacture other types of CWH equipment.

J. Other Energy Conservation Standards Topics

1. Market Failures

In the field of economics, a market failure is a situation in which the market outcome does not maximize societal welfare. Such an outcome would result in unrealized potential welfare. DOE welcomes comment on any aspect of market failures, especially those in the context of amended energy conservation standards for UFHWSTs.

2. Network Mode/''Smart'' Equipment

DOE recently published an RFI on the emerging smart technology appliance and equipment market. 83 FR 46886 (Sept. 17, 2018). In that RFI, DOE sought information to better understand market trends and issues in the emerging market for appliances and commercial equipment that incorporate smart technology. DOE's intent in issuing the RFI was to ensure that DOE did not

[33] Available online at *https://www.sba.gov/document/support-table-size-standards.*

inadvertently impede such innovation in fulfilling its statutory obligations in setting efficiency standards for covered products and equipment. Although UFHWSTs themselves do not consume energy or presumably have a network mode capability, they interact with water heaters that may have such capabilities. Consequently, to the extent water heaters have a network mode that may be impacted by a paired UFHWST, DOE seeks comments, data, and information on the issues presented in this RFI as they may be applicable to UFHWSTs.

3. Other

In addition to the issues identified earlier in this document, DOE welcomes comment on any other aspect of uniform national standards for UFHWSTs not already addressed by the specific areas identified in this document.

III. Submission of Comments

DOE invites all interested parties to submit in writing by the date specified previously in the **DATES** section of this document, comments, data, and information on matters addressed in this document and on other matters relevant to DOE's consideration of amended energy conservation standards for UFHWSTs. Interested parties may submit comments, data, and other information using any of the methods described in the **ADDRESSES** section at the beginning of this document. After the close of the comment period, DOE will review the public comments received and may begin collecting data and conducting analyses discussed in this RFI.

Submitting comments via http://www.regulations.gov. The *http://www.regulations.gov* web page requires you to provide your name and contact information. Your contact information will be viewable to DOE Building Technologies staff only. Your contact information will not be publicly viewable except for your first and last names, organization name (if any), and submitter representative name (if any). If your comment is not processed properly because of technical difficulties, DOE will use this information to contact you. If DOE cannot read your comment due to technical difficulties and cannot contact you for clarification, DOE may not be able to consider your comment.

However, your contact information will be publicly viewable if you include it in the comment itself or in any documents attached to your comment. Any information that you do not want to be publicly viewable should not be included in your comment, nor in any document attached to your comment. Otherwise, persons viewing comments will see only first and last names, organization names, correspondence containing comments, and any documents submitted with the comments.

Do not submit to *http://www.regulations.gov* information for which disclosure is restricted by statute, such as trade secrets and commercial or financial information (hereinafter referred to as Confidential Business Information (''CBI'')). Comments submitted through *http://www.regulations.gov* cannot be claimed as CBI. Comments received through the website will waive any CBI claims for the information submitted. For information on submitting CBI, see the Confidential Business Information section.

DOE processes submissions made through *http://www.regulations.gov* before posting. Normally, comments will be posted within a few days of being submitted. However, if large volumes of comments are being processed simultaneously, your comment may not be viewable for up to several weeks. Please keep the comment tracking number that *http://www.regulations.gov* provides after you have successfully uploaded your comment.

Submitting comments via email, hand delivery/courier, or postal mail. Comments and documents submitted via email, hand delivery/courier, or postal mail also will be posted to *http://www.regulations.gov.* If you do not want your personal contact information to be publicly viewable, do not include it in your comment or any accompanying documents. Instead, provide your contact information in a cover letter. Include your first and last names, email address, telephone number, and optional mailing address. The cover letter will not be publicly viewable as long as it does not include any comments.

Include contact information each time you submit comments, data, documents, and other information to DOE. If you submit via postal mail or hand delivery/courier, please provide all items on a CD, if feasible, in which case it is not necessary to submit printed copies. No telefacsimiles (faxes) will be accepted.

Comments, data, and other information submitted to DOE electronically should be provided in PDF (preferred), Microsoft Word or Excel, WordPerfect, or text (ASCII) file format. Provide documents that are not secured, written in English, and free of any defects or viruses. Documents should not contain special characters or any form of encryption and, if possible, they should carry the electronic signature of the author.

Campaign form letters. Please submit campaign form letters by the originating organization in batches of between 50 to 500 form letters per PDF or as one form letter with a list of supporters' names compiled into one or more PDFs. This reduces comment processing and posting time.

Confidential Business Information. Pursuant to 10 CFR 1004.11, any person submitting information that he or she believes to be confidential and exempt by law from public disclosure should submit via email, postal mail, or hand delivery/courier two well-marked copies: One copy of the document marked ''confidential'' including all the information believed to be confidential, and one copy of the document marked ''non-confidential'' with the information believed to be confidential deleted. Submit these documents via email or on a CD, if feasible. DOE will make its own determination about the confidential status of the information and treat it according to its determination.

Factors of interest to DOE when evaluating requests to treat submitted information as confidential include: (1) A description of the items, (2) whether and why such items are customarily treated as confidential within the industry, (3) whether the information is generally known by or available from other sources, (4) whether the information has previously been made available to others without obligation concerning its confidentiality, (5) an explanation of the competitive injury to the submitting person which would result from public disclosure, (6) when such information might lose its confidential character due to the passage of time, and (7) why disclosure of the information would be contrary to the public interest.

It is DOE's policy that all comments may be included in the public docket, without change and as received, including any personal information provided in the comments (except information deemed to be exempt from public disclosure).

DOE considers public participation to be a very important part of the process for developing standards. DOE actively encourages the participation and interaction of the public during the comment period in each stage of the rulemaking process. Interactions with and between members of the public provide a balanced discussion of the issues and assist DOE in the rulemaking process. Anyone who wishes to be added to the DOE mailing list to receive future notices and information about

this process should contact Appliance and Equipment Standards Program staff at (202) 287–1445 or via email at *ApplianceStandardsQuestions@ee.doe.gov.*

Signed in Washington, DC, on August 1, 2019.

Alexander N. Fitzsimmons,

Acting Deputy Assistant Secretary for Energy Efficiency, Energy Efficiency and Renewable Energy.

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BILLING CODE 6450–01–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No. FAA–2019–0329; Notice No. 25–19–06–SC]

Special Conditions: The Boeing Company (Boeing) Model 777–9 Series Airplane; Interior Design To Facilitate Searches for Passenger Cabin High Wall Suites

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed special conditions.

SUMMARY: This action proposes special conditions for The Boeing Company (Boeing) Model 777–9 series airplane. This airplane will have novel or unusual design features when compared to the state of technology envisioned in the airworthiness standards for transport category airplanes. These design features are passenger cabins with high wall suites (HWS). The applicable airworthiness regulations do not contain adequate or appropriate safety standards for this design feature. These proposed special conditions contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards.

DATES: Send comments on or before September 23, 2019.

ADDRESSES: Send comments identified by Docket No. FAA–2019–0329 using any of the following methods:

- *Federal eRegulations Portal:* Go to *http://www.regulations.gov/* and follow the online instructions for sending your comments electronically.
- *Mail:* Send comments to Docket Operations, M–30, U.S. Department of Transportation (DOT), 1200 New Jersey Avenue SE, Room W12–140, West Building Ground Floor, Washington, DC 20590–0001.
- *Hand Delivery or Courier:* Take comments to Docket Operations in Room W12–140 of the West Building Ground Floor at 1200 New Jersey Avenue SE, Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.
- *Fax:* Fax comments to Docket Operations at 202–493–2251.

Privacy: The FAA will post all comments it receives, without change, to *http://www.regulations.gov/,* including any personal information the commenter provides. Using the search function of the docket website, anyone can find and read the electronic form of all comments received into any FAA docket, including the name of the individual sending the comment (or signing the comment for an association, business, labor union, etc.). DOT's complete Privacy Act Statement can be found in the **Federal Register** published on April 11, 2000 (65 FR 19477–19478).

Docket: Background documents or comments received may be read at *http://www.regulations.gov/* at any time. Follow the online instructions for accessing the docket or go to Docket Operations in Room W12–140 of the West Building Ground Floor at 1200 New Jersey Avenue SE, Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

FOR FURTHER INFORMATION CONTACT: Shannon Lennon, Airframe and Cabin Safety Section, AIR–675, Transport Standards Branch, Policy and Innovation Division, Aircraft Certification Service, Federal Aviation Administration, 2200 South 216th Street, Des Moines, Washington 98198; telephone and fax 206–231–3209; email *shannon.lennon@faa.gov.*

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites interested people to take part in this rulemaking by sending written comments, data, or views. The most helpful comments reference a specific portion of the special conditions, explain the reason for any recommended change, and include supporting data.

The FAA will consider all comments we receive by the closing date for comments. The FAA may change these special conditions based on the comments received.

Background

On April 24, 2018, Boeing applied for an amendment to Type Certificate No. T00001SE to include the new Model 777–9 series airplane. The Boeing Model 777–9 series airplane, which is a derivative of the 777–300ER currently approved under Type Certificate No. T00001SE, is a twin-engine, transport category airplane with seating for up to 495 passengers depending upon airplane configuration, and a maximum takeoff weight of approximately 775,000 lbs.

Type Certification Basis

Under the provisions of title 14, Code of Federal Regulations (14 CFR) 21.101, Boeing must show that the Model 777–9 series airplane, continues to meet the applicable provisions of part 25, as amended by amendments 139 through 141, and the regulations listed in Type Certificate No. T00001SE, or the applicable regulations in effect on the date of application for the change, except for earlier amendments as agreed upon by the FAA.

If the Administrator finds that the applicable airworthiness regulations (*i.e.,* 14 CFR part 25) do not contain adequate or appropriate safety standards for the Boeing Model 777–9 series airplane because of a novel or unusual design feature, special conditions are prescribed under the provisions of § 21.16.

Special conditions are initially applicable to the model for which they are issued. Should the type certificate for that model be amended later to include any other model that incorporates the same novel or unusual design feature, these special conditions would also apply to the other model under § 21.101.

In addition to the applicable airworthiness regulations and special conditions, the Boeing Model 777–9 series airplane must comply with the continued airworthiness and safety improvement requirements for transport category airplanes of 14 CFR part 26, the fuel vent and exhaust emission requirements of 14 CFR part 34, and the noise certification requirements of 14 CFR part 36.

The FAA issues special conditions, as defined in 14 CFR 11.19, in accordance with § 11.38, and they become part of the type certification basis under § 21.101.

Novel or Unusual Design Features

The Boeing Model 777–9 series airplane will incorporate the following novel or unusual design features:

This airplane will include a passenger cabin with six HWS arranged in two rows of three suites each in a 1–1–1 configuration. Each HWS has a door and walls that extend from the floor to the ceiling or close to the ceiling. The characteristics of the HWS design are unique such that the suites are not fully open to the cabin (such as for