

**Interpretation IC 90.1-1989-18 - June 26, 1995**  
**ASHRAE/IES Standard 90.1-1989, *Energy Efficient Design of New Buildings Except Low-Rise Residential Buildings***

**Request from:** R. Michael Martin, California Energy Commission, 1516 Ninth Street MS 42, Sacramento, CA 95814

**References:** Mr. Martin's request refers to Standard 90.1-1989 clause 10.4.1 and 11.4.2 and the associated Tables 10-8 and 11-1.

**Background:** Standard 90.1-1989, as amended by Addendum 90.1b-1992, includes minimum performance provisions for two groups of water heating appliances.

Clause 10 is entitled "Heating, Ventilating, and Air-Conditioning (HVAC) Equipment." Clause 10.4.1 requires that "Equipment shall have a minimum efficiency at the specified rating conditions, not less than the values shown in Tables 10-1 through 10-10." Table 10-8 is entitled "Standard Rating Conditions and Minimum Performance Boilers: Gas- and Oil-Fired." There is no definition in the standard for the term "boiler."

Clause 11 is entitled "Service Water Heating Systems and Equipment." Clause 11.4.2 requires that "all water heaters and hot water storage tanks shall meet the criteria of Table 11-1." Table 11-1 is entitled "Minimum Performance of Water Heating Equipment." Service water heating is defined in the standard as "the supply of hot water for purposes other than comfort heating and process requirements." The terms "water heater" and "water heating systems and equipment" are not defined in the standard.

California's Energy Commission's Interpretation: Mr. Martin's letter opines that:

The provisions of Clause 11, Subclause 11.4.2, and Table 11-1 apply to all equipment in buildings for which compliance with Standard 90.1 is claimed and that is used for the supply of hot water for purposes other than comfort heating and process requirements. Further, these provisions apply to water heating systems and equipment that are marketed as boilers but used in the building for which compliance is claimed for the supply of hot water for purposes other than comfort heating and process requirements.

Water heating systems and equipment marketed as boilers do not have to comply with the provisions of Clause 10, subclause 10.1.1, and Table 10-8, if they are used for the supply of hot water for purposes other than comfort heating and process requirements.

Water heating systems and equipment, used in the building for which compliance with Standard 90.1 is claimed, for both comfort heating and for the supply of hot water for purposes than comfort heating and process, must comply with both the provisions of Clauses 10 and 11.

**Question:** Are the California Energy Commission's interpretations correct?

**Answer:** a) No.

**Comment:** The committee has determined that the criteria for water heaters in the current standard does not apply to hot water supply boilers. The committee has proposed Addendum 90.1n to 90.1-1989 which is intended to provide coverage for hot water supply boilers.

**Answer:** b) No.

**Comment:** In 90.1-1989 these units would be covered as boilers.

**Answer:** c) No.

**Comment:** Please see 10.4.1.3 and 11.5.4.1 of 90.1-1989 for clarification.