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Staff Supplement to California Statewide Codes and Standards Enhancement (CASE) Team Measure Proposal Nonresidential Space Heating

Date: **March 28, 2024**

Pages: **3**

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Description of Proposed Regulatory Changes

The measure change proposal submitted by California Statewide Codes and Standards Enhancement (CASE) team and titled “Nonresidential HVAC Space Heating” proposes to make the following changes to the Standards:

1. Hot Water Supply Temperature Limit

    - Add a mandatory requirement for zones that use hot water for space heating no greater than 130 °F. This will apply to new construction and additions and alterations.

        - Staff agrees with the proposed changes to the definitions and Section 120.2(l) and have incorporated substantially similar language into the express terms.

2. Mechanical Heat Recovery and Thermal Energy Storage

    - Add new prescriptive requirements for simultaneous mechanical heat recovery for large buildings based on cooling or heating capacity.

    - Add new prescriptive requirements for recovering heat for service water heating based on service water heating capacity.

    - Add new prescriptive requirements for thermal energy storage based on cooling tons and service water heating with heating capacity.

        - Staff agrees with the proposed changes for heat recovery topics for simultaneous heating and cooling of spaces, as well as heat recovery for service water heating in section

140.4(r)1 and 3. Staff have incorporated substantially similar language to the express terms.

- Staff does not agree with the proposed changes for thermal energy storage and have not included the proposed changes to the express terms.

3. Electric Resistance Heating

- Updating existing prescriptive requirements in 140.4(g) to expand use of electric resistance heating to low load spaces.

  - Staff does not agree with the proposed changes for electric resistance and have not included the proposed changes to the express terms.

Staff finds that the thermal energy storage measure, although cost effective and energy saving, is too complicated at this time for implementation for a minimum building energy efficiency standard. Staff plans to reevaluate the feasibility of incorporating this measure in upcoming code cycles.

Staff finds that the electric resistance measure, although cost effective, does not save energy. Staff understands that this measure would reduce source energy and fossil fuel consumption, but because this measure does not save energy staff is not proposing the measure in this code cycle.

Staff Analysis and Conclusion

Staff has analyzed the submitted proposal and reached the following conclusions for the measures included in the Express Terms:

- Based on the evidence presented in the proposal, the hot water supply temperature and mechanical heat recovery measures, as proposed, are cost effective and the author has appropriately followed the Energy Commission's Life Cycle Cost methodology.

- Measure costs premiums presented in the proposal are reasonable and appropriate for the measure proposed.

- Measured energy savings presented in the proposal are appropriately modeled and appear credible.

- Measure environmental impacts presented in the proposal are reasonable and appropriate for the measure proposed.