

DOCKETED

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Proposed Specification for Electric Water Heating with Load Management for California Title 24 - 2019

RE: Proposed Specification for Electric Water Heating with Load Management for California Title 24 - 2019.

The Washington State Energy Office supports the development of energy codes in our state. This coming year Washington State will also consider implementation of water heater demand control capabilities like those proposed for Title 24. Providing a consistent approach throughout the Pacific coast region benefits our citizens and the companies that serve them by creating large markets for products.

The rules define the requirements for electric water heating equipment that are applying for a "water heating load management credit" under the alternate compliance method (ACM) for title 24. These are not mandatory unless the permit holder is using a credit for compliance using the ACM. This is consistent with our own Northwest codes practice of introducing new technologies into the codes via voluntary credits as opposed to mandatory base code requirements.

The rules define two types of controls: "local load management" and "remote load management". The primary difference between the two is that the "local load management" is structured around response to pre-scheduled pricing while the "remote load management" includes responses to grid-defined needs that are potentially not scheduled ahead. This dual provision allows for alternate approaches to water heater autonomy versus direct or indirect aggregator control schemes. "Local Load Management" functionality is considered a minimum requirement in this specification while "remote load management" is considered optional and may be substituted as an alternative control. From a Northwest perspective, we would like to see all water heaters be "remote load management capable" since this provides the greatest grid flexibility at a cost that is probably significantly less for the water heater unit than local load management which requires a secondary device on premise to store pricing schedules and keep track of time and dates. In the near term, we believe that the best business case for both consumers and the grid is enabled by "remote load management" rather than "local load management". However, without a mature market for either system, it is reasonable to allow for both pathways at this time.

The rule includes provisions for multiple communications options including ADR 2.0 and CTA 2045. This multiplicity of communications protocols is probably OK at this stage of the technology.

From a Northwest perspective, probably the most important component of the specification is the requirement that the device response protocols match CTA 2045. Even if a different communication protocol is used, the device must be capable of responding to the CTA command structure. This sends the right market signals to water heater manufacturers that CTA 2045 is ultimately the specification that they will need to design to, and that other specifications will need to be layered on top. This will help make the case for future circuit board and chipset designs that embed CTA 2045 functionality into controls at very little incremental cost.

The primary lack in the requirements is that it does not specify CTA 2045 physical layer components; i.e. the device connections that allow for multiple communication devices to be used on the same physical connection structure. Ultimately, this full compliance with CTA 2045 is what we believe would provide the greatest compatibility with a wide range of future connectivity options ranging from FM radio signal to WiFi to hardwired connections. Over the 15-year life of a typical water heater, there is likely a need for this flexibility as communication devices and security

protocols change over time. While the physical "connection" specified in this version, it would be worth weighing in that the Northwest believes that CTA 2045 physical connection specifications will provide the best value for end-consumers and for the grid over the full life of the water heater.

Thank you for the opportunity to provide input.

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