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California Energy Commission
Attention: Docket No. 05-BSTD-02
Dockets Office
1516 Ninth Street, Mail Station 4
Sacramento, CA 95814

NEMA comments on Proposed Title 24 Programmable Communicating Thermostat Requirements

NEMA is the leading trade association in the United States representing the interests of electroindustry manufacturers. Founded in 1926 and headquartered near Washington, D.C., its 430 member companies manufacture products used in the generation, transmission and distribution, control, and end-use of electricity, including thermostats.

Residential thermostats are in the scope of NEMA's Residential Controls Section. Participants in the CEC PCT effort are Apcom, Inc.; Emerson/White-Rodgers, GE Consumer & Industrial; Honeywell, Inc.; Johnson Controls, Inc.; and Therm-O-Disc.

The proposed CEC requirements continue to evolve making it difficult to provide well-considered comments. Assuming that rev29f is the 'final' draft for comment we offer the following. Please note that after rules are 'final' it would take 18-24 months to develop and test a commercial product.

We disagree with the approach of having a Reference Joint Appendix 5. The requirements should be in Title 24. The CEC title should be strictly limited to the requirements needed to accomplish the California state demand response goals. The Appendix contains tutorial materials, improper use of verbs relative to their normative meaning in standards (for example, in standards practice in the US and worldwide, requirements are noted through the use of the word 'shall'). Only 'shalls' are normative and the title should be limited to the 'shalls'.

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Also, we believe that the security requirements, including design basis threats, should be made available only on a 'need to know' basis. Having this information in the public domain largely defeats security by making it obvious which threats are beyond the design basis, creating clearer opportunities for mischief. The desire for two-way communications on the part of IOUs further complicates security, as the customer site becomes a transmitter, which, if you will, is already inside the security fence—another reason why two-way communications significantly raises complexity and cost without clear benefits beyond well-designed one-way systems.

In a recent discussion, IOUs indicated that they might use the EXCEPTION 2 to Section 112(c) as a means to circumvent the need for PCTs on their systems altogether. Utilities are not qualified experts in HVAC controls and having them specify HVAC controls raises questions, for example, about product safety performance and reliability, customer satisfaction, and warrantees for the HVAC equipment, as well as for the PCT surrogate.

As we have said before, if the IOUs want to specify their own unique controls they may issue RFPs which contractors can bid on; there is no need to require PCT products be built with expansion ports for two-way communications. The IOUs have stated that they plan to do their own thing either way as it relates to the communications protocols and necessary associated programming, which means these expansion ports add cost and complexity to the PCTs without providing significant value.

The manufacturers would like to serve significant markets. If IOUs opt out of the PCT markets, the California market would be significantly reduced. The potential market for the Revised Title 24 PCT, as envisioned by the CEC, would already be small, consisting only of new buildings and significant retrofits—not a large number like the advanced meters market envisioned. This is another reason why California would be better served with a uniform statewide one-way system, consisting of reliable systems from recognized manufacturers.

Some specific comments follow:
The radio communications system needs to be finalized—see (2) Communicating Capabilities, which currently says RDS, which we understand to be in flux.

Price Events. We do not understand the benefit of giving customers the capability to change the default temperature offset or to use, instead, a reset to an absolute temperature instead of a default offset. Most customers would not understand whatever benefit could result and would not be able to rationally change the defaults to some other value that would benefit them or the grid. Of course, if a customer reset the offset from 4 degrees F to zero, there would be no benefit. We think a simple manual override; with no capability to change the default setting would incorporate the demand response benefit (in this case lowering peak rates) intended.

Communications port—we continue to disagree with this proposed requirement. The one-way system does not need it and if IOUs are going to spec their own devices to control HVAC directly, there is no need for a PCT with a port.

The utility business model goes hand in hand with addressability. An approach we have discussed is PCTs packaged with serial numbers that contractors for a new home, or homeowners for the case of PCT purchase at a home improvement store, could phone into the local distribution company. The utility, via caller identification, would know where the PCT was. There is no need for two-way electronic interrogation and verification.

The manufacturers as represented by NEMA fully support the goals of demand response and as agreed upon in the meeting with Commissioner Rosenfeld and staff of the CEC and PUC in October of 2006 support a programmable communicating thermostat with a one-way communication protocol to meet the demand response needs of the State of California. Additionally, as we have previously stated, manufacturers are willing to study, discuss and implement if feasible the other proposed elements in the current draft of the Title 24 PCT specifications for the 2011 Title 24 re-write. The 2008 Title 24 code does not provide sufficient time for manufacturers to study and develop products to meet the still evolving specifications listed in the latest draft (Rev29).

Therefore, we would respectfully request that in keeping with our joint agreement between the manufacturers and the CEC in October 2006 that the Proposed Title 24 PCT Requirements for the 2008 building code be revised to simply require a uniform statewide one-way system, consisting of reliable systems from recognized manufacturers. Thank you in advance for your consideration

Please contact Mr. Edward Gray, NEMA Director for Energy Infrastructure, at 703-841-3265 for additional information or follow-up to our submitted comments.

Respectfully submitted,

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