

From: [REDACTED]

Sent: Monday, March 26, 2012 6:44 PM

To: [REDACTED]

Cc: ED Custom Review; Nikhil Gandhi; Bradley, Kris; Ball, Joseph; Kanungo, Amit; Ehrlich, Charles; Steven Gates

Subject: ED's ex ante review of PG&E project #: NC117106 EAR

Hi [REDACTED]

This refers to Energy Division's custom ex ante review finding of the above referenced PG&E custom project. In this project, floating head/suction pressure controls were installed in a refrigerated warehouse that was not in use for two years. PG&E correctly classified the incentive application as a new construction project because the equipment was not operational for two years. However, the 2008 T24 standard requires the use of floating head/suction pressure controls. This project is **not approved** because this measure is not incented in NC refrigerated warehouses. For applications of this measure in facilities other than refrigerated warehouses, ED may wish to conduct an industry standard practice assessment in collaboration with PG&E. It appears though that T24 requirement could be considered as the base standard practice even for other industrial sectors. If PG&E would like to discuss ED's assessment during the weekly call or at a specifically scheduled time, we are available.

T24 requirements are listed in the following document.

http://www.energy.ca.gov/2008publications/CEC-400-2008-017/rev1_chapters/NRCM_Chapter_8_Refrigerated_Warehouse.pdf

On page 8-13:

"The minimum saturated condensing temperature set point for systems utilizing evaporative condensers must be 70°F (21°C) or less. To provide stable system operation at the minimum condensing temperature, all components in the system must be capable of operating at a saturated condensing temperature less than or equal to the minimum saturated condensing temperature set point.

To minimize overall system energy consumption, the condensing temperature set point in evaporatively cooled systems must be reset using outdoor wet bulb temperature (i.e. variable set point control) rather than controlling to a single set point. Alternative set point control strategies may be utilized which achieve similar results to the prescribed wet bulb following control method; controlling fan speed by utilizing calculations or mapped performance to minimizing total compressor and condenser fan power. These controls are uncommon but may be used if the control method is sufficiently described and proven to the satisfaction of the local enforcement agency."

This chapter also addresses floating suction. It is not required, but there is language stating, if used, that the (required) variable-speed evaporator fans first be reduced to minimum speed before resetting suction temperature.

The above was from the compliance manual; the Standard itself reads:

"126(d)5. All condenser fans for air-cooled condensers shall be continuously variable speed and the condensing temperature or pressure control system shall control the speed of all condenser fans serving a common condenser loop in unison. The minimum condensing temperature setpoint shall be less than or equal to 70°F, or reset in response to ambient dry bulb temperature or refrigeration system load."

Thanks,

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