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GUIDANCE FOR ELECTRIC READINESS OF MULTIFAMILY CENTRAL HOT WATER SYSTEMS

This document is intended to provide guidance for compliance with the electric readiness provisions of the Encinitas Municipal Code Section 23.12.080. It may be updated from time-to-time.

Heat Pump Water Heater Ready. Central water heating systems using gas or propane to serve multiple dwelling units shall include the following:

1. The system input capacity of the gas or propane water heating system shall be determined as the sum of the input gas or propane capacity of all water heating devices associated with each gas or propane water heating system.
2. Space reserved shall include:
 - A. Heat Pump. The minimum space reserved shall include space for service clearances and air flow clearances and shall meet one of the following:
 - i. The space reserved shall be the space required for a heat pump water heater system that meets the total building hot water demand as calculated and documented by the responsible person associated with the project; or
 - ii. The space reserved shall meet the requirements specified in Appendix A, Item 1.
 - B. Tanks. The minimum space reserved shall include space for service clearances and shall meet one of the following:
 - i. The space reserved shall be the space required for a heat pump water heater system that meets the total building hot water demand as calculated and documented by the responsible person associated with the project; or
 - ii. The space reserved shall meet the requirements specified in Appendix A, Item 2.
3. Ventilation shall be provided by meeting one of the following:
 - A. Physical space reserved for the heat pump shall be located outside; or
 - B. A pathway shall be reserved for future routing of supply and exhaust air via ductwork from the reserved heat pump location to a suitable outdoor location. Penetrations through the building envelope for louvers and ducts shall be planned and identified for future use. The reserved pathway and penetrations through the building envelope shall be sized to meet one of the following:
 - i. The reserved pathway and penetrations shall be sized to serve a heat pump water heater system that meets the total building hot water demand as calculated and documented by the responsible person associated with the project.
 - ii. The reserved pathway and penetrations shall be sized to meet the requirements specified in Appendix A, Item 3
4. Condensate drainage piping. An approved receptacle that is sized per the California Plumbing Code for condensate drainage shall be installed within 3 feet of the reserved heat pump location, or piping shall be installed from within 3 feet of the reserved heat pump location to an approved discharge location that is sized in accordance with the California Plumbing Code, and meet one of the following:

- A. Condensate drainage shall be sized to serve a heat pump water heater system that meets the total building hot water demand as calculated and documented by the responsible person associated with the project.
 - B. Condensate drainage piping shall be sized to meet the requirements specified in Appendix A, Item 4.
5. Electrical
- A. Physical space shall be reserved on the bus system of the main switchboard or on the bus system of a distribution board to serve the future heat pump water heater system including the heat pump and temperature maintenance tanks. In addition, the physical space reserved shall be capable of providing adequate power to the future heat pump water heater in accordance with the following:
 - i. Heat Pump. Meet one of the following.
 - A. The electrical power required to power a heat pump water heater system heat pump that meets the total building hot water demand as calculated and documented by the responsible person associated with the project.
 - B. The electrical power required that meets the requirements specified for the heat pump in Appendix A, Item 5.
 - ii. Temperature Maintenance Tank. Meet one of the following.
 - A. The electrical power required to power a heat pump water heater system temperature maintenance tank that meets the total building hot water demand as calculated and documented by the responsible person associated with the project.
 - B. The electrical power required that meets the requirements specified for the temperature maintenance tank in Appendix A, Item 5.

Appendix A – Qualification Requirements for Central Heat Pump Water Heater Ready

This Appendix provides sizing requirements for electric ready infrastructure installed with gas or propane water heating systems to meet the requirement for electric readiness.

1. Heat Pump Space Requirements

Space shall be reserved for future installation of central heat pump water heaters. The space reserved shall meet the following requirements:

- a. If the gas water heating system has an input capacity less than 200,000 Btu per hour, the minimum space reserved for the heat pump shall be 2.0 square feet per 10,000 Btu per hour input of the gas or propane water heating system, and the minimum linear dimension of the space reserved shall be 48 linear inches.
- b. If the gas water heating system has an input capacity greater than or equal to 200,000 Btu per hour, the minimum space reserved for the heat pump shall be 3.6 square feet per 10,000 Btu per hour input of the gas or propane water heating system, and the minimum linear dimension of the space reserved shall be 84 linear inches.

2. Storage Tank Space Requirements

Space shall be reserved for future installation of hot water storage tanks. The space reserved shall meet the following requirements:

- a. If the input capacity of the gas water heating system is less than 200,000 Btu per hour, the minimum space reserved for the storage and temperature maintenance tanks shall be 4.4 square feet per 10,000 Btu per hour input of the gas or propane water heating system.
- b. If the input capacity of the gas water heating system is greater than or equal to 200,000 Btu per hour, the minimum physical space reserved for the storage and temperature maintenance tanks shall be 3.1 square feet per 10,000 Btu per hour input of the gas or propane water heating system.

3. Ventilation Requirements

The reserved pathway and penetrations through the building envelope shall meet the following requirements:

- a. If the input capacity of the gas water heating system is less than 200,000 Btu per hour, the minimum air flow rate shall be 70 CFM per 10,000 Btu per hour input of the gas or propane water heating system and the total external static pressure drop of ductwork and louvers shall not exceed 0.17 inch when the future heat pump water heater is installed.
- b. If the input capacity of the gas water heating system is greater than or equal to 200,000 Btu per hour, the minimum air flow rate shall be 420 CFM per 10,000 Btu per hour input of the gas or propane water heating system and the total external static pressure drop of ductwork and louvers shall not exceed 0.17 inch when the future heat pump water heater is installed.

4. Condensate Drainage Piping Requirements

The condensate drainage piping shall meet the following requirements:

- a. If the input capacity of the gas water heating system is less than 200,000 Btu per hour, condensate drainage shall be sized for 0.2 tons of refrigeration capacity per 10,000 Btu per hour input.
- b. If the input capacity of the gas water heating system is greater than or equal to 200,000 Btu per hour, condensate drainage shall be sized for 0.7 tons of refrigeration capacity per 10,000 Btu per hour input.

5. Electrical Requirements

The electrical system serving the heat pump shall meet the following requirements:

- a. If the input capacity of the gas water heating system is less than 200,000 Btu per hour, provide 0.1 kVA per 10,000 Btu per hour input.
- b. If the input capacity of the gas water heating system is greater than or equal to 200,000 Btu per hour, provide 1.1 kVA per 10,000 Btu per hour input.

The electrical system serving the temperature maintenance tank shall meet the following requirements:

- c. If the input capacity of the gas water heating system is less than 200,000 Btu per hour, provide 1.0 kVA per 10,000 Btu per hour input.
- d. If the input capacity of the gas water heating system is greater than or equal to 200,000 Btu per hour, provide 0.6 kVA per 10,000 Btu per hour input.