

# Element D Services

Heating, Ventilating, and Air  
Conditioning

## D3010 TECO Energy Supply

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### PART 1 - GENERAL

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#### 1.1 OVERVIEW

- A. This section addresses criteria for buildings with thermal chilled water and steam energy provided by the Texas Medical Center Central Heating and Cooling Services Corporation (TECO).
- B. For specific design requirements, refer to the latest revision of TECO's New Service Connection Manual.

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### PART 2 - DESIGN CRITERIA

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#### 2.1 GENERAL

- A. TECO chilled water and steam services shall enter the building's first floor mechanical room from below the slab. The building thermal energy services shall tie into the top of TECO chilled water supply and return mains and high pressure steam and low pressure pumped condensate return mains located below grade with straight or 45 degree tap.
  - 1. TECO will install chilled water and steam service lateral lines to a point five (5) feet from the exterior wall.
  - 2. Chilled water and steam service lines shall be returned immediately adjacent to the point of delivery unless TECO agrees in writing to a different point of delivery.
- B. Energy supply to the building will be metered through a chilled water meter, steam meter and a condensate meter provided by TECO and installed by the Division 23 contractor. The A/E shall coordinate TECO meter locations and space requirements within the mechanical equipment room per TECO criteria. Pre-calibrated, revenue grade (BAPI) Temperature and pressure sensors shall be provided on the primary side.
- C. The secondary (building) side shall be metered through a chilled and hot water meters provided by the project and installed by the Division 23 contractor.
- D. The A/E shall confirm all criteria noted above and coordinate exact thermal energy service entrance locations to the building.

#### 2.2 CHILLED WATER SERVICE

- A. The (TECO) design chilled water supply temperature to the building for cooling will be 43 degrees F. The building HVAC piping design shall be based on peak flow. The building air conditioning system shall be designed to accommodate the TECO criteria noted below:
  - 1. Plate and frame heat exchangers must be used to transfer heat from the building chilled water secondary side to the primary (TECO) chilled water side of the heat exchanger. Provide a fine mesh double basket strainer upstream of heat exchanger connections.

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2. The heat exchanger shall be selected for a 2 degree approach where the leaving chilled water on the secondary side will not exceed 45 degrees F and the (TECO) chilled water entering on the primary side is 43 degrees F. Refer to Design Guidelines Element D3030.
3. Provide temperature and pressure gauges on the primary chilled water header.
4. When a new building is planned to be connected to TECO chilled water service, a separate (make-up) water meter must be installed on the building secondary side of the chilled water system. The meter shall be a positive displacement type with a magnetic driven register that cannot be reset.

### 2.3 STEAM AND STEAM CONDENSATE RETURN SERVICE

- A. TECO has indicated that the steam pressure at the inlet pressure would be within a normal operating range of 125 psig to 300 psig with a maximum pressure of 425 psig and a minimum pressure of 100 psig at a maximum temperature of 625 degrees F.
- B. The steam system will be designed for a steam supply pressure of 225 to 275 psig. Provide a two-stage steam pressure reducing station to reduce TECO steam pressure to 70 psig and 15 psig for use within the facility. Provide a 1/3 - 2/3 piping arrangement with the appropriate steam pressure indicating gauges for all steam pressure reducing valve stations. There shall be egress from both ends of the steam PRV station.
- C. All steam condensate shall be returned to TECO, and the pumped condensate pressure shall not exceed the maximum allowable pressures required by TECO. Pressure regulating devices shall be provided where required.

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## PART 3 - SPECIAL CONTRACT DOCUMENT REQUIREMENTS

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### 3.1 GENERAL

- A. Specify temperatures and pressures of TECO energy service to be delivered to the building on the Contract Documents.
- B. Indicate chilled water pressure gauges at the TECO supply and return piping on the piping riser diagrams.

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## PART 4 - PRODUCTS

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### 4.1 GENERAL

- A. Refer to Owner's Master Construction Specifications. These are available on the Owner's Design Guidelines website: <http://www2.mdanderson.org/depts/cpm/standards/specs.html>
- B. The A/E shall specify a meter isolator/splitter so that the meter signal can be shared by building automation system. A/E shall coordinate the location of this device with TECO.

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### PART 5 - DOCUMENT REVISION HISTORY

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Issue	Date	Revision Description	Reviser
	20190301	Initial Adoption of Element	
Rev. 1			

END OF ELEMENT D3010