**SECTION 23 12 13**

**FACILITY FUEL OIL PUMPS**

**BASED ON DFD MASTER SPECIFICATION DATED 10/1/2012**

***This section has been written to cover most (but not all) situations that you will encounter. Depending on the requirements of your specific project, you may have to add material, delete items, or modify what is currently written. The Division of Facilities Development expects changes and comments from you.***

**P A R T 1 - G E N E R A L**

**SCOPE**

This section includes specifications for facility fuel oil pumps. Included are the following topics:

PART 1 - GENERAL

 Scope

 Related Work

 Reference

 Quality Assurance

 Shop Drawings

 Operation and Maintenance Data

 Design Criteria

PART 2 - PRODUCTS

 Fuel Oil Pumps

PART 3 - EXECUTION

 Installation

Fuel Oil Pumps

 Construction Verification Items

 Functional Performance Testing

 Agency Training

**RELATED WORK**

Section 01 91 01 or 01 91 02 – Commissioning Process

Section 23 05 13 - Common Motor Requirements for HVAC Equipment

Section 23 08 00 – Commissioning of HVAC

**REFERENCE**

Applicable provisions of Division 1 shall govern work under this section.

**QUALITY ASSURANCE**

Refer to division 1, General Conditions, Equals and Substitutions.

**SHOP DRAWINGS**

Refer to division 1, General Conditions, Submittals.

Include data concerning dimensions, capacities, materials of construction, ratings, weights, pump curves with net positive suction head requirements, manufacturer's installation requirements, manufacturer's performance limitations, and appropriate identification.

Pump curves shall identify design point of operation.

# OPERATION AND MAINTENANCE DATA

All operations and maintenance data shall comply with the submission and content requirements specified under section GENERAL REQUIREMENTS.

***Delete the following if there are no additional requirements.***

In addition to the general content specified under GENERAL REQUIREMENTS supply the following additional documentation:

1. ***[A/E and commissioning provider to define detailed operation and maintenance data requirements for equipment specifications added to this section.]***

**DESIGN CRITERIA**

Pump sizes, capacities, pressures and operating characteristics shall be as scheduled.

Pumps shall meet or exceed operating efficiencies scheduled.

Provide all pumps with motors, drive assemblies, bearings, coupling guard, and other accessories specified. Statically and dynamically balance all rotating parts. Service or repair of base mounted pumps shall not require breaking piping connections or removal of motor.

Provide pump with a motor sized for non-overloading over the entire pump curve. Motors to be 1750 rpm unless specified otherwise.

Furnish each pump and motor with a nameplate giving the manufacturer's name, serial number of pump, capacity in GPM and head in feet at design condition, horsepower, voltage, frequency, speed and full load current.

Test all pumps, clean and paint before shipment. The manufacturer shall certify all pump ratings.

All pumps to operate without excessive noise or vibration.

Furnish one spare seal and casing gasket for each pump to user agency.

**P A R T 2 - P R O D U C T S**

**FUEL OIL PUMPS**

Manufacturer:

Tuthill , Viking, DeLaval, or approved equal.

TYPE:

Pumps to be positive displacement, base mounted with vertical split case, steel rotor and shaft. Rotary screw or positive displacement gear driven designs are acceptable. Furnish pump with an integral relief valve. Pump shall be flexible couplings with bushings keyed to the shaft. Pump and motor to have a common base.

CASING:

Pump casing to be constructed of cast iron or steel, suitable for 250 psig working pressure.

**P A R T 3 - E X E C U T I O N**

**INSTALLATION**

Install all pumps in strict accordance with manufacturer's instructions. Access/service space around pumps shall not be less than minimum space recommended by pump manufacturer.

Support piping adjacent to pump such that no weight is carried on pump casings.

Decrease from line size at pump connections with suction diffusers where specified, long radius reducing elbows or concentric reducers/increasers in the vertical piping, and eccentric reducers/increasers for horizontal piping. Install eccentric reducers/increasers with the top of the pipe level

All valves and piping specialties must be full line size as indicated on the drawings

Lubricate pumps before startup.

Install a full line size spring loaded check valve and balancing valve in the pump discharge piping. At contractor’s option, combination shut-off, check, balancing valve may be substituted instead of separate valves. Reference section 23 05 23.

**FUEL OIL PUMPS**

Provide 2" deep drain pan constructed of 16 gauge galvanized steel, all welded, under fuel oil pump set and fuel oil filters. Weld all seams and joint in drain pans.

# CONSTRUCTION VERIFICATION ITEMS

Contractor is responsible for utilizing the construction verification checklists supplied under specification Section 23 08 00 in accordance with the procedures defined for construction verification in Section 01 91 01 or 01 91 02.

# FUNCTIONAL PERFORMANCE TESTING

Contractor is responsible for utilizing the functional performance test forms supplied under specification Section 23 08 00 in accordance with the procedures defined for functional performance testing in Section 01 91 01 or 01 91 02.

# AGENCY TRAINING

All training provided for agency shall comply with the format, general content requirements and submission guidelines specified under Section 01 91 01 or 01 91 02.

END OF SECTION