SECTION 15593

1. SCOPE

1.1 All motors shall comply with D.I.L.H.R. Energy and Power Factor Requirements.

1.2 Work Included:

2. HOT WATER BOILERS

2.1 Patterson Kelley Mach Series of sizes, capacities, and efficiencies indicated.

2.2 Built for working pressures indicated on the Schedule, in accordance with ASME, and Wisconsin Boiler Codes.

2.3 Construction:

A. Boiler shall be of gas fired with a modulating power burner and positive pressure discharge.

B. The flame monitoring system shall incorporate a UL recognized combustion safeguard system utilizing interrupted spark ignition and a rectification type flame sensor. An electro-hydraulic double seated safety shut off valve be an inherent part of the gas train.

C. Boiler shall incorporate electric probe type low water cut off and dual over temperature protection. Remote fault alarm, sensor failure direction, and auxiliary equipment contacts shall be standard equipment. Boiler shall operate on voltage specified on schedules.

2.4 Boiler control complete with outdoor air reset and fully integrated into the existing building's automated control system. All hardware/software necessary to be provided by the temperature control contractor.

A. Wiring and all control set-up for lead-lag system shall be by the qualified Temperature Control Contractor. T.C.C. shall work closely with a manufacturer's representative in setting up all control stratagies.

B. Control of discharge water temperature shall be adjusted by an externally provided 4-20ma signal (1) per each boiler. Temperature shall respond linearly throughout signal range from minimum to maximum. Unit shall maintain discharge temperature within specified range through load variations from 0 to 100%.

C. Boiler shall be capable of maintaining the outlet temperature with an accuracy of +/-2 degrees F.

2.5 Installation:

A. All aspects of installation of Boiler Plant shall be in strict accordance with manufacturer's instructions. Materials used shall conform with all manufacturer's recommendations.

2.6 Warranty/Service

A. Heat Exchanger/Combustion Chamber assembly shall be warranted against failure from any mechanical or thermal shock for a period of five (5) years. Pressure vessel and exhaust manifold shall be warranted against failure or leakage for a period of 10 years. All other components shall be unconditionally warranted for a period of one year from date of start-up. Contractor shall provide the services of a factory authorized representative to supervise equipment start-up. A letter of compliance with all factory recommendations and installation instructions shall be submitted to the owner with operation and maintenance instructions.

3. INLINE PUMPS

3.1 Armstrong, B&G, Taco, Grunfoss, or approved equal, of sizes and capacity indicated on schedules.

3.2 Complete With:

A. Mechanical seal rated for 220 degrees F.

B. 3225 RPM motor, drip-proof and suspended in rubber.

C. Bronze fittings and steel shaft.

D. Non-overloading over entire operating range.

3.3 Note:

A. Submit characteristic operating curves with shop drawings.

B. Each pump and motor is to be provided 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.

C. Manufacturer is to provide replacement of impellers or trimming of impellers to meet capacity requirements indicated on the plans at no additional cost to Owner.

D. Provide Owners Representative with 2 (two) sets of operating and maintenance instructions.

END OF SECTION 15593