SERIES 130
CLOSE COUPLED REGENERATIVE TURBINE PUMPS

PART I - GENERAL

1.01 DESCRIPTION

The Contractor shall furnish materials, equipment and labor to furnish, install and test the pumping system complete with the pumps, motors, mounting bases, piping, valves and appurtenances, as indicated on the contract drawings and as herein specified.

1.02 INSTALLATION

The Contractor shall insure that the pumps and motors are properly installed with no pipe strain transmitted to the pump casing.

1.03 RESPONSIBILITY

To assure a properly integrated and compatible system, all equipment described in this section shall be furnished by the Pump Manufacturer, who shall assume full responsibility for the proper operation of the pumps and associated equipment.

1.04 SUPERVISION

The Contractor shall arrange for the Pump Manufacturer to provide a factory-trained representative as required for the purpose of supervising installation, start-up, final field acceptance testing, and providing instruction to the owner's operating personnel in the proper operation and maintenance of the equipment in this section.

1.05 REFERENCE STANDARDS

The work in this section is subject to the requirements of applicable portions of the following standards:

Hydraulic Institute Standards
IEEE Standards
NEMA Standards
OSHA Rules and Regulations

PART II - PRODUCTS

2.01 GENERAL DESCRIPTION

The pumps shall be horizontal close-coupled regenerative turbine pumps, Aurora Pump series 130 or pre-approved equal. Pre-approval must be obtained a minimum of ten days before bid date.

2.02 MATERIALS OF CONSTRUCTION

Casing.....Cast Iron (ASTM A48)
Impeller.....Bronze (ASTM B62)
Shaft.....Stainless Steel (AISI 416)

Impeller Sleeve.....Bronze (ASTM B62)
Channel Rings.....Cast Iron (ASTM A48)

2.03 CASING

The casing shall have a top side suction inlet and a center-line discharge outlet with an integral stuffing box cover and motor mounting bracket and removable front cover for Series 133 pumps. The suction inlet and discharge outlet shall be NPT threaded. The casing shall bolt directly to the motor.

2.04 IMPELLER

The impeller shall be of the regenerative turbine or periphery-vane type, with the pumping vanes machined on both sides of the impeller to balance hydraulic thrust. The impeller shall be keyed to the shaft, but not locked in place to allow the impeller to self-balance between the channel rings. Balancing holes shall be machined into the impeller to facilitate this floating action as required.

2.05 SHAFT

The impeller shall be direct-coupled to the motor shaft. The motor shall be machined to provide a keyway, and drilled and tapped to accept the impeller sleeve fastener. Stub shafts are not acceptable.

2.06 CHANNEL RINGS

The channel rings shall have an individual water passageway machined, and cleaned of all burrs, trimmings and irregularities.

2.07 IMPELLER SLEEVE

The pump shall include an impeller sleeve fitted over and keyed to the shaft to minimize shaft wear. The impeller shall fit over this sleeve. The sleeve shall be locked to the shaft by means of a washer and capscrew at the shaft end. The mechanical seal spring shall fit onto the impeller sleeve.

2.08 MECHANICAL SEAL

Shaft sealing shall be accomplished by means of a mechanical seal with a Ni-Resist seat, carbon washer, Buna-N elastomer, and stainless steel metal parts.

2.09 MOTOR

The motor shall conform to the latest NEMA Standards, and shall have to the following characteristics:

Enclosure.....Open Drip Proof/TEFC/X-Proof
Number of Phases.....Three
Cycles.....60 Hz.
Voltages.....230/460 Volt
Speed.....3600 RPM
Horsepower.....? hp

Each motor shall have a sufficient horsepower rating to operate the pump at any point on the pump's head-capacity curve without overloading the nameplate horsepower rating of the motor. The motor shall have a service factor of at least 1.15. The service factor is reserved for variations in voltage and frequency.

PART III - PERFORMANCE

3.01 CONDITIONS OF SERVICE

The following conditions of service shall be strictly adhered to:

Number of Units.....?
Type of Drive.....? (variable or constant)
Discharge Size.....1.5 in, minimum
Suction Size.....2 in, minimum
Design Capacity..... US gpm
Design Head..... ft
Efficiency at Design..... %, minimum
Rotative Speed.....3500 RPM, maximum
Shut-off Head.....905 ft, minimum
Drive Horsepower.....4.28 hp, minimum
NPSHR at Design..... ft, maximum

3.02 INSPECTION AND FACTORY TESTS

Each regenerative turbine pump furnished under these specifications shall be tested at the factory to verify individual performance (VIP). Certified copies of all test reports shall be submitted to the Engineer for approval prior to shipment.

3.03 INSTALLATION AND ACCEPTANCE TESTS

A. The pumping units shall be installed in accordance with the instructions of the manufacturer and as shown on the drawings by the Contractor.

B. Installation shall include furnishing the required oil and grease for initial operation. The grades of oil and grease shall be in accordance with the manufacturer's recommendations.

NOTES: Teflon is a registered trademark of E.I. DuPont.

Additional information is available from any Aurora Pump authorized distributor.

Aurora Pump reserves the right to make revisions to its product and their specifications without notice.