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PETROLEUM & ENERGY INFRASTRUCTURE

EFRAT

FIRE FUMP SPECIFICATION

(Version 2)

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SCOPE:

This document covers the technical requirements for design, fabrication, supply, and delivery of horizontal split case fire pumps fitted with electrical motor drive to be operated in Petroleum & Energy Infrastructure, at EFRAT terminal in Israel.

The pump motor and accessories shall be design and manufacture in according to NFPA 20 and shall be U.L listed.

SITE CONDITIONS:

1. Site altitude is about 200 m' above sea level.
2. Ambient temperature varies between 0^0C- 45^0C.
3. Relative humidity varies between 45% - 90%.
4. Rain fall around 250 mm' / year.
5. The pump shall be installed indoor.

PUMP REQUIREMENTS:

1. The pumps shall be rated to 2500 GPM, 175 PSI.
2. The pumps shall be design to provide the rated capacity with the following safety factors:
   2.1 The rated capacity shall not be less than 150% at 65% of the rated head.
   2.2 The maximum head shall not exceed 140% of the rated head.
3. The pumps shall be of a double suction horizontal split case design.
4. The pumps shall be fitted with ANSI flanges.
5. The pumps shall be fitted with class 300 cast iron casing, bronze casing wearing rings, bronze impellers and renewable key driven bronze shaft sleeves through the packing.
6. The bearings shall be grease lubricated cartridge anti-friction type.
7. The packing box gland shall be of bronze split type.
8. The pumps shall be fitted with high-strength steel shaft. The shaft deflection shall not exceed 0.002" at the stuffing boxes when the pump is operating at 25% of the B.E.P.

ELECTRICAL MOTOR DRIVE REQUIREMENTS:

1. The required electrical motor drive should be of a reliable manufacturer, in according with NEMA MG-1 specification and shall be listed for fire pump service (UL listed).
2. Electrical motor power supply: 400 V
3. The motor shall be rated for continuous duty.
4. The motor manufacturer shall have a reliable local agent with a constant spare part.
5. All electrical and wiring equipments to be used with the installation of the fire pump shall comply with the National Electrical Code, and the NFPA 20, Fire Pump Standard.
6. The pump shall be supply with digital solid-state starting fire pump FM/UL approver controller. The controller features soft start, soft stop, and system sensing capabilities.
   The controller monitor displays and records fire pumps system information
   The controller shall be supply separately for local installation on site.
   The controller shall have NEMA 4 encloser.
7. The unit shall be connected to the main site power supply that is back up by central emergency generators that start working automatically in the event of power outage.
8. The controller manufacturer shall have a reliable local agent with a constant spare part.
9. Electric motor will be rated for electric supply of 400V/3phase/50/Hz.
10. The pump manufacturer shall be the only responsible for providing a motor with a sufficient capacity to operate with the full work range of the pump.

BASE PLATE AND MOUNTING OF THE DRIVE:

1. The motor will be supply and assembled by the pump manufacturer on a common base-plate with the pump.
2. The base-plate shall be fitted base by at least 6 grout holes. Those holes shall be located so that the base can be grouted in place without the need to removal of the pump or the drive.
3. The base-plate shall be large and rigid enough for fit to the largest possible drive applicable to the pump.

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4. The base-plate shall include drain rims and port to effect complete drainage of the pump leaks.
5. Fixing bolts and dowels for pump and drive shall supplied by the pump manufacturer.

ACCESSORIES AND FITTINGS:

The pump shall be furnished with the following accessories and fitting:

- 3.5" diameter suction and discharge gauges.
- 1/2" automatic air release valve.
- Pressure relief valve upon the pump case for minimum flow rate.
- Flow metering device.

PUMP DIMENSION:

All parts that required painting shall be painted.
The painting shall be min 200 micron of epoxy
Color will decide before shipment.

TAG AND MARKING:

The equipments shall bear name plate made of stainless steel.
The plate thickness shall be 1.5 mm'.
The plate shall contain the following data:

- Manufacturer name.
- Manufacturer country.
- Year of built.
- Equipment model.
- Manufacturer item number.
- Rating.
- Size.
- All data that might be needed by the codes.

Packing

1. All machined surfaces shall be greased.

2. All rotation elements shall be factory lubricated and tied up.
3. All ports and opening shall be blanked off.
4. The goods shall be packed of in containers or boxes with water repellent materials.
5. The package shall be suitable for export and capable of withstanding rough handing – marine package.
6. The vendor shall quote the list of all items in each container or box.

INSPECTION AND TESTING:

1. The vendor shall supply performance test curve for the pump.
2. Each pump shall be hydraulically tested.

ERECTION:

The pump shall be installed outdoor.

GUARANTEE:

The vender shall guarantee the design, materials, equipments, and workmanship for a period of 24 months from operation but not later then 30 months after shipment.
Should any defect due to faulty design, materials or bad workmanship become apparent during the guarantee period, the vendor shall agree to make all necessary to repairs or replacements the defect parts, free of charge, and shall pay transportation costs involved.

General terms:

In order to evaluate the tender's quotations, the following information must be given:

- Dimensional drawings.
- Accessories drawings.
- Description of all components of the scope of supply.
- Data sheet for all the goods.
- List of recommended spare parts for two (2) years of operation. The spare part list shall be quoted with itemized prices.
- Assembly, installation, operation and maintenance instructions.
- Fabrication schedule.

- Installation description.
- Price listing of the offer.
- The price should include the packing and preparation for seaworthy.
- Shipment and delivery CIF ASHDOD Port.

Units: All drawings and dimension prints shall be in accordance with the SI System.

Language: All proposals, drawings, specifications, material/quality control sheet, reports, test certificates and other documents shall be in English or Hebrew.

Item	Document	Offer stage	Supply stage
1	General drawings.	2	2
2	Accessories description and drawings.	3	2
3	Data sheet.	3	2
4	List of spare parts	2	2
5	Sectional drawings with lists of parts		2
6	All the instructions	2	3
7	Price listing of the offer	3	
8	Time schedule	2	
9	Test documentation		3

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