

ANNEXURE - I**TECHNICAL SPECIFICATIONS FOR MODIFICATION OF LUBE OIL SYSTEM****DESCRIPTION OF WORK:**

Supply of items as per ANNEXURE - II, modification and commissioning of existing Lube Oil System at BHEL R&D, Hyderabad as per the attached technical specifications (ANNEXURE-I) and tentative layout of the compressor inlet line lube oil circuit (ANNEXURE - III).

LUBE OIL SYSTEM DETAILS.

The lube oil system is meant for supply of SERVO PRIME 57 grade Lube Oil to three different bearings of Compressor test rig and one Gear box (total four individual lines) with maximum operating speed of 8000 RPM as per the required flow parameters as given below:

Lube Oil Requirement:

- Gear Box : 120 LPM at 2.0 bar (gauge) at bearing inlet
- 90 mm Journal Bearings : 40 LPM at 1.5 bar (gauge) at bearing inlet
- 70 mm Journal Bearings : 30 LPM at 1.5 bar (gauge) at bearing inlet
- Thrust Bearing 8" Dia. : 110 LPM at 1.0 bar (gauge) at bearing inlet
- Total Oil Requirement : 300 LPM
- Oil Grade : Servo Prime57 (Turbine Oil type Non ISO IS: 1012-012/ BS 489/1983)
- Viscosity range, cSt : 55-80

1.0 SCOPE OF WORK

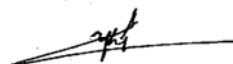
- 1.01 Dismantling of Existing Lube Oil pumps - 2Nos, modification of existing Base frame for fixing of one no. new pump. Mounting of new Lube Oil pump provided by BHEL on drive motor shaft and alignment of both the shafts.
- 1.02 Removal of existing delivery pipelines, Pressure Relief Valves (PRVs), filters, Manifold Etc.
- 1.03 Supply of required items as per site condition and installation of new delivery line piping circuit with header, pressure relief valves, flow control valves, flanges and other required fittings as per tentative list of items as per Annexure - II.
- 1.04 Installation of new 320 LPM capacity Lube Oil Filter provided by BHEL.
- 1.05 Inlet and Outlet connections of the pump through common header to the existing four lines.
- 1.06 Removal of 2 Nos. of pump inlet ball valves, supply & fixing of new 4" size SS inlet ball valve and fixing of dummy plug to the second inlet connection.
- 1.07 Rectification and arresting of all oil leakages in the Lube oil system piping circuit.
- 1.08 Fixing of existing pressure, temperature, flow instruments at appropriate locations in the lube oil circuit.
- 1.09 Trial runs & commissioning of the Lube Oil system and demonstration of the specified delivery parameters.

2.0 GENERAL REQUIREMENTS

- 2.01 To make a correct estimate for supply of items and to carry out the required modification & commissioning of the existing Lube Oil system, assessment of the space availability, mounting arrangements in the existing lube oil system and also for any technical clarifications the vendors necessarily have to visit BHEL R&D before submitting the offer. The offer of the vendors who do not visit the site will not be considered for technical evaluation.
- 2.02 All tools and tackles required for carrying out the modification work are in the scope of the supplier.
- 2.03 Lube Oil pump of 320 LPM delivery with 8 to 10 Kg/Cm² discharge pressure - 1 No. and 320 LPM capacity of Lube oil filter - 1 No. will be provided by BHEL free of cost.
- 2.04 Except the items indicated in clause No. 2.03 all other items required for modification work as per the tentative list of items attached as ANNEXURE - II. Suitable 4"SS pipe lines for discharge/pressure lines should be used as per the site condition.
- 2.04 Vendor should furnish TECHNICAL COMPLIANCE STATEMENT in the enclosed format as per ANNEXURE-VI along with Technical bid FOR EACH OF THE ITEMS OFFERED SEPERATLY. The Vendor should not say Complied, should explicitly specify the specification of each parameters. The deviations if any with reference to BHEL specifications may clearly be indicated. BHEL reserves the right to disqualify the tender if the statement as per ANNEXURE-VI is not submitted and relevant information is not indicated in the compliance statement.
- 2.05 Vendors may please note that the installation of Lube oil pump, filter in the existing system and piping modifications are to be carried out in BHEL R&D only.
- 2.06 Any other requirements not covered in these specifications, but necessary for the safe and reliable operation of the equipment shall be included. Quantities other than specified in the ANNEXURE - II shall be supplied for satisfactory modification and commissioning of the equipment. Variations due to site requirement shall be incorporated.
- 2.07 The Un-priced price bid shall be enclosed to the Technical bid.

3.00 Purchaser's scope:

- 3.01 Lube Oil pump of 320 LPM delivery with 8 to 10 Kg/Cm² discharge pressure with suitable coupling for mounting on the drive motor shaft and mating flanges for pump inlet and outlet connections - 1 Set.
- 3.02 Lube oil filter of 320 LPM capacity with suitable mating flanges for filter inlet and outlet connections- 1 Set.



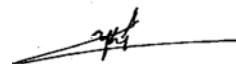
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ANNEXURE - II**LIST OF ITEMS REQUIRED FOR MODIFICATION WORK**

Sl. No.	Description	Qty
	Supply of SS Pipes, valves and Fittings required for modification.	
1	4" SS pipe sech. 40	3 Mt
2	4" SS Ball valve of Stanadard make.	1 No
3	SS Flanges suitable for above ball valve	2 Nos
4	SS Pressure Relief valve, Pressure range 0.5 bar to 1.2 bar	1 No
5	4" SS Elbows	6 Nos.
6	4"x 3" SS Reducer	2 Nos.
7	30 bar rating 3" Flexible Hose connector of 2 Mtrs. approximate Length	1 No.
8	3" SS Short Bend	1 No.
9	SS Flow Regulating valves ¾" - 2 Nos & 1"size - 2 Nos.	4 Nos.

NOTE:

The above indicated items and quantities are only tentative. Vendor should supply additional required items if any (not considered in the above list) as per the site requirement with out any cost implication for carrying out the modification and satisfactory commissioning of the Lube oil system.



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