

Government eProcurement System

Tender Details

Date: 07-Sep-2024 05:54 PM



Basic Details	Basic Details				
Organisation Chain	Bharat Heavy Electricals Lin	nited PEM - Noida Core Material Man	agement Common CMM		
Tender Reference Number	PEM-20/001	PEM-20/001			
Tender ID	2024_BHEL_39753_1	Withdrawal Allowed	Yes		
Tender Type	Open Tender	Form of contract	Supply		
Tender Category	Goods	No. of Covers	2		
General Technical Evaluation Allowed	No	ItemWise Technical Evaluation Allowed	No		
Payment Mode	Not Applicable	Is Multi Currency Allowed For BOQ	No		
Is Multi Currency Allowed For Fee	No	Allow Two Stage Bidding	No		

Cover Details, No. Of Covers - 2					
Cover No	Cover	Document Type	Description		
1	Fee/PreQual/Technical	.pdf	NIT		
2	Finance	.xls	PRICEFORMAT		

	Tender Fee De	tails, [To	otal Fee in ₹ * - 0	.00]	EMD Fee Details	5
	Tender Fee in ₹	0.00			EMD Amount in ₹	0
l	Fee Payable To	Nil	Fee Payable At	Nil		
l	Tender Fee	No			EMD Fee Type	fi
l	Exemption				EMD Payable To	N
l	Allowed					_

EMD Fee Details					
0.00	EMD Exemption Allowed	No			
fixed	EMD Percentage	NA			
Nil	EMD Payable At	Nil			
	0.00 fixed	0.00 EMD Exemption Allowed fixed EMD Percentage			

Click to view modification history

Work /Item(s)							
Title	Framewo	mework Agreement (Rate Contract) of LUBE OIL TRANSFER PUMPS					
Work Description	Framewo	ork Agreement (Rate Contra	act) of LUBE OIL TRANSFE	ER PUMPS			
Pre Qualification Details	Please re	fer Tender documents.					
Independent External Monitor/Remarks	NA	NA					
Show Tender Value in Public Domain	No	No					
Tender Value in ₹	1	Product Category	Miscellaneous Goods	Sub category	NA		
Contract Type	Tender	Bid Validity(Days)	180	Period Of Work (Days)	1095		
Location	NOIDA	Pincode	201301	Pre Bid Meeting Place	NA		
Pre Bid Meeting Address	NA	Pre Bid Meeting Date	NA	Bid Opening Place	NOIDA		
Should Allow NDA Tender	No	Allow Preferential Bidder	No				

<u>Critical Dates</u>			
Publish Date	07-Sep-2024 06:00 PM	Bid Opening Date	17-Sep-2024 05:00 PM
Document Download / Sale Start Date	07-Sep-2024 06:00 PM	Document Download / Sale End Date	17-Sep-2024 02:00 PM

Clarification Start Date	07-Sep-2024 06:00 PM	Clarification End Date	17-Sep-2024 01:00 PM
Bid Submission Start Date	07-Sep-2024 06:00 PM	Bid Submission End Date	17-Sep-2024 02:00 PM

Tender Do	cume	<u>ents</u>						
NIT Document	S.No	Document Name		Description			Docur Size (
	1	Tendernotice_1.pdf		NIT				15586.82
Work Item Documents	S.No	Document Type	Docume	nt Name	Des	cription	Docui Size (
	1	Other Document	PriceForma	at.xls	PRIC	E FORMAT		85.50

Bid Openers List						
S.No	Bid Opener Login Id	Bid Opener Name	Certificate Name			
1.	anubha@bhel.in	ANUBHA TIWARI	ANUBHA KRISHNANI			
2.	nitingupta@bhel.in	NITIN GUPTA	NITIN GUPTA			
3.	manish.sinha@bhel.in	MANISH KUMAR SINHA	MANISHKUMARSINHA			
4.	sumansaurabh@bhel.in	KUMAR SUMAN SAURABH	KUMAR SUMAN SAURABH			

GeMARPTS Details		
GeMARPTS ID	3G5VLQ6E36AM	
Description	NOT AVAIALBLE	
Report Initiated On	05-Sep-2024	
Valid Until	05-Oct-2024	

Tender Properties	<u>Tender Properties</u>					
Auto Tendering Process allowed	No	Show Technical bid status	Yes			
Show Finance bid status	Yes	Stage to disclose Bid Details in Public Domain	Technical Bid Opening			
BoQ Comparative Chart model	NIL	BoQ Compartive chart decimal places	2			
BoQ Comparative Chart Rank Type	NIL	Form Based BoQ	No			

TIA Undertaking

S.No	Undertaking to Order	Tender complying with Order	Reason for non compliance of Order
1	PPP-MII Order 2017	Agree	
2	MSEs Order 2012	Agree	

Tender Inviting Authority	
Name	KUMAR SUMAN SAURABH
Address	BHEL-SADAN. NOIDA

<u>Tender Creator Details</u>		
Created By	KUMAR SUMAN SAURABH	
Designation	Dy. Mgr	
Created Date	07-Sep-2024 05:37 PM	



Enquiry No-PEM-20/001

Date- 7-Sep-24

BHEL invites offers from reputed Suppliers as per following terms and conditions -

1. Tender Type	Open Tender (Domestic-Indian)		
2. Mode of Enquiry	E - PROCUREMENT		
3. Project	Framework Agreement	(Rate Contract) of LUBE OIL TRANSFER PUMPS	
4. Executing Agency	BHEL-PEM		
5. Package	LUBE OIL TRANSFER	PUMPS	
6. Whether Package is DIVISIBLE or NON - DIVISIBLE	DIVISIBLE		
7. Due Date & Time	17 September 2024	2:00 PM	
8. Earnest Money Deposit (EMD)	Not Applicable		
9. Tender Cost	NIL		
10. Numbers of Part bid	2-Part bid (Techno-Commercial and Price Bid)		
11. Technical Scope	As per Tech. Spec No: PE-TS-STD-567-A001		
12. Pre-Bid clarifications	NO		
13. Prequalification Requirement	Financial PQR-NO	Technical PQR- YES	
14. Delivery terms	For Supply Portion: FOR Despatch Station		
15. Delivery Schedule: -			
Engineering	Drawing/ documents submission & re-submission schedule shall be as per Technical Specification: PE-TS-STD-567-A001		
Main Supply (" A")	167 days from the date of PO		
Mandatory Spares	90 days from BHEL clearance date		
Supervision of E&C	Bidder to depute their personnel at site within 04 weeks from the date of intimation by BHEL		

Notes:

- a. Supplier to start manufacturing/supply only after getting the applicable engineering Drgs. /docs approved from BHEL/End Customer.
- b. Drawings /documents submission/re-submission schedule shall be as per Technical specification (PE-TS-STD-567-A001) which shall be used for progress monitoring purpose and required course correction, if any.
- c. The delivery date specified is for completion of the deliveries. Deliveries to start progressively so as to meet the completion schedule.
- d. The delivery conditions specified are for contractual purposes. However, to meet project requirement, BHEL may ask for early deliveries without any compensation thereof.



2.0 Validity of contract placed on basis of Framework Agreement (Rate Contract) for individual projects (PO rates, terms and conditions):

Vendor has to make supply of goods/services as per the delivery time mentioned above. However, due to unavoidable circumstances if delay happens in providing inputs/ clearances (inputs, Engineering approvals, deputing inspector for inspection, issuance of MDCC and any hold imposed owing to site issues etc.) for which delivery time extension is admissible as per point no.3, in such situation it shall be obligatory at vendor part to execute the contract at PO rates, terms and conditions where inputs/ clearances has been accorded within validity of contract. Validity period for various activities shall be as defined below or as mentioned in the NIT.

2.1 Contract for main supply shall be valid for **365** ('C') days from the PO date. In case of more than 2 units, validity period will be increased by supply time considered for subsequent units. However, delay at vendor's end (if any) shall be added to the validity period and contract validity shall get extended by the delay period at vendor's end.

For example: Original Delivery period for main supply: A (in days)

Delay at vendor's end: B (in days beyond "A" days)

Contract validity: C+B (in days)

Notes:

- a. B is the Vendor delay days beyond original contractual delivery period for main supply /extended delivery period owing to time taken by BHEL.
- b. Main supply, applicable in the contract released/ cleared for manufacturing within contractual validity period, to be supplied by vendor/supplier at PO rates, terms and conditions.
- c. Execution of the contract quantities released beyond contract validity period shall be decided on mutual consent basis at PO rates, terms and conditions.



3.0 Delivery Extension: Extension of contractual delivery time:

Delivery time mentioned in the NIT includes Engineering completion time (time for drawing/document submission/resubmission by the vendor and review/approval of the same by the BHEL/End customer), manufacturing, inspection, Packing and dispatch time. Due diligence is to be observed by the vendor to ensure timely completion of engineering and supply.

During the execution of the contract, time loss occurred owing to the reason attributable to BHEL besides force majeure shall be considered for delivery time extension to the vendor as given below: -

- i. Any Delay in providing comments/ approval on Primary drawing/documents beyond the stipulated time as specified in NIT.
- ii. Time Loss in approval of the drawing/document as a result of increase in the iteration not attributable to the vendor (i.e. resubmission owing to end customer comments) as certified by BHEL. Time extension equivalent to the resubmission time noted in the tech. spec and consequential increase in the approval time in lieu of increase in iteration shall be applicable. However, for incomplete re- submission time loss shall be in vendor account.
- iii. Delay in providing engineering input/material by BHEL.
- iv. Delay in deputing inspector for inspection and delay in release of MDCC in line with GCC
- v. Any hold put by BHEL for whatever reasons during execution of contract (within contract validity period), time extension equivalent to hold period shall be admissible. However, in the event hold period continues for more than 30 days then, an additional fifteen days for the purposes of mobilization and demobilization of resources shall also be admissible.

Note: Extension in delivery period if any with or without imposition of LD shall be considered after detailed delay analysis based on provisions given above. However, no delay analysis will be applicable if supply is completed within delivery schedule as specified in Purchase order.

- 16. **Liquidated Damages:** As per Clause No-16.0 of General Commercial Terms & Condition of GCC Rev 07
- 17. **Guarantee Terms:** As per Clause No-12.0 except Clause no 12.2 (b) of General Commercial Terms & Condition of GCC Rev 07
- 18. Validity of offer shall be as per Clause no. 7 (Instruction to Suppliers) of GCC Rev 07.

19. CIF Content	Not Applicable		
20. Integrity Pact Applicability	NO		
21. Performance Security (PS)	PS Applicability	No Performance Security (PS) against the current enquiry for Framework Agreement (Rate Contract) for Tender package. However, Suppliers to note that Performance Security shall be submitted for orders placed by Project Groups of BHEL-PEM on the Framework Agreement (Rate Contract). Successful Supplier/s will have to submit Performance Security for each POs (irrespective of value) which will be placed under the Framework Agreement (Rate Contract) finalised through this	



tender considering FA (RC) as original contract as per the format given in GCC Rev 07. Relevant details of the PS to be submitted on the basis of Framework Agreement (Rate Contract) as following: Validity of PS: As per clause no-11.0 of General Commercial Terms and Conditions of GCC Rev-07.
PS Submission: PS should be in favour of BHEL-PEM. Supplier may opt any of the following for submission of Performance Security: - Initially 10% of the contract value (total Ex-works price). However, 5% of the contract value (as above) will be released after completion of Main Supply based on certification by Project Group/Purchaser. OR
5% of the contract value (total Ex-works price). Additional 5% of the contract value will be retained from first bill & subsequent bill(s) of the same contract. The retention amount will be released after completion of Main Supply based on certification by Project Group/ Purchaser.



Modes of Deposit	Performance security may be furnished in the following forms: a) Local cheques of Scheduled Banks (subject to realization)/ Pay Order/ Demand Draft/ Electronic Fund Transfer in favour of BHEL. b) Bank Guarantee from Scheduled Banks / Public Financial Institutions as defined in the Companies Act. The Bank Guarantee format should have the approval of BHEL. c) Fixed Deposit Receipt issued by Scheduled Banks / Public Financial Institutions as defined in the Companies Act (FDR should be in the name of the Contractor, a/c BHEL). d) Securities available from Indian Post offices such as National Savings Certificates, Kisan Vikas Patras etc. (held in the name of Contractor furnishing the security and duly endorsed/ hypothecated/ pledged, as applicable, in favour of BHEL). e) Insurance Surety Bond. (Note: BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith) Performance Security is to be furnished within 14 days from the date of PO and it should remain valid for a period of 60 (sixty) days beyond the date of completion of all contractual obligations of the Supplier, including warranty obligations.
Remarks for PS	a) The performance security will be forfeited and credited to BHEL's account in the event of a breach of contract by the supplier. b) Performance security should be refunded to the contractor without interest, after he duly performs and completes the contract in all respects but not later than 60 (sixty) days of completion of all such obligations including the warranty under the contract. The Performance Security shall not carry any interest.



22. Breach of contract,
Remedies and
Termination (Tenderer to
note that this clause will
supersede any clause
regarding recovery
amount from Tenderer
due to Breach on contract
mentioned anywhere in
GCC Rev07 and its
Corrigendum)

In case of Breach of Contract, BHEL shall recover 10% of the contract value from the Supplier using following instruments:

- (i) Encashment of security instruments like EMD, Performance Security with executing agency (PEM) against the said contract.
- (ii) Balance amount (if value of security instruments is less than 10% of the contract value) from other Financial remedies i.e. available bills of the Supplier, retention amount etc. with executing agency (PEM).
- (iii) Balance amount from security instruments like EMD, Performance Security and other Financial remedies i.e. available bills of the Supplier, retention amount etc. with other units of BHEL.
- (iv) If recovery is not possible then legal remedies shall be pursued.

However, Supplier shall continue performance of the Order/ Contract, under all circumstances, to the extent not cancelled.

23. **Tender Evaluation – Price will be finalized through RA** The evaluation currency for this tender shall be INR. Evaluation will be done on overall L1 (Total Package Price including Freight excluding taxes) basis with necessary loading as applicable.

In the course of evaluation, if more than one Supplier happens to occupy L-1 status, effective L-1 will be decided by soliciting discounts from the respective L-1 Suppliers.

In case more than one Supplier happens to occupy the L-1 status even after soliciting discounts, the L-1 Supplier shall be decided by a toss/ draw of lots, in the presence of the respective L-1 Supplier (s) or their representative(s). Ranking will be done accordingly. BHEL's decision in such situations shall be final & binding.

24. Terms & Conditions: - The Terms & Conditions shall be as per enclosed Special Conditions of the Contract (copy enclosed), GCC Rev 07 & Corrigendum 01 to GCC Rev-07 which is available on www.pem.bhel.com and other Terms and Conditions included in this Enquiry Letter.

25. Payment Terms:

1. **Main Supply:** As per clause No. 9.1 of General Commercial Terms and Conditions of GCC, Rev - 07. i.e.

Payment of basic price of supplied materials (as per PO/ approved billing schedule) along with freight and taxes and duties (as applicable), shall be paid against receipt of material (receipted LR) at site on pro-rata basis. 10% of basic price of materials supplied will be retained as security deposit which will be released on pro – rata basis as below:

On receipt of Material Receipt Certificate (MRC) from project site engineer of owner/purchaser and on submission of certificate of submission of all the final documents for the package (as per Annexure IX(A) of GCC Rev 07), duly certified by Engineering Department of Purchaser.

II. **Mandatory spares**: Payment of basic price of supplied materials (as per PO/ approved billing schedule) along with freight and taxes and duties (as applicable), shall be paid against receipt of material (receipted LR) at site on pro-rata basis. 10% of basic price of materials supplied will be retained as security deposit which will be released on pro – rata basis as below:

On receipt of Material Receipt Certificate (MRC) from project site engineer of owner/purchaser and on



submission of certificate of submission of all the final documents for the package (as per Annexure IX(A) of GCC Rev 07), duly certified by Engineering Department of Purchaser.

III. Services:

Supervision of E&C:100% payment shall be released after successful completion of the activity on pro rata basis, on Site certification/ certification by engineering as applicable.

Note: Services charges shall not exceed 2% of the Total contract value.

In case Service charge components is above 2% Total quoted Price, BHEL shall re-adjust the prices accordingly.

26. Reverse Auction:

BHEL shall be resorting to Reverse Auction (RA) (Guidelines as available on www.bhel.com on "Supplier registration page") for this tender. RA shall be conducted among all the Techno-Commercially qualified Suppliers.

Price Bids of all the Techno-Commercially qualified Suppliers shall be opened and same shall be considered as initial bids of Suppliers in RA. In case any Supplier(s) do(es) not participate in online Reverse Auction, their sealed envelope price bid along with applicable loading, if any, shall be considered for ranking.

- 27. Supplier to note that this is an Open Tender enquiry & Reverse Auction participation shall be subject to following condition:
 - a. Qualifying Technical Pre-Qualification Requirement.
 - b. Techno-Commercial acceptance of offer by BHEL-PEM.
 - c. Registration in BHEL-PEM for the Tender package.

The Suppliers who are not registered with BHEL-PEM may apply for registration in BHEL-PEM through Registration Portal available at https://pem.bhel.com/Bhel_Supplier_section.aspx >online supplier registration (https://supplier.bhel.in/). All credentials and/ or documents duly signed & stamped related to registration has to be uploaded on the website & submit the application for registration. One set of hard copy filled-up SRF downloaded from Online Registration Portal duly signed & stamped has to be submitted.

- 28. Clause no 9.6 (excluding Notes) of GCTC of GCC Rev. 07 shall be read as-
 - "Suppliers shall submit billing documents for payment directly to BHEL. Payment will be released within days as mentioned below after submission of complete documents as per clause no 9.7.2 9.7.5:
 - a. 90 days for non-MSME as per MSMED Act.
 - b. 45 days for Suppliers qualified and registered as Micro and Small Enterprises MSEs as per MSMED Act.
 - c. 60 days for Suppliers qualified as Medium Enterprises as per MSMED Act."



- 29. Suppliers are requested to refer clause no 26.0 (Make in India) of instructions to Supplier of GCC Rev 07. Further, following shall be taken into consideration for submitting bids by Suppliers:
 - For this procurement, Public Procurement (preference to make in India), order 2017 dtd. 15.06.17, 28.05.18, 29.05.19, 16.09.20 & 19.07.24 and subsequent orders issued by the respective nodal ministry shall be applicable even if issued after issue of this NIT but before finalization of contract/PO/WO against this NIT. In the event of any nodal ministry prescribing higher or lower percentage of purchase preference and / or local content in respect of this procurement, same shall be applicable. Suppliers are requested to go through the above-mentioned orders and submit their in adherence to Public Procurement (preference to make in India), order 2017 dtd. 15.06.17, 28.05.18, 29.05.19, 16.09.20 & 19.07.24 and subsequent orders.
 - Minimum Local Content prescribed for Tender package by Nodal Ministry is 60% and hence for this procurement, as per Public Procurement (preference to make in India), order 2017 dtd. 15.06.17, 28.05.18, 29.05.19, 16.09.20 & 19.07.24 and subsequent orders issued by the nodal ministry, this package is reserved for only Class-I supplier having Minimum local Content 60%. Class-II and Non-Local suppliers are not eligible to quote for this enquiry.
- 30. Purchase preference to MSE Supplier: Yes.
- 31. Framework Agreement (Rate contract) shall be done with 2 suppliers in ratio of 70:30 at L1 FOR site price (Ex-works + freight) for this package. For splitting order, L1 Rates (Ex works + Freight) shall be counteroffered to remaining techno-commercially approved Suppliers.
- 32. GOI circular dated 18.05.2023 for Concurrent application of Public Procurement Policy for Micro and Small Enterprises Order, 2012 and Public Procurement (Preference to Make in India) Order,2017 shall be applicable for order splitting and order finalization.
- 33. If none of the Supplier accepts counteroffered L1 Rates (Ex works + Freight), then contract shall be awarded to L1 Supplier for 100% value.
- 34. All corrigenda, addenda, amendments, time extensions, clarifications, etc. to the tender will be hosted on BHEL website (www.bhel.com), https://eprocurebhel.co.in/nicgep/app & BHEL-PEM website (https://pem.bhel.com/Home.aspx). Suppliers should regularly visit websites to keep themselves updated.
- 35. If Supplier mentions Not Applicable/ Not Required/ Not Quoted in BHEL price format, the same to be substantiated by the Supplier. If such item is required to be supplied for system completion in future, same will be supplied free of cost.
- 36. All other correspondence thereof shall be addressed to the undersigned by name & designation and sent at the following address:

Manish Kumar Sinha/ Sr. Mgr.-CMM M/s Bharat Heavy Electricals Ltd.,

Project Engineering Management, Power Project Engineering Institute, HRD & ESI Complex,

Plot No 25, Sector-16 A, Noida-201301

E-MAIL: manish.sinha@bhel.in

Ph. No. 0120-6748120

Kumar Suman Saurabh/ Mgr.-CMM M/s Bharat Heavy Electricals Ltd.,

Project Engineering Management, Power Project Engineering Institute,

HRD & ESI Complex,

Plot No 25, Sector-16 A, Noida-201301

E-MAIL: sumansaurabh@bhel.in

Ph. No. 9718771765

- 37. GST shall be payable extra at actual as per the HSN code finalized for the items during detailed BBU.
- 38. GeM Seller ID shall be mandatory before placement of order/award of contract to the successful Supplier.



- 39. Suppliers to quote freight charges in percentage of their quoted Total Ex-works Prices. Supplier to quote non-zero freight % for supply.
- 40. Over all (%) quantity variation: The variation on overall package value shall be limited to +/-30%
- 41. Suppliers shall Quote for the entire Scope. Partial scope is not acceptable.
- 42. Suppliers to ensure that Third party/ Customer issued certificates being submitted as proof of PQR qualification should have verifiable details of document/ certificate issuing authority such as name & designation of Issuing Authority and its organization contact number and e mail Id etc. Offer of only those Suppliers shall be considered further, who meets the PQR criteria. Suppliers to furnish latest verification details for checking veracity of document(s) by BHEL. In case the same found not available, Purchaser has right to reject such document from evaluation. Format for the same is below: -

Sl. No.	Project	Customer Name,	Contract/	Value of	Brief of	Completion
	Name	Contact Address,	Order No.	Contract/	Work	Date
		Phone No. & Email ID		Order		

- 43. Self-declarations/ auditor's/ accountant's certificates submitted by the manufacturer/ supplier may be verified randomly by the committee constituted as per MoP Order 28-07-2020. In case of false documents/ misrepresentation of the facts requisite action against such manufacturer/ supplier will be taken based on the recommendation of the Committee
- 44. Suppliers to comply Govt. of India, Ministry of Power, Order no.-25-111612018-PG dated 02/07/2020 regarding mandatory testing of all the Imported items/ Equipment's/ Components.
- 45. This item/ Package falls under the list of items defined in Para 3 of Ministry guideline ref no. F.20/2/214-PPD(Pt.) dated 20-09-2016 (in respect of procurement of items related to public safety, health, critical security operations and equipment's, etc.) & hence no relaxation of PQR for start-up/ MSME Suppliers is envisaged for the items/ Package.
- 46. The Supplier declares that they will not enter into any illegal or undisclosed agreement or understanding, whether formal or informal with other Supplier(s). This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process. In case, the Supplier is found having indulged in above activities, suitable action shall be taken by BHEL as per extant policies/ guidelines



- 47. The offers of the Suppliers who are under suspension as also the offers of the Suppliers, who engage the services of the firms debarred across BHEL, shall be rejected. The list of firms debarred across BHEL is available on BHEL web site www.bhel.com.
 - 1.0 Integrity commitment, performance of the contract and punitive action thereof:
 - 1.1. Commitment by BHEL: BHEL commits to take all measures necessary to prevent corruption in connection with the tender process and execution of the contract. BHEL will during the tender process treat all Supplier(s) in a transparent and fair manner, and with equity.
 - 1.2. Commitment by Supplier/ Supplier/ Contractor:
 - 1.2.1. The Supplier/ supplier/ contractor commits to take all measures to prevent corruption and will not directly or indirectly influence any decision or benefit which he is not legally entitled to nor will act or omit in any manner which tantamount to an offence punishable under any provision of the Indian Penal Code, 1860 or any other law in force in India.
 - 1.2.2. The Supplier/ supplier/ contractor will, when presenting his bid, disclose any and all payments he has made, and is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract and shall adhere to relevant guidelines issued from time to time by Govt. of India/ BHEL.
 - 1.2.3. The Supplier/ supplier/ contractor will perform/ execute the contract as per the contract terms & conditions and will not default without any reasonable cause, which causes loss of business/ money/ reputation, to BHEL.

If any Supplier/ supplier/ contractor during pre-tendering/ tendering/ post tendering/ award/ execution/ post-execution stage indulges in malpractices, cheating, bribery, fraud or and other misconduct or formation of cartel so as to influence the bidding process or influence the price or acts or omits in any manner which tantamount to an offence punishable under any provision of the Indian Penal Code, 1860 or any other law in force in India, then, action may be taken against such Supplier/ supplier/ contractor as per extant guidelines of the company available on www. bhel.com and/or under applicable legal provisions".

- 48. A Supplier shall not have conflict of interest with other Suppliers. Such conflict of interest can lead to anticompetitive practices to the detriment of Procuring Entity's interests. The Supplier found to have a conflict of interest shall be disqualified. A Supplier may be considered to have a conflict of interest with one or more parties in this bidding process, if:
 - a) they have controlling partner (s) in common;' or
 - b) they receive or have received any direct or indirect subsidy/ financial stake from any of them; or
 - c) they have the same legal representative/ agent for purposes of this bid; or
 - d) they have relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the bid of another Supplier; or
 - e) Supplier participates in more than one bid in this bidding process. Participation by a Supplier in more than one Bid will result in the disqualification of all bids in which the parties are involved. However, this does not limit the inclusion of the components/ sub-assembly/ assemblies from one bidding manufacturer in more than one bid, or
 - f) In cases of agents quoting in offshore procurements, on behalf of their principal manufacturers, one agent cannot represent two manufacturers or quote on their behalf in a particular tender enquiry. One manufacturer can also authorize only one agent/ dealer. There can be only one bid from the following:
 - 1. The principal manufacturer directly or through one Indian agent on his behalf; and
 - 2. Indian/ foreign agent on behalf of only one principal,

Or

- g) A Supplier or any of its affiliates participated as a consultant in the preparation of the design or Technical specifications of the contract that is the subject of the Bid, or
- h) In case of a holding company having more than one independently manufacturing units, or more than one unit having common business ownership/ management, only one unit should quote. Similar restrictions would apply to closely related sister companies. Suppliers must proactively declare such sister/ common business/ management units in same/ similar line of business.



- 49. All the above terms and conditions, post-bid agreements/ MoMs (during Techno- Commercial evaluation) shall automatically become a part of the Order/Contract after its finalization.
- 50. Suppliers to note that offers shall be submitted strictly in accordance with the requirements of tender documents. Suppliers shall upload their complete offer meeting the requirements of the tender documents on e-procurement portal https://eprocurebhel.co.in/nicgep/app.

Following documents need to be uploaded:

- Offer forwarding/ Covering letter with Un-price bid, DEVIATION SHEET (COST OF WITHDRAWAL).
- Documents required for meeting Technical PQRs.
- Land Border certificate compliance as per DOE circular dated 23.02.2023.
- Make In India Certificate
- Price bid along with Annexure-II on e-procurement portal https://eprocurebhel.co.in/nicgep/app
- 51. It shall be the responsibility of the Supplier to ensure that the tender is uploaded on or before the due date and time. Late offers are not accepted.
- 52. All other terms and conditions shall be as per Special Conditions of Framework Agreement (Rate Contract), and GCC Rev07 & Corrigenda-01 to GCC Rev 07.

In the event of any contradiction in the terms and conditions mentioned, the order of preference shall be as mentioned in clause no 36 of GCTC of GCC (Rev.07).

Note: - In case you are not making an offer against this enquiry, you are requested to send a regret letter so as to reach us on or before the due date.

TECHNICAL SPECIFICATION

FOR

RATE CONTRACT

OF

LUBE OIL TRANSFER PUMPS

SPECIFICATION NO.: PE-TS-STD-567-A001



BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR PROJECT ENGINEERING MANAGEMENT
PPEI, NOIDA-INDIA



LUBE OIL TRANSFER PUMP

SPECIFICATION NO: PE-TS-STD-567-A001

VOLUME: II B & III

REV: 00 DATE:22.06.2024

SHEET: 1 OF 2

INDEX

SECTIONS	TITLE		Page No
SECTION-A	INTENT OF SP	ECIFICATION	3
SECTION-B	PROJECT INFO	DRMATION	6
SECTION-C	TECHNICAL SI	PECIFICATIONS	7
	SECTION-C1	SPECIFIC TECHNICAL REQUIREMENT	8
		ANNEXURE-I (DATASHEET— C FOR LUBE OIL TR. PUMPS)	12
	ANNEXURE-IA (P &ID)		18
	ANNEXURE-II (MINIMUM REQUIREMENT OF QAP OF LUBE OIL PUMPS)		20
	ANNEXURE-III (MDL WITH SUBMISSION SCHEDULE)		
	ANNEXURE-IV(LIST OF MAKES OF SUB-VENDOR ITEMS)		3
	ANNEXURE-V (O & M MANUAL FORMAT)		35
	ANNEXURE-VI (h)		39
	ANNEXURE-VI (PAINTING REQUIREMENT)		47
-	TECHNICAL SPECIFICATION (ELECTRICAL PORTION)		49

VOLUME-III

SECTIONS	TITLE	Page No
1	LIST OF DOCUMENTS TO BE SUBMITTED WITH BID	65
2	COMPLIANCE CUM CONFIRMATION CERTIFICATE	66
3	PRE BID CLARIFICATION SCHEDULE	69
4	SCHEDULE OF TECHNICAL DEVIATION	71
5	ELECTRICAL LOAD DATA	73
6	SUGGESTIVE PRICE FORMAT	75



LUBE OIL TRANSFER PUMPS

	SPECIFICATION NO:	PE-TS-STD-567-A001	
	VOLUME: II B		
İ	SECTION: A		
	REV: 00	DATE:17.07.2024	
	Sheet: 1 OF 4		

SEC	CTION-A
INTENT OF	SPECIFICATION



LUBE OIL TRANSFER PUMPS

SPECIFICATION NO:	PE-TS-STD-567-A001
VOLUME: II B	
SECTION: A	
REV: 00	DATE:17.07.2024
Sheet: 2 OF 4	

1.0 INTENT OF SPECIFICATION

- 1.1 The specification is intended to covers design, engineering, manufacturing, inspection and testing at manufacturer's works, painting, supply/delivery duly packed at project site for pump & motor set duly coupled and unitised on a common base frame with coupling guard, foundation bolts, flanges, companion flanges with nuts bolts and gaskets, drip pan with plugged draining arrangement, strainer with flanges, companion flanges, nuts, bolts & gaskets, foundation bolts etc along with commissioning spares and all accessories, as required on FOR site basis, of Lube Oil Transfer Pumps as per details in different sections / volumes of this specification and various pre award agreements for RATE CONTRACT PURPOSE.
- 1.2 The Contractor shall be responsible for providing all material, equipment & services, which are required to fulfil the intent of ensuring operability, maintainability, reliability and complete safety of the complete work covered under this specification, irrespective of whether it has been specifically listed herein or not. Omission of specific reference to any component / accessory necessary for proper performance of the equipment shall not relieve the contractor of the responsibility of providing such facilities to complete the supply Lube oil pumps within quoted price.
- 1.3 It is not the intent to specify herein all the details of design and manufacture. However, the equipment shall conform in all respects to highest standards of design, engineering and workmanship and shall be capable of performing the required duties in a manner acceptable to purchaser who will interpret the meaning of drawings and specifications and shall be entitled to reject any work or material which in his judgement is not in full accordance herewith.
- 1.4 The extent of supply under the contract includes all items shown in the drawings, notwithstanding the fact that such items may have been omitted from the specification or schedules. Similarly, the extent of supply also includes all items mentioned in the specification and /or schedules, notwithstanding the fact that such items may have been omitted in the drawing. Similarly, the extent of supply also includes all items required for completion of the system and not withstanding that they may have been omitted in drawings / specifications or schedules.
- 1.5 The general term and conditions, instructions to tenderers and other attachment referred to elsewhere are made part of the tender specification. The equipment materials and works covered by this specification is subject to compliance to all attachments referred to in the specification. The bidder shall be responsible for and governed by all requirements stipulated herein.
- 1.6 While all efforts have been made to make the specification requirement complete & unambiguous, it shall be bidders' responsibility to ask for missing information, ensure



LUBE OIL TRANSFER PUMPS

SPECIFICATION NO:	PE-TS-STD-567-A001
VOLUME: II B	
SECTION: A	
REV: 00	DATE:22.06.2024
Sheet: 3 OF 4	

completeness of specification, to bring out any contradictory / conflicting requirement in different sections of the specification and within a section itself to the notice of BHEL and to seek any clarification on specification requirement in the format enclosed under Vol-III of the specification within 10 days of receipt of tender documents. In absence of any such clarifications, in case of any contradictory requirement, the more stringent requirement as per interpretation of Purchaser / Customer shall prevail and shall be complied by the bidder without any commercial implication on account of the same. Further in case of any missing information in the specification not brought out by the prospective bidders as part of prebid clarification, the same shall be furnished by Purchaser/ Customer as and when brought to their notice either by the bidder or by purchaser/ customer themselves. However, such requirements shall be binding on the successful bidder without any commercial & delivery implication.

- 1.7 The bidder's offer shall not carry any sections like clarification, interpretations and /or assumptions.
- 1.8 Deviations, if any, should be very clearly brought out clause by clause in the Cost of withdrawal format given in General Condition of Contract (GCC) otherwise, it will be presumed that the vendor's offer is strictly in line with NIT specification. If there are no deviations from the tender document, bidder shall indicate `NO DEVIATION' in the deviation schedule.
- 1.9 In case all above requirements are not complied with, the offer may be considered as incomplete and would become liable for rejection.
- 1.10 Unless specified otherwise, all through the specification, the word contractor shall have same meaning as successful bidder /vendor and Customer/ Purchaser/Employer will mean BHEL and / or Customer including their consultant as interpreted by BHEL in the relevant context.

VOLUME-IIB	
SECTION – B	
(PROJECT INFORMATION)	
(FROSECT INFORMATION)	
VOID	
	Page 6 of 80

TECHNICAL SPECIFICATION

FOR

RATE CONTRACT

OF

LUBE OIL TRANSFER PUMPS

VOLUME-IIB

SECTION C

(TECHNICAL SPECIFICATIONS)



BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR PROJECT ENGINEERING MANAGEMENT
PPEI, NOIDA-INDIA

TECHNICAL SPECIFICATIONS FOR LUBE OIL TRANSFER PUMPS

SECTION C1 (Specific Technical Requirements)



BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR PROJECT ENGINEERING MANAGEMENT
PPEI, NOIDA-INDIA



TITLE

TECHNICAL SPECIFICATION FOR

LUBE OIL PUMPS

(Specific Technical Requirements)

SPECIFI	CATION NO. PE	-TS-STD-567-A001	
VOLUME	EIIB		
SECTIO	N C		
REV	00	DATE 11.07.2024	
SHEET	1 _{OF 3}		

1.0 SCOPE OF WORK

1.1 Design, engineering, manufacturing, inspection and testing at manufacturer's works, painting, supply/delivery duly packed at project site for pump & motor set duly coupled and unitised on a common base frame with coupling guard, foundation bolts, flanges, companion flanges with nuts bolts and gaskets, drip pan with plugged draining arrangement, strainer with flanges, companion flanges, nuts, bolts & gaskets, foundation bolts etc along with commissioning spares and all accessories as indicated in the pump data sheet.

The broad classification of items intended to be covered under this specification shall be as follows:

	ITEM DESRIPTION
	Lube Oil Pump Motor Set duly coupled and unitised on a common base frame with coupling guard, foundation bolts, flanges, companion flanges with nuts bolts and gaskets, drip pan with plugged draining arrangement with 1 set of commissioning spares comprising of one no. mechanical seal and one no. gasket compound tube/one set gasket for pump and strainer
	Rated Capacity $6600 \text{LP}=$ and rated discharge pressure as $2 \text{kg/cm} 2 \text{kg/cm} 2$
l '	Rated Capacity 8250 LP= and rated discharge pressure as 2 kg/cm2 (g) or 3 kg/cm2 (g), inlet/outlet size as 80 NB/80NB
	Strainers complete with flanges, companion flanges with nuts bolts and gaskets, foundation bolts (if applicable) with nuts—and washers, 15 NB vent and drain connections provided with CS ball valves, 15 NB vent & drain pipe each 5 ft long
a)	Duplex Strainer - Rated Capacity 6600 LP= , inlet/outlet size as 80 NB/80NB
b)	Duplex Strainer - Rated Capacity 8250 LP=, inlet/outlet size as 80 NB/80NB

Further the quantity shall be as per the price schedule provided with the specification. Bidder to note that variation in quantity shall be +/- 30% based on the actual project requirement as mentioned in the price schedule.

1.2 Mandatory spares:

Mandatory spares, if required, shall be project specific and will be intimated accordingly. However the broad classification of items intended to be covered under the mandatory spares shall be as follows:



TITLE

TECHNICAL SPECIFICATION FOR

LUBE OIL PUMPS

(Specific Technical Requirements)

SPECIFICATION NO. PE-TS-STD-567-A001										
VOLUME II B										
SECTION	N C									
REV	00	DATE 11.07.2024								
SHEET	2 _{OF 3}									

pares comprising of 100% requirement for 1 pump motor set of following items against pump apacities and head indicated below. The MOCs of the items shall be as indicated in the specification
o. PE-TS-STD-567-A001
pares for Lube oil Transfer Pump, Cap. 6600 LPH and rated discharge pressure as 2 kg/cm2
g)
riving & Driven Gear
Mechanical seal /Oil Seals/ O-rings
ump-Motor coupling
ump Bearings
Notor bearing-driving end
Notor bearing -non driving end
rive Motor (Energy effcient)
erminal plates
Greasing arrangements
nd Shield Cover Driving & Non-Driving End
Notor Terminal Block
ooling Fan
ransfer oil pumps (set comprising of pumps along with motor)
uplex oil filters/ strainers (complete set consisting of cartridges,gaskets, 'O' rings except housing)
pares for Lube oil Transfer Pump, Cap. 8250 LPH and rated discharge pressure as 2 kg/cm2
g)
Priving & Driven Gear
Mechanical seal /Oil Seals/ O-rings ump-Motor coupling
· · ·
ump Bearings
Notor bearing-driving end
Notor bearing -non driving end
erive Motor (Energy effcient) erminal plates
·
Greasing arrangements nd Shield Cover Driving & Non-Driving End
Notor Terminal Block
Cooling Fan
ransfer oil pumps (set comprising of pumps along with motor)
puplex oil filters/ strainers (complete set consisting of cartridges,gaskets, 'O' rings except housing)

Further the quantity shall be as per the price schedule provided with the specification. Final quantity shall be intimated to the successful bidder based on the project requirement along with quantity of the main supply.



TITLE

TECHNICAL SPECIFICATION FOR

LUBE OIL PUMPS

(Specific Technical Requirements)

SPECIFICATION NO. PE-TS-STD-567-A001										
VOLUME	IIВ									
SECTIO	N C									
REV	00	DATE 11.07.2024								
SHEET	3 _{OF 3}									

2.0 TERMINAL POINT WITH THE CUSTOMER

- a) For Pump- Counter flange on both suction and discharge side.
 - b) For Strainer- Counter flange on both suction and discharge side.
- 2.2 For electrical system, bidder's scope shall terminate at motor terminal box complete with cable glands/ lugs for power cabling. Also refer electrical scope between BHEL & Vendor enclosed under section- D of specification.

3.0 EXCLUSIONS

- 3.1 Power Cable
- 3.2 Motor starter in MCC
- 3.3 Local Push Button Station
- 3.4 Supply feeder
- 3.5 Earthing of Pumps. However, earthing conductor is to be provided by the bidder.
- 3.6 Foundation & associated Civil works.

4.0 CORROSION PROTECTION/ PAINTING SCHEDULE

The painting schedule shall be as per the Painting Requirement

This shall be project specific. There will, however, be no additional commercial implication on account of the same. The shade of colour shall be 410- light brown as per IS 5 unless stated otherwise. However, successful bidder will have to get confirmation in writing from BHEL/ Customer regarding final colour shade before going ahead with finish coat.

5.0 QUALITY REQUIREMENTS

Unless noted otherwise, the pumps, motors & strainers shall meet the minimum requirements as indicated in the Standard Quality Plan for these items and enclosed in the specification. However, for project specific QP, in case customer has any comments on the standard quality plans, these will be taken care by the bidder without any additional commercial implication to BHEL.

6.0 SUB-VENDOR ITEMS

The makes of sub-vendor items indicated in the data sheets placed under Vol- III of specification are subject to acceptance by customer without any additional commercial implication to BHEL

7.0 OTHER PROJECT SPECIFIC DATA

Following details will also be project specific and intimated to the bidder accordingly.

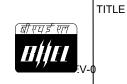
- Project information
- Power Cable Data

TECHNICAL SPECIFICATIONS FOR LUBE OIL TRANSFER PUMPS

ANNEXURE-I (DATASHEET-C FOR LUBE OIL PUMPS)



BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR PROJECT ENGINEERING MANAGEMENT
PPEI, NOIDA-INDIA



DATA SHEET-C FOR LUBE OIL PUMPS

SPECIFICATION NO. PE-TS-STD-567-A001

VOLUME IIB

SECTION

DATE DATE:11.07.2024

SHEET 1 of 5

"*" marked details will be furnished by the bidder for review and approval by customer
1.00 Project Information
1.01 Enquiry No.

1.02 Project *

2.00 Service Condition

2.01 Service Clean Oil/ Dirty Oil/Drain Oil (*bidder to tick mark the applicable service)

2.02 No. of units

2.03 Location Indoor

2.04 Duty Intermittent

3.00 Operating Condition

3.01 Liquid to be pumped Turbine Lube Oil

3.02 Pumping Temperature Ambient/70°C

3.03 Viscosity

a) Highest 140cSt @20°C

b) Lowest 28cSt @50°C

c) Normal 48cSt @37.8°C

3.04 Design Viscosity of oil (cSt) 28cSt for capacity, 140cSt for power

consumption

3.05 Specific Gravity 0.9 gm/cc

3.06 Suction Conditions available Flooded

3.07 i) Rated capacity (LPH) *

ii) Pump Maximum flow (LPH) & corresponding head (kg/cm² (g)) *

3.08 Rated head $- \text{kg/cm}^2(g)$

3.09 R..V.Press.Setting *

4.00 Pump

4.01 Manufacturer *

4.02 Type External gear with herringbone gears

4.03 Model No. *

4.04 (i) Design & Manufacturing Standard API 676

4.04 (ii) Testing Standard HIS (ANSI/HI-3.6-2000 / VDMA 24284 , Accuracy Class-2, Group-II

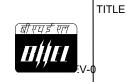


DATA SHEET-C FOR LUBE OIL PUMPS

SPECIFICATION NO. PE-	TS-STD-567-A001
VOLUME IIB	
SECTION	
DATE	DATE:11.07.2024

SHEET 2 of 5

(* Bidder to tick the standard adopted) 4.05 Rotation (Viewed from pump shaft end) 4.06 Shut off head, if applicable Not applicable 4.07 Size 80 NB for pump capacity 5000 LPH and above, Suction flange 50 NB for pump capacity 2880 and 2640 LPH Standard ANSI B 16.5 150 lb Rating Facing RF Location (as viewed from drive end) -*(Bidder to tick the applicable) End Side Top 4.08 Discharge flange Size 80 NB for pump capacity 5000 LPH and above, 50 NB for pump capacity 2880 and 2640 LPH Standard ANSI B 16.5 Rating 150 lb RF Facing Location (as viewed from drive end) -*(Bidder to tick the applicable) End Side Top 4.09 **Timing Gear** Not applicable for gear pumps 4.10 Relief Valve Built-in a) Manufacturer Pump manufacturer (OEM) b) Type c) Size (NB) d) Capacity, litre/min 110% of the pump max. flow e) Valve, setting pressure adjustable Yes/No (* bidder to indicate the applicable) & range of adjustability, in case adjustable f) Material g) Spring, Material Spring Steel h) Relief valve cover-Material Same as MOC of pump body i) Bonnet-Material Same as MOC of pump body 4.11 **Shaft Sealing** Mechanical seal 4.12 Bearing a) Type b) Nos. Provided c) Method of lubrication d) Temperature rise over oil temperature



DATA SHEET-C FOR LUBE OIL PUMPS

SPECIFICATION NO. PE-TS-STD-567-A001

VOLUME IIB

SECTION

DATE DATE:11.07.2024

Page 15 of 80

SHEET 3 of 5 4.13 Type of Coupling 4.14 Type of Impeller External gear- Herringbone profile 4.15 BHP consumed at Rated viscosity (at pump shaft) 4.16 BHP consumed at Max. viscosity (at pump shaft) 4.17 BHP consumed at Min. viscosity (at pump shaft) BHP consumed at the R.V. Set Pressure (at pump shaft) @ 48 cSt 4.18 at maximum value of set pressure range 4.19 Pump Efficiency at rated condition @ 48 cSt a) Mechanical b) Volumetric c) Overall 4.20 Recommended motor rating at 50 ° C ambient (kw) 4.21 Motor RPM 4.22 Design pressure of the pump body and end covers - kg/cm² (g)- * (Should be at least 6 kg/cm²(g)) 5.00 **Material of Construction** 5.01 Casing and End covers CAST IRON - IS210 FG260 5.02 VOID 5.03 Rotor/Gear EN-8 BS 970 Part-I Hardness-* 5.04 Shaft/Shaft Sleeve SS 316 5.05 Seal 5.06 Gasket GRAFOIL/ Any other asbestos free material subject to customer acceptance (* bidder to indicate) 5.07 Bearing 5.08 Relief Valve Components 5.09 **Base Plate** MS to IS 2062 6.00 **Spares** 6.01 **Commissioning Spares** 1 set of gaskets/1 no. gasket compound tube 1 No. mechanical seal 6.02 Essential Spares for Pump, if applicable * (Project specific)

ती एच ई एल **गिग्रा**

DATA SHEET-C FOR LUBE OIL PUMPS

SPECIFICATION NO. PE-TS-STD-567-A001

VOLUME IIB

SECTION

DATE DATE:11.07.2024

Page 16 of 80

SHEET 4 of 5

6.03	Essential Spares for Motor, if applicable	* (Project specific)
6.04	Recommended Spares for Pump for 3 Years	*
6.05	Recommended Spare for Motor for 3 Years	*
7.00	Weight of	
7.01	Pump	*
7.02	Motor	*
7.03	Base plate	*
7.04	Other Accessories (Please specify)	*
8.00	Strainer/Filter	
8.00 8.01	Strainer/Filter Manufacturer	*
		* * (Type -Project specific; size –to match pump suction)
8.01	Manufacturer	* (Type -Project specific; size –to
8.01 8.02	Manufacturer Type & Size	* (Type -Project specific; size –to match pump suction)
8.01 8.02 8.03	Manufacturer Type & Size Nos. provided	* (Type -Project specific; size –to match pump suction)* (Project specific)
8.01 8.02 8.03 8.04	Manufacturer Type & Size Nos. provided Size of Screen mesh & wire dia (min) Design Pressure (kg/cm²)	 * (Type -Project specific; size –to match pump suction) * (Project specific) 40 mesh & 34 SWG
8.01 8.02 8.03 8.04 8.05	Manufacturer Type & Size Nos. provided Size of Screen mesh & wire dia (min) Design Pressure (kg/cm²) (Should be at least 4 kg/cm²)	 * (Type -Project specific; size –to match pump suction) * (Project specific) 40 mesh & 34 SWG *
8.01 8.02 8.03 8.04 8.05	Manufacturer Type & Size Nos. provided Size of Screen mesh & wire dia (min) Design Pressure (kg/cm²) (Should be at least 4 kg/cm²) Capacity (LPH)	 * (Type -Project specific; size –to match pump suction) * (Project specific) 40 mesh & 34 SWG * To match pump flow
8.01 8.02 8.03 8.04 8.05 8.06 8.07	Manufacturer Type & Size Nos. provided Size of Screen mesh & wire dia (min) Design Pressure (kg/cm²) (Should be at least 4 kg/cm²) Capacity (LPH) Design Viscosity	 * (Type -Project specific; size –to match pump suction) * (Project specific) 40 mesh & 34 SWG * To match pump flow 140cSt @ 20 °C
8.01 8.02 8.03 8.04 8.05 8.06 8.07 8.08	Manufacturer Type & Size Nos. provided Size of Screen mesh & wire dia (min) Design Pressure (kg/cm²) (Should be at least 4 kg/cm²) Capacity (LPH) Design Viscosity End Connection Maximum Pressure drop at design	 * (Type -Project specific; size –to match pump suction) * (Project specific) 40 mesh & 34 SWG * To match pump flow 140cSt @ 20 °C



DATA SHEET-C FOR LUBE OIL PUMPS

SPECIFICATION NO. PE-TS-STD-567-A001

VOLUME IIB

SECTION

DATE DATE:11.07.2024

SHEET 5 of 5

8.10 Material of construction

a) Strainer body

b) Screen SS316

c) Gaskets GRAFOIL/ Any other asbestos

free material subject to customer acceptance (* bidder to indicate)

8.10 a) Inlet pipe Area

b) Free straining area *

c) Ratio of Free straining area to inlet pipe area

(should be \geq 6:1)

9.00 Accessories to be provided

Common base plate Yes- MS fabricated from IS 2062

plate

Common for pump & motor

Coupling & Coupling Guard Yes

Foundation bolts & nuts Yes

Flanges & Companion flanges Yes, Class 150 lb, RF to ANSI B 16.5

Nuts, bolts & gaskets Yes

Lifting lugs, Eye bolts etc Yes

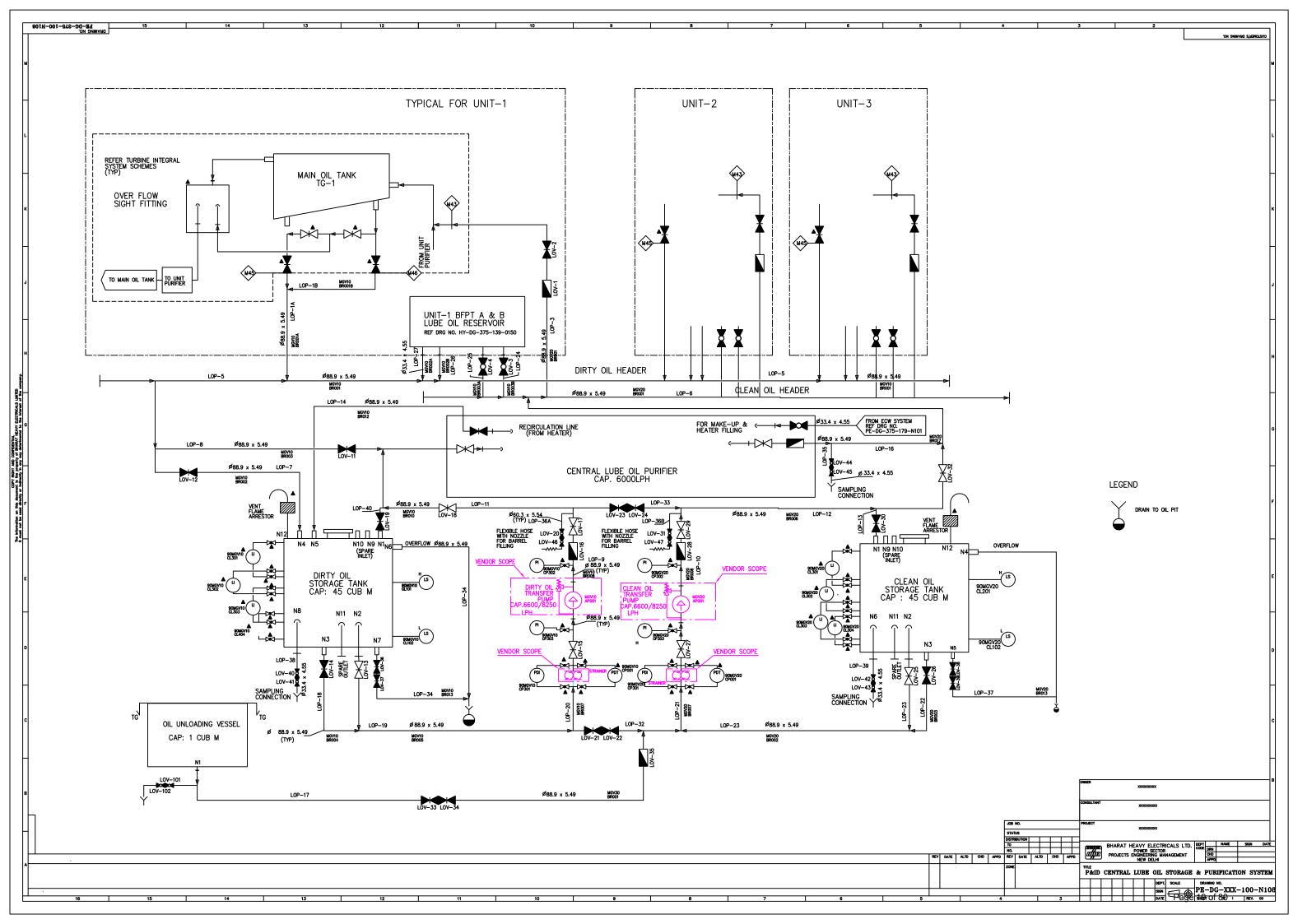
Name plate for all the equipment Yes

TECHNICAL SPECIFICATIONS FOR LUBE OIL TRANSFER PUMPS

ANNEXURE-IA (P & ID FOR LUBE OIL PUMPS)



BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR PROJECT ENGINEERING MANAGEMENT
PPEI, NOIDA-INDIA



TECHNICAL SPECIFICATION

FOR

RATE CONTRACT

OF

LUBE OIL TRANSFER PUMPS

ANNEXURE - II

(MINIMUM REQUIREMENTOF QAP FOR LUBE OIL TRANSFER PUMPS PACKAGE)



BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR PROJECT ENGINEERING MANAGEMENT
PPEI, NOIDA-INDIA

-	MANUEL CEUD	ED /DIDDED #/END	3B									ı				Т
	MANUFACTURI NAME & ADDRI	ER/BIDDER/VEND(ESS)R	STA	NDAR	D QUAL	ITY I	PLAN		SPEC. N	O: PE-	DATE:XXXX				
बीएचई एल			CUSTO	OMER:							QP NO.:	PE-QA	P-XXX	K-567-A001	DATE: 5.5.2020	
BHEL			PROJE	ECT:								PO NO.:	LATE	R		DATE: XXXX
			ITEM	LUBE OIL PU	J MP			SYSTE	EM:			SECTIO	N: S	HEET	1 OF 4	
SL NO.	COMPONENT & OPERATIONS	CHARACTERIST	C-ICS CLAS	S TYPE OF CHECK				ACCEPTANCE NORMS		FORMA RECO			AG	ENCY	REMARKS	
1	2	3	4	5		6	7		8		9 *		* **		10	
ı					М	C/N						D	D M C		N	
1.0	RAW MATERIAL 8	& BOUGHT OUT ITEMS	\$													
1.1	PUMP CASING	PHYSICAL AND CHEMCIAL PROPER	RTIES	LAB TEST	100%		APPROVED DRAWING/D. SHEET	АТА	APPROVED DRAWING/E SHEET		LAB REPORT	. 1	Р	V	-	
1.2	END COVER	PHYSICAL AND CHEMCIAL PROPERTIES	MA	LAB TEST	100%		APPROVED DRAWING/D. SHEET	АТА	APPROVED DRAWING/E SHEET		LAB REPORT	. 1	Р	٧	-	
1.3	SHAFT	PHYSICAL AND CHEMCIAL PROPERTIES	MA	LAB TEST	100%		APPROVED DRAWING/D. SHEET	АТА	APPROVED DRAWING/E SHEET		LAB REPORT	. 1	Р	V	-	
		INTERNAL DEFECTS	S MA	UT	100%		ASTM-E 388 BACK WELL		FALL IN BAC 20% ,MAX D ECHO M20% MAX	DEFECT	UT REPORT	1	Р	V	-	
		HARDNESS	MA	HARDNESS	5 100%		APPROVED DRAWING/D. SHEET	АТА	APPROVED DRAWING/E SHEET	1	LAB REPORT	. 1	Р	V	-	
1.4	GEARS (DRIVING AND DRIVEN)	PHYSICAL AND CHEMCIAL PROPER	RTIES	LAB TEST	100%		APPROVED DRAWING/D. SHEET	АТА	APPROVED DRAWING/E SHEET		LAB REPORT	. 1	Р	V	-	
		HEAT TREATMENT	MA	HEAT TREATMENT	100%		APPROVED DRAWING/D. SHEET	АТА	APPROVED DRAWING/E SHEET		HT CHART	1	Р	V	-	
		INTERNAL DEFECTS	S MA	UT	100%		ASTM-E 388 BACK WELL		FALL IN BAC 20% ,MAX D ECHO M20% MAX	DEFECT	UT REPORT	1	Р	V	-	
		HARDNESS	MA	HARDNESS	3 100%		APPROVED DRAWING/D. SHEET	АТА			LAB REPORT	. 1	Р	V	-	
1.5	RELIEF VALVE BODY	PHYSICAL AND CHEMCIAL PROPER	RTIES	LAB TEST	100%		APPROVED DRAWING/D. SHEET	АТА	APPROVED DRAWING/E SHEET		LAB REPORT	. 1	Р	V	-	
1.6	FLANGES(COMPANION)	PHYSICAL AND CHEMCIAL PROPERTIES	MA	LAB TEST	100%		APPROVED DRAWING/D. SHEET	АТА	APPROVED DRAWING/E SHEET		LAB REPORT	. 1	Р	V	-	
1.7	BEARINGS, OIL SEA S, MEACHANICAL	MAKE, SIZE , BEA NUMBER,FINISH,FIT NT		VISUAL,FITM ENT	M 100%		MANUFACTU DRAWING	RING	MANUFACTI DRAWING	JRING	COC	1	Р	V	-	
		ВНЕІ	u	•	<u> </u>		BIDDER/ S	UPPLI	ER		FOR	CUSTOM	ER RE	/IEW &	& APPROVA	L
	ENGINEERI	NG		QUALITY		Sign &	Date			Doc No:						
	Sign & Date	Name		Sign & Date	Name	Seal					Sign & Date	Nan	e		Seal	
Prepared by:	S.K. Yadav		Checked by:	A Pa	shish anigrahi					Reviewed by:						
Reviewed by	y: Sayan Roy		Reviewed by:		K Jaiswal					Approved by:						

	MANUFACTUR NAME & ADDR	ER/BIDDER/VENDOR			STA	NDAR	D QUALITY			SPEC. NO	DATE:XXXX				
बी एच ई एल	NAME & ADDR	LSS	CUSTON								QP NO.: P	E-QAl	P-XXX	-567-A001	DATE: 5.5.2020
BHEL									PO NO.: L	ATER	DATE: XXXX				
			ITEM:	LUBE OIL PUME	•		SYSTEM:					SH	IEET	2 OF 4	
SL NO.	COMPONENT & OPERATIONS	CHARACTERIST-IC	CLASS CLASS	TYPE OF CHECK		NTUM HECK				FORMA RECO			AGI	ENCY	REMARKS
1	2	3	4	5		6	7	8		9	*		**		10
					М	C/N					D	М	С	N	
	SEALS														
1.8	ELECTRIC MOTOR	REVIEW OF ROUTNE TEST CERTIFICATE	MA	REVIEW	100%	100%	IS 325 /IEC -34 FOR EXPORT MOTOR	APPROVED DRAWING/E SHEET		ROUTINE TEST REPORT	1	Р	V	-	
2.0	IN PROCESS INSP	ECTION	•	•							•		•		
2.1	ALL COMPONENT	WORKMANSHIP & FINISH	MA	VISUAL/MEA SUR EMENT	100%		MANUFACTURING DRAWING	MANUFACT DRAWING	URING	IR	√ √	Р	V	-	
		DIMENSIONS	MA	VISUAL/MEA SUR EMENT	100%		MANUFACTURING DRAWING	MANUFACT DRAWING	URING	IR	√	Р	V	-	
2.2	PUMP CASING, COVERS,RELIE F VALVES HOUSING & CURING OF PUMP CASING GASKETS	LEAK TIGHTNESS	CR	HYDRO TEST AT 2X MAXIMUM ALLOWABLE WORKING PRESSURE FOR 30 MINUTES	100%	100%	APPROVED DRAWING/DATA SHEET	NO LEAKAG	GE	IR	1	Р	W	-	
2.3	GEARS/SCREW & SHAFT	INTERNAL DEFECTS	MA	DPT	100%		ASTM E 165	NO DEFECT	rs	IR	V	Р	V	-	
2.4	GEARS/SCRE W - INDUCTION HARDENING	HARDNESS	MA	HARDNESS MEASUREME NT	100%		APPROVED DRAWING/DATA SHEET	APPROVED DRAWING/E SHEET		LAB REPORT	1	Р	V	-	
3.0	SUB-ASSEMBLY	ASSEMBLY CONTROL/F	NAL INSPECT	ON AND TESTING				'	'		'				
3.1	ROTOR ASSEMBLY	STATIC RESIDUAL DYNAMIC BALANCING	CR	STATIC RESIDUAL DYNAMIC BALANCING	100%		ISO -1940 GR 6.3	ISO -1940 G	GR 6.3	IR	√	Р	V	-	
3.2	PUMP ASSEMBLY	COMPLETENESS	MA	VISUAL,MEAS UREMENT	100%		APPROVED GA DRAWING	MANUFACT DRAWING	URING	IR	1	Р	V	-	
3.3	COMPLETE PUMP WITH JOB MOTOR	1. PERFORMANCE H V. Q, H V/S p, PH VS PUM EFFICIENCY		PERFORMANC E TEST	100%	100%	HYDRAULIC INSTITUTE STANDARD OF USA	HYDRAULIO INSTITUTE STANDARD		TEST REPORT	Γ √	Р	W	-	PUMP TO BE TESTED WITH OIL OF VISCOSITY CLOSEST TO THE LUBE OIL
		BHEL					BIDDER/ SUPPLI	ER		FOR (CUSTOMER	REV	IEW &	k APPROVA	L
	ENGINEERI	NG		QUALITY		Sign &	Date		Doc No:						
	Sign & Date	Name		gn & Date	Name	Seal				Sign & Date	Name			Seal	
Prepared by:		by		Ashis Panig	grahi				Reviewed by:						
Reviewed by	y: Sayan Roy	Re by	viewed :	R K .	Jaiswal				Approved by:						

	MANUFACTUR NAME & ADDR	ER/BIDDER/VENDOR ESS	STANDARD QUALITY PLAN										SPEC. NO: PE-TS-XXX-567-A001					
बीएचई एल			CUSTOMER: QP N										· XXX	-567-A001	DATE: 5.5.2020			
HHFI			PROJECT:												DATE: XXXX			
			ITEM:	LUBE OIL PUMI	•		S	SYSTEM	1 :		SECTION	: SH	EET	3 OF 4				
SL NO.	COMPONENT & OPERATIONS	CHARACTERIST-ICS	CLASS	TYPE OF CHECK		NTUM CHECK	REFERENCE DOCUMEN			FORMA' RECO		AGENCY			REMARKS			
1	2	3	4	5		6	7		8	9	*		**		10			
					М	C/N					D	М	С	N				
	AND STRAINER														@RATES VISCOSITY FOR PRESSURE @LOWEST VISCOSITY FOR CAPACITY @ HEIGHESTVISCO SITY FOR POWER			
		VIBRATION/NOISE	MA	MEASURE MENT	100%	100%	APPROVED DRAWING/DAT SHEET	TA I	APPROVED DRAWING/DATA SHEET	TEST REPOR	Γ √	P	W	-				
		RELIEF VALVE SET PRESSURE	MA		100%	100%	APPROVED DRAWING/DA ⁻ SHEET	TA I	APPROVED DRAWING/DATA SHEET	TEST REPOR	Γ √	Р	W	-				
		LEAKAGE	MA	LEAK TEST	100%	100%	APPROVED DRAWING/DAT	TA.	APPROVED DRAWING/DATA SHEET	TEST REPOR	Γ √	Р	W	-				
		TEMPERATURE	MA	MEASURE MENT	100%	100%	APPROVED DRAWING/DA' SHEET	TA.	APPROVED DRAWING/DATA SHEET	TEST REPOR	Γ √	Р	W	-				
		OVERALL DIMENTIONS	MA	MEASURE MENT	100%	100%	APPROVED DRAWING/DA' SHEET	TA	APPROVED DRAWING/DATA SHEET	TEST REPOR	Γ √	Р	W	-				
		ORENTATION	MA	MEASURE MENT	100%	100%	APPROVED DRAWING/DAT SHEET	TA	APPROVED DRAWING/DATA SHEET	TEST REPOR	Γ √	Р	W	-				
		STRIP TEST	CR	VISUAL	100%	100%	NO VISIBLE DAMAGE		NO VISIBLE DAMAGE	TEST REPOR	Γ √	Р	W	-				
3.4	CLEANING , PROTECTION , PAINTING & PACKING	ACTVITY COMPLIANCE	MI	VISUAL	100%		TECHNICAL //\ SPEC FOR PACKING,APF VED DRAWING FOR CLEANIN PROTECTION BAINTING	MFG PRO IG NG I AND	TECHNICAL MFG SPEC FOR PACKING,APPROVED DRAWING FOR CLEANING PROTECTION AND	IR	٧	Р	V	-				

		BH	EL		
	ENGINEERING			QUALITY	
	Sign & Date	Name		Sign & Date	Name
Prepared by:	S.K. Yadav		Checked by:		Ashish Panigrahi
Reviewed by:	Sayan Roy		Reviewed by:		R K Jaiswal

	BID	DDER/ SUPPLIER
	Sign & Date	
	Seal	
_		

FOR CUSTOMER REVIEW & APPROVAL						
Doc No:						
	Sign & Date	Name	Seal			
Reviewed						
by:						
Approved						
by:						

	MANUFACTURI NAME & ADDRI	ER/BIDDER/VENDOR ESS	STANDARD QUALITY PLAN							SPEC. NO: 1	SPEC. NO: PE-TS-XXX-567-A001				
बीएचईएन			CUSTOMER:							QP NO.: PE	DATE: 5.5.2020				
BHEL			PROJECT	•							PO NO.: LA	TER		DATE: XXXX	
	ITEM: LUBE OIL PUMP SYSTEM:									SECTION:					
SL NO.	COMPONENT & OPERATIONS	CHARACTERIST-ICS	CLASS	CLASS TYPE OF QUANTUM OF CHECK				REFERENCE ACCEPTANCE FORM NORMS REC				AGENCY		REMARKS	
1	2	3	4	5	5 6 7 8 9			*		**	10				
			M C/N				D	МС	N						

NOTES:

- 1. In case of foreign supplier, all test certificates shall be furnished by the supplier, duly witnessed/verified by supplier's TPI.
- 2. Following to be noted for packing:
 - a. Material shall be packed suitably in order to avoid damage of paint and valve during transit and also during storage at site in tropical climate conditions for a period of 15-18 months.
 - b. Photographs of the packing just before dispatch for information of PEM.
- 3. The latest revisions/year of issue of all the standard indicated in the QP shall be referred.
- 4. Project specific QP will be prepared based on customer requirement.
- 5. BHEL reserves the right for conducting repeat test, if required.

LEGENDS:

*RECORDS, INDENTIFIED WITH "TICK"(\(\sqrt{)}\) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION,

** M: SUPPLIER/ MANUFACTURER/ SUB-SUPPLIER, C: MAIN SUPPLIER/ BHEL/ THIRD PARTY INSPECTION AGENCY, N: CUSTOMER,

P: PERFORM, W: WITNESS, V: VERIFICATION, AS APPROPRIATE, D: DOCUMENTATION

MA: MAJOR, MI: MINOR, CR: CRITICAL, MTC: Mill Test Certificate, RT: Radiographic Test, PT: Penetrant Test

BHEL											
	ENGINEERING		QUALITY								
	Sign & Date	Name		Sign & Date	Name						
Prepared by:	S.K. Yadav		Checked by:		Ashish Panigrahi						
Reviewed by:	Sayan Roy		Reviewed by:		R K Jaiswal						

BII	BIDDER/ SUPPLIER									
Sign & Date		D								
Seal		R b A b								

	FOR CU	STOMER REV	EW & APPROVAL
Doc No:			
	Sign & Date	Name	Seal
Reviewed			
by:			
Approved			
by:			

- R C	MANUFACTURES SUPPLIER NAME			;	STANI	DARD (QUALITY PLA	N	SPEC.	NO : PE-TS-X	XXX-	567-A	001		DATE:xx.xx.xxxx
बीएचई एल			CUS	TOMER:					QP NO.: PE-QAP-XXX-567-A001(S)					DATE: 5.5,2020	
	1		PRO	JECT:					PO NO.	:LATER					DATE: xx.xx.xxxx
			ITE	M: BASKET DUPLEX	(STRAIN	ER SYS	TEM: LUBE OIL PU	MPS	SECTION:					SHEET 1 OF 3	
SL NO	COMPONENT & OPERATIONS	ERATIONS CS	CL AS S	TYPE OF CHECK		NTUM	REFERENCE DOCUMENT	ACCEF E NOR		FORMA OF RECOR		A	GEN	CY	REMARKS
1	2	3	4	5		6	7	8		9	*		**		
					М	C/ N					D	М	С	N	
1.0	RAW MATERIAL & BOUG	нт													
1.1	STRAINER BODY , FLANGE BOTTOM PLATE, TOP COVER	PHYSICAL AND CHEMCIAL PROPERTIES	MA	LAB TEST	100%		APPROVED DRAWING/DATA SHEET	APPROVE DRAWING SHEET		LAB REPORT	√	Р	V		
1.2	3 WAY VALVE HOUSING CASTING, BACKING PLATE	PHYSICAL AND CHEMCIAL PROPERTIES	MA	LAB TEST	100%		APPROVED DRAWING/DATA SHEET	APPROVE DRAWING SHEET		LAB REPORT	1	Р	V		
1.3	SCREEN	CHEMCIAL PROPERTIES	MA	LAB TEST	100%		APPROVED DRAWING/DATA SHEET	APPROVE DRAWING SHEET		LAB REPORT	1	Р	V		
2.0	IN PROCESS CONTROL			1			OTTEE!	0.1221			1	-			1
2.1	WELDING PROCEDURE	CORRECTNESS /WELDING PARAMETER S	MA	REVIEW	100%		ASME SEC IX	ASME SE	C IX	QW 482	1	Р	V		
2.2	PQR & WELDERS QUALIFICATION	WELD SOUNDNESS	MA	PHYSICAL TEST/RT	100%		APPRVED WPS/APPROVED DWG	APPROVE	ED WPS	QW 482	1	Р	V		
2.3	WELD FIT UPS	DIMENSIONS & ALIGNMENT ORIENION	MA	MEASUREMENT VISUAL	100%		APPROVED DRAWINGS	APPROVE DRAWING		IR	1		V		
2.4	WELDMENTS -ROOT & FINAL RUN(AS APPLICABLE)	WELD DEFECTS	MA	PANETRATION TEST	100%		ASME E 165	NO DEFE		IR	1		V		
2.5	ASSEMBLY OF INTERNAL BASKET	DIMENSION & FITTING OF INTERNAL	MA	VISUAL & PROPERFITMENT	100%		APPROVED DRAWING/DATA SHEET	APPROVE DRAWING A SHEET		IR	1	Р	V		
3.0	FINAL INSP CTION AND TESTING														
3.1		COMPLETENESS,	MA	VISUAL &	100%		APPROVED	APPROVE	ΞD	IR	V	Р	V		
		BHEL				BIDDE	R/ SUPPLIER			FOR CUS	ГОМ	ER RI	EVIEV	V & AI	PPROVAL
	ENGINEERING		OUA	LITV	Sign &	Date		Doc No							

Sign & Date

Prepared by: Reviewed by: Name

S K Yadav

Sayan Roy

Checked

Reviewed by:

Sign & Date

Name

Ashish Panigrahi

R K Jaiswal

Seal

Seal

Sign & Date

Reviewed by: Approved by: Name

बीएचई एल	MANUFACTURE SUPPLIER NAME			,	STANI	DARD (QUALITY PLA	N	SPEC. NO : PE-TS-XXX-567-A001						DATE:xx.xx.xxxx
MICH S CH			CUS	CUSTOMER:				QP NO.: PE-QAP-XXX-567-A001(S)					DATE: 5.5.2020		
BIJEL			PRO	PROJECT: PO						.:LATER	DATE: xx.xx.xxxx				
			ITE	TEM: BASKET DUPLEX STRAINER SYSTEM: LUBE OIL PUMPS SECTION:											SHEET 2 OF 3
SL NO	COMPONENT & OPERATIONS	CHARACTERISTI CS	CL AS S	TYPE OF CHECK	1	NTUM	REFERENCE DOCUMENT	ACCEF E NOF	Ē	FORMA OF RECOR		Α	GEN	CY	REMARKS
1	2	3	4	5		6	7	8	8		*		**		
					М	C/ N					D	М	С	N	
				•	•	•	•	•							
		CLEALINESS, DIMENSION OF SCRFEN & OTHER PARTS		MEASUREMENT			DRAWING/DATA SHEET	DRAWING SHEET							
		LEAK TIGHTNESS	MA	HYDRO TEST AT 1.5 TIMES THE DESIGN PRESSURE;	100%		APPROVED DRAWING/DATA SHEET	NO LEAK	AE	IR	1	Р	V		

ONE/TYPE/

100%

NOTES:

3.2

CLEANING,

PROTECTION,

PAINTING & PACKING

- 1. In case of foreign supplier, all test certificates shall be furnished by the supplier, duly witnessed/verified by supplier's TPI.
- 2. Following to be noted for packing:
 - a. Material shall be packed suitably in order to avoid damage of paint and valve during transit and also during storage at site in tropical climate conditions for a period of 15-18 months.

APPROVED

SPEC FOR

CLEANING

SHEET

DRAWING/DATA

TECHNICAL /MFG

PAC ING,APPR

DRAWING FOR

PROTECTION

AND PAINTING

NO LEAKAE

SPEC FOR

CLEANING

TECHNICAL /MFG

PACKING, APPR

DRAWING FOR

PROTECTION

AND PAINTING

b. Photographs of the packing just before dispatch for information of PEM.

FLOW V/S PRESSURE

DROP TEST

COMPLIANCE

ACTVITY

c. The latest revisions/year of issue of all the standard indicated in the QP shall be referred.

MINUTES

VISUAL

VISUAL

MEASUREMENT

	BHEL					BII	DDER/ SUPPLIER	FOR CUSTOMER REVIEW & APPROVAL				
ENGINEERING QUALITY				Sign & Date		Doc No:						
	Sign & Date	Name		Sign & Date	Name	Seal			Sign & Date	Name	Seal	
Prepared		S K Yadav	Checked		Ashish			Reviewed				
by:			by:		Panigrahi] [by:				
Reviewed		Sayan Roy	Reviewed		R K Jaiswal	11		Approved				
by:			by:					by:				

बीएचईएल	M NUFACTURER/ BIDDER/ SUPPLIER NAME & ADDRESS	STANDA	RD QUALITY PLAN	SPEC. NO : PE-TS-XXX-567-A001	DATE:xx.xx.xxxx
		CUSTOMER:		QP NO.: PE-QAP-XXX-567-A001(S)	DATE: 5.5.2020
BIJEL		PROJECT:		PO NO.:LATER	DATE: xx.xx.xxxx
		ITEM: BASKET DUPLEX STRAINER	SYSTEM: LUBE OIL PUMPS	SECTION:	SHEET 3 OF 3

	SL NO		CHARACTERISTI CS	CL AS S	TYPE OF CHECK	QUAI OF C	NTUM HECK	REFERENCE DOCUMENT	ACCEP E NOR	FORM/ OF RECOR		AGEN	CY	REMARKS
ſ	1	2	3	4	5	(3	7	8	9	*	**		
						М	C/ N				D	M C	N	

- 3. Project specific QP will be prepared based on customer requirement.
- 4. BHEL reserves the right for conducting repeat test, if required

LEGENDS:

*RECORDS, INDENTIFIED WITH "TICK"(√) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION,

** M: SUPPLIER/ MANUFACTURER/ SUB-SUPPLIER, C: MAIN SUPPLIER/ BHEL/ THIRD PARTY INSPECTION AGENCY, N: CUSTOMER,

P: PERFORM, W: WITNESS, V: VENEZIE ON, AS APPROPRIATE

MA: MAJOR, MI: MINOR, CR: CRITICAL

	BHEL										
	ENGINEERIN	NG	QUALITY								
	Sign & Date	Name		Sign & Date	Name						
Prepared		S K Yadav	Checked		Ashish						
by:			by:		Panigrahi						
Reviewed		Sayan Roy	Reviewed		R K Jaiswal						
by:			by:								

BIE	DDER/ SUPPLIER	1
Sign & Date		Doc No:
Seal		
		Reviewe
		by:
		Approve
		by:

٦		FOR CUSTOMER REVIEW & APPROVAL									
1	Doc No:										
7		Sign & Date	Name	Seal							
I	Reviewed										
Į	by:										
	Approved										
	by:										

(- Company
	AI ('T \$ ('M
	otter i
1	
	. //

MANUFACTURER/ BIDDER/ STANDARD QUALITY PLAN SPEC. NO: DATE: **SUPPLIER NAME & ADDRESS CUSTOMER:** QP NO.: PE-QP-999-Q-006, REV-02 DATE: 17.04.2020 **PROJECT:** PO NO.: DATE: ITEM: AC ELECT. MOTORS SHEET 1 of 2 SYSTEM: **SECTION: II UPTO 55KW (LV (415V))**

S. NO.	COMPONENT & OPERATIONS	CHARACTERISTI CS	CLA SS	TYPE OF CHECK	_	NTUM HECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMA' OF RECORI		A	GEN Y	IC	REMARKS
1	2	3	4	5	M	6 C/ N	7	8	9	* D	M	**	N	
		1.WORKMANSHI P	MA	VISUAL	100%	-	MFG. SPEC.	MFG. SPEC.	LOG BOOK		P	-	-	
		2.DIMENSIONS	MA	VISUAL	100%	-	MFG. DRG./ MFG. SPEC.	MFG. DRG./ MFG. SPEC.	LOG BOOK		P	-	-	
1.0	ASSEMBLY	3.CORRECTNESS COMPLETENESS TERMINATIONS/ MARKING/ COLOUR CODE	MA	VISUAL	100%	-	MFG.SPEC./	MFG.SPEC.	LOG BOOK		P	-	-	
2.0	PAINTING	1.SHADE	MA	VISUAL	SAM PLE	-	MFG. SPEC/ APPROVED DATASHEET	MFG. SPEC/ APPROVED DATASHEET	LOG BOOK	√	P	V	-	
3.0	TESTS	1.ROUTINE TEST INCLUDING SPECIAL TEST	MA	VISUAL	100%	-	IS-325 / IS- 12615/ APPROVED DATA SHEET	IS-325 / IS-12615/ APPROVED DATA SHEET	TEST/ INSPN. REPORT	✓	P	V *	-	* NOTE -1
		2.OVERALL DIMENSIONS & ORIENTATION	MA	MEASUREME NT & VISUAL	100%	-	APPROVED DRG/ DATA SHEET	APPROVED DRG/ DATA SHEET	TEST/ INSPN. REPORT	✓	P	V *	-	* NOTE -1 & NOTE-2

	BHEL						
	ENGINEERIN	(G		QUALITY	7		
	Sign & Date	Name		Sign & Date	Name		
Prepared by:	HEMA 00040 00040 1000400 100040 100040 100040 100040 100040 100040 100040 100040 1000400 100040 100040 100040 100040 100040 100040 100040 100040 1000	HEMA KUSHWAHA	Checked by:	City tally signed by Kenell Gardini Disconsisted Gordini, on-Bills, con-PIM in-Pim Dec. 2000 (1009 10.2018)	KUNAL GANDHI		
Reviewed by:	PRAVEEN DUTTA DUTTA DUTTA DUTTA DUTTA DUTTA DUTTA	PRAVEEN DUTTA	Reviewed by:	RITESH KUMAR JAISWA	RITESH KUMAR JAISWAL		

BIDDER/ SUPPLIER				

FOR CUSTOMER REVIEW & APPROVAL					
Doc No:					
	Sign & Date	Name	Seal		
Reviewed					
by:					
Approved					
by:					

बीएच ई एत	MANUFACTURER/ BIDDER/ SUPPLIER NAME & ADDRESS	STANDARD QU	ALITY PLAN	SPEC. NO:	DATE:
		CUSTOMER:		QP NO.: PE-QP-999-Q-006, REV-02	DATE: 17.04.2020
	3	PROJECT:		PO NO.:	DATE:
		ITEM: AC ELECT. MOTORS UPTO 55KW (LV (415V))	SYSTEM:	SECTION: II	SHEET 2 of 2

		3.NAMEPLATE DETAILS	MA	VISUAL	100%	-	IS-325 / IS-12615 / APPROVED DATA SHEET	SAME AS COL. 7	TEST/ INSPN. REPORT P V -	
4.0	PACKING	SURFACE FINISH & COMPLETENESS	MA	VISUAL	100%	100%	AS PER MFG. STANDARD / (#)	AS PER MFG. STANDARD / (#).	INSPC. P W -	(#) REFER NOTE-8

NOTES:

- 1. Routine tests on 100% motors shall be done by the vendor. However, BHEL/ Customer shall witness routine tests on random samples. The sampling plan shall be mutually agreed upon.
- 2. For exhaust/ventilation fan motors of rating up to 1.5 KW, only routine test certificates shall be furnished for scrutiny.
- 3. In case test certificates for these tests on similar type, size and design of motor from independent laboratory are available, the same is valid for 5 years.
- 4. BHEL reserves the right to perform repeat test, if required.
- 5. After packing and prior to issue MDCC, photographs of items to be despatched shall be sent to BHEL for review.
- 6. In case of any changes in QP commented by customer at contract stage, same shall be carried out by bidder without any implication to BHEL/ Customer.
- 7. Project specific QP to be developed based on customer requirement.
- 8. For export job, BHEL technical specification for seaworthy packing to be followed.
- 9. Packing shall be suitable for storage at site in tropical climate conditions.
- 10. Latest revision/ year of issue of all the standards (IS/ ASME/ IEC etc.) indicated in QP shall be referred.

LEGENDS:

*RECORDS, INDENTIFIED WITH "TICK"(√) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION,

- ** M: SUPPLIER/ MANUFACTURER/ SUB-SUPPLIER, B: MAIN SUPPLIER/ BHEL/ THIRD PARTY INSPECTION AGENCY, C: CUSTOMER,
- P: PERFORM, W: WITNESS, V: VERIFICATION, AS APPROPRIATE

MA: MAJOR, MI: MINOR, CR: CRITICAL

D: DOCUMENTATION

		BHI	EL		
	ENGINEERIN	I G		QUALITY	7
	Sign & Date	Name		Sign & Date	Name
Prepared by:	HEMA Cognitive growth, Cognitive and Cognit	HEMA KUSHWAHA	Checked by:	Bigs By digned by Kinal Gardel. Gardel Garde	KUNAL GANDHI
Reviewed by:	PRAVEE Distally report by 1994 ACIA NATTA Distally report by 1994 ACIA NATTA Distally a face of the 1994 ACIA NATTA DISTALLY ACIA NATTA DISTALLY REPORT BECOME TO A DISTALLY REPORT ACIA NATIONAL DISTALLY REPORT ACIA N	PRAVEEN DUTTA	Reviewed by:	RITESH KUMAR JAISWAL TECHNOLOGISTATION TO THE STATE OF	RITESH KUMAR JAISWAL

	BIL	DDER/ SUPPLIER
	Sign & Date	
[Seal	

FOR CUSTOMER REVIEW & APPROVAL				
Doc No:				
	Sign & Date	Name	Seal	
Reviewed by:				
Approved by:				

TECHNICAL SPECIFICATION

FOR

RATE CONTRACT

OF

LUBE OIL TRANSFER PUMPS

ANNEXURE - III

(MDL WITH SUBMISSION SCHEDULE)



BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR PROJECT ENGINEERING MANAGEMENT
PPEI, NOIDA-INDIA



TECHNICAL SPECIFICATION LUBE OIL TRANSFER PUMP Rate contract

PE-TS-XXX-567-A001	
Issue No. 00	
Rev. No. 00	
Date :	

DOCUMENTATION REQUIREMENT

DR	DRAWINGS & DOCUMENTS TO BE SUBMITTED BY ALL THE BIDDERS ALONG WITH THE BID				
SI. No.	DOCUMENT TITLE				
1					
2	COMPLIANCE SHEET				

DRAWINGS & DOCUMENTS TO BE SUBMITTED BY SUCCESSFUL BIDDER AFTER AWARD OF					
SI. No.	DOCUMENT No.	FIRST SUBMISSION SCHEDULE			
1	PE-V0-XXX-567-A001	Data sheet & GA of LOP	45 days from LOI		
2	PE-V0-XXX-567-A002	Data sheet & GA of Strainer	45 days from LOI		
3	PE-V0-XXX-567-A003	Data sheet & GA of lube oil pump motor	45 days from LOI		
4	PE-V0-XXX-567-A004	QAP of Lube oil pump and strainer	45 days from LOI		
5			45 days from LOI		
	BHEL/Customer comments/approval and Vendor Resubmission schedule				
BHEL /Customer Comment/Approval on First Submission			Within 7 days of Vendor submission/Resubmission		
BHEL /Customer Comment/Approval on subsequent revision			Within 18 days of Vendor submission/Resubmission		
Vendor Resubmission		Within 7 days of BHEL/ Customer Comments.			

4	ι.	7	ı
ı	11	и	ı
	l	H	HH

TITLE:

TECHNICAL SPECIFICATION	ΟN
LUBE OIL TRANSFER PUMF	Þς

SPEC. NO.: PE-TS-STD-567-A001				
VOLUME: IIB SECTION-E				
REV. NO.: 00				

NOTE:. Drwg/ Document shall be uploaded by the successful bidder on WRENCH /DMS.Procedure for the same will be informed after award of contract.

COMPANY SEAL

SIGNATURE :	
NAME :	
DESIGNATION:	
COMPANY:	
DATE:	



TECHNICAL SPECIFICATION FOR LUBE OIL TRANSFER PUMPS SUB-VENDOR LIST ANNEXURE-IV

T					
SPECIFICATION NO. PE-TS-STD-567-A001					
VOLUME II-B	SECTION C1				
VOLUME II-B	SECTION 01				
REVISION 00	DATE:22.06.2024				
KE VISION 00	DATE:22.06.2024				
PAGE 1 of 3					
TAGE 1 01 3					

ANNEXURE-IV LIST OF MAKES OF SUB-VENDOR ITEMS LUBE OIL TRANSFER SYSTEM



PE-TS-STD-567-A001	
Issue No. 00	
Rev. No. 00	
Date :	

	SUB-VENDORS - LUBE OIL TRANSFER PUMPS							
S.NO	ITEM	SUB-VENDORS	PLACE	REMARKS				
		332 12.120.13	12.102	i i i i i i i i i i i i i i i i i i i				
1		UT PUMPS & SYSTEMS LTD.	FARIDABAD					
	LUBE OIL TRANSFER PUMPS	MATZ PUMPS PVT. LTD.	AHMEDABAD					
		DELTA PD PUMPS PVT LTD	MUMBAI					
		TUSHACO PUMPS PVT.LTD.	NEW DELHI					
		JAYPEE INDUSTRIES PVT. LTD.	NEW DELHI					
		MULTITEX FILTRATION ENGINEERS LIMITED,	NEW DELHI					
		OTOKLIN GLOBAL BUSINESS LIMITED	MUMBAI					
		SUNGOV ENGINEERING PVT. LTD.	CHENNAI					
	DAIDI DV	GRAND PRIX	FARIDABAD					
2	DUPLEX			SELF MAKE- SUPPLIED IN				
	STRAINERS	TUSHACO PUMPS PVT LIMITED	NEW DELHI	DADRI				
				SUBSIDIARY OF MATZ				
		DELLARI E ENGINEERO		PUMP: SUPPLY STRAINER				
		RELIABLE ENGINEERS		IN ALL PROJECT. ONLY				
				FOR LOP				
		ABB	FARIDABAD	UPTO 55KW				
		ABB	BANGALORE					
		JYOTI LTD.	VADODARA					
		TIPM	JAPAN	UPTO 15 KW (NON FLAME PROOF)				
		HYOSUNG	SOUTH KOREA					
		WEG	BRAZIL					
		HYUNDAI	SOUTH KOREA					
		LHP	SOLAPUR					
		CGL	AHMEDNAGAR	RQP, FOR FLAME PROOF MOTOR				
3	MOTORS	TMEIC	JAPAN (NAGASAKHI					
ŭ	WOTORS	NGEF	BANGALORE	UPTO 15 KW				
		BHARAT BIJLEE	MUMBAI	RQP, FOR FLAME PROOF ALSO				
		KEC	BANGALORE/ HUBLI*	*UPTO 90KW, RQP, FOR FLAME PROOF ALSO				
		MARATHON	KOLKATA	RQP (UPTO 690V & 600 KW) FOR FLAME PROOF ALSO				
		ABB	SWEDEN	UPTO 55KW				
		HAVELL	NEEMRANA	UP TO 90KW				
		KAWAMATA	JAPAN	UP TO 75 KW				
		TIPS	JAPAN	UP TO 45KW				
		ASIAN PAINT						
		BERGER						
		KANSAI NEROLAC						
		JOTUN						
		SHALIMAR						
4	PAINT	JENSON & NICHOLSON (I) LTD						
4	PAINI	CDC CARBOLINE (I) LTD.						
		ADDISON PAINTS LTD						
		GRAND POLYCOAT						
		BOMBAY PAINTS						
		HEMPLE PAINTS (SINGAPORE)						
		AKZONOBEL COATINGS						
	NOTES							

NOTES

The make of Sub-vendor items shall be generally as indicated above which is subject to customer / BHEL approval during detail engineering.

Make of any unlisted items shall be subject to customer / BHEL approval during detail engineering. For such items, bidder to furnish list of sub-vendors during detail engineering stage for Customer / BHEL's review and approval. Bidder shall furnish following supporting documentation within 1 month of placement of LOI. Thereafter no request for additional sub-vendor shall be entertained.

a) Documentation to show that the equipment /system has been supplied for a plant of similar or higher capacity.

b) Documentation in the form of certificate that the equipment/system has been operating satisfactorily for two years as on the scheduled date of bid opening. The successful bidder will get the makes of all items approved from Customer/ Consultant during detail engineering within two months of placement of LOI. The complete list will be necessarily be submitted within one month of placement of LOI to ensure timely placement of order for BOIs Bidder to assess the capability of their proposed sub-vendors in terms of preparation of drawings, calculations, documents, quality assurance, supply of material etc. as per project schedule before placing the order on them

TECHNICAL SPECIFICATION

FOR

RATE CONTRACT

OF

LUBE OIL TRANSFER PUMPS

ANNEXURE - V (FORMAT FOR O& M MANUAL)



BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR PROJECT ENGINEERING MANAGEMENT
PPEI, NOIDA-INDIA

Check List for Operation & Maintenance Manual

Project name:

Project number:

Package Name:

Sl.no. & Sections	Description	Yes	No	Not Applicable	Remarks
1.	Cover page				
1.1	Project Name				
1.2	Customer Name				
1.3	Name of Package				
1.4	Supplier details with phone, FAX email address				
1.5	Name and sign of prepared by , checked by & approved by				
2.0	Index				
2.1	showing the sections & related page nos All the pages should be numbered section wise				
3.0	Description of Plant				
3.1	Description /write up of operating principle of system equipment/ associated sub-systems & accessories/controls system, operating conditions, performance parameters under normal, start up and special cases				
3.2	Equipment list and basic parameter with Tag numbers				
3.3	Data sheets approved by Customer/for information and catalogues provided by original manufacturer				
3.4	Associated other packages and Interface /terminal points				
3.5	P&ID & Process Diagrams				
3.6	GA Layout drawings, As-built drawings				
3.7	Single line/wiring diagrams				
3.8	Control philosophy /control write-ups				
4.0	Commissioning Activities (if not covered in separate document i.e. erection manual, commissioning manual)				
4.1	Pre-Commissioning Checks				
4.2	Transportation and handling at site				
4.3	Storage at site				
4.4	Unpacking & Installation procedure				
5.0	Operation Guidelines for plant personal/user/operator				
5. 1	Interlock & Protection logic along with the limiting values of protection settings for the				

	equipment along with brief philosophy behind the logic, drawings etc. to be provided.		
5. 2	Start up and shut down procedure for equipments along with the associated systems in step by step mode. Valve sequence chart, step list, interlocks etc with Equipment isolating procedures to be mentioned.		
5. 3	Do's & Don't of the equipments.		
5. 4	Safety precautions to be taken during normal operation. Safety symbols, Emergency instructions on total power failure condition/lubrication failure/any other condition		
5. 5	Parameters to be monitored with normal values and limiting values		
5. 6	Trouble shooting with causes and remedial measures		
5. 7	Routine operational checks, recommended logs & records		
5. 8	Changeover schedule if more than one auxiliary for the same purpose is given		
5. 9	Painting requirement and schedule		
5. 10	Inspection, repair , Testing and calibration procedures		
6.0	Maintenance guidelines for plant personal		
6.1	List of Special Tools and Tackles required for Overhaul/Trouble shooting including special testing equipment required for calibration etc.		
6.2	Stepwise dismantling and re-assembly procedure clearly specifying the tools to be used, checks to be made, records to be maintained, clearances etc. to be mentioned. Tolerances for fitment of various components to be given.		
6.3	Preventive Maintenance & Overhauling schedules linked with running hours/calendar period along with checks to be given		
6.4	Long term maintenance schedules especially for structural, foundations etc.		
6.5	Consumable list along with the estimated quantity required during commissioning, normal running and during maintenance like Preventive Maintenances and Overhaul.		
6.6	List of lubricants with their Indian equivalent, Lubrication Schedule, Quantity required for each equipment for complete replacement is to be given		

6.7	List of vendors & Sub-vendors with their latest addresses, service centres ,Telephone Nos., Fax Nos., Mobile Nos., e-mail IDs etc.		
6.8	List of mandatory and recommended spare parts list		
6.9	Tentative Lead time required for ordering of spares from the equipment supplier		
6.10	Guarantee and warranty clauses		
7.0	Statutory and other specific requirements considerations.		

ANNEXURE-VI (Packing requirments)



TECHNICAL SPECIFICATION LUBE OIL TRANSFER PUMP RATE CONTRACT

PE-TS-XXX-567-A001	
Issue No: 01	

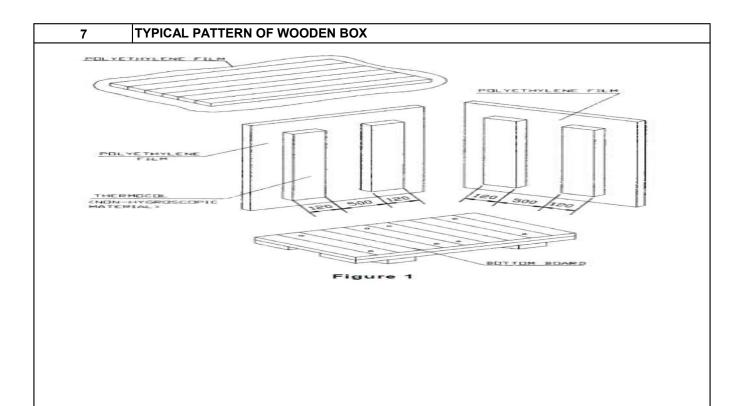
Rev. No. 00 Date :

	PACKING REQUIREMENT
	COMMON GUIDELINES FOR PACKING
1	GENERAL:
1.1	The Components/Assemblies need to be packed suitably to avoid physical damage & corrosion during transit & storage. This packing shall be suitable for different handling operations and for the adverse conditions during transportation and during indoor / outdoor storage of materials.
1.2	All the equipment shall be suitably protected, coated, covered or boxed and crated to prevent damage
1.3	The identification marking indicating the name and address of the consignee shall be clearly marked in indelible ink on two opposite sides and top of each of the packages. In addition the Contractor shall include in the marking gross and net weight, outer dimension and cubic measurement.
1.4	
1.5	Each package shall be accompanied by a packing note quoting specifically the name of the Contractor, the number and date of contract and names of the office placing the contract, nomenclature of contents and Bill of Material.
2.	
а	
b	
С	
d	
е	'CR' - Case Packing – Electrical/Electronic Components/ Assemblies, which require special packing viz. Water Proof, Shock Proof etc
3.	DESCRIPTION OF TYPES OF PACKING:
3.1	

3.2	PP' - Partially Packed
3.2.1	Components which need special protection at selected portions only shall be despatched partially packed. Machined surfaces should not be allowed to come directly in contact with the wood. Such surfaces should be protected with 100GSM(Colourless) Multi Layered Cross Laminated Polyethylene
3.2.2	Film. All sharp corners and edges shall be protected by rubber mats to prevent damage to the polyethylene film.
3.3	'CP' - Crate Packing
	Assemblies/Components which need only physical protection from the point of view of handling shall be despatched duly packed in crates.
3.4	'CQ' - Case Packing - Machined Components/Assemblies/Equipment
3.4.1	Small and medium sized components/assemblies/equipment due to size/weight and to avoid handling and pilferage problems shall be packed in Case/Containers. Wherever required adequate quantity of silica gel or VCI Powder/Tablets, packed in thin muslin cloth cotton bags shall be suitably placed. Small machines/components of less weight shall be provided with suitable cushioning by Rubberised coir. The components inside the case shall be entirely covered with100GSM(Colourless) Multi Layered Cross Laminated Polyethylene Film, wherever required. This may be prescribed for electronic parts/critical machined components/surfaces.
3.4.2	For mechanical product like valves where motors are separately securely wrapped in polyethylene, the requirement of individual component wrapping shall be exempted.
3.5	CR' - Case Packing - Electrical & Electronic Components/Assemblies
	Delicate components likely to be damaged e.g. Gauges, Instruments etc. are to be wrapped in waxed paper or polyethylene air bubble film and packed in cartons. Adequate quantity of Silica gel packed in cotton bags of 100grams each are to be suitably placed in the cartons. The cartons shall be entirely covered with 100GSM(Colourless) Multi Layered Cross Laminated Polyethylene Film before being packed in the cases. VCI Powder/Tablets can be used as an alternative to Silica Gel.
4	DDEDARATION OF DACKING CASES
<u>4</u> 4.1	PREPARATION OF PACKING CASES DIMENSIONS:
a)	Thickness of planks for Front, rear, top and bottom sides and binding, jointing battens shall be 25/20mm +2/-3 mm as per applicable drawings of the respective units/manufacturers.
b)	Width of all planks including the tongue shall be more than 125mm and after plaining it shall be minimum 100mm.
c)	Minimum number of planks shall be used for a shook.
d) Horizontal, vertical, diagonal planks shall be given for binding (number of such plant dimension of panel.	
e)	Width of binding planks shall be minimum 100mm.
f)	Distance between any 2 binding planks shall be less than 750mm.

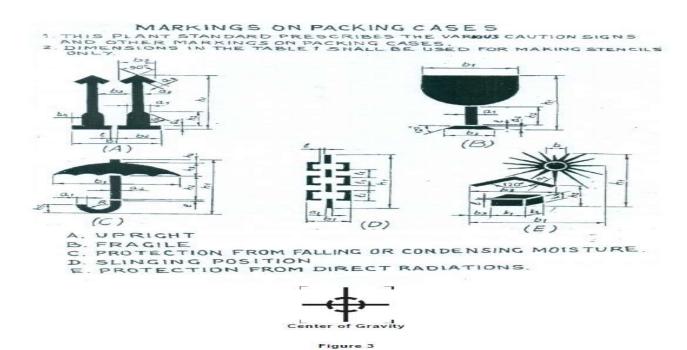
side being 100+2mm. Two holes shall be provided towards the end of each side for screwing /naili MULTI LAYERED CROSS LAMINATED POLYTHELENE FILM 100GSM (Colourless) Multi Layered Cross Laminated Polythelene Film are used to make covers the jobs individually. The cross lamination gives qualities of extra toughness, together with flexibility and lightness coupled with good weather resistance to ultra violet rays. 4.5 RUBBERISED COIR: The rubberized coir is used as cushioning material. For the packing of loose items, items are to be arrested by using rubberized coir. For the packing of cubicles rubberized coir of thickness 25mm a width 75mm shall be used. 5 MULTI LAYER CROSS LAMINATED POLY FILM WHILE PACKING OF CUBICLES/CASING 5.1 The inner surface of 4 sides of shook's shall be nailed with Multi-layer cross laminated poly film (a per 4.4) using blue nails wherever 2 pieces of Cross laminated poly film are used, the joint shall he an overlap of minimum 20mm. 5.2 The inner surface of top cover shall be nailed with Multi-layer cross laminated poly film. This sheet shall project outside on 4 sides by at least 100mm and shall be nailed properly on sides. Joining of sheets should have overlap of minimum 20mm. 5.3 The cubicles shall be covered with Multi-layer cross laminated poly film. 6 PACKING OF LOOSE ITEMS/SPARES 6.1 Inner surfaces of all 6 sides shall be lined with Multi Layered Cross Laminated Polythelene Film (a per clause 5.4) using blue nails. 6.2 Rubberized coir of minimum 25mm thickness and 100 mm width shall be nailed to inner surfaces of bottom and 4 sides of box. 6.3 Internal packing: Items that go into the box shall be packed using 100GSM, (Colourless) Multi-Layered Cross Laminated Polyethylene Film. Any space left between the job and the sides and the		
### HOOP IRON STRIPS These are used for strapping the boxes. The width of the strips shall be 19+1mm and thickness 0.6+0.01mm. The material shall be free from rust. If sufficient nailing is done for bigger boxes, strapping need not be done. #### A3. **BRACKETS** These brackets are used for nailing to the corners of cubicle boxes. The brackets shall be of mild steel of thickness min 2mm and width 25+1mm. The brackets shall be of "1." shape, the length of a side being 100+2mm. Two holes shall be provided towards the end of each side for screwing/nailing to the corners of cubicle boxes. The brackets shall be of side being 100+2mm. Two holes shall be provided towards the end of each side for screwing/nailing to the jobs individually. The cross lamination gives qualities of extra toughness, together with flexibility and lightness coupled with good weather resistance to ultra violet rays. ###################################	h)	Distance of the outer edges of these planks from the edge of case shall be less than 250mm.
4.2 HOOP IRON STRIPS These are used for strapping the boxes. The width of the strips shall be 19+1mm and thickness 0.6+0.01mm. The material shall be free from rust. If sufficient nailing is done for bigger boxes, strapping need not be done. 4.3 BRACKETS These brackets are used for nailing to the corners of cubicle boxes. The brackets shall be of mild steel of thickness min 2mm and width 25+1mm. The brackets shall be of "1." shape, the length of e side being 100+2mm. Two holes shall be provided towards the end of each side for screwing /nailide being 100+2mm. Two holes shall be provided towards the end of each side for screwing /nailide being 100+2mm. Two holes shall be provided towards the end of each side for screwing /nailide being 100+2mm. Two holes shall be provided towards the end of each side for screwing /nailide being 100+2mm. Two holes shall be provided towards the end of each side for screwing /nailide being 100+2mm. Two holes shall be provided towards the end of each side for screwing /nailide being 100+2mm. Two holes shall be provided towards the end of each side for screwing /nailide being 100+2mm. The rubberized coir saminated polythelene Film are used to make covers the jobs individually. The cross laminated poly film (a presented by using rubberized coir. For the packing of cubicles rubberized coir of thickness 25mm a width 75mm shall be used. 5 MULTI LAYER CROSS LAMINATED POLY FILM WHILE PACKING OF CUBICLES/CASING 5.1 The inner surface of 4 sides of shook's shall be nailed with Multi-layer cross laminated poly film (a per 4.4) using blue nails wherever 2 pieces of Cross laminated poly film are used, the joint shall he an overlap of minimum 20mm. 5.2 The inner surface of top cover shall be nailed with Multi-layer cross laminated poly film. This sheet shall project outside on 4 sides by at least 100mm and shall be nailed properly on sides. Joining of sheets should have overlap of minimum 20mm. 6. PACKING OF LOOSE ITEMS/SPARES 6.1 Inner surfaces of all 6 sides shall be lined with Multi-la	;\	
These are used for strapping the boxes. The width of the strips shall be 19+1mm and thickness 0.6+0.01mm. The material shall be free from rust. If sufficient nailing is done for bigger boxes, strapping need not be done. 4.3 BRACKETS These brackets are used for nailing to the corners of cubicle boxes. The brackets shall be of mild steel of thickness min 2mm and width 25+1mm. The brackets shall be of "L" shape, the length of side being 100+2mm. Two holes shall be provided towards the end of each side for screwing /naili 100GSM (Colourless) Multi Layered Cross Laminated Polythelene Film are used to make covers to the jobs individually. The cross lamination gives qualities of extra toughness, together with flexibility and lightness coupled with good weather resistance to ultra violet rays. 4.5 RUBBERISED COIR: The rubberized doir is used as cushioning material. For the packing of loose items, items are to be arrested by using rubberized coir. For the packing of cubicles rubberized coir of thickness 25mm a width 75mm shall be used. 5 MULTI LAYER CROSS LAMINATED POLY FILM WHILE PACKING OF CUBICLES/CASING 5.1 The inner surface of 4 sides of shock's shall be nailed with Multi-layer cross laminated poly film (a per 4.4) using blue nails wherever 2 pieces of Cross laminated poly film are used, the joint shall he an overlap of minimum 20mm. 5.2 The inner surface of top cover shall be nailed with Multi-layer cross laminated poly film. This sheet shall project outside on 4 sides by at least 100mm and shall be nailed properly on sides. Joining of sheets should have overlap of minimum 20mm. 5.3 The cubicles shall be covered with Multi-layer cross laminated Polythelene Film (a per clause 5.4) using blue nails. 6.4 PACKING OF LOOSE ITEMS/SPARES 6.5 Inner surfaces of all 6 sides shall be lined with Multi-Layered Cross Laminated Polythelene Film (a per clause 5.4) using blue nails. 6.4 Rubberized coir of minimum 25mm thickness and 100 mm width shall be nailed to inner surfaces of bottom and 4 sides of box. 6.5 Interna	1)	
These are used for strapping the boxes. The width of the strips shall be 19+1mm and thickness 0.6+0.01mm. The material shall be free from rust. If sufficient nailing is done for bigger boxes, strapping need not be done. 4.3 BRACKETS These brackets are used for nailing to the corners of cubicle boxes. The brackets shall be of mild steel of thickness min 2mm and width 25+1mm. The brackets shall be of "L" shape, the length of a side being 100+2mm. Two holes shall be provided towards the end of each side for screwing /nailing the being 100+2mm. Two holes shall be provided towards the end of each side for screwing /nailing the jobs individually. The cross laminated Polythelene Film are used to make covers the jobs individually. The cross lamination gives qualities of extra toughness, together with flexibiling and lightness coupled with good weather resistance to ultraviolet rays. 4.5 RUBBERISED COIR: The rubberized coir is used as cushioning material. For the packing of loose items, items are to be arrested by using rubberized coir. For the packing of cubicles rubberized coir of thickness 25mm a width 75mm shall be used. 5 MULTI LAYER CROSS LAMINATED POLY FILM WHILE PACKING OF CUBICLES/CASING 5.1 The inner surface of 4 sides of shook's shall be nailed with Multi-layer cross laminated poly film (a per 4.4) using blue nails wherever 2 pieces of Cross laminated poly film are used, the joint shall be an overlap of minimum 20mm. 5.2 The inner surface of top cover shall be nailed with Multi-layer cross laminated poly film. This sheet shall project outside on 4 sides by at least 100mm and shall be nailed properly on sides. Joining of sheets should have overlap of minimum 20mm. 6. PACKING OF LOOSE ITEMS/SPARES 6.1 Inner surfaces of all 6 sides shall be lined with Multi-Layered Cross Laminated Polythelene Film (a per clause 5.4) using blue nails. 6.2 Rubberized coir of minimum 25mm thickness and 100 mm width shall be nailed to inner surfaces obtottom and 4 sides of box. 6.3 Internal packing: Items that go into the	4.2	HOOP IRON STRIPS
These brackets are used for nailing to the corners of cubicle boxes. The brackets shall be of mild steel of thickness min 2mm and width 25+1mm. The brackets shall be of "L" shape, the length of e side being 100+2mm. Two holes shall be provided towards the end of each side for screwing /naili MULTI LAYERED CROSS LAMINATED POLYTHELENE FILM 100GSM (Colourless) Multi Layered Cross Laminated Polythelene Film are used to make covers the jobs individually. The cross lamination gives qualities of extra toughness, together with flexibility and lightness coupled with good weather resistance to ultra violet rays. 4.5 RUBBERISED COIR: The rubberized coir is used as cushioning material. For the packing of loose items, items are to be arrested by using rubberized coir. For the packing of cubicles rubberized coir of thickness 25mm a width 75mm shall be used. 5 MULTI LAYER CROSS LAMINATED POLY FILM WHILE PACKING OF CUBICLES/CASING 5.1 The inner surface of 4 sides of shook's shall be nailed with Multi-layer cross laminated poly film (are per 4.4) using blue nails wherever 2 pieces of Cross laminated poly film are used, the joint shall he an overlap of minimum 20mm. 5.2 The inner surface of top cover shall be nailed with Multi-layer cross laminated poly film. This sheet shall project outside on 4 sides by at least 100mm and shall be nailed properly on sides. Joining of sheets should have overlap of minimum 20mm. 5.3 The cubicles shall be covered with Multi-layer cross laminated poly film. 6 PACKING OF LOOSE ITEMS/SPARES 6.1 Inner surfaces of all 6 sides shall be lined with Multi Layered Cross Laminated Polythelene Film (a per clause 5.4) using blue nails. 6.2 Rubberized coir of minimum 25mm thickness and 100 mm width shall be nailed to inner surfaces of bottom and 4 sides of box. 6.3 Internal packing: Items that go into the box shall be packed using 100GSM, (Colourless) Multi Layered Cross Laminated Polythylene Film. Any space left between the job and the sides and the Certain items like transformers, reactors, b		These are used for strapping the boxes. The width of the strips shall be 19+1mm and thickness 0.6+0.01mm. The material shall be free from rust. If sufficient nailing is done for bigger boxes,
These brackets are used for nailing to the corners of cubicle boxes. The brackets shall be of mild steel of thickness min 2mm and width 25+1mm. The brackets shall be of "L" shape, the length of e side being 100+2mm. Two holes shall be provided towards the end of each side for screwing /naili MULTI LAYERED CROSS LAMINATED POLYTHELENE FILM 100GSM (Colourless) Multi Layered Cross Laminated Polythelene Film are used to make covers the jobs individually. The cross lamination gives qualities of extra toughness, together with flexibility and lightness coupled with good weather resistance to ultra violet rays. 4.5 RUBBERISED COIR: The rubberized coir is used as cushioning material. For the packing of loose items, items are to be arrested by using rubberized coir. For the packing of cubicles rubberized coir of thickness 25mm a width 75mm shall be used. 5 MULTI LAYER CROSS LAMINATED POLY FILM WHILE PACKING OF CUBICLES/CASING 5.1 The inner surface of 4 sides of shook's shall be nailed with Multi-layer cross laminated poly film (a per 4.4) using blue nails wherever 2 pieces of Cross laminated poly film are used, the joint shall he an overlap of minimum 20mm. 5.2 The inner surface of top cover shall be nailed with Multi-layer cross laminated poly film. This sheet shall project outside on 4 sides by at least 100mm and shall be nailed properly on sides. Joining of sheets should have overlap of minimum 20mm. 5.3 The cubicles shall be covered with Multi-layer cross laminated poly film. 6 PACKING OF LOOSE ITEMS/SPARES 6.1 Inner surfaces of all 6 sides shall be lined with Multi Layered Cross Laminated Polythelene Film (a per clause 5.4) using blue nails. 6.2 Rubberized coir of minimum 25mm thickness and 100 mm width shall be nailed to inner surfaces of bottom and 4 sides of box. 6.3 Internal packing: Items that go into the box shall be packed using 100GSM, (Colourless) Multi Layered Cross Laminated Polythylene Film. Any space left between the job and the sides and the Octation in the sides and the Certain items li	4.3	BRACKETS
100GSM (Colourless) Multi Layered Cross Laminated Polythelene Film are used to make covers the jobs individually. The cross lamination gives qualities of extra toughness, together with flexibility and lightness coupled with good weather resistance to ultra violet rays. 4.5 RUBBERISED COIR: The rubberized coir is used as cushioning material. For the packing of loose items, items are to be arrested by using rubberized coir. For the packing of cubicles rubberized coir of thickness 25mm a width 75mm shall be used. 5 MULTI LAYER CROSS LAMINATED POLY FILM WHILE PACKING OF CUBICLES/CASING 5.1 The inner surface of 4 sides of shook's shall be nailed with Multi-layer cross laminated poly film (aper 4.4) using blue nails wherever 2 pieces of Cross laminated poly film are used, the joint shall he an overlap of minimum 20mm. 5.2 The inner surface of top cover shall be nailed with Multi-layer cross laminated poly film. This sheet shall project outside on 4 sides by at least 100mm and shall be nailed properly on sides. Joining of sheets should have overlap of minimum 20mm. 5.3 The cubicles shall be covered with Multi-layer cross laminated poly film. 6 PACKING OF LOOSE ITEMS/SPARES 6.1 Inner surfaces of all 6 sides shall be lined with Multi Layered Cross Laminated Polythelene Film (aper clause 5.4) using blue nails. 6.2 Rubberized coir of minimum 25mm thickness and 100 mm width shall be nailed to inner surfaces obottom and 4 sides of box. 6.3 Internal packing: Items that go into the box shall be packed using 100GSM, (Colourless) Multi Layered Cross Laminated Polythylene Film. Any space left between the job and the sides and the Certain items like transformers, reactors, breakers, etc., shall be bolted to the bottom of the box us bolts, nuts and washers.		
100GSM (Colourless) Multi Layered Cross Laminated Polythelene Film are used to make covers the jobs individually. The cross lamination gives qualities of extra toughness, together with flexibility and lightness coupled with good weather resistance to ultra violet rays. 4.5 RUBBERISED COIR: The rubberized coir is used as cushioning material. For the packing of loose items, items are to be arrested by using rubberized coir. For the packing of cubicles rubberized coir of thickness 25mm a width 75mm shall be used. 5 MULTI LAYER CROSS LAMINATED POLY FILM WHILE PACKING OF CUBICLES/CASING 5.1 The inner surface of 4 sides of shook's shall be nailed with Multi-layer cross laminated poly film (aper 4.4) using blue nails wherever 2 pieces of Cross laminated poly film are used, the joint shall he an overlap of minimum 20mm. 5.2 The inner surface of top cover shall be nailed with Multi-layer cross laminated poly film. This sheet shall project outside on 4 sides by at least 100mm and shall be nailed properly on sides. Joining of sheets should have overlap of minimum 20mm. 5.3 The cubicles shall be covered with Multi-layer cross laminated poly film. 6 PACKING OF LOOSE ITEMS/SPARES 6.1 Inner surfaces of all 6 sides shall be lined with Multi Layered Cross Laminated Polythelene Film (aper clause 5.4) using blue nails. 6.2 Rubberized coir of minimum 25mm thickness and 100 mm width shall be nailed to inner surfaces obottom and 4 sides of box. 6.3 Internal packing: Items that go into the box shall be packed using 100GSM, (Colourless) Multi Layered Cross Laminated Polythylene Film. Any space left between the job and the sides and the Certain items like transformers, reactors, breakers, etc., shall be bolted to the bottom of the box us bolts, nuts and washers.		MILL THE AVERED CROSS LAMINATED POLYTHELENE EILM
the jobs individually. The cross lamination gives qualities of extra toughness, together with flexibility and lightness coupled with good weather resistance to ultra violet rays. 4.5 RUBBERISED COIR: The rubberized coir is used as cushioning material. For the packing of loose items, items are to be arrested by using rubberized coir. For the packing of cubicles rubberized coir of thickness 25mm a width 75mm shall be used. 5 MULTI LAYER CROSS LAMINATED POLY FILM WHILE PACKING OF CUBICLES/CASING 5.1 The inner surface of 4 sides of shook's shall be nailed with Multi-layer cross laminated poly film (aper 4.4) using blue nails wherever 2 pieces of Cross laminated poly film are used, the joint shall he an overlap of minimum 20mm. 5.2 The inner surface of top cover shall be nailed with Multi-layer cross laminated poly film. This sheet shall project outside on 4 sides by at least 100mm and shall be nailed properly on sides. Joining of sheets should have overlap of minimum 20mm. 5.3 The cubicles shall be covered with Multi-layer cross laminated poly film. 6 PACKING OF LOOSE ITEMS/SPARES 6.1 Inner surfaces of all 6 sides shall be lined with Multi Layered Cross Laminated Polythelene Film (aper clause 5.4) using blue nails. 6.2 Rubberized coir of minimum 25mm thickness and 100 mm width shall be nailed to inner surfaces of bottom and 4 sides of box. 6.3 Internal packing: Items that go into the box shall be packed using 100GSM, (Colourless) Multi Layered Cross Laminated Polyethylene Film. Any space left between the job and the sides and the Certain items like transformers, reactors, breakers, etc., shall be bolted to the bottom of the box us bolts, nuts and washers.		
The rubberized coir is used as cushioning material. For the packing of loose items, items are to be arrested by using rubberized coir. For the packing of cubicles rubberized coir of thickness 25mm a width 75mm shall be used. 5 MULTI LAYER CROSS LAMINATED POLY FILM WHILE PACKING OF CUBICLES/CASING 5.1 The inner surface of 4 sides of shook's shall be nailed with Multi-layer cross laminated poly film (ar per 4.4) using blue nails wherever 2 pieces of Cross laminated poly film are used, the joint shall he an overlap of minimum 20mm. 5.2 The inner surface of top cover shall be nailed with Multi-layer cross laminated poly film. This sheet shall project outside on 4 sides by at least 100mm and shall be nailed properly on sides. Joining of sheets should have overlap of minimum 20mm. 5.3 The cubicles shall be covered with Multi-layer cross laminated poly film. 6 PACKING OF LOOSE ITEMS/SPARES 6.1 Inner surfaces of all 6 sides shall be lined with Multi Layered Cross Laminated Polythelene Film (a per clause 5.4) using blue nails. 6.2 Rubberized coir of minimum 25mm thickness and 100 mm width shall be nailed to inner surfaces of bottom and 4 sides of box. 6.3 Internal packing: Items that go into the box shall be packed using 100GSM, (Colourless) Multi Layered Cross Laminated Polyethylene Film. Any space left between the job and the sides and the Certain items like transformers, reactors, breakers, etc., shall be bolted to the bottom of the box us bolts, nuts and washers.		the jobs individually. The cross lamination gives qualities of extra toughness, together with flexibility
The rubberized coir is used as cushioning material. For the packing of loose items, items are to be arrested by using rubberized coir. For the packing of cubicles rubberized coir of thickness 25mm a width 75mm shall be used. 5 MULTI LAYER CROSS LAMINATED POLY FILM WHILE PACKING OF CUBICLES/CASING 5.1 The inner surface of 4 sides of shook's shall be nailed with Multi-layer cross laminated poly film (ar per 4.4) using blue nails wherever 2 pieces of Cross laminated poly film are used, the joint shall he an overlap of minimum 20mm. 5.2 The inner surface of top cover shall be nailed with Multi-layer cross laminated poly film. This sheet shall project outside on 4 sides by at least 100mm and shall be nailed properly on sides. Joining of sheets should have overlap of minimum 20mm. 5.3 The cubicles shall be covered with Multi-layer cross laminated poly film. 6 PACKING OF LOOSE ITEMS/SPARES 6.1 Inner surfaces of all 6 sides shall be lined with Multi Layered Cross Laminated Polythelene Film (a per clause 5.4) using blue nails. 6.2 Rubberized coir of minimum 25mm thickness and 100 mm width shall be nailed to inner surfaces of bottom and 4 sides of box. 6.3 Internal packing: Items that go into the box shall be packed using 100GSM, (Colourless) Multi Layered Cross Laminated Polyethylene Film. Any space left between the job and the sides and the Certain items like transformers, reactors, breakers, etc., shall be bolted to the bottom of the box us bolts, nuts and washers.	4.5	PURREPISED COIP:
5.1 The inner surface of 4 sides of shook's shall be nailed with Multi-layer cross laminated poly film (as per 4.4) using blue nails wherever 2 pieces of Cross laminated poly film are used, the joint shall have an overlap of minimum 20mm. 5.2 The inner surface of top cover shall be nailed with Multi-layer cross laminated poly film. This sheet shall project outside on 4 sides by at least 100mm and shall be nailed properly on sides. Joining of sheets should have overlap of minimum 20mm. 5.3 The cubicles shall be covered with Multi-layer cross laminated poly film. 6 PACKING OF LOOSE ITEMS/SPARES 6.1 Inner surfaces of all 6 sides shall be lined with Multi Layered Cross Laminated Polythelene Film (as per clause 5.4) using blue nails. 6.2 Rubberized coir of minimum 25mm thickness and 100 mm width shall be nailed to inner surfaces of bottom and 4 sides of box. 6.3 Internal packing: Items that go into the box shall be packed using 100GSM, (Colourless) Multi Layered Cross Laminated Polyethylene Film. Any space left between the job and the sides and the Certain items like transformers, reactors, breakers, etc., shall be bolted to the bottom of the box us bolts, nuts and washers.	4.0	The rubberized coir is used as cushioning material. For the packing of loose items, items are to be arrested by using rubberized coir. For the packing of cubicles rubberized coir of thickness 25mm and
5.1 The inner surface of 4 sides of shook's shall be nailed with Multi-layer cross laminated poly film (as per 4.4) using blue nails wherever 2 pieces of Cross laminated poly film are used, the joint shall have an overlap of minimum 20mm. 5.2 The inner surface of top cover shall be nailed with Multi-layer cross laminated poly film. This sheet shall project outside on 4 sides by at least 100mm and shall be nailed properly on sides. Joining of sheets should have overlap of minimum 20mm. 5.3 The cubicles shall be covered with Multi-layer cross laminated poly film. 6 PACKING OF LOOSE ITEMS/SPARES 6.1 Inner surfaces of all 6 sides shall be lined with Multi Layered Cross Laminated Polythelene Film (as per clause 5.4) using blue nails. 6.2 Rubberized coir of minimum 25mm thickness and 100 mm width shall be nailed to inner surfaces of bottom and 4 sides of box. 6.3 Internal packing: Items that go into the box shall be packed using 100GSM, (Colourless) Multi Layered Cross Laminated Polyethylene Film. Any space left between the job and the sides and the Certain items like transformers, reactors, breakers, etc., shall be bolted to the bottom of the box us bolts, nuts and washers.		MILL THE AVER CROSS LAMINATED BOLVEILM WHILE DACKING OF CURICLES/CASING
shall project outside on 4 sides by at least 100mm and shall be nailed properly on sides. Joining of sheets should have overlap of minimum 20mm. 5.3 The cubicles shall be covered with Multi-layer cross laminated poly film. 6 PACKING OF LOOSE ITEMS/SPARES 6.1 Inner surfaces of all 6 sides shall be lined with Multi Layered Cross Laminated Polythelene Film (a per clause 5.4) using blue nails. 6.2 Rubberized coir of minimum 25mm thickness and 100 mm width shall be nailed to inner surfaces of bottom and 4 sides of box. 6.3 Internal packing: Items that go into the box shall be packed using 100GSM, (Colourless) Multi Layered Cross Laminated Polyethylene Film. Any space left between the job and the sides and the Certain items like transformers, reactors, breakers, etc., shall be bolted to the bottom of the box us bolts, nuts and washers.		The inner surface of 4 sides of shook's shall be nailed with Multi-layer cross laminated poly film (as per 4.4) using blue nails wherever 2 pieces of Cross laminated poly film are used, the joint shall have
6 PACKING OF LOOSE ITEMS/SPARES 6.1 Inner surfaces of all 6 sides shall be lined with Multi Layered Cross Laminated Polythelene Film (a per clause 5.4) using blue nails. 6.2 Rubberized coir of minimum 25mm thickness and 100 mm width shall be nailed to inner surfaces of bottom and 4 sides of box. 6.3 Internal packing: Items that go into the box shall be packed using 100GSM, (Colourless) Multi Layered Cross Laminated Polyethylene Film. Any space left between the job and the sides and the 6.4 Certain items like transformers, reactors, breakers, etc., shall be bolted to the bottom of the box us bolts, nuts and washers.	5.2	The inner surface of top cover shall be nailed with Multi-layer cross laminated poly film. This sheet shall project outside on 4 sides by at least 100mm and shall be nailed properly on sides. Joining of sheets should have overlap of minimum 20mm.
 6.1 Inner surfaces of all 6 sides shall be lined with Multi Layered Cross Laminated Polythelene Film (a per clause 5.4) using blue nails. 6.2 Rubberized coir of minimum 25mm thickness and 100 mm width shall be nailed to inner surfaces of bottom and 4 sides of box. 6.3 Internal packing: Items that go into the box shall be packed using 100GSM, (Colourless) Multi Layered Cross Laminated Polyethylene Film. Any space left between the job and the sides and the Certain items like transformers, reactors, breakers, etc., shall be bolted to the bottom of the box us bolts, nuts and washers. 	5.3	The cubicles shall be covered with Multi-layer cross laminated poly film.
per clause 5.4) using blue nails. 6.2 Rubberized coir of minimum 25mm thickness and 100 mm width shall be nailed to inner surfaces of bottom and 4 sides of box. 6.3 Internal packing: Items that go into the box shall be packed using 100GSM, (Colourless) Multi Layered Cross Laminated Polyethylene Film. Any space left between the job and the sides and the Certain items like transformers, reactors, breakers, etc., shall be bolted to the bottom of the box us bolts, nuts and washers.	6	PACKING OF LOOSE ITEMS/SPARES
bottom and 4 sides of box. 6.3 Internal packing: Items that go into the box shall be packed using 100GSM, (Colourless) Multi Layered Cross Laminated Polyethylene Film. Any space left between the job and the sides and the Certain items like transformers, reactors, breakers, etc., shall be bolted to the bottom of the box us bolts, nuts and washers.		Inner surfaces of all 6 sides shall be lined with Multi Layered Cross Laminated Polythelene Film (as
Layered Cross Laminated Polyethylene Film. Any space left between the job and the sides and the Certain items like transformers, reactors, breakers, etc., shall be bolted to the bottom of the box us bolts, nuts and washers.	6.2	Rubberized coir of minimum 25mm thickness and 100 mm width shall be nailed to inner surfaces of bottom and 4 sides of box.
6.4 Certain items like transformers, reactors, breakers, etc., shall be bolted to the bottom of the box us bolts, nuts and washers.	6.3	
6.5 Silica gel held in cotton bags shall be kept at proper places in the box.	6.4	Certain items like transformers, reactors, breakers, etc., shall be bolted to the bottom of the box using
	6.5	Silica gel held in cotton bags shall be kept at proper places in the box.

6.6	Packing slip kept in polyethylene bag shall be placed in the box.
6.7	Two numbers of hoop iron strips shall be strapped tightly on the case using clips.
6.8	Stencil marking of various details and marking of various symbols shall be done as per BHEL instructions using indelible/non-washable marking ink.
6.9	Loose items to be kept inside the cubicle/casing
6.10	Other items which are given loose in addition to cubicle shall be packed in separate boxes.



8	SEALED PACKING:				
	Components sub-assemblies and assemblies sensitive to climatic conditions shall be packed seal				
9	MARKINGS/STENCILINGS				
9.1	"HANDLE WITH CARE", "FRAGILE DO NOT TURN OVER".				
9.2	Besides the caution signs the product information's shall be stencilled of letters with 13mm to 50mm height.				
9.3	In case of consignment consists of more than one package, each package shall carry its package no as given in shipping list. All caution signs shall be stencilled in high quality full glossy out door finishing paint red in colour (AA56126). All other markings shall be carried out in black enamel.				
9.4	Caution signs & other markings shall be stencilled on both the end shooks & the side shooks.				

9.5	Caution sign (for slinging) shall be stencilled only on side shooks at the appropriate place.
9.6	In case the size of package is small for using the stencils, then hand written letters/figures shall be allowed.



nhee	DUEL comits	desetions mins		
CONSIGNEE	BHEL - <unit> -</unit>	<location> - <pin></pin></location>	0.8.N	1 SPARES
			Jan	T ST AIRES
MATERIAL	1	O. NO.		
CUSTOMER REF. DESPATCH		7.000.00		
ADVICE NOTE NO DIMENSIONS(MM)	NE NE	ASE NO ET GROSS	INITIA	L SPARES
LxBxH	l w	T -KGS WT -KGS	HEILER	LOIPARTES
SPECIAL	HANDLE WITH CARE - KEEP	DRY		Figure 5
INSTRUCTIONS	DO NOT DROP - DO NOT TIL	г		
Fig	ure 4 – TYPICAL MARKING PLA	TE (225 X 170)	Easy spares [Initial and O&M] Traceability	and Identification at units and as well as at sites:
		,		T
	!			
0	STANDARD MET	HOD OF PACKING		
able 1 - Stand	dard Method of Pag	cking		
. No.	DESCRIPTION			CASE/CRATE/BUNDLE
	MOTOR			CASE
	PUMP			CASE
	STRAINER			CASE
	COUPLING &OTI	HER ACCESSORIES (F	ASTNERS AND GASKET ETC)	CASE
ı	COMPLETE CAB	LE GLANDS & LUGS		CASE
1	MAINTENANCE TOOLS AND TACKLES CASE			
	ALL OTHER LOOSE ITEMS CASE		CASE	
lote:	Protective coating	applied on machined s	urfaces should not be disturbed. T	he plastic covering should
	be put back caref	ully so that it prevents in	gress of dust and moisture. Some	packing may have vapou
	phase inhibitor (V	PI) paper enclosed insid	de the packing cases. This should	be restored to its original
	place as far as po	,		ŭ
	'			

ANNEXURE-VII PAINTING REQUIREMENT



TECHNICAL SPECIFICATION LUBE OIL TRANSFER PUMP RATE CONTRACT

PE-TS-STD567-A001 ssue No: 00 Rev. No. 00 Date :11.07.2024	
Rev. No. 00	PE-TS-STD567-A001
	ssue No: 00
Date :11.07.2024	Rev. No. 00
	Date :11.07.2024

PAINTING REQUIREMENT

Package	Condition	Surface Preparation	Primer Coat	Intermediate Coat	Final Coat
		Surface shall be	One coat of Zinc rich -	Intermediate Coat of Epoxy Based TiO2	One coat of High Solid (High Build) Epoxy
		degreased and	Epoxy based Primer of 50 –	pigmented polyamide cured paint of 50 –	Based paint of 110 Microns DFT.
	Plain Area	prepared by wire brush	75 microns DFT shall be	75 microns DFT shall be applied.	Thus a total DFT of 210 - 235 microns shall be
LOTP		/ mechanical tool /	applied.		achieved.
LOTE		sand blasting as per			Paint Shade: GREY to RAL 9002
		paint			
		manufacturers guide			
		lines to SA 2.5 finish			

Biddder to note Any change in painting specification at later date as per customer comments needs to be complied by bidder without any Commercial implication



LUBE OIL TRANSFER PUMPS TECHNICAL SPECIFICATION (ELECTRICAL PORTION)

SPECIFICATION No: PE-TS-STD-567-A001				
VOLUME: II B				
SECTION: C-2				
REV. 00 DATE:11.07.2024				

SECTION: C-2
TECHNICAL SPECIFICATION (ELECTRICAL PORTION)



TECHNICAL SPECIFICATION FOR LUBE OIL PUMPS (ELECTRICAL PORTION)

SPECIFICATION NO. VOLUME II B SECTION-C REV 0 DA

PAGE 1 OF 2

DATE 17.04.2015

SPECIFIC TECHNICAL REQUIREMENTS: ELECTRICAL

1.0 **EQUIPMENT & SERVICES TO BE PROVIDED BY BIDDER:**

- a) Services and equipment as per "Electrical Scope between BHEL and Vendor".
- b) Any item/work either supply of equipment or erection material which have not been specifically mentioned but are necessary to complete the work for trouble free and efficient operation of the plant shall be deemed to be included within the scope of this specification. The same shall be provided by the bidder without any extra charge.
- c) Supply of mandatory spares as specified in the specifications of mechanical equipments.
- d) Electrical load requirement for Lube Oil Pumps.
- e) All equipment shall be suitable for the power supply fault levels and other climatic conditions mentioned in the enclosed project information.
- f) Bidder to furnish list of makes for each equipment at contract stage, which shall be subject to customer/BHEL approval without any commercial and delivery implications to BHEL
- g) Various drawings, data sheets as per required format, Quality plans, calculations, test reports, test certificates, operation and maintenance manuals etc. shall be furnished as specified at contract stage. All documents shall be subject to customer/BHEL approval without any commercial implication to BHEL.
- h) Motor shall meet minimum requirement of motor specification.
- i) Vendor to clearly indicate equipment locations and local routing lengths in their cable listing furnished to BHEL.
- j) Cable BOQ worked out based on routing of cable listing provided by the vendor for "both end equipment in vendor's scope" shall be binding to the vendor with +10 % margin to take care of slight variation in routing length & wastages.

2.0 EQUIPMENT & SERVICES TO BE PROVIDED BY PURCHASER FOR ELECTRICAL & TERMINAL POINTS:

Refer "Electrical Scope between BHEL and Vendor".

3.0 DOCUMENTS TO BE SUBMITTED ALONG WITH BID

- 3.1 The electrical specification without any deviation from the technical/quality assurance requirements stipulated shall be deemed to be complied by the bidder in case bidder furnishes the overall compliance of package technical specification in the form of compliance certificate/No deviation certificate.
- 3.2 No technical submittal such as copies of data sheets, drawings, write-up, quality plans, type test certificates, technical literature, etc, is required during tender stage. Any such submission even if made, shall not be considered as part of offer.



TECHNICAL SPECIFICATION FOR LUBE OIL PUMPS (ELECTRICAL PORTION)

SPECIFICATION NO.
VOLUME II B
SECTION-C
REV 0 DATE 17.04.2015

PAGE 2 OF 2

4.0 List of enclosures:

- a) Electrical scope between BHEL & vendor (Annexure –I)
- b) Technical specification for motors.
- c) Datasheets & quality plan for motors.
- d) Electrical Load data format (Annexure –II)
- e) BHEL cable listing format (Annexure –III)
- f) Quality Plan of Motor

REV: 0 DATE: 17.03.2015

STANDARD ELECTRICAL SCOPE BETWEEN BHEL AND VENDOR(FOR EPC PROJECTS)

PACKAGE: LUBE OIL PUMPS (Supply Package)

PROJECT:

<u>S.NO</u>	<u>DETAILS</u>	SCOPE SUPPLY	SCOPE E&C	<u>REMARKS</u>
1	415 V MCC	BHEL	BHEL	415 V AC (3 PHASE 4 WIRE / 3 WIRE) supply shall be provided by BHEL based on load data provided by vendor at contract stage for all equipment supplied by vendor as part of contract. Any other voltage level (AC/DC) required will be derived by the vendor.
2	Local Push Button Station (for motors)	BHEL	BHEL	Located near the motors.
3	Power cables, control cables and screened control cables	BHEL	BHEL	Incoming cable from BHEL supplied MCC will be informed by BHEL. Vendor shall provide lugs & glands accordingly.
4	Cable trays, accessories & cable trays supporting system	BHEL	BHEL	
5	Cable glands and lugs for equipments supplied by Vendor	Vendor	BHEL	Double compression Ni-Cr plated brass cable glands Solder less crimping type heavy duty tinned copper lugs for power and control cables.
6	Conduit and conduit accessories for cabling between equipments supplied by vendor	BHEL	BHEL	
7	Equipment grounding & lightning protection	BHEL	BHEL	
8	Below grade grounding	BHEL	BHEL	
9	LT Motors with base plate and foundation hardware	Vendor	BHEL	Makes shall be subject to BHEL approval at contract stage.
10	Mandatory spares	Vendor	-	Vendor to quote as per specification.
11	Recommended O & M spares	Vendor	-	As per specification
12	Any other equipment/material/service required for completeness of system but not specified above (to ensure trouble free and efficient operation of the system).	Vendor	BHEL	
13	Electrical equipment GA drawing	Vendor	-	For necessary interface review.

NOTES:

- Make of all electrical equipments/items supplied shall be reputed make & shall be subject to approval of BHEL after award of contract.
 All QPs shall be subject to approval of BHEL after award of contract without any commercial implication.

TITLE:	SPECIFICATION NO.		
GENERAL TECHNICAL REQUIREMENTS	PE-SS-999-506-E101		
FOR	VOLUME NO. : II-B		
rUK			
LV MOTORS	REV NO. : 00 DATE : 20/3/15		
	SHEET : 1 OF 1		
GENERAL TECHNICAL REQUIR	ENAENITS		
GENERAL TECHNICAL REQUIR	EIVIEIN I 3		
FOR			
FUK			
LV MOTORS			
SPECIFICATION NO.: PE-SS-999-506-	SPECIFICATION NO.: PE-SS-999-506-E101 Rev 00		



TITLE : GENERAL TECHNICAL REQUIREMENTS

FOR

LV MOTORS

| SPECIFICATION NO. | PE-SS-999-506-E101 | VOLUME NO. : II-B | SECTION : D | REV NO. : 00 DATE : 20/3/15 | SHEET : 1 OF 4

1.0 **INTENT OF SPECIFIATION**

The specification covers the design, materials, constructional features, manufacture, inspection and testing at manufacturer's work, and packing of Low voltage (LV) squirrel cage induction motors along with all accessories for driving auxiliaries in thermal power station.

Motors having a voltage rating of below 1000V are referred to as low voltage (LV) motors.

2.0 CODES AND STANDARDS

Motors shall fully comply with latest edition, including all amendments and revision, of following codes and standards:

IS:325	Three phase Induction motors	
IS: 900	Code of practice for installation and maintenance of induction motors	
IS: 996	Single phase small AC and universal motors	
IS: 4722	Rotating Electrical machines	
IS: 4691	Degree of Protection provided by enclosures for rotating electrical machines	
IS: 4728	Terminal marking and direction of rotation rotating electrical machines	
IS: 1231	Dimensions of three phase foot mounted induction motors	
IS: 8789	Values of performance characteristics for three phase induction motors	
IS: 13555	Guide for selection and application of 3-phase A.C. induction motors for	
	different types of driven equipment	
IS: 2148	Flame proof enclosures for electrical appliance	
IS: 5571	Guide for selection of electrical equipment for hazardous areas	
IS: 12824	Type of duty and classes of rating assigned	
IS: 12802	Temperature rise measurement for rotating electrical machnines	
IS: 12065	Permissible limits of noise level for rotating electrical machines	
IS: 12075		

In case of imported motors, motors as per IEC-34 shall also be acceptable.

3.0 **DESIGN REQUIREMENTS**

- 3.1 Motors and accessories shall be designed to operate satisfactorily under conditions specified in data sheet-A and Project Information, including voltage & frequency variation of supply system as defined in Data sheet-A
- 3.2 Motors shall be continuously rated at the design ambient temperature specified in Data Sheet-A and other site conditions specified under Project Information

 Motor ratings shall have at least a 15% margin over the continuous maximum demand of the driven equipment, under entire operating range including voltage & frequency variation specified above.

3.3 **Starting Requirements**

- 3.3.1 Motor characteristics such as speed, starting torque, break away torque and starting time shall be properly co-ordinated with the requirements of driven equipment. The accelerating torque at any speed with the minimum starting voltage shall be at least 10% higher than that of the driven equipment.
- 3.3.2 Motors shall be capable of starting and accelerating the load with direct on line starting without exceeding acceptable winding temperature.



TITLE: GENERAL TECHNICAL REQUIREMENTS

FOR

LV MOTORS

SPECIFICATION NO.
PE-SS-999-506-E101
VOLUME NO.: II-B
SECTION: D
REV NO.: 00 DATE: 20/3/15

The limiting value of voltage at rated frequency under which a motor will successfully start and

SHEET : 2 OF 4

accelerate to rated speed with load shall be taken to be a constant value as per Data Sheet - A during the starting period of motors.

- 3.3.3 The following frequency of starts shall apply
 - i) Two starts in succession with the motor being initially at a temperature not exceeding the rated load temperature.
 - ii) Three equally spread starts in an hour the motor being initially at a temperature not exceeding the rated load operating temperature. (not to be repeated in the second successive hour)
 - iii) Motors for coal conveyor and coal crusher application shall be suitable for three consecutive hot starts followed by one hour interval with maximum twenty starts per day and shall be suitable for mimimum 20,000 starts during the life time of the motor

3.4 **Running Requirements**

- 3.4.1 Motors shall run satisfactorily at a supply voltage of 75% of rated voltage for 5 minutes with full load without injurious heating to the motor.
- 3.4.2 Motor shall not stall due to voltage dip in the system causing momentary drop in voltage upto 70% of the rated voltage for duration of 2 secs.

3.5 **Stress During bus Transfer**

- 3.5.1 Motors shall withstand the voltage, heavy inrush transient current, mechanical and torque stress developed due to the application of 150% of the rated voltage for at least 1 sec. caused due to vector difference between the motor residual voltage and the incoming supply voltage during occasional auto bus transfer.
- 3.5.2 Motor and driven equipment shafts shall be adequately sized to satisfactorily withstand transient torque under above condition.
- 3.6 Maximum noise level measured at distance of 1.0 metres from the outline of motor shall not exceed the values specified in IS 12065.
- 3.7 The max. vibration velocity or double amplitude of motors vibration as measured at motor bearings shall be within the limits specified in IS: 12075.

4.0 CONSTRUCTIONAL FEATURES

4.1 Indoor motors shall conform to degree of protection IP: 54 as per IS: 4691. Outdoor or semi-indoor motors shall conform to degree of protection IP: 55 as per IS: 4691and shall be of weather-proof construction. Outdoor motors shall be installed under a suitable canopy

Motors rated above 160 KW shall be Closed Air Circuit Air (CACA) cooled

4.3 Motors shall be designed with cooling fans suitable for both directions of rotation.



TITLE: GENERAL TECHNICAL REQUIREMENTS

FOR

LV MOTORS

SPECIFICATION NO.
PE-SS-999-506-E101
VOLUME NO.: II-B
SECTION: D
REV NO.: 00 DATE: 20/3/15 is SHEET: 3 OF 4

- 4.4. Motors shall not be provided with any electric or pneumatic operated external fan for cooling the motors.
- 4.5 Frames shall be designed to avoid collection of moisture and all enclosures shall be provided with facility for drainage at the lowest point.
- 4.6 In case Class 'F' insulation is provided for LV motors, temperature rise shall be limited to the limits applicable to Class 'B' insulation.

 In case of continuous operation at extreme voltage limits the temperature limits specified in table-1 of

IS:325 shall not exceed by more than 10°C.

4.7 Terminals and Terminal Boxes

4.7.1 Terminals, terminal leads, terminal boxes, windings tails and associated equipment shall be suitable for connection to a supply system having a short circuit level, specified in the Data Sheet-A.

Unless otherwise stated in Data Sheet-A, motors of rating 110 kW and above will be controlled by circuit breaker and below 110 kW by switch fuse-contactor. The terminal box of motors shall be designed for the fault current mentioned in data sheet "A".

- 4.7.2 unless otherwise specified or approved, phase terminal boxes of horizontal motors shall be positioned on the left hand side of the motor when viewed from the non-driving end.
- 4.7.3 Connections shall be such that when the supply leads R, Y & B are connected to motor terminals A B & C or U, V & W respectively, motor shall rotate in an anticlockwise direction when viewed from the non-driving end. Where such motors require clockwise rotation, the supply leads R, Y, B will be connected to motor terminals A, C, B or U W & V respectively.
- 4.7.4 Permanently attached diagram and instruction plate made preferably of stainless steel shall be mounted inside terminal box cover giving the connection diagram for the desired direction of rotation and reverse rotation.
- 4.7.5 Motor terminals and terminal leads shall be fully insulated with no bar live parts. Adequate space shall be available inside the terminal box so that no difficulty is encountered for terminating the cable specified in Data Sheet-A.
- 4.7.6 Degree of protection for terminal boxes shall be IP 55 as per IS 4691.
- 4.7.7 Separate terminal boxes shall be provided for space heaters.. If this is not possible in case of LV motors, the space heater terminals shall be adequately segregated from the main terminals in the main terminal box. Detachable gland plates with double compression brass glands shall be provided in terminal boxes.
- 4.7.8. Phase terminal boxes shall be suitable for 360 degree of rotation in steps of 90 degree for LV motors.
- 4.7.9 Cable glands and cable lugs as per cable sizes specified in Data Sheet-A shall be included. Cable lugs shall be of tinned Copper, crimping type.
- 4.8 Two separate earthing terminals suitable for connecting G.I. or MS strip grounding conductor of size given in Data Sheet-A shall be provided on opposite sides of motor frame. Each terminal box shall have a grounding terminal.



TITLE: GENERAL TECHNICAL REQUIREMENTS

FOR

LV MOTORS

SPECIFICATION NO.
PE-SS-999-506-E101
VOLUME NO.: II-B
SECTION: D
REV NO.: 00 DATE: 20/3/15
SHEET: 4 OF 4

- 4.9.1 Motors provided for similar drives shall be interchangeable.
- 4.9.2 Suitable foundation bolts are to be supplied alongwith the motors.
- 4.9.3 Motors shall be provided with eye bolts, or other means to facilitate safe lifting if the weight is 20Kgs. and above.
- 4.9.4 Necessary fitments and accessories shall be provided on motors in accordance with the latest Indian Electricity rules 1956.
- 4.9.5 All motors rated above 30 kW shall be provided with space heaters to maintain the motor internal air temperature above the dew point. Unless otherwise specified, space heaters shall be suitable for a supply of 240V AC, single phase, 50 Hz.
- 4.9.6 Name plate with all particulars as per IS: 325 shall be provided
- 4.9.7 Unless otherwise specified, the colour of finish shall be grey to Shade No. 631 and 632 as per IS:5 for motors installed indoor and outdoor respectively. The paint shall be epoxy based and shall be suitable for withstanding specified site conditions.

5.0 **INSPECTION AND TESTING**

- 5.1 All materials, components and equipments covered under this specification shall be procured, manufactured, as per the BHEL standard quality plan No. PED-506-00-Q-006/1 and PED-506-00-Q-007/3 enclosed with this specification and which shall be complied.
- 5.2 LV motors of type-tested design shall be provided. Valid type test reports not more than 5 year shall be furnished. In the absence of these, type tests shall have to be conducted by manufacturer without any commercial implication to purchaser.
- 5.3 All motors shall be subjected to routine tests as per IS: 325 and as per BHEL standard quality plan.
- 5.4 Motors shall also be subjected to additional tests, if any, as mentioned in Data Sheet A.

6.0 DRAWINGS TO BE SUBMITTED AFTER AWARD OF CONTRACT

- a) OGA drawing showing the position of terminal boxes, earthing connections etc.
- b) Arrangement drawing of terminal boxes.
- c) Characteristic curves:

(*To be given for motor above 55 kW unless otherwise specified in Data Sheet*).

- i) Current vs. time at rated voltage and minimum starting voltage.
- ii) Speed vs. time at rated voltage and minimum starting voltage.
- Torque vs. speed at rated voltage and minimum voltage.

 For the motors with solid coupling the above curves i), ii), iii) to be furnished for the motors coupled with driven equipment. In case motor is coupled with mechanical equipment by fluid coupling, the above curves shall be furnished with and without coupling.
- iv) Thermal withstand curve under hot and cold conditions at rated voltage and max. permissible voltage.

TECHNICAL DATASHEET FOR LT MOTOR FOR LOTP PACKAGE.

S.No.	Parameters	Requirement
1	Applicable Standards	1) Three phase induction motors: IS:325, IEC:60034, IS:12615, IS: 15999
		2) Single phase AC motors: IS:996, IEC:60034
		3) Energy Efficient motors: IS 12615, IEC:60034-30
2	Rated voltage	415V, 3 Phase
3	Frequency (Hz)	50Hz
4	Permissible variations for	55712
-		. / 100/
	a) Voltage	+/-10%
	b) Frequency	+3% & -5%
	c) Combined	10% (Sum of absolute values)
	System fault level at rated voltage	50KA for 1 sec
	Short time rating for terminal boxes	50KA for .25 sec
5	Type of motors	Continuous duty squirrel cage induction motor suitable for direct-on-line starting
6	Efficiency class	IE3 Class confirming to IS 12615 or IEC:60034-30
7	Design margin over continous max. demand of the driven	
′	equipment (min)	10%
8	Starting requirement	
	a) Minimum permissible voltage as a percentage of rated	(a) Below 110KW: Up to 85% of rated voltage
	voltage, at start to bring the driven equipment upto the	(b) From 110 KW & upto 200 KW : Up to 80% of rated voltage
	driven equipment upto rated speed	100, 100
	b) Maxmum locked rotor current	as per IS 12615
	c) Starting duty	Two hot starts in succession, with motor initially at
	c) starting duty	•
	all the leadership assessment the second street and the second street and the second street are second street as the second street are second stree	normal running temperature.
	d) the locked rotor withstand time under hot condition at	a) atleast 2.5 secs. more than starting time(for motors with starting time upto 20 secs. at
	highest voltage limit	minimum permissible voltage during starting
		b)atleast 5 secs. more than starting time(for motors with starting time more than 20 secs.
		and upto 45 secs. at minimum permissible voltage during starting
		c) more than starting time by at least 10% of the starting time(For motors with starting
		time more than 45 secs.at minimum permissible voltage during starting
		d) Speed switches mounted on the motor shaft shall be provided in cases where above
		requirements are not met.
		requirements are not met.
	a)The making of leadered makes 10/40 at maked makes to make d 10/4/	(a) Pala 110(/M - 11.0
	e)The ratio of locked rotor KVA at rated voltage to rated KW	(a) Below 110KW : 11.0
	T /	(b) From 110 KW & upto 200 KW : 9.0
	Torque (percent of full load torque)	1] Accelerating torque at any speed with the lowest permissible starting voltage shall be
9		at least 10% motor full load torque.
		2]Pull out torque at rated voltage shall not be less than 205% of full load torque. It shall
		be 275% for crane duty motors.
10	Noise level (max.)	85dB(A)
11	Vibration shall be limited within the limits	as per IS:12075 / IEC 60034-14
12	Construction Features	
(i)	Enclosure Details	
(')	a) Degree of protection	i) Indoor motors - IP 55
	a, begree or protection	'
	LA Markhaul of contillation	ii) Outdoor motors - IP 55 (Additional Canopy to be provided)
	b) Method of ventilation	Totally enclosed fan cooled (TEFC) or totally enclosed tube or ventilated (TETV) or Closed
		air circuit air cooled (CACA) type.
(ii)	Insulation	
	Bearings	Grease lubricated ball or roller bearings for Horizontal motors
(iii)		Grease lubricated ball or roller bearings or combined trust and guide beaing for Vertical
		motors
,	Winding Type	Electrolytic grade Copper conductor, Non hygroscopic, oil resistant, flame resistant
(iv)	Winding Type	Electrolytic grade Copper conductor, Non hygroscopic, oil resistant, flame resistant Insulation.
(iv)	- · · · · · · · · · · · · · · · · · · ·	
	Winding Type Main terminal box	Insulation.
	- · · · · · · · · · · · · · · · · · · ·	Insulation. -Motor terminal box shall be detachable type and located in accordance with Indian
	- · · · · · · · · · · · · · · · · · · ·	Insulation. -Motor terminal box shall be detachable type and located in accordance with Indian Standards clearing the motor base- plate/ foundation.
	- · · · · · · · · · · · · · · · · · · ·	Insulation. -Motor terminal box shall be detachable type and located in accordance with Indian Standards clearing the motor base- plate/ foundationTerminals shall be stud or lead wire type, substantially constructed and thoroughly
13	Main terminal box	Insulation. -Motor terminal box shall be detachable type and located in accordance with Indian Standards clearing the motor base- plate/ foundation. -Terminals shall be stud or lead wire type, substantially constructed and thoroughly insulated from the frame.
	- · · ·	Insulation. -Motor terminal box shall be detachable type and located in accordance with Indian Standards clearing the motor base- plate/ foundation. -Terminals shall be stud or lead wire type, substantially constructed and thoroughly insulated from the frame. - The terminals shall be clearly identified by phase markings, with corresponding direction
13	Main terminal box	Insulation. -Motor terminal box shall be detachable type and located in accordance with Indian Standards clearing the motor base- plate/ foundation. -Terminals shall be stud or lead wire type, substantially constructed and thoroughly insulated from the frame.
13	Main terminal box	Insulation. -Motor terminal box shall be detachable type and located in accordance with Indian Standards clearing the motor base- plate/ foundation. -Terminals shall be stud or lead wire type, substantially constructed and thoroughly insulated from the frame. - The terminals shall be clearly identified by phase markings, with corresponding direction
13	Main terminal box	Insulation. -Motor terminal box shall be detachable type and located in accordance with Indian Standards clearing the motor base- plate/ foundation. -Terminals shall be stud or lead wire type, substantially constructed and thoroughly insulated from the frame. - The terminals shall be clearly identified by phase markings, with corresponding direction of rotation marked on the non-driving end of the motor.
13	Main terminal box	Insulation. -Motor terminal box shall be detachable type and located in accordance with Indian Standards clearing the motor base- plate/ foundation. -Terminals shall be stud or lead wire type, substantially constructed and thoroughly insulated from the frame. - The terminals shall be clearly identified by phase markings, with corresponding direction of rotation marked on the non-driving end of the motor.
(i) (ii)	Main terminal box Type DOP	Insulation. -Motor terminal box shall be detachable type and located in accordance with Indian Standards clearing the motor base- plate/ foundation. -Terminals shall be stud or lead wire type, substantially constructed and thoroughly insulated from the frame. - The terminals shall be clearly identified by phase markings, with corresponding direction of rotation marked on the non-driving end of the motor. -terminal box shall be suitable to rotate at 90 degrees same as motor
(i) (ii) (iii)	Main terminal box Type DOP Position when veiwed from the non driving end	Insulation. -Motor terminal box shall be detachable type and located in accordance with Indian Standards clearing the motor base- plate/ foundation. -Terminals shall be stud or lead wire type, substantially constructed and thoroughly insulated from the frame. - The terminals shall be clearly identified by phase markings, with corresponding direction of rotation marked on the non-driving end of the motor. -terminal box shall be suitable to rotate at 90 degrees same as motor - Left hand side
(i) (ii)	Main terminal box Type DOP	Insulation. -Motor terminal box shall be detachable type and located in accordance with Indian Standards clearing the motor base- plate/ foundation. -Terminals shall be stud or lead wire type, substantially constructed and thoroughly insulated from the frame. - The terminals shall be clearly identified by phase markings, with corresponding direction of rotation marked on the non-driving end of the motor. -terminal box shall be suitable to rotate at 90 degrees same as motor - Left hand side 90 Deg.
(i) (ii) (iii)	Main terminal box Type DOP Position when veiwed from the non driving end	Insulation. -Motor terminal box shall be detachable type and located in accordance with Indian Standards clearing the motor base- plate/ foundation. -Terminals shall be stud or lead wire type, substantially constructed and thoroughly insulated from the frame. - The terminals shall be clearly identified by phase markings, with corresponding direction of rotation marked on the non-driving end of the motor. -terminal box shall be suitable to rotate at 90 degrees same as motor - Left hand side

	1			
		-Motor terminal box shall be furnished with suitable cable lugs and double compression		
		brass glands to match with cable used.		
		State graines to material with course assets		
		Cable glands shall conform to BS:6121. Cable glands shall be made of heavy duty brass		
		machine finished and nickel chrome plated. Thickness of plating shall not be less than 10		
(vi)	Cable glands and lugs	micron. All washers and hardware shall also be made of brass with nickel chrome plating		
		Rubber components shall be of neoprene or better synthetic material and of tested		
		quality.		
		1		
		Cable lugs/ferrules shall be solderless crimping type suitable for power and control cables		
		as per the DIN 46239. Aluminium solderless crimping lugs/ ferrules shall be used for		
		Aluminium cables and Copper lugs/ferrules shall be used for Copper cables. Bimetallic		
		washers or bimetallic type lugs shall be used for bimetallic connections.		
(vii)	DIMENSIONS OF TERMINAL BOXES FOR LV MOTORS:			
	Motor MCR in KW	Minimum distance between centre of stud and gland plate in mm		
	a) UP to 3 KW	As per manufacturer's practice.		
	b) Above 3 KW - upto 7 KW	85		
	c) Above 7 KW - upto 13 KW	115		
	d) Above 13 KW - upto 24 KW	167		
	e) Above 24 KW - upto 37 KW	196		
	f) Above 37 KW - upto 55 KW	249		
	g) Above 55 KW - upto 90 KW	277		
	h) Above 90 KW - upto 125 KW	331		
	i) Above 125 KW-upto 200 KW	203		
	j) For HT motors the distance between gland plate and the			
	terminal studs shall not be less than 500 mm.			
(viii)	PHASE TO PHASE/ PHASE TO EARTH AIR CLEARANCE:			
` ′	NOTE: Minimum inter-phase and phase-earth air clearances for	LT motors with lugs installed shall be as follows:		
	Motor MCR in KW	Clearance		
	a) UP to 110 KW	10mm		
	b) Above 110 KW and upto 150 KW	12.5mm		
	c) Above 150 KW	19mm		
	Earthing points (2 nos. on diagonally opposite sides) suitable	CC 51 . 50 . C OD 05 W C OD 05 W O		
14	for connection	GS Flat- 50 x 6 OR 25 X 6 OR 25 X 3		
		RAL 5012 (Blue)/Light grey finish No. 631 as per		
15	Paint shade	IS: 5 (subject to customer approval)		
16				
	a) The following type test reports shall be submitted for each	type and rating of LT motor.		
	1. Measurement of resistance of windings of stator and wour	nd rotor.		
	2. No load test at rated voltage to determine input current po	ower and speed		
	3. Open circuit voltage ratio of wound rotor motors (in case	of Slip ring motors)		
	4. Full load test to determine efficiency power factor and slip			
	5. Temperature rise test			
	6. Momentary excess torque test.			
	7. High voltage test			
	8. Test for vibration severity of motor.			
	9. Test for noise levels of motor(Noise level for all the motors shall be limited to 85dB (A) except for BFP motor for which the maximum limit shall be 90			
	dB(A). Vibration shall be limited within the limits prescribed in IS/IEC 60034-14. Motors shall withstand vibrations produced by driven equipment. HT			
	motor bearing housings shall have flat surfaces, in both X and Y directions, suitable for mounting 80mmX80mm vibration pads.)			
	10. Test for degree of protection and			
	11. Overspeed test.			
	12. Type test reports for motors located in fuel oil area having flame proof enclosures as per IS 2148 / IEC 60079-1			
	13. The type test listed above should have been conducted within 10 yrs from date of approval of drawings. In absence of type tests reports or in case			
	reports are not found to be meeting the specification/standards requirements, vendor shall conduct all such type tests without any			
	evant standards and reports shall be submitted to the owner for approval.			
	in the residence of the	The second secon		
	4. For Motor rating upto 50KW, BHEL QP No.PE-QP-999-Q-006, REV -02 is to be followed & for Motor rating above 50KW, NTPC RQP, QP No. 0000-999-			
	14. For Motor rating upto 50KW, BHEL QP No.PE-QP-999-Q-006, REV -02 is to be followed & for Motor rating above 50KW, NTPC RQP, QP No. CQVE-P-044, Rev. No. :4 is to be followed. b) All acceptance and routine tests as per the specification andrelevant standards shall be carried out. Charges for these shall be deemed to be			
	in the equipment price.			
	c) The type test reports once approved for any projects shall be treated as reference. For subsequent projects of NTPC, an endorsement sheet will be			
	furnished by the manufacturer confirming similarity and "No design Change". Minor changes if any shall be highlighted on the endorsement sheet. 15. All motors shall be controlled as followes: -			
	MPCB + Contactor (MPCB shall be with adjustable S/C and O/	L protection).		

DATA TO BE FURNISHED BY SUCCESSFUL BIDDER AFTER ORDERING

4 0551554) BE FURNISHED BY SUCCESSFUL BIDDER AFTER (
1. GENERA		
i)	Manufacturer & Country of origin.	
ii)	Equipment driven by motor)	
iii)	Motor type	
iv)	Country of origin	
v)	Quantity	
2. DESIGN	N AND PERFORMANCE DATA	
i)	Frame size	
ii)	Type of duty	
iii)	Type of enclosure and method of cooling	
vi)	Type of mounting	
vii)	Direction of rotation as viewed from DE END	
viii)	Standard continuous rating at 40 deg.C. ambient temp. as	
,	per Indian Standard (KW)	
ix)	(A) Derated rating for specified normal condition i.e. 50	
1//	deg. C ambient temperature (KW)	
	(B) Rating as specified in load list/Maximum continuous load	
	demand of driven equipment	
vil		
xi)	Rated speed at rated voltage and frequency	
xii)	At rated Voltage and frequency	
	a) Full load current (Amps)	
	b) No load current (Amps)	
xiii)	Power Factor at	
	a) 100% load	
	b) At duty point	
	c) 75% load	
	d) 50% load	
	e) NO load	
	f) Starting.	
xiv)	Efficiency at rated voltage and frequrecy	
,,	a) 100% load	
	b) At duty point	
	c) 75% load	
	d) 50% load	
xv)	Starting current (amps) at	
	a. 100 % voltage	
	b. 85% voltage	
	c. 80% voltage	
xvi)		
	a. Without driven equipment coupled	
	b. With driven equipment coupled	
xvii)	Safe stall time with 110% of rated voltage	
,	a. From hot condition	
	b. From cold condition	
xviii)	Torques:	
Aviii)	a. Starting torque at min. permissible voltage(kg-mtr.)	
	b. Pull up torque at rated voltage.	
	c. Pull out torque	
	d. Min accelerating torque (kg.m) available	
	e. Rated torque (kg.m)	
xix)	Stator winding resistance per phase (ohms at 20 Deg.C.)	
xx)	GD ² value of motors	
xxi)	Locked rotor KVA input (at rated voltage)	
xxii)	Locked rotor KVA/KW.	
xxiii)	Bearings	
·	a. Type	
	b. Manufacturer	
	c. Self Lubricated or forced Lubricated	
	d. Recommended Lubricants	
	e. Guaranteed Life in Hours	
	f. Whether Dial Type thermometer provided	
	g. Oil pressure Gauge/switch	
	i. Range	
	ii. Contact Nos. & ratings	
	iii. Accuracy	
xxiv)	Vibration	
	a) Velocity (mm/s)	
	b) Displacement (microns)	
xxv)	Noise level (DB)	
	CUCTIONAL FEATURES	

i)		
,	a. Class & Type	
	b. Tropicalised (Yes/No)	
	c. Temperature rise over specified max.	
	i. Cold water temperature of 38 DEG. C.	
	ii. Ambient Air 50 DEG. C.	
	d. Method of temperature measurement	
	e. Stator winding connection	
	f. Number of terminals brought out	
ii)	Type of terminal box for	
	a. stator leads	
	b. space heater	
	c. Temperature detectors	
	d. Instrument switch etc.	
iii)	For main terminal box	
	a. Location	
	b. Entry of cables	
	c. Recommended cable size	
	d. Fault level (MVA)	
	e. No. of Eathing Pads	
iv)	Temperature detector for stator winding	
	а Туре	
	b. Nos. provided	
	c. Location	
	d. Make	
	e. Resistance value at 0 deg. C. (ohms)	
vi)	Paint shade	
vii)	Weight of(approx)	
	a. Motor stator (KG)	
	b. Motor Rotor (KG)	
	c. Total weight (KG)	
4. LIST OF		
i)	Torque speed characteristic of the motor	
ii)	Thermal withstand characteristic	
iii)	Starting. current Vs. Time	
iv)	Starting. current Vs speed	
v)	P.F. and Effi. Vs Load	

NOTE:

- 1. SHEET 3 & 4 of TECHNICAL DATASHEET SHOULD BE READ IN CONJUCTION WITH SHEET 1 & 2 of TECHNICAL DATASHEET.
- 2. DURING CONTRACT STAGE: SUPPLIER TO SIGN & STAMP SHEET 1 & 2 OF TECHNICAL DATASHEET, AND APPEND DULY FILLED SIGNED & STAMPED SHEET -3 & 4 OF TECHNICAL DATASHEET FOR BHEL/CUSTOMER'S APPROVAL.

		RATIN	G (KW / A)	۵	No	s.	* Ш	* :	_ =	<u> </u>				CAI	BLE					VERIFICATI ON FROM	KKS NO
LOAI	D TITLE	NAME PLATE		(S) NTS/(U) TINU	RUNNING	STANDBY	VOLTAGE CODE*	FEEDER CODE**	CONT (C) INTT (I)	STARTING TIME	>5 SEC (Y)	LOCATION	BOARD NO.	SIZE CODE	NOs	BLOCK CABLE DRG. No.	CONT ROL CODE	REMA RKS	LOAD No.	MOTOR DATASHEE T (Y/N)	
	1	2	3	4	5	6	7	8 !	9 10) 1	11	12	13	14	15	16	17	18	19	20	21
ANNEXUR	E-II																				
THATAL										T											
					H		Ш		-	-	_										
				+	H		${\mathbb H}$	-	+	-	\dashv			-			+				
								-	+	+	1										
																	-				
•																					
				-	1		\vdash	-	-	-	-										
				╁	H		H	+	╁	+	+										
					Ш		Щ			\perp							1				
				t							+										
				-	H		dash	_	+	+	\dashv						1				
NOTES:	1. COLUMN 1 TO 12	2 & 18 SH A	LL BE FILL F) RV	THF	ERF	QUI	SITIC	NFR	(OR	IGIN	ATING AGENC	Y): REMAINI	NG COLU	IMNS ARE	TO RF	FILLED I	JP BY PI	EM (FI FO	CTRICAL V CUS	TOMER
	2. ABBREVIATIONS	s : * V	OLTAGE COD	DE (7	7):- (a	ac)	A=11	K۷,	B=6.	δKV,	, C=3	3.3 KV, D=415 V ER, B=BI-DIREC	, E=240 V (1	PH), F=1	10 V		(cc): G=	220 V, H	=110 V, J	l=48 V, K=+24V	, L=-24 V
I			JOB NO.	- (0	, U=	_UN	אוטוו		CINA	40		אוטיוטיוט –ט.		GINATIN			.x, b=30	FEIFE		ELECTRICAL	
į l	LOAD DA	TA [PROJECT T	ITL	E	1	1x(VAN	AKE	ORI STPP	NAME						D UP O	N	•
	(ELECTRIC		SYSTEM DEPTT. / SE	СТ	ION	+		L			. PUI RIC <i>I</i>	MPS	SIGN. SHEET 1	OF 1	REV. 00	1			RED O		
			DEF 11./ 3E	-01	ION	\perp L				_011	NICE	1 L	JIILEII	OF 1	IVE 4. 00		DE	JOIN.	& DAIL		

CABLE SCHEDULE FORMAT ANNEXURE III

NITCABLENO FRO	OM T	то	CABLE SCOPE (BHEL PEM/ VENDOR)	REMARKS	CABLESIZE	TENTATIVE CABLE LENGTH
						1
						1
						1
						1
						1
						l
						1
						1
						1
						1
						l
						1
						1
						1
						1

FOR RATE CONTRACT OF

LUBE OIL TRANSFER PUMPS

VOLUME-III

(TECHNICAL SCHEDULES)



BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR PROJECT ENGINEERING MANAGEMENT PPEI,
NOIDA-INDIA



TECHNICAL SPECIFICATION FOR LUBE OIL TRANSFER PUMPS

SPECIFICATION NO. PE-TS	S-408-567-A001
VOLUME III	
SECTION 1	
REV – 00	DATE - 28.04.2015

LIST OF DOCUMENTS TO BE SUBMITTED WITH THE BID

- a. Prebid clarification schedule as per format given under Vol-III, in case of any clarifications.
- b. Deviation schedule as per format given under Vol-III, in case of any deviations by bidder.
- c. Compliance cum confirmation certificate as given under Vol-III.
- d. Stamped copy of unpriced price schedule (section6 of vol-III)
- e. Stamped copy of electrical load list (section 5 of vol-III).

In addition to the above, docs required along with bid given under **electrical portion of specification** shall be furnished by bidder.

NOTES:

OFFER WILL BE CONSIDERED AS INCOMPLETE IN ABSENCE OF ANY OF THE ABOVE DOCUMENTS.

DOCUMENTS OTHER THAN ABOVE, IF ANY, SUBMITTED WITH THE OFFER WILL NOT FORM PART OF CONTRACT AND ACCORDINIGLY WILL NOT BE CONSIDRED FOR BID EVALUATION.



LUBE OIL TRANSFER PUMP

SPECIFICATIO	SPECIFICATION NO. PE-TS-STD-567-A001			
VOLUME : III				
SECTION: 2				
REV: 00 DATE:22.06.2024				
SHFFT 1 OF 1				

VOLUME-III SECTION 2 COMPLIANCE CUM CONFIRMATION CERTIFICATE



TITLE:

TECHNICAL SPECIFICATION

SPEC. NO.:	PE-	TS-STD-567-A	001
VOLUME:	Ш		
SECTION:2			
REV. NO.	0	DATE	
SHEET	1	OF 2	

COMPLIANCE CUM CONFIRMATION CERTIFICATE

COMPLIANCE CUM CONFIRMATION CERTIFICATE

The bidder shall confirm compliance with following by signing/ stamping this compliance certificate (every sheet) and furnish same with the DATE:22.06.2024

- a) The scope of supply, technical details, construction features, design parameters etc. shall be as per technical specification & there are no exclusions ofter than those mentioned under "exclusion" and those resolved as per 'Schedule of Deviations', if applicable, with regard to same.
- b) There are no other deviations w.r.t. specifications other than those furnished in the 'Schedule of Deviations'. Any othe r deviation, stated or implied, taken elsewhere in the offer stands withdrawn unless specifically brought out in the 'Schedule of Deviations'.
- c) Bidder shall submit QP in the eve nt of order based on the guidelines given in th specification & QP enclosed therein. QP will be subject to BHEL/ CUSTOMER approval & customer hold points for inspection/ testing shall be marked in the QP at the contract stage. Inspection/ testing shall be witnessed as per same apart from revie w of various test certificates/ Inspection records etc. This shall be within the contracted price with no extra implications to BHEL after award of the contract.
- d) All drawings/ data-she ets/ calcu lations etc. submitted along with the offer shall be considered for reference only, same shall be subject to BHEL/ CUSTOMER approval in the event of order.
- e) The offered materials shall be eit her equivalent or superior to those specif specification & shall meet the specified/intended duty requirements. In case the material specified in the specifications is not compatible for intended duty requirements then same shall be resolved by the bidder with BHEL during the pre - bid discussions, otherwise BHEL/ Customer's decision shall be binding on the bidder whenever the deficiency is pointed out.
 - For components where materials are not specified, same shall be suitable for intended duty, all materials shall be subject to approval in the event of order.
- f) The commissioning spares shall be supplied on 'As Required Basis' & prices f or same included in the base price itself.
- g) All sub vendors shall be subject to BHEL/ CUSTOMER approval in the event of order.
- h) Guarantee for plant/equipment as applicable, shall be as per relevant clause of GCC /SCC /Other Commercial Terms & Conditions.
- i) In the event of order, all the material required for completing the job at site shall be supplied by the bidder within the ordered price even if the same are additional to approved billing break up, approved drawing or approved Bill of quantities. This clause will apply in case during site commissioning addition al requirements emerges due to customer and/ or consultant's comments. No extra claims shall be put on this account.
- i) Schedule of drawings submissions, comment incorporations & approval shall be as stipulated in the specifications. The successful bidder shall depute his design per rsonnel to BHEL's/ Customer's/ Consultant's office for across the table resolution of issues and to get documents approved in the stipulated time.



TITLE: TECH

	SPEC. NO.: PE-TS-STD-567-A001
HNICAL SPECIFICATION	VOLUME: III
	SECTION:2
ANCE CUM CONFIDMATION	REV. NO. 0 DATE

COMPLIANCE CUM CONFIRMAT CERTIFICATE

	SECTION:	2		
ION	REV. NO.	0	DATE	
ION	SHEET	2	OF 2	

- k) As built drawings shall be submitted as and when required during the project execution.
- I) The bidder has not tempered with this compliance cum confirmation certificate and if at any stage any tempering in the signed copy of this document is noticed th en same shall be treated as breach of contract and suitable actions shall be taken against the bidder.

SIGNATURE:	
NAME :	
DESIGNATION:	
COMPANY:	
DΔΤΕ·	

COMPANY SEAL



LUBE OIL TRANSFER PUMP

SPECIFICATION NO. PE-TS-STD-567-A001					
VOLUME : III					
SECTION: 3					
REV: 00 DATE:22.06.2024					
SHEET 1 OF 1					

VOLUME-III SECTION 3 PRE BID CLARIFICATION SCHEDULE

बी एच ई एन
nthri

PRE-BID CLARIFICATION SCHEDULE

Lube Oil Transfer Pump

SPECIFICATION NO. PE-TS-STD -555-A001
VOLUME III
SECTION 3
REV 00

PRE-BID CLARIFICATION SCHEDULE

S.No. Section/Clause/ Page No.		Statement of the referred clause	Clarification required

The bidder hereby certifies that above mentioned are the only clarifications required on the technical specification for the subject package.

SIGNATURE:
NAME :
DESIGNATION:
COMPANY:
DATE:

COMPANY SEAL



LUBE OIL TRANSFER PUMP

RATE CONTRACT

SPECIFICATION NO. PE-TS-408-567-A001							
VOLUME : III							
SECTION: 4							
REV: 00 DATE:11.07.2024							
SHEET 1 OF 1							

VOLUME-III SECTION 4 SCHEDULE OF TECHNICAL DEVIATION

				ANNEXU	RE-II DEV	ATION SHEET (COST O	F WITHDRAWA	L)			
PROJECT:-						RATE CONTRACT		•			
PACKAGE	:-					LOTP					
TENDER E	NQUIRY :-										
NAME OF	THE BIDDER										
SI. No.	Volume/ Section	Page No.	Clause No.	Technic al Specific ation/Te nder Docume nt No	Complet e Descript ion of Deviatio n	Cost of withdrawal of	Schedule of	Nature of cost of withdrawal of deviation (Positive/Neg ative)	Reasons for quoting deviation		
1	TECHNIC	AL DEVIA	TION								
1.01											
1.02											
1.03											
1.04											
1.05											
1.06											
1.07											
1.08											
2	COMMER	CIAL DEV	/IATION								
2.01											
2.02											
2.03											
2.04											
2.05											
2.06											
2.07											
2.08											

NOTES:

- 1. Cost of Withdrawal of deviation will be applicable on the basic price (i.e. excluding taxes, duties & freight) only.
- 2. All the bidders have to list out all their technical & commercial deviations (if any) in details in the above format.
- 3. Any deviation not mentioned above and shown separately or found hidden in offer, will not be taken cognizance of.
- 4.Bidder shall submit duly filled unpriced copy of above format indicating "quoted" in "cost of withdrawl of deviation" column of the schedule above along with their Techno-commercial offer, wherever applicable. In absence of same, such deviation(s) shall not be considered and offer shall be considered in total compliance to NIT.
- 5. Bidder shall furnish price copy of above format along with price bid.
- 6.The final decision of acceptance/rejection of the deviations quoted by the bidder shall be at discretion of the Purchaser.
- 7. Bidders to note that any deviation (technical/commercial) not listed in above and asked after Part-I opening shall not be considered.
- 8. For deviations w.r.t. Credit Period, Liquidated damages, Firm prices if a bidder chooses not to give any cost of withdrawl of deviation loading as per Annexure-VII of GCC, Rev-07 will apply. For any other deviation mentioned in un-priced copy of this format submitted with Part-I bid but not mentioned in priced copy of this format submitted with Priced bid, the cost of withdrawl of deviation shall be taken as NIL.
- 9. Any deviation mentioned in priced copy of this format, but not mentioned in the un-priced copy, shall not be accepted.
- 10. All techno-commercial terms and conditions of NIT shall be deemed to have been accepted by the bidder, other than those listed in unpriced copy of this format
- 11. Cost of withdrawl is to be given seperately for each deviation. In no event bidder should club cost of withdrawl of more than one deviation else cost of withdrawl of such deviations which have been clubbed together shall be considered as NIL.
- 12. In case nature of cost of withdrawl (positive/negative) is not specified it shall be assumed as positive.
- 13. In case of descrepancy in the nature of impact (positive/ negative), positive will be considered for evaluation and negative for ordering.



LUBE OIL TRANSFER PUMP

SPECIFICATION NO. PE-TS-STD-567-A001						
VOLUME : III						
SECTION: 5						
REV: 00 DATE:22.06.2024						
SHEET 1 OF 1						

VOLUME-III SECTION 5 ELECTRICAL LOAD DATA

	RATING	(KW / A)	<u>@</u>	No	os.	*	*	0	(1)	ш			CAI	BLE				
LOAD TITLE	NAME PLATE	MAX. CONT. DEMAND (MCR)	UNIT (U)/STN (S)			FEEDER CODE**	EMER. LOAD (Y)	CONT.(C)/ INTT.(I)	STARTING TIME >5 SEC (Y)	LOCATION	BOARD NO.	SIZE CODE	NOs	BLOCK CABLE DRG. No.	CONTROL CODE	REMARKS	LOAD No.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
LUBE OIL TRANSFER PUMP	3.7 KW		-	-	-	D	U	-	ı	1								

Note:

- 1. Bidder to confirm that the system provided by them would be catered by the above loads considered by BHEL. In case there is any variation; the same should be clearly stated in the technical offer. No changes would be admissible during detailed engineering stage.
- 2. Bidder to note that for the system being supplied by them, only the above loads will be provided. In case any other load is required the same would be derived /multiplied by bidder on their own from these feeders only.

NOTES: 1. COLUMN 1 TO 12 & 18 SHALL BE FILLED BY THE REQUISITIONER (ORIGINATING AGENCY); REMAINING COLUMNS ARE TO BE FILLED UP BY PEM (ELECTRICAL)

2. ABBREVIATIONS : * VOLTAGE CODE (7):- (ac) A=11 KV, B=6.6 KV, C=3.3 KV, D=415 V, E=240 V (1 PH), F=110 V

(cc): G=220 V, H=110 V, J=48 V, K=+24V, L=-24 V

: ** FEEDER CODE (8):- U=UNIDIRECTIONAL STARTER, B=BI-DIRECTIONAL STARTER, S=SUPPLY FEEDER, D=SUPPLY FEEDER (CONTACTER CONTROLLED)



LOAD DATA (ELECTRICAL)

JOB NO.		OR	IGINATIN	IG AGENCY	PEM (ELE	CTRICAL)
PROJECT TITLE	RATE CONTRACT	NAME			DATA FILLED UP ON	
SYSTEM	LUBE OIL PUMPS	SIGN.			DATA ENTERED ON	
DEPTT. / SECTION	ELECTRICAL	SHEET 1	OF 1	REV. 00	DE'S SIGN. & DATE	5 - 400
						Page 74 of 80



LUBE OIL TRANSFER PUMP

SPECIFICATION NO. PE-TS-STD-567-A001							
VOLUME : III	VOLUME : III						
SECTION: 6							
REV: 00	REV: 00 DATE:22.06.2024						
SHEET 1 OF	CHEET 1 OF 1						

VOLUME-III SECTION 6 SUGGESTIVE PRICE FORMAT

बी ए	गर्ड एत								ANNEXURE- I	
H	PRICE FOR	RMAT-RATE C	ONTRACT FO	R LUBE OII	L TRANSFER PUM	P				
S.No	Description of equipment / item	HSN CODE	TOTAL TENTATIVE QUANTITY	UOM	UNIT PRICE EX-WORKS (DULY PACKED) (Rs)	TOTAL PRICE EX-WORKS (DULY PACKED) (Rs)	FREIGHT CHARGES WITHOUT GST @ % OF TOTAL EX WORKS (INR) (RS.)	APPLICABLE GST RATE % ON (TOTAL EX WORKS + FREIGHT) (INR)	TOTAL F.O.R. SITE PRICE (Rs.)	
1	2		3	4	5	6	7	8	9	
1.0.0	Total lump sum firm price inclusive of all prevailing taxes, duties and other levies for SUPPLY PART comprising of design (i.e. preparation and submission of drawing /documents including "As Built" drawings and O&M manuals), engineering, manufacture, fabrication, assembly, inspection / testing at vendor's & sub-vendor's works, painting, maintenance tools & tackles, fill of lubricants & consumables, forwarding, proper packing, shipment and delivery at site complete with all accessories alongwith spares for erection, startup and commissioning, additional items, essential spares and Supervision of Erection and Comissioning for the total scope defined as per BHEL's NIT & tender technical specification, amendment & agreements till placement of order.					TO BE QUOTED =	Derived	Derived	Derived	
1.1.1	Pump & motor set duly coupled and unitised on a common base frame with coupling guard, foundation bolts, flanges, companion flanges with nuts bolts and gaskets, drip pan with plugged draining arrangement with one set of commissioning spares comprising of one no. mechanical seal and one no. gasket compound tube/one set gasket for pump. Rated Capacity 6600 LPH and rated discharge pressure as 2 kg/cm2 (g), inlet/outlet size as 80NB/80NB	8413 60 10	10	NOS	To be quoted			D % TO BE QUOTED	Derived	
1.1.2	Strainer complete with flanges, companion flanges with nuts bolts and gaskets, foundation bolts (if applicable) with nuts and washers, 15 NB vent and drain connections provided with CS ball valves, 15 NB vent & drain pipe each 5 ft long with one set of commissioning spares comprising of one set gasket for strainer. Duplex Strainer - Rated Capacity 6600 LPH, inlet/outlet size as 80NB/80NB	8413 60 10	10	NOS	To be quoted	: Column 5)			Derived	
1.2.1	Pump & motor set duly coupled and unitised on a common base frame with coupling guard, foundation bolts, flanges, companion flanges with nuts bolts and gaskets, drip pan with plugged draining arrangement with one set of commissioning spares comprising of one no. mechanical seal and one no. gasket compound tube/one set gasket for pump. Rated Capacity 8250 LPH and rated discharge pressure as 2 kg/cm2 (g), inlet/outlet size as	8413 60 10	26	NOS	To be quoted	Derived (Column 3 x Column 5)	% TO BE QUOTED		Derived	
	80NB/80NB					ď				
1.2.2	Strainer complete with flanges, companion flanges with nuts bolts and gaskets, foundation bolts (if applicable) with nuts and washers, 15 NB vent and drain connections provided with CS ball valves, 15 NB vent & drain pipe each 5 ft long with one set of commissioning spares comprising of one set gasket for strainer.	8413 60 10	26	NOS	To be quoted				Derived	
	Duplex Strainer - Rated Capacity 8250 LPH, inlet/outlet size as 80NB/80NB									
1.3.0	Supervision of erection and commissioning of Lube Oil Transfer Pump and its Bidder to fill up)	accessories (Bre	ak up as per An	nexure II:	Total price with GST i	s to be derived from Ar	nnexure-II			
1.4.0	Mandatory Spares for Lube Oil Transfer Pumps (Break up as per Annexure I	II: Bidder to fill	up)		Total price with freight and GST is to be derived from Annexure-III					
1.5.0	GRAND TOTAL (1.1.1+1.1.2+1.2.1+1.2.2+1.3.0-	+1.4.0)	-						Derived = Rs Y	
Note:-							· · ·	•		

^{1.} Bidder to note that evaluation shall be on Grand Total Ex works price + Freight charges, however, Bidder to quote total Ex works of the LUBE OIL TRANSFER PUMPS mentioned at 1.1.1 to 1.2.2(Rs X) only as per the BOQ above. The item wise break up of Ex works prices (Unit as well as Total) for all the items in the BOQ shall be quoted by the bidders. Bidder also need to indicate taxes percentage in the respective column and freight percentage of Ex works value considering delivery anywhere in India in the freight column.

^{2.} Rate contract shall be decided on the basis of grand Total Ex works price + Freight charges of Total BOQ

^{3. %} Freight as quoted for Main Supply items, same shall also be considered for Mandatory spares.

^{4.} Value is to be filled only where "to be quoted" is mentioned and for other columns where "derived" is mentioned same shall be derived by BHEL as indicated.

- 5. Bidder to note that grand total price indicated above at 1.5.0 shall be considered for evaluation and hence should be complete in all respect for the full scope defined and considering all terms and conditions agreed.
 6. Prices shall remain firm during contract execution.
 7. For any Technical clarification please refer Technical Specification No-PE-TS-STD-567-A001
 8. Bidder to fill up prices for mandatory spares & supervision of E&C.
 9. Bidder to note that variation in quantity shall be +/- 30%.



ANNEXURE- II TO RATE CONTRACT

PRICE FORMAT FOR SERVICE PART (SUPERVISION OF ERECTION AND COMISSIONING) -RATE CONTRACT FOR LUBE OIL TRANSFER PUMPS

S.NO	DESCRIPTION OF EQUIPMENT / ITEM		UOM	HSN CODE	UNIT PRICE EX-WORKS (RS)	TOTAL PRICE EX-WORKS (RS)	APPLICABLE GST RATE % ON TOTAL EX- WORKS	TOTAL F.O.R. SITE PRICE (RS.)
1	2	3	4	5	6	7	8	9
1.3.0	SERVICE part comprising of Supervision of erection and commissioning of Lube Oil Transfer Pumps and its accessories.							
1.3.0.1	Lump sum dvisit charges for engineer including travel charges	36	NOS.					
1.3.0.2	LIMP SUM DAILY CVHARGES FOR ENGINEER.	252	NOS.					
	GRAND TOTAL [1.3.0.1 to 1.3.0.2]							

ABOVE QUOTED UNIT RATES SHALL BE CONSIDERED FOR EVALUATION AND SUBSEQUENT ORDERING SHALL AS PER ACTUAL PROJECT REQUIREMENT

बी एचई ए	m)		ANNEXURE- III TO R	ATE CONTRACT				
milie	7	MAN	DATORY SPARES- LUB	E OIL TRANSFER P	UMPS			
HIJE		PRICE FORMAT	- MANDATORY SPARES	S FOR LUBE OIL TR	ANSFER PUMPS			
S.No		QUANTITY	HSN CODE	UNIT PRICE EX- WORKS (DULY PACKED) (Rs)	TOTAL PRICE EX- WORKS (DULY PACKED) (Rs)	FREIGHT CHARGES WITHOUT GST @ % OF TOTAL EX WORKS (INR) (RS.)	APPLICABLE GST RATE % ON (TOTAL EX WORKS + FREIGHT) (INR)	TOTAL F.O.R. SITE PRICE (Rs.)
1	2	3	4	5	6	7	8	9
	MANDATORY SPARES							
A	Spares for Lube oil Transfer Pump, Cap. 6600 LPH and rated discharge pressure as 2 kg/cm2 (g)							
1.00	Driving & Driven Gear	1 Set						
2.00	Mechanical seal /Oil Seals/ O-rings	1 Set						
3.00	Pump-Motor coupling	1 Set						
4.00	Pump Bearings	1 Set						
5.00	Motor bearing-driving end	5 Set						
6.00	Motor bearing -non driving end	5 Set						
7.00	Drive Motor (Energy effcient)	1 Set						
8.00	Terminal plates	11 Nos.						
9.00	Greasing arrangements	5 Set						
10.00	End Shield Cover Driving & Non-Driving End	1 Set						
11.00	Motor Terminal Block	1 Set						
12.00	Cooling Fan	1 Set						
13.00	Transfer oil pumps (set comprising of pumps along with motor)	1 Set						
14.00	Duplex oil filters/ strainers (complete set consisting of cartridges,gaskets, 'O' rings except housing)	2 Set						
В	Spares for Lube oil Transfer Pump, Cap. 8250 LPH and rated discharge pressure as 2 kg/cm2 (g)							
15.00	Driving & Driven Gear	1 Set						
16.00	Mechanical seal /Oil Seals/ O-rings	5 Set						
17.00	Pump-Motor coupling	6 Set						
18.00	Pump Bearings	4 Set						
19.00	Motor bearing-driving end	11 Set						
20.00	Motor bearing -non driving end	11 Set						
21.00	Drive Motor (Energy effcient)	6 Set						
22.00	Terminal plates	11 Nos.						
23.00	Greasing arrangements	5 Set						
24.00	End Shield Cover Driving & Non-Driving End	2 Set						
25.00	Motor Terminal Block	2 Set						
26.00	Cooling Fan	2 Set						
27.00	Transfer oil pumps (set comprising of pumps along with motor)	1 Set						
28.00	Duplex oil filters/ strainers (complete set consisting of cartridges,gaskets, 'O' rings except housing)	2 Set						
	Total (1 to 28)							
	GRAND TOTAL OF [A to B]							
	NOTE		E OIL TO AN 2222 2000	 	D AND ENGINEER	D OFOTION III OF THE CO	AL OPERIENCE STATE OF	TO OTD
1)	ONE SET SHALL MEAN 100% REQUIREMENT FOR ONE COMPI ABOVE QUOTED UNIT RATES SHALL BE CONSIDERED FOR O				K ANNEXURE II , SU	R SECTION HA OF TECHNIC	CAL SPECIFICATION NO PE-	1S-S1D-567-A00

³⁾ In case spares indicated in the list are not applicable to the particular design offered by the bidder, the bidder should offer spares applicable to offered design with Quantities generally in line with the approach followed in the above list.

Page 1 of 1 Page 79 of 80

				ANNEXU	RE-II DEV	IATION SHEET (COST O	F WITHDRAWA	L)	
PROJECT:-									
PACKAGE	:-								
TENDER E	NQUIRY :-								
NAME OF THE BIDDER									
SI. No.	Volume/ Section	Page No.	Clause No.	Technic al Specific ation/Te nder Docume nt No	Complet e Descript ion of Deviatio n	Cost of withdrawal of deviation to be entered by the bidder	Schedule of	of doviction	Reasons for quoting deviation
1	TECHNIC	AL DEVIA	TION						
1.01									
1.02									
1.03									
1.04									
1.05									
1.06									
1.07									
1.08									
2	COMMER	CIAL DEV	/IATION						
2.01									
2.02									
2.03									
2.04									
2.05									
2.06									
2.07									
2.08									

NOTES:

- 1. Cost of Withdrawal of deviation will be applicable on the basic price (i.e. excluding taxes, duties & freight) only.
- 2. All the bidders have to list out all their technical & commercial deviations (if any) in details in the above format.
- 3.Any deviation not mentioned above and shown separately or found hidden in offer, will not be taken cognizance of.
- 4.Bidder shall submit duly filled unpriced copy of above format indicating "quoted" in "cost of withdrawl of deviation" column of the schedule above along with their Techno-commercial offer, wherever applicable. In absence of same, such deviation(s) shall not be considered and offer shall be considered in total compliance to NIT.
- 5. Bidder shall furnish price copy of above format along with price bid.
- 6.The final decision of acceptance/rejection of the deviations quoted by the bidder shall be at discretion of the Purchaser.
- 7.Bidders to note that any deviation (technical/commercial) not listed in above and asked after Part-I opening shall not be considered.
- 8. For deviations w.r.t. Credit Period, Liquidated damages, Firm prices if a bidder chooses not to give any cost of withdrawl of deviation loading as per Annexure-VII of GCC, Rev-07 will apply. For any other deviation mentioned in un-priced copy of this format submitted with Part-I bid but not mentioned in priced copy of this format submitted with Priced bid, the cost of withdrawl of deviation shall be taken as NIL.
- 9. Any deviation mentioned in priced copy of this format, but not mentioned in the un-priced copy, shall not be accepted.
- 10. All techno-commercial terms and conditions of NIT shall be deemed to have been accepted by the bidder, other than those listed in unpriced copy of this format.
- 11. Cost of withdrawl is to be given seperately for each deviation. In no event bidder should club cost of withdrawl of more than one deviation else cost of withdrawl of such deviations which have been clubbed together shall be considered as NIL.
- 12. In case nature of cost of withdrawl (positive/negative) is not specified it shall be assumed as positive.
- 13. In case of descrepancy in the nature of impact (positive/ negative), positive will be considered for evaluation and negative for ordering.



PROJECT: Rate contract

PRE-QUALIFICATION REQUIREMENT- LUBE OIL TRANSFER

DOC NO.: PE-F	Q- XXX-567-A001
DATE	05.08.2024
REV NO	0

1.0	The following technical details are required from bidder to comply technical PQR:
	a) LUBE OIL PUMPS should be of GEAR type.
2.0	b) Pump should be designed as per API-676. Supplier should have capabilities for design/manufacturing and having in-house / out—
	Supplier should have capabilities for design/manufacturing sourced facility for these pumps meeting the requirements as per sl.no. 1.0 Above. The supplier has to submit either of following supporting documents meeting above
3.0	mentioned pre-qualifying requirement. a) Copy of minimum one (1) performance certificate in English from end user along with copy of related Purchase Order (PO) or letter of intent (LOI) or letter of award (LOA) or work order (WO) specifying that the product/equipment is running successfully for one (1) year from date of commissioning meeting the minimum pre-qualifying requirement. OR b) Minimum two PO/LOI/LOA/WO placed with a minimum gap of six (6) months from same purchaser meeting the minimum pre-qualifying requirement. OR c) Minimum one PO/LOI/LOA/WO after commissioning of first order from same purchaser meeting the minimum pre-qualifying requirement. OR d) In case, vendor has executed contract (s) for BHEL-PEM, internal assessment by BHEL-PEM shall be followed for evaluation for satisfactory performance. For this, vendor, vendor to submit the request along with relevant documents. OR e) Minimum three customer's /third party's inspection reports/ test certificates/
	commissioning certificates meeting the minimum pre-qualifying requirements.
4.0	Bidder shall submit design documents to substantiate technical parameters specified in PQR, if the same is not mentioned in performance certificate/purchase order.
5.0	Bidder should have manufactured and supplied Eighteen (18) Nos of gear pump during the last two (2) preceding years from the date of bid submission. Relevant material dispatch clearance certificate (MDCC)/Material receipt certificate (MRC)/Lorry receipt(LR)/ supply invoice shall be submitted to establish the above.
6.0	Bidder to submit all supporting documents in English. If documents submitted by bidder are in language other than English, a self-attested English translated document should also be submitted.
7.0	Notwithstanding anything stated above, BHEL reserve the right to assess the capabilities and capacity of the bidder/ collaborator to perform the contract, should the circumstances warrant such assessment in the overall interest of BHEL.
8.0	Consideration of offer shall be subject to customer's approval of bidder, if applicable.
9.0	After satisfactory fulfilment of all the above criteria/ requirement, offer shall be considered for further evaluation as per NIT and all other terms of the tender.
10.0	The bidder shall meet PQR based on its own credentials. Bid from joint venture company / Consortium bid is not acceptable.

Approved By

SK Bhami

05/08/2124

TENTATIVE PROJECT LIST FOR FRAMEWORK AGREEMNT (RATE CONTRACT) OF LUBE OIL TRANSFER PUMPS

S.No	Project Name
1	2X800MW NTPC LARA STPP-STAGE II EPC
2	2 X 800 MW MEL SINGRAULI (PH-II) TPP -BANDHAURA
3	2X800 MW NTPC SINGRAULI STPP STAGE III
4	1x800MW Yamunanagar TPS Extn
5	3x800 MW NLC Talabira (NTTPP)
6	2 X 800 MW (APL) RAIGARH (PH-II) TPP
7	2x800 MW ADANI Raipur (Ph-II) USTPP
8	2x800 MW ADANI Mirzapur (Ph-I)
9	2 X 800 MW MEL SINGRAULI STAGE-III TPP -BANDHAURA
10	2X800 MW DVC Koderma Ph-II TPP
11	2x800 MW KAWAI-PH-II
12	2x800 MW KAWAI-PH-III
13	1 X 800 MW GSECL Ukai TPP
14	1X660 MW MPPGCL Amarkantak TPP Unit 6
15	2X660 MW Koradi TPP Unit 11 & 12
16	2 X 660 MW CSPGCL Korba West TPP
17	1 X 660 MW MPGCL Satpura TPP
18	2X660 MW NLCIL Neyveli TPP-II 2nd Expansion

Annexure-I PRICE FORMAT-RATE CONTRACT FOR LUBE OIL TRANSFER PUMP त्री एगर्ड एल FREIGHT CHARGES TOTAL PRICE EX-APPLICABLE GST RATE % UNIT PRICE EX-WORKS WITHOUT GST @ % OF TOTAL TENTATIVE ON (TOTAL EX WORKS + TOTAL F.O.R. SITE PRICE WORKS Description of equipment / item HSN CODE UOM (DULY PACKED) TOTAL EX WORKS QUANTITY (DULY PACKED) FREIGHT) (Rs.) (Rs) (INR) (INR) (Rs) RS.) 2 3 4 5 6 7 8 9 1.0.0 Total lump sum firm price inclusive of all prevailing taxes, duties and other levies for SUPPLY PART comprising of design (i.e. preparation and submission of drawing /documents including "As Built" drawings and O&M manuals), engineering, manufacture, fabrication, assembly, inspection / testing at vendor's & sub-vendor's works, painting, maintenance tools & tackles, fill of lubricants & consumables, forwarding, proper packing, shipment and delivery at site complete with all accessories alongwith spares for erection, startup and commissioning, additional items ,essential spares and Supervision of Erection and Comissioning for the total scope defined as per BHEL's NIT & tender technical specification, amendment & agreements till placement of Pump & motor set duly coupled and unitised on a common base frame with coupling guard, foundation bolts, flanges, companion flanges with nuts bolts and gaskets, drip pan with plugged draining arrangement with one set of commissioning spares comprising of one no. mechanical seal and one no. gasket compound tube/one set gasket 1.1.1 8413 60 10 10 NOS for pump. Rated Capacity 6600 LPH and rated discharge pressure as 2 kg/cm2 (g), inlet/outlet size as 80NB/80NB Strainer complete with flanges,companion flanges with nuts bolts and gaskets, foundation bolts (if applicable) with nuts and washers, 15 NB vent and drain connections provided with CS ball valves, 15 NB vent & drain pipe 1.1.2 each 5 ft long with one set of commissioning spares comprising of one set gasket for strainer. 8413 60 10 NOS 10 Duplex Strainer - Rated Capacity 6600 LPH, inlet/outlet size as 80NB/80NB Pump & motor set duly coupled and unitised on a common base frame with coupling guard, foundation bolts flanges, companion flanges with nuts bolts and gaskets, drip pan with plugged draining arrangement with one set of commissioning spares comprising of one no. mechanical seal and one no. gasket compound tube/one set gasket 1.2.1 8413 60 10 26 NOS for pump Rated Capacity 8250 LPH and rated discharge pressure as 2 kg/cm2 (g), inlet/outlet size as 80NB/80NB Strainer complete with flanges, companion flanges with nuts bolts and gaskets, foundation bolts (if applicable) with nuts and washers, 15 NB vent and drain connections provided with CS ball valves, 15 NB vent & drain pipe each 5 ft long with one set of commissioning spares comprising of one set gasket for strainer. 1.2.2 8413 60 10 26 NOS Duplex Strainer - Rated Capacity 8250 LPH, inlet/outlet size as 80NB/80NB Supervision of erection and commissioning of Lube Oil Transfer Pump and its accessories (Break up as per Annexure II: Bidder to fill up)(Total price with GST is to be derived from Annexure-II) Mandatory Spares for Lube Oil Transfer Pumps (Break up as per Annexure III: Bidder to fill up) (Total price with freight and GST is to be derived from Annexure-III) GRAND TOTAL (1.1.1+1.1.2+1.2.1+1.2.2+1.3.0+1.4.0) 1.5.0 Derived = Rs Y

Note:-

. Bidder to note that evaluation shall be on Grand Total Ex works price + Freight charges, however, Bidder to quote total Ex works of the LUBE OIL TRANSFER PUMPS mentioned at 1.1.1 to 1.2.2(Rs X) only as per the BOQ above. The item wise break up of Ex works prices (Unit as well as Total) for all the items in the BOQ shall be quoted by the bidders. Bidder also need to indicate taxes percentage in the respective column and freight percentage of Ex works value considering delivery anywhere in India in the freight column.

- Rate contract shall be decided on the basis of grand Total Ex works price + Freight charges of Total BOQ
- 8. % Freight as quoted for Main Supply items, same shall also be considered for Mandatory spares.
- I. Value is to be filled only where "to be quoted" is mentioned and for other columns where "derived" is mentioned same shall be derived by BHEL as indicated.
- . Bidder to note that grand total price indicated above at 1.5.0 shall be considered for evaluation and hence should be complete in all respect for the full scope defined and considering all terms and conditions agreed.
- Prices shall remain firm during contract execution.
- '. For any Technical clarification please refer Technical Specification No-PE-TS-STD-567-A001
- Bidder to fill up prices for mandatory spares & supervision of E&C
- Bidder to note that variation in quantity shall be +/- 30%. 10. Services charges shall not exceed 2% of the Total contract value.
- In case Service charge components is above 2% Total quoted Price, BHEL shall re-adjust the prices accordingly.



ANNEXURE- II TO RATE CONTRACT

PRICE FORMAT FOR SERVICE PART (SUPERVISION OF ERECTION AND COMISSIONING) -RATE CONTRACT FOR LUBE OIL TRANSFER PUMPS

S.NO	DESCRIPTION OF EQUIPMENT / ITEM	TOTAL TENTATIVE QUANTITY	UOM	HSN CODE	UNIT PRICE EX-WORKS (RS)	TOTAL PRICE EX-WORKS (RS)	APPLICABLE GST RATE % ON TOTAL EX- WORKS	TOTAL F.O.R. SITE PRICE (RS.)
1	2	3	4	5	6	7	8	9
1.3.0	SERVICE part comprising of Supervision of erection and commissioning of Lube Oil Transfer Pumps and its accessories.							
1.3.0.	Lump sum dvisit charges for engineer including travel charges	36	NOS.					
1.3.0.2	LIMP SUM DAILY CVHARGES FOR ENGINEER.	252	NOS.					
	GRAND TOTAL [1.3.0.1 to 1.3.0.2]							

ABOVE QUOTED UNIT RATES SHALL BE CONSIDERED FOR EVALUATION AND SUBSEQUENT ORDERING SHALL AS PER ACTUAL PROJECT REQUIREMENT.



ANNEXURE- III TO RATE CONTRACT

MANDATORY SPARES- LUBE OIL TRANSFER PUMPS

PRICE FORMAT- MANDATORY SPARES FOR LUBE OIL TRANSFER PUMPS

S.No		QUANTITY	HSN CODE	UNIT PRICE EX- WORKS (DULY PACKED) (Rs)	TOTAL PRICE EX- WORKS (DULY PACKED) (Rs)	FREIGHT CHARGES WITHOUT GST @ % OF TOTAL EX WORKS (INR) (RS.)	APPLICABLE GST RATE % ON (TOTAL EX WORKS + FREIGHT) (INR)	TOTAL F.O.R. SITE PRICE (Rs.)
1	2	3	4	5	6	7	8	9
	MANDATORY SPARES							
A	Spares for Lube oil Transfer Pump, Cap. 6600 LPH and rated discharge pressure as 2 kg/cm2 (g)							
1.00	Driving & Driven Gear	1 Set						
2.00	Mechanical seal /Oil Seals/ O-rings	1 Set						
3.00	Pump-Motor coupling	1 Set						
4.00	Pump Bearings	1 Set						
5.00	Motor bearing-driving end	5 Set						
6.00	Motor bearing -non driving end	5 Set						
7.00	Drive Motor (Energy effcient)	1 Set						
8.00	Terminal plates	11 Nos.						
9.00	Greasing arrangements	5 Set						
10.00	End Shield Cover Driving & Non-Driving End	1 Set						
11.00	Motor Terminal Block	1 Set						
12.00	Cooling Fan	1 Set						
13.00 14.00	Transfer oil pumps (set comprising of pumps along with motor) Duplex oil filters/ strainers (complete set consisting of cartridges,gaskets, 'O' rings except housing)	1 Set 2 Set						
В	Spares for Lube oil Transfer Pump, Cap. 8250 LPH and rated discharge pressure as 2 kg/cm2 (g)							
15.00	Driving & Driven Gear	1 Set						
16.00	Mechanical seal /Oil Seals/ O-rings	5 Set						
17.00	Pump-Motor coupling	6 Set						
18.00	Pump Bearings	4 Set						
19.00	Motor bearing-driving end	11 Set						
20.00	Motor bearing -non driving end	11 Set						
21.00	Drive Motor (Energy effcient)	6 Set						
22.00	Terminal plates	11 Nos.						
23.00	Greasing arrangements	5 Set						
24.00	End Shield Cover Driving & Non-Driving End	2 Set						
25.00	Motor Terminal Block	2 Set						
26.00	Cooling Fan	2 Set						
27.00	Transfer oil pumps (set comprising of pumps along with motor)	1 Set						
28.00	Duplex oil filters/ strainers (complete set consisting of cartridges,gaskets, '0' rings except housing)	2 Set						
	Total (1 to 28)							
	GRAND TOTAL OF [A to B]							
	NOTE			1 11 11 11 11 11	1 1 10 10 11	DE TO OTD 507 465 :		
1)	One set shall mean 100% requirement for one complete set of lube			, sub section IIA of te	chnical specification r	10 PE-1S-STD-567-A001.		
2)	Above quoted unit rates shall be considered for ordering as per actu- In case spares indicated in the list are not applicable to the particular				1: 11 / 65 11 :			and the Alexander and the

				C	OST OF WITHDRAWAL							
PROJECT:-							Framework Agreement (Rate Contract)					
PACKAGE :-							MPS					
TENDER E	NQUIRY :-											
NAME OF	THE BIDDER											
SI. No.	Volume/Section	Page No.	Clause No.	Technical Specification/Tender Document No	Complete Description of Deviation	Cost of withdrawal of deviation to be entered by the bidder in	Reference of price Schedule of which Cost of Withdrawal of Deviation is applicable	Nature of cost of withdrawal of deviation (Positive/Negati ve)	Reasons for quoting deviation			
1	TECHNICAL DEVIATION											
1.01												
1.02												
1.03												
1.04												
1.05												
2	COMMERCIAL DEVIATION											
2.01												
2.02												
2.03												
2.04												
2.05												

NOTES:

Make In India certification

Letter head of Company/Cost Audi	tor/Statutory Auditor
Ref.	Date
To, Bharat Heavy Electricals Limited PEM, PPEI Building, Plot No 25, Sector -16A, Noida (U.P)-201301	
Subject: - Certification regarding L	ocal Content
Reference: Enquiry No.	
Name of Package: FRAMEWORI OIL TRANSFER PUMPS	K AGREEMENT (RATE CONTRACT) LUBE
(RATE CONTRACT) LUBE OIL line with NIT and Public Procurer	ered by us of "FRAMEWORK AGREEMENT TRANSFER PUMPS" meets the requirement in ment (Preference to Make in India), Order 2017 9.05.2019, 04.06.20 & 16.09.20, 19.07.2024 and
Local Content:%	
We further confirm that details of lo	ocation at which the local value addition will be
(complete address of the works	······································
Yours truly (authoriz	ed signatory of company)
(authoriz	

Land Border Certificate

Dated:	
Tender Title:	
This has reference to order no. F.No.7/10/2021-PPD, Ministry of Finance, Department Public Procurement Division. We, M/sthe following:	•
I have read the clause regarding restrictions on procurement from a bidder of a country land border with India and on sub-contracting to contractors from such countries; I cert M/s is not from such a count	tify that this
I hereby certify that this M/srequirements in this regard and is eligible to be considered.	fulfills all

Signature with Company seal