

	PPX-BOI DEPARTMENT BHARAT HEAVY ELECTRICALS LIMITED HEEP: HARDWAR-249 403 (Uttarakhand) TEL: +91 1334 28 4175 / 1670	PACKAGE: OIL MODULE & IT'S MANDATORY SPARES PROJECT: 2X660 MW Korba West
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INDEX

Document description	Page No. of PDF file
Overview of Oil Module (Doc. No.: 4-11939-S5811 Rev01 dt. 05/03/2025) <u>(Complete Specifications will be furnished to suppliers only against exchange of signed FCA (Framework Confidentiality Agreement) with BHEL)</u>	Pg. No. 02 to 05
FCA (Framework Confidentiality Agreement)	Pg. No. 06 to 12
Pre-Qualification Requirement (PQR) of Oil Module (Doc. No.: 4-11939-J8810 Rev.01 Dated 07.06.2025)	Pg. No. 13 to 15
CHECK LIST (PED) ANNEXURE-B (Doc. No.: 4-11939-L2511)	Pg. No. 16 to 19
CHECK LIST (CIE) ANNEXURE-A (Doc. No.: 4-18101-I6-010A)	Pg. No. 20 to 24
Integrity Pact	Pg. No. 25 to 29
NTPC Sub-Vendor Questionnaire Format	Pg. No. 30 to 31
Format for Quality Plan	Pg. No. 32



1. OVERVIEW OF OIL MODULE

Oil Module has the following functions:-

- To supply lubrication oil to steam turbine bearings.
- To filter lubrication oil

Oil Module consists of the following equipments whose technically binding parameters are informed to vendors in purchase specification:-

MAIN OIL TANK (MOT): This is a reservoir to store oil. Upon return from bearings, oil comes inside MOT where it is made to de-aerate itself by use of an internal baffle plate inside MOT. On the top of MOT are mounted many other equipments such as pumps, oil mist eliminator etc. During operation of pumps and oil mist eliminator, tank is subject to vibration loads. Tank is also subject to load of fluid. Complete design and fabrication of the Main Oil Tank is in scope of Oil Module supplier. Seismic requirements are also to be factored in while designing of tank. Size of Main Oil Tank is given in Clause No. 4. During normal operation, the tank is filled with Oil which is Turbine Oil ISO VG46. Further details of this Oil may be requested from BHEL by vendor. Tank is designed for re-circulation frequency of oil <8.4.

MAIN OIL PUMP (MOP): 2 X 100% vertical centrifugal Main Oil Pumps + their AC Motors are installed on top of MOT. These run 24x7 and are used to supply lube oil to bearings of Turbine-Generator set during normal operation. Make and model number is mentioned in purchase specification.

EMERGENCY OIL PUMP (EOP): One no. or two nos. vertical centrifugal Emergency Oil Pump + its DC motor is installed on top of MOT. It is used to supply lube oil to bearings during emergency operation. Make and model number is mentioned in purchase specification.

LIFTING OIL PUMP (JOP): 2 X 100% horizontal positive displacement (vane type) Lifting Oil Pump + their motors are installed on top of MOT. It is used to supply oil to bearings to lift Steam Turbine rotor train. Make and model number is mentioned in purchase specification. The circuit of Lifting Oil Pump is referred to as Lifting Oil Line. Rest all lines are named as lube oil lines.

LUBE OIL AND LIFTING OIL FILTER: 2 x 100% duplex type filters are installed in both the lube oil line and lifting oil line. Make and model number is mentioned in purchase specification.

OIL MIST ELIMINATOR (OME): 2 x 100% Oil Mist Eliminator (a.k.a Oil Vapor Exhauster) serves to suck oil+vapor mixture from the turbine bearing system as well as MOT. Make and model number is mentioned in purchase specification.

3-WAY TEMPERATURE CONTROL VALVE: This is a motorized valve and has two inlet ports (one each for hot and cold oil) and one outlet port. This is a mixing type of valve. Also opening and closing of hot and cold inlet ports is automated to achieve a constant outlet flow at a desired set temp.. Make and model number is mentioned in purchase specification.

INTERCONNECTING PIPING: The interconnecting piping can be broadly divided into following 5 system:-

- Lube Oil Supply System Piping
- Lifting Oil Piping
- Oil Return Piping
- Oil Vapor Exhaust Piping
- Drain Piping.

The design of Lifting Oil Piping is critical to Oil Module and is important.

For the purpose of this enquiry, the Oil Module mentioned in this document is meant and understood. Other Oil Modules are not meant and not understood.

Worked & Checked	HS DOGRA/SM-STE(TL)
Approved	A JAIN/SDGM-STE(TL)
	Name



A photograph of Oil Module is shown below for better understanding.

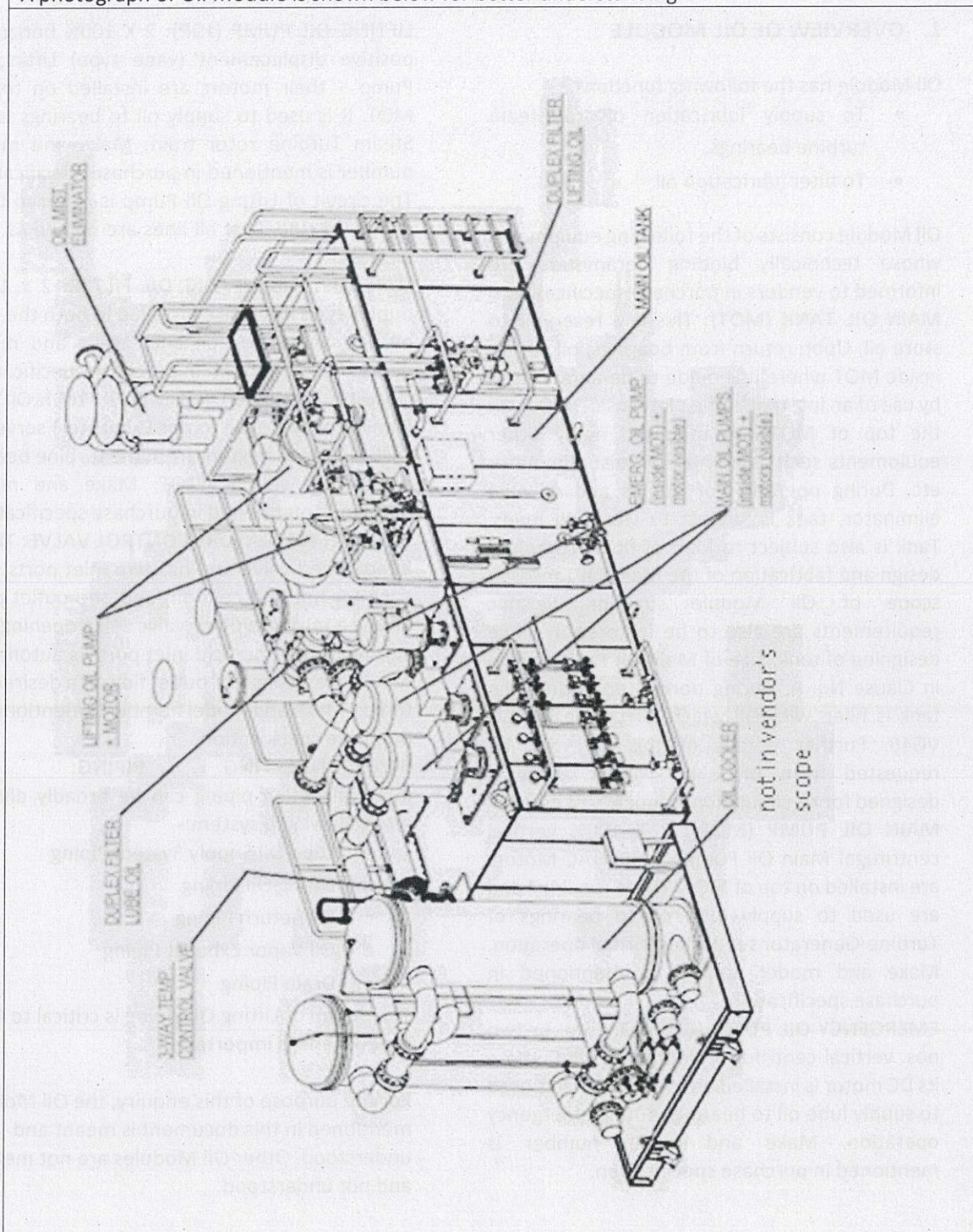


Figure-1: Photograph showing requirement of items in Oil Module. Oil Cooler is shown here, but it is not part of Oil Module.

Worked & Checked	HS DOGRA/SM-STE(TL)	<i>Heugh</i> 5/2/25
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	Name	



OVERVIEW OF OIL MODULE

Doc. NO.: 4-11939-S5811

Rev 01

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Table-1 below shows system requirement at the interfaces.

Description	Medium	Pressure		Temperature	
		Operating (bar)	Design (bar)	Operating (°C)	Design (°C)
Lube Oil Pipes	Oil	6	8	50	80
Lifting Oil Pipes	Oil	175	200*	70	80
Return Oil Pipes	Oil	De-pressurised	2.5	70	80
Oil Vapor Exhaust Pipes	Air and Oil Particles	slight vacuum	2.5	70	80
* A safety margin for piping wall thickness shall be used here, with design for 250bar to accommodate loads other than design parameters.					
TABLE-1: system requirement at the interfaces					

2. NOMENCLATURE OF OIL MODULE

Refer following table for Nomenclature of Oil Modules.

Module Size	Volume of Oil Inside tank during normal operation (m ³)	Volume of Tank (m ³)	Nominal Size of Tank	Lube Oil Flow rate (liter per sec)	Approx. dimensions of tank (L x b x h) in meters
M	19	28	19/28	>27.7...≤44.4	6.95 x 3 x 1.7
L1	24	38	24/38	>44.4...≤55.5	7.8 x 3 x 2
L2	32	45	32/45	>55.5...≤69.4	9.2 x 3 x 2
TABLE 2: Nomenclature of Oil Module					

Worked & Checked	HS DOGRA/SM-STE(TL)	5/3/25
Approved	A JAIN/SDGM-STE(TL)	5/3/25
	Name	
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3. DESIGN

i. Design of Oil Module and Main Oil Tank is in scope of Oil Module supplier. As the tank is an integral part of the module structure, which shall endure heavy loads during lifting and transportation, static calculation shall be performed for the entire structure. In all cases the bottom of the module shall be oil-tight. Attention shall be paid to the specific conditions (e.g. seismic requirements). Vendor should have experience of design according to DIN 6625 Part 2 or equivalent standard. The following is an indicative, not exhaustive, list of aspects to be considered in analysis of Oil Tank:

- a. Full scale equipment modelling on the tank.
- b. Equipment lifting analysis.
- c. Earthquake analysis with oil.
- d. Load case combination application.
- e. Detailed model analysis.
- f. Harmonic analysis (for different load cases).
- g. Superimposition of results of model analysis to Harmonic analysis
- h. Finding of worst case scenario.
- i. Finalizing of Oil Module configuration.

BHEL expresses no claim as to exhaustiveness of above aspects. It shall be vendor's responsibility to understand equipment's requirement completely and comprehensively; The responsibility of correct design, and hence correct functioning/operation of the Oil Module at site, rests with Oil Module supplier.

ii. Design of piping is in scope of supplier. Vendor should have experience of stress-analysis of piping according to ASME B31.1 or equivalent standard including Seismic analysis.

Vendor should have experience of pressure drop calculations across pipe lengths. High operational pressure with considerable pressure fluctuations and small pipe diameters with susceptibility to vibration excitation are the characteristic features of the lift oil pipe system. From this, results the necessity that all elements of the lift oil pipe system must thoroughly be designed against static and fluctuating internal pressure and that the arrangement of pipe supports must satisfy the contradictory criteria of vibration suppression and limitation of the loads due to thermal expansion and movements at the pipe's terminal points.

iii. The design of Oil Module and Main Oil Tank must be done ensuring structural stability and operational ability for required lifetime of 25 years.

iv. It shall be ensured that integrity of structure is not compromised (eg. Issues like excessive vibrations etc are not there). The responsibility of correct design, and hence correct functioning/operation of the Oil Module at site, rests with Oil Module supplier. Understanding the design requirements complete and comprehensively shall be vendor's responsibility.

v. The make and model numbers of major items such as Main Oil Pump, Emergency Oil Pump, Lifting Oil Pump, motors of these pumps, Oil Mist Eliminator, filters, important valves etc. are mentioned in the specification.

Revision History

1. Rev01 / 05.03.25: Table 2 updated.

Worked & Checked	HS DOGRA/SM-STE(TL)	<i>Heugh</i> 9/3/25
Approved	A JAIN/SDGM-STE(TL)	<i>Ajain</i> 9/3/25
	Name	

Framework Confidentiality Agreement cum Undertaking

This Agreement made on this the _____ day of (month) _____ 20____
("Effective Date") by and between
M/s BHARAT HEAVY ELECTRICALS LIMITED, having registered office at "BHEL
House", Siri Fort, New Delhi – 110049 (India), acting through its _____ Unit
(hereinafter may be referred to as "BHEL" or "the Company").

And

M/s _____ (address) _____
represented by authorized representative Sri _____ (herein after
referred to as the "Supplier").

The Supplier and the Company may, unless the context otherwise requires, hereinafter be
collectively referred to as "Parties" or singly as the "Party".

RECITALS

Whereas, BHEL is engaged in the design, engineering, manufacturing, construction, testing,
commissioning and servicing of a wide range of products, systems and services for the core
sectors of the economy, viz. Power, Transmission, Industry, Transportation, Renewable
energy, Oil & Gas and Defence and providing associated services to varied customers in
relation to which BHEL/its affiliates own valuable information of a secret and confidential
nature.

Whereas the Company may, in connection with Contract(s) (as defined hereunder) placed or
to be placed upon the Supplier, or otherwise, from time to time, make available, Technical
Information as is defined hereunder.

And Whereas BHEL is willing to provide such Technical Information to the Supplier from
time to time and the Supplier understands and acknowledges that such Technical Information
is valuable for the Company and as such is willing to protect confidentiality of such
information, subject to the terms and conditions set out hereunder.

Now therefore, in view of the foregoing premises and in consideration of the mutual
covenants and agreements hereinafter set forth, the Parties agree as under:

1. Definitions:

Unless the context so requires, in this Agreement, the following terms will bear the meaning
ascribed to the said term in this clause.

- A. **"Contract"** means the Contract entered into with a Supplier and includes a Purchase
Order, or a Work Order for procurement of any goods or for provision of any services.
- B. **"Effective Date"** means the date of this Agreement as mentioned in the preamble of
this Agreement.

- C. **“Supplier”** includes a Contractor or a Vendor of the Company whether for supplying of goods or for providing any services under a Contract or both.
 - D. **“Technical Information”** includes Drawings, and/or Product Standards and/or Specifications and/or Corporate / Plant Specifications and/or Technological Process Sheets and/or Technical Data Sheets and/or Jigs & Fixtures and/or Pattern & Dies and/or Special Gauges and/or Tools etc. belonging to or wherein the Company has acquired from a third party a right of user and includes any improvement thereto from time to time whether carried out by the Company or by the Supplier.
 - E. **“Intended Purpose”** means the purpose for which the Technical Information is provided to the Supplier under or in connection with a Contract.
 - F. **“Improvement”** includes any modification made to, or adaptation of, the Technical Information which enhances or is calculated to enhance the performance (whether in terms of effectiveness or in terms of efficiency or both) of the product and/or the service to be provided by the Supplier under a Contract.
2. This Agreement shall come into force/deemed to have come into force, as the case may be, on the Effective Date; or, on the first date when the Technical Information or any part thereof is provided by BHEL to the Supplier; whichever is earlier.
3. **Agreement deemed to be incorporated in each Contract:** Unless and to the extent otherwise stipulated in the Contract, the conditions of this Agreement are deemed to be incorporated in all Contracts which may be entered into between the Company and the Supplier. Further, unless otherwise stipulated, the obligations under this Agreement are and will be independent of the obligations under the Contracts and such obligations of the Supplier hereunder will remain of full effect and validity notwithstanding that the period of validity of the Contracts has expired by efflux of time stipulated therein; or, the contract has been discharged by performance or breach; or, the termination of the Contracts for any reason whatsoever.
4. **Ownership:**
- 4.1 The Company may, from time to time, make available to the Supplier, Technical Information on a non-exclusive basis by way of loan.
- 4.2 The Supplier acknowledges and agrees that all Technical Information and copies thereof that are or may be provided by the Company to the Supplier, are and shall remain the property of BHEL or that of the concerned entity from whom BHEL has obtained the Technical Information and such Technical Information are and shall constitute trade secrets of the BHEL. Nothing in this Agreement or in any disclosures made hereunder by or on behalf of the Company shall be construed as granting upon the Supplier any patent, copyright or design or any other intellectual property rights of whatsoever description that subsists or may hereinafter exist in the Technical Information. Furthermore, nothing in this Agreement or in any disclosures made hereunder by or on behalf of the Company shall be construed as granting upon the Supplier any license or rights of use of such patent, copyright or design or any other

intellectual property rights of whatsoever description which may now or hereafter exist in the Technical Information except for use of the Technical Information strictly in accordance with this Agreement and the Contract and/or as directed in writing by the Company, solely for the Intended Purpose under the Contract.

4.3 Neither Party is obligated by or under this Agreement to purchase from or provide to the other Party any service or product and that any such purchase/sale of any product and/or service by one Party to the other Party will be governed by the Contract if any, that may be entered into by and between the Company and the Supplier.

4.4 The Supplier is/has been made well aware and acknowledges that the Technical Information being/which may be shared with it by the Company has been either generated by the Company by incurring huge investment and cost or obtained from foreign collaborators under Technical Collaboration Agreement (TCA) with stringent confidentiality conditions.

4.5 The Supplier agrees and undertakes to adhere to confidentiality requirements as applicable to BHEL under a TCA and also ensure that the confidentiality requirements are adhered to by all its concerned employees or sub-contractors/suppliers (where permitted to be engaged by BHEL). Any damages, losses, expenses of any description whatsoever, arising out of or in connection with a breach of the confidentiality requirements under a TCA owing to any act or omission on the part of the Supplier or its employees or sub-contractors/suppliers that is claimed by a foreign collaborator from the Company shall be wholly borne by the Supplier and it shall keep BHEL fully indemnified in this behalf. The demand by the Company shall be conclusive upon the Supplier who shall thereupon forthwith pay to the Company without demur, dispute or delay the amount as demanded without demanding any further proof thereof.

4.6 The Supplier agrees and undertakes that unless so decided and advised by the Company in writing all rights/title to any Improvement to the Technical Information shall vest in the Company. The Supplier undertakes and agrees to inform forthwith to the Company of any such Improvement made to the Technical Information and transfer all drawings/documents or other materials connected with such Improvement to the Company and also agrees to fully cooperate with the Company for protecting the Company's interests in such Improvement in the Technical Information including but not limited to obtaining necessary protection for the intellectual property rights in such improvement, if so desired by the Company. If a question arises whether a modification amounts to Improvement to the Technical Information, the same shall be decided by the Company and such decision shall be final and binding upon the Supplier.

5. Use and Non-Disclosure:

5.1 Unless otherwise stipulated by the Company, all Technical Information made available to the Supplier, by the Company shall be treated as Confidential irrespective of whether the same is marked or otherwise denoted to be Confidential or not.

- 5.2 The Supplier undertakes and agrees that the Technical Information in its possession shall be held in strict confidence and will be used strictly in accordance with this Agreement and solely for the Intended Purpose under the Contract. Use of the Technical Information for any other purpose other than Intended Purpose is prohibited.
- 5.3 In particular, the Supplier shall not use Technical Information or any Improvement in its possession for the manufacture or procurement of the Product(s) or components or parts thereof or use the Technical Information or any portion thereof or any modification or adaptation thereof in any form to provide any product and/or service to any third party, without the prior written consent of the Company.
- 5.4 The Supplier shall not disclose any of such Technical Information to any third party without the prior written consent of the Company. The Supplier agrees that without prior written consent of the Company, the Supplier shall not disclose to a third party about the existence of this Agreement, or of the fact that it is/was in possession of or has experience in the use of any Technical Information nor shall the Supplier share in any manner whatsoever, with a third party, the name or details of any Contract(s) awarded by the Company to it or performed by the Supplier or the scope of work thereof or share any document or correspondence by and between the Company and the Supplier in or in connection with this Agreement or such Contract(s). Notwithstanding what is stated elsewhere, the overall responsibility of any breach of the confidentiality provisions under this Agreement shall rest with the Supplier.
- 5.5 The Supplier undertakes and agrees not to make copies or extracts of and not to disclose to others any or all of the Technical Information in its possession, except as follows:
- (a) The Supplier may disclose the Technical Information to such of its officers and employees strictly to the extent as is necessary for such officer or employee for the Intended Purpose, provided that the Confidential Information (or copies thereof) disclosed shall be marked clearly as the confidential and proprietary information of Company and that such officers and employees shall similarly be bound by undertakings of confidence, restricted use and non-disclosure in respect of the Technical Information. The Supplier shall be responsible for any breach of such confidentiality provisions by such officers and employees.
 - (b) With the prior written consent of Company, the Supplier may disclose for the Intended Purpose such Technical Information as is provided for in such consent to such of its professional advisers: consultants, insurers and subcontractors who shall be similarly bound by undertakings of confidence, restricted use and non-disclosure in respect of such Technical Information.
 - (c) The Supplier shall not be prevented to make any disclosure required by (i) order of a court of competent jurisdiction or (ii) any competent regulatory authority or agency where such disclosure is required by law, provided that where the Supplier

intends to make such disclosure, it shall first consult Company and take all reasonable steps requested by it to minimize the extent of the Technical Information disclosed and to make such disclosure in confidence and also shall cooperate with the Company in seeking any protective order or any other remedy from proper authority in this matter.

6. Exceptions:

The obligations of the Supplier pursuant to the provisions of this agreement shall not apply to any Confidential Information that:

- a) was/is known to, or in the possession of the Supplier prior to disclosure thereof by the Company;
- b) is or becomes publicly known, otherwise than as a result of a breach of this agreement by the Supplier.
- c) is developed independently of the Disclosing Party by the Supplier in circumstances that do not amount to a breach of the provisions of this Agreement or the Contract;
- d) is received from a third party in circumstances that do not result in a breach of the provisions of this Agreement.

7. The obligation of maintaining confidentiality of the Technical Information on each occasion, shall subsist for the entire duration during which the Technical Information / equipment is in possession of the Supplier and shall thereafter subsist for a further period of --- years from the date when the complete Technical Information has been returned to the Company and if Technical Information has been returned in portions on different dates then, the period of ---- years will be reckoned from the date when the last portion of the Technical Information has been returned. Notwithstanding the expiry of the confidentiality obligation, the obligation of the Supplier under clause 5.4 shall continue to subsist for a further period of ----- years.

8. Warranties & Undertakings:

- a) The Supplier undertakes to ensure the due observance of the undertakings of confidence, restricted use and non-disclosure by its persons to whom it discloses or releases copies or extracts of the Technical Information.
- b) The Supplier shall keep the Technical Information or improvement made therein properly segregated and not mix up the same with any other material/documents belonging to him/it or to any other third party.
- c) The Supplier further undertakes that he/it shall not hypothecate or give on lease or otherwise alienate or do away with any of the Technical Information and/or equipment of the Company, made available to him/it, and undertakes that he/it shall hold the same as a trustee, in capacity of custodian thereof and use/utilise the same solely for the purpose of executing the Contract awarded by the Company.
- d) The Supplier further undertakes that he/it shall return all the equipment and/or Technical Information as far as practicable in the same condition in which the same was made available to him/it by the Company together with any Improvement thereon and the documents connected with such Improvement, to the Company forthwith upon completion of the scope

of work or Contract for which such Technical Information was provided by the Company to it or as directed by the Company together with a confirmation by way of an affidavit or in such manner as directed by the Company that it has not retained any equipment and/or Technical Information/Improvement thereof. In case any such equipment and/or Technical Information or Improvement thereof shall remain in his possession or is not capable of being returned, the retention and use of such Technical Information or Improvement thereto shall continue to be governed by this Agreement.

e) The Supplier undertakes to indemnify the Company for all the direct, indirect and/or consequential losses, damages, expenses whatsoever including any consequential loss of business, profits suffered by the Company owing to breach by the Supplier of its obligations under this Agreement and/or the confidentiality requirements, if any, contained in the Contract and that the Supplier hereby agrees that the decision of the Company in all such or any such matter/s shall be final and binding on the Supplier. On mere written demand of the Company, the Supplier shall forthwith and without demur or delay pay to the Company any such sum as determined by the Company as the amount of loss or damage or expense which has been suffered by the Company. The Supplier agrees that the Company shall be entitled to withhold and appropriate any amount payable to the Supplier under any Contract then existing between the Company and the Supplier, in case the Supplier fails to make payment, in terms of the written demand, within 7 days thereof. Without prejudice to the foregoing actions, in respect to any breach of this Agreement, the Company shall be entitled to take any other action against the Supplier as per applicable laws, the Contract, Company's applicable policies, guidelines rules, procedures, etc.

9. Without prejudice to any other mode of recovery as may be available to the Company for recovery of the amount determined as due as per Clause 8(e) hereinabove, the Company shall have a right to withhold, recover and appropriate the amount due towards such losses, damages, expenses, from any amount due to the Supplier in respect of any other Contract (s) placed on him/it by any department/office/Unit/Division of the said Company.

10. Arbitration & Conciliation:

a) In case amicable settlement is not reached between the Parties, in respect of any dispute
or

difference or claim or controversy arising out of the formation, breach, termination, validity or execution of the Contract(or Agreement) or the respective rights and liabilities of the parties or in relation to interpretation of any provision of the Contract or in any manner touching upon the Contract, then, either Party may, by a notice in writing to the other Party refer such dispute or difference or controversy or claim, (except as to any matters, the decision of which is specifically provided for therein) to the sole arbitration by the arbitrator appointed by Head/In-Charge of the Unit/Division/Region.

b) The Arbitrator shall pass a reasoned award and the award of the Arbitrator shall be final and binding upon the parties to the dispute.

c) Subject as aforesaid, the provisions of Arbitration and Conciliation Act 1996 (India), or other statutory modifications or re enactments thereof and the rules made thereunder and for

the time being in force shall apply to the arbitration proceedings under this clause. The seat of arbitration shall be at ----- **(Insert the name of the city/town of the concerned BHEL Unit/Division).**

d) In case of Contract with Public Sector Enterprise (PSE) or a Government Department, the following shall be applicable:

In the event of any dispute or difference relating to the interpretation and application of the provisions of the Contract, such dispute or difference shall be referred to by either party to the arbitration of one of the arbitrators in the department of public enterprises to be nominated by the Secretary to the Government of India in-charge of the Department of Public Enterprises. The Arbitration and Conciliation Act, 1996 shall not be applicable to arbitration under this clause. The award of the arbitrator shall be binding upon the parties to the dispute, provided, however, any party aggrieved by such award may make further reference for setting aside or revision of the award to the Law Secretary, Department of Legal Affairs, Ministry of Law and Justice, Government of India. Upon such reference the dispute shall be decided by the Law Secretary or the Special Secretary or Additional Secretary when so authorized by the Law Secretary, whose decision shall bind the parties hereto finally and conclusively.

e) Notwithstanding the existence or any dispute or differences and/or reference for the arbitration, the Supplier shall proceed with and continue without hindrance the performance of its obligations under this Contract with due diligence and expedition in a professional manner.

11. Governing Law & Jurisdiction:

This Agreement shall be governed by and be construed as per applicable Indian Laws in force at the relevant time.

Subject to clauses 10(a) and 10(d) hereinabove, all matters in connection with the subject agreement shall be subject to exclusive jurisdiction of Courts situated at -----**(insert the name of the place where the BHEL Unit/Division is located)**

SIGNATURE

WITNESSES

1.

Name

Address:

2.

Name:

Address:



**PREQUALIFICATION REQUIREMENT
OF OIL MODULE SKID (INCLUDING TANK,
PUMPS, FILTERS, PIPING ETC.)**

Doc. NO.: 4-11939-J8810

Rev 01

Date of Issue: 07.06.25

1. SCOPE OF THE DOCUMENT:

This document states the pre-qualification requirements (PQR) of Oil Module. Vendors desirous of supplying the Oil Module equipment to BHEL are advised to read this document carefully and furnish required documentation. Overview of Oil Module is given in document 4-11939-S5811.

SECTION 1 (MECHANICAL)

2. ACCEPTANCE CRITERIA OF VENDOR

1. Vendor/vendor's principal should have experience of design, manufacturing, testing, supply and successful running of atleast two Oil Modules supplied to Turbine OEM⁵; meeting all of the following conditions: -
 - a. Where size of Lube Oil Tank $\geq 16m^3$;
 - b. Where oil flow ≥ 10 lps;
 - c. Where tank is a steel tank (CS or SS);
 - d. Where pumps (MOP, EOP) are mounted on top of tank;
 - e. Where Oil Module was used to supply oil to bearings of steam/nuclear/gas turbine;
 - f. Where vendor is Turbine OEM approved for supply of Oil Module;
 - g. Where experience of successful running is atleast 2 years for 2 Oil Modules. i.e. Date of commissioning shall be two years or more before date of enquiry.

⁵Turbine OEM means OEM of Turbine of Steam, Nuclear and Gas Power Plants $\geq 200MW$ like Siemens, GE/Alstom/Arabelle/PSIPL, etc.

3. SUBMISSION OF DOCUMENTS CONFORMING TO CLAUSE NO. 2 ALONGWITH OFFER

For any two Purchase Orders conforming to Clause 2, vendor shall furnish the following documents: -

- A. Vendor to furnish, minimum two nos. unpriced POs or one PO with multiple Oil Modules; executed for BHEL Haridwar / BHEL Haridwar Collaborator (Siemens/GE).

OR

- 3.A.1 Vendor shall furnish a certificate/letter/email from Turbine OEM mentioning that the structural design and static calculation of Lube Oil Tank has been done by Oil Module vendor or Turbine OEM approved tank calculation.
- 3.A.2 Vendor shall furnish valid document from Turbine OEM mentioning the date of commissioning. Alternately, other documents like commissioning report, MoM of commissioning etc may also be furnished as documentary evidence of date of commissioning.
- 3.A.3 Vendor shall furnish letter/email from Turbine OEM/End User mentioning that the Oil Module is satisfactorily functioning.
- 3.A.4 Vendor shall furnish Turbine OEM approval letter or any other Turbine OEM document from which it is clear that vendor is Turbine OEM approved vendor for supply of Oil Module.
- 3.A.5 Vendor shall furnish valid document from Turbine OEM/End User mentioning that there is no lube oil pump driven by shaft of turbine i.e. the pump/pumps mounted on top of tank have 24X7 operation.
- 3.A.6 Vendor to furnish minimum two nos. unpriced POs.

Worked by	HS DOGRA/SM-STE(TL)	Gurpreet Kaur/Mgr-STE(TL)
Checked	A JAIN/SDGM-STE(TL)	Satish Kumar/SDGM-CIE
Approved	A JAIN/SDGM-STE(TL)	Vinod Kumar/AGM-CIE
	STE-TL	CIE



**PREQUALIFICATION REQUIREMENT
OF OIL MODULE SKID (INCLUDING TANK,
PUMPS, FILTERS, PIPING ETC.)**

Doc. NO.: 4-11939-J8810

Rev 01

Date of Issue: 07.06.25

B. All vendors shall also furnish the following documents/information:

3.B.1 reference list/experience list of projects executed by vendor;

3.B.2 Documents showing Oil Module and its major dimensions (eg. General Arrangement drgs., datasheets, P&IDs etc.). Photos of executed orders are also acceptable, incase vendor is bound by non-disclosure agreement with other end-customer. However, details such as dimensions of Oil Tank, name of project, flow rate, tank size etc need to be marked in photos;

3.B.3 Unpriced dispatch related documents (inspection report/minutes, delivery challan, tax invoice, LR etc).

TABLE-1: TO BE SUBMITTED FILLED BY VENDOR ALONGWITH OFFER

Sl. no.	Description	Acceptance Criteria	Vendors response for Project 1 Tick correct box.	Vendors response for Project 2 Tick correct box.	Does vendor meet PQR (Vendor to tick Yes or No)
1	Project name and project rating				
2	Purchase Order No. and PO Date				
3	Whether design, manufacturing, testing, supply was done by vendor.	Yes	Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐
4	Whether size of Oil Module Tank >= 16m3	Yes	Tank size =m3 (Vendor to fill)	Tank size =m3 (Vendor to fill)	Yes ☐ No ☐
5	Whether Flow of Oil Module >= 10 lps	Yes	Flow =lps (Vendor to fill)	Flow =lps (Vendor to fill)	Yes ☐ No ☐
6	whether tank is a steel tank (CS or SS)	Yes	CS ☐ SS ☐	CS ☐ SS ☐	Yes ☐ No ☐
7	Whether pumps (MOP, EOP etc) are mounted on top of tank	Yes	Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐
8	Whether Oil Module was used to supply oil to bearings of steam/nuclear/gas turbine	Yes	Steam ☐ Nuclear ☐ Gas ☐	Steam ☐ Nuclear ☐ Gas ☐	Yes ☐ No ☐
9	Whether vendor is Turbine OEM approved for supply of Oil Module	Yes	Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐
10	Date of Commissioning of Oil Module.	2 years or more before date of enquiry.	Date.....	Date.....	Yes ☐ No ☐
12	Contact details, Telephone no's & Email id of End user				

SECTION 2 (ELECTRICAL)

4. The vendor to confirm they have previously supplied and commissioned the required instrumentation i.e Transmitter, switches, gauges compatible with oil module applications of Steam/Nuclear/Gas Turbines.

Worked by	HS DOGRA/SM-STE(TL)	Gurpreet Kaur/Mgr-STE(TL)
Checked	A JAIN/SDGM-STE(TL)	Satish Kumar/SDGM-CIE
Approved	A JAIN/SDGM-STE(TL)	Vinod Kumar/AGM-CIE
	STE TL	CIE



**PREQUALIFICATION REQUIREMENT
OF OIL MODULE SKID (INCLUDING TANK,
PUMPS, FILTERS, PIPING ETC.)**

Doc. NO.: 4-11939-J8810

Rev 01

Date of Issue: 07.06.25

SECTION 3 (GENERAL)

5. Note:-

- A. BHEL reserves the right to ask for more information / documents/ clarifications. Vendor's offer shall not be considered if vendor fails to furnish the document / information / clarifications as mentioned above or vendor doesn't meet the acceptance criteria as mentioned above. Vendor shall provide the information to BHEL in a timely manner so that project schedule doesn't hamper.
- B. In case of information / data furnished by the vendor found false/incorrect, BHEL reserves the right to reject their offer for the above item. Submission of fake/fraudulent information shall be taken seriously and shall invite legal action.
- C. BHEL may visit the power plants where the items are supplied & installed by vendor. Cost shall be borne by BHEL for these visits. Vendor shall facilitate with end-customer.

Revision History

1. Rev01 / 07.06.25: Clause 3A revised.

Worked by	HS DOGRA/SM-STE(TL)	Gurpreet Kaur/Mgr-STE(TL)
Checked	A JAIN/SDGM-STE(TL)	Satish Kumar/SDGM-CIE
Approved	A JAIN/SDGM-STE(TL)	Vinod Kumar/AGM-CIE
	STE-TL	CIE

OIL MODULE (M-TYPE)
CHECK LIST (PED)
660MW KORBA WEST

Vendors are supposed to fill relevant columns with Yes/ No/ Value offered. It may be noted that this document is not the specification. Incase of any discrepancy between the information in this document and the specification, the same is to be informed to BHEL in writing and clarified. Incase of any dispute, the specification shall prevail.

1. MAIN OIL PUMP			
MAKE:	Allweiler, KSB, FINDER	Yes/ No	
MODEL NO:	ALLWEILER NSSV 80-250/01 or model of other make	Yes/ No	
DESIGN PRESSURE	6+0.3BAR	Yes/ No	
DESIGN FLOW	44.4 LPS	Yes/ No	
QTY.	2 NOS.	Yes/ No	
COUPLING	TORSIONALLY FLEXIBLE COUPLING AS PER SPEC.	Yes/ No	
SPEED	2950 RPM	Yes/ No	
2. EMERGENCY OIL PUMP			
MAKE:	Allweiler, KSB, FINDER	Yes/ No	
MODEL NO:	ALLWEILER NSSV 100-160/01 or model of other make	Yes/ No	
DESIGN PRESSURE	2.5 + 0.2 BAR	Yes/ No	
DESIGN FLOW	42LPS	Yes/ No	
QTY.	1NOS.	Yes/ No	
COUPLING	TORSIONALLY FLEXIBLE COUPLING AS PER SPEC.	Yes/ No	
SPEED	2900 RPM	Yes/ No	
3. LIFTING OIL PUMP			
MAKE:	Parker Denison, Bosch Rexroth	Yes/ No	
MODEL NO:	PARKER HANNIFIN (DENISON T7E 050) or model of other make	Yes/ No	
DESIGN PRESSURE	175BAR	Yes/ No	
DESIGN FLOW	3.47 LPS	Yes/ No	
QTY.	2 NOS.	Yes/ No	
COUPLING	TORSIONALLY FLEXIBLE COUPLING AS PER SPEC.	Yes/ No	
DISCHARGE NOZZLE FOR PUMP	SAE 62	Yes/ No	

**OIL MODULE (M-TYPE)
CHECK LIST (PED)
660MW KORBA WEST**

SUCTION NOZZLE FOR PUMP	SAE 61	Yes/ No	
SPEED	1470 RPM	Yes/ No	
4. LUBE OIL FILTER			
TYPE	2x100% DUPLEX CHANGEOVER TYPE	Yes/ No	
MATERIAL OF FILTER ELEMENTS	STAINLESS STEEL	Yes/ No	
DESIGN FLOW	IS THE DESIGN FLOW EQUAL TO MAX POSSIBLE VOLUMETRIC FLOW OF MODULE (AS PER TABLE 5 IN CL. 3.1.1 OF GENERAL CRS DSPPG -0066852)	Yes/ No	
WORKING PRESSURE	≤ 10 BAR	Yes/ No	
FILTER ELEMENT COLLAPSING PR.	>10 BAR	Yes/ No	
MESH SIZE	25μm	Yes/ No	
HOUSING MATERIAL	CARBON STEEL	Yes/ No	
5. LIFTING OIL FILTER			
TYPE	2x100% SWICTCHABLE PR.FILTER	Yes/ No	
MODEL NO:	Is the model no. as per Figure 15 of General CRS DSPPG-0066852	Yes/ No	
MATERIAL OF FILTER ELEMENTS	STAINLESS STEEL	Yes/ No	
HOUSING MATERIAL	CARBON STEEL	Yes/ No	
WORKING PR.	≤ 240 BAR	Yes/ No	
CONNECTING FLANGES	SAE	Yes/ No	
MESH SIZE	25μm	Yes/ No	
FLOW RATE	Is the flow rate equal to design flow of Lifting Oil Pump	Yes/ No	
6. MAIN OIL TANK			
MATERIAL	STAINLESS STEEL	Yes/ No	

**OIL MODULE (M-TYPE)
CHECK LIST (PED)
660MW KORBA WEST**

SIZE	19/28	Yes/ No	
HEATER QTY	3 NOS.	Yes/ No	
HEATER RATING PER PIECE	12KW	Yes/ No	
7. COLLECTING MANIFOLD OF JACKING OIL FILTER			
SUPPLIER	PARKER, HYDAC	Yes/ No	
TYPE	NG 32	Yes/ No	
8. TEMPEATORE CONTROL VALVE			
SUPPLIER	RTK	Yes/ No	
TYPE	MV5321	Yes/ No	
ADJUSTMENT RANGE	20-70°C	Yes/ No	
PR. LOSS	0.2 BAR	Yes/ No	
FLOW RATE	162m ³ /hr	Yes/ No	
CASING MATERIAL	Stainless Steel	Yes/ No	
CHARACTERISTIC CURVE	LINEAR	Yes/ No	
STROKE	40 MM	Yes/ No	
SEAT DIA.	150 MM	Yes/ No	
MAX. PR.	16 BAR	Yes/ No	
MAX.TEMP.	250°C	Yes/ No	
9. OIL MIST ELIMINATOR			
SUPPLIER	FRANKE, UT99, Contec, Hilliard	Yes/ No	
DESIGN	IS THE DESIGN AS PER OIL MODULE SCHEME	Yes/ No	
10. ARE THE SUPPLIERS OF VERY IMPORTANT COMPONENTS AS PER SPEC.		Yes/ No	
11. Is the matrial of piping, fitting, valves as per BHEL spec.		Yes/ No	
12. IS THE FUNCTIONAL TEST OFFERED AS PER BHEL SPEC.		Yes/ No	
13. IS THE PAINTING AS PER BHEL SPEC.		Yes/ No	

14. Vendor to clearly mention any deviation to BHEL spec in following space:-

- (a)
- (b)
- (c)

OIL MODULE (M-TYPE) CHECK LIST (CIE)

Doc. no.-4-18101-I6-010A

Annexure-A

CHECKLIST FOR ELECTRICAL ITEMS IN OIL MODULE (2X660 MW KORADI STPP)				
Vendors are supposed to fill relevant columns with Yes/ No/ Not applicable (if any)/Value offered.				
Qty mentioned against items is for single oil module unit.				
1. AC MOTOR FOR MAIN OIL PUMP				
1.1	MOTOR TYPE	3 phase Induction motor	Yes/ No	
1.2	MAKE	As per approved vendor List.Technically refer C&I addendum ,418101I6010,Rev00,clause B6.VII	Yes/ No	
1.3	NOMINAL MOTOR POWER (stamped on the rating plate)	110KW	Yes/ No	Vendor to specify (if different)
1.4	QTY.	2 no. (As per approved PID 0-13100-L2106)	Yes/ No	
1.5	RATED VOLTAGE	415 V	Yes/ No	
1.6	WAY OF STARTING	Direct online starting with delta connection	Yes/ No	
1.7	RATED CURRENT (stamped on the rating plate)	as per standard IS:12615(latest revision)		Vendor to specify (if different)
1.8	EFFICIENCY CLASS	As per C&I addendum 418101I6010, clause B4,II	Yes/ No	
1.9	RATED SPEED (at rated voltage and frequency(RPM))	2900 rpm approx	Yes/ No	
1.10	NOISE LEVEL LIMIT (dBA)	85 Db at 1mtr from operating motor as per IEC60034-14/IS 12065.	Yes/ No	
1.11	Minimum moment of inertia	1.6 kg/m ²	Yes/ No	
2. DC MOTOR FOR EMERGENCY OIL PUMP				
2.1	MOTOR TYPE	shunt wound	Yes/ No	
2.2	MAKE	WINKELMANN /KRETZSCHMAR/CGL	Yes/ No	
2.3	NOMINAL MOTOR POWER (stamped on the rating plate)	20.16KW	Yes/ No	Vendor to specify (if different)
2.4	QTY.	1 no. (As per approved PID 0-13100-L2106)	Yes/ No	
2.5	RATED VOLTAGE	220 V DC	Yes/ No	
2.6	RATED CURRENT (stamped on the rating plate)	149 A approx	Yes/ No	Vendor to specify (if different)
2.7	RATED SPEED (at rated voltage and frequency(RPM))	2900 rpm approx	Yes/ No	
2.8	STARTING (EXTERNAL) REISTOR -TYPE / QTY	01 no	Yes/ No	Vendor to specify resistor type
2.9	STARTING RESISTOR VALUE (as per doc.-drawino no. 9000603), VAR-62	(2-steps) or System requirement		Vendor to specify (if different)
2.10	FIELD TRIMMER RESISTANCE- TYPE / QTY	QTY-1 no	Yes/ No	PI write type & rating here.
3. AC MOTOR FOR LIFTING OIL PUMP				
3.1	MOTOR TYPE	3 phase Induction motor	Yes/ No	Vendor to specify (if equivalent)
3.2	MAKE	As per approved vendor List , also refer C&I addendum ,418101I6010,Rev00,clause B6.VII	Yes/ No	
3.3	NOMINAL MOTOR POWER (stamped on the rating plate)	90KW	Yes/ No	Vendor to specify (if different)
3.4	QTY.	1 no. (As per approved PID 0-13100-J2105)	Yes/ No	
3.5	RATED VOLTAGE	415 V	Yes/ No	
3.6	WAY OF STARTING	Direct online starting with delta connection	Yes/ No	
3.7	RATED CURRENT (stamped on the rating plate)	139 A		Vendor to specify (if different)
3.8	EFFICIENCY CLASS	IE3 as per IEC 60034/IS 12615-2011	Yes/ No	
3.9	RATED SPEED (at rated voltage and frequency(RPM))	1485 rpm approx	Yes/ No	
3.10	NOISE LEVEL LIMIT (dBA)	85 Db at 1mtr from operating motor as per IEC60034-14/IS 12065.	Yes/ No	

OIL MODULE (M-TYPE) CHECK LIST (CIE)

4. DC MOTOR FOR LIFTING OIL PUMP				
4.1	MOTOR TYPE	shunt wound	Yes/ No	
4.2	MAKE	WINKELMANN /KRETZSCHMAR	Yes/ No	
4.3	NOMINAL MOTOR POWER (stamped on the rating plate)	90KW	Yes/ No	Vendor to specify (if different)
4.4	QTY.	1 no. (As per approved PID 0-13100-J2105)	Yes/ No	
4.5	RATED VOLTAGE	220 V DC	Yes/ No	
4.6	RATED CURRENT (stamped on the rating plate)	450 A approx	Yes/ No	Vendor to specify (if different)
4.7	RATED SPEED (at rated voltage and frequency(RPM))	1470 rpm approx	Yes/ No	
4.8	STARTING (EXTERNAL) REISTOR- TYPE & QTY	(3 STEPS) / 01 no	Yes/ No	
4.9	STARTING RESISTOR VALUE	0.17Ohm, 0.045Ohm, 0.014 Ohm(in 3 Steps) or System requirement	Yes/ No	Vendor to specify (if different)
4.10	FIELD TRIMMER RESISTANCE- TYPE / QTY	QTY-1 no	Yes/ No	Pl write type & rating here.
4.11	CURRENT (cold/hot)	3.28/2.5A approx	Yes/ No	
4.12	COOLING	IC 411 (TEFC)	Yes/ No	
5. AC MOTOR FOR OIL VAPOUR EXHAUSTER				
5.1	MOTOR TYPE	Flame proof type as per IEC60079-1/ IS 2148.	Yes/ No	Vendor to specify
5.2	MAKE	As per approved vendor List , also refer C&I addendum ,418101I6010,Rev00,clause B6.VII	Yes/ No	
5.3	NOMINAL MOTOR POWER (stamped on the rating plate)			Pl write value here.
5.4	QTY.	2 no. (As per approved PID 0-13100-L2106)	Yes/ No	
5.6	RATED VOLTAGE	415 V AC	Yes/ No	
5.7	RATED CURRENT (stamped on the rating plate)			Pl write value here.
5.8	RATED SPEED (at rated voltage and frequency(RPM))	2900 rpm approx	Yes/ No	Vendor to specify (if different)
6. TEMPERATURE CONTROL VALVE				
(i)	Motor type (AC motor)	230V AC, 50 Hz	Yes/ No	
(ii)	Protection class	IP 55	Yes/ No	
(iii)	Additional /Supplementary equipment	Potentiometer	Yes/ No	
7. INSTRUMENTATIONS				
7.1	Pressure Transmitters	Range= 0-250 Bar	Yes/ No	
		Qty=3 nos	Yes/ No	
		Tag no.-MAV31CP001, MAV32CP001, MAV35CP001	Yes/ No	
		Make= Siemens or equivalent	Yes/ No	
7.2	Pressure Transmitters	Range= 0-10 Bar	Yes/ No	
		Qty=3 nos	Yes/ No	
		Tag no.-MAV42CP016, MAV42CP017, MAV42CP018	Yes/ No	
		Make= Siemens or equivalent	Yes/ No	
7.3	Pressure Transmitters	Range= (-120)-0 mBar	Yes/ No	
		Qty=2 no	Yes/ No	
		Tag no.-MAV82CP001/MAV82CP002	Yes/ No	
		Make= Endress & Hauser or equivalent	Yes/ No	
7.4	Level Transmitters	Range= 650-1450 mm	Yes/ No	Vendor to specify (if different)

OIL MODULE (M-TYPE) CHECK LIST (CIE)

		Qty=3 nos	Yes/ No	
		Tag no.-MAV10CL021, MAV10CL022, MAV10CL023	Yes/ No	
		Type= Guided wave radar type	Yes/ No	
		Make= Endress & Hauser or equivalent	Yes/ No	
7.5	Level Indicator	Range= 650-1450 mm	Yes/ No	Vendor to specify (if different)
		Qty=1 no	Yes/ No	
		Tag no.-MAV10CL521	Yes/ No	
		Make=Jerguson,Mohren or equivalent	Yes/ No	
7.6	RTD (Resistance Thermometer)	Range= 0-100 DegC	Yes/ No	
		Qty=4 nos	Yes/ No	
		Tag no.-MAV10CT001, MAV10CT002, MAV42CT001, MAV42CT002	Yes/ No	
		Make= Rosemount or equivalent	Yes/ No	
7.7	Thermometer	Range= 0-100 DegC	Yes/ No	
		Qty=2 nos	Yes/ No	
		Tag no.-MAV21CT501 ,MAV42CT501	Yes/ No	
		Make= Wiegand,Ashcroft, GIC or equivalent	Yes/ No	
7.8	Pressure Gauges	Range= 0-10 Bar	Yes/ No	
		Qty=4 nos	Yes/ No	
		Tag no.-MAV21CP501, MAV21CP505, MAV21CP506, MAV24CP501,	Yes/ No	
		Make= Wika, GIC or equivalent	Yes/ No	
7.90	Pressure Gauges	Range= 0-400 Bar	Yes/ No	
		Qty=3 nos	Yes/ No	
		Tag no.-MAV31CP501, MAV32CP501, MAV35CP501	Yes/ No	
		Make= Wika, GIC or equivalent	Yes/ No	
7.10	Pressure Gauges	Range= (-)60-0 mBar	Yes/ No	
		Qty=2 no	Yes/ No	
		Tag no.-MAV82CP501	Yes/ No	
		Make= Wika, GIC or equivalent	Yes/ No	
7.11	Pressure Gauges	Range= (-)160-0 mBar	Yes/ No	
		Qty=2 no	Yes/ No	
		Tag no.-MAV82CP502	Yes/ No	
		Make= Wika, GIC or equivalent	Yes/ No	
7.12	Pressure switch.	Range= 0.5-10 Bar	Yes/ No	
		Qty=4 nos	Yes/ No	
		Tag no.-MAV21CP001,MAV42CP012, MAV42CP019	Yes/ No	
		Make= Herion Systemtechnik,United Electric or equivalent	Yes/ No	
7.13	DP switch	Range= 0-4.2 Bar	Yes/ No	
		Qty=1 no	Yes/ No	
		Tag no.-MAV35CP016	Yes/ No	
		Make= Internormen(Eaton Tech GmbH), Hydac	Yes/ No	
7.14	DP switch	Range= 0-1.2 Bar	Yes/ No	
		Qty=1 no	Yes/ No	
		Tag no.-MAV42CP013	Yes/ No	

OIL MODULE (M-TYPE) CHECK LIST (CIE)

		Make= Internormen(Eaton Tech GmbH), Hydac	Yes/ No	
7.15	3/2 way manual instrument valves. as per TLV2001	Qty=3 nos	Yes/ No	
		Tag no.-MAV21AA321, MAV42AA322, MAV42AA329	Yes/ No	
		Make= Norgren, Harion or equivalent	Yes/ No	
7.15	Electrical adapter box for AC motors,DC motors ,Heater(per unit)	Qty=3+2+1 nos + as required	Yes/ No	[Refer addendum(electrical) doc. no.-DOCUMENT No. 4-18101-I6-010 REV00 clause no.-B5(III)]

8. INSTRUMENTATIONS-additional to above

8.1	Pressure Gauge	Range= 0-10 Bar	Yes/ No	
		Qty=2 nos	Yes/ No	

9. JUNCTION BOX

9.1	Junction box for instruments (PREWIRED)	Tag no.-MAV00GF001	Yes/ No	
		Qty=1 no	Yes/ No	

10. TANK HEATERS

10.1	Tank Heater	Tag no.-MAV10AH001/002/003	Yes/ No	
		Qty=3 no	Yes/ No	
		rating (each heater)-12 KW, 415V AC	Yes/ No	

11. DOCUMENTATION's (Following documents shall be submitted after PO for BHEL/Customer approval)

11.1	Motor Data Sheet in BHEL format 418000_AC_001, as per IEC60034/IS 325	BHEL format i.e., 418000_AC_001 in editable format shall be furnished to vendors after PO placement		
a	Lube oil pump AC motor		Yes/ No	
b	Lifting oil pump AC motor		Yes/ No	
c	Oil vapour exhaustor AC motor		Yes/ No	
11.2	General arrangement drawings, Characteristic curves & Electrical connection diagrams	Part of Motor data sheet		
a	Lube oil pump AC motor		Yes/ No	
b	Lifting oil pump AC motor		Yes/ No	
c	Oil vapour exhaustor AC motor		Yes/ No	
11.3	Motor Data Sheet in BHEL format 418000_DC_001, as per IEC60034/IS 325	BHEL format i.e., 418000_DC_001 in editable format shall be furnished to vendors after PO placement		
a	Emergency oil pump DC motor		Yes/ No	
b	Lifting oil pump DC motor		Yes/ No	
11.4	General arrangement drawings, Characteristic curves & Electrical connection diagrams	Part of Motor data sheet		
a	Emergency oil pump DC motor		Yes/ No	
b	Lifting oil pump DC motor		Yes/ No	

OIL MODULE (M-TYPE) CHECK LIST (CIE)

11.5	Types test reports for AC & DC motors as per IEC60034/IS 325 . Test includes-			
a	Measurement of resistance of windings of stator & wound rotor		Yes/ No	
b	No load test at rated voltage to determine input current power & speed,		Yes/ No	
c	Locked rotor readings of voltage, current & power input at a suitable reduced voltage		Yes/ No	
d	Full load test to determine efficiency power factor & slip,		Yes/ No	
e	Temperature rise test		Yes/ No	
f	Momentary overload test		Yes/ No	
g	Insulation resistance test		Yes/ No	
h	High voltage test		Yes/ No	
i	Test for vibration severity of motor		Yes/ No	
j	Test for noise levels of motor		Yes/ No	
k	Test for degree of protection		Yes/ No	
l	Overspeed test.		Yes/ No	
m	Type test reports for motors located in fuel oil area having flame proof enclosures as per IS 2148 / IEC 60079-1.		Yes/ No	
11.6	Electrical load list for motors, actuators & valves.		Yes/ No	
11.7	Wiring details upto Junction boxes for instruments as well as electrical loads of oil module.		Yes/ No	
11.8	GA drawing of oil module covering Instruments, valves with KKS.		Yes/ No	
11.9	Calibration report for instruments used in oil module.	Documents shall be required before shipment	Yes/ No	
11.10	Instrument catalogue for all instruments used in oil module	Documents shall be required before shipment	Yes/ No	

12. Vendor to clearly mention any deviation to BHEL spec in following space.

INTEGRITY PACT**Between**

Bharat Heavy Electricals Ltd. (BHEL), a company registered under the Companies Act 1956 and having its registered office at "BHEL House", Siri Fort, New Delhi - 110049 (India) hereinafter referred to as "The Principal", which expression unless repugnant to the context or meaning hereof shall include its successors or assigns of the ONE PART

and

_____, (description of the party along with address), hereinafter referred to as "The Bidder/ Contractor" which expression unless repugnant to the context or meaning hereof shall include its successors or assigns of the OTHER PART

Preamble

The Principal intends to award, under laid-down organizational procedures, contract/s for _____

_____ (hereinafter referred to as "Contract"). The Principal values full compliance with all relevant laws of the land, rules and regulations, and the principles of economic use of resources, and of fairness and transparency in its relations with its Bidder(s)/ Contractor(s).

In order to achieve these goals, the Principal will appoint panel of Independent External Monitor(s) (IEMs), who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

Section 1- Commitments of the Principal

- 1.1 The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles: -
 - 1.1.1 No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
 - 1.1.2 The Principal will, during the tender process treat all Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential/ additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.
 - 1.1.3 The Principal will exclude from the process all known prejudiced persons.
- 1.2 If the Principal obtains information on the conduct of any of its employees which is a penal offence under the Bharatiya Nyaya Sanhita (BNS) 2023 and Prevention of Corruption Act 1988 or any other statutory penal enactment, or if there be a substantive suspicion in this regard, the Principal will inform its Vigilance Office and in addition can initiate disciplinary actions.

Section 2 - Commitments of the Bidder(s)/ Contractor(s)

- 2.1 The Bidder(s)/ Contractor(s) commit himself to take all measures necessary to prevent corruption. The Bidder(s)/ Contractor(s) commits himself to observe the following principles during participation in the tender process and during the contract execution.

- 2.1.1 The Bidder(s)/ Contractor(s) will not, directly or through any other person or firm, offer, promise or give to the Principal or to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material, immaterial or any other benefit which he/ she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.
- 2.1.2 The Bidder(s)/ Contractor(s) will not enter with other Bidder(s) into any illegal or undisclosed agreement or understanding, whether formal or informal. 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.
- 2.1.3 The Bidder(s)/ Contractor(s) will not commit any penal offence under the relevant Bharatiya Nyaya Sanhita (BNS) and Prevention of Corruption Act; further the Bidder(s)/ Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
- 2.1.4 Foreign Bidder(s)/ Contractor(s) shall disclose the name and address of agents and representatives in India and Indian Bidder(s)/ Contractor(s) to disclose their foreign principals or associates. The Bidder(s)/ Contractor(s) 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.
- 2.2 The Bidder(s)/ Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.
- 2.3 The Bidder(s)/ Contractor(s) shall not approach the Courts while representing the matters to IEMs and shall await their decision in the matter.

Section 3 - Disqualification from tender process and exclusion from future contracts

If the Bidder(s)/ Contractor(s), before award or during execution has committed a transgression through a violation of Section 2 above, or acts in any other manner such as to put his reliability or credibility in question, the Principal is entitled to disqualify the Bidder(s)/ Contractor(s) from the tender process, terminate the contract, if already awarded, exclude from future business dealings and/ or take action as per the separate "Guidelines on Banning of Business dealings with Suppliers/ Contractors", framed by the Principal.

Section 4 - Compensation for Damages

- 4.1 If the Principal has disqualified the Bidder (s) from the tender process before award / order acceptance according to Section 3, the Principal is entitled to demand and recover the damages equivalent to Earnest Money Deposit/ Bid Security.
- 4.2 If the Principal is entitled to terminate the Contract according to Section 3, or terminates the Contract in application of Section 3 above, the Bidder(s)/ Contractor (s) transgression through a violation of Section 2 above shall be construed breach of contract and the Principal shall be entitled to demand and recover from the Contractor an amount equal to 5% of the contract value or the amount equivalent to Security Deposit/ Performance Bank Guarantee, whichever is higher, as damages, in addition to and without prejudice to its right to demand and recover compensation for any other loss or damages specified elsewhere in the contract.

Section 5 - Previous Transgression

- 5.1 The Bidder declares that no previous transgressions occurred in the last 3 (three) years (to be reckoned from date of bid submission) with any other company in any country conforming to the anti-corruption approach in India that could justify his exclusion from the tender process. The date of such transgression, for the purpose of disclosure by the bidders in this regard, would be the date on which cognizance of the said transgression was taken by the competent authority. The transgression(s), for which cognizance was taken even before the said period of three years, but are pending conclusion, shall also be reported by the bidders.
- 5.2 If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason or action can be taken as per the separate "Guidelines on Banning of Business dealings with Suppliers/ Contractors", framed by the Principal.

Section 6 - Equal treatment of all Bidder (s)/ Contractor (s) / Sub-contractor (s)

- 6.1 The Principal will enter into Integrity Pacts with identical conditions as this Integrity Pact with all Bidders and Contractors.
- 6.2 In case of a joint venture, all the partners of the joint venture should sign the Integrity Pact. In case of Sub-contracting, the Principal Contractor shall be solely responsible for the adherence to the provisions of IP by the sub-contractor(s).
- 6.3 The Principal will disqualify from the tender process all Bidders who do not sign this Integrity Pact or violate its provisions.

Section 7 - Criminal Charges against violating Bidders/ Contractors /Subcontractors

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the Vigilance Office.

Section 8 -Independent External Monitor(s)

- 8.1 The Principal appoints competent and credible panel of Independent External Monitor (s) (IEMs) for this Integrity Pact. The task of the IEMs is to review independently and objectively, whether and to what extent the parties comply with the obligations under this Integrity Pact on receipt of any complaint by them from the bidder(s).
- 8.2 The IEMs are not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the CMD, BHEL.
- 8.3 The IEMs shall be provided access to all documents/ records pertaining to the Contract, for which a complaint or issue is raised before them as and when warranted. However, the documents/records/information having National Security implications and those documents which have been classified as /Top Secret are not to be disclosed.
- 8.4 The Principal will provide to the IEMs sufficient information about all meetings among the parties related to the Contract provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the IEMs the option to participate in such meetings.
- 8.5 The role of IEM is advisory and the advice of IEM is non- binding on the Organization. However, as IEMs are invariably persons with rich experience who have retired as senior functionaries of the government, their advice would help in proper implementation of the IP.

- 8.6 For ensuring the desired transparency and objectivity in dealing with the complaints arising out of the tendering process, the matter should be examined by the full panel of IEMs jointly, who would look into the records, conduct an examination, and submit their joint recommendations to the Management. In case the full panel is not available due to some unavoidable reasons, the available IEM(s) will conduct examination of the complaints. Consent of the IEM(s), who may not be available, shall be taken on record.
- 8.7 The IEMs shall examine all the representations/grievances/ complaints received by them from the bidders or their authorized representative related to any discrimination on account of lack of fair play in modes of procurement and bidding systems, tendering method, eligibility conditions, bid evaluation criteria, commercial terms & conditions, choice of technology/ specifications etc.
- 8.8 The CMD, BHEL shall decide the compensation to be paid to the IEMs and its terms and conditions.
- 8.9 IEMs should examine the process integrity, they are not expected to concern themselves with fixing of responsibility of officers. Complaints alleging mala fide on the part of any officer of the Principal should be looked into by the CVO of the Principal.
- 8.10 If the IEMs have reported to the CMD, BHEL, a substantiated suspicion of an offence under relevant Bharatiya Nyaya Sanhita (BNS)/ Prevention of Corruption Act, and the CMD, BHEL has not, within reasonable time, taken visible action to proceed against such offence or reported it to the Vigilance Office, the IEMs may also transmit this information directly to the Central Vigilance Commissioner, Government of India.
- 8.11 After award of work, the IEMs shall look into any issue relating to execution of Contract, if specifically raised before them. As an illustrative example, if a Contractor who has been awarded the Contract, during the execution of Contract, raises issue of delayed payment etc. before the IEMs, the same shall be examined by the panel of IEMs.
- 8.12 However, the IEMs may suggest systemic improvements to the management of the Principal, if considered necessary, to bring about transparency, equity and fairness in the system of procurement.
- 8.13 The word 'Monitor' would include both singular and plural.

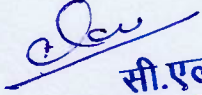
Section 9 - Pact Duration

- 9.1 This Integrity Pact shall be operative from the date this Integrity Pact is signed by both the parties. Any violation of the same would entail disqualification of the bidders and exclusion from future business dealings.
- 9.2 If any claim is made/ lodged during currency of this Integrity Pact, the same shall be binding and continue to be valid despite the lapse of this Pact as specified above, unless it is discharged/ determined by the CMD, BHEL.

Section 10 - Other Provisions

- 10.1 This Integrity Pact is subject to Indian Laws and exclusive jurisdiction shall be of the competent Courts as indicated in the Tender or Contract, as the case may be.
- 10.2 Changes and supplements as well as termination notices need to be made in writing.

- 10.3 If the Bidder(s)/ Contractor(s) is a partnership or a consortium or a joint venture, this Integrity Pact shall be signed by all partners of the partnership or joint venture or all consortium members.
- 10.4 Should one or several provisions of this Integrity Pact turn out to be invalid, the remainder of this Integrity Pact remains valid. In this case, the parties will strive to come to an agreement to their original intentions.
- 10.5 Only those bidders / contractors who have entered into this Integrity Pact with the Principal would be competent to participate in the bidding. In other words, entering into this Integrity Pact would be a preliminary qualification.
- 10.6 In the event of any dispute between the Principal and Bidder(s)/ Contractor(s) relating to the Contract, in case, both the parties are agreeable, they may try to settle dispute through Mediation before the panel of IEMs in a time bound manner. If required, the Principal may adopt any mediation rules for this purpose. However, not more than five meetings shall be held for a particular dispute resolution. The fees/expenses on dispute resolution shall be equally shared by both the parties. In case, the dispute remains unresolved even after mediation by the panel of IEMs, either party may take further action as the terms & conditions of the Contract.


सी.एल.मीणा
C.L. Meena
वरिष्ठ अधिकारी (क्रय-बी.ओ.आई.)
For & On behalf of the Principal
(Office Seal)
Sr. Manager (Purchase-BOI)
BHEL, Ranipur, Haridwar

Place _____

Date _____

Witness: _____

(Name & Address) _____

HEEP, BHEL, HARIDWAR

For & On behalf of the Bidder/ Contractor
(Office Seal)

Witness: _____

(Name & Address) _____

	CORPORATE QUALITY ASSURANCE SUB-VENDOR QUESTIONNAIRE
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i.	Item/Scope of Sub-contracting			
ii.	Address of the registered office	Details of Contact Person (Name, Designation, Mobile, Email)		
iii.	Name and Address of the proposed Sub-vendor's works where item is being manufactured	Details of Contact Person: (Name, Designation, Mobile, Email)		
iv.	Annual Production Capacity for proposed item/scope of sub-contracting			
v.	Annual production for last 3 years for proposed item/scope of sub-contracting			
vi.	Details of proposed works			
1.	Year of establishment of present works			
2.	Year of commencement of manufacturing at above works			
3.	Details of change in Works address in past (if any)			
4.	Total Area			
	Covered Area			
5.	Factory Registration Certificate	Details attached at Annexure – F2.1		
6.	Design/ Research & development set-up (No. of manpower, their qualification, machines & tools employed etc.)	Applicable / Not applicable if manufacturing is as per Main Contractor/purchaser design) Details attached at Annexure – F2.2 (if applicable)		
7.	Overall organization Chart with Manpower Details (Design/Manufacturing/Quality etc)	Details attached at Annexure – F2.3		
8.	After sales service set up in India, in case of foreign sub-vendor (Location, Contact Person, Contact details etc.)	Applicable / Not applicable Details attached at Annexure – F2.4		
9.	Manufacturing process execution plan with flow chart indicating various stages of manufacturing from raw material to finished product including outsourced process, if any	Details attached at Annexure – F2.5		

	CORPORATE QUALITY ASSURANCE SUB-VENDOR QUESTIONNAIRE
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10.	Quality Control exercised during receipt of raw material/BOI, in-process , Final Testing, packing	Details attached at Annexure – F2.6												
11.	Manufacturing facilities (List of machines, special process facilities, material handling etc.)	Details attached at Annexure – F2.7												
12.	Testing facilities (List of testing equipment)	Details attached at Annexure – F2.8												
13.	If manufacturing process involves fabrication then-	Applicable / Not applicable												
	List of qualified Welders	Details attached at Annexure – F2.9												
	List of qualified NDT personnel with area of specialization	(if applicable)												
14.	List of out-sourced manufacturing processes with Sub-Vendors' names & addresses	Applicable / Not applicable Details attached at Annexure. –F2.10 (if applicable)												
15.	Supply reference list including recent supplies	Details attached at Annexure – F2.11 (as per format given below)												
	<table border="1" style="width: 100%;"> <tr> <th style="width: 10%;">Project/ package</th> <th style="width: 10%;">Customer Name</th> <th style="width: 30%;">Supplied Item (Type/Rating/Model /Capacity/Size etc)</th> <th style="width: 15%;">PO ref no/date</th> <th style="width: 15%;">Supplied Quantity</th> <th style="width: 10%;">Date of Supply</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	Project/ package	Customer Name	Supplied Item (Type/Rating/Model /Capacity/Size etc)	PO ref no/date	Supplied Quantity	Date of Supply							
Project/ package	Customer Name	Supplied Item (Type/Rating/Model /Capacity/Size etc)	PO ref no/date	Supplied Quantity	Date of Supply									
16.	Product satisfactory performance feedback letter/certificates/End User Feedback	Attached at annexure - F2.12												
17.	Summary of Type Test Report (Type Test Details, Report No, Agency, Date of testing) for the proposed product (similar or higher rating) Note:- Reports need not to be submitted	Applicable / Not applicable Details attached at Annexure – F2.13 (if applicable)												
18.	Statutory / mandatory certification for the proposed product	Applicable / Not applicable Details attached at Annexure – F2.14 (if applicable)												
19.	Copy of ISO 9001 certificate (if available)	Attached at Annexure – F2.15												
20.	Product technical catalogues for proposed item (if available)	Details attached at Annexure – F2.16												
<table border="1" style="width: 100%;"> <tr> <td style="width: 15%;">Name:</td> <td style="width: 25%;"> </td> <td style="width: 15%;">Desig:</td> <td style="width: 25%;"> </td> <td style="width: 15%;">Sign:</td> <td style="width: 15%;"> </td> <td style="width: 10%;">Date:</td> <td style="width: 10%;"> </td> </tr> </table>			Name:		Desig:		Sign:		Date:					
Name:		Desig:		Sign:		Date:								

Company's Seal/Stamp:-

MANUFACTURER'S NAME AND ADDRESS			QUALITY PLAN					TO BE FILLED BY BHEL		TO BE FILLED BY BHEL				
BHEL	VENDOR'S NAME	ITEM			QP NO.									
					REV									
		DRG. NO.		AS PER PO										
		SPEC.		AS PER PO										
		REV		Page 1 of 1										
SL. NO.	COMPONENT & OPERATIONS	CHARACTERISTICS		CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORDS		AGENCY			REMARKS
										M	B	N		
1	2	3		4	5	6	7	8	9	D	10			11

Note 1: BHEL approved NDT procedure should be obtained by vendors before performing NDT , if the same is not already available with the vendor for the job.

Note 2: All page of inspection documents shall be numbered in chronology with the QAP clause , dully mentioning the corresponding QAP clause nos. at the top of each page. One index page containing the documents descriptions, their page no & QAP clause shall be attached upfront the inspection documents.

MANUFACTURER/SUBCONTRACTOR		LEGEND:	FOR CUSTOMER USE	APPROVED BY
		! RECORDS IDENTIFIED WITH 'TICK' SHALL BE ESSENTIALLY INCLUDED BY CONTRACTOR IN QA DOCUMENTATION.		
		M: MANUFACTURER / SUBCONTRACTOR B: BHEL / NOM. INSPECTION AGENCY N: CUSTOMER INDICATE 'P' PERFORM 'W' WITNESS AND 'V' VERIFICATION ALL 'W' INDICATED IN COLUMN 'N' SHALL BE 'CHP' OF CUSTOMER		