Bharat Heavy Electricals Limited Ranipet-632406, India. Quality Assurance (Mech)

BHILAI: AGT: 121:359 Dt. 07-02-2022

| SI No. | AGITATORS For | Indent No | Indent Dt. | PGMA | Technical Specification |
|--------|--------------------|-----------|------------|-------|---|
| | | RFW11541 | 02.02.2022 | FW720 | ECD. ACITATORC.DO1 |
| 01 | NSPCL BHILAI | RFW11542 | 02.02.2022 | | FGD: AGITATORS:R01, BHILAI:FGD:AGITATORS:R00 & |
| 01 | (2X250 MW) Project | RFW11544 | 02.02.2022 | FW997 | AGITATORS:QR-3K:BHILAI |

"Customer/NTPC has informed that in case the item is covered under Sub-QR list, the proposed vendors for the same shall be accepted by QA after acceptance of vendor by NTPC Engg."

- 1. Since Agitators appears under Sub-QR item, Sub-QR approved vendor by NTPC Engg. acceptable to Quality also.
- 2. Inspection and testing shall be done as per approved Quality plan, Quality plan to be approved by Customer/ NTPC after review of BHEL.
- 3. Painting shall be as per Customer approved Painting schedule.
- **4.** Arrange MQP from sub QR Cleared vendor for taking up with Customer for their review and approval. Find herewith-attached indicative MQP (QP NO.FGD:704/00, DT: 26.10.2020). This MQP is indicative only and actual Quantum of Check/Stage may differ based on Project/Customer requirement and their approved MQP.
- **5.** Already NTPC approved latest MQP for similar application if available specific to Vendor may be shared for obtaining faster approval from Customer/Customer Consultant.
- **6.** All the Agitators shall be inspected at supplier works as per approved QP/Approved Drawing/Approved datasheet and Technical Specification.
- 7. Packing of items shall be as per BHEL Engg Approved Packing Drawing/Packing Specifications.
- 8. BHEL Authorized representatives shall have the right to witness the necessary inspection and testing of goods mentioned in the PO. The supplier shall inform BHEL in advance about the readiness of the goods for inspection and testing. Inspection / Inspection wavier / approval by BHEL does not absolve Supplier's responsibility for conformity of the specification as per the terms of PO. Material Test Certificates shall be submitted to BHEL.
- 9. Annexure 'Q' and BOI's Details shall be part of enquiry File and shall be filled by Supplier with their duly sign and seal.
- 10. Following Notes applicable for Inspection Purpose:
 - a. Latest version of standards & Specification shall be applied.
 - b. Materials shall be procured in compliance to Functional Technical specification.
 - c. Gauges and measuring instruments with valid calibration only shall be used.
 - d. Inspection / Inspection wavier / approval by BHEL does not absolve Supplier's responsibility for conformity of the responsibility for conformity of the specification as per the terms of PO.
 - e. BHEL /BHEL Authorized representatives shall have the right to witness the necessary inspection and testing of goods mentioned in the PO.
 - f. In case of Vendor Drawing & Datasheet, it needs approval by BHEL Engineering.
 - g. QP shall be read along with relevant PO, BHEL Specification / Approved Drawing / Datasheet.

This is for your information and further necessary action at your end please.

Sd\- Rakesh Kr Madhu Dy/Mgr-QA Sd\- K Renjith Mgr/QA

Page 1 of 1

| बीए | बीएच ई एल MANUFACTURING QUALITY PLAN | | | | | | | | PROJECT: | | | | | | |
|-----------------|--------------------------------------|------|----------------|--------|---------|--------|-----------------|--------------------------|------------|----------------------|-----|------|------|------|---------|
| H | Manufacturer Name and Address: | | | | | | ITEM: AGITATORS | | | PACKAGE: FGD PACKAGE | | | | | |
| | | | | | | | QP N | 0: FGD:704, RE | EV:00 | CUST MAIN (| - | RACT | TOR: | BHFI | |
| Main contractor | | | | | | DT: 26 | 6.10.2020 Pa | age 1 of 4 | | | | | | - | |
| SL. | COMPONE | NT & | CHARATERISTICS | CLASS | TYPE OF | QUATU | M OF | REFERENCE | ACCEPTANCE | FORMA | | A | GEN(| CY | REMARKS |
| NO. | OPERATIO | N | | 02/100 | CHECK | CHEC | CK | DOCUMENT | NORMS | OF REC | ORD | M | С | N | |
| | | | | | | M | C/N | | | | | | | | |
| 1 | 2 | | 3 | 4 | 5 | 6 | | 7 | 8 | 9 | D* | | 10 | | 11 |

| 1.0 | RAW MATERIA | LS INSPECTION | | | | | | | | | | | |
|-----|--|--|-------|--|--------------|--------------|----------------------|-------------------|---|---|---|---|-------------------------------|
| 1.1 | Shaft & Blades, rubber composition & other material | Chem. & Mech Properties | Major | Review of MTC | One/ Heat | One/ Heat | =: | | 1 | Р | V | ٧ | For shaft Dia ≥ 40mm UT shall |
| | including castings & | Dimensions | | Measure nt | 100% | | , | IR | ٧ | P | - | - | be done as per ASTM A 388. |
| | forgings | Surface Defects | | Visual | 100% | - | | IR | | P | - | - | |
| 2.0 | 2.0 Motor Separate MQP for Electrical Motor as applicable. | | | | | | | | | | | | |
| 3.0 | Gear box | Make,Type, Rating,vibration,n oise Review of Routine/Run test Report | Major | Review of manufact ure's test report | 100% | 100% | Drawing/Data Sheet | TC/ Repo rt | 1 | P | V | V | |
| 4.0 | .0 IN PROCESS INSPECTION | | | | | | | | | | | | |
| 4.1 | Welding Qualifications | WPS,PQR,WPQ | Major | WPS, PQR & WPQ | 100% | 100% | ASME Sec IX/AWS D1.1 | WPS/ PQR | 1 | Р | ٧ | V | |

| | LEGEND: * RECORDS, INDENTIFIED WITH "TICK" (√) UNDER | | | |
|---------------------------|---|-------------|-------------|-------------|
| | COLUMN 'D'SHALL BE SUBMITTED TO CUSTOMER AS A 'QA' DOCUMENTATION PACKAGE. M: MANUFACTURE/SUB SUPPLIER, C: MAIN CONTRACTOR(BHEUBHEL AIA), N:NTPC P: PERFORM W: WITNESS AND V: VERIFICATION / REVIEW OF RECORDS, | | | |
| MANUFACTURER SIGN & STAMP | MTC: MATERIAL TEST CERTIFICATE, TC: TEST CERTIFICATE, MA: MAJOR, MI:MINOR, COC: CERTIFICATE OF CONFORMANCE, IR: INSPECTION REPORT, TR: TEST REPORT AIA: AUTHORISED INSPECTION AGENCY. | PREPARED BY | reviewed by | APPROVED BY |

| बी (| ग्च ई एल | | | MANUFACT | TURING | QUALIT | Y PLAN | | PROJI | ECT: | | | | |
|------------|--|---|---------|----------------------------|--------------|--------|-------------------------|---------------------------|-------------------------------------|------|---|------------|---------|---------|
| B | Manuf | acturer Name and A | ddress: | | | ITEM: | AGITATOF | RS | PACKAGE: FGD PACKAGE | | | | | |
| | // | | | | | QP NO |): FGD:704, F | REV:00 | CUST No: — MAIN CONTRACTOR: BHEL | | | | I | |
| Main | contractor | | | | | | 5.10.2020 I | Page 2 of 4 | WAIN CONTRACTORS. BILL | | | | L | |
| SL. NO. | COMPONENT & OPERATION | CHARATERISTICS | CLASS | TYPE OF CHECK | QUATU CHE | | REFERENCE DOCUMENT | | FORMA OF REC | | M | AGENO C | CY N | REMARKS |
| | | | | _ | M | C/N | | | | D. | | | | 44 |
| 1 | 2 | 3 | 4 | 5 | 6 | | 7 | 8 | 9 | D* | | 10 | | 11 |
| 4.2 | Marking,cutting ,Edge preparation Tacking | Dimensions | Major | Measure ment | 100% | 1 | Appd.Drav | ing | IR | - | Р | - | - | |
| 4.3 | Shaft & Impeller | Visual & Dimension check,face out and run out of shaft (after flange welding) | Major | Measure ment | 100% | 100% | As per Spe Appd.Draw | | IR | 1 | Р | V | V | |
| 4.4 | Welds | Visual, Dimension | Major | Visual, Measure ment | 100% | 100% | ASME Sec | :-VIII/ AWS D!.1 | IR | 1 | Р | V | ٧ | |
| 4.5 | Weld surface check | Weld soundness | Major | DPT | 100% | 100% | ASME Sec Appendix 8 | :-VIII/AWS D1 3 | IR | 1 | Р | W | ٧ | |
| 4.6 | Impeller | Balancing | Major | Visual, Measure ment | 100% | 10% | ISO 1940- Data sheet | /Appd.Drg.& | TR | V | Р | W | ٧ | |

| | LEGEND: ★ RECORDS, INDENTIFIED WITH "TICK" (√) UNDER | | | |
|-----------------------------|--|-------------|-------------|-------------|
| | COLUMN 'D'SHALL BE SUBMITTED TO CUSTOMER AS A 'QA' | | | |
| | DOCUMENTATION PACKAGE. | | | |
| | M: MANUFACTURE/SUB SUPPLIER, C: MAIN | | | |
| | CONTRACTOR(BHEL/BHEL AIA), N:NTPC P: PERFORM W: | | | |
| | WITNESS AND V: VERIFICATION / REVIEW OF RECORDS, | | | |
| | MTC: MATERIAL TEST CERTIFICATE, TC: TEST CERTIFICATE, | | | |
| MANUELACTURED CIONI A CTAMP | MA: MAJOR, MI:MINOR, COC: CERTIFICATE OF | | DEVIEWED DV | ADDDOVED DV |
| MANUFACTURER SIGN & STAMP | CONFORMANCE, IR: INSPECTION REPORT, TR: TEST REPORT | PREPARED BY | reviewed by | APPROVED BY |
| | AIA: AUTHORISED INSPECTION AGENCY. | | | |

| वीर | च ई एन | | | | MANUFACT | TURING | QUALI | TY PLAN | | PROJ | ECT: | | | | |
|------------|--|------------|--|---|---|--|----------------------------------|--|---------------------------------|---------------------|-------------------|------|------------|---------|--|
| R | HFL | Manufa | acturer Name and A | ddress: | | | ITEM: | AGITATOR | S | _ | (AGE: FGD PACKAGE | | | | |
| | " | | | | | | QP NO |): FGD:704, R | EV:00 | CUST | 'No: CONT | -סער | T∩D. | | I |
| Main (| contractor | | | | | | DT: 26 | 6.10.2020 P | age 3 of 4 | INIVIIA | OONI | ΠΛΟ | TOI1. | םו ונ | L |
| SL. NO. | COMPON OPERAT | | CHARATERISTICS | CLASS | TYPE OF CHECK | QUATU CHE | CK | REFERENCE DOCUMENT | ACCEPTANCE NORMS | FORMAT OF RECORD | | M | AGENO C | CY N | REMARKS |
| | ļ., | | • | | - | M | C/N | - | | | - Bi | | 40 | | 44 |
| 1 | 2 | 2 | 3 | 4 | 5 | 6 | | 7 | 8 | 9 | D* | | 10 | | 11 |
| 4.7 | Rubber | Lining | Thickness of Rubber, Hardness, Spark test, Adhesion Test on Test piece | Major | Measure ment | 100% | 10% | As per Specs./ Appd. Drg. & data sheet | Appd.Drg.& Data sheet, | TR | 1 | P | W | ٧ | |
| 5.0 | FINAL I | NSPEC1 | TION | | | | | ı | 1 | | | | ı | | |
| 5.1 | Final As Base Frame, F etc. | , | Visual- Workmanship, Dimensional, | Major | Visual, Measure ment | 100% | 20% of each type(| Appd.Drg. 8 | & Spec, | IR | 1 | P | W | ٧ | For Top Agitator with shaft length>5meter |
| 5.2 | Free Air test of Complei assemb | te | Current,RPM, Vibration,Noise & Temperature rise | Major | Measure ment | 100% | Vertic al/Hor izonta l) | | er's procedure/ Prawing/Data | IR | 1 | Р | W | W | run test to be carried out with bearing Shaft only. |
| 5.3 | Painting | l | Visual,DFT | Major | Paint Shade & DFT measure ment | 100% | 10% | NTPC Appr Schedule | oved Painting | IR | 1 | Р | W | ٧ | |
| 5.4 | Marking | | Visual | Major | Visual | 100% | 10% | Appd.Drawi | ing | IR | 1 | Р | W | V | |
| 5.5 | Packing | | Visual | Major | Visual | 100% | 100% | Appd.Drawin | g/Specification | COC | - | Р | - | - | |
| 5.6 | Review Docume | | MQP Compliance | Major | Complian ce Record | 100% | 100% | Completion documents, as per Appr | Test Report | IR | 1 | Р | ٧ | ٧ | |
| MANUI | FACTURER | SIGN & STA | LEGEND: * RECO COLUMN 'D'SHALL DOCUMENTATION M: MANUFACTURE CONTRACTOR(BH WITNESS AND V: ' MTC: MATERIAL T MA: MAJOR, MI:MI CONFORMANCE, I AIA: AUTHORISED | BE SUBM I PACKAGE E/SUB SUP EL/BHEL A VERIFICAT EST CERTI NOR, COC IR: INSPEC | ITTED TO CUST : : : : : : : : : : : : : : : : : : : | PERFORM PERFORM OF RECORD ST CERTIF OF | W: S, ICATE, | PREPAI | RED BY | REVI | EWED | ВУ | | | APPROVED BY |

| वी | एच ई एन | | MANUFACTURING QUALITY PLAN | | | | | | | | | | | | |
|------|--------------------------------|--------|----------------------------|-------|---------|-------|----------------------|-------------|---------------------------------|-----------|-------|-------|------|----|---------|
| H | Manufacturer Name and Address: | | | | | | ITEM | AGITATOR | PACKAGE: FGD PACKAGE | | | | | | |
| | | | | | | QP N | 0: FGD:704, R | EV:00 | CUST No: MAIN CONTRACTOR: BHEL | | | | | | |
| Main | contractor | | | | | | DT: 2 | 6.10.2020 P | age 4 of 4 | 1417 (114 | 00111 | 11110 | 1011 | | - |
| SL. | COMPON | IENT & | CHARATERISTICS | CLASS | TYPE OF | QUATU | JM OF | REFERENCE | ACCEPTANCE | FORMA | T | Α | GEN(| CY | REMARKS |
| NO. | OPERAT | ON | | | CHECK | CHE | CK | DOCUMENT | NORMS | OF REC | ORD | M | C | N | |
| | | | | | | M | C/N | | | | | | | | |
| 1 | 2 |) | 3 | 4 | 5 | 6 | | 7 | 8 | 9 | D* | | 10 | | 11 |

Notes:

- 1. This QP is applicable for Mandatory spare also.
- 2. All other minor items, which are not cover under this QP, shall be manufactured inspected as per OEM (Original equipment Manufacturer)/BHEL standard practice and relevant standard. Relevant TC/COC will be submitted for the same.

| | LEGEND: * RECORDS, INDENTIFIED WITH "TICK" ($$) UNDER | | | |
|---------------------------|---|-------------|-------------|-------------|
| | COLUMN 'D'SHALL BE SUBMITTED TO CUSTOMER AS A 'QA' DOCUMENTATION PACKAGE. | | | |
| | M: MANUFACTURE/SUB SUPPLIER, C: MAIN | | | |
| | CONTRACTOR(BHEL/BHEL AIA), N:NTPC P: PERFORM W: WITNESS AND V: VERIFICATION / REVIEW OF RECORDS, | | | |
| | MTC: MATERIAL TEST CERTIFICATE, TC: TEST CERTIFICATE, | | | |
| MANUFACTURER SIGN & STAMP | MA: MAJOR, MI:MINOR, COC: CERTIFICATE OF CONFORMANCE, IR: INSPECTION REPORT, TR: TEST REPORT AIA: AUTHORISED INSPECTION AGENCY. | PREPARED BY | reviewed by | APPROVED BY |

| Annexure Q | | | | | | | | | |
|------------|---|--|--|--|--|--|--|--|--|
| | Indent No: Enquiry no: | W C 20 | | | | | | | |
| SI.No | BHEL / Customer Requirements | ## Specific confirmations by the manufacturer (Acceptable/Not acceptable) | | | | | | | |
| | Quality Plan Requirement: (If SQP is not given & Vendor QP applicable) | | | | | | | | |
| | (i) MQP (Manufacturing Quality Plan) shall be submitted in attached format for BHEL/Customer review & approval. Our SQP/Typical MQP/ MQP Format is attached for guidance & use. | | | | | | | | |
| | (ii) MQP shall invariably cover w.r.t Inward inspection including on Raw material Procurement, In process and Final inspection in elaborated way/details. | | | | | | | | |
| | (iii) Bidder shall also to give specific confirmation that on need basis, their competent officials shall visit to BHEL / customer for finalization of Quality plan including test procedure/methodology during preaward / post award approval / detailed engineering in the event of an order. | | | | | | | | |
| | (iv) No deviation on BHEL/Customer approved MQP/ SQP (In case BHEL SQP is provided) is acceptable. | | | | | | | | |
| 1 | (v) Bidder shall agree to submit all cross referred documents other than codes/standards to BHEL/Customer/Consultant. | | | | | | | | |
| | Important Notes shall be included in MQP: (a) Latest revision of Standard's & Specification shall apply. Only International Standards are applicable. (b) Materials shall be procured in compliance to Functional Technical Specification. (c) Inspection shall be in compliance with Approved Quality Control Procedure for the Product. (d) NDT shall be carried out by Qualified Personnel with compliance to Approved NDT Procedures and Acceptance Norms, as per ASME standard. (e) Gauges and measuring Instruments, with valid calibration only shall be used. (f) Cleaning and Painting of products shall be carried out as per Approved Painting Schedule. (g) Finished Products shall be packed to comply with Approved Packing Schedule. (h) Welding shall be carried out by Qualified Personnel with compliance to Approved NDT Procedures and Acceptance Norms, as per ASME standard. | | | | | | | | |
| 2 | Domestic / Inland Inspection will be carried out by BHEL/BHEL appointed Third Party Inspection Agency (TPIA) / Customer/Customer Appointed Inspection Agency/Consultant. This is applicable for all Stage inspection and Final Inspection identified as "W" - Witness or "CHP" - Customer Hold Point as per customer approved Quality Plan/ Technical specification / Approved Drawing/ Approved Data sheet / Scheme / PID / PFD / SLD (Process Instrumentation Diagram / Process Flow Diagram / Single Line Diagram) etc. (as applicable). | | | | | | | | |
| 3 | Inspection Agency for Foreign Bidders and also for Indian Bidder but importing from Foreign Sources: (1) Any one of the following Third Party Inspection Agency (TPIA) shall be appointed by the bidder and same shall be furnished by the bidder in techno commercial bid itself. (2) The details of TPIA with contact details like Name of the official, Phone no, Email id shall also to be submitted during pre/post award. However cost for such inspection agency shall be borne by the bidder only. Inspection charges for such inspection agency shall be indicated separately so that if BHEL/Customer is undertaking the inspection by on their own , then these charges are non claimable by the bidder. List of TPIA 1.M/s Bureau Veritas 2.M/s TUV-Nord 3.M/s TUV-SUD 4.M/s TUV Rheinland 5.M/s Lloyds Register 6.M/s SGS 7.M/s Germanischer Lloyds 8.M/s QUEST 9.M/s Certification Engineers International 10.M/s Intertek 11.M/s IR Class Systems and Solutions 12.M/s DNV 13. M/s Fichtner 14. M/s ABS Inspection Services | | | | | | | | |

| SI.No | BHEL / Customer Requirements | ## Specific confirmations by the manufacturer (Acceptable/Not acceptable) |
|-------|--|---|
| 4 | Stage Inspection during manufacturing Process: Stage Inspection during manufacturing shall be carried out as per approved quality plan and all necessary documents shall be provided for review, verification and clearance for further processing. This inspection call shall be given well in advance (at least 2 weeks before) to TPI/Bidder's own inspection agency to avoid delay in the manufacturing processes. | |
| | Inspection before despatch for domestic supplier: Inspection before despatch at supplier's works shall be carried out by BHEL appointed Inspection agency (as in SI no. 2). Inspection shall be done as per approved Quality plan/ Technical specification/ Approved Drawing/ Approved Data sheet. | |
| l h | Inspection at Foreign Source/Supplier: (a) As in sl no: 3. shall be ensured without fail (b) No material / items shall be despatched without getting the written communication from BHEL / Customer inspection carried out by Bidder appointed Third Party Inspection Agency (As per Sl no.3) / Customer/Customer Appointed Inspection Agency/Consultant. This is applicable for all Stage inspection and Final Inspection identified as "W" - Witness or "CHP" - Customer Hold Point as per customer approved Quality Plan/ Technical specification / Approved Drawing/ Approved Data sheet / Scheme / PID / PFD / SLD (Process Instrumentation Diagram / Process Flow Diagram / Single Line Diagram) etc. (As applicable). Inspection before despatch for Foreign supplier: Inspection before despatch at supplier's works shall be carried out by bidder appointed inspection agencies having international presence at vendors and or vendor's sub vendor works. Inspection shall be done as per approved Quality plan/ Technical specification/ Approved Drawing/ Approved Data sheet by TPIA mentioned in Sl no: 03 at supplier's cost. | |
| 7 | Painting shall be done strictly as per BHEL/Customer approved painting schedule / scheme only. Paint Thickness / Paint shade shall be ensured as per BHEL / Customer approved painting schedule / specification / data sheet etc. No deviation is acceptable unless otherwise accepted by BHEL/Customer in writing. Any conflict if any among BHEL / Customer approved painting schedule / Spec / data sheet etc. shall be brought to the notice of BHEL well in advance before proceeding including the BOI being procured for assy / skid like motors etc. | |
| 8 | Specific conformation for document package in the event of an order (2 Hard copies & soft copy in PDF file) is to be given containing the following with proper linkages (i) Index Sheet (ii) MQP/RQP/Endorsement Sheet (As applicable) (iii) TCs identified by BHEL/ Customer for record for "CHP" / "W" and Verification portion ("V") as given in approved QP. (iv) Final inspection report + TC including Chemical + Mechanical + HT + NDT etc. (v) Third party Inspection report + TC (vi) Customer CHP/ MDCC (vii) Type test / Performance Test reports conducted (viii) Type test / Performance Test approval/ clearance obtained from BHEL/Customer (ix) BOM with As Build Drgs with actual make / rating used with BHEL/customer approved drawings. | |
| | Packing / Seaworthy Packing shall be as per BHEL Packing schedule / approved drg / sketch. This shall be ensured to take care transit / handling / transhipment in Road / Sea / Air. Photographs are to be submitted for BHEL review before despatching the material as per contract conditions. | |
| 10 | Outsourcing of test facilities: Bidder shall ensure all the testing facilities in house. However If any of the test facilities are not available with successful bidder, then bidder shall ensure the same at NABL accredited third party lab / Govt / Govt Lab for major testing such as NDT, Electrical & Mechanical testing. | |
| 11 | Important Note: No deviation on the above requirement 01 to 10 is acceptable with respect to Quality Requirement and those offers not meeting these specific customer requirement is liable for rejection and hence the bidder shall submit all the required documentary evidences in the offer itself. | |
| 12 | ## Necessarily to be filled up by the bidder at the time of offer itself otherwise the offer may not be considered w.r.t Quality Requirement being customer specific requirement. | |
| | VENDOR SIGN AND STAMP: | Vendor Name & Address: |

W.r.t INDIGENOUS OEM VENDORS ONLY

| SI | Description & Quality Requirements | Specific confirmation |
|----|---|-----------------------|
| no | | by the vendor |
| | | (Confirmed/Not |
| | | Confirmed) |
| 01 | OEM vendor shall meet all the requirements as in | |
| | Annexure-I and also OEM Vendor shall endorse (Signature | |
| | and Stamp in all the pages) in attached CONTRACT | |
| | QUALITY REQUIREMENTS (CQR) for LT MOTORS(IE3) Up to | |
| | 200KW used in Agitators (DOC.NO: BAP/QR/G211 to | |
| | G212/NSPCL Bhilai/ LTM/Agitators: 001 Rev No. 00 dt | |
| | 11.02.2022) and send us the same to follow / ensure all | |
| | the requirements in the event of an order. | |
| 02 | OEM vendor shall ensure Credentials of design and | |
| | Manufacturing capabilities w.r.t. LT Motors by their LT | |
| | Motor manufacture. | |
| 03 | OEM Supplier shall submit other details like that they are | |
| | already approved vendor by Ultimate Customer – NTPC | |
| | (National Thermal Power Corporation | |
| | Limited) specifically for proposed supply of LT Motor | |
| | against BHEL/Ranipet. The details of PO already executed | |
| | preferably through various other BHEL units for any NTPC | |
| | projects with CHP/MDCC including technical catalogue, PO | |
| | received so far for similar supply of LT Motors may also be | |
| | submitted. | |
| 04 | Accordingly OEM vendor shall be suitably informed that | |
| | If Ultimate Customer – NTPC (National Thermal Power | |
| | Corporation Limited) vendor approvals is not there /not | |
| | available, then their offer will not be considered for | |
| | further processing / ordering for the supply of LT Motors | |
| | to take care of overall equipment/system requirements. | |
| 05 | No material shall be dispatched without BHEL/ Ultimate | |
| | Customer – NTPC (National Thermal Power Corporation | |
| | Limited) inspection - CHP/MDCC clearances. | |

| NSP Proj (BHI NTP CC/0 26/00 PAC MAI BHE SUB | PROJECT: NSPCL - BHILAI Expansion Power Project (2x250 MW) (BHEL W.O no: G 211 and G212) NTPC CONTRACT NO: CC/CC&M-C-568-FC-NOA/141 Dt: 26/08/2019 PACKAGE: FGD PACKAGE MAIN CONTRACTOR: BHEL - RANIPET SUB CONTRACTOR (OEM) & ADDRESS: | | CONTRACT QUALITY REQUIREMENTS (CQR) for LT MOTORS(IE3) - Up to 200KW used in Agitators NSPCL - BHILAI Expansion Power Project (2x250 MW) (BHEL W.O no: G 211 and G212) | DOC.NO: BAP/QR/G211 to G212/NSPCL Bhilai/ LTM/ Agitators: 001 Rev NO.: 00 PAGE: Page 1 of 6 DATE: 11.02.2022 | ##Enquiry No: ## OEM Supplier Name & Address: ##Offer reference: ##Date: Contact Official Name: Mobile no: Email id: |
|---|---|--|---|--|--|
| (То | be filled by OEM | VENDOR) | | | |
| SI. NO. | DESCRIPTION | BHEL and | d Ultimate Customer - NTPC (Nationa Corporation)., India Quality Require | | ##Specific confirmations by the vendor |
| | | | ITEM: LT Motors (IE3) Up to | 200KW | |
| 01 | Type Test Requirements | in SL NO of ultimat for the te proposed have been been with / BHEL Manufact B. However, | nall submit the type test reports of all: 01 (D) below and carried out within e NTPC bid opening dt 12.04.2019. The set conducted on the identical/similar to be supplied under this enquiry and a conducted at an independent laboratessed by BHEL AIA (BHEL Appoints (or) Ultimate client NTPC at the surre of OEM vendor. If vendor is not able to submit the set as per above condition (or) in the care | | |
| | | test reportance are not for shall concuparty lab Appointed submit the C. Type Te Appointed must in lin | | | |

| PROJECT: NSPCL - BHILAI Expansion Power Project (2x250 MW) (BHEL W.O no: G 211 and G212) NTPC CONTRACT NO: CC/CC&M-C-568-FC-NOA/141 Dt: 26/08/2019 PACKAGE: FGD PACKAGE MAIN CONTRACTOR: BHEL - RANIPET SUB CONTRACTOR (OEM) & ADDRESS: | | G212) NOA/141 Dt: GE M) & | CONTRACT QUALITY REQUIREMENTS (CQR) for LT MOTORS(IE3) - Up to 200KW used in Agitators NSPCL - BHILAI Expansion Power Project (2x250 MW) (BHEL W.O no: G 211 and G212) | DOC.NO: BAP/QR/G211 to G212/NSPCL Bhilai/ LTM/ Agitators: 001 Rev NO.: 00 PAGE: Page 2 of 6 DATE: 11.02.2022 | ##Enquiry No: ## OEM Supplier Name & Address: ##Offer reference: ##Date: Contact Official Name: Mobile no: Email id: |
|---|----------------------------|---|--|--|--|
| | be filled by OEM | | | | |
| SI. NO. | DESCRIPTION | BHEL and | d Ultimate Customer - NTPC (Nationa Corporation)., India Quality Require | | ##Specific confirmations by the vendor |
| | | | ITEM: LT Motors (IE3) Up to | | by the render |
| 01 | Type Test RequirementContd | i. Meas ii. No le and s iii. Open moto iv. Full l v. Temp vi. Mom vii. High viii. Test shall the n x. Over xi. Degr xii. Type proof | for above 50KW LT Motor as per residuard) - BIS 325 / IEC 60034 etc uring of resistance of winding of st plicable) bad test at rated voltage to determine peed. circuit voltage ratio of wound rotor ness) oad test to determine efficiency power becauter rise test. entary excess load test voltage test for vibration severity of motor of noise levels of motor (Noise level for be limited to 85dB(A) except for BF naximum limit shall be 90dB(A).) speed test ee of Protection Tests (Minimum Ingretest reports for motors located in fuel fenclosures as per BIS 2148/ IEC 6007 / Type Test reports shall also be giet & page control through Email & S | bmitted covering the elevant BIS (Bureau of ator and wound rotor e input current, power motor (in case slip ring factor and slip at all the motors of the motor for which ess Protection - IP 55). Oil area having flame 79-1 ven as PDF file with | |

| NSP Proj (BHI NTPC CC/0 26/00 PAC MAI BHE SUB ADD | JECT: CL - BHILAI Expanect (2x250 MW) EL W.O no: G 211 and C CONTRACT NO: CC&M-C-568-FC-N 8/2019 KAGE: FGD PACKAON CONTRACTOR: L - RANIPET CONTRACTOR (OER RESS: be filled by OEM | (G212) NOA/141 Dt: GE M) & VENDOR) | CONTRACT QUALITY REQUIREMENTS (CQR) for LT MOTORS(IE3) - Up to 200KW used in Agitators NSPCL - BHILAI Expansion Power Project (2x250 MW) (BHEL W.O no: G 211 and G212) | DOC.NO: BAP/QR/G211 to G212/NSPCL Bhilai/ LTM/ Agitators: 001 Rev NO.: 00 PAGE: Page 3 of 6 DATE: 11.02.2022 | ##Enquiry No: ## OEM Supplier Name & Address: ##Offer reference: ##Date: Contact Official Name: Mobile no: Email id: |
|--|---|---|--|---|--|
| SI. NO. | DESCRIPTION | BHELand | d Ultimate Customer - NTPC (Nationa Corporation)., India Quality Require | | ##Specific confirmations by the vendor |
| L | | <u>I</u> | ITEM: LT Motors (IE3) Up to | 200KW | I |
| 02 | Quality Plan Requirement | 2. RQP these Manu ultim 3. If any NTP((Refe appli) obtai even route 4. Acco subm with & sea 5. If LT MQP | or MQP is applicable for these LT /MQP (Manufacturing Quality Plate LT Motors and accordingly ufacture and OEM shall submit atte customer – NTPC format. y of LT Motor manufacture is having to capproved MQP (Manufacturing erence Quality Plan) and having to cable for these LT Motor for in ning ultimate customer NTPC for the of an order through endorsement as in sline: 4 below ordingly, LT Motor Manufacture & customer approved MQP, all in the event of a Purchase Order Motor Manufacture / OEM veneral Motor Motor Manufacture / OEM veneral Motor Mot | an) is applicable for Actual LT Motor the RQP/MQP in g, ultimate customer Quality Plan) / RQP validity, the same is spection subject to mal approval in the tent sheet approval OEM supplier shall eet (copy attached) /RQP with signature from BHEL. | |
| 03 BHEL / Ultimate Customer - Specific requestion NTPC Supproved Specific requestion ABE Supproved Sup | | | are to be procured only from NTPC approved vendors and n irement is acceptable. / Bengaluru (Up to 200KW) & Hub/Ahemdnagar (Up to 200KW) //ENS/Mumbai (Up to 200KW) //Faridabad (Up to 55KW) and (W) //Mumbai (Up to 200KW) //F Bengaluru (Up to 15KW) //thon / Kolkatta (Up to 200KW) // Vadodara (Up to 200KW) // Ini / Vadodara (Up to 200KW) // Ini Hydralics Private Limited (LHP | | |

| NSP Proj (BHI NTP CC// 26/00 PAC MAI BHE SUB ADD | PROJECT: NSPCL - BHILAI Expansion Power Project (2x250 MW) (BHEL W.O no: G 211 and G212) NTPC CONTRACT NO: CC/CC&M-C-568-FC-NOA/141 Dt: 26/08/2019 PACKAGE: FGD PACKAGE MAIN CONTRACTOR: BHEL - RANIPET SUB CONTRACTOR (OEM) & ADDRESS: (To be filled by OEM VENDOR) | | CONTRACT QUALITY REQUIREMENTS (CQR) for LT MOTORS(IE3) - Up to 200KW used in Agitators NSPCL - BHILAI Expansion Power Project (2x250 MW) (BHEL W.O no: G 211 and G212) | DOC.NO: BAP/QR/G211 to G212/NSPCL Bhilai/ LTM/ Agitators: 001 Rev NO.: 00 PAGE: Page 4 of 6 DATE: 11.02.2022 | ##Enquiry No: ## OEM Supplier Name & Address: ##Offer reference: ##Date: Contact Official Name: Mobile no: Email id: |
|--|---|--|--|---|--|
| SI. | DESCRIPTION | BHEL and | d Ultimate Customer - NTPC (Nationa | | ##Specific confirmations |
| NO. | | | Corporation)., India Quality Require | | by the vendor |
| 04 | Inspection | IT Motors w | ITEM: LT Motors (IE3) Up to to 30KW – Inspection Categorizati | | |
| | Methodology to be adopted at Actual LT Motor Manufacture works by OEM vendor | All Routine te same are to be AIA (BHEL a works as per a relevant BIS (all the Routine for BHEL/Ulti and dispatch c LT Motor Mar states that the Customer spec frequency varirise, distance by | inspected & witnessed by OEM Vend uthorized inspection Agency) at LT M pproved MQP & approved data sheet A Bureau of Indian Standard) - BIS 325 A to Test Reports with Inspection report (I imate Customer – NTPC for review an | of OEM Vendor & lor / BHEL / BHEL / BHEL / Indoor manufacture / drg / spec/ as per / IEC 60034 etc and IR) to be submitted d to obtain inspection the of Conformance of daking care of emp., voltage and log KVA/KW, temp. space heater and | |
| | | All Routine T & witnessed Agency) at L Test Reports approved MC BIS (Bureau the Routine Te BHEL/Ultima and dispatch c Above 50KV All Routine & Vendor and sa authorized ins inspection & v Reports as per data sheet / dr BIS 325 / IEC Reports includ (IR) to be subt | ests on LT Motors are to be ensure by BHEL/BHEL AIA (BHEL author). T Motor manufacture works including and Degree of Protection Test Reports (Protection Test Reports with Inspection report (IR) the Customer – NTPC for review and to learned. Wand up to 200KW – Inspection (Protection Agency) / Ultimate Customer – NTPC for review and to learned to BHEL/BHEL/BHEL/BHEL/BHEL/BHEL/BHEL/BHEL/ | ed by OEM vendor ized inspection ing review of Type ports (IP 55) as per c. / as per relevant c. 660034 etc and all to be submitted for o obtain inspection Categorization: I De be ensured by OEM AIA (BHEL -NTPC for of Protection Test ent sheet / approved of Indian Standard) - ports, Type test ith Inspection report | |

| PROJECT: NSPCL - BHILAI Expansion Power Project (2x250 MW) (BHEL W.O no: G 211 and G212) NTPC CONTRACT NO: CC/CC&M-C-568-FC-NOA/141 Dt: 26/08/2019 PACKAGE: FGD PACKAGE MAIN CONTRACTOR: BHEL - RANIPET SUB CONTRACTOR (OEM) & ADDRESS: (To be filled by OEM VENDOR) | | G212) GOA/141 Dt: GE M) & | CONTRACT QUALITY REQUIREMENTS (CQR) for LT MOTORS(IE3) - Up to 200KW used in Agitators NSPCL - BHILAI Expansion Power Project (2x250 MW) (BHEL W.O no: G 211 and G212) | DOC.NO: BAP/QR/G211 to G212/NSPCL Bhilai/ LTM/ Agitators: 001 Rev NO.: 00 PAGE: Page 5 of 6 DATE: 11.02.2022 | ##Enquiry No: ## OEM Supplier Name & Address: ##Offer reference: ##Date: Contact Official Name: Mobile no: Email id: |
|---|--|--|--|---|--|
| SI. | DESCRIPTION | BHEL and | d Ultimate Customer - NTPC (Nationa | | ##Specific confirmations |
| NO. | | | Corporation)., India Quality Require | ements | by the vendor |
| | | | ITEM: LT Motors (IE3) Up to | | |
| 04 | Inspection Methodology to be adopted at Actual LT Motor Manufacture works by OEM | Customer-NTI works and sub reports includi approved MQI | AIA (BHEL authorized inspection AgPC to witness / perform inspection at I mit all the inspection documents and rng Degree of Protection Test Reports P & approved data sheet / drg / spec / a lian Standard) - BIS 325 /IEC 60034 | T Motor Supplier outine & Type test (IP 55) as per as per relevant BIS | |
| | vendor Contd | Customer – N' | nall be dispatched without BHEL / BH TPC Inspection and dispatch clearance | | |
| 05 | Painting Requirements | of coats if any as per BHEL/ | rement like paint shade and painting the are to be ensured by the OEM vendor Ultimate Customer -NTPC approved ec (As applicable). | for these LT Motors | |
| 06 | Packing | | be as per Specification / Drg. / Dat g if any to avoid any transit & handlin | | |
| 07 | For Inspection call | Motor Manufa / Ultimate Cus be ensured / a +91 9443006 DM (QC-Proc including for resolution. | I by OEM Vendor for LT Motor insacture works to be raised for BHEL/stomer – NTPC including for type test ddressed to Mr R Kesavan., DGM (0303., Email id: kesavan@bhel.in antipolicy), Mobile no: +91 8903502628., Eminspection related activities for in | BHEL AIA inspection t witnessing if any to QC-Proc)., Mobile no: d Mr Kovarathanan., ail id: kovak@bhel.in mmediate response / | |
| Package / Dossier copies + soft of proper linkages (i) Index (ii) MQF (iii) TCs (Cust as giv (iv) Final (v) BHE (vi) Ultin CHP Clear (vii) Type appro | | | mation for Document Package in the evolution of the PDF file) is to be given contain (.) a Sheet (PRQP/Endorsement sheet identified by BHEL/NTPC for record for "omer Hold Point) Verification & Witness "en in MQP / RQP / MQP (as applicable). Inspection Report + TC L AIA (BHEL Appointed Inspection Agenta to the Point of the Poin | | |

PROJECT:

Annexure-I CONTRACT QUALITY REQUIREMENTS (CQR) for LT MOTORS(IE3) Up to 200KW (For INDIGENOUS OEM VENDOR ONLY)

DOC.NO:

CONTRACT QUALITY

| NSPCL - BHILAI Expansion Power Project (2x250 MW) (BHEL W.O no: G 211 and G212) NTPC CONTRACT NO: CC/CC&M-C-568-FC-NOA/141 Dt: 26/08/2019 PACKAGE: FGD PACKAGE MAIN CONTRACTOR: BHEL - RANIPET SUB CONTRACTOR (OEM) & ADDRESS: (To be filled by OEM VENDOR) | | G212) GOA/141 Dt: GE M) & | REQUIREMENTS (CQR) for LT MOTORS(IE3) - Up to 200KW to in Agitators NSPCL - BHILAI Expansion Po Project (2x250 MW) (BHEL W.O no: G 211 and G212) | used I | Rev NO.: PAGE : I | /G211 to PCL Bhilai/ gitators: 001 | | | | |
|--|----------------------|---------------------------|---|---|---|--|----------|--------------------|-------|------------------------------|
| SI. NO. | D | ESCRIPT | ION | BHEL and | d Ultimate Customer - NTPC (Na Corporation)., India Quality Re | | | l Power | • | c confirmations he vendor |
| | | | | <u> </u> | ITEM: LT Motors (IE3) U | Jp to 20 | 00KW | | | |
| 09 | Im | portant | t | Inspection Cate | | | | | | |
| | not | tes | | Inspection by M | Main contractor (BHEL) / BHEL A | AIA base | ed on Ul | ltimate | | |
| | | | | Inspection Cate COC by Main inspection as in | contractor (BHEL) to Ultimate Customer – NTPC based on sl no:04. | | | | | |
| | | | | witnessing of BHEL / BHEI Supplier only | plication for conducting checany of the tests at Actual LT Mo LAIA / Ultimate Customer – NT and no extra cost if any will be a during execution of the contract. | | | | | |
| 10 | | | | ish following M | otor details involved in Agitators | s (as app | plicable | | uiry. | |
| | | S. No | | | Agitators | Ra | ting | LT Motor Quantity | Make | |
| | | | | | | | kW) | (in nos) | | |
| | | 1 | | rber Tank Agita | | 1 | | | | |
| | | 2 3 | | | Cank Agitator Motor | + | | | | |
| | | 4 | | te Water Tank A | Agitator Motor Ione Feed Tank Agitator Motor | + | | | | |
| | 5 Waste Water Tank A | | | | + | | | | | |
| | | | | rage Tank Agitator Motor | + | | | | | |
| | | | | | ne Feed Tank Agitator Motor | 1 | | | | |
| | | | | | Sump Agitator Motor | | | | | |
| | | 9 | | | Sump Agitator Motor | | | | | |
| | | 10 | | | Sump Agitator Motor | 1 | | | | |
| | | 11 | Other | LT motors involv | red in the system (if any) | + | | | | |
| | | | | | | | | | | |

OEM Supplier signature with seal

##Enquiry No:

Necessarily to be filled up & submitted by the OEM vendor at the time of offer itself otherwise the offer may not be considered w.r.t Quality Requirements against LT Motors being BHEL/ ultimate customer – NTPC (National Thermal Power Corporation Limited) specific requirements.

ENDORSEMENT SHEET FOR QP REFERENCE / STANDARD / FIELD QUALITY PLAN (RQP / SQP/RFQP/SFQP)

| TO BE FILLED IN BY SUPPLIER AT T | TIME OF SUBMISSION | एनरीपीसी NTPC | To be filled in by NTPC |
|---|--|--|---|
| PROJECT NAME | NSPCL - BHILAI Expansion Power Project (2x250 MW) (BHEL W.O no: G 211 and G212) | 2REVIEW & | ENDORSEMENT BY NTPC PECIFIC OP NUMBER ALLOTTED |
| CONTRACT NO.: | CC/CC&M-C-568-FC-NOA/141 Dt; 26/08/2019 | . 1110020101 | |
| MAIN SUPPLIER | M/S.BHEL, RANIPET , TAMIL NADU., INDIA | QP NO: | |
| MANUFACTURER WORKS & ADDRESS | (TO BE FILLED BY OEM/LT MOTOR SUPPLIER | REV. NO.: (| 00 DT: |
| ITEM /EQUIPMENT / SYSTEM/ SUB-SYSTEM DETAILS i.e. MODEL TYPE/SIZE/RATING etc. | LT MOTOR(IE3) - AGITATORS FOR FGD APPLICATION | | |
| APPROVED QP NO.: RQP/SQP/RFQP/SFQP | TO BE FILLED BY OEM / LT MOTOR SUPPLIER | | |
| Confirmation by Main Supplier (TICK WHICHE | | (TICK APPLICAE | BLE) |
| I. That the item/component is identical to that co | nsidered for SQP approval. $$ | ~ ~ | <i>P/SQP</i> is endorsed for this project |
| II. That there are minor changes in the item/com the same do not affect the contents of MQP/RQP/ | ponent with respect to that considered for MQP/RQP/SQP approval, however SQP | without any c | hange |
| III. That there are minor changes in the item/con the same affect the MQP/RQP/SQP slightly, as ind | nponent with respect to that considered for MQP/RQP/SQP approval, however dicated below / in attached sheet. | as indicated. DISTRIBUTI A) MQP/RQ 1. MAIN SUPP MQP/RQP/SQ 2. MANUFACT 3. RIO 4. CQA-SPL 5. CQA-O/C B) RFQP/SF(1. MAIN SUPP 2. MANUFACT 3. NTPC FQA () | LIER (WITH A COPY OF P) FURER PP: LIER (with a copy of MQP/RQP/SQP |
| | (TO BE FILLED BY OEM / LT MOTOR SUPPLIER | NTPC (Revie | wed /Approved by/ Date & Seal) |
| SIGN.: (Main Supplier) DATE: | SIGN.: (Manufacturer) DATE: | (1.1.1 | 11 v |

| (TO | EM SUPPLIER WITH OEM MFGR.'s LOGO) BE FILLED BY EM SUPPLIER) | NAME AN (TO BE FI | R MANUFACTURER'S D ADDRESS LLED BY OEM / PR MANUFACTURE) | TO 20 APPI SUB- | A: LT M 00KW F LICATIO | OTOR(IE3 OR FGD ON M: FGD - |) UP | QP NO MOTO REV.N DATE: PAGE: | 0.: 00 | | Project (2x250 MW) (FGD PACKAGE NTPC CONTRACT CC/CC&M-C-568-FC MAIN CONTRACTC SUB CONTRACTOR | | | C CONTRACT NO: C&M-C-568-FC-NOA/141 Dt; 26/08/2019 N CONTRACTOR: BHEL · RANIPET CONTRACTOR (OEM) & ADDRESS: BE FILLED BY OEM SUPPLIER) | | |
|-----------|---|------------------------|---|--|---|---|--|--|---------------------------------------|---------------------|--|----|---------|--|---------|------------------|
| SL. NO | COMPONEN OPERATIO | | CHARACTERIST | TCS | CLASS | TYPE OF CHECK | OF C | NTUM HECK | REFERENCE DOCUMENT | ACCEPTANCI NORMS | FORMA RECO | | | GENC | | REMARKS |
| 1. | <u>2.</u> | | 3. | | <mark>4.</mark> | <u>5.</u> | M | C/N 6. | <mark>7.</mark> | <u>8.</u> | 9 <u>.</u> | D* | M ** | C * 1 | N). | <mark>11.</mark> |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | "(√) SHALL BE | | DOC. NO.: | | | | REV. | CAT |
| | I MANUFACTURER IOTOR SUPPLIER SIGN | MAIN SUPPI ATURE | ESS ** C: P: 1 | SENTIALLY M: OEM N MAIN SUP PERFORM | Y INCLUD MANUFAC PLIER – B W: WITN | ED BY SUPPL CTURER/LT M HEL/BHEL AI | JER IN (OTOR S IA, N: VERIFI | QA DOCU. UB-SUPPI NTPC CATION. | MENTATION. LIER AS APPROPRIATE, | FOR NTPC USE | REVIEWED | ВУ | AI | PPROV | VED BY | APPROVAL SEAL |

FORMAT NO.: QS-01-QAI-P-09/F1-R1 1/1 ENGG. DIV./QA&I



W.r.t FOREIGN OEM VENDORS ONLY

| SI | Description & Quality Requirements | Specific confirmation |
|----|---|-----------------------|
| no | | by the vendor |
| | | (Confirmed/Not |
| | | Confirmed) |
| 01 | OEM vendor shall meet all the requirements as in | |
| | Annexure-I and also OEM Vendor shall endorse (Signature | |
| | and Stamp in all the pages) in attached CONTRACT | |
| | QUALITY REQUIREMENTS (CQR) for LT MOTORS(IE3) Up to | |
| | 200KW used in Agitators (DOC.NO: BAP/QR/G211 to | |
| | G212/NSPCL Bhilai/ LTM/Slurry Pumps: 002 Rev No. 01 dt | |
| | 11.02.2022) and send us the same to follow / ensure all | |
| | the requirements in the event of an order. | |
| 02 | OEM vendor shall ensure Credentials of design and | |
| | Manufacturing capabilities w.r.t. LT Motors by their LT | |
| | Motor manufacture. | |
| 03 | OEM Supplier shall submit other details like that they are | |
| | already approved vendor by Ultimate Customer – NTPC | |
| | (National Thermal Power Corporation | |
| | Limited) specifically for proposed supply of LT Motor | |
| | against BHEL/Ranipet. The details of PO already executed | |
| | preferably through various other BHEL units for any NTPC | |
| | projects with CHP/MDCC including technical catalogue, PO | |
| | received so far for similar supply of LT Motors may also be | |
| | submitted. | |
| 04 | Accordingly OEM vendor shall be suitably informed that | |
| | If Ultimate Customer – NTPC (National Thermal Power | |
| | Corporation Limited) vendor approvals is not there /not | |
| | available, then their offer will not be considered for | |
| | further processing / ordering for the supply of LT Motors | |
| | to take care of overall equipment/system requirements. | |
| 05 | No material shall be dispatched without BHEL/ Ultimate | |
| | Customer – NTPC (National Thermal Power Corporation | |
| | Limited) inspection - CHP/MDCC clearances. | |

Annexure-II

CONTRACT QUALITY REQUIREMENTS (CQR) for LT MOTORS(IE3) Up to 200KW

| PROJECT: NSPCL - BHILAI Expansion Power Project (2x250 MW) (BHEL W.O no: G 211 and G212) NTPC CONTRACT NO: CC/CC&M-C-568-FC-NOA/141 Dt: 26/08/2019 PACKAGE: FGD PACKAGE MAIN CONTRACTOR: BHEL - RANIPET SUB CONTRACTOR (OEM) & ADDRESS: (To be filled by OEM VENDOR) | | G212) NOA/141 Dt: GE M) & | CONTRACT QUALITY REQUIREMENTS (CQR) for LT MOTORS(IE3) - Up to 200KW used in Agitators NSPCL - BHILAI Expansion Power Project (2x250 MW) (BHEL W.O no: G 211 and G212) | EMENTS (CQR) for IE3) - Up to 200KW used Agitators BAP/QR/G211 to G212/NSPCL Bhilai/ LTM/ Slurry Pumps: 002 Rev NO.: 00 PAGE: Page 1 of 6 DATE: 11.02.2022 LAI Expansion Power et (2x250 MW) | | | |
|--|------------------------|--|--|--|--------------------------------|--|--|
| SI. | DESCRIPTION | | nd Ultimate Customer - NTPC (Nation | | ##Specific | | |
| NO. | | | Corporation)., India Quality Requi | irements | confirmations by the vendor | | |
| | | | ITEM: LT Motors(IE3) - Up to | 200KW | vendor | | |
| 01 | Type Test Requirements | SL NO: (ultimate should be those prop have beer witnessed (or) Ultin respective B. However, report as p are not f acceptable vendor sh either at r lab in the / BHEL | nall submit the type test reports of all D1 (D) below and carried out within a Customer NTPC bid opening dt 12 for the test conducted on the identitions to be supplied under this enquiry a conducted at an independent laborate by BHEL/BHEL AIA (BHEL Appoint customer NTPC (National Therme LT Motor Manufacture of OEM vence if vendor is not able to submit the siper above condition in 01 (A) (or) in the country of the submit the submit to be meeting the specification to be meeting the specification to BHEL/BHEL AIA/ Ultimate C all conduct all these tests at no additional conduct all these tests at no addition | 10 years from the data of 2.04.2019. These reports cal/similar LT Motors to y and test (s) either should ory (or) should have been inted Inspection Agency) all Power Corporation) at dor. Imilar / identical type test the case of type test reports on requirement and not sustomer – NTPC, the onal cost if any to BHEL int approved lab (or) own binted Inspection Agency) the reports for BHEL / | | | |
| | | | | | | | |

Annexure-II

CONTRACT QUALITY REQUIREMENTS (CQR) for LT MOTORS(IE3) Up to 200KW

| PROJECT: NSPCL - BHILAI Expansion Power Project (2x250 MW) (BHEL W.O no: G 211 and G212) NTPC CONTRACT NO: CC/CC&M-C-568-FC-NOA/141 Dt: 26/08/2019 PACKAGE: FGD PACKAGE MAIN CONTRACTOR: BHEL - RANIPET SUB CONTRACTOR (OEM) & ADDRESS: (To be filled by OEM VENDOR) | | | CONTRACT QUALITY REQUIREMENTS (CQR) for LT MOTORS(IE3) - Up to 200KW used in Agitators NSPCL - BHILAI Expansion Power Project (2x250 MW) (BHEL W.O no: G 211 and G212) | DOC.NO: BAP/QR/G211 to G212/NSPCL Bhilai/ LTM/ Slurry Pumps: 002 Rev NO.: 00 PAGE: Page 2 of 6 DATE: 11.02.2022 | ##Enquiry No: ## OEM Supplier Name & Address: ##Offer reference: ##Date: Contact Official Name: Mobile no: Email id: |
|---|--------------------|--|--|--|--|
| SI. | DESCRIPTION | BHEL a | nd Ultimate Customer - NTPC (Natior | nal Thermal Power | ##Specific |
| NO. | | | Corporation)., India Quality Requi | irements | confirmations by the |
| | | | ITEM: LT Motors(IE3) - Up to | 200KW | vendor |
| 01 | Type Test | D. The follow | wing Type test reports to be submitted | | |
| | Requirement(Contd) | for above | e 50KW LT Motor as per relevant - BIS 325 / IEC 60034 etc | | |
| 02 | Quality Plan | ii. No lo speed iii. Open moto iv. Full l v. Temp vi. Mom vii. High viii. Test ix. Test obe lir maxi x. Over xi. Degraxii. Type proof E. The TCs/page cont | circuit voltage ratio of wound rotor | | |
| 02 | Requirement | b. If any of I approved same is apobtaining | unutacturing Quality Plan) is applicable dingly Actual LT Motor Manufacture sustomer – NTPC format for review and Customer - NTPC. LT Motor manufacture is having, ultim MQP (Manufacturing Quality Plan) and opplicable for these LT Motor for insperultimate customer NTPC formal appropulation approach to the property of the provided approach to th | shall submit the MQP in ind approval by BHEL / mate customer NTPC and having validity, the ction purposes subject to oval in the event of an | |

Annexure-II

CONTRACT QUALITY REQUIREMENTS (CQR) for LT MOTORS(IE3) Up to 200KW

| NSPO Projo (BHE NTPC CC/O 26/08 PACI MAIN BHEI SUB (ADD) | JECT: CL - BHILAI Expanent (2x250 MW) L W.O no: G 211 and C CONTRACT NO: CC&M-C-568-FC-N 8/2019 KAGE: FGD PACKAN CONTRACTOR: L - RANIPET CONTRACTOR (OEI RESS: be filled by OEM | G212) GOA/141 Dt: GE M) & | CONTRACT QUALITY REQUIREMENTS (CQR) for LT MOTORS(IE3) - Up to 200KW used in Agitators NSPCL - BHILAI Expansion Power Project (2x250 MW) (BHEL W.O no: G 211 and G212) | DOC.NO: BAP/QR/G211 to G212/NSPCL Bhilai/ LTM/ Slurry Pumps: 002 Rev NO.: 00 PAGE: Page 3 of 6 DATE: 11.02.2022 | ##Enquiry No: ## OEM Supplier Name & Address: ##Offer reference: ##Date: Contact Official Name: Mobile no: Email id: |
|---|---|---|--|---|---|
| SI. NO. | DESCRIPTION | BHEL a | nd Ultimate Customer - NTPC (Natior Corporation)., India Quality Requi | | ##Specific confirmations by the |
| | | | corporation,, maia quant, moqui | | vendor |
| | | | ITEM: LT Motors(IE3) - Up to | | |
| 02 | Quality Plan Requirement | filled up I approved from BHI d. If LT M | gly, LT Motor Manufacture & OEM st Endorsement sheet (copy attached) wit MQP with signature & seal in the even EL for BHEL/Ultimate Customer – NT otor Manufacture / OEM vendor do abmit a fresh MQP to BHEL/NTPO | | |
| | | review & e. Typical I | | | |
| 03 | Inspection Methodology to be adopted at Actual LT Motor | a. All LT M inspection MQP & | ot final and binding on BHEL / Ultima Motors are to be inspected by BHEL in Agency) at LT Motor manufacture approved data sheet/drg/spec/ as per anndard) - BIS 325 / IEC 60034 e -NTPC | | |
| | Manufacture works by OEM vendor | inspection MQP & a | ne Tests are to be witnessed by BHEIn Agency) at LT Motor manufacture approved data sheet/drg/spec / as per andard) - BIS 325 / IEC 60034 e-NTPC | e works as per approved relevant BIS (Bureau of | |
| | | NTPC wind Degree of | A (BHEL authorized inspection Ager ill also ensure LT Motor type tests Protection Test Reports & acceptance data sheet / drg / spec / as per releva - BIS 325 / IEC 60034 etc. | | |
| | | Customer works and reports in approved | JA (BHEL authorized inspection -NTPC to witness / perform inspect d submit all the inspection documents cluding Degree of Protection Test Re MQP & approved data sheet / drg / s f Indian Standard) - BIS 325 / IEC 6 | ion at LT Motor Supplier s and routine & Type test ports (IP 55) as per spec / as per relevant BIS | |

Annexure-II

CONTRACT QUALITY REQUIREMENTS (CQR) for LT MOTORS(IE3) Up to 200KW

| NSP Proj (BHE NTP(CC/0 26/03 PAC: MAII BHE SUB ADD | JECT: CL - BHILAI Expaiect (2x250 MW) EL W.O no: G 211 and C CONTRACT NO: CC&M-C-568-FC-N 8/2019 KAGE: FGD PACKAN N CONTRACTOR: L - RANIPET CONTRACTOR (OEI RESS: be filled by OEM | G212) GOA/141 Dt: GE M) & VENDOR) | CONTRACT QUALITY REQUIREMENTS (CQR) for LT MOTORS(IE3) - Up to 200KW used in Agitators NSPCL - BHILAI Expansion Power Project (2x250 MW) (BHEL W.O no: G 211 and G212) | ## OEM Supplier Name & Address: ##Offer reference: ##Date: Contact Official Name: Mobile no: Email id: ##Specific | | | |
|---|--|--|--|--|---------------------------------------|--|--|
| SI. NO. | DESCRIPTION | BHEL | nd Ultimate Customer - NTPC (Natior Corporation)., India Quality Requi | irements | employers confirmations by the vendor | | |
| | | | ITEM: LT Motors(IE3) - Up to | | | | |
| 03 | Inspection Methodology to be adopted at Actual LT Motor Manufacture works by OEM vendorcontd | All Routine te are to be inspe (BHEL author per approved I (Bureau of Ind Test Reports v Customer – N' LT Motor Mar that the above specific requir variation, hot she between centre with approved | sts on LT Motors are to be ensured by octed & witnessed by OEM Vendor / I ized inspection Agency) at LT Motor MQP & approved data sheet /drg / spelian Standard) - BIS 325 / IEC 60034 with Inspection report (IR) to be submit TPC for review and to obtain inspection unfacturer has to issue COC (Certifica motor/ motors was manufactured takinements regarding ambient temp., volta starts, pull out torque, starting KVA/K et of stud and gland plate, space heater drawing/data. 10 OKW to 50KW) – Inspection Category | OEM Vendor & same BHEL / BHEL AIA manufacture works as c/as per relevant BIS etc and all the Routine tted for BHEL/Ultimate on and dispatch clearance. te of Conformance) states ing care of Customer age and frequency W, temp. rise, distance and tested in accordance | | | |
| | | All Routine T same are to authorized in including rev Reports (IP sheet/drg/spe 325 / IEC 60 report (IR) to and to obtain i Above 50KV All Routine & Vendor at Act BHEL/ BHEL Customer-NTT Protection Tes | ured by OEM vendor & EL / BHEL AIA (BHEL or manufacture works gree of Protection Test P & approved data f Indian Standard) - BIS Reports with Inspection tomer – NTPC for review Categorization: I re to be ensured by OEM d same shall be offered to be Agency) / Ultimate ding review of Degree of P (Reference Quality Plan sheet / drg / spec / as per | | | | |
| | | | | | | | |

Annexure-II

CONTRACT QUALITY REQUIREMENTS (CQR) for LT MOTORS(IE3) Up to 200KW

| NSP Proj (BHI NTP CC/0 26/00 PAC MAI BHE SUB ADD | JECT: CL - BHILAI Expanect (2x250 MW) EL W.O no: G 211 and C CONTRACT NO: CC&M-C-568-FC-N 8/2019 KAGE: FGD PACKAN N CONTRACTOR: L - RANIPET CONTRACTOR (OEI RESS: be filled by OEM | (G212) NOA/141 Dt: GE M) & VENDOR) | CONTRACT QUALITY REQUIREMENTS (CQR) for LT MOTORS(IE3) - Up to 200KW used in Agitators NSPCL - BHILAI Expansion Power Project (2x250 MW) (BHEL W.O no: G 211 and G212) | ## OEM Supplier Name & Address: ##Offer reference: ##Date: Contact Official Name: Mobile no: Email id: ##Specific | | | |
|--|--|--|--|---|-----------------------------|--|--|
| SI. NO. | DESCRIPTION | DHEL A | nd Ultimate Customer - NTPC (Natior Corporation)., India Quality Requi | | confirmations by the vendor | | |
| | | I | ITEM: LT Motors(IE3) - Up to | 200KW | vendor | | |
| 03 | Inspection Methodology to be adopted at Actual LT Motor Manufacture works by OEM vendorcontd | pection & witnessing at AIA (BHEL authorized are under OEM scope acting checks / tests LT Motor Manufacture / Ultimate Customer — paid in the event of an HEL / BHEL AIA and atch clearance. | | | | | |
| 04 | Painting Requirements | coats if any ar | rement like paint shade and painting the to be ensured by the OEM vendor foute Customer -NTPC approved data | | | | |
| 05 | Packing | Packing shall | be as per Specification / Drg. / Data s to avoid any transit & handling dama | | | | |
| 06 | For Inspection call | Motor Manu inspection/ witnessing if (QC-Proc)., I and Mr Kova Email id: kov immediate re | all by OEM Vendor for LT Motor if facture works to be raised for Ultimate Customer – NTPC in any to be ensured / addressed to Mobile no: +91 9443006303., Emarathanan., DM (QC-Proc)., Mobile vak@bhel.in including for inspecting sponse / resolution. | | | | |
| 07 | Document Package / Dossier | soft copies in Pl (i) Index (ii) MQP (iii) TCs i (Custr as giv (iv) Final (v) BHEI (vi) Ultin CHP Clear (vii) Type | nation for Document Package in the event Df file) is to be given containing the follow a Sheet //RQP/Endorsement sheet dentified by BHEL/NTPC for record for "omer Hold Point) Verification & Witness "en in MQP / RQP / MQP (as applicable). Inspection Report + TC L AIA (BHEL Appointed Inspection Agentary TC L AIA (BHEL Appointed Inspection Agentary TC (Customer NTPC (National Thermal Point) / MDCC (Material ance Certificate) test reports conducted/submitted with app ved data sheet and BOM with actual make | | | | |

Annexure-II

CONTRACT QUALITY REQUIREMENTS (CQR) for LT MOTORS(IE3) Up to 200KW

(For FOREIGN (OUTSIDE INDIA) OEM VENDOR ONLY)

| Proje (BHE NTPC CC/O 26/08 PACI MAII BHE SUB ADD | CL - ect (2 EL W. C CO CC& B/201 KAGI N CO L - R. CON RESS | BHILA 2x250 M O no: G NTRACT M-C-56 9 E: FGD F NTRACT ANIPET TRACTC S: | W) 211 and F NO: 8-FC-N PACKAG FOR: OR (OEN | IOA/141 Dt: GE | CONTRACT QUALITY REQUIREMENTS (CQR) for LT MOTORS(IE3) - Up to 200KW u in Agitators NSPCL - BHILAI Expansion Por Project (2x250 MW) (BHEL W.O no: G 211 and G212 | ## OEM Supplier Name & Address: ##Offer reference: ##Date: Contact Official Name: Mobile no: Email id: | | | | | |
|---|--|--|---|--|---|--|---|---|---------------|----|--------------------|
| SI. | DI | ESCRIPT | ION | BHEL a | nd Ultimate Customer - NTPC (N | ationa | al Therm | al Power | | | ##Specific |
| NO. | | | | | Corporation)., India Quality F | | | | | | rmations by the |
| | | | | | | | | | | | vendor |
| | | | | Custo | <u>ITEM: LT Motors(IE3) - U</u> mer approved drgs. | J p to 2 | 200KW | | ı | | |
| 08 | Im | portant | | Inspection Cate | 11 0 | | | | | | |
| | not | ees | | Inspection Cate Inspection Cate Inspection Cate COC by Main inspection as in Any cost implic the tests at Acte | Main contractor (BHEL) / BHEL A PC approved MQP/RQP & based egorization: III contractor (BHEL) to Ultimate Cu | IA bas on ins stomen | sed on Ul pection a r – NTPC ng for wi | Itimate Is in sl no:03 C based on Itnessing of an | ny of mate | | |
| | | | | | the event of an order and also during | | | | | | |
| 09 | | tor deta | | | | | | | | | |
| | Vei | | ıll furni | ish following M | otor details involved in Agitators | (as ap | plicable | | quiry. | | ا ا |
| | | S. No | | | Agitators | | ating 1 kW) | LT Motor Quantity (in nos) | Ma | ke | |
| | | 1 | | rber Tank Agita | | | | | | | 1 |
| | | 2 | | | Cank Agitator Motor | 1 | | | | | _ |
| | | 3 | | te Water Tank A | | 1 | | | | | |
| | | 5 | | | lone Feed Tank Agitator Motor | 1 | | | | | 4 |
| | | 6 | | e Water Tank A | gitator Motor rage Tank Agitator Motor | + | | | | | 1 |
| | | 7 | | | he Feed Tank Agitator Motor | | | 1 | | | |
| | | 8 | | | Sump Agitator Motor | † | | | | | 1 |
| | | 9 | | um Area Drain | | | 1 | | | | |
| | | 10 | 1 | | Sump Agitator Motor | | | | | |] |
| | | 11 | Other | LT motors involv | red in the system (if any) | | | | | | sianatura with and |

OEM Supplier signature with seal

##Necessarily to be filled up & submitted by the OEM vendor at the time of offer itself otherwise the offer may not be considered w.r.t Quality Requirements against LT Motors being BHEL/ ultimate customer – NTPC (National Thermal Power Corporation Limited) specific requirements.

ENDORSEMENT SHEET FOR QP REFERENCE / STANDARD / FIELD QUALITY PLAN (RQP / SQP/RFQP/SFQP)

| TO BE FILLED IN BY SUPPLIER AT T | TIME OF SUBMISSION | एनरीपीसी NTPC | To be filled in by NTPC |
|---|--|---|--|
| PROJECT NAME | NSPCL - BHILAI Expansion Power Project (2x250 MW) (BHEL W.O no: G 211 and G212) | 2REVIEW & | ENDORSEMENT BY NTPC PECIFIC OP NUMBER ALLOTTED |
| CONTRACT NO.: | CC/CC&M-C-568-FC-NOA/141 Dt; 26/08/2019 | . 1110020102 | |
| MAIN SUPPLIER | M/S.BHEL, RANIPET , TAMIL NADU., INDIA | QP NO: | |
| MANUFACTURER WORKS & ADDRESS | (TO BE FILLED BY OEM/LT MOTOR SUPPLIER | REV. NO.: 0 | 00 DT: |
| ITEM /EQUIPMENT / SYSTEM/ SUB-SYSTEM DETAILS i.e. MODEL TYPE/SIZE/RATING etc. | LT MOTOR(IE3) - AGITATORS FOR FGD APPLICATION | | |
| APPROVED QP NO.: RQP/SQP/RFQP/SFQP | TO BE FILLED BY OEM / LT MOTOR SUPPLIER | | |
| Confirmation by Main Supplier (TICK WHICHE | | (TICK APPLICAE | BLE) |
| I. That the item/component is identical to that co | nsidered for SQP approval. $$ | | QP/SQP is endorsed for this project |
| II. That there are minor changes in the item/com the same do not affect the contents of MQP/RQP/ | ponent with respect to that considered for MQP/RQP/SQP approval, however SQP | without any c | hange |
| III. That there are minor changes in the item/con the same affect the MQP/RQP/SQP slightly, as ind | nponent with respect to that considered for MQP/RQP/SQP approval, however dicated below / in attached sheet. | as indicated. DISTRIBUTION A) MQP/RQ 1. MAIN SUPP. MQP/RQP/SQ 2. MANUFACT 3. RIO 4. CQA-SPL 5. CQA-O/C B) RFQP/SF(1. MAIN SUPP. 2. MANUFACT 3. NTPC FQA (| LLER (WITH A COPY OF DP) FURER QP: LLER (with a copy of MQP/RQP/SQP |
| | (TO BE FILLED BY OEM / LT MOTOR SUPPLIER | NTPC (Revie | wed /Approved by/ Date & Seal) |
| SIGN.: (Main Supplier) DATE: | SIGN.: (Manufacturer) DATE: | (- / - / | 11 , |

| | | OEM SUPP | PLIER | | MANU | FACTURING QL | JALITY PLAN FO | R | | | IILAI :FG | D AGITATORS:001 | |
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| | MIL NADU | LT MOT | OR | | | | | | | | | | |
| | INDIA | Manufac | | | | | | | | | | | |
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| S1.No | . COMPONET/A | | CLASS | TYPE OF | QUANUTM OF | REFERENCE DOCUMENT | ACCEPTANCE STANDARD | FORMAT OF REC | | AGENCY | | REMARKS | |
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| | ERATION/TES TS | | | | | | | | J | lw | BHEL | | |
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| INCO | MING INSPC | ETIONS: | | | | | | | | | | | |
| 1.1 | Enamelled round copper conductor(Dual | 1.Overall diameter | Major | Mechanical | 1 sample/lot | IS 13730 1993 Part 13 / IEC 60317-0-1-2008 (As applicable) | IEC 60317-0-1 2008 | Plant format | | Р | V | | |
| | coated)MM | 2.Bare conductor diameter | Major | Mechanical | 1 sample/lot | BHEL / NTPC Spec & Apprd Datasheet | BHEL / NTPC Spec & Apprd Datasheet | Plant format | | P | ٧ | | |
| | | 3.BDV test | Major | Electrical | 1 sample/lot | do | do | Plant format | | P | ٧ | | |
| | | 4.Elongation | Major | Mechanical | 1 sample/lot | do | do | Plant format | | P | V | | |
| | | $\begin{array}{ll} \textbf{5.Continuity} \; (\text{insulatio} \\ \textbf{n}) \end{array}$ | Major | Electrical | 1 sample/lot | do | do | Insp report/ Supplier TC | | P | ٧ | | |
| | | 6.Tan Delta (If applicable) | Major | Electrical | 1 sample/lot | do | do | Insp report/ Supplier TC | | Р | V | EC gr purity: -99.6% | |
| 1.2 | Aluminum Ingots | 1.Chemical composition | Major | Chemical | 1 sample/lot | do | do | Supplier Tc | | P | V | LO gi punty. 00.070 | |
| 1.3 | FAN | 1.Diameter (ID&OD) | Major | Mechanical | 1 sample/lot | do | do | Inspection Report | | P | V | | |
| 1.4 | Bearings (SKF OR FAG) | 1.Type & Make | Major | Visual | 100% | d0 | do | Inspection Record | | P | V | | |
| | | 2.Dimensions - ID,OD&width | Major | Mechanical | 1 sample/lot | do | do | Inspection Record | | P | V | | |
| 1.5 | Terminal Block | 1.Dimensions | Major | Mechanical | Plant std. | do | do | Inspection Report | | P | V | | |
| | | 2.Proof voltage test | Major | Electrical | Plant std. | do | do | Inspection Report | | P | V | | |

| | | OEM SUP | | | MANU | FACTURING QU | MQP:E:LTM:NSPCL BHILAI :FGD AGITATORS:001 REV:NO:00 DATE: 11.02.2022 | | | | | |
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| | BHEL | OEM Sup | plier | | | \ 1 | Page : | | | | | |
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| | INDIA | <u>Manufac</u> | ture | | | | | | | | | |
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| | Supplier | | | | | | | | | | | |
| S1.No | 1.No. COMPONET/A CHARACTE- CLASS | | | TYPE OF | | REFERENCE DOCUMENT | ACCEPTANCE STANDARD | FORMAT OF REC | | AGENCY | REMARKS | |
| | SSEMBLY/OP ERATION/TES TS | | | CHECK | HECK CHECK | | | | D | M BH | EL | |
| 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. | 11. | 12. | |
| | OCESS INSP | | | | | | | | | | | |
| 2.1 | Stator core | 1.Core length dia | Major | Mechanical | 100% | do | do | Inspection Record | | P V | | |
| | | 2.Core locking | Major | Visual | 100% | do | do | Inspection Record | | P V | | |
| | | 3.Rigidity of core | Major | Mechanical | 100% | do | do | Inspection Record | | P V | | |
| 2.2 | Die cast rotor | 1.Core length | Major | Mechanical | 100% | do | do | Inspection Record | | P V | | |
| | | 2.Blow holes | Major | Mechanical | 100% | do | do | Inspection Record | | P V | | |
| 2.3 | Wound stator (if applicable) | 1.Resistance | Major | Electrical | 100% | d0 | d0 | Inspection Record | | P V | | |
| | | 2.H.V.Test | Major | Electrical | 100% | do | do | Inspection Record | | P V | | |
| | | 3.Insulation resisitance | Major | Electrical | 100% | do | do | Inspection Record | | P V | | |
| 2.4 | Final Assembiy | 1.Completeness | Major | Visual | 100% | do | do | Inspection Record | | P V | | |
| | | 2.Runout in case of flanged motors | Major | Mechanical | 100% | do | do | Inspection Record | | P V | | |
| | | 3.Mounting dimensions | Major | Mechanical | 100% | do | do | Inspection Record | | P V | | |

| | | OEM SUP | PLIER | | MANU | FACTURING QL | ALITY PLAN FO | n | MQP:E:LTM:NSPCL BHILAI :FGD AGITATORS:001 | | | | | | |
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| TA | TAMIL NADU <u>LT MOTOR</u> | | | | | | | | | | | | | | |
| | INDIA <u>Manufacture</u> | | | | | | | | | | | | | | |
| | | To be filled b | y OEM | | | | | | | | | | | | |
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| 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. | 11. | | 12. | | | |
| | | N AND TESTING | | F1 | 4000/ | DUEL INTRO 0 | DUEL ANTROO | | | _ | 141 | | | | |
| 3.1 | Routine Test | Resistance Measurement on | Major | Electrical | | BHEL / NTPC Spec, GA Drawing & Apprd Datasheet | BHEL / NTPC Spec, GA Drawing & Apprd Datasheet and | inspection Record | | Р | W | | | | |
| | | winding & space | | | | and | IS/IEC 60034 (As applicable) | | | | | | | | |
| | | heater | | | | IS/IEC 60034 (As applicable) | | | | | | | | | |
| | | 2.HV Test | Major | Electrical | 100% | do | do | Inspection Record | | Р | W | | | | |
| | | 3.Phase sequence & | Major | Electrical | 100% | do | do | Inspection Record | | P | W | | | | |
| | | direction of rotation | | | | | | | | | | | | | |
| | | 4.No load run test | Major | Electrical | 100% | do | do | Inspection Record | | P | W | | | | |
| | | 5. Vibration test | Major | Mechanical | 100% | do | do | Inspection Record | | P | W | | | | |
| | | 6.Name plate recheck | Major | Visual | 100% | do | do | Inspection Record | | P | W | | | | |
| | | 7.Paint shade | Maior | Visual & | 100% | do | do | Inspection Record | | Р | W | | | | |
| | | thickness & adhesion | -3- | Measurement | | | | r | | | | | | | |
| | | AM # A A " | | | 1000/ | 1 | ı | | | | 141 | | | | |
| | | 8.Moutings & Overall dimensions | Major | Mechanical | 100% | do | -do- | Inspection Record | | Р | W | | | | |
| | | unifoliolio | | | | | | | | | | | | | |

| | | OEM SUPF | | | MANU | FACTURING QU | Π | MQP:E:LTM:NSPCL BHILAI :FGD AGITATORS:001 REV:NO:00 | | | | | |
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| | BHEL | OEM Sup | plier | | | V 1 | Page : | | | | | | |
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| | ERATION/TES TS | | | CHECK | | | | D | l l | BHEL/ Bhel aia | | | |
| 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. | 11. | | 12. | |
| 3.2 | TYPE TESTS ### | | | | | | | | | | | | |
| 3.3 | Preservation and Packing | 1.Completeness | Major | Review | 100% | do | do | Inspection Record | | P | V | | |
| | | 2.Motors covered with polythene sheets | Major | Visual | 100% | do | do | Inspection Record | | P | V | | |
| | | 3.Packing | Major | Visual | | do | do | Inspection Record | | Р | V | | |

TYPE TEST REQUIREMENTS FOR LT MOTOR INCLUDING DEGREE OF PROTECTION TEST REPORT (IP 55)

BHEL/BHEL AIA (Authorised Inspection Agency) shall review the Identical design type test report during including degree of Protection Test report (IP 55) for acceptance in line with BHEL/ Ultimate Customer - NTPC approved Data sheet/Drg/Spec for LT Motor rating up to 50KW and BHEL/Ultimate Customer NTPC approved type test report for LT Motor rating more than 50KW and up to 200KW. If not available for Similar / Identical Design of any of the LT Motor motor, then OEM / LT Motor Manufacture shall conduct all these type tests at Third party lab / Government Approved Lab / Own lab in presence of BHEL/BHEL AIA / without any cost implication to BHEL/Ultimate Customer - NTPC within reasonable time.

- 1. Measurement of Resistence of Stator
- 2. No Load test at Rated Voltage
- 3,. Pull out test
- 4.Temperature Rise Test
- 5.Momentary Excees Torque Torque Test
- 6.High Voltage Test
- 7.Test for Vibration Severity
- 8. Test for Noise Level Measurement
- 9. Over Speed Test
- 10. Degree of Protection TC (IP 55)

LEGEND: OEM = Orgional Equipement Supplier M = LT Motor Manufacture -

BHEL AIA = BHEL AUTHORISED INSPECTION AGENCY

GA Drawing: General Arrangment Drawing

NTPC - NATIONAL THERMAL POWER CORPORATION (Ultimate Customer)

OEM SUPPLIER: (To be Filled up by OEM Supplier)
LT MOTOR Manufacture: (To be Filled up by OEM Supplier)

| OEM SUPPLIER WITH OEM MFGR.'S LOGO (TO BE FILLED BY OEM SUPPLIER) NAME AND ADDRESS (TO BE FILLED BY OEM / LT MOTOR MANUFACTUR | | | TO APP. SUI AG | EM: LT M) 200KW F PLICATIO B-SYSTEN SITATORS | OTOR(IE3 OR FGD ON M: FGD - |) UP | QP NO MOTO REV.N DATE: PAGE: | O.: 00 OF | LT | FGD PACKA NTPC CON CC/CC&M MAIN CON SUB CONT (TO BE FII | 211 and G212) 6/08/2019 NIPET RESS: | | | | | |
|--|--|------------------------|----------------|---|--------------------------------------|------------------|--|---------------------|---------------------------------------|---|--|----|--------|-----------|------------------|------------|
| <mark>SL.</mark> NO | COMPONEN OPERATIO | | CHARACTER | RISTICS | CLASS | TYPE OF CHECK | - | NTUM HECK C/N | REFERENCE DOCUMENT | ACCEPTANCE NORMS | FORMA RECO | | A M | GENC C | Y N | REMARKS |
| 1. | <mark>2.</mark> | | 3. | | <mark>4</mark> . | <mark>5.</mark> | | 6. | <u>7.</u> | 8. | 9. | D* | ** | | | <u>11.</u> |
| | | | | | | | | | | | | | | | | |
| | | | | <u>LEGEN</u> D |): * RECOR | DS, INDENTI | FIED WI | TH "TICK | "(√) SHALL BE | | DOC. NO.: | | | | REV. | CAT |
| | I MANUFACTURER IOTOR SUPPLIER SIGN | MAIN SUPPI ATURE | (BHEL) | LEGEND: * RECORDS, INDENTIFIED WIT ESSENTIALLY INCLUDED BY SUPPLIER IN QU ** M: OEM MANUFACTURER/LT MOTOR SU C: MAIN SUPPLIER - BHEL/BHEL AIA, N: N P: PERFORM W: WITNESS AND V: VERIFIC CHP: NTPC SHALL IDENTIFIED IN COLUM "S | | | | | MENTATION. LIER AS APPROPRIATE, | FOR NTPC USE | REVIEWED | AF | PPROV | ED BY | APPROVAL SEAL | |

FORMAT NO.: QS-01-QAI-P-09/F1-R1 1/1 ENGG. DIV./QA&I

