

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

FGD: NKP: AGT: 336

Dt. 03-01-2022

Item Name	Indent No	Indent Dt.	PGMA	Technical Specification
AGITATORS (WO:G601-G603)	RFW11474	16.12.2021	FW720	FGD:AGITATORS, REV:01,DT:09.09.2021
	RFW11475	16.12.2021	FW720	AGITATORS: QR-3K: NKSTPP, REV: 00. NKSTPP: FGD: AGITATORS, REV: 00.
	RFW11513	18.12.2021	FW997	TECI: LTMOTOR:REV:05

**Project: North Karanpura (3X660 MW)**

**QA- Mechanical comments as follows:**

1. NTPC Approved Vendor and Sub-QR approved vendor by Engg acceptable to Quality also. NTPC Approved vendor list uploaded along with NTPC approved Categorization Plan.
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 typical MQP (QP NO: NKP: 23.07.2021). 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 with 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 Specification.
7. 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.
8. Annexure 'Q' and BOI's Details shall be part of enquiry File and shall be filled by Supplier with their duly sign and seal.
9. **Vendor Quality Plan shall contain following Inspection Notes:**
  - 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 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. This QP shall be read along with relevant PO, BHEL Specification / Approved Drawing / Datasheet.

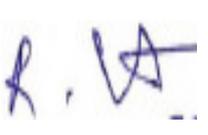
sd\ - Dy/Mgr-QA  
Rakesh Kumar Madhu

sd\ -Mgr/QA  
K Renjith

Receipt No : 621474/2022/BAP-QA\_MECH

SL. NO.	COMPONENT & OPERATION	CHARATERISTICS	CLASS	TYPE OF CHECK	QUATUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD		AGENCY			REMARKS
					M	C/N			M	C	N			
1	2	3	4	5	6		7	8	9	D*	10			11
MANUFACTURER LOGO		MANUFACTURING QUALITY PLAN						PROJECT: NORTH KARANPURA (3X660 MW)						
		Manufacturer Name and Address: NTPC SUB QR APPROVED SOURCE				ITEM: AGITATOR		CUSTOMER: NTPC						
						QP NO: NKP:23.07.2021		BHEL W/O:						
						Page 1 of 4		MAIN CONTRACTOR: M/s BHEL.						

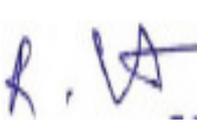
1.0 RAW MATERIALS INSPECTION.													
1.1	Shaft & Blades, rubber composition & other material including castings & forgings.	Chem. & Mech Properties	Major	Review of MTC	1/ Heat	-	Owner / Owner QA & I - NTPC Approved Drawing / Data Sheet	TC	√	P	V	V	For shaft Dia ≥ 40mm UT shall be done as per ASTM A 388.
		Dimensions		Measurement	100%			IR		P	-	-	
		Surface Defects		Visual	100%			IR		P	-	-	
2.0 Motor Refer Separate MQP for Electric Motor.													
3.0	Gear box	Make, Type, Rating, vibration, noise, Routine/Run test.	Major	Review of manufacture's test report	100%	-	Drawing/Data Sheet	TC/ Report	√	P	V	V	
4.0 IN PROCESS INSPECTION.													
4.1	Welding Qualifications	WPS, PQR, WPQ	Major	WPS, PQR & WPQ	100%	-	ASME Sec IX/AWS D1.1	WPS/ PQR	√	P	V	V	

MANUFACTURER SIGN & STAMP	<b>LEGEND:</b> * RECORDS, IDENTIFIED WITH "TICK" (√) UNDER COLUMN 'D' SHALL BE SUBMITTED TO CUSTOMER AS A 'QA' DOCUMENTATION PACKAGE., C: MAIN CONTRACTOR(BHEL / BHEL AIA), M: MANUFACTURE/SUB SUPPLIER, N: OWNER (OWNER CONSULTANT QA & I / NTPC) P: PERFORM W: WITNESS AND V: VERIFICATION / REVIEW OF RECORDS, MTC: MATERIAL TEST CERTIFICATE, TC: TEST CERTIFICATE, MA: MAJOR, MI: MINOR, COC: CERTIFICATE OF CONFORMANCE, IR: INSPECTION REPORT, TR: TEST REPORT,	MDL NO:		
		Rakesh Kr Madhu (Dy.Mgr/QA)	K Renjith (Manager/QA)	R Arunachalam (DGM/QA)
				
		PREPARED BY	REVIEWED BY	APPROVED BY

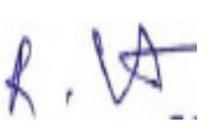
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					M	C/N			M	C	N			
1	2	3	4	5	6		7	8	9	D*	10			11

4.2	Marking, cutting, Edge preparation Tacking	Dimensions	Major	Measurement	100%	-	Approved Drawings	IR	-	P	-	-	
4.3	Shaft & Impeller	Visual & Dimension check, face out and run out of shaft (after flange welding)	Major	Measurement	100%	100%	As per Spec. & Owner / Owner QA & I - NTPC Appd. Drawing / Datasheet	IR	√	P	V	V	
4.4	Welds	Visual, Dimension	Major	Visual, Measurement	100%	100%	ASME Sec-VIII/ AWS D1.1	IR	√	P	V	V	
4.5	Weld surface check	Weld surface check	Major	Measurement DPT	100%	10%	ASME Sec-VIII/AWS D1 Appendix 8	IR	√	P	W	V	
4.6	Impeller	Balancing	Major	Visual, Measurement	100%	10%	ISO 1940/Appd. Drg. & Data sheet/Relevant standard	TR	√	P	W	V	

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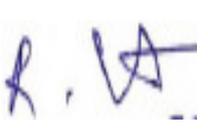
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4.7	Rubber Lining	Thickness of Rubber, Hardness, Spark test, Adhesion test on test piece	Major	Measurement	100%	10%	As per Specs./ Appd. Drg. & data sheet	Appd.Drg.& Data sheet,	TR	√	P	W	V					
<b>5.0 FINAL INSPECTION</b>																		
5.1	Final Assembly Base Frame, Agitator etc.	Visual- Workmanship, Dimensional.	Major	Visual, Measurement	100%	10%	Owner / Owner QA & I - NTPC Appd.Drg./ Datasheet & Spec,		IR	√	P	W	V					
5.2	Run test of Agitator assembled with Gearbox & job Motor. Medium-Slurry (Duration-30 minutes)	Current,RPM, Vibration,Noise & Temperature rise	Major	Measurement	100%	20% of each type (side & top entry)	Manufacturer's procedure/ Approved Drawing/Data Sheet		IR	√	P	W	W	For top agitator with shaft length >5Meter run test to be carried out with bearing shaft only.				
5.3	Painting	Visual,DFT	Major	Paint Shade & DFT measurement	100%	20% of each type	Owner / Owner QA & I - NTPC Approved Painting Schedule		IR	√	P	W	V					
5.4	Marking	Visual	Major	Visual	100%	100%	Approved Drawing		IR	√	P	V	V					
MANUFACTURER SIGN & STAMP		<b>LEGEND:</b> * RECORDS, IDENTIFIED WITH "TICK" (√) UNDER COLUMN 'D'SHALL BE SUBMITTED TO CUSTOMER AS A 'QA' DOCUMENTATION PACKAGE., C: MAIN CONTRACTOR(BHEL / BHEL AIA),M: MANUFACTURE/SUB SUPPLIER, N: OWNER (OWNER CONSULTANT QA & I / NTPC) P: PERFORM W: WITNESS AND V: VERIFICATION / REVIEW OF RECORDS, MTC: MATERIAL TEST CERTIFICATE, TC: TEST CERTIFICATE, MA: MAJOR, MI: MINOR, COC: CERTIFICATE OF CONFORMANCE, IR: INSPECTION REPORT, TR: TEST REPORT,					MDL NO:			Rakesh Kr Madhu (Dy.Mgr/QA)			K Renjith (Manager/QA)			R Arunachalam (DGM/QA)		
																		
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1	2	3	4	5	6		7	8	9	D*	10	11	
5.5	Quality Dossier	Compliance of Reports	Major	Document	100%	100%	Completion of all documents, Test Report as per Approved MQP.	Report	√	P	V	V	
5.6	Packing	Compilation of PO	Major	Visual	100%	100%	PO/specification/ Packing Drawing	Report	√	P	V	-	

- Notes:** a. This QP is applicable for Mandatory spare also. 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.
- b. Latest version of standards & Specification shall be applied.
- c. Materials shall be procured in compliance to Functional Technical specification.
- d. Gauges and measuring instruments with valid calibration only shall be used.
- e. Inspection / Inspection wavier / approval by BHEL does not absolve Supplier's responsibility for conformity of the specification as per the terms of PO.
- f. This QP shall be read along with relevant PO, BHEL Specification / Approved Drawing / Datasheet.

MANUFACTURER SIGN & STAMP	<b>LEGEND:</b> * RECORDS, IDENTIFIED WITH "TICK" (√) UNDER COLUMN 'D' SHALL BE SUBMITTED TO CUSTOMER AS A 'QA' DOCUMENTATION PACKAGE., C: MAIN CONTRACTOR(BHEL / BHEL AIA), M: MANUFACTURE/SUB SUPPLIER, N: OWNER (OWNER CONSULTANT QA & I / NTPC) P: PERFORM W: WITNESS AND V: VERIFICATION / REVIEW OF RECORDS, MTC: MATERIAL TEST CERTIFICATE, TC: TEST CERTIFICATE, MA: MAJOR, MI: MINOR, COC: CERTIFICATE OF CONFORMANCE, IR: INSPECTION REPORT, TR: TEST REPORT,	MDL NO:		
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Annexure Q		
	Indent No:	Enquiry no:
Sl.No	BHEL / Customer Requirements	## Specific confirmations by the manufacturer (Acceptable/Not acceptable)
	<b>Quality Plan Requirement: (If SQP is not given &amp; Vendor QP applicable)</b>	
	(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.	
	<b>Important Notes shall be included in MQP :</b> (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	<b>Domestic / Inland Inspection</b> 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	<b>Inspection Agency for Foreign Bidders and also for Indian Bidder but importing from Foreign Sources:</b> (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. <u>List of TPIA</u> 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	

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Sl.No	BHEL / Customer Requirements	## Specific confirmations by the manufacturer (Acceptable/Not acceptable)
4	<b>Stage Inspection during manufacturing Process :</b> 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.	
5	<b>Inspection before despatch for domestic supplier :</b> Inspection before despatch at supplier's works shall be carried out by BHEL appointed Inspection agency (as in Sl no. 2). Inspection shall be done as per approved Quality plan/ Technical specification/ Approved Drawing/ Approved Data sheet .	
6	<b>Inspection at Foreign Source/Supplier:</b> (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	<b>Painting</b> 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.	
9	<b>Packing / Seaworthy Packing</b> 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	<b>Outsourcing of test facilities:</b> 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	<b>Important Note:</b> 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:



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1	2	3	4	5	6		7	8	9	D*	10			11

1.0 RAW MATERIALS INSPECTION.														
1.1	Shaft & Blades, rubber composition & other material including castings & forgings.	Chem. & Mech Properties Dimensions Surface Defects	Major	Review of MTC Measurement Visual	1/ Heat 100% 100%	-	Owner / Owner QA & I - NTPC Approved Drawing / Data Sheet	TC IR IR	√	P P	V -	V -		For shaft Dia ≥ 40mm UT shall be done as per ASTM A 388.
2.0 Motor Refer Separate MQP for Electric Motor.														
3.0	Gear box	Make, Type, Rating, vibration, noise, Routine/Run test.	Major	Review of manufacture's test report	100%	-	Drawing/Data Sheet	TC/ Report	√	P	V	V		
4.0 IN PROCESS INSPECTION.														
4.1	Welding Qualifications	WPS, PQR, WPQ	Major	WPS, PQR & WPQ	100%	-	ASME Sec IX/AWS D1.1	WPS/ PQR	√	P	V	V		

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4.2	Marking, cutting, Edge preparation Tacking	Dimensions	Major	Measurement	100%	-	Approved Drawings	IR	-	P	-	-	
4.3	Shaft & Impeller	Visual & Dimension check, face out and run out of shaft (after flange welding)	Major	Measurement	100%	100%	As per Spec. & Owner / Owner QA & I - NTPC Appd. Drawing / Datasheet	IR	√	P	V	V	
4.4	Welds	Visual, Dimension	Major	Visual, Measurement	100%	100%	ASME Sec-VIII/ AWS D1.1	IR	√	P	V	V	
4.5	Weld surface check	Weld surface check	Major	Measurement DPT	100%	10%	ASME Sec-VIII/AWS D1 Appendix 8	IR	√	P	W	V	
4.6	Impeller	Dynamic Balancing	Major	Visual, Measurement	100%	10%	ISO 1940/Appd. Drg. & Data sheet/Relevant standard	TR	√	P	W	V	

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4.7	Rubber Lining	Thickness of Rubber, Hardness, Spark test, Adhesion test on test piece	Major	Measurement	100%	10%	As per Specs./ Appd. Drg. & data sheet	Appd.Drg.& Data sheet,	TR	√	P	W	V	
<b>5.0 FINAL INSPECTION</b>														
5.1	Final Assembly Base Frame,Agitator etc.	Visual- Workmanship, Dimensional.	Major	Visual, Measurement	100%	10%	Owner / Owner QA & I - NTPC Appd.Drg./ Datasheet & Spec,		IR	√	P	W	V	
5.2	Run test of Agitator assembled with Gearbox & job Motor. Medium-Slurry (Duration-30 minutes)	Current,RPM, Vibration,Noise & Temperature rise	Major	Measurement	100%	20% of each type (side & top entry)	Manufacturer's procedure/ Approved Drawing/Data Sheet		IR	√	P	W	W	For top agitator with shaft length >5Meter run test to be carried out with bearing shaft only.
5.3	Painting	Visual,DFT	Major	Paint Shade & DFT measurement	100%	20% of each type	Owner / Owner QA & I - NTPC Approved Painting Schedule		IR	√	P	W	V	
5.4	Marking	Visual	Major	Visual	100%	100%	Approved Drawing		IR	√	P	V	V	
MANUFACTURER SIGN & STAMP		<b>LEGEND:</b> * RECORDS, IDENTIFIED WITH "TICK" (√) UNDER COLUMN 'D'SHALL BE SUBMITTED TO CUSTOMER AS A 'QA' DOCUMENTATION PACKAGE., C: MAIN CONTRACTOR(BHEL / BHEL AIA),M: MANUFACTURE/SUB SUPPLIER, N: OWNER (OWNER CONSULTANT QA & I / NTPC) P: PERFORM W: WITNESS AND V: VERIFICATION / REVIEW OF RECORDS, MTC: MATERIAL TEST CERTIFICATE, TC: TEST CERTIFICATE, MA: MAJOR, MI: MINOR, COC: CERTIFICATE OF CONFORMANCE, IR: INSPECTION REPORT, TR: TEST REPORT,					MDL NO:		Rakesh Kr Madhu (Dy.Mgr/QA)		K Renjith (Manager/QA)			
														
							PREPARED BY		REVIEWED AND APPROVED BY					

Receipt No : 622511/2022/BAP-QA-ELEC

SL. NO.	COMPONENT & OPERATION	CHARATERISTICS	CLASS	TYPE OF CHECK	QUATUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY			REMARKS
					M	C/N				M	C	N	
1	2	3	4	5	6		7	8	9	D*	10	11	
5.5	Quality Dossier	Compliance of Reports	Major	Document	100%	100%	Completion of all documents, Test Report as per Approved MQP.	Report	√	P	V	V	
5.6	Packing	Compilation of PO	Major	Visual	100%	100%	PO/specification/ Packing Drawing	Report	√	P	V	-	

- Notes:** a. This QP is applicable for Mandatory spare also. 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.
- b. Latest version of standards & Specification shall be applied.
- c. Materials shall be procured in compliance to Functional Technical specification.
- d. Gauges and measuring instruments with valid calibration only shall be used.
- e. Inspection / Inspection wavier / approval by BHEL does not absolve Supplier's responsibility for conformity of the specification as per the terms of PO.
- f. This QP shall be read along with relevant PO, BHEL Specification / Approved Drawing / Datasheet.

### RECORD OF REVISION

REV NO	DATE	DESCRIPTION
00	23.17.2019	Original Issue – First submission
01	03.01.2021	Revised Based on customer comments.

MANUFACTURER SIGN & STAMP	<b>LEGEND:</b> * RECORDS, IDENTIFIED WITH "TICK" (√) UNDER COLUMN 'D' SHALL BE SUBMITTED TO CUSTOMER AS A 'QA' DOCUMENTATION PACKAGE., C: MAIN CONTRACTOR(BHEL / BHEL AIA), M: MANUFACTURE/SUB SUPPLIER, N: OWNER (OWNER CONSULTANT QA & I / NTPC) P: PERFORM W: WITNESS AND V: VERIFICATION / REVIEW OF RECORDS, MTC: MATERIAL TEST CERTIFICATE, TC: TEST CERTIFICATE, MA: MAJOR, MI: MINOR, COC: CERTIFICATE OF CONFORMANCE, IR: INSPECTION REPORT, TR: TEST REPORT,	MDL NO:	
		Rakesh Kr Madhu (Dy.Mgr/QA)	K Renjith (Manager/QA)
			
		PREPARED BY	REVIEWED AND APPROVED BY

**W.r.t INDIGENOUS OEM VENDORS**

Sl no	Description & Quality Requirements	Specific confirmation 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 (DOC.NO: BAP/QR/G601, G602 &G603/LTM/Agitators 001 Rev NO.: 01 dt 10.01.2022) 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 manufacturers.	
03	OEM Supplier shall submit other details like that they are already approved vendor by <b>Ultimate Customer – NTPC (National Thermal Power Corporation Limited)</b> 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 <b>Ultimate Customer – NTPC (National Thermal Power Corporation Limited)</b> 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 <b>BHEL/ Ultimate Customer – NTPC (National Thermal Power Corporation Limited)</b> inspection - CHP/MDCC clearances.	

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

PROJECT: NORTH KARANPURA (3X660MW) BHEL WO no: G601, G602 & G603 NTPC CONTRACT NO: CS-4410-109-2- FC/SC-NOA- 6695/6696 PACKAGE: FGD PACKAGE MAIN CONTRACTOR: BHEL - RANIPET <b>SUB CONTRACTOR (OEM) &amp;          ADDRESS:</b>  <b>(To be filled by OEM VENDOR)</b>		CONTRACT QUALITY REQUIREMENTS (CQR) for <u>LT MOTORS(IE3) - Up to 200KW used</u> in <u>Agitators</u>  NTPC - NORTH KARANPURA (3X660MW) BHEL WO no: G601, G602 & G603		DOC.NO: BAP/QR/G601, G602 &G603/LTM/Agitators 001  Rev NO.: 01 Rev NO.: 00 PAGE : Page 1 of 5 DATE: 10.01.2022	<b>##Enquiry No:</b>  <b>## OEM Supplier Name &amp;          Address:</b>  <b>##Offer reference:</b>  <b>##Date:</b>  <b>Contact Official Name:</b> <b>Mobile no:</b> <b>Email id:</b>
Sl. NO.	DESCRIPTION	BHEL and Ultimate Customer - NTPC (National Thermal Power Corporation), India Quality Requirements		##Specific confirmations by the vendor	
<b>ITEM: LT Motors(IE3) Up to 200KW</b>					
01	Type Test Requirements	A. Vendor shall submit the type test reports of all the type tests as listed in SL NO: 01 (D) below and carried out within 10 years from the date of ultimate customer NTPC bid opening dt 22.06.2018. These reports should be for the test conducted on the identical/similar LT Motors to those proposed to be supplied under this enquiry and test (s) either should have been conducted at an independent laboratory (or) should have been witnessed by BHEL AIA (BHEL Appointed Inspection Agency) / BHEL (or) Ultimate client NTPC at respective LT Motor Manufacture of OEM vendor.			
		B. However, if vendor is not able to submit the similar / identical type test report as per above condition (or) in the case of type test reports are not found to be meeting the specification requirement, the vendor shall conduct all the tests at no additional cost to BHEL either at third party lab (or) own lab in the presence of BHEL AIA (BHEL Appointed Inspection Agency) / BHEL /Ultimate client NTPC and submit the reports for review & approval.			
		C. Type Test reports review and approval by BHEL AIA (BHEL Appointed Inspection Agency) / BHEL / Ultimate client NTPC is must in line with NTPC approved data sheet / BOM/GA Drawing etc.			
		D. The following Type test reports to be submitted covering the following for above 50KW LT Motor as per relevant BIS (Bureau of Indian Standard) - BIS 325 / IEC 60034 etc			
		i. Measuring of resistance of winding of stator and wound rotor (if applicable) ii. No load test at rated voltage to determine input current, power and speed. iii. Open circuit voltage ratio of wound rotor motor (in case slip ring motors) iv. Full load test to determine efficiency power factor and slip v. Temperature rise test. vi. Momentary excess load test vii. High voltage test viii. Test for vibration severity of motor ix. Test of noise levels of motor ( <b>Noise level for all the motors shall be limited to 85dB(A) except for BFP motor for which the maximum limit shall be 90dB(A).</b> ) x. Over speed test xi. Degree of Protection Tests (Minimum Ingress Protection - IP 55). xii. Type test reports for motors located in fuel oil area having flame proof enclosures as per BIS 2148/ IEC 60079-1			

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

PROJECT: NORTH KARANPURA (3X660MW) BHEL WO no: G601, G602 & G603 NTPC CONTRACT NO: CS-4410-109-2- FC/SC-NOA- 6695/6696 PACKAGE: FGD PACKAGE MAIN CONTRACTOR: BHEL - RANIPET <b>SUB CONTRACTOR (OEM) &amp;          ADDRESS:</b>  <b>(To be filled by OEM VENDOR)</b>		CONTRACT QUALITY REQUIREMENTS (CQR) for <u>LT MOTORS(IE3) - Up to 200KW used</u> in <u>Agitators</u>  NTPC - NORTH KARANPURA (3X660MW) BHEL WO no: G601, G602 & G603	DOC.NO: BAP/QR/G601, G602 &G603/LTM/Agitators 001 Rev NO.: 01 Rev NO.: 00 PAGE : Page 2 of 5 DATE: 10.01.2022	<b>##Enquiry No:</b>  <b>## OEM Supplier Name &amp;          Address:</b>  <b>##Offer reference:</b>  <b>##Date:</b>  <b>Contact Official Name:</b> <b>Mobile no:</b> <b>Email id:</b>
Sl. NO.	DESCRIPTION	BHEL and Ultimate Customer - NTPC (National Thermal Power Corporation),, India Quality Requirements		##Specific confirmations by the vendor
<b>ITEM: LT Motors(IE3) Up to 200KW</b>				
01	Type Test Requirement .....Contd	E. The TCs / Type Test reports shall also be given as PDF file with index sheet & page control through Email & Soft Copy (File size to less than 9MB).		
02	Quality Plan Requirement	<ol style="list-style-type: none"> <li>RQP or MQP is applicable for these LT Motor.</li> <li>RQP/MQP (Manufacturing Quality Plan) is applicable for these LT Motors and accordingly Actual LT Motor Manufacture and OEM shall submit the RQP/MQP in ultimate customer – NTPC format.</li> <li>If any of LT Motor manufacture is having, ultimate customer NTPC approved MQP (Manufacturing Quality Plan) / RQP (Reference Quality Plan) and having validity, the same is applicable for these LT Motor for inspection subject to obtaining ultimate customer NTPC formal approval in the event of an order through endorsement sheet approval route as in sl no: 4 below</li> <li>Accordingly, LT Motor Manufacture &amp; OEM supplier shall submit the filled up Endorsement sheet (copy attached) with ultimate customer approved MQP/RQP with signature &amp; seal in the event of a Purchase Order from BHEL.</li> <li>If LT Motor Manufacture / OEM vendor does not have MQP/RQP, they should submit a fresh MQP to BHEL/NTPC (in NTPC format) for review &amp; approval. (copy attached).</li> </ol>		
03	BHEL / Ultimate Customer – NTPC approved vendors	LT Motors are to be procured only from following Ultimate Customer - NTPC approved vendors and no deviation on this specific requirement is acceptable. <ul style="list-style-type: none"> <li>➤ KEC / Bengaluru (Up to 200KW) &amp; Hubli (Up to 90KW)</li> <li>➤ CGL/Ahemednagar (Up to 200KW)</li> <li>➤ SIEMENS/Mumbai (Up to 200KW)</li> <li>➤ ABB/Faridabad (Up to 55KW) and Bengaluru (Up to 200KW)</li> <li>➤ BBL/Mumbai (Up to 200KW)</li> <li>➤ NGEF/ Bengaluru (Up to 15KW)</li> <li>➤ Marathon / Kolkatta (Up to 200KW)</li> <li>➤ Jyothi / Vadodara (Up to 200KW)</li> <li>➤ Laximi Hydraulics Private Limited (LHPL) / Solapur (Up to 200KW)</li> </ul>		

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

<b>PROJECT: NORTH KARANPURA (3X660MW)</b> <b>BHEL WO no: G601, G602 &amp; G603</b> <b>NTPC CONTRACT NO:</b> <b>CS-4410-109-2- FC/SC-NOA-6695/6696</b> <b>PACKAGE: FGD PACKAGE</b> <b>MAIN CONTRACTOR:</b> <b>BHEL - RANIPET</b> <b>SUB CONTRACTOR (OEM) &amp; ADDRESS:</b>  <b>(To be filled by OEM VENDOR)</b>		<b>CONTRACT QUALITY REQUIREMENTS (CQR) for LT MOTORS(IE3) - Up to 200KW used in</b> <b>Agitators</b>  <b>NTPC - NORTH KARANPURA (3X660MW)</b> <b>BHEL WO no: G601, G602 &amp; G603</b>		<b>DOC.NO:</b> <b>BAP/QR/G601, G602 &amp; G603/LTM/Agitators 001</b>  <b>Rev NO.: 01</b> <b>Rev NO.: 00</b> <b>PAGE : Page 3 of 5</b> <b>DATE: 10.01.2022</b>		<b>##Enquiry No:</b>  <b>## OEM Supplier Name &amp; Address:</b>  <b>##Offer reference:</b>  <b>##Date:</b>  <b>Contact Official Name:</b> <b>Mobile no:</b> <b>Email id:</b>		
Sl. NO.	DESCRIPTION	BHEL and Ultimate Customer - NTPC (National Thermal Power Corporation),, India Quality Requirements			##Specific confirmations by the vendor			
<b>ITEM: LT Motors(IE3) Up to 200KW</b>								
04	<b>Inspection Methodology to be adopted at Actual LT Motor Manufacture works by OEM vendor</b>	<b><u>LT Motors up to 30KW – Inspection Categorization: III</u></b>						
		<p>All Routine tests on LT Motors are to be ensured by OEM Vendor &amp; same are to be inspected &amp; witnessed by OEM Vendor / BHEL / BHEL AIA (BHEL authorized inspection Agency) at LT Motor manufacture works as per approved MQP &amp; approved data sheet / drg / spec/ as per relevant BIS (Bureau of Indian Standard) - BIS 325 / IEC 60034 etc and all the Routine Test Reports with Inspection report (IR) to be submitted for BHEL/Ultimate Customer – NTPC for review and to obtain inspection and dispatch clearance .</p> <p>LT Motor Manufacturer has to issue COC (Certificate of Conformance) states that the above motor/ motors was manufactured taking care of Customer specific requirements regarding ambient temp., voltage and frequency variation, hot starts, pull out torque, starting KVA/KW, temp. rise, distance between centre of stud and gland plate, space heater and tested in accordance with approved drawing/data sheets</p>						
		<b><u>LT Motors (30KW to 50KW) – Inspection Categorization: II</u></b>						
			<p>All Routine Tests on LT Motors are to be ensured by OEM vendor &amp; witnessed by BHEL/BHEL AIA (BHEL authorized inspection Agency) at LT Motor manufacture works including review of Type Test Reports and Degree of Protection Test Reports (IP 55) as per approved MQP &amp; approved data sheet/drg/spec / as per relevant BIS (Bureau of Indian Standard) - BIS 325 / IEC 60034 etc and all the Routine Test Reports with Inspection report (IR) to be submitted for BHEL/Ultimate Customer – NTPC for review and to obtain inspection and dispatch clearance .</p>					
			<b><u>Above 50KW and up to 200KW – Inspection Categorization: I</u></b>					
			<p>All Routine &amp; Type Tests if any on LT Motors are to be ensured by OEM Vendor and same shall be offered to BHEL/ BHEL AIA (BHEL authorized inspection Agency) / Ultimate Customer-NTPC for inspection &amp; witnessing including review of Degree of Protection Test Reports as per approved MQP /RQP with endorsement sheet / approved data sheet / drg / spec / as per relevant BIS (Bureau of Indian Standard) - BIS 325 / IEC 60034 etc and all the Routine Test Reports , Type test Reports including Degree of protection test report with Inspection report (IR) to be submitted for BHEL/Ultimate Customer – NTPC for review and to obtain inspection and dispatch clearance .</p>					

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

<b>PROJECT: NORTH KARANPURA (3X660MW)</b> <b>BHEL WO no: G601, G602 &amp; G603</b> <b>NTPC CONTRACT NO:</b> <b>CS-4410-109-2- FC/SC-NOA-6695/6696</b> <b>PACKAGE: FGD PACKAGE</b> <b>MAIN CONTRACTOR:</b> <b>BHEL - RANIPET</b> <b>SUB CONTRACTOR (OEM) &amp; ADDRESS:</b>  <b>(To be filled by OEM VENDOR)</b>		<b>CONTRACT QUALITY REQUIREMENTS (CQR) for LT MOTORS(IE3) - Up to 200KW used in</b> <b>Agitators</b>  <b>NTPC - NORTH KARANPURA (3X660MW)</b> <b>BHEL WO no: G601, G602 &amp; G603</b>	<b>DOC.NO:</b> <b>BAP/QR/G601, G602 &amp; G603/LTM/Agitators 001</b>  <b>Rev NO.: 01</b> <b>Rev NO.: 00</b> <b>PAGE : Page 4 of 5</b> <b>DATE: 10.01.2022</b>	<b>##Enquiry No:</b>  <b>## OEM Supplier Name &amp; Address:</b>  <b>##Offer reference:</b>  <b>##Date:</b>  <b>Contact Official Name:</b> <b>Mobile no:</b> <b>Email id:</b>
Sl. NO.	DESCRIPTION	BHEL and Ultimate Customer - NTPC (National Thermal Power Corporation), India Quality Requirements		##Specific confirmations by the vendor
<b>ITEM: LT Motors(IE3) Up to 200KW</b>				
04	<b>Inspection Methodology to be adopted at Actual LT Motor Manufacture works by OEM vendor..... Contd</b>	BHEL/ BHEL AIA (BHEL authorized inspection Agency) ) / Ultimate Customer-NTPC to witness / perform inspection at LT Motor Supplier works and submit all the inspection documents and routine & Type test reports including Degree of Protection Test Reports (IP 55) as per approved MQP & approved data sheet / drg / spec / as per relevant BIS (Bureau of Indian Standard) - BIS 325 / IEC 60034 etc.  No material shall be dispatched without BHEL / BHEL AIA and Ultimate Customer – NTPC Inspection and dispatch clearance.		
05	<b>Painting Requirements</b>	Painting requirement like paint shade and painting thickness including no of coats if any are to be ensured by the OEM vendor for these LT Motors as per BHEL/ Ultimate Customer -NTPC approved data sheet/drg/spec (As applicable).		
06	<b>Packing</b>	Packing shall be as per Specification / Drg. / Data sheet including sea worthy packing if any to avoid any transit & handling damages .		
07	<b>For Inspection call</b>	Inspection call by OEM Vendor for LT Motor inspection at Actual LT Motor Manufacture works to be raised for BHEL/BHEL AIA inspection / Ultimate Customer – NTPC including for type test witnessing if any to be ensured / addressed to Mr R Kesavan., DGM (QC-Proc)., Mobile no: +91 9443006303., Email id: kesavan@bhel.in and Mr Zeeshan Ali., Sr. Engineer (QC-Proc)., Mobile no: +91 9443149691 ., Email id: zeeshan@bhel.in including for inspection related activities for immediate response / resolution.		
08	<b>Document Package / Dossier Document Package / Dossier...contd</b>	Specific confirmation for Document Package in the event of an order (3 hard copies + soft copies in Pdf file) is to be given containing the following with proper linkages (.) (i) Index Sheet (ii) MQP/RQP/Endorsement sheet (iii) TCs identified by BHEL/NTPC for record for “CHP” (Customer Hold Point) Verification & Witness “W” portion as given in MQP / RQP / MQP (as applicable). (iv) Final Inspection Report + TC (v) BHEL AIA (BHEL Appointed Inspection Agency) / BHEL report + TC (vi) Ultimate customer NTPC (National Thermal Power Corporation) CHP (Customer Hold Point) / MDCC (Material Dispatch Clearance Certificate) (vii) Type test reports conducted/submitted with approval with approved data sheet and BOM with actual make used with Customer approved drgs.		

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

PROJECT: NORTH KARANPURA (3X660MW) BHEL WO no: G601, G602 & G603 NTPC CONTRACT NO: CS-4410-109-2- FC/SC-NOA- 6695/6696 PACKAGE: FGD PACKAGE MAIN CONTRACTOR: BHEL - RANIPET SUB CONTRACTOR (OEM) & ADDRESS:  <b>(To be filled by OEM VENDOR)</b>		CONTRACT QUALITY REQUIREMENTS (CQR) for <u>LT MOTORS(IE3) - Up to 200KW used</u> in <u>Agitators</u>  NTPC - NORTH KARANPURA (3X660MW) BHEL WO no: G601, G602 & G603		DOC.NO: BAP/QR/G601, G602 &G603/LTM/Agitators 001 Rev NO.: 01 Rev NO.: 00 PAGE : Page 5 of 5 DATE: 10.01.2022	<b>##Enquiry No:</b>  <b>## OEM Supplier Name &amp; Address:</b>  <b>##Offer reference:</b>  <b>##Date:</b>  <b>Contact Official Name:</b> <b>Mobile no:</b> <b>Email id:</b>																																																																				
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09	<b>Important notes</b>	<u><b>Inspection Categorization: I</b></u> Inspection by BHEL/BHEL AIA and also by Ultimate Customer – NTPC based on MQP/RQP approved and as in sl no:04  <u><b>Inspection Categorization: II</b></u> Inspection by Main contractor (BHEL) / BHEL AIA based on Ultimate Customer – NTPC approved MQP/RQP & based on inspection as in sl no:04  <u><b>Inspection Categorization: III</b></u> COC by Main contractor (BHEL) to Ultimate Customer – NTPC based on inspection as in sl no:04.  Any cost implication for conducting checks / tests including for witnessing of any of the tests at Actual LT Motor Manufacture Works by BHEL / BHEL AIA / Ultimate Customer – NTPC is in the scope of OEM Supplier only and no extra cost if any will be admissible in the event of an order and also during execution of the contract.																																																																							
10	<b>Motor details</b>	Vendor shall furnish following Motor details involved in Agitators (as applicable) for this enquiry.																																																																							
		<table border="1"> <thead> <tr> <th rowspan="2">S. No</th> <th rowspan="2">Agitators</th> <th colspan="3">LT Motor</th> </tr> <tr> <th>Rating (in kW)</th> <th>Quantity (in nos)</th> <th>Make</th> </tr> </thead> <tbody> <tr><td>1</td><td>Absorber Tank Agitator Motor</td><td></td><td></td><td></td></tr> <tr><td>2</td><td>Auxiliary Absorber Tank Agitator Motor</td><td></td><td></td><td></td></tr> <tr><td>3</td><td>Filtrate Water Tank Agitator Motor</td><td></td><td></td><td></td></tr> <tr><td>4</td><td>Secondary Hydrocyclone Feed Tank Agitator Motor</td><td></td><td></td><td></td></tr> <tr><td>5</td><td>Waste Water Tank Agitator Motor</td><td></td><td></td><td></td></tr> <tr><td>6</td><td>Limestone Slurry Storage Tank Agitator Motor</td><td></td><td></td><td></td></tr> <tr><td>7</td><td>Primary Hydrocyclone Feed Tank Agitator Motor</td><td></td><td></td><td></td></tr> <tr><td>8</td><td>Absorber Area Drain Sump Agitator Motor</td><td></td><td></td><td></td></tr> <tr><td>9</td><td>Gypsum Area Drain Sump Agitator Motor</td><td></td><td></td><td></td></tr> <tr><td>10</td><td>Limestone Area Drain Sump Agitator Motor</td><td></td><td></td><td></td></tr> <tr><td>11</td><td>Other LT motors involved in the system (if any)</td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> </tbody> </table>		S. No	Agitators	LT Motor			Rating (in kW)	Quantity (in nos)	Make	1	Absorber Tank Agitator Motor				2	Auxiliary Absorber Tank Agitator Motor				3	Filtrate Water Tank Agitator Motor				4	Secondary Hydrocyclone Feed Tank Agitator Motor				5	Waste Water Tank Agitator Motor				6	Limestone Slurry Storage Tank Agitator Motor				7	Primary Hydrocyclone Feed Tank Agitator Motor				8	Absorber Area Drain Sump Agitator Motor				9	Gypsum Area Drain Sump Agitator Motor				10	Limestone Area Drain Sump Agitator Motor				11	Other LT motors involved in the system (if any)										
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**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.**

<b>ENDORSEMENT SHEET FOR QP</b> REFERENCE / STANDARD / <u>FIELD</u> QUALITY PLAN (RQP / SQP/RFQP/SFQP)		
<i>TO BE FILLED IN BY SUPPLIER AT TIME OF SUBMISSION</i>		 To be filled in by NTPC
PROJECT NAME	NORTH KARANPURA (3X660MW ) BHEL WO no: G601, G602 & G603	<u>2REVIEW &amp; ENDORSEMENT BY NTPC</u> PROJECT SPECIFIC QP NUMBER ALLOTTED  QP NO:  REV. NO.: 00 DT :
CONTRACT NO.:	CS-4410-109-2-FC/SC-NOA-6695/6696	
MAIN SUPPLIER	M/S.BHEL, RANIPET , TAMIL NADU,, INDIA	
MANUFACTURER WORKS & ADDRESS	(TO BE FILLED BY OEM / LT MOTOR SUPPLIER)	
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)	
<i>Confirmation by Main Supplier (TICK WHICHEVER APPLICABLE)</i>		<i>(TICK APPLICABLE)</i>
<i>I. That the item/ component is identical to that considered for RQP/MQP/SQP approval. ✓</i>		The MQP/RQP/SQP is endorsed for this project without any change
<i>II. That there are minor changes in the item/ component with respect to that considered for MQP/RQP/SQP approval, however the same do not affect the contents of MQP/RQP/SQP</i>		
<i>III. That there are minor changes in the item/ component with respect to that considered for MQP/RQP/SQP approval, however the same affect the MQP/RQP/SQP slightly, as indicated below / in attached sheet.</i>		The SQP is endorsed for this project with changes as indicated.  <u>DISTRIBUTION OF ENDORSEMENT OF</u> A) MQP/RQP/SQP : 1. MAIN SUPPLIER (WITH A COPY OF MQP/RQP/SQP ) 2. MANUFACTURER 3. RIO 4. CQA-SPL 5. CQA-O/C B) RFQP/SFQP: 1. MAIN SUPPLIER (with a copy of MQP/RQP/SQP 2. MANUFACTURER 3. NTPC FQA (with a copy of MQP/RQP/SQP 4. NTPC Erection (with a copy of MQP/RQP/SQP 5. CQA-SPL 6. CQA-O/C
(TO BE FILLED BY OEM / LT MOTOR SUPPLIER)		NTPC (Reviewed /Approved by/ Date & Seal)
SIGN.: (Main Supplier)      DATE:	SIGN.: (Manufacturer )      DATE:	

<b>OEM SUPPLIER WITH OEM MFGR.'s LOGO (TO BE FILLED BY OEM SUPPLIER)</b>	<b>LT MOTOR MANUFACTURER'S NAME AND ADDRESS (TO BE FILLED BY OEM/ LT MOTOR MANUFACTURE)</b>	<b>MANUFACTURING QUALITY PLAN</b>				PROJECT: NTPC NORTH KARANPURA (3X660MW) (BHEL WO no: G601,G602 & G 603) NTPC CONTRACT NO: CS-4410-109-2-FC/SC-NOA-6695/6696 PACKAGE: FGD PACKAGE MAIN CONTRACTOR: BHEL - RANIPET SUB CONTRACTOR (OEM) & ADDRESS: (TO BE FILLED BY OEM SUPPLIER)			
		ITEM : LT MOTOR (IE3) UP TO 200KW FOR FGD APPLICATION SUB-SYSTEM: FGD - AGITATORS	QP NO.: AGITATORS:LTM:NK:001 REV.NO.: 00 DATE: PAGE: .... OF....						

SL. NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD		AGENCY			REMARKS
					M	C/N				D*	M	C	N	
1.	2.	3.	4.	5.	6.		7.	8.	9.	D*	** 10.			11.

OEM MANUFACTURER/ LT MOTOR SUPPLIER SIGNATURE	MAIN (BHEL) SUPPLIER	<b>LEGEND:</b> * RECORDS, IDENTIFIED WITH "TICK" (✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. ** M: OEM MANUFACTURER/LT MOTOR SUB-SUPPLIER C: MAIN SUPPLIER - BHEL/BHEL AIA, N: NTPC P: PERFORM W: WITNESS AND V: VERIFICATION. AS APPROPRIATE, CHP: NTPC SHALL IDENTIFIED IN COLUMN "N" AS ' W'	FOR NTPC USE	DOC. NO.:		REV..... CAT.....	
				REVIEWED BY	APPROVED BY	APPROVAL SEAL	

FORMAT NO.: QS-01-QAI-P-09/F1-R1

1/1

ENGG. DIV./QA&I



**W.r.t FOREIGN OEM VENDORS**

Sl no	Description & Quality Requirements	Specific confirmation by the vendor (Confirmed/Not Confirmed)
01	OEM vendor shall meet all the requirements as in Annexure-II 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 (DOC.NO: BAP/QR/G601, G602 & G603/LTM/Agitators 002 Rev NO.: 01 dt 10.01.2022) 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 manufacturers.	
03	OEM Supplier shall submit other details like that they are already approved vendor by <b>Ultimate Customer – NTPC (National Thermal Power Corporation Limited)</b> 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 <b>Ultimate Customer – NTPC (National Thermal Power Corporation Limited)</b> 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 <b>BHEL/ Ultimate Customer – NTPC (National Thermal Power Corporation Limited)</b> inspection - CHP/MDCC clearances.	

**Annexure-II****CONTRACT QUALITY REQUIREMENTS (CQR) for LT MOTORS(IE3) Up to 200KW****(For FOREIGN (OUTSIDE INDIA) OEM VENDOR ONLY)**

<b>PROJECT: NORTH KARANPURA (3X660MW) BHEL WO no: G601, G602 &amp; G603 NTPC CONTRACT NO: CS-4410-109-2- FC/SC-NOA- 6695/6696 PACKAGE: FGD PACKAGE MAIN CONTRACTOR: BHEL - RANIPET SUB CONTRACTOR (OEM) &amp; ADDRESS:  (To be filled by OEM VENDOR)</b>		<b>CONTRACT QUALITY REQUIREMENTS (CQR) for LT MOTORS(IE3) - Up to 200KW used in <u>Agitators</u>  NTPC - NORTH KARANPURA (3X660MW) BHEL WO no: G601, G602 &amp; G603</b>	<b>DOC.NO: BAP/QR/G601, G602 &amp;G603/LTM/Agitators 002 Rev NO.: 01 Rev NO.: 00 PAGE : Page 1 of 6 DATE: 10.01.2022</b>	<b>##Enquiry No:  ## OEM Supplier Name &amp; Address:  ##Offer reference:  ##Date:  Contact Official Name: Mobile no: Email id:</b>
<b>Sl. NO.</b>	<b>DESCRIPTION</b>	<b>BHEL and Ultimate Customer - NTPC (National Thermal Power Corporation),, India Quality Requirements</b>		<b>##Specific confirmations by the vendor</b>
<b>ITEM: LT Motors(IE3) - Up to 200KW</b>				
01	<b>Type Test Requirements</b>	<p>A. Vendor shall submit the type test reports of all the type tests as listed in SL NO: 01 (D) below and carried out within 10 years from the date of ultimate Customer NTPC bid opening dt 22.06.2018. These reports should be for the test conducted on the identical/similar LT Motors to those proposed to be supplied under this enquiry and test (s) either should have been conducted at an independent laboratory (or) should have been witnessed by BHEL/BHEL AIA (BHEL Appointed Inspection Agency) (or) Ultimate customer NTPC (National Thermal Power Corporation) at respective LT Motor Manufacture of OEM vendor.</p> <p>B. However, if vendor is not able to submit the similar / identical type test report as per above condition in 01 (A) (or) in the case of type test reports are not found to be meeting the specification requirement and not acceptable to BHEL/BHEL AIA/ Ultimate Customer – NTPC , , the vendor shall conduct all these tests at no additional cost if any to BHEL either at reputed third party lab (or) Government approved lab (or) own lab in the presence of BHEL AIA (BHEL Appointed Inspection Agency) / BHEL /Ultimate client NTPC and submit the reports for BHEL / Ultimate Customer – NTPC review &amp; approval.</p> <p>C. Type Test reports review and approval by BHEL AIA (BHEL Appointed Inspection Agency) / BHEL / Ultimate client NTPC is must in line with NTPC approved data sheet / BOM (Bill of Material) /GA (General Arrangement) Drawing etc.</p>		

**Annexure-II****CONTRACT QUALITY REQUIREMENTS (CQR) for LT MOTORS(IE3) Up to 200KW****(For FOREIGN (OUTSIDE INDIA) OEM VENDOR ONLY)**

PROJECT: NORTH KARANPURA (3X660MW) BHEL WO no: G601, G602 & G603 NTPC CONTRACT NO: CS-4410-109-2- FC/SC-NOA- 6695/6696 PACKAGE: FGD PACKAGE MAIN CONTRACTOR: BHEL - RANIPET <b>SUB CONTRACTOR (OEM) &amp;          ADDRESS:</b>  <b>(To be filled by OEM VENDOR)</b>		CONTRACT QUALITY REQUIREMENTS (CQR) for <u>LT MOTORS(IE3) - Up to 200KW used</u> in <u><b>Agitators</b></u>  <b>NTPC - NORTH KARANPURA</b> <b>(3X660MW)</b> BHEL WO no: G601, G602 & G603	DOC.NO: BAP/QR/G601, G602 &G603/LTM/Agitators 002  Rev NO.: 01 Rev NO.: 00 PAGE : Page 2 of 6 DATE: 10.01.2022	<b>##Enquiry No:</b>  <b>## OEM Supplier Name &amp;          Address:</b>  <b>##Offer reference:</b>  <b>##Date:</b>  <b>Contact Official Name:</b> <b>Mobile no:</b> <b>Email id:</b>
<b>Sl. NO.</b>	<b>DESCRIPTION</b>	<b>BHEL and Ultimate Customer - NTPC (National Thermal Power Corporation),, India Quality Requirements</b>		<b>##Specific confirmations by the vendor</b>
<b>ITEM: LT Motors(IE3) - Up to 200KW</b>				
01	<b>Type Test Requirement .....(Contd)</b>	D. The following Type test reports to be submitted covering the following for above 50KW LT Motor as per relevant BIS (Bureau of Indian Standard) - BIS 325 / IEC 60034 etc <ol style="list-style-type: none"> <li>i. Measuring of resistance of winding of stator and wound rotor (if applicable)</li> <li>ii. No load test at rated voltage to determine input current, power and speed.</li> <li>iii. Open circuit voltage ratio of wound rotor motor (in case slip ring motors)</li> <li>iv. Full load test to determine efficiency power factor and slip</li> <li>v. Temperature rise test.</li> <li>vi. Momentary excess /over load test</li> <li>vii. High voltage test</li> <li>viii. Test for vibration severity of motor</li> <li>ix. Test of noise levels of motor (<b>Noise level for all the motors shall be limited to 85dB(A) except for BFP motor for which the maximum limit shall be 90dB(A.)</b>)</li> <li>x. Over speed test</li> <li>xi. Degree of Protection Tests (Minimum Ingress Protection - IP 55).</li> <li>xii. Type test reports for motors located in fuel oil area having flame proof enclosures as per BIS 2148/ IEC 60079-1</li> </ol>		
		E. The TCs/Test reports shall also be given as PDF file with index sheet & page control through Email & Soft Copy (File size to less than 9MB).		
02	<b>Quality Plan Requirement</b>	a. MQP (Manufacturing Quality Plan) is applicable for these LT Motors and accordingly Actual LT Motor Manufacture shall submit the MQP in ultimate customer – NTPC format for review and approval by BHEL / Ultimate Customer - NTPC.		
		b. If any of LT Motor manufacture is having, ultimate customer NTPC approved MQP (Manufacturing Quality Plan) and having validity, the same is applicable for these LT Motor for inspection purposes subject to obtaining ultimate customer NTPC formal approval in the event of an order through endorsement sheet approval route as in sl no: 01 (c) below		

**Annexure-II****CONTRACT QUALITY REQUIREMENTS (CQR) for LT MOTORS(IE3) Up to 200KW****(For FOREIGN (OUTSIDE INDIA) OEM VENDOR ONLY)**

<b>PROJECT: NORTH KARANPURA (3X660MW)</b> <b>BHEL WO no: G601, G602 &amp; G603</b> <b>NTPC CONTRACT NO: CS-4410-109-2- FC/SC-NOA-6695/6696</b> <b>PACKAGE: FGD PACKAGE</b> <b>MAIN CONTRACTOR: BHEL - RANIPET</b> <b>SUB CONTRACTOR (OEM) &amp; ADDRESS:</b>  <b>(To be filled by OEM VENDOR)</b>		<b>CONTRACT QUALITY REQUIREMENTS (CQR) for LT MOTORS(IE3) - Up to 200KW used in</b> <b><u>Agitators</u></b>  <b>NTPC - NORTH KARANPURA (3X660MW)</b> <b>BHEL WO no: G601, G602 &amp; G603</b>	<b>DOC.NO:</b> <b>BAP/QR/G601, G602 &amp; G603/LTM/Agitators 002</b> <b>Rev NO.: 01</b> <b>Rev NO.: 00</b> <b>PAGE : Page 3 of 6</b> <b>DATE: 10.01.2022</b>	<b>##Enquiry No:</b>  <b>## OEM Supplier Name &amp; Address:</b>  <b>##Offer reference:</b>  <b>##Date:</b>  <b>Contact Official Name:</b> <b>Mobile no:</b> <b>Email id:</b>
<b>Sl. NO.</b>	<b>DESCRIPTION</b>	<b>BHEL and Ultimate Customer - NTPC (National Thermal Power Corporation),, India Quality Requirements</b>		<b>##Specific confirmations by the vendor</b>
<b>ITEM: LT Motors(IE3) - Up to 200KW</b>				
02	<b>Quality Plan Requirement ...contd</b>	c. Accordingly, LT Motor Manufacture & OEM supplier shall submit the filled up Endorsement sheet (copy attached) with ultimate customer approved MQP with signature & seal in the event of an Purchase Order from BHEL for BHEL/Ultimate Customer – NTPC review and approval.  d. If LT Motor Manufacture / OEM vendor does not have MQP, they should submit a fresh MQP to BHEL/NTPC (in NTPC format) for review & approval. (copy attached).  e. Typical Indicative MQP is attached for inf and & guidance purposes only and it is not final and binding on BHEL / Ultimate Customer NTPC.		
03	<b>Inspection Methodology to be adopted at Actual LT Motor Manufacture works by OEM vendor</b>	a. All LT Motors are to be inspected by BHEL AIA (BHEL authorized inspection Agency) at LT Motor manufacture works as per approved MQP & approved data sheet/drg/spec/ as per relevant BIS (Bureau of Indian Standard) - BIS 325 / IEC 60034 etc by BHEL / Ultimate Customer-NTPC  b. All Routine Tests are to be witnessed by BHEL AIA (BHEL authorized inspection Agency) at LT Motor manufacture works as per approved MQP & approved data sheet/drg/spec / as per relevant BIS (Bureau of Indian Standard) - BIS 325 / IEC 60034 etc by BHEL / Ultimate Customer-NTPC  c. BHEL AIA (BHEL authorized inspection Agency) / Ultimate Customer-NTPC will also ensure LT Motor type tests reports review including Degree of Protection Test Reports & acceptance as per approved MQP & approved data sheet / drg / spec / as per relevant BIS (Bureau of Indian Standard) - BIS 325 / IEC 60034 etc.  d. BHEL AIA (BHEL authorized inspection Agency) ) / Ultimate Customer-NTPC to witness / perform inspection at LT Motor Supplier works and submit all the inspection documents and routine & Type test reports including Degree of Protection Test Reports (IP 55) as per approved MQP & approved data sheet / drg / spec / as per relevant BIS (Bureau of Indian Standard) - BIS 325 / IEC 60034 etc.		

**Annexure-II****CONTRACT QUALITY REQUIREMENTS (CQR) for LT MOTORS(IE3) Up to 200KW****(For FOREIGN (OUTSIDE INDIA) OEM VENDOR ONLY)**

<b>PROJECT: NORTH KARANPURA (3X660MW)</b> <b>BHEL WO no: G601, G602 &amp; G603</b> <b>NTPC CONTRACT NO: CS-4410-109-2- FC/SC-NOA-6695/6696</b> <b>PACKAGE: FGD PACKAGE</b> <b>MAIN CONTRACTOR: BHEL - RANIPET</b> <b>SUB CONTRACTOR (OEM) &amp; ADDRESS:</b>  <b>(To be filled by OEM VENDOR)</b>		<b>CONTRACT QUALITY REQUIREMENTS (CQR) for LT MOTORS(IE3) - Up to 200KW used in</b> <b><u>Agitators</u></b>  <b>NTPC - NORTH KARANPURA (3X660MW)</b> <b>BHEL WO no: G601, G602 &amp; G603</b>	<b>DOC.NO:</b> <b>BAP/QR/G601, G602 &amp; G603/LTM/Agitators 002</b>  <b>Rev NO.: 01</b> <b>Rev NO.: 00</b> <b>PAGE : Page 4 of 6</b> <b>DATE: 10.01.2022</b>	<b>##Enquiry No:</b>  <b>## OEM Supplier Name &amp; Address:</b>  <b>##Offer reference:</b>  <b>##Date:</b>  <b>Contact Official Name:</b> <b>Mobile no:</b> <b>Email id:</b>
<b>Sl. NO.</b>	<b>DESCRIPTION</b>	<b>BHEL and Ultimate Customer - NTPC (National Thermal Power Corporation),, India Quality Requirements</b>		<b>##Specific confirmations by the vendor</b>
<b>ITEM: LT Motors(IE3) - Up to 200KW</b>				
03	<b>Inspection Methodology to be adopted at Actual LT Motor Manufacture works by OEM vendor...contd</b>	<b><u>LT Motors up to 30KW – Inspection Categorization: III</u></b> All Routine tests on LT Motors are to be ensured by OEM Vendor & same are to be inspected & witnessed by OEM Vendor / BHEL / BHEL AIA (BHEL authorized inspection Agency) at LT Motor manufacture works as per approved MQP & approved data sheet /drg / spec/ as per relevant BIS (Bureau of Indian Standard) - BIS 325 / IEC 60034 etc and all the Routine Test Reports with Inspection report (IR) to be submitted for BHEL/Ultimate Customer – NTPC for review and to obtain inspection and dispatch clearance.  LT Motor Manufacturer has to issue COC(Certificate of Conformance) states that the above motor/ motors was manufactured taking care of Customer specific requirements regarding ambient temp., voltage and frequency variation, hot starts,pull out torque,starting KVA/KW, temp. rise, distance between centre of stud and gland plate, space heater and tested in accordance with approved drawing/data sheets		
		<b><u>LT Motors (30KW to 50KW) – Inspection Categorization: II</u></b> All Routine Tests on LT Motors are to be ensured by OEM vendor & same are to be inspected & witnessed by BHEL / BHEL AIA (BHEL authorized inspection Agency) at LT Motor manufacture works including review of Type Test Reports and Degree of Protection Test Reports (IP 55) as per approved MQP & approved data sheet/drg/spec / as per relevant BIS (Bureau of Indian Standard) - BIS 325 / IEC 60034 etc and all the Routine Test Reports with Inspection report (IR) to be submitted for BHEL/Ultimate Customer – NTPC for review and to obtain inspection and dispatch clearance .		
		<b><u>Above 50KW and up to 200KW – Inspection Categorization: I</u></b> All Routine & Type Tests if any on LT Motors are to be ensured by OEM Vendor at Actual LT Motor Manufacture Works and same shall be offered to BHEL/ BHEL AIA (BHEL authorized inspection Agency) / Ultimate Customer-NTPC for inspection & witnessing including review of Degree of Protection Test Reports as per approved MQP /RQP (Reference Quality Plan with endorsement sheet approved) / approved data sheet / drg / spec / as per relevant BIS (Bureau of Indian Standard) - BIS 325 / IEC 60034 etc and all the Routine Test Reports with Inspection report (IR) to be submitted for BHEL/Ultimate Customer – NTPC review and to obtain inspection and dispatch clearance.		

**Annexure-II****CONTRACT QUALITY REQUIREMENTS (CQR) for LT MOTORS(IE3) Up to 200KW****(For FOREIGN (OUTSIDE INDIA) OEM VENDOR ONLY)**

<b>PROJECT: NORTH KARANPURA (3X660MW)</b> <b>BHEL WO no: G601, G602 &amp; G603</b> <b>NTPC CONTRACT NO: CS-4410-109-2- FC/SC-NOA-6695/6696</b> <b>PACKAGE: FGD PACKAGE</b> <b>MAIN CONTRACTOR: BHEL - RANIPET</b> <b>SUB CONTRACTOR (OEM) &amp; ADDRESS:</b>  <b>(To be filled by OEM VENDOR)</b>		<b>CONTRACT QUALITY REQUIREMENTS (CQR) for LT MOTORS(IE3) - Up to 200KW used in</b> <b>Agitators</b>  <b>NTPC - NORTH KARANPURA (3X660MW)</b> <b>BHEL WO no: G601, G602 &amp; G603</b>	<b>DOC.NO:</b> <b>BAP/QR/G601, G602 &amp; G603/LTM/Agitators 002</b> <b>Rev NO.: 01</b> <b>Rev NO.: 00</b> <b>PAGE : Page 5 of 6</b> <b>DATE: 10.01.2022</b>	<b>##Enquiry No:</b>  <b>## OEM Supplier Name &amp; Address:</b>  <b>##Offer reference:</b>  <b>##Date:</b>  <b>Contact Official Name:</b> <b>Mobile no:</b> <b>Email id:</b>
<b>SI. NO.</b>	<b>DESCRIPTION</b>	<b>BHEL and Ultimate Customer - NTPC (National Thermal Power Corporation), India Quality Requirements</b>		<b>##Specific confirmations by the vendor</b>
<b>ITEM: LT Motors(IE3) - Up to 200KW</b>				
3	<b>Inspection Methodology to be adopted at Actual LT Motor Manufacture works by OEM vendor...contd</b>	<p>All the checks / tests /review of documents / inspection &amp; witnessing at LT Motor Manufacture by OEM /BHEL / BHEL AIA (BHEL authorized inspection Agency) ) / Ultimate Customer-NTPC are under OEM scope and any cost implication arising out of due to conducting checks / tests including for witnessing of any of the tests at Actual LT Motor Manufacture Works (or) at third party etc by BHEL / BHEL AIA / Ultimate Customer – NTPC are in the scope of OEM Supplier only.</p> <p>As such No extra cost if any will be admissible and paid in the event of an order and also during execution of the contract .</p> <p>No material shall be dispatched without BHEL / BHEL AIA and Ultimate Customer – NTPC Inspection and dispatch clearance.</p>		
04	<b>Painting Requirements</b>	Painting requirement like paint shade and painting thickness including no of coats if any are to be ensured by the OEM vendor for these LT Motors as per BHEL/ Ultimate Customer -NTPC approved data sheet/drg/spec (As applicable)		
05	<b>Packing</b>	Packing shall be as per Specification / Drg. / Data sheet including sea worthy packing if any to avoid any transit & handling damages		
06	<b>For Inspection call</b>	Inspection call by OEM Vendor for LT Motor inspection at Actual LT Motor Manufacture works to be raised for BHEL/BHEL AIA inspection / Ultimate Customer – NTPC including for type test witnessing if any to be ensured / addressed to Mr R Kesavan., DGM (QC-Proc), Mobile no: +91 9443006303., Email id: kesavan@bhel.in and Mr Zeeshan Ali., Sr.Engineer (QC-Proc), Mobile no: 9443149691., Email id: zeeshan@bhel.in including for inspection related activities for immediate response / resolution.		
07	<b>Document Package / Dossier</b>	<p>Specific confirmation for Document Package in the event of an order (3 hard copies + soft copies in Pdf file) is to be given containing the following with proper linkages (.)</p> <ul style="list-style-type: none"> <li>(i) Index Sheet</li> <li>(ii) MQP/RQP/Endorsement sheet</li> <li>(iii) TCs identified by BHEL/NTPC for record for “CHP ” (Customer Hold Point) Verification &amp; Witness “W” portion as given in MQP / RQP / MQP (as applicable).</li> <li>(iv) Final Inspection Report + TC</li> <li>(v) BHEL AIA (BHEL Appointed Inspection Agency) / BHEL report + TC</li> <li>(vi) Ultimate customer NTPC (National Thermal Power Corporation) CHP (Customer Hold Point) / MDCC (Material Dispatch Clearance Certificate)</li> <li>(vii) Type test reports conducted/submitted with approval with</li> </ul>		

**Annexure-II****CONTRACT QUALITY REQUIREMENTS (CQR) for LT MOTORS(IE3) Up to 200KW****(For FOREIGN (OUTSIDE INDIA) OEM VENDOR ONLY)**

<b>PROJECT: NORTH KARANPURA (3X660MW)</b> <b>BHEL WO no: G601, G602 &amp; G603</b> <b>NTPC CONTRACT NO: CS-4410-109-2- FC/SC-NOA-6695/6696</b> <b>PACKAGE: FGD PACKAGE</b> <b>MAIN CONTRACTOR: BHEL - RANIPET</b> <b>SUB CONTRACTOR (OEM) &amp; ADDRESS:</b>  <b>(To be filled by OEM VENDOR)</b>		<b>CONTRACT QUALITY REQUIREMENTS (CQR) for LT MOTORS(IE3) - Up to 200KW used in</b> <b><u>Agitators</u></b>  <b>NTPC - NORTH KARANPURA (3X660MW)</b> <b>BHEL WO no: G601, G602 &amp; G603</b>		<b>DOC.NO:</b> <b>BAP/QR/G601, G602 &amp; G603/LTM/Agitators 002</b> <b>Rev NO.: 01</b> <b>Rev NO.: 00</b> <b>PAGE : Page 6 of 6</b> <b>DATE: 10.01.2022</b>		<b>##Enquiry No:</b>  <b>## OEM Supplier Name &amp; Address:</b>  <b>##Offer reference:</b>  <b>##Date:</b>  <b>Contact Official Name:</b> <b>Mobile no:</b> <b>Email id:</b>																																																																
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07	<b>Document Package / Dossier...contd</b>	approved data sheet and BOM with actual make used with Customer approved drgs.																																																																				
08	<b>Important notes</b>	<u><b>Inspection Categorization: I</b></u> <b>Inspection by BHEL/BHEL AIA and also by Ultimate Customer – NTPC based on MQP/RQP approved and as in sl no:03</b>  <u><b>Inspection Categorization: II</b></u> <b>Inspection by Main contractor (BHEL) / BHEL AIA based on Ultimate Customer – NTPC approved MQP/RQP &amp; based on inspection as in sl no:03</b>  <u><b>Inspection Categorization: III</b></u> <b>COC by Main contractor (BHEL) to Ultimate Customer – NTPC based on inspection as in sl no:03</b>																																																																				
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09	<b>Motor details</b>	Vendor shall furnish following Motor details involved in Agitators (as applicable) for this enquiry.																																																																				
		<table border="1"> <thead> <tr> <th rowspan="2">S. No</th> <th rowspan="2">Agitators</th> <th colspan="3">LT Motor</th> </tr> <tr> <th>Rating (in kW)</th> <th>Quantity (in nos)</th> <th>Make</th> </tr> </thead> <tbody> <tr><td>1</td><td>Absorber Tank Agitator Motor</td><td></td><td></td><td></td></tr> <tr><td>2</td><td>Auxiliary Absorber Tank Agitator Motor</td><td></td><td></td><td></td></tr> <tr><td>3</td><td>Filtrate Water Tank Agitator Motor</td><td></td><td></td><td></td></tr> <tr><td>4</td><td>Secondary Hydrocyclone Feed Tank Agitator Motor</td><td></td><td></td><td></td></tr> <tr><td>5</td><td>Waste Water Tank Agitator Motor</td><td></td><td></td><td></td></tr> <tr><td>6</td><td>Limestone Slurry Storage Tank Agitator Motor</td><td></td><td></td><td></td></tr> <tr><td>7</td><td>Primary Hydrocyclone Feed Tank Agitator Motor</td><td></td><td></td><td></td></tr> <tr><td>8</td><td>Absorber Area Drain Sump Agitator Motor</td><td></td><td></td><td></td></tr> <tr><td>9</td><td>Gypsum Area Drain Sump Agitator Motor</td><td></td><td></td><td></td></tr> <tr><td>10</td><td>Limestone Area Drain Sump Agitator Motor</td><td></td><td></td><td></td></tr> <tr><td>11</td><td>Other LT motors involved in the system (if any)</td><td></td><td></td><td></td></tr> </tbody> </table>			S. No	Agitators	LT Motor			Rating (in kW)	Quantity (in nos)	Make	1	Absorber Tank Agitator Motor				2	Auxiliary Absorber Tank Agitator Motor				3	Filtrate Water Tank Agitator Motor				4	Secondary Hydrocyclone Feed Tank Agitator Motor				5	Waste Water Tank Agitator Motor				6	Limestone Slurry Storage Tank Agitator Motor				7	Primary Hydrocyclone Feed Tank Agitator Motor				8	Absorber Area Drain Sump Agitator Motor				9	Gypsum Area Drain Sump Agitator Motor				10	Limestone Area Drain Sump Agitator Motor				11	Other LT motors involved in the system (if any)						
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6	Limestone Slurry Storage Tank Agitator Motor																																																																					
7	Primary Hydrocyclone Feed Tank Agitator Motor																																																																					
8	Absorber Area Drain Sump Agitator Motor																																																																					
9	Gypsum Area Drain Sump Agitator Motor																																																																					
10	Limestone Area Drain Sump Agitator Motor																																																																					
11	Other LT motors involved in the system (if any)																																																																					

**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.**

<b>ENDORSEMENT SHEET FOR QP</b> REFERENCE / STANDARD / <u>FIELD</u> QUALITY PLAN (RQP / SQP/RFQP/SFQP)		
<i>TO BE FILLED IN BY SUPPLIER AT TIME OF SUBMISSION</i>		 To be filled in by NTPC
PROJECT NAME	NORTH KARANPURA (3X660MW ) BHEL WO no: G601, G602 & G603	<u>2REVIEW &amp; ENDORSEMENT BY NTPC</u> PROJECT SPECIFIC QP NUMBER ALLOTTED  QP NO:  REV. NO.: 00 DT :
CONTRACT NO.:	CS-4410-109-2-FC/SC-NOA-6695/6696	
MAIN SUPPLIER	M/S.BHEL, RANIPET , TAMIL NADU,, INDIA	
MANUFACTURER WORKS & ADDRESS	(TO BE FILLED BY OEM / LT MOTOR SUPPLIER)	
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)	
<i>Confirmation by Main Supplier (TICK WHICHEVER APPLICABLE)</i>		<i>(TICK APPLICABLE)</i>
<i>I. That the item/ component is identical to that considered for RQP/MQP/SQP approval. ✓</i>		The MQP/RQP/SQP is endorsed for this project without any change
<i>II. That there are minor changes in the item/ component with respect to that considered for MQP/RQP/SQP approval, however the same do not affect the contents of MQP/RQP/SQP</i>		
<i>III. That there are minor changes in the item/ component with respect to that considered for MQP/RQP/SQP approval, however the same affect the MQP/RQP/SQP slightly, as indicated below / in attached sheet.</i>		
		<u>DISTRIBUTION OF ENDORSEMENT OF</u> A) MQP/RQP/SQP : 1. MAIN SUPPLIER (WITH A COPY OF MQP/RQP/SQP ) 2. MANUFACTURER 3. RIO 4. CQA-SPL 5. CQA-O/C B) RFQP/SFQP: 1. MAIN SUPPLIER (with a copy of MQP/RQP/SQP 2. MANUFACTURER 3. NTPC FQA (with a copy of MQP/RQP/SQP 4. NTPC Erection (with a copy of MQP/RQP/SQP 5. CQA-SPL 6. CQA-O/C
(TO BE FILLED BY OEM / LT MOTOR SUPPLIER)		NTPC (Reviewed /Approved by/ Date & Seal)
SIGN.: (Main Supplier)      DATE:	SIGN.: (Manufacturer )      DATE:	

BHEL BAP/RANIPET/ TAMIL NADU INDIA		OEM SUPPLIER		MANUFACTURING QUALITY PLAN FOR LT MOTOR ( Up to TO 200KW) - FGD Application					MQP:E:LTM:BONGAIGAON :FGD:AGITATOR: 001			
		To be filled by OEM Supplier							REV:NO:00			DATE: 23.09.2021
S1.No		COMPONENT/ASSEMBLY/OPERATION/TESTS	CHARACTERISTIC	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE STANDARD	FORMAT OF REC	Page :		
										D	M	BHEL/ BHEL AIA
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.			
<b>INCOMING INSPCTIONS:</b>												
1.1	Enamelled round copper conductor(Dual coated)MM	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	P	V		
		2.Bare conductor diameter	Major	Mechanical	1 sample/lot	BHEL / NTPC Spec & Apprd Datasheet	BHEL / NTPC Spec & Apprd Datasheet	Plant format	P	V		
		3.BDV test	Major	Electrical	1 sample/lot	--do--	--do--	Plant format	P	V		
		4.Elongation	Major	Mechanical	1 sample/lot	--do--	--do--	Plant format	P	V		
		5.Continuity (insulation)	Major	Electrical	1 sample/lot	--do--	--do--	Insp report/ Supplier TC	P	V		
		6.Tan Delta (if applicable)	Major	Electrical	1 sample/lot	--do--	--do--	Insp report/ Supplier TC	P	V		
1.2	Aluminum Ingots	1.Chemical composition	Major	Chemical	1 sample/lot	--do--	--do--	Supplier Tc	P	V		EC gr purity: -99.6%
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%	--do--	--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		

BHEL BAP/RANIPET/ TAMIL NADU INDIA		<b>OEM SUPPLIER</b>  <b>To be filled by OEM Supplier</b>  <b>LT MOTOR Manufacture</b>  <b>To be filled by OEM Supplier</b>		<b>MANUFACTURING QUALITY PLAN FOR LT MOTOR ( Up to TO 200KW) - FGD Application</b>					MQP:E:LTM:BONGAIGAON :FGD:AGITATOR: 001			
REV:NO:00												
DATE: 23.09.2021												
Page :												
S1.No.	COMPONENT/ASSEMBLY/OPERATION/TESTS	CHARACTERISTIC	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE STANDARD	FORMAT OF REC	D	M	AGENCY BHEL/ BHEL AIA	REMARKS
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	
<b>INPROCESS INSPECTONS:</b>												
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%	--do--	--do--	Inspection Record	P	V		
		2.H.V.Test	Major	Electrical	100%	--do--	--do--	Inspection Record	P	V		
		3.Insulation resistance	Major	Electrical	100%	--do--	--do--	Inspection Record	P	V		
2.4	Final Assembly	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		

BHEL BAP/RANIPET/ TAMIL NADU INDIA		<b>OEM SUPPLIER</b>  <b>To be filled by OEM Supplier</b>  <b>LT MOTOR Manufacture</b>  <b>To be filled by OEM Supplier</b>		<b>MANUFACTURING QUALITY PLAN FOR LT MOTOR ( Up to TO 200KW) - FGD Application</b>					MQP:E:LTM:BONGAIGAON :FGD:AGITATOR: 001			
									REV:NO:00			
									DATE: 23.09.2021			
									Page :			
S1.No.	COMPONENT/ASSEMBLY/OPERATION/TESTS	CHARACTERISTIC	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE STANDARD	FORMAT OF REC	D	M	AGENCY BHEL/ BHEL AIA	REMARKS
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	
<b>FINAL INSPECTION AND TESTING:</b>												
3.1	Routine Test	1.Resistance Measurement on winding & space heater	Major	Electrical	100%	BHEL / NTPC Spec, GA Drawing & Apprd Datasheet and IS/IEC 60034 (As applicable)	BHEL / NTPC Spec, GA Drawing & Apprd Datasheet and IS/IEC 60034 (As applicable)	Inspection Record			P	W
		2.HV Test	Major	Electrical	100%	--do--	--do--	Inspection Record			P	W
		3.Phase sequence & direction of rotation	Major	Electrical	100%	--do--	--do--	Inspection Record			P	W
		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 thickness & adhesion	Major	Visual & Measurement	100%	--do--	--do--	Inspection Record			P	W
		8.Moutings & Overall dimensions	Major	Mechanical	100%	--do--	--do--	Inspection Record			P	W

BHEL BAP/ RANIPET / TAMIL NADU INDIA	<b>OEM SUPPLIER</b>		<b>MANUFACTURING QUALITY PLAN FOR</b> <b>LT MOTOR ( Up to TO 200KW) - FGD Application</b>						MQP:E:LTM:BONGAIGAON :FGD:AGITATOR: 001			
	To be filled by OEM Supplier								REV:NO:00			
	<b>LT MOTOR</b> <b>Manufacture</b>								DATE: 23.09.2021			
	To be filled by OEM Supplier								Page :			
S1.No.	COMPONENT/ASSEMBLY/OPERATION/TESTS	CHARACTERISTIC	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE STANDARD	FORMAT OF REC	D	M	BHEL/BHEL AIA	REMARKS
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	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	100%	--do--	--do--	Inspection Record	P	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. <u>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.</u>												
1. Measurement of Resistance of Stator 2. No Load test at Rated Voltage 3. Pull out test 4. Temperature Rise Test 5. Momentary Exceeds 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)												
<b>LEGEND:</b> OEM = Original Equipment Supplier M = LT Motor Manufacture - BHEL AIA = BHEL AUTHORIZED INSPECTION AGENCY GA Drawing : General Arrangement 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)												

<b>OEM SUPPLIER WITH OEM MFGR.'s LOGO (TO BE FILLED BY OEM SUPPLIER)</b>	<b>LT MOTOR MANUFACTURER'S NAME AND ADDRESS (TO BE FILLED BY OEM/ LT MOTOR MANUFACTURE)</b>	<b>MANUFACTURING QUALITY PLAN</b>				PROJECT: NTPC NORTH KARANPURA (3X660MW) (BHEL WO no: G601,G602 & G 603) NTPC CONTRACT NO: CS-4410-109-2-FC/SC-NOA-6695/6696 PACKAGE: FGD PACKAGE MAIN CONTRACTOR: BHEL - RANIPET SUB CONTRACTOR (OEM) & ADDRESS: (TO BE FILLED BY OEM SUPPLIER)			
		ITEM : LT MOTOR (IE3) UP TO 200KW FOR FGD APPLICATION SUB-SYSTEM: FGD - AGITATORS	QP NO.: AGITATORS:LTM:NK:001 REV.NO.: 00 DATE: PAGE: .... OF....						

SL. NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD		AGENCY			REMARKS
					M	C/N				D*	M	C	N	
1.	2.	3.	4.	5.	6.		7.	8.	9.	D*	** 10.			11.

OEM MANUFACTURER/ LT MOTOR SUPPLIER	MAIN (BHEL) SUPPLIER	<b>LEGEND:</b> * RECORDS, IDENTIFIED WITH "TICK" (✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. ** M: OEM MANUFACTURER/LT MOTOR SUB-SUPPLIER C: MAIN SUPPLIER - BHEL/BHEL AIA , N: NTPC P: PERFORM W: WITNESS AND V: VERIFICATION. AS APPROPRIATE, CHP: NTPC SHALL IDENTIFIED IN COLUM "N" AS ' W"	FOR NTPC USE	DOC. NO.:		REV..... CAT.....	
				REVIEWED BY	APPROVED BY	APPROVAL SEAL	

FORMAT NO.: QS-01-QAI-P-09/F1-R1

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