

MINUTES OF MEETINGS HELD BETWEEN NTPC & BHEL AT NTPC, EOC, NOIDA FROM 13.06.2011 TO 07.07.2011 & 20.10.2011 REGARDING QA&I DISCUSSIONS OF SG PACKAGE OF BULK DARLIPALLI (2x800MW) and GAJMARA (2x800MW)

PRESENT

NTPC

S/Sh.

- Pramod Kumar, GM (QA&I)
- K.K Chattopadhyay, DGM (QA)
- Apurba Ghosh, DGM (QA)
- S Samanta, DGM(QA)
- P.K. Basu, DGM (QA)
- PP Patil, Sr. Manager(QA)
- N.H.S.Sharad, Engineer (QA)

BHEL

S/Sh.

- Shakil Manocha, AGM (Marketing)
- P. Elongovan, AGM (QA), PC Chennai
- V. Ravikumar, Sr.DGM (QA)- Trichy
- R P S Sisodia, DGM (Marketing)
- R. Arunachalam, Mgr (QC), Ranipet
- Amit Yadav, Sr. Engr (Marketing)
- N S Bhadoria, Engr (Marketing)

BHEL confirmed to comply with QA Management System requirements specified in the Contract Specification. Further, a QA Co-ordination Procedure is mutually discussed and agreed to facilitate QA&I activities of the Contract and the same is placed at annexure-D of this MOM. This includes the list of items for QP and Vendor Approval together with vendor list.

Following are also deliberated and agreed in this regard:-

- a) BHEL requested that they should be allowed to allocate manufacture of components/ assemblies/ equipments within BHEL's various units where similar components/ assemblies/ equipments can be manufactured meeting the specification requirements.
NTPC indicated that in case of any exigency to re-allocate the manufacture of any such components/ assemblies/ equipments within BHEL's manufacturing units, BHEL may submit their proposal along with appropriate justification for NTPC approval. The same shall be examined by NTPC on case to case basis.
- b) The lists of items for QP/Vendor Approvals, mutually finalized now, are based on information furnished by BHEL as available at present. On detailed engineering, some changes may be affecting the design/ type of item, applicability of item, QP requirement and sourcing. Further, for some of the items, scope-distribution among various units of BHEL is also not explicitly known presently. Hence, during detailed engineering stage, relevant addition/deletion to these lists shall be made with approval of NTPC.
- c) Vendors with whom NTPC do not have past experience are identified in "DR" Category in above lists. Complete vendor details for DR category vendors are to be furnished by BHEL to NTPC for review and approval of vendors. Such complete details shall be furnished by BHEL within Six months of award of the contract by NTPC, in case of items to be ordered in first nine months / 6 months prior to placement of purchase order as per L2- network on the vendor for other items. The vendor proposals in 'DR' Category, where complete details are not furnished within the above period shall be considered withdrawn by BHEL. On receipt of complete vendor details in such DR cases, NTPC shall process the vendor proposals and shall furnish their decision within six weeks from receipt of details.
- d) For certain sub system, vendors are not yet proposed by BHEL. Same shall be proposed by BHEL in time meeting project schedule, with complete vendor details, for review and approval by NTPC.
- e) BHEL has furnished vendor proposals for various systems which are termed as level-I vendors. Further vendor proposals for major items/components under these systems are not yet furnished as the same

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- Signature: *Apurba Ghosh*
- Signature: *Shakil Manocha*
- Signature: *P. Elongovan*
- Signature: *V. Ravikumar*
- Signature: *R. Arunachalam*
- Signature: *Amit Yadav*
- Stamp: *Heavy Electricals Limited, P&Mktg, Delhi*
- Stamp: *Power Sector Marketing*
- Page number: **110**

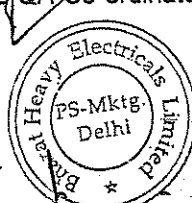
would depend on Level-I vendor short-listed by BHEL for such systems. It is agreed that vendor proposals for such items/components (Level-II vendors) shall be made by BHEL to NTPC, with complete vendors details, in such manner that the proposals may be finalised prior to award of contract by BHEL on Level-I vendor. Further, schedule of such vendor proposals/approval shall be in accordance with project schedule taking into consideration the time required for processing vendor approvals.

- f) For certain system/items covered in Section VI, Part A, Sub section-I of contract technical specification, requisite details are not furnished by BHEL in attachment 3A of their offer; however BHEL confirmed that the vendors selected/ shortlisted by them for items/ systems, shall meet the qualifying requirement as per above clause of the specification. Further, in few cases the vendor proposal in **attachment 5** for such items are not in accordance with requirement qualifying experience as per attachment 3A. Such cases are discussed among NTPC Engg, NTPC QA and BHEL and list of such cases is placed at Sl.No.1 of **Annexure-QC** of Attachment-D1 of this MOM. Requisite vendor details including qualifying experience details for item commented in 'DR' Category shall be furnished by BHEL within the time period as specified at point no c) above for review and approval of NTPC.
- g) The schedule of submission and approval of QP and vendor details is not indicated by BHEL in most of the QP/vendor lists finalised presently. The same shall be finalised within four weeks of EFFECTIVE DATE AS PER LOI/ NOA OF CONTRACT. The schedule shall be dovetailed with L2 network in such a manner the QP is approved at least 6 weeks prior to scheduled start of manufacturing of respective item and FQP is approved at least three months before scheduled start of respective field activity.
- h) A mutually agreed consolidated list of vendors for this contract has been attached (Annexure-D1) under four categories: A-Accepted, N-Noted, DR-require submitting details for NTPC approval, if required and A*- can be extended in 'A' category subject to submission of relevant experience details of comparable size/rating required for 800 MW unit. Further, in view of very tight project schedule, BHEL shall not propose any additional vendors in post-award stage, except in following circumstances/cases:-
- i) Where any item is added on list of items for vendor approval or type/ design of an item is changed during detailed engineering.
 - ii) Finalisation of Level-II vendors' list for a sub-system, as per 'e' above during execution of main contract.
 - iii) Where BHEL is confronted with force-measure situation such that supplies from already approved sources is not possible. In such case, the proposal for additional vendor shall be made by Head (Quality) of BHEL's respective unit to Head (QA&I) of NTPC, furnishing reasons and justification for such consideration.
 - iv) Wherein less than three sub vendors are identified in Acceptable or DR category in vendor list, BHEL may propose additional vendors for such items within the time specified in the above clause no. c).
- i) Regarding BHEL's inspection of bought out items and services, BHEL confirmed that internal actions are taken by BHEL CQA for enhancing effectiveness of inspection by them. Further, BHEL CQA' Inspection offices shall closely co-ordinate with NTPC's respective Regional Inspection Offices for weekly inspection planning and related activities. The matter regarding inspection problems, deviation dispositioning etc shall also be co-ordinated by BHEL QA Co-ordinator of respective unit and relevant

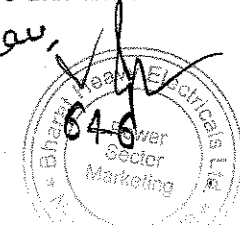
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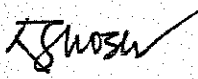


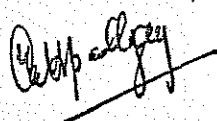
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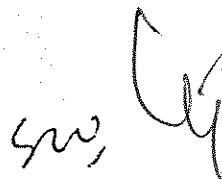


BHEL CQA. It was also agreed that periodic review meetings shall be held between BHEL and NTPC QA, once in every six months, to review the effectiveness of inspection and related activities and to workout corrective/ preventive measures wherever required. BHEL will be deputing their CQA representative for inspection/ joint inspection as per requirement of agreed/ approved Quality plan. BHEL also confirmed that outsourcing if any for inspection activity will be only after due approval of NTPC.

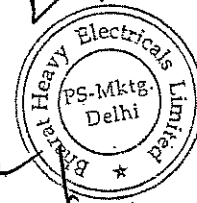
- j) BHEL confirms that repetitive deviations shall be avoided during manufacturing in their works. BHEL confirmed to improve their system of preventive actions and to upgrade their manufacturing facilities by repair/replacement of erring components of machine tools.
- k) FQA Manpower deployment programme was discussed and BHEL agreed to NTPC's requirement of FQA Engineers as per Annexure- D 2. Also the total deployment plan as required by NTPC is placed at Annexure -D 2 of this MOM. Further BHEL expressed that they may outsource part of FQA Manpower as per guidelines placed at Annexure-D3 of this MOM. The same shall be reviewed by NTPC and acceptance or otherwise shall be informed to BHEL within 4 months of effective date as per LOI/ NOA.
- l) BHEL confirmed that requisite storage facilities for equipment/ materials shall be established by BHEL at site prior to receipt of equipment/ material at site after allotment of land by NTPC. For this purpose, requisite storage plan and schedule for the same shall be agreed between BHEL and NTPC site within 3 months of effective date as per LOI/ NOA.
- m) Regarding NDT of welds at site, BHEL confirmed following:
- Test facilities shall be established/ sourced expeditiously, testings shall be conducted regularly and no backlogs shall be piled up.
 - Repair work and re-sampling shall also be taken up promptly, without piling backlogs.
- In this regard a detailed confirmation is placed at Annexure-D4 of this MOM.
- n) BHEL confirmed that similar to supply portion of the work, the Non-conformities observed during field activities shall also be dispositioned according to NTPC's NCR dispositioning system in the prescribed format of NTPC.
- o) BHEL confirmed that all sub vendors agreed for offloading / machining and fabrication subcontracts for ongoing NTPC projects and / or any other NTPC project by different BHEL units shall be applicable for this project; however specific proposal shall be made by BHEL for acceptance by NTPC.
- p) BHEL to ensure that the design, manufacturing / fabrication and supply of Power cycle piping, HP Heaters, Valves etc shall be as per IBR 1950 regulations and furnish required IBR certificates in original to NTPC site for these items as per IBR regulations.
- q) Within 30 days from NOA, M/s BHEL shall submit/ propose the Vendors for raw materials i.e; boiler tubes & pipes, power cycle piping and structural steel. These Vendors shall be mutually discussed and agreed upon.
- r) All the attachments referred to this MOM ie Coordination procedures, Agreed Sub QR list, Vendor list, Erection agency, List of FQP, Manpower deployment plan, Methodology for NDT & testing, QA- formats etc shall be applicable for Darlipalli (2 X 800 MW) & Gajmara (2 X 800 MW) SG package.


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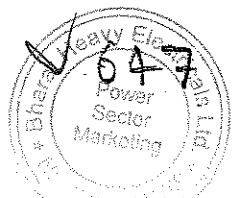




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(BHEL)



BULK TENDER-02 (9 x 800 MW)

Vendor list for Mechanical items covered under Sub-QR (Provenness Criteria) as per Technical Specifications.
(Section - VI Part-A Sub-Section-I Clause 3.00.00)

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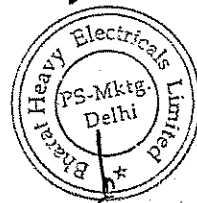
Legends- A- Acceptable

DR-Details Required

S. No.	ITEM	VENDOR PROPOSAL IN ATT- 3A / ATT-5		REMARKS	
				On qualifying experience	On vendor detail
	EQUIPMENT	NAME	LOCATION		
1.	AXIAL FANS PA	TLT	GERMANY	A (Under clause 3.02)	A
		BHEL (License from TLT Germany)	RANIPET	A (Under clause 3.03)	DR
2.	AXIAL FANS FD	TLT	GERMANY	DR	A
		BHEL (License from TLT Germany)	RANIPET	DR (Under clause 3.03)	DR
3.	AXIAL FANS ID	TLT	GERMANY	A (Under clause 3.02)	A
		BHEL (License from TLT Germany)	RANIPET	A (Under clause 3.03)	DR
4.	PRIMARY AIR PREHEATER	Alstom Air Pre Heater Co.	USA	A (Under clause 3.02)	A
		BHEL (License from Alstom USA)	RANIPET	DR	DR
5.	SECONDARY AIR PREHEATER	Alstom Air Pre Heater Co.	USA	A (Under clause 3.02)	A
		BHEL (License from Alstom USA)	RANIPET	DR	DR
6.	COAL PULVERISERS	BHEL (License from Alstom USA)	HYDERABAD	A (Under clause 3.03)	DR
7.	RAW COAL FEEDERS	BHEL	TRICHY	A (Under clause 3.02)	A
8.	BOILER START UP DRAIN RECIRCULATION PUMPS	HAYWARD TAYLOR	UK	DR	A
		KSB AG	GERMANY	DR	A
		TORISHIMA PUMP MFG. CO. LTD.	JAPAN	DR	A
9.	AUXILIARY BOILER	BHEL	TRICHY	A	A
10.	POWER CYCLE PIPING DESIGNER	BHEL, PC	CHENNAI	A (Under clause 4.01)	NA
11.	AIR COMPRESSOR	INGERSOLL RAND	USA	DR	DR
		ATLAS COPCO	BELGIUM	DR	A (FOR OIL FREE SCREW TYPE)
		ATLAS COPCO	BELGIUM	DR	DR (FOR CENTRIFUGAL TYPE)
		KOBELCO	JAPAN	DR	A (FOR OIL FREE SCREW TYPE)
		KOBELCO	JAPAN	DR	DR (FOR CENTRIFUGAL TYPE)

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		CAMERON COMPRESSION	USA	DR	DR (FOR CENTRIFUGAL TYPE)
		ELGI EQUIPMENT LTD	COIMBATORE	DR	A (FOR OIL FREE SCREW TYPE, MODEL UPTO NH-265, WITH AIR ENDS FROM HITACHI-JAPAN)
		ELGI - SAMSUNG	COIMBATORE	DR	DR (FOR CENTRIFUGAL TYPE)
12.	MILL REJECT HANDLING SYSTEM	MACAWBAR BEEKAY	DELHI	DR	A
		UNITED CONVEYOR CORP.	USA	DR	A
		UNITED CONVEYOR CORP.	KOLKATA	DR	A
		DYNAMIC AIR	USA	DR	DR
		HV EQUIPMENTS	NOIDA	DR	DR
		DCIPS	KOLKATA	DR	DR
13.	DDCMIS	BHEL, EDN	BANGALORE	A	A
14.	ID FAN MOTOR	BHEL	BHOPAL	A	A

Note:

- Whenever the proposed sub Vendor for any particular equipment/ system/ auxiliaries is getting qualified under clause 3.03.00 or 3.04.00 of Sub-section I, Part A of section- VI of Technical Specifications with the support of the Collaborator/ Licensor, the sub Vendor shall also comply with the requirement of Clause 3.05.00 and 3.06.00 of Sub-section I, Part A of section- VI of Technical Specifications.

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