

PROJECT
TENDER NO.
SUBJECT

: STEAM GENERATION PLANT AT TALCHER, ODISHA
: PNMM/PC-150/E-4003/NCB
: REPLY TO PRE-BID QUERIES : LOT 8 Dated 02.09.2020

Sl. No.	Reference of Tender Document			Bidder's Query	PDIL/TFL's Reply
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1.	PBR LOT 1	Sr. No. 21 Page 3 of 44		C Fluxant Since the consumption / cost of the fluxant is to be guaranteed, complete analysis of the fluxant is requested especially the moisture content in the fluxant. Request you to provide the same.	Lime stone Analysis for works Guarantee:- CaCO3-----91% (minimum) MgO-----0.6-2% SiO2-----1.6-3% Al2O3-----0.3-1.5% Moisture-----maximum 6% However, Bidder to design the limestone handling system and Boiler considering min. 85% purity of limestone (in terms of CaCO3).
2.	PBR LOT 3	Sr. No. 35 Page 6 of 71		C Steam Drum shall be designed with minimum 2 minutes of capacity of storage between normal water level (NWL) and Low-Low trip level. Inline with Sec-VI,5.3.7 clause no- 20.1 minimum storage time of 1 min is sufficient between Normal level and permitted low low level for a CFBC boiler, as the water wall panels and roof panels are filled with water already in the event of a trip. Designing the steam drum for 2 minutes of storage will result in unnecessary oversizing of the steam drum. Request you to review the same.	Please follow the Reply in Pre-bid Query Lot-3, Sl. No. 35.
3.	PBR LOT 3	Sr. No. 187 Page 22 of 71		C Contractor shall Guarantee and demonstrate that maximum Ammonia slip downstream of SCR reactor shall not exceed 3 ppm at 3-4% oxygen (O2) content in flue gas on dry gas basis from 40 % to 100 % load condition considering the range of coals specified. Since the offered boiler is a CFBC boiler, SNCR technology is the most suitable for controlling Nox emissions. This is inline with the tender requirement as mentioned in clause no. 1.0 GENERAL under Section VI - 5.3.7 Design Philosophy of Boiler. Request you to accept the same. TENDER CLAUSE: - "1.0 GENERAL This document covers minimum requirements for design, engineering, manufacture & assembly, inspection, erection, testing, commissioning and performance testing of coal fired PF/CFBC steam generators and auxiliaries (with 2W+1S configuration) including FGD/SCR/SNCR (as required) to meet statutory requirements to well established engineering practices, safety codes and other relevant codes and standards for the Steam Generation Plant for TFL Fertilizer Complex at Talcher, Angul, Odisha."	SCR/ SNCR (as required) shall be provided to meet the latest NOX emission norms. Amendment shall be issued to Section-VI-8.0
4.	PBR LOT 3	Sr. No. 252 Page 31 of 71		C 14. Coal seams and their quality - Please see Sr. No. 17 of Reply to Pre-Bid Queries Technical Lot-1 Point no. 17 of the Pre-bid queries Technical Lot-1 refers to the coal to be considered for calculating works cost guarantee and does not answer to the query raised. Request you to check and confirm. The table provides GCV (kcal/kg) of different coal seam / parting . However the provided GCV doesnot specify if the GCV is moisture free or inclusive of moisture. We have assumed that the provided in the table is "as received basis" (inclusive of moisture - no corrections required). Request you to confirm the same.	HHV of Coal has been given Moisture free basis in Reply to Pre-bid Queries Lot-1.
5.	PBR LOT 3	Sr. No. 255 Page 31 of 71		C ID fan Impeller shall be hard faced to avoid Sr. no.49 & Sr. no. 50 of the Prebid queries - Technical LOT 1 defines the speed of the FD fan shall be 1500 rpm & NIT clause prevails respectively. However the query related to hard	Both ID & FD fans needed to be hard faced to prevent erosion. Wear liner plates may also be accepted in place of hard facing if strength and longevity of

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				erosion of the impeller blades. facing of the impeller / blades remains unanswered. Bidder wishes to clarify that the blades of the ID fan can only be hard faced to prevent erosion.	surface are no less than the hard facing process. Bidder to ensure. Amendment shall be issued to Section-VI-4.0
6.	PBR LOT 3	Sr. No. 260 Page 32 of 71	C Performance guarantee shall be exclusive of instrument tolerances / uncertainties	Prebid queries technical LOT 1 instructs to refer to clause no. 2.4 of Section-VI-8.0. Bidder wishes to inform that the clarification is against the point referred in the replies. The clarification is listed again below. Request you to go through the same for clarity. Bidder understands that since performance guarantee shall be exclusive of instrument tolerances / uncertainties (by uncertainties it means, test uncertainties as per applicable code), the values of guaranteed parameters arrived by conducting PG tests, shall be subjected to correction equivalent to the instrument tolerances / uncertainties. Thus, as long as the values of guaranteed parameters arrived by conducting PG tests are within the limits of instrument tolerances/ test uncertainties, the performance test may be treated as successful.	Bidder's understanding is not correct. Clause no.-2.4 of Section-VI-8.0 clearly states that "The guaranteed figures shall be inclusive of all instrument tolerances / uncertainties, further no meter tolerance shall be allowed in calculation". Bidder to quote the guaranteed figures inclusive of all instrument tolerances / uncertainties.
7.	DESIGN PHILOSOPHY – COAL AND ASH HANDLING SYSTEM DESIGN PHILOSOPHY – BOILER	DESIGN PHILOSOPHY – COAL AND ASH HANDLING SYSTEM pg no. 1295 of 2464 DESIGN PHILOSOPHY – BOILER pg No 1350 of 2464	C Bunkers shall be provided with load cells, vibrators/poking hole, ultrasonic level indicator etc. The angle of conical portion of bunkers shall be kept as 55° with the horizontal. Fuel bunkers including complete, platforms, bunker top cover flooring materials, bunker inside lining material, isolating gates etc. complete. Necessary pocking holes including level sensor, Load cell for weight measurement, vibro-system in hoppers.	Since gravimetric feeders are being provided at the outlet of the coal bunker to measure the rate of fuel flow into the combustor & since level transmitters are being provided in the bunker for continuous level monitoring, separate load cells are not required for the coal bunker. Request you to review and confirm.	As per NIT.
8.		STANDARD SPECIFICATION FOR MOTORISED ACTUATOR: Sheet 11 of 13 (PDF Page No: 836/ 2464)	C STANDARD SPECIFICATION FOR MOTORISED ACTUATOR: The following documents are required to be submitted along with bid after placement order for approval purposes and final documentation before dispatch of consignment	Bidder understands that Being bought out equipment (motorised actuator), the documents (Technical) are required to be submitted along with bid shall be submitted during post order stage for information /approval as per tender requirement. Please confirm	Bidder Understanding is correct.
9.		STANDARD SPECIFICATION FOR SAFETY RELIEF VALVE: Clause No: 8.00 Documentation/ Sheet 9 of 10 (PDF Page No: 1046/ 2464)	C STANDARD SPECIFICATION FOR SAFETY RELIEF VALVE: The following documents (Technical) are required to be submitted by the vendor	Bidder understands that Being bought out equipment(Safety relief valve) , the documents (Technical) are required to be submitted along with bid shall be submitted during post order stage for information /approval as per tender requirement. Please confirm	Bidder Understanding is correct.

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				along with bid, after placement of order for approval purposes and final documentation before despatch of consignment	
10.		STANDARD SPECIFICATION FOR RUPTURE DISC / Clause No: 7 Documentation/ Sheet 6 of 6 (PDF Page No: 1053/ 2464)		C STANDARD SPECIFICATION FOR RUPTURE DISC 7.0 DOCUMENTATION	Bidder understands that Being bought out equipment (Rupture disc) , the documents (Technical) are required to be submitted along with bid shall be submitted during post order stage for information /approval as per tender requirement. Please confirm.
11.	PROJECT DESCRIPTION Pre bid reply : Lot3 (Sr.No:319 , Pg No: 46 of 71)	PC150/E/4003/SecVI-1.0 Sheet 5 of 6 2.2 PLANTS & ASSOCIATED FACILITIES pg.no 302 / 2464		C Crushers/ Mill for coal (-) 30 mm to the required size Crushers/ Mill for Fluxant (if required) to make the required size <u>PDIL Reply: Lot 3: (Sr No 319)</u> Refer Annexure-1 of Section-VI-2.0 of NIT. Sieve Analysis of Lime and Coal shall be provided later on.	Bidder requesting to confirm the (-) 1mm size of the raw coal and raw Limestone at the inlet of battery limit since it has cost bearing of the crusher and screening system. Providing Sieve analysis during detail engineering stage will have cost impact on bidder for crushing and screening system at detail engineering stage. Hence to submit competitive bid, bidder request you to provide the above requested details. Since it is critical parameter PDIL has to give more clarity on the above requirement to select suitable handling system and to submit competitive work cost guarantee parameter. Providing the above information during detail engineering will make the bid ineffective.
12.	Pre bid reply : Lot3 (Sr.No:163 , Pg No: 20 of 71)	SECVI-2.0/ Clause 2.o / Page No 3 of 7		C Fluxant (If required) <u>PDIL Reply:</u> Fluxant Handling System & auxiliaries to be designed considering minimum purity of 85 wt. % and above. For works cost guarantee, bidder to consider 85 wt. % purity of Fluxant. Appearance: Powder/ Solid Lumps Size of Fluxant: - Refer Section-VI-5.3.4	Since PDIL has not confirmed whether Fluxant means limestone. Bidder request to provide more clarity on the same. Also Please note that in pre bid reply Lot 3 Page No 71 of 71 in CGP crusher house, only Coal and limestone screening and crusher system has shown. There will not be any separate Fluxant handling system. Hence we understood Fluxant means limestone. Please clarify.
13.	Pre bid reply : Lot3 (Sr.No:163 , Pg No: 20 of 71)	SECVI-2.0/ Clause 2.o / Page No 3 of 7		C Fluxant (If required) <u>PDIL Reply:</u> Fluxant Handling System & auxiliaries to be designed considering minimum purity of 85 wt. % and above. For works cost guarantee, bidder to consider 85 wt. % purity of Fluxant. Appearance: Powder/ Solid Lumps Size of Fluxant: - Refer Section-VI-5.3.4	Since PDIL has mentioned appearance of fluxant (limestone) shall be Powder/ Solid Lumps. Bidder requesting to confirm the following. 1. If fluxant(limestone) is in Powder form the crusher house/screening system can be eliminated completely to optimize price of fluxant (Limestone) handling system 2. If fluxant(limestone) is in Powder form bidder request to furnish the sieve analysis at battery limit since works cost guarantee consumption is related with sieve analysis . Please confirm. 3. If fluxant(Limestone) is in lump form bidder understands that maximum size of lumps shall be (-) 30 mm at inlet of battery limit and

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				requesting PDIL to confirm the percentage of fluxant at (-)1 mm size at inlet of battery limit. Since it is critical parameter PDIL has to give more clarity on the above requirement to select suitable handling system and to submit competitive works cost guarantee parameter. Providing the above information during detail engineering will make the bid ineffective.	
14.		DESIGN PHILOSOPHY – COAL AND ASH HANDLING SYSTEM / 3.0 RAW MATERIAL HANDLING SYSTEM / 3.1 / sheet 4 of 30 (PDF Page No: 1284 of 2464)		C COAL CRUSHING AND SCREENING Capacity of belt conveying system at battery limit of Steam Generation Plant is 1000TPH (Rated)/ 1200 TPH (Design). Bidder to design Material Handling system as per steam generation plant process requirement for two shift operations i.e. 14 hours to fill all raw materials to steam generation plant.	Coal handling Capacity : Noted. Lime Handling Capacity to be considered by Bidder : 500TPH (Rated)/ 600 TPH (Design). In case of sizing of limestone crusher (bidder's scope), bidder shall use a surge hopper to store limestone with adequate capacity in upstream of crusher for minimize the capacity of limestone crusher.
15.	Pre bid reply : Lot1 (Sr .No:339 & 340 , Pg No: 38 of 44)	Sr No 339 & 340 / Page No: 38 of 44 of PDIL's Pre bid reply Lot 1		C Site grading and levels: PDIL Reply: Fairly graded land will be handed over to successful bidder. Refer attached Land Development drawing	Confirmed. However, only micro grading if required should be considered by the bidder.
16.	PC150/E/400 3/SecVI-5.2 Refer Lot -3 Clarification Sr. no. 284 (Pg No:36 of 71)	Section: VI -5.2 Clause - 2.4 Page 32 of 149		Clarification Vibration & Temperature Machine monitoring (MMS) - Bentley Nevada series 3500: <u>PDIL Reply in Pre bid reply Lot 3:</u> VMS shall be provided for pumps (1 MW and above). For other equipments OEM recommendation shall be followed. Bidder to consider vibration transmitters with 4-20 mA connected to Plant DCS for other applications. Vendor for VMS/MMS shall be as per Tender.	Noted your clarification however you have not address the make issue of MMS. Only Bentley Nevada make 3500 series Vibration & Temperature Machine monitoring (MMS) listed in tender specification. Request you to provide minimum 3 alternate makes & its model to avoid undue advantage by single supplier. We request you to provide minimum 3 vendors for Vibration & Temperature Machine monitoring (MMS) looking towards PSU Jobs.

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17.	PC150/E/4003/SecVI-5.2 Refer Lot -3 Clarification Sr. no. 287 (Pg No:36 of 71)	Section: VI -5.2 Clause - 2.5 Page 16 of 149	Hazardous Area classification - Hazardous Area classification for Instruments shall be Zone 2, IIC, T6. <u>PDIL Reply in Pre bid reply Lot 3:</u> Tender condition prevails.	Clarification <u>Bidder clarification dated: 17th March 2020:</u> The area like HVAC , Control room , material handling , ash handling, deaerator , feed pumps, boiler steam & water, boiler air & gas path needs to consider under hazardous area classification? In our opinion the development of area classification (Hazardous or safe) shall be developed by bidder in detail engg. as per relevant IS standard. The field equipment's /instruments are thus made suitable based on hazardous or safe area classification prepared by bidder. <u>Bidder clarification dated 3rd Aug 2020:</u> We would like to retain our clarification the tender document does not give clarity on which area we need to consider as hazardous.The area like HVAC , Control room , material handling , ash handling, deaerator , feed pumps, boiler steam & water, boiler air & gas path needs to consider under hazardous area classification, Pls. re-confirm Tender condition prevails does not address the query raised by the bidder. PDIL / TFL to give clarity which area needs to be considered to be hazardous since it having commercial implications or PDIL /TFL to accept the clarification as below provided by bidder. The development of area classification (Hazardous or safe) shall be developed by bidder in detail engg. as per as per relevant Indian standard. The field equipment's /instruments are thus made suitable based on hazardous or safe area classification prepared by bidder.	Irrespective of area classification instruments shall be suitable for Zone-2, IIC, T6 inline with NIT requirement. Bidder to comply the same.
18.	PC150/E/4003/Sec VI-5.5 - DESIGN PHILOSOPHY – CIVIL & STRUCTURAL WORKS Pre bid reply Lot 3: (Sr No:265)	3.8.2 - Structural Steel (Sheet 80 of 200)	C For process plants, the following contingency additional loading shall be applied to individual beam elements, these shall be applied as point loads to produce worst shear and bending stresses: Platform Walkways 3 KN Secondary Floor Trimmers 5 KN Primary / Grid beams 10 KN Pre bid reply Lot 3:(Sr No 265) NIT cl. 3.8.2 (Sh 80 of 200) of PC150/E/4003/SecVI-5.5 - DESIGN PHILOSOPHY – CIVIL & STRUCTURAL WORKS shall prevail.	Bidder understands that this clause may be related to other generic chemical process plants which may require maintenance and additional loads relating to the same. However for Steam generation plant(boiler) which has established loads, the above magnitude of contingency loads is not required and applying such kind of additional contingency load to walkways, primary/grid beams would lead to gross overdesigning of structural supports and eventually lead to disproportionate higher foundation load. Kindly review and provide clarity on the same	Contingency loads are to be applied in the absence of actual loads from vendor data of boiler/ other equipments. For walkways/ operating platforms/ slabs, such loadings shall be considered as per the established engg. practices. Design shall be according to IS codes. Amendment shall be issued.
19.	PC150/E/4003/Sec VI-5.5 - DESIGN PHILOSOPHY – CIVIL &	4.7.3 - Structural Steel (Sheet 87 of 200)	C All embedded steel items (exposed to atmosphere) shall be hot-dip galvanized	Bidder understanding is , Foundation Bolts in Embedments shall be Hot Dip galvanized.	The referred clause is only for the embedded steel items such as insert/ embedded plates or angles etc. and is not applicable for the Foundation/ anchor bolts.

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	STRUCTURAL WORKS Pre bid reply Lot 3: (Sr No:267)			in accordance with IS: 2629, except if noted otherwise on the design drawings. Pre bid reply Lot 3:(Sr No 267) Refer cl. 4.5 (page 86 of 200) of DESIGN PHILOSOPHY – CIVIL & STRUCTURAL WORKS doc. No. PC150/E/4003/SecVI-5.5		
20.	PC009/E/4003/Section -VI-5.3.7 - DESIGN PHILOSOPHY – BOILER Pre bid reply Lot 3: (Sr No:269)	2.4.18 - Scope (Sheet 5 of 42)		C Complete roof and side cladding along with structures for protection against rain and other climatic conditions for operating floors, drum floors and other floor levels including gutter and rain water down pipes. Pre bid reply Lot 3:(Sr No 269) AS PER NIT cl 2.4.18 No change is allowed.	Boiler Roof side sheeting shall extend upto Drum Floor Level for Boiler and Bunker Top for Bunker Bay. Economiser Bay shall have only Roof Sheeting. <u>Bidder Clarification dated 3rd August 2020:</u> As per PDIL pre bid reply Lot 3, Point No 242 , Page 29 , Roof and Side sheeting will be considered. Kindly confirm	As per NIT. Refer Reply to Pre-bid Queries Lot 4, Sl. No. 52.
21.	PC009/E/4003/Section -VI-5.3.7 - DESIGN PHILOSOPHY – BOILER Pre bid reply Lot 3: (Sr No:273)	5.13 - Equipment Fabrication (Sheet 10 of 42)		C Nozzles and manholes shall be joined to the shell and to their reinforcements with full penetration welds. All nozzles shall be set-in type, unless otherwise specifically accepted. Pre bid reply Lot 3: (Sr No:273) As per NIT.	Noted. All Vessel Nozzles of size greater than 50 NB shall be Set-in connection , Full penetration weld. Nozzles of 50 NB and less in Drum shall be set-in Part - Penetration weld as per IBR.	Noted.
22.	PC009/E/4003/Section -VI-5.3.7 - DESIGN PHILOSOPHY – BOILER Pre bid reply Lot 3: (Sr No:274)	8.1.10 - Equipment Design Basis (Sheet 11 of 42)		C Nozzle for drain & vent shall be trimmed flush with inside surface of vessel. Other nozzle may extend inward within limits for welding. Pre bid reply Lot 3: (Sr No:274) As per NIT.	Noted. All Vessel Nozzles of size greater than 50 NB shall be Set-in connection , Full penetration weld. Nozzles of 50 NB and less in Drum shall be set-in Part - Penetration weld as per IBR.	Noted.
23.	PC009/E/4003/Section -VI-5.3.7 - DESIGN PHILOSOPHY – BOILER Pre bid reply Lot 3: (Sr No:279)	19.13 - Superheater (Sheet 22 of 42)		C Molybdenum wherever used in alloy for super heater material, should be suitably stabilized with requisite amount of vanadium and chromium. Alloys containing molybdenum will not be accepted. Pre bid reply Lot 3: (Sr No:279) As per NIT	Bidder understanding of the clause is that Alloy steels containing only Molybdenum is not acceptable (e.g T1). owever if Molybdenum is used in alloying,either Vanadium or Chromium or both shall be used as stabilising Medium. Kindly confirm. Bidder would also clarifies that alloys such as SA213 T11,SA213T12,SA 213 T22 has molybdenum along with Chromium (without Vanadium) is used as SH tube material for longer time and well proven and can be used as Superheater material.	As per NIT. Molybdenum wherever used in alloy for super heater material, should be suitably stabilized with requisite amount of vanadium and chromium.
24.	PC150/E/4003/Section VI-5.3.1 - PIPING Pre bid reply Lot 3:	2 - Design Philosophy (Sheet 4 of 75)		C Piping systems shall be in accordance with Clause 1.1, which permits the use of	Being a domestic job , Local statutory code (IBR) need to be followed , and the Boiler and its components , including auxiliaries are designed as per IBR. Hence piping shall be designed as	As per NIT.

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	(Sr No:282)			the following specifications: ASME B31.1 Power Piping Materials, design, construction, testing and inspection shall be fully in accordance with the selected specification. Pre bid reply Lot 3: (Sr No:282) As per NIT	per the requirements of IBR
25.	PC150/E/4003/Sec VI-5.3.1 - PIPING Pre bid reply Lot 3: (Sr No:283)	5.3.6.5 - Pump Piping (Sheet 17 of 75)		C Unless otherwise specified T -type strainers with drain shall be used on pump suction piping for sizes 2" and above Pre bid reply Lot 3: (Sr No:283) As per NIT	Strainer type shall be as per the recommendation of PUMP OEM for safe operation of equipment. Kindly confirm As per NIT, However any specific requirement of PUMP OEM shall be discussed and finalised during detailed engineering.
26.	VI-8.0	7 of 11	2.1 C.	Contractor shall Guarantee and demonstrate that maximum Ammonia slip downstream of SCR reactor shall not exceed 3 ppm at 3-4% oxygen (O2) content in flue gas on dry gas basis from 40 % to 100 % load condition considering the range of coals specified.	As there is no guideline in India for ammonia slip, kindly consider EPA (Environment Protection Agency, USA) guideline followed worldwide in which Ammonia slip of 5 - 20 ppm is acceptable and allowed considering practically achievable values for various technologies. Bidder to comply the Ammonia slip less than 20 ppm. Amendment to be issued.
27.	Pre-bid replies Lot 1 & 3 BHEL's queries/pending concerns vide email dated 09.07.2020			Limestone purity Conflict in Pre-bid reply regarding Limestone purity as under: Pre-Bid query LOT-001, S.No. 21 – Purity of fluxant will be 65% and above for design purpose. However performance guarantee will be based on 65% purity. Pre-Bid query LOT-003- S.No. 7 –Fluxant handling system and auxiliaries to be designed for minimum purity of 85 wt. % and above. For work cost guarantee, bidder to consider 85 wt. % purity of fluxant. Please clarify. <u>Revised Query</u> As clarified, we note that minimum purity of limestone is 85%.	Lime stone Analysis for works Guarantee:- CaCO3-----91% (minimum) MgO-----0.6-2% SiO2-----1.6-3% Al2O3-----0.3-1.5% Moisture----- maximum 6% However, Bidder to design the limestone handling system and Boiler considering min. 85% purity of limestone (in terms of CaCO3).
28.	Pre-bid replies Lot 1, S.No.72 BHEL's queries/pending concerns vide email dated 09.07.2020			Ultimate analysis for best & worst coal As per Pre-bid replies Lot 1, S.No.72 – It was requested to provide ultimate analysis for best and worst coal. While, proximate seam analysis and ultimate analysis for design coal has been provided. Kindly provide ultimate analysis. <u>Revised Query</u> For designing of auxiliaries like limestone injection system, EP design, Fan sizing, ash handling system, SNCR system etc., we would like customer/consultant to classify seam analysis into design, best and worst coal. This will help in proper sizing of boiler auxiliaries. Currently available seam analysis input will lead	Bidder to consider the coal analysis as given in Reply to Pre-bid Queries Lot 1 Sl. No. 17 to 20, for Works Cost Guarantee Purpose . However, Bidder shall have to consider maximum 43.5% ash content in ROM Coal as design basis for SGP.

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				<p>to multiple interpretation by bidders. Thus, each bidder can use favourable values for auxiliary system sizing, resulting in sub-optimal design offered.</p> <p>To make all bidders on same footing, we request customer/consultant to classify coal into Design/best/worst and provide proximate and ultimate analysis for the same. In addition customer/consultant can specify range of coal constituents for which the boiler can operate. This practice is followed by major power generation companies, while issuing tender. A format for filling required coal analysis is attached for your reference and use.</p>	
29.	Pre-Bid query Lot – 001 - S. No.35 (PC150/E/4003/VI-3.0- Pg 4 of 10 – Cl. 1.2-r)			<p>chemicals, lubricants and consumables for 6 months</p> <p>Supply of chemicals, lubricants and consumables required for a period of six months from completion of Successful Commissioning For better clarity across all bidders (avoid ambiguity), customer may enlist critical chemicals, lubricants and consumables required.</p> <p><u>Revised Query</u> For better clarity across all bidders (avoid ambiguity), customer may enlist critical chemicals, lubricants and consumables required.</p>	<p>Tentative List of chemicals, lubricants and consumables to be followed by Bidders (Not limited to) :</p> <ol style="list-style-type: none"> 1. LP & HP Dosing Chemical 2. All Lubricants 3. Sealants 4. Any other consumable items required for operation of plant.
30.	Pre-bid Replies Lot 4			<p>Amendment to BOQ/Schedule of rates</p> <p>Kindly specify changes being made, or furnish the amendment at the earliest for review at our end.</p> <p>Also wish to highlight that inadvertently, Unit for Power has been mentioned as "M³" in the "Unit" column in the Guaranteed Cost sheet of Price schedule. May also arrange for suitable correction for same.</p> <p><u>Revised Query</u> We understand amendment is being issued shortly.</p>	<p>Unit will be corrected.</p> <p>Amendment shall be issued shortly.</p>
31.	Pre-bid Replies Lot 4- Sl. 4 (Section II, B- Evaluation Methodology- Sl. b)			<p>Evaluation methodology</p> <p>There is a mention of discounting for a period of 25 years. As per standard practice being followed for similar tenders, the period ranges from 10-15 years. Period of 25 years is on a higher side.</p> <p>Request for review and suitable amendment in line with Industry standard.</p> <p><u>Revised Query</u> BHEL requested PDIL/TFL to review.</p>	<p>NIT Conditions prevail.</p>
32.			All pre-bid replies	<p>Amendments to specifications as mentioned in replies</p> <p>There is a mention of amendment to be issued to the specifications on various accounts as mentioned in the Pre-bid replies. In case the same is to be issued, please help in the same at the earliest enabling review at our end.</p>	<p>Amendment shall be issued shortly.</p>

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33.			All pre-bid replies	Vendor List	<p><u>Revised Query</u> We understand amendment is being issued shortly.</p> <p>The response to PBQs have mostly asked to follow tender. Herein, wish to submit as under:</p> <ul style="list-style-type: none"> - BHEL being a reputed PSU manufacturer in the field of Power Plant Equipment, wherever BHEL manufactured items are meeting the requirements we request you to accept the same/consider BHEL as approved vendor. - Further w.r.t. Bought out items, BHEL being a PSU, tendering process is followed to purchase items during execution and for many of the items, our Team has highlighted that it is a possibility that the tender may turn out to be single tender. In view of this, we request you to kindly allow for provision of suggestion of additional vendors for any/all items. We shall submit relevant qualification/technical documents for such items for due review by PDIL/TFL before proceeding for finalization. This philosophy is followed for all similar projects in the Industry. <p>Kindly accept.</p> <p><u>Revised Query</u> BHEL once again requested PDIL/TFL for review. At least a provision for suggestion of additional vendors may be kept so that a mutually agreed vendor list may be followed for optimized execution of project.</p> <p>For certain cases, also wish to highlight that the vendor list of tender may result in single tenders or may not be in compliance with Govt. of India's Make in India Guidelines. (Also refer our specific comments against some items as mentioned below).</p> <p>In view of above, we once again request PDIL/TFL to review & revert on this aspect.</p>
34.				Vendor list for Electrical Actuators	<p>The tender specifically mentions that Electric Actuators shall be supplied by the following vendors only:</p> <ol style="list-style-type: none"> 1. Biffi Italia S.R.L. (ITALY) 2. Limitorque (U.S.A) 3. Rotork Control (Deutschland) GmbH (GERMANY) 4. Auma (U.S.A) <p>There are no Indian vendors in the list. Various bidders have taken pre-bidqueries for including Indian vendors for Electric Actuators. We have</p>

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				<p>repeatedly raised Pre-bid clarifications, however inclusion of any other actuator vendors/ Indian offices of the above vendors has not been allowed.</p> <p>BHEL is usually supplying actuators for all projects including EPC, FGD, R&M, CPP etc from Indian vendors like Auma (India), Limitorque (India), Rotork (India) etc.</p> <p>Wish to submit that as per recent measures from Government of India, Global Tenders are not permitted for government procurement of goods if the value is less than Rs.200 Crore. (Make in India guidelines for procurement from foreign sources is enclosed for ready reference).</p> <p>The cost of actuators would be less than 200 Cr and, therefore, procurement from foreign suppliers is not possible, by PSU like BHEL.</p> <p>There are additional factors like spares availability, service after sale to be viewed critically in the case of foreign vendors.</p> <p>Accordingly, we request for review and resolution of this aspect.</p> <p>We also propose to submit our Vendor lists for Boiler Auxiliaries for your review & consideration. (Enclosed).</p>	
35.	pre-bid replies Lot-4, Sl. 33, 34			<p>Additional Features for Electrical Actuators</p> <p>As per tender specification, the special features of Motorised actuators are as follows:</p> <p>a) The motor shall be conforming to Explosion proof category: Ex "d", Gas group IIC, T3.</p> <p>b) Digital position indicator with display from fully open to fully closed in 1% increment.</p> <p>c) Contacts of limit switches shall be Gold plated.</p> <p>d) Intrinsically safe design</p> <p>For other similar Industrial/ CPP/Utility/CFBC/FGD applications for which BHEL has supplied Electric Actuators for more than 3 decades, these special features are not applicable for Electric Actuators for Gates & Dampers applications. As such, insistence on these features may not only limit the vendor choices but also would impact the ready availability of spares.</p> <p>Accordingly, we request to kindly review and remove these specific features or may inform specific reason to insist for these.</p>	Tender condition prevails.

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36.				Vendor list for Ash Handling system As per the Approved vendor list, "Macawberbeekay", "Indure" and "United Conveyor corporation" are the approved vendors for Ash handling system. During execution, there are chances that this may become "single tender" for us. Also, as we adopt open tender process, some more qualified vendors can quote and they should be given equal opportunity. Accordingly, we request review and approval of additional vendors also after award of contract to us, as we follow open tendering process.	Bidder to note that Vendor List enclosed with the NIT shall only be followed. Vendors for equipment/ machinery /item/ash handling not covered in Vendor List, shall be considered, as per Section VI-15.0 Note 4. (Sheet 88 of 88) of NIT.
37.			Pre-bid reply Lot 1 (Bid ref: Section VI-5.4: Cl 9.1.6 (pg 35 of 89))	Creepage distance shall be 31mm/kV (for highest system voltage) for all equipment Pre-bid Reply Lot 1 - Min. Creepage distance for 11kV shall be 320mm. <u>Revised Query</u> As per IS13134, the support insulators provided in Indoor Switchgear are in nonpolluted environment for which minimum creepage distance required is 16mm/kv (Refer table 2 of enclosed IS) i.e, 176mm for 11kV. Hence, Customer is requested to kindly accept offered Indoor switchgear with creepage distance of 220mm which is approx. 18.3kV/mm. The type test reports SG39525 for Impulse Test on offered design is enclosed for customer reference. Refer page 16 of 20 of report for Insulator creepage details.	Creepage distance shall be Minimum 25mm/kV (for highest system voltage) for all equipment.
38.			Pre-bid reply Lot 1 (Bid ref: Section VI-5.4: Cl 9.5.1.19 (pg 40 of 89))	11KV & 3.3KV Breaker shall be with Integral Earthing switch system with proper interlocks. Pre-bid Reply Lot 1 – As per NIT. <u>Revised Query</u> We confirm to offer Integral Earthing switch.	Noted.
39.			Cl 9.5.1.24 (pg 40 of 89)	The maximum height of the switchboard and other control panels shall be limited to 2200 mm. Pre-bid Reply Lot 1 – The maximum height of the switchboard shall be limited to maximum 2400 mm <u>Revised Query</u> Against customer requirement of 2400mm high panels we propose to offer 2600mm high switchgear panels for 40kA fault level. We request customer to kindly accept 2600mm height design which is suitable for 40kA STC & IAC.	The maximum height of the switchboard shall be limited to maximum 2400 mm
40.	Pre-bid replies Lot 1- Sl. 119 STD-0098 Sheet 46 of 69, Cl.			DISTRIBUTED CONTROL SYSTEM: The system shall be microprocessor based having function distribution & database distribution sub-system wise BHEL proposes ValmetDNA based DCS meeting tender specification. ValmetDNA based control system is manufactured by BHEL at Electronics Division,	Not acceptable. Kindly follow Tender requirement.

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	5.0 Sheet 49 of 69, Cl. 6.0			<p>PLC shall be microprocessor based system</p> <p>Bidder's PBQ- Bidder propose ValmetDNA based control system. This system is manufactured by BHEL at Electronics Division, Bangalore under collaboration with Valmet Automation, Finland. This is well proven system, supplied in various power plants and implemented as part of OEM proprietary standard. It is a proven system being supplied in power plants up to 800 MW. Please confirm acceptance</p> <p>Owner's reply to PBQ : Not acceptable. Tender Condition prevails</p>	<p>Bangalore under collaboration with Valmet Automation, Finland. BHEL has established facilities and expertise for: total integration & System engineering with Valmet DNA, manufacturing of Valmet DNA modules & panels, testing & deployment of Valmet DNA DCS and erection & commissioning of Valmet DNA DCS.</p> <p>BHEL has supplied Valmet system in Thermal Power plants upto 800MW including Kothagudam 1 x 800 MW STPS, Yadadri (Nalgonda) 5 x 800 MW STPS & Krishnapatnam, SDSTPS Stage II, 1x800 MW. The system is also proven for various Hydro Power Plant, CPPs & Refinery Projects.</p> <p>ValmetDNA reference list & Write-Up attached for your perusal.</p> <p>We once again request for acceptance of this proven system which is complying to all technical requirements.</p>	
41.	Pre-bid replies Lot 1- Sl. 120 STD-0098 Sheet 42 of 69, Cl. 4.13.3.1.1 Section-VI - 10.0, Cl. 6.0			<p>Machine Monitoring system shall be by Bentley Nevada 3500 or equivalent.</p> <p>Bentley Nevada 3500 Series Vibration Monitoring System Spares.</p> <p>Bidder's PBQ: Bidder proposes ValmetDNA based Vibration Monitoring system meeting specification requirement. The same is well established for various application including power plant up to 800MW & process plant. Equivalent spare for the system shall be supplied. Please confirm.</p> <p>Owner's reply to PBQ: ValmetDNA not acceptable. VMS shall be provided for pumps (1 MW and above). For other equipments OEM recommendation shall be followed. Bidder to consider vibration transmitters with 4-20 mA connected to Plant DCS for other applications</p>	<p>BHEL proposes ValmetDNA based Vibration Monitoring System meeting specification requirement. The system has already been approved by NTPC and has been supplied at 3X360MW Maitree project.</p> <p>NTPC Approval letter and Reference list of Valmet DNA based Vibration Monitoring System attached for reference.</p> <p>We once again request for acceptance of this proven system which is complying to all technical requirements.</p>	Not acceptable. Kindly follow Tender requirement.

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42.		224 of 2464	1.1.1 g	Construction power and water to be made available by Owner within 6 months of FOA	Reffered tender clause and subsequent Lot 6 reply Sr. No. 44 specifies Construction water and power shall be made availavle by Owner in 6th months from FOA. Considering the tender requirement of project completion of 26 moths from FOA, we would like to highlight the the construction power and water shall be required at site atleast from the 3rd month to meet the project overall schedule. Hence requesting TFL/PDIL to consider arranging this requirement from 3rd month at site	Noted & Agreed.
43.		224 of 2464 279, 280 of 2464	1.1.1 g point b., e., f.	Raw Material to be made available to Contractor not before 2 months of Completion period. De-mineralised Water (DMW) shall be supplied by owner at the plant B.L 2 months before scheduled completion period. Plant and Instrument air, Natural Gas will be provided by Owner 2 months before scheduled completion period of SGP at single point tie-in connection at the battery limit of LSTK Contractor. Required Plant & Instrument air in the above period (2 months before scheduled completion period) shall be arranged by LSTK Contractor himself	To meet the completion schedule, all raw material including DM Water, Plant and instrument air, service air , natural gas, etc. shall be required from 20th month i.e atleast 6 months before the completion period. Hence, request Client to make available these Raw material 6 months before Completion period enabling the contractors to meet the 26 months project completion schedule.	As per NIT. However, prior to this, Bidder shall make their own arrangement for all the utilities etc.
44.	SCC- V	24 of 55 244 of 2474	1.2.19	Commissioning services of Plant	As per PDIL reply Lot 7 , point 3 dated August 17, 2020, understand the amendment in SCC Clause 1.2.19 will remove Guarantee test as an activity from Commissioning. Please confirm. Also, since Clause 1.2.19 includes activities wherein inputs from Owner is required, request for an additional clause for <u>Deemed Commissioning</u> period which shall be applicable if Commissioning was not conducted within <u>say 2 months</u> from Mechanical Completion for reasons not attributable to the Contractor	Bidder's understanding is correct Not acceptable
45.	GCC	39 of 87 172 of 2474	31.1.3	In the event the CONTRACTOR fails to attain the PRELIMINARY ACCEPTANCE within the GUARANTEED COMPLETION DATE.....	As per PDIL reply Lot 7 , point 5 dated August 17, 2020, the project completion shall be considered as the Date of Commissioning. Hence, the Mutually Agreed Damages shall be due to delay in Commissioning and not Preliminery Acceptance. Request for modification of this clause 31.1.3	Under review, amendment if required shall be issued shortly.
46.	VI-5.3.4	Sheet 4 of 30	3.1	Bidder to design Material Handling system as per steam generation plant process requirement for two shift operations i.e. 14 hours to fill all raw materials to steam generation plant.	Inline with prebid replies lot 4 we have envisaged 1000/1200 Rated/Design capacity for down stream Coal handling system. Please confirm Sieve distribution after primary crushing (CGP crusher) to decide up on screening &	Coal handling Capacity: 1000/1200tph. Sieve distribution for coal and Limestone shall be provided during detailed engineering.

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				crushing capacities. For lime stone handling we have envisaged 150 Rated capacity for conveying and crushing to suit boiler requirement. Since conveying system is common for Coal & limestone, Client to consider VVFD upstream to meet the required conveying capacity.	Lime Handling Capacity to be considered by Bidder : 500TPH (Rated)/ 600 TPH (Design). In case of sizing of limestone crusher (bidder's scope), bidder shall use a surge hopper to store limestone with adequate capacity in upstream of crusher for minimize the capacity of limestone crusher.
47.	VI-5.3.4	Sheet 4 of 30	3.1	Density value to be considered for Coal and Lime stone for volumetric calculation and Structural loading. We have Considered as below For Coal: 800 kg/cu.m for volume calculation 1100 kg/cu.m for weight calculation For Limestone: 1100 kg/cu.m for volume calculation 1400 kg/cu.m for weight calculation	<u>For Coal:</u> 800 kg/cu.m for volume calculation 1100 kg/cu.m for weight calculation <u>For Limestone:</u> 1300 kg/cu.m for volume calculation 1400 kg/cu.m for weight calculation
48.	VI-5.3.4	Sheet 4 of 30	3.1	Moisture content of Lime stone received from CHP Crusher house. We have Considered as below CaCo3 - 85% by wt MgCo3 - 2 % by wt Inert - 12% by wt Moisture - 1% by wt	Lime stone Analysis for works Guarantee:- CaCO3-----91% (minimum) MgO-----0.6-2% SiO2-----1.6-3% Al2O3-----0.3-1.5% Moisture----- maximum 6% However, Bidder to design the limestone handling system and Boiler considering min. 85% purity of limestone (in terms of CaCO3).
49.	VI-5.3.4	Sheet 4 of 30	3.1	Crusher shall be mounted on independent foundation with vibration damping device like gerb spring and dampers We have envisaged Concrete Crusher house for Coal and Lime stone up to the roof. More over all Crushers used shall be Double Roll type. Hence for none of the Crushers for Coal and Limestone we shall use Gerb type vibration isolation system.	Noted.
50.	PC009/E/4003/ Section -VI-5.3.7, Rev 0	SHEET 5 OF 42 & Sheet 19 of 42	2.4.8 & 17.1	Tubular air-heater system completes, including casing, structural steel supports etc. The contractor shall furnish tubular type or regenerative type of airheater,	Both type (tubular or regenerative) of Airpreheater have been accepted as per NIT. Bidder is free to select as per OEM recommendation. <i>This supersedes Reply to pre-bid Query Lot -1 Sl. no. 239 & Lot-3 Sl. no. 49.</i>
51.	SecVI-5.4	13 of 89	2.1.6 - n	Electrical equipments i.e. DG Set, Transformers, Switchgears, MCCs, PCCs etc. shall have capacity for future requirements. The Margin shall be as follows: i) DG Set sizing: 25% is added to the Maximum Emergency Load. ii) HV Transformer: 25% is added to the Continuous Peak Load. LV Transformer: 30% is added to the Continuous Peak Load.	Noted. DG Shall be provided for Emergency Power Requirement/ Emergency Operation and Safe Shutdown of Steam Generation Plant, keeping one DG set of maximum rating as stand by. The voltage Level and rating shall be decided by LSTK Contractor as per NIT subject to approval by Owner/PMC., Bidder shall clearly indicate Start-up Load Requirement in their Bid.
	SecVI-5.4	22 of 89	5.1.2	DG Sets shall be suitable for Black start.	Kindly confirm. <i>This supersedes Reply to pre-bid Query Lot 1 Sl. no. 260 & Lot 3 Sl. no. 92.</i>
	SecVI-5.4	23 of 89	5.1.11	HV emergency board shall also have 2 normal and 1 emergency incomer.	
	SecVI-5.4	32 of 89	25	3.3kV DG set shall be provided	
	SecVI-5.4	35 of 89	9.2.1	DG set will supply the total emergency power requirement; keeping one DG set	

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52.	PC150/E/4003/Sec VI-5.4	Sheet 71 of 89	14	of maximum rating as stand by. CAPACITOR BANKS	Capacitor bank for 11/3.3kV system Not envisaged. <i>This supersedes Reply to pre-bid Query Lot 3 Sl. No. 92.</i>
53.	PC150/E/4003/Sec VI-5.4 DESIGN PHILOSOPHY – ELECTRICAL	5.1 (22 of 89)	2 Nos. 11 kV Feeders shall be made available in 11 kV Switchboard at Main Receiving Substation. Tapping of power supply from 11 kV Switchboard at Main Receiving Substation (including supply of all required material), ...	C	Please give the route length of MRSS to Steam Generating Package substation. <i>This supersedes Reply to pre-bid Query Lot 3 Sl. No. 329.</i>
54.	Document No - PC150/E-4003/P-I/S-V	Rev 0 - Special Conditions of Contract - Contractor Obligation - Construction Power - Page No. - 4 of 55 - Clause No. 1.1.1 - g - 1st para.	Construction Water (at one point within factory premises and Contractor to arrange the line up to their battery limit) and Construction (1 No.....	Clarification	Bidder has been provided construction water & Construction power at free of cost by OWNER. Construction power (3 phase, 4 Wire system, 415 V / 440 V, 50 Hz - Grid power) point at least minimum one (1) point per boiler within 200 mtr radius from actual erection area. Construction water shall be provided at a point inside the fertilizer factory premises and distribution from that point shall be in Bidder's scope. 1 No. 11 kV Feeder (rated for 2 MVA) at Existing Substation near 132 KV Switchyard shall be made available for Construction Power. Tapping of Construction Power (on chargeable basis) from this feeder (including supply & erection of all required materials like structural supports for cable tray, cable trays, power cables, control cables, protection & metering, cable termination etc. as well as underground cabling work) and further distribution shall be in LSTK Contractor's scope. Both construction water and construction power shall be chargeable basis, as per NIT. Power shall be metered at 11 KV Switchboard at Substation near 132 kV Switchyard. Meter for Construction Water shall be in Bidder's scope. <i>This supersedes Reply to pre-bid Query Lot 3 Sl. No. 331.</i>
55.	SecVI-5.4 PC150/E/4003/SecVI-5.4	Sheet 45 of 89	9.5.2.23	All low voltage switchboards shall be provided with 20% spare outgoing feeders or minimum one of each rating (fully wired) and with all the components.	DCDB.2.Breaker(ACB) controlled Motor Feeder & O/Gs Feeder to other MCC/ACDB shall be provided 20% or min 1 no. spare feeders (Except DG TIE feeder). 3. Supply feeders shall be provided based on SFU, MCCB, MPCB rating 20% or min 1 no. spare feeders. 4. Bidirectional motor feeder: Spare feeders based on physical size of the module 20% or min 1 no. spare feeders. 5. Unidirectional motor feeder: Spare feeders based on Type & rating of the module 20% or min 1no. spare feeders. 20% or Minimum 1 No. Outgoing feeder, whichever is higher for each type & rating of Outgoing feeders in all 415 V Switchboards including Distribution Boards shall be provided. <i>This supersedes Reply to pre-bid Query Lot 4 Sl. No. 13.</i>