

BHEL's clarifications are furnished below for information against some of the bidder's query sought vide letters/email/in the pre bid held on 5/3/2015 in the tender BHEL PSSR SCT 1575

Corrigendum-4,dt: 12/3/2015 for Tender BHEL:PSSR:SCT:1575 for Construction of Civil works for 2x660 MW at Ennore SEZ Thermal Power Project at Ash Dyke

Sl. No	Clause No.	Description	Queries	BHEL Reply
1	TCC Vol-1A,Part-1,Chapter2 Cl.1.2.4	All the works areas shall be adequately flood lighted to the satisfaction of the Engineerin-Charge when the work is in progress during the night shifts	Considering the stringent project timelines ,we understand ,the contractor is permitted to work round the clock .	If required based on the requirementwith the permission of Engineer incharge
2	General	Under Ground Utilities	We understand ,there would not be any existing underground utilities in the centire construction site.If any UG utilities is encountered during execution then expenses towards shifting of the UG urilities shall be paid extra on mutual agreeable basis.	agreed
3	TCC Vol-1A,Part-1,Chapter2, Scope of Civil & Structural works, Cl. 2.06.00 point no 61	All temporary roads and approach roads necessary for construction purpose shall be of WBM for a minimum width of 4m. All permanent min roads inside the plant, cross road to auxiliary buildings and inspection road around compound wall will be provided by bidder	Permanent approach road from Katupalli main road to this project site of length about 7 km shall be provided by BHEL and to be completed before commencement of this Project.	Approach road will be made ready by BHEL/TANGEDCO.
4	TCC Vol-1A,Part-1,Chapter2, Scope of Civil & Structural works, Cl. 1.7.2.4	Advance for Mobilization-1.7.2.4- 1.5% at the end of third month from date of fax LOI on completion of site Mobilization of Machinery & T&P as given below and on certification by site in-charge for compliance. 1. 75 MT Crane – 2 No's 2. Gantry Crane 3. Batching Plant – 90 cum/hr. 4. Portable automatic concrete batching plant – 15cum/hr. – 1 No's 5. Transit Mixers - 2 No's	We understand at the end of third month 75 MT & Gantry crane may not be necessiated, however, these equipments are required,the same shall be mobilized.so request BHEL to release 1.5% of contract value without mobilizaing the 75 MT crane & Gantry crane.	tender condition prevails

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5	TCC Vol-1A,Part-1,Chapter3, Clause 1.3.6.1	<p>Supply / providing cement, aggregate, sand, Hand Rail, Stainless Steel, Roof sheets, Rails, MS rods, MS flats, Reinforcement steel (TMT) & structural steel and all other materials required for the work and in line with the technical requirement and BOQ are in the scope of the contractor. BHEL will not be providing Staging material. However, BHEL shall provide only reinforcement steel (TMT) (around 7000 MT) for incorporation mostly for piling work/pile cap work on chargeable basis. The material will be issued from BHEL stores located at the existing NCTPS Stage 2 yard which is located at a distance of approximately 8 km away from site of construction. Collection and transporting to the place of work is in contractor's scope. The steel will be issued to the agency in standard lengths. Necessary test certificates of all materials supplied by contractor are to be submitted to BHEL prior to use of those materials. For all brought out items, necessary approval from BHEL/TNEB must be obtained before supply of material at site.</p> <p>1..3.6.2 In the event of BHEL supplying the material, the cost towards material supply shall be recovered from the agency as below</p> <ol style="list-style-type: none"> 1. Reinforcement steel TMT : Rs 46158/- per MT 2. Structural Plates : Rs 48700/- per MT 3. Structural Plates : Rs 48700/- per MT 4. Structural Steel : Channel Section : 47367/- per MT 5. Structural Steel : Beam Section : 49870/- per MT 6. Structural Steel : Beam Section : 46012/- per MT 	<p>We understand that BHEL will supply Reinforcement steel of 7000 MT only. However, in the event of BHEL supplying reinforcement steel beyond 7000 MT, the cost towards reinforcement supply shall be recovered @ Rs 46158/- per MT or prevailing market rate whichever is lower. Please confirm.</p>	<p>Yes. However refer clause 1.3.6.3 of TCC under heading" MATERIAL SUPPLY" - "<i>In the event of failure of contractor to bring necessary and timely reinforcement and structural steel, BHEL may arrange for the same at the risk and cost of the contractor. The entire cost prevailing during procurement towards this along-with 10% overhead shall be recovered from the contractor's bills.</i>"</p>

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6	Vol-IIB,Scope of Civil & Structural & Architectural, Section-C, Specific Technical Requirements, 2.00.00.44a	<p>Site shall be graded up to +9.5m level with available material from existing bund and the balance depth i.e. up to +10.00m shall be filled with approved good quality murrum/gravel. Level with available material from existing bund and the balance depth i.e. up to +10.00m shall be filled with approved good quality murrum/gravel.</p> <p>Site shall be graded up to +9.2m level by OWNER. The EPC contractor has to carry out site grading work for the entire plant from +9.2m level to +9.50m level with approved quality of murrum/gravel.The finished floor level of plant shall be +10.0m.</p>	<p>Please clarify from which level murrum filling to be made i.e. from RL +9.50m to +10.0m or RL +9.20m to +9.50m.</p> <p>Also, please clarify what is the finished ground level.</p>	<p>It is planned to fill the moorum from RL+9.20 to RL+9.5m. However, moorum filling to be done as per drawing furnished during detail engg stage. Finished ground level is RL+9.5m.</p>
7	SCT 1575 Corrigendum-II – Revised Priced Bid SI No.2302	<p>Extra over ST NO. 2301 for blast cleaning of steel structures to near white metal surface(Sa 2 1/2) and applying epoxy based zinc phosphate primer in coats of minimum 25 micron (DFT) at shop and 25 micron (DFT) after erection, instead of primer coat of red oxide zinc-chromate, including touch-up painting etc all complete.</p>	<p>Since our quoted rates in SI no.2301 are inclusive of 2 coats of red oxide zinc-chromate primer, how the rate adjustment for the same will take place? Please clarify.</p>	<p>Bidder to quote for differential rate as per the item description.</p>
8	SCT 1575 Corrigendum-II – Revised Priced Bid SI No.A2302	<p>Extra over ST NO. 2301 for blast cleaning of steel structures to near white metal surface(Sa 2 1/2) as per SIS 05-5900 and applying 100 micron total DFT zinc silicate primer(two coats of 50 mm DFT each), instead of two coats of primer of red oxide zinc-chromate, including touch-up painting etc all complete.</p>	<p>Since our quoted rates in SI no.2301 are inclusive of 2 coats of red oxide zinc-chromate primer, how the rate adjustment for the same will take place? Please clarify.</p>	<p>Bidder to quote for differential rate as per the item description.</p>
9	SCT 1575 Corrigendum-II – Revised Priced Bid SI No.2306	<p>Providing, laying and clamping of crane rails over the crane girder at all elevations as per IS 3443 including all fixtures, clamps, testings etc. all complete as per drawing and specification.</p>	<p>Please provide the size of rails & dimensions etc., need to consider.</p>	<p>The unit is in "MT". The size and dimensions of the rail shall be furnished during detail engg stage.</p>

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10	SCT 1575 Corrigendum-II – Revised Priced Bid Sl No.2307	Supplying, fabrication, erection and alignment of factory made electroforged galvanised grating units with mild steel (having minimum galvanisation of 610 g/sqm) conforming to IS:2062 in flooring, platforms, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads etc. including fixing clamps, fittings, fixtures, all taxes, duties, packing, grinding, drilling, welding, edge preparation, etc. all complete.	Please provide the type of gratings to be used.	Item description is clear.
11	SCT 1575 Corrigendum-II – Revised Priced Bid Sl No.1700	MS down take pipes & UPVC Pipes Supply	Please provide the list of approved vendors for pipes	No separate approved vendor list is available. Supply as per BOQ item description and IS. Approval shall be obtained case to case basis.
12	SCT 1575 Corrigendum-II – Revised Priced Bid Sl No.1817	HDPE Pipes Supply	Please provide the list of approved vendors for pipes	
13	SCT 1575 Corrigendum-II – Revised Priced Bid Sl No.2100	GI Pipes & Fittings Supply	Please provide the list of approved vendors for Pipes	
14	SCT 1575 Corrigendum-II – Revised Priced Bid Sl No.1500	Supply of Sheet, Insulation & Paint etc.	Request you to provide the approved vendor list for Supply of Sheet, Insulation & Paint etc.	
15	SCC: Clause 1.7.6 of Page 5	Preservation / Re-conservation of all the components during storage / erection / commissioning till handling over.	Please provide the specifications for Preservation / Re-conservation for equipment wise or system wise.	
16	SCC: Clause 2.3 of Page 6	Transport of material to their respective places of erection and erection of the complete plant & equipment as supplied under this specifications Ⓜ	Please provide the distance from storage area / yard to erection site	this clause pertain to BHEL supplied equipment and T&P
17	SCC: Clause 4.2.2.16 (c) of Page 15	In case BHEL cranes are not covered under AMC of BHEL. In case BHEL cranes are covered Under AMC of BHEL.	Please confirm which option needs to be considered.	

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18	SCC: Clause 4.2.2.17 (d) of Page 16	The construction and dismantling of the foundations required for the construction/elevator lifts is included in the scope of the contractor	Please provide the details for the same.	This clause pertains to construction lifts/elevators provided by BHEL
19	GCC: Clause 2.7.8 of Page 67	In the unforeseen event of inordinate delay in receipt of materials, drawings, fronts etc., due to which inordinate discontinuity of work is anticipated, BHEL at its discretion may consider contractor's request to short close the contract.	In this case please confirm whether any additional compensation will be paid to contractor as we would be mobilized all our resources, equipments, etc. with respect to total quantity and established site infrastructure completely at the site.	Clause is clear. Clause to be read fully to understand
20	GCC: Clause 2.11.3 of Page 71	However if any 'Time extension' is granted to the contractor to facilitate continuation of work and completion of contract, due to backlog attributable to the contractor alone, then it shall be without prejudice to the rights of BHEL to impose penalty / LD for the delays attributable to the contractor, in addition to any other actions BHEL may wish to take at the risk and cost of contractor.	In case the delay in completion of works attributable to delay in supply of free issue materials from BHEL, contractor shall be suitably compensated for the same. Kindly Confirm	Free issue of materials is not envisaged in the tender
21	GCC: Clause 2.22.2 (ii) of Page 79	Balance 50% of retention amount shall be retained towards 'Performance Guarantee for Workmanship' and shall become refundable after expiry of Guarantee Period, provided all the defects noticed during the guarantee period have been rectified by BHEL Site Engg.	Please provide Performance Guarantee Period or Defects Liability Period	Tender prevails
22	1.8.5.1 of TCC	New levies and taxes	Does this cover GST impact also since this comes under change in law?	As per clause 1.8.5.1 it abides on the documentary proof submission.
23	GCC: Clause 2.7.8 of Page 67	In the unforeseen event of inordinate delay in receipt of materials, drawings, fronts etc., due to which inordinate discontinuity of work is anticipated, BHEL at its discretion may consider contractor's request to short close the contract	In this case please confirm whether any additional compensation will be paid to contractor as we will be mobilizing our resources, equipments, etc. considering the total quantity and execution of complete works.	Clause is clear. Clause to be read fully to understand

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24	GCC	NO limitation of liability or consequential damages clause provided in the tender documents	Request BHEL to add such clauses	Tender Prevails
25	2.24.1 of GCC	Warranty	We request to consider the warranty period to start for each structure separately from the date they are made use of by BHEL	Tender prevails
26	1.6.7 of TCC	To achieve the Milestones , the contractor should be aware the related inputs	Please provide the drawing schedule	Drawing schedule will be given to the agency on award of work for preparation of detailed Schedule
27	Vol 1A, Techno Commercial Bid	Vol. III : Mechanical Works, Sea Water Analysis (Cooling Tower), (Page No. 427 of 1014 of PDF document) : Sea Water Analysis	The Sea Water Analysis given in the tender document does not show the salinity value to be considered for thermal design. As you may be aware, this is an important parameter for thermal design as it affects the vapour pressure and hence, the enthalpy values. Please specify the same to ensure that all bidders have a similar basis for design. In case the salinity value is not readily available you may choose to specify a value that is equal to TDS times the CoC, i.e. $39,740 * 1.3 = 51,662$ ppm	Bidder understanding is correct.
28	Vol 1A, Techno Commercial Bid	Clause No.9.7, Vol. III : Mechanical Works, Natural Draught Cooling Tower, (Page No. 183 of 1014 of PDF document) - Aviation warning lights	This Clause has contradictory requirements, The second paragraph under the clause specifies 12 nos. low intensity AOLs (at 1/4 & 3/4 heights) and 12 nos. medium intensity AOLs (1/2 and top levels) for the NDCT. Whereas the fifth paragraph specifies that a second level of lights are required to be installed for structures exceeding 600 feet (183 m). Please note that the fifth paragraph applies only when high intensity AOLs are used when NDCT height exceeds 150 m. Hence, please clarify that second paragraph will be applicable for NDCTs with height less than 150 m and the fifth paragraph beyond 150 m.	second paragraph will be applicable for NDCTs with height less than 150 m and the fifth paragraph beyond 150 m.

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29	Vol 1A, Techno Commercial Bid	Sr. No. 8.14, Data Sheet-A, Section-D1, Sheet 5 of 6, Vol. IIB (Page No. 425 of 1014 of PDF document) - Water Distribution Pipes (Inside CT)	As per this clause/data sheet, Water Distribution Pipes (Inside CT) needs to be of GRP/FRP. But the PVC Splash fills are specified in this tender. As you are aware PVC material is a good choice for Sea Water applications. When PVC is allowed for fill material please let us know why it is not specified for internal how water distribution pipes? Use of PVC pipes for water distribution is cost effective for sea water towers. PVC pipes are allowed in NTPC works also. Hence, we request you to allow us to use PVC pipes for water distribution inside cooling tower.	Bidder to follow specification.
30	Vol 1A, Techno Commercial Bid	Sr. No. 8.13 & 9.0, Data Sheet-A, Section-D1, Sheet 5 of 6, Vol. IIB (Page No. 424 & 425 of 1014 of PDF document) - Piping	Clauses 8.13 & 9.0 are contradictory. Clause 8.13 requires corrocoat or poly Urea coating on the inside of pipes above 150 NB dia. Whereas Clause 9.0 requires coal tar epoxy for the same purpose. Please clarify as to which of these clauses is governing.	Bidder to follow Clause 8.13 of Datasheet-A, Section-D1for Pipe with Sea Water Application. Bidder to follow Clause 9.1 of Datasheet-A, Section-D1for Pipe with Non-Sea Water Application(as applicable).
31	Corrigendum - 2	Sr. no. 13 & Sr. No. 2.12, Data Sheet-A, Section-D1, Sheet 1 of 6, Vol. IIB (Page No. 421 of 1014 of PDF document) - RH Value, Maximum Basin Diameter & Pumping head	You have revised the RH value to 60% from 75% for NDCT design vide Corrigendum-2. Please note that this is a big change for NDCT sizing. The space (diameter) allotted for NDCT as per Clause 2.12, Data Sheet-A shall be no longer valid for this revised duty condition. Only a film fill can give you 130 m base diameter with 60% RH for this tower with Sea Water circulation. You need to revise this base diameter to at least 145m for splash fill design. Please note that the water flow is quite large for the NDCT and hence, 130 m with splash fill is not possible. Hence, please confirm space availability as above for the revised duty. Further, as the base diameter increases the air inlet height also has to increase as otherwise air flow to the center of the tower will not be possible. Hence, we request you to revise the pumping head availability from 16 mWC w.r.t FGL to 17mWC max. Otherwise a good design as per BS & CTI norms will not be possible. Please consider & confirm.	Bidder to follow the Maximum Pumping Head as per technical Specification.

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33	Corrigendum – 3, Point no 45 and reply in page 9 of 13 and specification reference, Data sheet A for cooling tower, BHEL spec PE-TS-412-165-N001	BHEL has clarified that relative humidity shall be considered as 60.0 % in reply to bidder's clarifications vide point nos 13, 122, 133, 159 of corrigendum – 2 dated 12th feb'15. However vide point no 45 of corrigendum – 3 BHEL has withdrawn the value of Design Relative Humidity mentioned by them as 60.0 % in corrigendum – 2 and has replied as below "Design relative humidity shall be based on metrological data of Chennai for last 50 years. The design relative humidity as furnished previously as 60 % may be considered tentative & maximum and subject to customer (TANGEDCO) approval during detailed engineering stage. Any variation in Design RH during approval of design / documents, nothing extra will be payable on this account and shall not constitute a valid reason in affecting the terms and conditions of the bid".	Please note that relative humidity is the major and sensitive design parameter for NDCT thermal design. Hence we request you to specify relative humidity for design of NDCT as minimum 60%. Further we wish to inform you that design relative humidity of 60.0 % is followed for the projects like NTPC Simhadri Project Stage I & Stage II and APGENCO Krishnapatnam built in the coastal region which is having the similar climatological data to Ennore. Hence it would be more prudent to specify the specific Design RH value for the smooth and timely execution of project.	Bidder to comply with the Technical Specification and Corrigendum-3 for the value of Design Relative Humidity. Matter had been taken up with M/s TANGEDCO earlier and they clarified that design relative humidity shall be as per TANGEDCO Technical Specification Clause No. 9.2 of Vol III: 370. (Reference Extract of DESIEN Specification is enclosed)
34	TCC - Vol 1A & Ch - VII - 1.7.3 SCC - Ch X - 10.5	RA Bills and Interim Payments	We understand that interim payment & RA bills conditions are described in TCC & SCC are different. Request you to clarify and confirm within how many days BHEL will release the payment to Prime Bidder". Also clarify which clause need to be followed.	refer clause 29 in the NIT under heading - order of precedence - TCC supersedes SCC
35	GCC - Ch 1, 1.10	Security Deposit	We request you to confirm whether the Consortium partner is required to submit the Security Deposit to BHEL?	Refer annexure-3 B-1 under heading consortium condition clause-10 and security deposit clause 1.10 in GCC
36	Section C3; Vol IIB Clause i; 3.02.03	Safe load carrying capacity of bored cast-in-situ RCC piles	In the reference clause safe load bearing capacity of Pile upto 900 mm size has been furnished. Based on our design we have arrived the optimum pile size of 1000 mm. We request you to furnish the safe load limits for 1000 mm dia. pile.	The safe load carrying capacity of 1000mm diameter and 25m length below cut-off level for bored cast-in-situ RCC pile shall be limited to the following after necessary ground improvement. (a) In vertical compression = 325MT (b) In lateral = 12MT (c) In uplift = 95MT
37	Corrigendum-3 Volume -2 (Price bid, Revision -01)	ST.NO. 1003 & A1003	As per the item nos & corrigendum-3, please confirm us which item will be operated. (Item description revised in Corrigendum-3, but item no & qty are not specified)	Item number and quantity remains the same. Only Item description of 1003 has been revised in corrigendum 3. Bidder to quote in line with the BOQ.

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38	ST No.3003 of BOQ (Package 1 Ground Improvement Works)	10 nos. of Vibrocat/ Vibrofloat units to be deployed for installation of vibro displacement stone columns under this item.	Considering the speed of execution, maximum number of Vibrocat/ Vibrofloat units required for installation of about 37000 nos. of vibro stone columns shall not exceed 6 nos. Accordingly, we request you to reduce the requirement of Vibrocat/ Vibrofloat units to maximum 6 nos. and revise/ modify the nos. both in the BOQ item as well as the Plant Deployment/ Requirement Schedule. Further, Bidder shall have the option to deploy these rigs progressively depending upon the availability of work front / approved for construction drawings and other exigencies/ working conditions at site.	Number of T&P as given in the item specification and T&P deployment to be followed. Bidders also requested to kindly see the note given under TCC Deployment of T&P.
39	BHEL Specification page no: 617 , TANGEDCO Vol. VI: 104 ,Clause no: 13.05.01	Cyclonic factor	The Specification refers to IS:15498 " Guidelines for improving the cyclonic resistance of low rise houses and other buildings / structures". As per this code clause no: 4, "in the design of special structures, specific requirements as specified in the respective code may be followed". Accordingly in compliance with the specification and the IS : 15498 code, we are using the cooling tower code for the calculation of wind load. Also additional intensification factor of 1.43 is considered as per specification requirement. Please confirm	Cyclonic risk factor is to be considered as per IS:15498 in design of cooling tower as per specification. All other factors are also to be considered as per the specification.
40	BHEL Specification page no: 620 , TANGEDCO Vol. VI: 107 ,Clause no: 13.07.00	Basin Slab	Specification stipulates a condition that main tower foundation should not be connected to the pond floor to give lateral resistance to piles. This being a piled structure and lateral capacity is governing condition to achieve economy in design it is preferred to be connect the main tower foundation to the pond floor. This arrangement has been followed in projects with similar features. This is also not prohibited in the code.	Specification to be followed.

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41	BHEL Specification page no: 619 , TANGEDCO Vol. VI: 106 ,Clause no: 13.06.00	Uplift	With regard to uplift, BS code for cooling tower (which is also specified in the tender and is widely used in the industry) allows up to 30 degree arc. But specification restricts this to 15 degree arc which is too stringent in consideration of enhanced wind loads for the site. This may please be reviewed.	Specification to be followed.
42	BHEL Specification page no: 616 , TANGEDCO Vol. VI: 103 ,Clause no: 13.02.00 (oo)	VGB Guidelines	The VGB code which is also one of the specified codes in the specification and widely followed in India and International for cooling towers, allows ribs. The practice of providing ribs is followed internationally and India as well. There is no limitation from the specification also in this regard. As this is in accordance with the code and is practiced in the industry we request that this feature be allowed.	Not allowed. Wind pressure distribution as per IS11504 to be applied.
43	Volume 2 , Price Bid , Revision -01 , Item no: 2001 & 2003	Fencing (Structural Post)	As per the BOQ description it is specified that Structural post shall be separately under item 2007, but in the BOQ there is no such line item available. Please confirm whether the same shall be measured and paid separately under item no: 2301 or Item no 2008.	Structural posts shall be paid under item no. 2301
44		Confirmation on Design Relative Humidity to be considered		Relative Humidity to be considered is 60%
45	PE-TS-412-165-N001 VOLUME: IIB SECTION: C1 SHEET 7 OF 11 Cl.no: 6.14.00	The buried piping in bidders scope shall be RCC Duct	Please confirm the encasement thickness over CW pipe for buried pipes.	details shall be provided during detail engg stage.
46	PE-TS-412-165-N001 VOLUME: IIB SECTION: C1 SHEET 11 OF 11 Cl.no: 15.00.00	The following documents only shall be furnished by the bidder with his offer:	The performance curve of cooling tower, GA drawing, pumping head calculation, and thermal performance curve will be arranged after award of contract. Please accept the same.	Documents to be submitted during the bid evaluation stage.

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47	PE-TS-412-165-N001 VOLUME: IIB SECTION: C1 SHEET 7 OF 11 Cl.no: 8.03.03	One Cooling Tower performance shall be tested jointly by CTI approved testing agency in presence of the bidder, BHEL and Owner. All the representatives shall jointly record data of test.	Please confirm the Performance of test of cooling tower will be done as per ATC-105 / BS 4485 as against the approved CTI agency. Please confirm.	Bid specification prevails.
48	Volume-II mechanical Works	DIN 1947 – VDI - Acceptance test code for water cooling towers (latest version)	The mentioned DIN standard will not considered for cooling tower performance. But We will consider ATC-105/BS 4485 as per BHEL standard specification (PE-TS-999-165-N004 Part-A rev-0 sheet-1 of 9. Please accept the same.	All relevant standards as per bid specification shall be applicable.
49	Volume-II mechanical Works	QUICK FILL, MAKE UP PIPING	The quick fill, make up piping are not in our scope. Please confirm.	Noted.
50	PE-TS-412-165-N001 VOLUME: IIB SECTION: D SHEET 1 OF 6 cl.no: 2.8	Design ambient Relative Humidity : Based on meteorological data of Chennai for last 50 years Maximum Cooling tower flow capacity to be considered for design of hot water distribution and cold water channel: Min 120% of design CW flow.	Please confirm the Design ambient Relative Humidity for cooling tower design. The mentioned 120% margin is only for hydraulic over load not for the thermal design. Please confirm.	Relative Humidity to be considered is 60%. For second point, Bid specification is clear.
51	PE-TS-412-165-N001 VOLUME: IIB SECTION: D SHEET 1 OF 6 Cl.no: 2.13	Submersible sump pumps	Handling facilities for Submersible sump pumps is not mentioned. So the same will be not in our scope. And also confirm type fixed sump pumps or Portable type sump pumps.	Suitable portable type tripod arrangement for each tower to be considered in bidder's scope.
52	Volume-II mechanical Works	The basin shall be designed for a water depth of 1.0 m from normal water level with a free board of at least 0.3 m above maximum water level.	Please clarify the difference water level in cooling tower. 1. Difference in level b/w the maximum water level to Normal water level 2. Difference in level b/w the Low water level to Normal water level.	For water levels please refer clause 4.0 of Technical specification of cooling tower, Data sheet A, Page 419, Volume IIB, Section D
53	PE-TS-412-165-N001 VOLUME: IIB SECTION: D SHEET 2 OF 6 Cl.no: 4.4	Storage capacity between Normal and minimum water levels. : 10 minutes (Between Max. & Min. Water Level) of Cooling tower design Flow.	Please clarify the mentioned Hold up volume for 10 min is it from Maximum water level to minimum water level or b/w Normal water level to minimum water level.	Bid specification is clear

BHEL's clarifications are furnished below for information against some of the bidder's query sought vide letters/email/in the pre bid held on 5/3/2015 in the tender BHEL PSSR SCT 1575

Corrigendum-4,dt: 12/3/2015 for Tender BHEL:PSSR:SCT:1575 for Construction of Civil works for 2x660 MW at Ennore SEZ Thermal Power Project at Ash Dyke

Sl. No	Clause No.	Description	Queries	BHEL Reply
54	PE-TS-412-165-N001 VOLUME: IIB SECTION: D SHEET 4 OF 9 Cl.no: 4.9.2	one set of monorail with supporting structure and chain pulley hoist complete with lifting chain and trolley for mounting the hoist shall be furnished	Mentioned one set chain pulley hoist is required for two cooling tower or not. Please confirm.	1 set of chain pulley hoist is required for each cooling tower.
55	PE-TS-412-165-N001 VOLUME: IIB SECTION: D SHEET 4 OF 9 CL.NO: 4.9.0	Screens Mesh size is not specified	Please confirm the mesh size of screen.	Mesh size of 50mm X 50 mm to be considered.
56		C Form for supply of cooling tower items		C form shall not be issued
57		WCT for supply portion of NDCT		As per clause 1.8.1 of TCC
58		Can we discharge the Service Tax liability by Rule 2A (i) which will be reimbursable by BHEL. Please confirm.		Acceptable
59	Vol 1A, Techno Commercial Bid; Vol. III : Mechanical Works, Sea Water Analysis (Cooling Tower), (Page No. 427 of 1014 of PDF document); Sea Water Analysis	The Sea Water Analysis given in the tender document does not show the salinity value to be considered for thermal design. As you may be aware, this is an important parameter for thermal design as it affects the vapour pressure and hence, the enthalpy values. Please specify the same to ensure that all bidders have a similar basis for design. In case the salinity value is not readily available you may choose to specify a value that is equal to TDS times the CoC, i.e. $39,740 * 1.3 = 51,662$ ppm	Kindly Provide the salinity value of Sea Water. In case the salinity value is not readily available you may choose to specify a value that is equal to TDS times the CoC, i.e. $39,740 * 1.3 = 51,662$ ppm	Bidder understanding is correct.
60	Vol 1A, Techno Commercial Bid; Clause No.9.7, Vol. III : Mechanical Works, Natural Draught Cooling Tower, (Page No. 183 of 1014 of PDF document); Aviation warning lights	This Clause has contradictory requirements, The second paragraph under the clause specifies 12 nos. low intensity AOLs (at 1/4 & 3/4 heights) and 12 nos. medium intensity AOLs (1/2 and top levels) for the NDCT. Whereas the fifth paragraph specifies that a second level of lights are required to be installed for structures exceeding 600 feet (183 m). Please note that the fifth paragraph applies only when high intensity AOLs are used when NDCT height exceeds 150 m.	Hence, please clarify that second paragraph will be applicable for NDCTs with height less than 150 m and the fifth paragraph beyond 150 m.	second paragraph will be applicable for NDCTs with height less than 150 m and the fifth paragraph beyond 150 m.

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Sl. No	Clause No.	Description	Queries	BHEL Reply
61	Vol 1A, Techno Commercial Bid; Sr. No. 8.13 & 9.0, Data Sheet-A, Section-D1, Sheet 5 of 6, Vol. IIB (Page No. 424 & 425 of 1014 of PDF document); Piping	Clauses 8.13 & 9.0 are contradictory. Clause 8.13 requires corrocoat or poly Urea coating on the inside of pipes above 150 NB dia. Whereas Clause 9.0 requires coal tar epoxy for the same purpose.	Please clarify as to which of these clauses is governing.	Bidder to follow Clause 8.13 of Datasheet-A, Section-D1 for Pipe with Sea Water Application. Bidder to follow Clause 9.1 of Datasheet-A, Section-D1 for Pipe with Non-Sea Water Application(as applicable).
62	Corrigendum - 2 & 3; Sr. no. 13 & Sr. No. 2.12, Data Sheet-A, Section-D1, Sheet 1 of 6, Vol. IIB (Page No. 421 of 1014 of PDF document); RH Value, Maximum Basin Diameter & Pumping head	You have revised the RH value to 60% from 75% for NDCT design vide Corrigendum-2. Please note that this is a big change for NDCT sizing. The space (diameter) allotted for NDCT as per Clause 2.12, Data Sheet-A shall be no longer valid for this revised duty condition. Only a film fill can give you 130 m base diameter with 60% RH for this tower with Sea Water circulation. You need to revise this base diameter to at least 145m for splash fill design. Please note that the water flow is quite large for the NDCT and hence, 130 m with splash fill is not possible. Hence, please confirm space availability as above for the revised duty.	Further, as the base diameter increases the air inlet height also has to increase as otherwise air flow to the center of the tower will not be possible. Hence, we request you to revise the pumping head availability from 16 mWC w.r.t FGL to 17mWC max. Please consider & confirm.	Bidder may consider Design of Relative Humidity as 60. - Bidder's query for Maximum Basin Diameter upto 140 M has been accepted. Bidder to follow the Maximum Pumping Head as per technical Specification.
63	VOLUME-2 PRICE BID Revision -01; Item : 920	Roof skylight structure for atrium with 6mm thick Polycarbonate sheet multi (twin) wall fire retardant and ultra violet resistant with sealed open edges for sky light for approved shape like dome, pyramidal etc. Joints are properly sealed with sealent, screws with pvc cap, self tapping screws, epdm rubber gasket.etc all complete as per detailed drawing and specification.	We presume that any SS/ MS structural Works shall be measured and paid seperatly. OR provide Kg / Sqm. Please confirm.	SS/MS structural members are not envisaged. Detail drawing will be issue during detail engineering stage.
64	Amendment to Clause for Ground Improvement of Cooling Tower	Amendemnt to Technical Specification for cooling tower Clause 3.02.05(a)		• Clause 3.02.05(a) shall be read as follows: "Ground improvement shall be done by installing 550mm diameter and 18m deep driven cast-in-situ compaction piles."
65	TCC	EMD	• With reference to TCC, Vol-IA, Part-II, Chapter-II, Formats (revised)" BG for BID Margin/EMD (for standalone/prime bidder), the word 'consortium' (para no. 5 page no.1) may be replaced with the word 'BID'.	Yes

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Sl. No	Clause No.	Description	Queries	BHEL Reply
66	Item 211	Item description change	<p>Existing Item description : Dismantling concrete work for all types of structures at all levels including stacking of servicable material to a lead of 500 m and disposal of unservicable material upto a lead of 2 km, cutting of reinforcement, labour, equipment, safety precautions etc all complete as per drawings, specification and instructions of engineer in charge.</p>	<p>Revised Item description : Dismantling concrete work for all types of structures at all levels including stacking of servicable material to a lead of 500 m and disposal of unservicable material upto a lead of 2 km, cutting of reinforcement, labour, equipment, safety precautions etc all complete as per drawings, specification and instructions of engineer in charge. Bidder to quote the rate taking into account the cost of serviceable materials including the reinforcement steel, hard and soft rock which he will be getting from the dismantled concrete.</p>
<p>All other conditions remain unchanged</p>				

GM/HR&SCT