

TENDER SPECIFICATION

NO: BHE/PW/PUR/PIVVG-CVL BAL/PKG-I/1179

BALANCE CIVIL, STRUCTURAL AND ARCHITECTURAL WORKS AT POWER HOUSE, BFP, DG, WORKSHOP, CONTROL & FACILITY AND COMPRESSOR BUILDING INCLUDING FLOORING, WATER PROOFING, SIDE CLADDING, INTERNAL & EXTERNAL PAINTING ETC. COMPLETE.

AT

2X350MW CCPP, GPPCL PIPAVAV, DISTT. AMRELI GUJARAT

TECHNICAL BID - VOLUME- I

TENDER SPECIFICATIONS CONSISTS OF:

- **Notice Inviting Tender**
- **Volume 1 A - Technical Conditions of Contract,**
- **Volume 1 B - Special conditions of Contract,**
- **Volume 1 C - General conditions of Contract**
- **Volume 1 D - Forms & Procedures**



Bharat Heavy Electricals Limited
(A Government of India Undertaking)
Power Sector - Western Region
345-Kingsway, Nagpur-440001

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LEGEND:

LEGEND:

This document (i.e. NIT & Vol-I Tech Bid) is issued as one booklet.

§: “**Vol I -B, I-C, I-D**” is a part of technical bid **issued as separate booklet**.

@: **Price bid is** issued as a separate hard copy booklet ‘Tender Specifications – Volume-II-Price Bid-1179)’.

Volume-II-B Section-D and Vol- IE- Technical specification are considered part of Vol IA ‘Technical Conditions of Contract’. However same are issues as separate booklet

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AT

2X350MW CCPP, GPPCL PIPAVAV, DISTT. AMRELI GUJARAT

EARNEST MONEY DEPOSIT: Refer Notice Inviting Tender

LAST DATE FOR TENDER SUBMISSION: Refer Notice Inviting Tender

THESE TENDER SPECIFICATION DOCUMENTS CONTAINING **VOLUME-I-Tech Bid**, **VOLUME- II-Price Bid** AND **VOLIME-IBCD Rev-01 Rev-01** and **Volume-IIB-Tech bid** and **Volume-IE_Tech Bid** ARE ISSUED TO:

M/s.

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PLEASE NOTE:
THESE TENDER SPECS DOCUMENTS ARE NOT TRANSFERABLE.

For Bharat Heavy Electricals Limited

AGM (Purchase)
Place: Nagpur
Date:

1179

NOTICE INVITING TENDER

Bharat Heavy Electricals Limited



Ref: BHE/PW/PUR/PIPVG-CVL BAL/PKG-I/1179

Date: 26/09/2013

NOTICE INVITING TENDER (NIT)
**NOTE: BIDDER MAY DOWNLOAD FROM WEB SITES
OR
PURCHASE TENDERS FROM THIS OFFICE ALSO**

To

Dear Sir/Madam

Sub : NOTICE INVITING TENDER

Sealed offers in two part bid system are invited from reputed & experienced bidders (meeting [PRE QUALIFICATION CRITERIA](#) as mentioned in Annexure-I) for the subject job by the undersigned on the behalf of BHARAT HEAVY ELECTRICALS LIMITED as per the tender document. Following points relevant to the tender may please be noted and complied with.

1.0 Salient Features of NIT

SL NO	ISSUE	DESCRIPTION
i	TENDER NUMBER	BHE/PW/PUR/PIPVG-CVL BAL/PKG-I/1179
ii	Broad Scope of job	BALANCE CIVIL, STRUCTURAL AND ARCHITECTURAL WORKS AT POWER HOUSE, BFP, DG, WORKSHOP, CONTROL & FACILITY AND COMPRESSOR BUILDING INCLUDING FLOORING, WATER PROOFING, SIDE CLADDING, INTERNAL & EXTERNAL PAINTING ETC COMPLETE AT 2X350MW CCPP, GPPCL PIPAVAV, DISTT. AMRELI GUJARAT
iii	DETAILS OF TENDER DOCUMENT	
a	Volume-IA	<i>Technical Conditions of Contract (TCC) consisting of Scope of work, Technical Specification, Drawings, Procedures, Bill of Quantities, Terms of payment, etc</i> Applicable
b	Volume-IB	<i>Special Conditions of Contract (SCC)</i> Applicable
c	Volume-IC	<i>General Conditions of Contract (GCC)</i> Applicable
d	Volume-ID	<i>Forms and Procedures</i>
e	Volume-II	<i>Price Schedule (Absolute value).</i> Applicable
iv	Issue of Tender Documents	1. Sale from BHEL PS Regional office at : Start : 27/09/2013 Closes: 11/10/2013 , Time : 16: Hrs 2. From BHEL website (www.bhel.com) Applicable/ Not applicable

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		Tender documents will be available for downloading from website till due date of submission	
v	DUE DATE & TIME OF OFFER SUBMISSION	Date : 14/10/2013, Time : 15:00 Hrs Place : <u>BHEL PS Regional office at :Nagpur</u> Tenders being submitted through representative shall be submitted at dispatch section of of PSWR HQ Office after making entry/registration at the reception. For any assistance on the matter kindly contact following officials: ShivkeshMeena / Engineer(Purchase) Pratish Gee Varghese/SrEngineer(Purchase)	Applicable
vi	OPENING OF TENDER	1 hours after the latest due date and time of Offer submission <i>Notes:</i> (1) In case the due date of opening of tender becomes a non-working day, then the due date & time of offer submission and opening of tenders get extended to the next working day. (2) Bidder may depute representative to witness the opening of tender	Applicable
vii	EMD AMOUNT	Rs 2,00,000/- (Rupees Two Lakhs Only)	Applicable
viii	COST OF TENDER	Rs 2000/-.	Applicable
ix	LAST DATE FOR SEEKING CLARIFICATION	Atleast 10 days before the due date of offer submission Along with soft version also, addressing to undersigned & to others as per contact address given below	Applicable
x	SCHEDULE OF Pre Bid Discussion (PBD)	Date :	Applicable /Not applicable.
xi	INTEGRITY PACT & DETAILS OF INDEPENDENT EXTERNAL MONITOR (IEM)	Shri Kanwarjit Singh, IRS (Retd.) D-6/11, Ground Floor, Vasant Vihar, New Delhi - 110 057	Applicable
xii	Latest updates	Latest updates on the important dates, Amendments, Correspondences, Corrigenda, Clarifications, Changes, Errata, Modifications, Revisions, etc to Tender Specifications will be hosted in BHEL webpage (www.bhel.com -->Tender Notifications →View Corrigendums) and not in the newspapers . Bidders to keep themselves updated with all such information	

- 2.0 The offer shall be submitted as per the instructions of tender document and as detailed in this NIT. Bidders to note specifically that all pages of tender document, including these NIT pages of this particular tender together with subsequent correspondences shall be submitted by them, duly signed & stamped on each page, as part of offer. **Rates/Price including discounts/rebates, if any, mentioned anywhere/in any form in the techno-commercial offer other than the Price Bid, shall not be entertained.**
- 3.0 Unless specifically stated otherwise, bidder shall remit cost of tender and courier charges if applicable, in the form of Demand Draft drawn in favour of Bharat Heavy Electricals Ltd, payable at Power Sector Regional HQ

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at Nagpur issuing the Tender, along with techno-commercial offer. Bidder may also choose to deposit the Tender document cost by cash at the Cash Office as stated above against sl no iv of 1, on any working day; and in such case copy of Cash receipt is to be enclosed with the Techno Commercial offer. Sale of tender Documents shall not take place on National Holidays, holidays declared by Central or State Governments and BHEL PS HQ at Nagpur, Sundays and second/ last Saturdays

4.0 Unless specifically stated otherwise, bidder shall deposit EMD through Demand Draft/Pay Order in favour of Bharat Heavy Electricals Ltd, payable at Nagpur. For other details and for 'One Time EMD' please refer General Conditions of Contract.

5.0 **Procedure for Submission of Tenders:** The Tenderers must submit their Tenders to Officer inviting Tender, as detailed below:

- PART-I consisting of 'PART-I A (Techno Commercial Bid)' & 'PART-I B (EMD/COST of TENDER)' in two separate sealed and superscribed envelopes (ENVELOPE-I & ENVELOPE-II)
- PART-II (Price Bid) – in sealed and superscribed envelope (ENVELOPE-III)
- One set of tender documents shall be retained by the bidder for their reference

6.0 The contents for ENVELOPES and the superscription for each sealed cover/Envelope are as given below.
(All pages to be signed and stamped)

Sl no	Description	Remarks
	Part-I A	
	<p><u>ENVELOPE – I superscribed as :</u> PART-I (TECHNO COMMERCIAL BID) TENDER NO : NAME OF WORK : PROJECT: DUE DATE OF SUBMISSION:</p> <p><u>CONTAINING THE FOLLOWING:-</u></p>	
i.	Covering letter/Offer forwarding letter of Tenderer.	
ii.	<p>Duly filled-in 'No Deviation Certificate' as per prescribed format to be placed after document under sl no (i) above.</p> <p><u>Note:</u></p> <p>a. In case of any deviation, the same should be submitted separately for technical & commercial parts, indicating respective clauses of tender against which deviation is taken by bidder. The list of such deviation shall be placed after document under sl no (i) above. It shall be specifically noted that deviation recorded elsewhere shall not be entertained.</p> <p>b. BHEL reserves the right to accept/reject the deviations without assigning any reasons, and BHEL decision is final and binding.</p> <p style="margin-left: 20px;">i). In case of acceptance of the deviations, appropriate loading shall be done by BHEL</p> <p style="margin-left: 20px;">ii). In case of unacceptable deviations, BHEL reserves the right to reject the tender</p>	
iii.	<p>Supporting documents/ annexure/ schedules/ drawing etc as required in line with Pre-Qualification criteria.</p> <p>It shall be specifically noted that all documents as per above shall be indexed properly and credential certificates issued by clients shall distinctly bear the name of organization, contact ph no, FAX no, etc.</p>	
iv.	All Amendments/Correspondences/Corrigenda/Clarifications/Changes/ Errata etc	

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	pertinent to this NIT.	
v.	Integrity Pact Agreement (Duly signed by the authorized signatory)	If applicable
vi.	Duly filled-in annexures, formats etc as required under this Tender Specification/NIT	
vii.	Notice inviting Tender (NIT)	
viii.	Volume – I A : Technical Conditions of Contract (TCC) consisting of Scope of work, Technical Specification, Drawings, Procedures, Bill of Quantities, Terms of payment, etc	
ix.	Volume – I B : Special Conditions of Contract (SCC)	
x.	Volume – I C : General Conditions of Contract (GCC)	
xi.	Volume – I D : Forms & Procedures	
xii.	Volume – II (UNPRICED – without disclosing rates/price, but mentioning only 'QUOTED' or 'UNQUOTED' against each item	
xiii.	Any other details preferred by bidder with proper indexing.	

	PART-I B	
	<p>ENVELOPE – II superscribed as: PART-I (EMD/COST of TENDER) TENDER NO : NAME OF WORK : PROJECT: DUE DATE OF SUBMISSION:</p> <p>CONTAINING THE FOLLOWING:-</p>	
i.	<p>1. Earnest Money Deposit (EMD) in the form as indicated in this Tender OR Documentary evidence for 'One Time EMD' with the Power Sector Region of BHEL floating the Tender</p> <p>2. Cost of Tender (Demand Draft or copy of Cash Receipt as the case may be)</p>	

	PART-II	
	PRICE BID consisting of the following shall be enclosed	
	<p>ENVELOPE-III superscribed as: PART-II (PRICE BID) TENDER NO : NAME OF WORK : PROJECT: DUE DATE OF SUBMISSION:</p> <p>CONTAINING THE FOLLOWING</p>	
i	Covering letter/Offer forwarding letter of Tenderer enclosed in Part-I	
ii	Volume II – PRICE BID (Duly Filled in Schedule of Rates – rate/price to be entered in words as well as figures)	

	OUTER COVER	
	<p>ENVELOPE-IV (MAIN ENVELOPE / OUTER ENVELOPE) superscribed as: TECHNO-COMMERCIAL BID, PRICE BID & EMD</p>	

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	TENDER NO: NAME OF WORK: PROJECT: DUE DATE OF SUBMISSION: CONTAINING THE FOLLOWING:	
i	<ul style="list-style-type: none">○ Envelopes I○ Envelopes II○ Envelopes III	

SPECIAL NOTE :All documents/ annexures submitted with the offer shall be properly annexed and placed in respective places of the offer as per enclosure list mentioned in the covering letter. BHEL shall not be responsible for any missing documents.

7.0 Deviation with respect to tender clauses and additional clauses/suggestions in Techno-commercial bid / Price bid shall NOT be considered by BHEL. Bidders are requested to positively comply with the same.

8.0 BHEL reserves the right to accept or reject any or all Offers without assigning any reasons thereof. BHEL also reserves the right to cancel the Tender wholly or partly without assigning any reason thereof. Also BHEL shall not entertain any correspondence from bidders in this matter (except for the refund of EMD).

9.0 Assessment of Capacity of Bidders:

Bidders capacity for executing the job under tender shall be assessed 'LOAD' wise and 'PERFORMANCE' wise as per the following:

I. **LOAD:** Load takes into consideration **ALL** the contracts of the Bidder under execution with BHEL Regions, irrespective of whether they are similar to the tendered scope or not. The 'Load' is the sum of the unit wise identified packages (refer Table-1) for contracts with BHEL Regions. The cut off month for reckoning 'Load' shall be the month, two (2) months preceding the month corresponding to the 'latest date of bid submission', in the following manner:

(Note: For example if latest bid submission is in Aug 2011, then the 'load' shall be calculated upto and inclusive of June 2011)

i). Total number of Packages

Total number of Packages in hand = P

Where

- 'P' is the sum of all unit wise identified packages under execution with BHEL Regions as of the cut off month defined above, including packages yet to be commenced, excepting packages which are on HOLD due to reasons not attributable to Bidder..

II. **PERFORMANCE:** Here 'Monthly Performance' of the bidder for all the packages (**under execution/** executed during the 'Period of Assessment' in all the Power Sector Regions of BHEL) **SIMILAR** to the packages covered under the tendered scope, excepting packages not commenced shall be taken into consideration. The 'Period of Assessment' shall be 6 months preceding the cut off month. The cut off month for reckoning 'Period of Assessment' shall be the month two (2) months preceding the month corresponding to the 'latest date of bid submission', in the following manner:

(**Note:** For example if 'latest date of bid submission' is in Aug 2011, then the 'performance' shall be assessed for a 6 month period upto and inclusive of June 2011, for all the unit wise identified packages (refer Table I)

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- i). Calculation of Overall 'Performance Rating' for 'similar Package/Packages' for the tendered scope under execution at Power Sector Regions for the 'Period of Assessment':
This shall be obtained by summing up the 'Monthly Performance Evaluation' scores obtained by the bidder in all Regions for all the similar Package/packages', divided by the total number of Package months for which evaluation should have been done, as per procedure below:
- $P_1, P_2, P_3, P_4, P_5, \dots P_N$ etc be the packages (**under execution/** executed during the 'Period of Assessment' in all Regions) **SIMILAR** to the packages covered under the tendered scope, excepting packages not commenced. Total number of similar packages for all Regions = P_T (ie $P_T = P_1 + P_2 + P_3 + P_4 + \dots P_N$)
 - Number of Months ' T_1 ' for which 'Monthly Performance Evaluation' as per relevant formats, should have been done in the 'Period of Assessment' for the corresponding similar package P_1 . Similarly T_2 for package P_2, T_3 for package P_3 , etc for the tendered scope. Now calculate cumulative total months ' T_T ' for total similar Packages ' P_T ' for all Regions (i.e $T_T = T_1 + T_2 + T_3 + T_4 + \dots T_N$)
 - Sum ' S_1 ' of 'Monthly Performance Evaluation' Scores ($S_{1-1}, S_{1-2}, S_{1-3}, S_{1-4}, S_{1-5}, \dots S_{1-N}$) for similar package P_1 , for the 'period of assessment' ' T_1 ' (i.e $S_1 = S_{1-1} + S_{1-2} + S_{1-3} + S_{1-4} + S_{1-5} + \dots S_{1-N}$). Similarly S_2 for package P_2 for period T_2, S_3 for package P_3 for period T_3 , etc for the tendered scope for all Regions. Now calculate cumulative sum ' S_T ' of 'Monthly Performance Evaluation' Scores for total similar Packages ' P_T ' for all Regions (i.e ' $S_T = S_1 + S_2 + S_3 + S_4 + S_5 + \dots S_N$).
 - Overall Performance Rating ' R_{BHEL} ' for the similar Package/Packages (under execution/** executed during the 'Period of Assessment') in all the Power Sector Regions of BHEL):

Aggregate of Performance scores for all similar packages in all the Regions

= -----

Aggregate of months for each of the similar package for which performance should have been evaluated in all the Regions

$$\frac{S_T}{T_T}$$

- e) Bidders to note that the risk of non evaluation or non availability of the 'Monthly Performance Evaluation' reports as per relevant formats is to be borne by the Bidder

f) Table showing methodology for calculating 'a', 'b' and 'c' above

Sl no	Item Description	Details for all Regions							Total
		(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	
(i)	(ii)								(x)
1	Similar Packages for all Regions → (under execution/ executed during period of assessment)	P_1	P_2	P_3	P_4	P_5	...	P_N	Total No of similar packages for all Regions = P_T ie Sum (Σ) of columns (iii) to (ix)
2	Number of Months for which 'Monthly Performance Evaluation' as per relevant formats	T_1	T_2	T_3	T_4	T_5	...	T_N	Sum (Σ) of columns (iii) to (ix) = T_T

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	should have been done in the 'period of assessment for corresponding similar Package (as in row 1)								
3	Monthly performance scores for the corresponding period (as in Row 2)	S ₁₋₁ , S ₁₋₂ , S ₁₋₃ , S ₁₋₄ , ... S _{1-T1}	S ₂₋₁ , S ₂₋₂ , S ₂₋₃ , S ₂₋₄ , ... S _{2-T2}	S ₃₋₁ , S ₃₋₂ , S ₃₋₃ , S ₃₋₄ , ... S _{3-T3}	S ₄₋₁ , S ₄₋₂ , S ₄₋₃ , S ₄₋₄ , ... S _{4-T4}	S ₅₋₁ , S ₅₋₂ , S ₅₋₃ , S ₅₋₄ , ... S _{5-T5}	S _{N-1} , S _{N-2} , S _{N-3} , S _{N-4} , ... S _{N-TN}	-----
4	Sum of Monthly Performance scores of the corresponding Package for the corresponding period (as in row-3)	S ₁	S ₂	S ₃	S ₄	S ₅	...	S _N	Sum (Σ) of columns (iii) to (ix) = S _T

- ii) Calculation of Overall 'Performance Rating' (R_{BHEL}) in case 'similar Package/Packages' for the tendered scope ARE NOT AVAILABLE, during the 'Period of Assessment':

This shall be obtained by summing up the 'Monthly Performance Evaluation' scores obtained by the bidder in all Regions for ALL the packages, divided by the total number of Package months for which evaluation should have been done. 'R_{BHEL}' shall be calculated subject to availability of 'performance scores' for at least 6 'package months' in the order of precedence below:

- 'Period of Assessment.
- 12 months preceding the cut-off month
- 24 months preceding the cut-off month
- 36 months preceding the cut-off month

In case, R_{BHEL} cannot be calculated as above, then Bidder shall be treated as 'NEW VENDOR'. Further eligibility and qualification of this bidder shall be as per definition of 'NEW VENDOR' described in 'Explanatory Notes'

- iii) Factor "L" assigned based on Overall Performance Rating (R_{BHEL}) at Power Sector Regions.:

S1 no	Overall Performance Rating (R _{BHEL})	Corresponding value of 'L'
1	=60	NA
2	>60 and ≤ 65	0.4
3	>65 and ≤ 70	0.35
4	> 70 and ≤ 75	0.25
5	> 75 and < 80	0.2
6	≥ 80	NA

III. 'Assessment of Capacity of Bidder':

'Assessment of Capacity of Bidder' is based on the Maximum number of packages for which a vendor is eligible, considering the performance scores of similar packages, as below:

Max number of packages P_{Max} = (R_{BHEL} - 60) divided by corresponding value of 'L'
i.e. (R_{BHEL} - 60)/L

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Note:

- i. In case the value of P_{Max} results in a fraction, the value of P_{Max} is to be rounded off to next whole number
- ii. For $R_{BHEL} = 60$, $P_{Max} = '1'$
- iii. For $R_{BHEL} \geq 80$, there will be no upper limit on P_{Max}

The Bidder shall be considered 'Qualified' as per 'Assessment of Capacity of Bidder' for the subject Tender if $P \leq P_{Max}$
(where P is calculated as per clause 9.I)

IV. Explanatory note:

- a) Similar package means Boiler or ESP or Piping or Turbine or Civil or Structure or Electrical or CI, etc at the individual level irrespective of rating of Plant, and irrespective of whether the subject tender is a single package or as part of combined/composite packages. Normally Boiler, ESP, Piping, Turbine, Electrical, CI, Civil, Structure, etc is considered individual level of package. For example in case the tendered scope is a Boiler Vertical Package comprising of Boiler, ESP and Power Cycle Piping (i.e the 'identified packages as per Table-1 below), the 'PERFORMANCE' part against sl no II above, needs to be evaluated considering all the identified packages (ie Boiler, ESP and Power Cycle Piping) and finally the Bidder's capacity to execute the tendered scope is assessed in line with III above
- b) Identified Packages (Unit wise)

Table-1

	Civil	Electrical & CI	Mechanical
	i). Enabling works ii). Pile and Pile Caps iii). Civil Works including foundations iv). Structural Steel Fabrication & Erection v). Chimney vi). Cooling Tower vii). Others (Civil)	i). Electrical ii). CI iii). Others (Elec& CI)	i). Boiler & Aux (All types including CW Piping if applicable) ii). Power Cycle Piping/Critical Piping iii). LP Piping iv). ESP v). Steam Turbine Generator set & Aux vi). Gas Turbine Generator set & Aux vii). Hydro Turbine Generator set & Aux viii). Turbo Blower (including Steam Turbine) ix). Material Handling x). Material Management xi). Material Handling & Material Management xii). Others (Mechanical)

- c) Bidders who have not been evaluated for at least six package months in the last 36 months in the online BHEL system for contractor performance evaluation in BHEL PS Regions, wef July'2010 shall be considered "NEW VENDOR".

A 'NEW VENDOR' shall be considered qualified subject to satisfying all other tender conditions

A 'NEW VENDOR' if awarded a job (of package/packages identified under this clause) shall be tagged as "FIRST TIMER" on the date of first LOI from BHEL.

The "FIRST TIMER" tag shall remain till execution of work for a period of not less than 09 months, from the commencement of work of first package

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A Bidder shall not be eligible for the next job as long as the Bidder is tagged as "FIRST TIMER" excepting for the Tenders which have been opened on or before the date of the bidder being tagged as 'FIRST TIMER'.

After removal of 'FIRST TIMER' tag, the Bidder shall be considered 'QUALIFIED' for the future tenders subject to satisfying all other tender conditions including 'Capacity Evaluation of Bidders'.

- d) In the unlikely event of all bidders shortlisted against Technical and Financial Qualification criteria not meeting the criteria on 'Assessment of Capacity of Bidders' detailed above, OR leads to a single tender response on applying the criteria of 'Assessment of Capacity of Bidders' or due to non-approval by Customer, then BHEL at its discretion reserves the right to consider the further processing of the Tender based on the **Overall Performance Rating 'R_{BHEL}'** only, starting from the upper band.
- e) 'Under execution' shall mean works in progress as per the following:
- i. up to Boiler Steam Blowing in case of Steam Generator and Auxiliaries
 - ii. upto Synchronisation in case of all other works excepting sl no (i) and (iii)
 - iii. Upto execution of at least 90% of anticipated contract value in case of Civil & Structures (unit wise), Enabling works and upto 90% of material unloading (in tonnage) as per the original contract in case of MM Package.
- Note : BHEL at its discretion can extend (or reduce in exceptional cases in line with Contract conditions) the period defined against (i), (ii) and (iii) above, depending upon the balance scope of work to be completed.
- f) Performance evaluation in CL 9 above is applicable to Prime bidder and consortium partner (or Technical tie up partner) for their respective scope of work

- 10.0 Since the job shall be executed at site, bidders must visit site/ work area and study the job content, facilities available, availability of materials, prevailing site conditions including law & order situation, applicable wage structure, wage rules, etc before quoting for this tender. They may also consult this office before submitting their offers, for any clarifications regarding scope of work, facilities available at sites or on terms and conditions.
- 11.0 For any clarification on the tender document, the bidder may seek the same in writing or through e-mail, as per specified format, within the scheduled date for seeking clarification, from the office of the undersigned. BHEL shall not be responsible for receipt of queries after due date of seeking clarification due to postal delay or any other delays. Any clarification / query received after last date for seeking clarification may not be normally entertained by BHEL and no time extension will be given.
- 12.0 BHEL may decide holding of pre-bid discussion [PBD] with all intending bidders as per date indicated in the NIT. The bidder shall ensure participation for the same at the appointed time, date and place as may be decided by BHEL. Bidders shall plan their visit accordingly. The outcome of pre-bid discussion (PBD) shall also form part of tender.
- 13.0 In the event of any conflict between requirement of any clause of this specification/ documents/drawings/data sheets etc or requirements of different codes/standards specified, the same to be brought to the knowledge of BHEL in writing for clarification before due date of seeking clarification (whichever is applicable), otherwise, interpretation by BHEL shall prevail. Any typing error/missing pages/ other clerical errors in the tender

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- documents, noticed must be pointed out before pre-bid meeting/submission of offer, else BHEL's interpretation shall prevail.
- 14.0 Unless specifically mentioned otherwise, bidder's quoted price shall be deemed to be in compliance with tender including PBD.
- 15.0 Bidders shall submit Integrity Pact Agreement (Duly signed by authorized signatory who signs in the offer), **if applicable**, along with techno-commercial bid. This pact shall be considered as a preliminary qualification for further participation. **The names and other details of Independent External Monitor (IEM) for the subject tender is as given at point (1) above.**
- 16.0 The Bidder has to satisfy the Pre Qualifying Requirements stipulated for this Tender in order to be qualified. The Price Bids of only those bidders will be opened who will be qualified for the subject job on the basis of satisfying the Pre Qualification Criteria specified in this NIT as per Annexure-I (as applicable), past performance etc. and date of opening of price bids shall be intimated to only such bidders. BHEL reserves the right not to consider offers of parties under HOLD.
- 17.0 In case BHEL decides on a 'Public Opening', the date & time of opening of the sealed PRICE BID shall be intimated to the qualified bidders and in such a case, bidder may depute one authorised representative to witness the price bid opening. BHEL reserves the right to open 'in-camera' the 'PRICE BID' of any or all Unsuccessful/Disqualified bidders under intimation to the respective bidders.
- 18.0 Validity of the offer shall be for **six months** from the latest due date of offer submission (including extension, if any) unless specified otherwise.
- 19.0 BHEL reserves the right to decide the successful bidder on the basis of Reverse Auction process. In such case all qualified bidders will be intimated regarding procedure/ modality for Reverse Auction process prior to Reverse Auction and price will be decided as per the rules for Reverse Auction. .
- However, if reverse auction process is unsuccessful as defined in the RA rules/procedures, or for whatsoever reason, then the sealed 'PRICE BIDS' will be opened for deciding the successful bidder. BHEL's decision in this regard will be final and binding on bidder.
- 20.0 On submission of offer, further consideration will be subject to compliance to tender & qualifying requirement and customer's acceptance, as applicable.
- 21.0 In case the bidder is an "Indian Agent of Foreign Principals", 'Agency agreement has to be submitted along with Bid, detailing the role of the agent along with the terms of payment for agency commission in INR, along with supporting documents.
- 22.0 The bidders shall not enter into any undisclosed M.O.U. or any understanding amongst themselves with respect to tender.
- 23.0 Consortium Bidding (or Technical Tie up) shall be allowed only if specified in Pre Qualifying Requirement (PQR) criteria, and in such a case the following shall be complied with:
- 23.1 Prime Bidder and Consortium Partner or partners are required to enter into a consortium agreement with a validity period of six months initially. In case the consortium is awarded the contract, then the Consortium Agreement between the Prime Bidder and Consortium Partner or partners shall be extended till contractual completion period including extension periods if any applicable.
- 23.2 'Stand alone' bidder cannot become a **Prime Bidder** or a **Consortium bidder** or **Technical Tie up bidder** in a consortium (or Technical Tie up) bidding. Prime bidder shall neither be a consortium partner to other prime bidder nor take any other consortium partners. However, consortium partner may

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enter into consortium agreement with other prime bidders. In case of non compliance, consortium bids of such Prime bidders will be rejected.

- 23.3 Number of partners for a consortium Bidding (or Technical Tie up) shall be as specified in the PQR
- 23.4 Prime Bidder shall be as specified in the Pre Qualification Requirement, else the bidder who has the major share of work
- 23.5 In order to be qualified for the tender, Prime Bidder and Consortium partner or partners shall satisfy (i) the Technical 'Pre Qualifying Requirements' specified for the respective package, (ii) "Assessment of Capacity of Bidder" as specified in clause 9.0
- 23.6 Prime Bidder shall comply with additional 'Technical' criteria of PQR as defined in 'Explanatory Notes for the PQR'
- 23.7 Prime Bidder shall comply with all other Pre Qualifying criteria for the Tender unless otherwise specified
- 23.8 In case customer approval is required, then Prime Bidder and Consortium Partner or partners shall have to be individually approved by Customer for being considered for the tender.
- 23.9 Prime Bidder shall be responsible for the overall execution of the contract
- 23.10 In case of award of job, Performance shall be evaluated for Prime Bidder and Consortium Partner or partners for their respective scope of work(s) as per prescribed formats
- 23.11 In case the Consortium partner or partners back out, their SDs shall be encashed by BHEL. In such a case, other consortium partner or partners meeting the PQR have to be engaged by the Prime Bidder, and if not, the respective work will be withdrawn and executed on risk and cost basis of the Prime Bidder. The new consortium partner or partners shall submit fresh SDs as applicable.
- 23.12 In case the prime Bidder withdraws, the whole contract shall be considered cancelled and short closed.
- 23.13 After execution of work, the work experience shall be assigned to the Prime Bidder and the consortium partner or partners for their respective scope of work. After successful execution of two similar works with the same consortium partner or partners under direct orders of BHEL, the Prime Bidder shall be eligible for becoming a 'stand alone' bidder for similar works, subject to certification from BHEL about the active involvement of the Prime Bidder for satisfactory execution of the works.
- 23.14 The consortium partner shall submit SD equivalent to 2% of the total contract value in addition to the SD to be submitted by the prime Bidder for the total contract value. In case there are two consortium partners, then each partner shall submit SD equivalent to 1% of the total contract value in addition to the SD to be submitted by the prime Bidder for the total contract value.
- 23.15 In case of a Technical Tie up, all the clauses applicable for the Consortium partner shall be applicable for the Technical Tie up partner also
- 24.0 The bidder shall submit documents in support of possession of 'Qualifying Requirements' duly self certified and stamped by the authorized signatory, indexed and properly linked in the format for PQR. In case BHEL requires any other documents/proofs, these shall be submitted immediately.
- 25.0 The bidder may have to produce original document for verification if so decided by BHEL.
- 26.0 Order of Precedence

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In the event of any ambiguity or conflict between the Tender Documents, the order of precedence shall be in the order below:

- a. Amendments/Clarifications/Corrigenda/Errata etc issued in respect of the tender documents by BHEL
- b. Notice Inviting Tender (NIT)
- c. Price Bid
- d. Technical Conditions of Contract (TCC)—Volume-1A
- e. Special Conditions of Contract (SCC)—Volume-1B
- f. General Conditions of Contract (GCC)—Volume-1C
- g. Forms and Procedures —Volume-1D

for BHARAT HEAVY ELECTRICALS LTD

Enclosure

01. Annexure-1: Pre Qualifying criteria.
02. Annexure-2: Check List.
03. Annexure-3: Integrity Pact
04. Annexure-4: Important Infor
05. Other Tender documents as per this NIT.

ANNEXURE - 1

PRE QUALIFYING REQUIREMENTS

JOB	BALANCE CIVIL, STRUCTURAL AND ARCHITECTURAL WORKS AT POWER HOUSE, BFP, DG, WORKSHOP, CONTROL & FACILITY AND COMPRESSOR BUILDING INCLUDING FLOORING, WATER PROOFING, SIDE CLADDING, INTERNAL & EXTERNAL PAINTING ETC COMPLETE AT 2X350MW CCPP, GPPCL PIPAVAV, DISTT. AMRELI GUJARAT
TENDER NO	BHE/PW/PUR/PIPVG-CVL BAL/PKG-I/1179

SL NO	PRE QUALIFICATION CRITERIA	Bidders claim in respect of fulfilling the PQR Criteria	
		Name and Description of qualifying criteria	Page no of supporting document. Bidder must fill up this column as per applicability
A	Submission of Integrity Pact duly signed (if applicable) (Note: To be submitted by Prime Bidder & Consortium/Technical Tie up partner jointly in case Consortium bidding is permitted, otherwise by the sole bidder)	Applicable	
B	<p><u>Technical</u> Bidder must have, achieved any one of the following in last seven (7) years as on latest date of bid submission:</p> <p><u>B.1</u> B.1.1) Executed at least One Civil and Architectural works in power/Industrial projects of value not less than of Rs 1160 Lakhs.</p> <p style="text-align: center;">AND</p> <p>B.1.2) Bidder must have executed Fabrication & Erection of Structural Works of at least 168 MT or more in the same or different Work Order.</p> <p style="text-align: center;">OR</p> <p><u>B.2</u> B.2.1) Executed at least Two Civil and Architectural works in power/Industrial projects each of value not less than of</p>	Applicable	

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	<p>Rs 725 Lakhs.</p> <p align="center">AND</p> <p>B.2.2) Bidder must have executed Fabrication & Erection of Structural Works of at least 168 MT or more in the same or different Work Order.</p> <p align="center">OR</p> <p><u>B.3</u></p> <p>B.3.1) Executed at least Three Civil and Architectural works in power/Industrial projects each of value not less than of Rs 580 Lakhs</p> <p align="center">AND</p> <p>B.3.2) Bidder must have executed Fabrication & Erection of Structural Works of at least 168 MT or more in the same or different Work Order.</p>		
C-1	<p><u>Financial TURNOVER</u> Bidders must have achieved an average annual financial turnover (Audited) of Rs 435 Lakhs or more over last three Financial Years (FY) i.e. 2010-2011, 2011-2012, 2012-2013 or for 2009-2010, 2010-2011, 2011-12 if Annual Accounts for FY 2012-2013 are not audited.</p>	Applicable	
C-2	<p>NETWORTH (only in case of Companies) Net worth of the Bidder based on the latest Audited Accounts as furnished for 'C-1' above should be positive</p>	Applicable	
C-3	<p>PROFIT Bidder must have earned cash profit in any one of the three Financial Years as applicable in the last three Financial Years defined in 'C-1' above based on latest Audited Accounts.</p>	Applicable	
D	<p>Assessment of Capacity of Bidder to execute the work as per sl no 9 of NIT (if applicable)</p>	Applicable	By BHEL
E	<p>Approval of Customer (if applicable)</p> <p>Note: Names of bidders (including consortium/Technical Tie up partners in case consortium bidding is permitted) who stand qualified after compliance of criteria A to D shall be</p>	Not Applicable	BY BHEL

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	forwarded to customer for their approval.		
F	Price Bid Opening Note: Price Bids of only those bidders shall be opened who stand qualified after compliance of criteria A to E	Applicable	BY BHEL
F	Consortium criteria (if applicable)	Not Applicable	
<p><u>Explanatory Notes for the PQR (unless otherwise specified in the PQR):</u></p> <ol style="list-style-type: none"> 1. Bidder to submit Audited Balance Sheet and Profit and Loss Account for the respective years as indicated against C-1 above along with all annexures 2. In case audited Financial statements have not been submitted for all the three years as indicated against C-1 above, then the applicable audited statements submitted by the bidders against the requisite three years, will be averaged for three years i.e total divided by three. 3. C-2:-NETWORTH : Shall be calculated based on the latest Audited Accounts as furnished for C-1 above. Net worth = Paid up share capital + Reserves. (Net worth is required to be evaluated in case of companies) 4. C-3:- PROFIT : shall be NET profit (PAT + Non cash expenditure viz depreciation) earned during any one of the three financial years as in C-1 above 5. 'Additional' Criteria in respect of 'Technical' criteria of PQR (as in 'B' above) for Civil, Electrical, CI, unless otherwise specified :- <ol style="list-style-type: none"> 1. Bidder should have executed similar work of any one of the following: <ol style="list-style-type: none"> a. One (1) work of value not less than Rs XXX OR b. Two (2) works of not less than Rs YYY OR c. Three (3) works of not less than Rs ZZZ (Value XXX, YYY, ZZZ shall be as indicated by BHEL 2. 'Similar' work for criteria 5 above means <ol style="list-style-type: none"> a. Civil or Structures or Civil & Structures or Chimney respectively as applicable to the tendered scope in respect of 'CIVIL' Works b. Electrical works in respect of 'ELECTRICAL' c. CI works in respect of 'CI' Works d. Material Handling and/or Management works in respect of 'MM' works 6. Time period for achievement of the 'Technical' criteria of PQR (as in 'B' above) will be the last 7 years ending on the 'latest date' of Bid submission 7. 'EXECUTED' means the Vendor should have achieved the criteria specified in the Technical criteria of PQR (as in 'B' above) even if the Contract has not been completed or closed 8. Unless otherwise specified, for the purpose of 'Technical' criteria of PQR (as in 'B' above), the word 'EXECUTED' means: <ol style="list-style-type: none"> 1. "Completion of RCC Shell and liner (steel or brick as per tendered scope) up to the HEIGHT specified using slip form" in case of RCC Chimney. 2. Achievement of physical Quantities as per respective PQRs in respect of Civil & Structures and Piling Works. 			

BIDDER SHALL SUBMIT ABOVE PRE-QUALIFICATION CRITERIA FORMAT, DULY FILLED-IN, SPECIFYING RESPECTIVE ANNEXURE NUMBER AGAINST EACH CRITERIA AND FURNISH RELEVANT DOCUMENT INCLUSIVE OF WORK ORDER WITH BOQ AND WORK COMPLETION CERTIFICATE AND TDS CERTIFICATE ETC IN THE RESPECTIVE ANNEXURES IN THEIR OFFER.

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ANNEXURE - 2

CHECK LIST

NOTE:-Tenderers are required to fill in the following details and no column should be left blank

1	Name and Address of the Tenderer		
2	Details about type of the Firm/Company		
3.a	Details of Contact person for this Tender	Name : Mr/Ms Designation: Telephone No: Mobile No: Email ID: Fax No:	
3.b	Details of alternate Contact person for this Tender	Name : Mr/Ms Designation: Telephone No: Mobile No: Email ID: Fax No:	
4	EMD DETAILS	DD No: Date : Bank : Amount: Please tick (✓) whichever applicable:- ONE TIME EMD / ONLY FOR THIS TENDER	
5	Validity of Offer	TO BE VALID FOR SIX MONTHS FROM DUE DATE	
		APPLICABILITY(B Y BHEL)	ENCLOSED BY BIDDER
6	Whether the format for compliance with PRE QUALIFICATION CRITERIA (ANNEXURE-I) is understood and filled with proper supporting documents referenced in the specified format	Applicable	YES / NO
7	Audited profit and Loss Account for the last three years	Applicable/Not Applicable	YES/NO
8	Copy of PAN Card	Applicable/Not Applicable	YES/NO
9	Whether all pages of the Tender documents including annexures, appendices etc are read understood and signed	Applicable/Not Applicable	YES/NO
10	Integrity Pact	/Not Applicable	YES/NO
11	Declaration by Authorised Signatory	Applicable/Not Applicable	YES/NO
12	No Deviation Certificate	Applicable/Not Applicable	YES/NO
13	Declaration confirming knowledge about Site Conditions	Applicable/Not Applicable	YES/NO
14	Declaration for relation in BHEL	Applicable/Not Applicable	YES/NO

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15	Non Disclosure Certificate	Applicable/Not Applicable	YES/NO
16	Bank Account Details for E-Payment	Applicable/Not Applicable	YES/NO
17	Capacity Evaluation of Bidder for current Tender	Applicable/Not Applicable	YES/NO
18	Tie Ups/Consortium Agreement are submitted as per format	Applicable/Not Applicable	YES/NO
19	Power of Attorney for Submission of Tender/Signing Contract Agreement	Applicable/Not Applicable	YES/NO
20	Analysis of Unit rates	Applicable/Not Applicable	YES/NO

NOTE : STRIKE OFF 'YES' OR 'NO', AS APPLICABLE. TENDER NOT ACCOMPANIED BY THE PRESCRIBED **ABOVE APPLICABLE DOCUMENTS** ARE LIABLE TO BE SUMMARILY REJECTED.

DATE :

AUTHORISED SIGNATORY

(With Name, Designation and Company seal)

INTEGRITY PACT

Between

Bharat Heavy Electricals Ltd. (BHEL), a company registered under the Companies Act 1956 and having its registered office at "BHEL House" Siri Fort, New Delhi – 110049 (India) hereinafter referred to as "The Principal", which expression unless repugnant to the context of meaning hereof shall include its successors or assigns of the ONE PART

And

_____, (description of the party along with address), hereinafter referred to as "The Bidder/ Contractor" which expression unless repugnant to the context or meaning hereof shall include its successors or assigns of the OTHER PART

Preamble

The Principal intends to award, under laid-down organizational procedures, contract/s for

_____. The Principal values full compliance with all relevant laws of the land, rules and regulations and the principles of economic use of resources, and of fairness and transparency in its relations with its Bidder(s)/ Contractor(s).

In order to achieve these goals, the Principal will appoint Independent External Monitor(s), who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

Section 1 - Commitments of the Principal

- 1.1 The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:-
 - 1.1.1 No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or

accept, for itself or third person, any material or immaterial benefit which the person is not legally entitled to.

- 1.1.2 The Principal will, during the tender process treat all Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential / additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.
- 1.1.3 The Principal will exclude from the process all known prejudiced persons.
- 1.2 If the Principal obtains information on the conduct of any of its employees which is a penal offence under the Indian Penal Code 1860 and Prevention of Corruption Act 1988 or any other statutory penal enactment, or if there be a substantive suspicion in this regard, the Principal will inform its Vigilance Office and in addition can initiate disciplinary actions.

Section 2 – Commitments of the Bidder(s)/ Contractor(s)

- 2.1 The Bidder(s)/ Contractor(s) commit himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.
- 2.1.1 the Bidder(s)/ Contractor(s) will not, directly or through any other person or firm, offer, promise or give to the Principal or to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material, immaterial or any other benefit which he / she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.
- 2.1.2 The bidder(s)/ Contractors(s) will not enter with other Bidder(s) into any illegal or undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.
- 2.1.3 The Bidder(s)/ Contractor(s) will not commit any penal offence under the relevant IPC/PC Act; further the Bidder(s)/ Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

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- 2.1.4 The Bidders (s)/ Contractor(s) will, when presenting his bid, disclose any and all payments he has made, and is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.
- 2.2 The Bidder(s)/ Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

Section 3 – Disqualification from tender process and execution from future contracts

If the Bidder(s)/Contractor(s), before award or during execution has committed a transgression through a violation of Section 2 above, or acts in any other manner such as to put his reliability or credibility in question, the Principal is entitled to disqualify the Bidder(s)/ Contractor(s) from the tender process or take action as per separate “Guidelines on for Suspension of Business Dealings with Suppliers/ Contractors” framed by the Principal.

Section 4 – Compensation for Damages

- 4.1 If the Principal has disqualified the Bidder from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover the damages equivalent to Earnest Money Deposit/ Bid Security.
- 4.2 If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to Section 3, the Principal shall be entitled to demand and recover from the Contractor liquidated damages equivalent to 5% of the contract value or the amount equivalent to Security Deposit/ Performance Bank Guarantee, whichever is higher.

Section 5 – Previous Transgression

- 5.1 The Bidder declares that no previous transgressions occurred in the last 3 years with any other company in any country conforming to the anti-corruption approach or with any other Public Sector Enterprise in India that could justify his exclusion from the tender process.
- 5.2 If the Bidder makes incorrect statement on his subject, he can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

Section 6 – Equal treatment of all Bidders/ Contractors/ Sub-Contractors

- 6.1 The Bidder(s)/ Contractor(s) undertake(s) to obtain from his sub-contractors a commitment consistent with this Integrity Pact and report Compliance to the Principal. This commitment shall be taken only from those sub-contractors whose contract value is more than 20% of Bidder's/ Contractor's contract value with the Principal. The

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- Bidder(s)/Contractor(s) shall continue to remain responsible for any default by his Sub-contractor(s).
- 6.2 The Principal will enter into agreements with identical conditions as this one with all Bidders and Contractors.
- 6.3 The Principal will disqualify from the tender process all bidders who do not sign this pact or violate its provisions.

Section -7 Criminal Charges against violating Bidders/ Contractors/ Sub-contractors

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Sub-contractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the Vigilance Office.

Section – 8 Independent External Monitor(s)

- 8.1 The Principal appoints competent and credible Independent External Monitor for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.
- 8.2 The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the CMD, BHEL.
- 8.3 The Bidder(s)/ Contractors(s) accepts that the Monitor has the right to access without restriction to all contract documentation of the Principal including that provided by the Bidder(s)/ Contractor(s). The Bidder(s)/Contractor(s) will grant the monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his contract documentation. The same is applicable to Sub-contractor(s). The Monitor is under contractual obligation to treat the information and documents of the Bidder(s)/ Contractor(s)/ Sib-contractor(s) with confidentiality.
- 8.4 The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the contract provided such meeting could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.
- 8.5 As soon as the Monitor notices, or believes to notice, a violation of this agreement, he will so inform the Management of the Principal and request the Management to discontinue or take corrective action, or heal the situation, or to take other relevant action. The Monitor can in this regard submit non-binding recommendations. Beyond

this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.

- 8.6 The Monitor will submit a written report to the CMD, BHEL within 8 to 10 weeks from the date of reference or intimation to him by the Principal and, should the occasion arise, submit proposals for correcting problematic situations.
- 8.7 The CMD, BHEL shall decide the compensation to be paid to the Monitor and its terms and conditions.
- 8.8 If the Monitor has reported to the CMD, BHEL, a substantiated suspicion of an offence under relevant IPC/PC Act, and the CMD, BHEL has not, within reasonable time, taken visible action to proceed against such offence or reported it to the Vigilance Office, the Monitor may also transmit this information directly to the Central Vigilance Commissioner, Government of India.
- 8.9 The number of Independent External Monitor(s) shall be decided by the CMD, BHEL.
- 8.10 The word 'Monitor' would include both singular and plural.

Section 9 – Pact Duration

- 9.1 This Pact begins and shall be binding on and from the submission of bid(s) by bidder(s). It expires for the Contractor 12 months after the last payment under the respective contract and for all other Bidders 6 months after the contract has been awarded.
- 9.2 If any claim is made/ lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified as above, unless it is discharged/ determined by the CMD, BHEL.

Section 10 – Other Provisions

- 10.1 This agreement is subject to Indian Laws and jurisdiction shall be registered office of the Principal, i.e. New Delhi.
- 10.2 Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.
- 10.3 If the contractor is a partnership or a consortium, this agreement must be signed by all partners or consortium members.

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- 10.4 Should one or several provisions of this agreement turn out to be invalid, the reminder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.
- 10.5 Only those Bidders/ Contractors who have entered into this agreement with the Principal would be competent to participate in the bidding. In other words, entering into this agreement would be a preliminary qualification.

For & On Behalf of the Principal
(Office Seal)

For & On Behalf of the Bidder/ Contractor
(Office Seal)

ANNEXURE - 4

IMPORTANT INFORMATION

1. The offers of the bidders who are on the banned list as also the offer of the bidders, who engage the services of the banned firms, shall be rejected. The list of banned firms is available on BHEL web site(www.bhel.com---> Tender Notification -> List of Banned Firms)
2. All Statutory Requirements as applicable for this project shall be complied with.
3. Please take note of following Revised Tender Clauses:
 - i. Notice Inviting Tender: SI No 9
 - ii. General conditions of Contract: Clause No 1.15.13 (New), Clause No 2.8.3, 2.8.4 and 2.8.5

Rev 00
6th
JULY

TECHNICAL CONDITIONS OF CONTRACT (TCC)

BHARAT HEAVY ELECTRICALS LIMITED



TECHNICAL CONDITIONS OF CONTRACT (TCC) CONTENTS

SI No	DESCRIPTION	Chapter
Volume-IA	Part-I: Contract specific details	
1	Project Information	Chapter-I
2	Scope of Works and Technical Specifications	Chapter-II
3	Facilities in the scope of Contractor/BHEL (Scope Matrix)	Chapter-III
4	T&Ps and MMEs to be deployed by Contractor	Chapter-IV
5	T&Ps and MMEs to be deployed by BHEL on sharing basis	Chapter-V
6	Time Schedule	Chapter-VI
7	Terms of Payment	Chapter-VII
8	Taxes and other Duties	Chapter-VIII
9	Tender Drawings	Chapter-IX

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter - I: Project Information

1.0	Project Information
1.1	<p><u>INTRODUCTION</u> This is a 2x350MW Gas Based Combined Cycle Power Plant (CCPP) at Pipavav Distt. Amreli (Gujarat). The entire work of this project have been awarded to BHEL on total turn-key basis (EPC Contract) comprising of Design, Engineering, Manufacturing, Supply, transportation, Unloading, Storage, erection, testing, Commissioning with Auxiliaries and ancillaries including civil & structural and land grading works and handing over the plant in phased manner .</p> <p>The plant is located at a distance of 375 Km from Ahmadabad city of Gujarat state on the State Highway NH-34 running between Rajula and Jafrabad. Contractor is advised to visit the site and appraise himself about the conditions of the site and infrastructure available in the area for fulfilling their commitment under the contract.</p> <p style="text-align: center;"><u>APPROACH TO SITE</u></p> <p>Location: In Amreli District of Gujarat State, Latitude 71° 16' N / Longitude 20° 54' E</p> <p>The site is a PIPAVAV Plant of GSPC in Amreli District of State of Gujarat.</p> <p>Power Station Site: 3 Meter above MSL, Graded Level Elevation above mean sea level (MSL)</p> <p>Nearest Railway Station: Rajula</p> <p>Nearest Town: Rajula Town (16km)</p> <p>Nearest Airport: Diu (80 kms) / Ahmadabad (375kms by road)</p> <p>Nearest Seaport: Pipavav (35 kms)</p> <p>Access by Road: PIPAVAV is connected by road from State Highway NH 34 running between Rajula and Jafrabad.</p> <p>1. Owner: GSPC PIPAVAV POWER COMPANY Ltd (GPPCL)</p> <p>2. Project Title: 2X351.43 MW PIPAVAV CCPP</p> <p>3. Location: Village: Kovaya Near pipavav Taluka: Rajula, Distt: Amreli, Gujarat, India</p> <p>4. Nearest Railway Station : Rajula</p> <p>5. Ambient Air Temperature:</p> <p>a. Highest ever temperature recorded (Dry Bulb): 43 deg.C</p> <p>b. Lowest ever temperature recorded (Dry Bulb) : 10 deg.C</p> <p>c. Maximum Daily Average (Dry Bulb) : 33 deg C</p> <p>d. Average Mean temperature (Dry Bulb) : 33 deg C (For CCPP Performance)</p> <p>e. Average Mean temperature (Wet Bulb) : 28 deg C (For CCPP Performance)</p>

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	<p>f. Average Mean temperature (Wet Bulb) : 28.5 deg C (For Cooling Tower Performance)</p> <p>g. Design Ambient for Electrical Equipment : 50 deg C</p>
6. Relative Humidity	<p>a. Maximum: 89%</p> <p>b. Minimum: 10%</p> <p>c. Average: 70%</p>
7. Rainfall	<p>a. Annual Average – 1050 mm in the period June to October. Maximum intensity of rainfall; 150 mm/hr continuously maximum rainfall in a day – 400mm.</p>
8. Wind Data :	16.5 km/hr
9. Seismic Zone -	Zone III as per IS: 1893-2005 (Part – IV)
10. Ambient Air Quality -	The site is located close to Kovaya village and is bordering Birla group Cement plant and colony .This area is classified under semi-urban area.

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Chapter - II : Scope of Works and Technical Specifications

2.0 Scope of Work

Balance Civil, Structural and Architectural works at 2X350MW CCPP, Pipavav

1. Site Leveling and Grading
2. Power House Building Unit #1 & 2 (STG #1, GTG#1, STG#2 and GTG#2)
 - a. IPS flooring
 - i. AB bay at EL (+) 0.00m
 - ii. BC bay Cable vault room at EL (+)0.00m
 - iii. Excitation Room at EL (+) 0.00m
 - iv. Stair case area
 - b. Carborundum Tiles at Turbine hall at EL (+11.00m)
 - c. Heavy duty ceramic tiles
 - i. Excitation Room
 - ii. Toilets at EL (+)0.00m, 10.5m, 17.00m
 - d. Acrylic Emulsion paint
 - i. BC bay Switchgear room at EL (+)4.00m
 - ii. BC bay CER room at EL (+) 10.5m
 - iii. BC bay AC Plant room and PLC Room at EL (+) 10.5m
 - e. Oil bound Distemper
 - i. B Grid wall at EL(+)0.00m to EL(+)22.5m
 - ii. Excitation Room
 - iii. BC bay Cable vault at EL (+)0.00m
 - iv. Generator Gas Room at EL (+) 0.00m
 - v. GCB Room at EL (+) 0.00m
 - f. Waterproofing and Wearing course
 - i. BC bay STG Building at EL (+) 22.5m
 - ii. BC bay GTG Building at EL (+) 14.5m
 - iii. GCB Room
 - g. Doors, Windows and Ventilators of Steel & Aluminum at EL (+)0.00m, 4.00m, 11.50m, 17.00m,22.5m
 - h. Side Cladding and False ceiling
 - i. External Painting (Vineratex)
 - j. Brickwork, Plastering and Plaster of Paris at some places.
 - k. Rain water down take pipes
 - l. Sanitary works
 - m. Water supply
3. BFP Building Unit#1 &2
 - a. IPS Flooring
 - i. Maintenance bay & BFP area at EL (+)0.00m
 - ii. Cable Spreader Room at EL (+) 6.70m
 - iii. MCC Room, SWAS Room and Other area at EL (+) 10.5m
 - b. Heavy Duty Ceramic Tiles at Toilets at EL (+) 0.00m & 10.5m
 - c. Waterproofing and Wearing course at EL (+) 14.5m

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- d. Oil bound distemper
 - i. Toilets at EL (+) 0.00m & 10.50m
 - ii. Cable Spreader Room at EL (+) 6.70m
 - iii. MCC Room, SWAS Room and Other area at EL (+) 10.5m
 - e. Doors, Windows, Ventilators and Rolling Shutters at various levels
 - f. Brickwork, Plastering, POP at some places
 - g. Sanitary works
 - h. Water supply
4. Transformer Yard
- a. Excavation at Mooring Point and Fire Fighting Trench.
 - b. PCC, RCC and Reinforcement of Foundations.
 - c. Backfilling
 - d. Boulder filling in Transformer pits
 - e. Construction of Dewatering pits for Electrical requirement.
5. Control & Facility Building
- a. Brickwork and Plaster up to 3.0m
 - b. Rubble soiling, PCC and RCC at EL (+)0.00m
 - c. Fixing of Doors (PVC, MS, Fire, Aluminum)
 - d. False ceiling
 - e. Internal Painting at EL (+)0.00m to 16.50m
 - f. Water supply and Sanitary works
 - g. Rain water down take pipes.
6. Workshop Building
- a. Excavation
 - b. Soiling, PCC and RCC of Cable Trenches, Grade slab and Foundations.
 - c. Metal deck Sheeting and Side cladding at Roof
 - d. RCC of slabs at various levels (+)0.00m, (+)4.70m, (+)7.10m and (+)11.70m(Roof)
 - e. Brickwork and Plaster
 - f. Precast slab at Cable Trenches
 - g. POP, OBD
 - h. Heavy Duty ceramic tiles at Toilets
 - i. IPS
 - j. Waterproofing and Wearing course
 - k. Sanitary works
 - l. Water supply
 - m. Rain water down take pipe.
7. Overhead Tank
- a. Rubble Soling, PCC and RCC
 - b. RCC of Dome at EL (+)20.8m to 32.72m
 - c. Precast for Stair case at EL (+) 17.6m to 23.6m

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- d. Hand railing for Stair case
- e. Fixing of Cage ladder
- 8. DG Building
 - a. Plinth protection
 - b. IPS flooring
 - c. Internal painting
 - d. Cage ladder
 - e. Painting at Doors, Windows, Ventilators and Rolling Shutters
 - f. Paving at DG area
 - g. Fencing
- 9. Compressor Building
 - a. Dismantling of Brickwork
 - b. Plinth protection
 - c. IPS flooring
 - d. Internal painting
 - e. Cage ladder
 - f. Painting at Doors, Windows, Ventilators and Rolling Shutters
- 10. Clarified Sea Water Pump House, Permeate Water Pump House and Filtered water pump house
 - a. Plinth protection
 - b. Glass fixing at Windows and Ventilators
 - c. Painting at Doors, Windows , Ventilators and Rolling shutters
 - d. Internal and External painting
 - e. Waterproofing and Wearing course
 - f. Boulder filling at Transformer pit at Clarified sea water pump house
 - g. Monorail & Monkey ladder fixing
 - h. Rain water down take pipe
 - i. Water supply and Sanitary works at Clarified Sea Water pump house
- 11. Permeate water Storage tank, Clarified Sea Water Storage Tank, DM Clarified Water Storage tank and Filtered water storage Tank
 - a. Curb Wall at Roof slab
 - b. Cage Ladders
 - c. Construction of Stair case at Clarified Sea water storage tank
 - d. Hand railing at Staircase
 - e. Vent pipe fixing
- 12. RODM Building
 - a. EOT Crane bolts grouting
 - b. Rolling Shutter, Window fixing and Painting
 - c. IPS
 - d. Kota stone at Stair case landing
 - e. Tiling at passage

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- f. Plinth protection
 - g. Monorail fixing
 - h. Rain water down take pipe
13. Effluent Treatment Plant
- a. N-pit
 - i. Hand railing
 - ii. PCC at adjacent side of N-pit
 - b. Guard pond
 - i. Hand railing
 - ii. Area Grading
 - c. SWRO
 - i. Cage Ladder
 - ii. Platform for C&I panel
14. Waste Water Pump House
- a. Brickwork and Plastering
 - b. Doors, Windows, Ventilators and Rolling shutter
 - c. Internal and External Painting (Vineratex)
 - d. Waterproofing and Wearing course
 - e. IPS
 - f. Plinth protection
 - g. Rain water down take pipe
 - h. Cage Ladder and Monorail fixing
15. Electro Chlorination Building
- a. Fixing of Doors, Windows, Ventilators and Rolling shutter and Painting
 - b. Internal and External Painting
 - c. Waterproofing and Wearing course
 - d. IPS and Tiles
 - e. Plinth protection
 - f. Rain water down take pipe
 - g. Cage Ladder and Monorail fixing
 - h. PCC and RCC at some portion
16. Sew water Intake pump house
- a. Fixing of Doors, Windows, Ventilators and Rolling shutter and Painting
 - b. Internal and External Painting
 - c. Waterproofing and Wearing course
 - d. IPS and Tiles
 - e. Plinth protection
 - f. Rain water down take pipe
 - g. Cage Ladder
 - h. Septic tank and Soak pit
 - i. Water supply and Sanitary works

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- j. RCC Grade Slab near Intake Sump
- 17. HRSG to STACK area Paving.
- 18. Car, Two wheeler and Cycle Parking
- 19. Structural works
 - a. Fabrication, Erection and Painting
 - i. Workshop building
 - ii. Monorails for all buildings
 - iii. Staircase at Power house and BFP building
 - iv. Cage ladders at all buildings
 - v. Walkway platforms at CW Pump house and Gas pipeline
 - vi. Crane girder at Workshop building
 - b. Hand railing
 - c. Painting at Pipe rack

The scope of works covers all balance (either in complete or partial stage) civil, structural, architectural, finishing, water proofing treatment of RCC Tanks and development works for the above areas including supply of all Materials, Labor, Tools and Plants but **excluding supply of Reinforcement (HCR-M Grade IS 1786, Fe 500), earthing rods and STRUCTURAL STEEL which will be supplied by BHEL free of cost** as detailed elsewhere in the contract.

For detailed specification of the scope of work, please refer Section D (Volume II B) and GPPCL document – Volume III (Pipavav Civil) provided with the Technical bid. In case of conflict, GPPCL document shall prevail.

2.0.2 Other Related Activities:

1. **Draw Construction Power & Water from Customer's given Point at one location inside the plant including all materials.**
2. **Taking delivery of reinforcement bars and Structural steel from BHEL stores including loading, transportation and unloading, stacking, preservation etc. at site.**

2.0.3 Field Quality Assurance:

The contractor shall be responsible for day-to-day quality checks of concrete and other building materials during the progress of work. All quality records and log sheets shall be maintained as per the requirement of BHEL/BHEL'S customer and as per field quality plan approved by **BHEL/GPPCL**. For this, contractor shall either establish their own field quality lab or have tie-up with approved lab by BHEL in/outside of the plant if so required by BHEL.

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2.0.4 Reconciliation of steel issued by BHEL (free of cost):

2.0.4.1 MATERIAL

- 1) Steel like (structural, reinforcement bars and 40mm dia. MS round earthing rod/ GI flats) as specified in relevant BOQ shall be issued at free of cost by BHEL for use in the work covered in this contract from BHEL stores/store yard. The contractor shall collect these materials from BHEL stores/store yard at specified places at his own cost and store the same at the work site or in his stores as per standard norms. Materials issued will be used only for construction of permanent works.
- 2) BHEL reserves the right to recover from the contractor any loss arising out of damage/ theft or any other causes or during verification/stacking or at any time under the custody of the contractor.
- 3) The contractor shall take care of material issued by BHEL and shall protect the same from damage and weathering. Contractor shall construct waterproof cement store (**capacity minimum 2000 Bags**) for storing and stacking of cement **procured by the contractor**. Design & drawing required for storage of cement shall be prepared by the vendor and shall be approved by BHEL's site in-charge before taking up for the construction work.
- 4) The contractor shall in no case be entitled for any compensation on account of any delay in supply or non-supply thereof for all or any such materials. However in case of non-availability of any specific section(s) which delays the completion of work, such cases shall be recorded separately during the joint review meeting at site and the shall be considered for time extension of contract.
- 5) No material shall be issued to the contractor except as those indicated and mentioned above i.e structural steel, reinforcement and MS round earthing rod/GI flats as specified in relevant BOQ. Contractor will have to make his own arrangement at his own cost for procurement of any other materials except as mentioned above, as required for the works and of such quality as acceptable to BHEL.
- 6) The contractor shall maintain proper store account for all the BHEL issued materials and shall give **Three (03) copies of monthly-computerized reconciliation statement** of such account showing total receipt, consumption and balance at site to the BHEL. BHEL Engineer's certification for the reconciliation of steel shall be final. The detailed reconciliation (dia. Wise or as required) shall be done **at least once in six months (06) or before submission of final bill which comes earlier**.
- 7) Contractor shall also carryout in complete association with BHEL, the material management functions and execution like day-to-day update of materials, issued to contractor, accounting for surplus/scrap material returned etc. These functions shall also be carried out through computerized system utilizing suitable software.

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Contractor shall engage experienced software personnel to associate on dedicated basis for efficient discharge of the same in time.

- 8) The contractor shall solely be responsible for the safety & security of material after it is handed over and issued to contractor by the BHEL.
- 9) BHEL issued materials, shall not be under any circumstances whatsoever, and shall be taken out of the project site unless otherwise permitted by BHEL for outside job.

2.0.5 FOLLOW UP & HANDLING OF MATERIALS ISSUED BY BHEL:

- 1) BHEL will place Purchase Order (P.O) on the manufactures for procurement of structural steel, reinforcement bars, SS steel and Earthing rods etc as specified in BOQ and successful bidders will provide all necessary supports for follow up/chase up with manufactures/supplies/vendors for speedy delivery of materials at site including posting a concerned person(s) for short duration at manufactures factory within their quoted rates.
- 2) Steel like (structural, reinforcement and MS round earthing rod/ GI flats) as specified in relevant BOQ shall be issued at free of cost by BHEL for use in the work covered in this contract from BHEL stores/storage yard. As per the approved drawings contractor shall furnish their section wise requirement well in advance.
- 3) Materials shall be issued by BHEL based on the weight basis/linear measurements & sectional weight and payment shall also be done in similar way. However on specific request of the contractor **“as a special case to expedite the job”** the consignment received at BHEL stores can directly be diverted to the work site following issuance procedure of BHEL. Such direct issues shall be as per the Chelan/document/LR received with the consignment. Contractor at their cost in such cases shall do unloading of materials from lorry.
- 4) It would be the responsibility of the contractor to keep in constant contact with BHEL site to find out the delivery status, arrival of the consignments and arrange for escort to accompany the truck/ trailer for transportation of above materials by BHEL’s supplier, if necessary.
- 5) All materials issued by BHEL shall be stacked, stored above ground level **by use of concrete or wooden sleepers. No materials shall remain on ground at any time.** All concrete or wooden sleepers required for stacking the materials shall be arranged by contractor (successful bidder of this package) at his own cost within the quoted rates. All other equipments like winches, D-Shackles, slings of various sizes, max puller, pulley blocks, jacks, trucks, trailers etc. Required for such handling of steel from BHEL stores/storage yard etc. Shall be arranged by contractor within quoted/accepted rates.

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- 6) The contractor shall take delivery of the materials from the designated place within the project premises at his own cost and store the same at his stores as per standard norms. Open land for such purposes shall be provided by BHEL on free of cost basis. Temporary barbed wire fencing of the open storage yard is to be done by the contractor and is included under the scope of his work. Contractor shall also remove grass, bushes, trees etc wherever required off the land provided to him and shall make proper continuous up keeping of the open yard /land by removing grass, bushes trees etc and same is included under the scope of his work & No extra payment shall be made to the contractor in this regard. The bidder shall make complete arrangement of necessary security personnel's to safeguard all such materials in his custody. Materials issued will be used only for construction of permanent works. The contractor shall take care of material issued by BHEL and shall protect the same from theft, damage and weathering. Excessive rusting of steel in custody of agency/contractor must be avoided. **In case, due to any cause attributable to the contractor, such rusting of steel occur rendering the same unusable, then such quantity of steel shall be recovered from the interim payment at the penal rate specified in the tender.**

2.0.5 ISSUE OF BHEL MATERIALS

Issue of steel: -The steel shall be issued to the contractor on the following basis:

(A)	Structural Steel, MS Flats , MS Plates/ Chequered Plates etc	Weighment Basis (unit – MT) / Linear Measurement (section wt. As per relevant IS code)
(B)	Reinforcement Steel	Weighment basis (unit – MT)/ linear and earthing rod (MS round). Measurement (section wt. As per relevant IS code)

All the steel (structural, reinforcement, earthing ms rod, MS/GI flats) issued by the BHEL shall be properly accounted for. The total quantity of steel required for the work will be calculated from the approved bar bending schedule, fabrication drawings, approved laps, chairs and lugs. The measurement for payment as well as for accounting shall be based on linear measurements and the sectional weight as indicated in the following IS specifications.

Sl.no	IS code (s)	Description
1	IS: 808-1964	Beams, Channels And Angles
2	IS: 1730-1961	Plates, Sheets And Strips
3	IS:1732-1971/ IS-1786	Rounds including deformed high yield strength bars/ TMT rebar.

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In case any such sectional weights are not available in the above documents, the manufacturer recommendation shall be binding. The steel issued to the contractor shall be mainly in standard length and sections as received from the supplier.

However, the contractor shall be bound to accept the steel in length as available in the project stores no claims for extra payment because of issue of non-standard length will be entertained. In case MS flats as required in the fabrication of structures are not available, the contractor shall cut such width out of the available MS plates to make flats at no extra cost till such material is available and procured by BHEL.

The contractor shall satisfy himself of the quality and quantity of the materials at the time of taking delivery from BHEL stores/storage yard. No claims whatsoever will be entertained by BHEL because of quality or quantity after the contractor takes the materials from BHEL stores/storage yard.

The contractor shall submit to the engineer, a statement indicating estimated quantity of steel required during a quarter at least two months in advance of the quarter. In addition, the contractor shall also furnish the **estimated requirement of steel during a month by the third week of the previous month indicating his requirement.** Following shall be limit for the maximum quantity of BHEL issue materials that would be with the contractor at any point of time when work is in progress (excluding what has already been incorporated in the works).

Sl. No.	Issue of materials	Max. Qty in contractor's store.
1	Reinforcement steel & Earthing rod 40mm. MS Round.	Requirement of one month
2	Structural steel	Requirement of one month

Bidders to ensure that no lamination materials are taken over by them from BHEL stores. Fabrication wastage, if any due to above, shall not be compensated by BHEL.

Bidder to note that all fasteners like MS/HT/HSFG bolts/Nuts, Lock Nuts, Washers etc shall be supplied by the bidder as per relevant items of BOQ.

Bidder to note that cement and steel required for their enabling job like store/site office etc shall be arranged at his own cost.

2.0.6 RETURN OF MATERIALS:

Return of steel:-

All surplus steel and all wastage materials will be taken back on weight basis. However linear measurements shall also be acceptable for unused / full size materials.

Surplus, unused and un-tampered steel shall be sorted in section-wise and returned separately for a place directed by BHEL/engineer within the project area, return of such materials will not be entitled to any handling and incidental charges.

All wastage / scrap (including melting scrap, wastage, and unusable scrap) shall be returned item wise to the stores and a receipt obtained for material

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accounting purposes. Return of such material will not be entitled to any additional cost due handling and transportation and incidental charge.

All scrap for reinforcement (cut pieces) shall be returned separately.

All scrap for structural steel including melting scrap shall be returned separately.

2.0.7 STEEL CONSUMPTION AND WASTAGE:-

Structural steel, reinforcement and earthing rod 40 mm MS round steel, GI flats consumption and wastage.

- 1) The theoretical consumption of various sections and/or diameter of reinforcement and earthing MS round/GI flats, rails shall be based on approved construction drawing and bar bending schedule. Weight shall be calculated considering/based on linear measurements and the sectional weights as per Indian standards. No extra cost shall be payable to the contractor for any deviation in weights for the different procedures adopted for issue and calculation of the **theoretical consumption including rolling tolerances**. However if rolling margins exceeds the limit stipulated in IS codes, the same shall be considered for reconciliation purpose.
- (A) Actual consumption = Issue – Surplus (unused).
- (B) Surplus = Un-tampered and unused qty. of steel returned by the contractor to BHEL store along-with relevant documents.
- (C) Wastage = Actual consumption – Theoretical consumption.

❖ Wastage of reinforcement steel

Allowable wastage: - plus five percentage (+5%) of the theoretical consumption shall be considered as allowable wastage for both reinforcement steel as well as earthing rod/flats. Wastage is further classified as cut pieces/serviceable scrap (pieces of reinforcement steel/GI strip/40mm dia. MS earth rod of lengths 3 m and above. Both serviceable & unserviceable shall be accounted separately.

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Sl. No.	Reinforcement steel & earthing rod 40 mm MS round	Basis of issue & Penal recovery
R-1	Theoretical consumption (without considering wastage and scrap or loss)	Free
R-2	Wastage limited to plus five percent (+5%) of aforesaid theoretical Consumption (R-1) towards allowable Wastage (cut pieces plus scrap to be Returned to BHEL).	Free
R-3	Wastage beyond five percent (+5%) of the theoretical consumption above (R-1). (Cut pieces plus scrap to be returned to BHEL).	Penal Rate

❖ **Wastage of structural steel:**

Allowable wastage: - plus five percentage (+5%) of the theoretical consumption shall be considered as allowable wastage for both structural steel as well as MS plates. Wastage as further classified as cut pieces/serviceable scrap (pieces of rolled section lengths 3 m and above, MS plate 1.0 m² and above with minimum width 200 mm) and scrap/unserviceable (less than above) measured as per actual weighment basis. Invisible wastage (loss of materials due to gas cutting, straightening of edges etc) shall be limited to 0.5% (zero point five percent) of theoretical consumption and shall be considered for reconciliation purposes only. But this invisible wastage shall be considered to be included in allowable wastage (i.e. Five percent).

Sl. No.	Structural Steel & MS plats , Rolled section, plates & SS liner etc	Basis of issue & Penal recovery
S-1	Theoretical consumption (without considering wastage and scrap or loss)	Free
S-2	Wastage limited to plus five percent (+5%) of aforesaid theoretical Consumption (S-1) towards allowable Wastage (cut pieces plus scrap to be Returned to BHEL).	Free
S-3	Wastage beyond five percent (+5%) of the theoretical consumption above (S-1). (Cut pieces plus scrap to be returned to BHEL).	Penal Rate

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2.0.8 RECONCILIATION OF BHEL ISSUED MATERIALS: -

- 1) The contractor shall submit a reconciliation statement of steel issued to them with each RA bill. BHEL engineer's certification will be final on this matter.
- 2) At the time of submission of bill(s), the contractor shall properly account for the material issued to him as specified herein to the satisfaction of BHEL certifying that the balance materials are available with contractor's custody at site.
- 3) At the time of submission of bills by the contractor, if it is noticed by BHEL that the wastage is high and calls recovery at the penal rate, then BHEL will proceed for recovery for the excess wastage as per penal recovery rates as specified.
- 4) The approved drawings/bar bending schedules are to be considered for the purpose of reconciliation of materials.

2.0.9 RECOVERY OF MATERIAL:-

- **If wastage exceeds the specified limit, the recovery of excess wastage shall be made from monthly r/a bill at the penal rate.**

Penal Rate of Materials

Sl.No	Description	UOM	Penal Rate (in Rs)
A	Reinforcement steel and earthing rod etc.	MT	55, 000/-
B	Structural steel		
1	Chqd. Plates/MS plates	MT	60, 000/-
2	Flats/ Beams/ Channel/ Angles etc. (rolled sections).	MT	60, 000/-

2.0.10 PROCUREMENT OF MATERIALS BY SUCCESSFUL CONTRACTORS AND TESTING:

Material required for the entire job (other than issued by BHEL as explained above) like cement, sand, aggregates, windows, doors, ventilators, rolling shutter, sanitary fixtures, painting & finishing material, stop-log gates, travelling screen, electrical fittings and wiring material and all other material required for the completion of entire scope, bolts & nuts, HSFG/HT bolts have to be arranged by the contractor, except those specifically indicated as BHEL scope of supply. BHEL reserves the right to reject any material not found satisfactory. Contractor shall produce manufacturer's test certificate (*MTC*) for cement for every batch of manufacturing along with each consignment brought to the site. Cement shall be procured from fresh stock only. Apart from the above, it shall be the responsibility of contractor to get the testing of cement, or any other materials procured from outside laboratory approved by **BHEL/PIPAVAV** to ascertain the quality if insisted by **BHEL/BHEL's customer**.

Rate quoted shall be inclusive of all such contingencies and no additional payment shall be made on this account. For this purpose, sample shall be collected at site in presence of

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BHEL/BHEL customer's representative. The variation in price of all the plant materials supplied by the contractor shall be subject to the relevant price variation clause (PVC).

Bidders are requested to have pre-bid visit/ inspection of site to make them fully acquainted with the site situation & nature of job. No claim shall be entertained at later date on account of non-familiarization of site condition. Bidders may fix up their site visit in consultation with construction manager BHEL site office PIPAVAV. Name, address & contact point of site is as below:

SHRI K.G PRABHU (CONSTRUCTION MANAGER)
BHEL SITE OFFICE – 2X350 MW CCPP PIPAVAV

E-MAIL ID: prabhu@bhelpswr.co.in

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Chapter – III : Facilities in the scope of Contractor/BHEL

Sl. No.	Description	Scope / to be taken care by		Remarks
		BHEL	Bidder	
3.1	PART I ESTABLISHMENT			
3.1.1	FOR CONSTRUCTION PURPOSE:			
a	Open space for office (as per availability)	Yes		Location will be finalized after joint survey with owner
b	Open space for storage (as per availability)	Yes		Location will be finalized after joint survey with owner
c	Construction of bidder's office, canteen and storage building including supply of materials and other services		Yes	
d	Bidder's all office equipments, office / store / canteen consumables		Yes	
e	Canteen facilities for the bidder's staff, supervisors and engineers etc		Yes	
f	Fire fighting equipments like buckets, extinguishers etc		Yes	
g	Fencing of storage area, office, canteen etc of the bidder		Yes	
3.1.2	FOR LIVING PURPOSES OF THE BIDDER			
a	Open space for labour colony (as per availability)		Yes	Contractor has to make his own arrangements for space, shelter and transportation of labors as per their requirement.
b	Labour Colony with internal roads, sanitation, complying with statutory requirements		Yes	
3.2.0	ELECTRICITY			
3.2.1	Electricity for construction purposes 3 Phase 415/440 V (To be specified whether chargeable or free)			

TECHNICAL CONDITIONS OF CONTRACT (TCC)
Chapter – III : Facilities in the scope of Contractor/BHEL

Sl. No.	Description PART I	Scope / to be taken care by		Remarks
		BHEL	Bidder	
a	Single point source	Yes		Free. At a distance of 500m from site (distance is only estimated, It may vary up to any extent depending on site condition). In case of power failure due to maintenance or any reason, contractor shall have to arrange the same at his own expenses through DG set etc. to ensure progress of work.
b	Further distribution including all materials, Energy Meter, Protection devices and its service		Yes	
c	Duties and deposits including statutory clearances if applicable		Yes	
3.2.2	Electricity for the office, stores, canteen etc of the bidder (to be specified whether chargeable or free)			Free at an available distance. In case of non-availability of power due to any reason from customer point, contractor shall have to arrange the same at his own expenses through DG set.
a	Single point source	Yes		
b	Further distribution including all materials, Energy Meter, Protection devices and its service		Yes	
c	Duties and deposits including statutory clearances if applicable		Yes	
3.2.3	Electricity for living accommodation of the bidder's staff, engineers, supervisors etc		Yes	Contractor has to make his own arrangement.

BHEL-PSWR

Tender Specification No: **BHE/PW/PUR/PIPVG-CVL BAL/PKG-I/1179**

Technical Conditions of Contract –Volume I A (Part I : Contract Specific Details)

TECHNICAL CONDITIONS OF CONTRACT (TCC)
Chapter – III : Facilities in the scope of Contractor/BHEL

Sl. No.	Description PART I	Scope / to be taken care by		Remarks
		BHEL	Bidder	
a	Single point source		Yes	
b	Further distribution including all materials, Energy Meter, Protection devices and its service		Yes	
c	Duties and deposits including statutory clearances if applicable		Yes	
3.3.0	WATER SUPPLY			
3.3.1	For construction purposes: (to be specified whether chargeable or free)			
a	Making the water available at single point	Yes		Free, At a distance of 500M from site. In Case Of non-availability of construction water due to Maintenance or any reason from customer point, contractor shall have to arrange construction water at his own expenses.
b	Further distribution as per the requirement of work including supply of materials and execution		Yes	
3.3.2	<u>Water supply for bidder's office, stores, canteen etc</u>			
a	Making the water available at single point	Yes		Free, At a distance of 500M from site. In Case of non-availability of construction water due to Maintenance or any reason from customer point, contractor shall have to arrange construction water at his own expenses.
b	Further distribution as per the requirement of work including supply of materials and execution		Yes	

TECHNICAL CONDITIONS OF CONTRACT (TCC)
Chapter – III : Facilities in the scope of Contractor/BHEL

Sl. No.	Description PART I	Scope / to be taken care by		Remarks
		BHEL	Bidder	
3.3.3	<u>Water supply for Living Purpose</u>			Contractor has to make his own arrangement.
a	Making the water available at single point		Yes	
b	Further distribution as per the requirement of work including supply of materials and execution		Yes	
3.4.0	LIGHTING			
a	For construction work (supply of all the necessary materials) 1. At office/storage area 2. At the preassembly area 3. At the construction site /area		Yes	
b	For construction work (execution of the lighting work/ arrangements) 1. At office/storage area 2. At the preassembly area 3 At the construction site /area		Yes	
c	Providing the necessary consumables like bulbs, switches, etc during the course of project work		Yes	
d	Lighting for the living purposes of the bidder at the colony / quarters		Yes	
3.5.0	COMMUNICATION FACILITIES FOR SITE OPERATIONS OF THE BIDDER			
a	Téléphone, fax, internet, intranet, e-mail etc.		Yes	
3.6.0	COMPRESSED AIR wherever required for the work		Yes	
3.7.0	Demobilization of all the above facilities		YES	
3.8.0	TRANSPORTATION			
a	For site personnel of the bidder		Yes	
b	For bidder's equipments and consumables (T&P, Consumables etc)		Yes	

TECHNICAL CONDITIONS OF CONTRACT (TCC)
Chapter – III : Facilities in the scope of Contractor/BHEL

Sl. No.	Description PART II 3.9.0 ERECTION FACILITIES	Scope / to be taken care by		Remarks
		BHEL	Bidder	
3.9.1	Engineering works for construction:			NOT APPLICABLE
a	Providing the erection/constructions drawings for all the equipment covered under this scope	Yes		For Details PI refer Chapter-IX-
b	Drawings for construction methods	Yes	Yes	In consultation with BHEL
c	As-built drawings – where ever deviations observed and executed and also based on the decisions taken at site- example – routing of small bore pipes		Yes	Changes are to be marked in drawing & handover to BHEL on completion of work.
d	Shipping lists etc for reference and planning the activities			NOT APPLICABLE
e	Preparation of site erection schedules and other input requirements		Yes	In consultation with BHEL
f	Review of performance and revision of site erection schedules in order to achieve the end dates and other commitments	Yes	Yes	In consultation with BHEL
g	Weekly erection schedules based on Sl No. e		Yes	In consultation with BHEL
h	Daily erection / work plan based on Sl No. g		Yes	In consultation with BHEL
i	Periodic visit of the senior official of the bidder to site to review the progress so that works are completed as per schedule. It is suggested this review by the senior official of the bidder should be done once in every two months.		Yes	
j	Preparation of preassembly bay			NOT APPLICABLE
k	Laying of racks for gantry crane if provided by BHEL or brought by the contractor/bidder himself			NOT APPLICABLE
L	Arranging the materials required for preassembly			NOT APPLICABLE

TECHNICAL CONDITIONS OF CONTRACT (TCC)
Chapter – IV: T&Ps and MMEs to be deployed by Contractor

A: TOOL & PLANTS

SN	DESCRIPTION	
1	(a) T &Ps for Civil works	
	SL	Qty
	Major T&P items	
	1. Hydra (8 / 10 T Cap.)	01Nos.
	2. Welding m/c	03Nos.
	3. Grinding machine	02Nos.
	4. Hand cutting set	01Nos
	5. DG set of 60 KVA	01Nos.
	6. 15t/20t tractor & trailor	01Nos.
	7. Mini batching plant (5/10 Cub.m./Hr.)	01Nos.
	8. Conventional concrete mixer machine	01 Nos.
	9. Vibrators	05Nos.
	10. Self priming Dewatering pump of various capacity (Diesel/Electric) From 3 HP to 12 HP	01Nos.
	11. Curing / dewatering pump – 1.5 / 2 HP	02Nos.
	12. JCB /Poclein	As per requirement
	13. Ply Shuttering board with adequate supporting structure – (Old steel shuttering plates will not be allowed).	As per requirement.
	14. Dumper	01No.
	15. Reinforcement bending machine	01No.
	16. Reinforcement cutting machine	01No.
	17. Power driven earth rammer	02Nos.
	18. Total Station	01No.
	19. Auto level & staff	01No.
	20. Rapid moisture meter	01 No
	21. Mother oven	01 No
	22. UTS for cube testing	01 no
	23. Concrete Cube Moulds	12 Nos.
	24. Tippers	2 Nos.
	25. Water Tanker	01No.
	26. Poles, Cables, Halogens, Bulbs Etc For Area Illumination	As per requirement
	27. Computer (window Xp) with printing & CD writing facility	2sets
	28. Communication facilities – landline, WAN, mobile, fax etc.	As per requirement

TECHNICAL CONDITIONS OF CONTRACT (TCC)
Chapter – IV: T&Ps and MMEs to be deployed by Contractor

SN	DESCRIPTION
	<p>(b) Civil Works - Field Quality Lab Equipments – (Optional): Bidders may have a tie-up with other agency with approval of BHEL for quality checks</p> <p>As per requirement</p> <p>Bidder must submit T&P deployment plan inclusive of above T&Ps as per format Annex – VII</p>

B: MEASURING AND MONITORING DEVICES (MMD):

AS PER REQUIREMENT TO BE FINALIZED AT SITE.

NOTE:

This above list is only indicative and neither exhaustive nor limiting. Quantities indicated above are only the minimum required. Contractor shall deploy all necessary T&P to meet the schedules & as prescribed by BHEL engineer and required for completion of work.

TECHNICAL CONDITIONS OF CONTRACT (TCC)
**Chapter – V: T&Ps and MMEs to be deployed by BHEL on sharing
basis**

BHEL WILL NOT PROVIDE ANY T & P's FOR THIS WORK

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VII: TERMS OF PAYMENT

6.1 TIME SCHEDULE & MOBILIZATION

6.1.1 INITIAL MOBILIZATION AND TENTATIVE SCHEDULE

Contractor shall reach site, make his site establishment and be ready to commence the work within two weeks from the date of fax Letter of Intent or as per directions of Construction Manager/ Project Manager of BHEL.

All bidders are requested to note that works fronts are available in all the areas specified in detailed scope of work in parallel and hence successful bidder must mobilize their resources for working in all parallel fronts so as complete the entire work within the stipulated contract period.

The contractor has to subsequently augment his resources in such a manner that the entire works are completed within the contract period of **06 (Six) months** in a manner required by BHEL to match with the project completion and handing schedule.

THE OVERALL CONTRACT PERIOD SHALL of 06 Six) months.

6.1.2

In order to meet above schedule and other intermediate targets/activities as set by BHEL Engineer In charge at site, to meet customer requirements/project schedule, contractor shall arrange all necessary resources and work force in consultation with BHEL Construction Manager at site to undertake works concurrently in all possible parallel work fronts as already available.

Contractor shall note that individual milestones as above shall be achieved as per schedule furnished above. **The date of start of first excavation/various major works specified in detail scope of work shall be reckoned as the start of contract period for this purpose, which ever started earlier.**

The contractor shall reach site and establish his site office and mobilize necessary resources well in advance of actual commencement of the contract time schedule as per directions of BHEL engineer Incharge.

DATE OF START OF WORK SHALL BE THE DATE ON WHICH FIRST EXCAVATION/ VARIOUS MAJOR WORKS SPECIFIED IN DETAIL SCOPE OF WORK SHALL BE RECKNOED AS START OF CONTRACT PERIOD FOR THIS PURPOSE, WHICHEVER STARTED EARLIER.

The contractor shall complete all the work in the scope of this contract within the contract period.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VII: TERMS OF PAYMENT

7.00 TERMS OF PAYMENT

7.0.1

The contractor shall submit his monthly on account bills with all the details required by BHEL on specified date every month covering progress of work in all respects and areas from the 25th of previous calendar month to 24th of the current month.

7.0.2

General conditions of contract shall be referred to as regards mode of payment, and measurement of the work completed.

7.0.3

Release of payment in each running bill will be restricted to **95% of the value of work admitted**, as per the percentage break-up for the stage of work completion stipulated vide clauses hereinafter.

The 5% retention amount shall be released as per GCC clause no. 2.22. The workmanship guarantee period for this contract shall be **12 months from the date of completion** of entire work as certified by BHEL

7.0.4

The payment for running bills will normally be released within around 30 days of submission of running bill with measurement sheets. Contractor shall make his own arrangement for making payment of impending labour wages and other dues in the meanwhile.

7.0.5

BHEL will release payment through **Electronic Fund Transfer (EFT)/RTGS**. In order to implement this system, the following details are to be furnished by the contractor pertaining to his bank accounts where proceeds will be transferred through **BHEL's banker**:

Name of the Company

Name of Bank

Name of Bank Branch

City/Place

Account Number

Account type

IFSC code of the Bank Branch

MICR Code of the Bank Branch

BHEL May Also Choose To Release Payment By Other Alternative Modes As Suitable.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VII: TERMS OF PAYMENT

7.0.6 Progressive Payment For Civil

The percentage of payment for progressive completion of work in various categories of work shall be as under:

7.0.7 Civil Work

100% of Item Rate on Pro-Rata Basis against Monthly RA Bills.

The RA bill payment shall be made as per Cl no 10.0 of Chapter –X of SCC and as per CL NO: 2.6 of GCC

7.0.8 Extra/Additional Items Of Work:-

As Per GCC.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-VIII: Taxes and Other Duties

8.0 TAXES, DUTIES, LEVIES (Consolidated Rev 03 dated 09/04/2013)

8.1. For All types of works excepting works covered under sl no 8.2

8.1.1

The contractor shall pay all (save the specific exclusions as enumerated in this contract) taxes, fees, license charges, deposits, duties, tools, royalty, commissions or other charges which may be levied on the input goods & services consumed and output goods & services delivered in course of his operations in executing the contract. In case BHEL is forced to pay any of such taxes, BHEL shall have the right to recover the same from his bills or otherwise as deemed fit.

However, provisions regarding Service Tax and Value Added Tax (VAT) on output services and goods shall be as per following clauses.

8.1.2 Service Tax & Cess on Service Tax

Contractor's price/rates shall be exclusive of Service Tax and Cess on Services. In case, it becomes mandatory for the contractor under provisions of relevant act/law to collect the Service Tax & Cess from BHEL and pay the same to the concerned tax authorities, such applicable amount will be paid by BHEL at the prevailing Service Tax Rate (presently 12.36 %) on the admitted bill value.

Contractor shall submit to BHEL documentary evidence of Service Tax registration certificate specifying name of services covered under this contract. Contractor shall submit serially numbered Service Tax and Cess Invoice, signed by him or a person authorized by him in respect of taxable service provided, and shall contain the following, namely,

1. The name, address and the registration number of the contractor,
2. The name and address of the party receiving taxable service,
3. Description, classification and value of taxable service provided and,
4. The service tax payable thereon.

All the Four conditions shall be fulfilled in the invoice before release of service tax payment.

Wherever, more than one route/option are available for discharge of service tax liability under a particular service, (e.g. "works contract Service"), contractor shall obtain prior written consent from BHEL site before billing the amount towards Service Tax.

8.1.3 VAT (Sales Tax /WCT)

As regards Value Added Tax (VAT)/CST on transfer of property in goods involved in Works Contract (previously known as Works Contract Tax) applicable as per local laws, the price quoted by the contractor shall be inclusive of the same and in no case input or output VAT/CST will be reimbursed extra.

In any case the Contractor shall register himself with the respective Sales Tax authorities of the state and submit proof of such registration to BHEL along with the first RA bill. Contractor will submit all the details of VAT/CST paid for the contract in the prescribed format of the respective state VAT laws. Also, the contractor will issue the tax Invoices to BHEL as per the Tax laws of respective state on monthly

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-VIII: Taxes and Other Duties

basis. Contractor shall also be required to furnish to BHEL necessary proof of VAT remittance on monthly basis.

Deduction of tax at source shall be made as per the provisions of law and is to be construed as an advance tax paid by the contractor and no reimbursement thereof will be made.

Further, if BHEL, at the instance of customer or otherwise adopts the specific route for discharging output VAT liability itself, benefit of the reduction in liability of the contractor will be passed on to BHEL.

In case, BHEL is forced to pay any VAT liability on behalf of contractor, the same will be recovered from contractor's bill or otherwise as deemed fit

8.2 'Enabling Works'

~~The contractor shall pay all (save the specific exclusions as enumerated in this contract) taxes, fees, license charges, deposits, duties, tools, royalty, commissions or other charges which may be levied on the input goods & services consumed and output goods & services delivered in course of his operations in executing the contract. In case BHEL is forced to pay any of such taxes, BHEL shall have the right to recover the same from his bills or otherwise as deemed fit. (i.e. rates quoted by bidder shall be inclusive of Service Tax, VAT/WCT and all other taxes and duties)~~

~~However, Since the proposed work is in the nature of 'Works Contract service' as per Service tax law, Hence, For non-corporate contractors being Individual, HUF, Proprietary Firm, Partnership Firm or Association of Persons (AOP), BHEL shall recover the applicable Service Tax under reverse charge mechanism from the contractor and remit the same with the Government as per the provisions of Law. Necessary advice/confirmation of remittance shall be issued to the contractor. The contractor shall not be eligible for any refund/reimbursement of such service tax from BHEL. It shall be the responsibility of the contractor to submit proper invoice giving all the requisite details as per Service Tax Law for the determination of the service tax liability of BHEL under reverse charge mechanism. BHEL reserves the right to determine such liability based on the invoice submitted by the contractor or otherwise independently and remittance of the same with the Government.~~

8.3 New Taxes/Levies

In case the Government imposes any new levy/tax on the output service/ goods/work after award of the contract, the same shall be reimbursed by BHEL at actual.

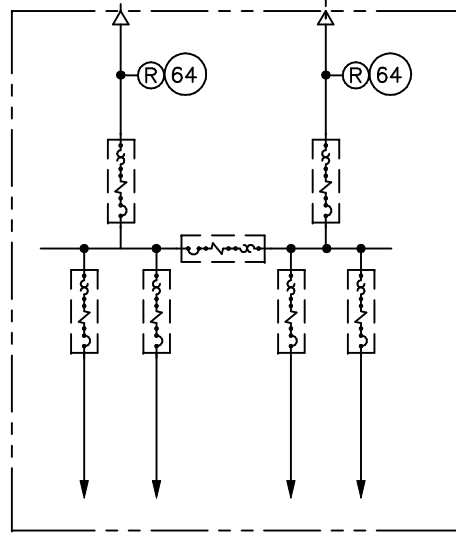
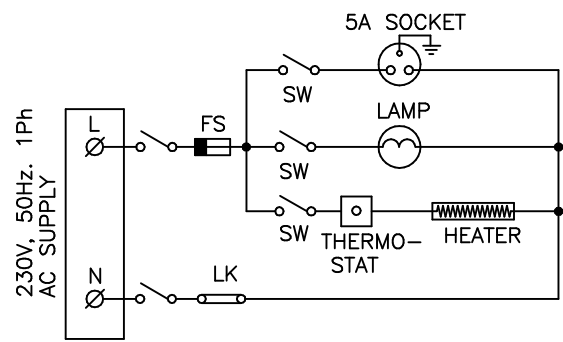
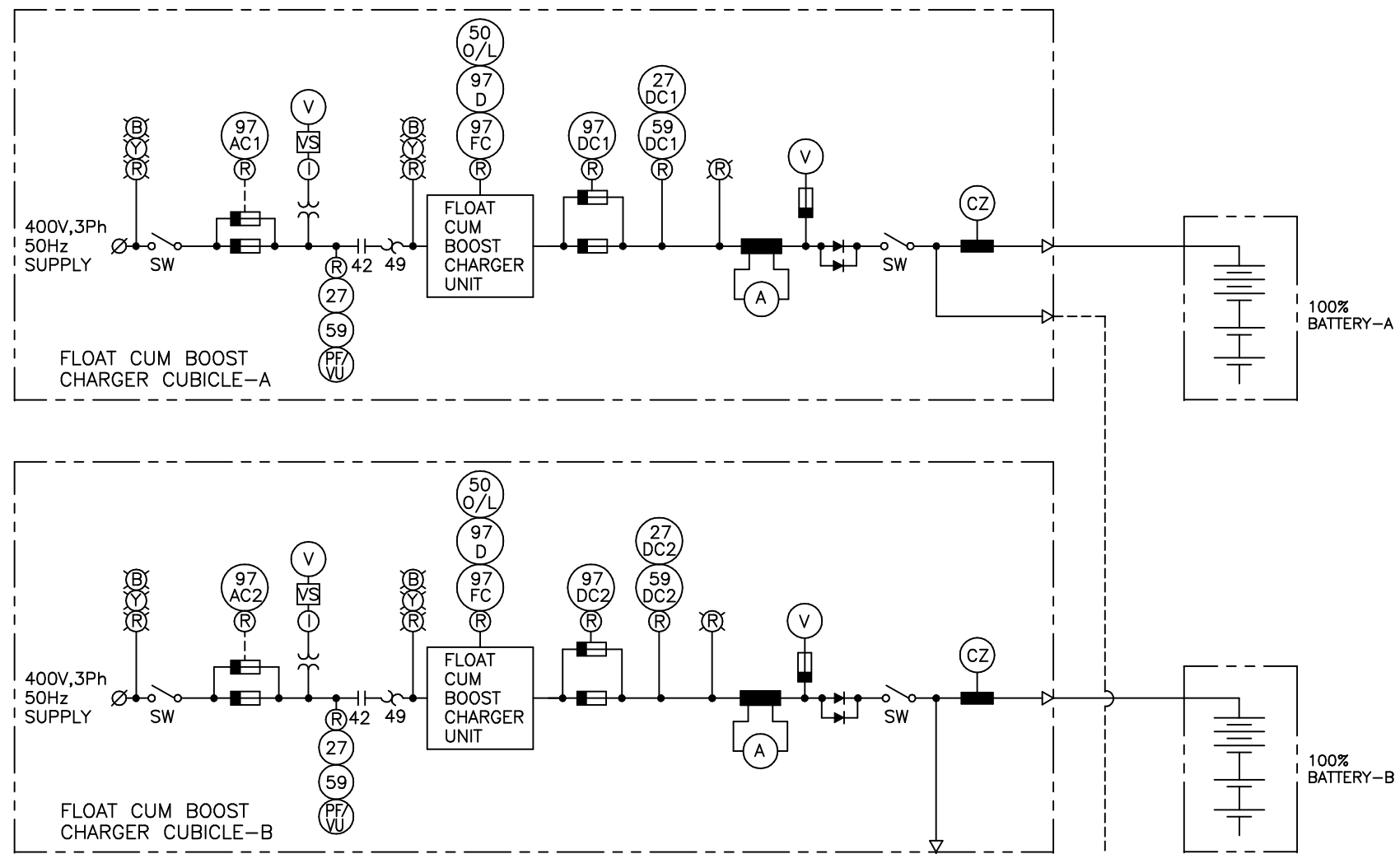
In case any new tax/levy/duty etc. becomes applicable after the date of Bidder's offer, the Bidder/Contractor must convey its impact on his price duly substantiated by documentary evidence in support of the same **before opening of Price Bid**. Claim for any such impact after opening the Price Bid will not be considered by BHEL for reimbursement of tax or reassessment of offer.

No reimbursement/recovery on account of increase/reduction in the rate of taxes, levies, duties etc. on input goods/services/work shall be made. Such impact shall be taken care of by the Price Variation/Adjustment Clause (PVC) if any. In case PVC is not applicable for the contract, Bidder has to make his own assessment of the impact of future variation if any, in rates of taxes/duties/ levies etc. in his price bid.

SPECIAL CONDITIONS OF CONTRACT (SCC)
CHAPTER IX –DRAWINGS

FOLLOWING DRAWINGS ARE ENCLOSED WITH THE TENDER:-

SL.NO	DRG. NO	TITLE
1	PE-DG-292-100-M001	PLOT PLAN



- LEGEND:**
- SWITCH
 - HRC FUSE
 - AMMETER
 - VOLTMETER
 - VOLTMETER SELECTOR SWITCH
 - DIODE
 - SHUNT
 - THERMAL OVER LOAD RELAY
 - MCCB
 - 42 POWER CONTACTORS
 - (R) RELAYING
 - (I) INSTRUMENTS
 - (R) CLUSTERED LED INDICATING LAMP
 - (97) FUSE FAILURE INDICATION
 - D - DIODE
 - FC - FILTER CONDENSER
 - AC1 - AC SUPPLY-1 INCOMING (TYP.)
 - DC1 - DC OUTPUT-1 (TYP.)
 - (27) U/V PROTECTION
 - (59) OVER VOLTAGE PROTECTION
 - (64) DC EARTH FAULT RELAY
 - (PF/U) PHASE FAILURE/VOLTAGE UNBALANCE PROTECTION
 - (50 O/L) OVER LOAD PROTECTION
 - (CZ) CENTRE ZERO AMMETER

- NOTES:**
- THIS DWG. DOES NOT PURPORT TO SHOW DETAILED CONNECTIONS OF ALL THE REQD. EQPT. BUT INDICATES ONLY THE GENERAL SCHEME.
 - THIS DWG. DOES NOT SHOW ALL THE PROTECTIONS, FAULT INDICATING CONTACTS AND THE LAMPS FOR THE SAME. CONTACTS AND LAMPS SHALL BE PROVIDED FOR ALL THE FAULT INDICATING CONDITIONS.
 - EACH CHARGER UNIT SHALL BE PROVIDED WITH THERMOSTATICALLY CONTROLLED SPACE HEATER, CUBICLE LAMP, SWITCH, FUSE, SOCKET ETC.
 - ALL EQUIPMENTS, PROTECTIONS, PARAMETERS SHOWN ARE FOR INDICATIVE PURPOSES ONLY. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL EQUIPMENTS / ACCESSORIES TO MAKE THE SYSTEM COMPLETE (AS DEEMED BY OWNER) IN ALL RESPECTS AND NO EXTRAS ON ANY ACCOUNT WILL BE ENTERTAINED.
 - DROPPER DIODES SHALL BE INCLUDED IN THE SCHEME. BYPASS CONTACTOR FOR DROPPER DIODE SHALL ALSO BE PROVIDED.

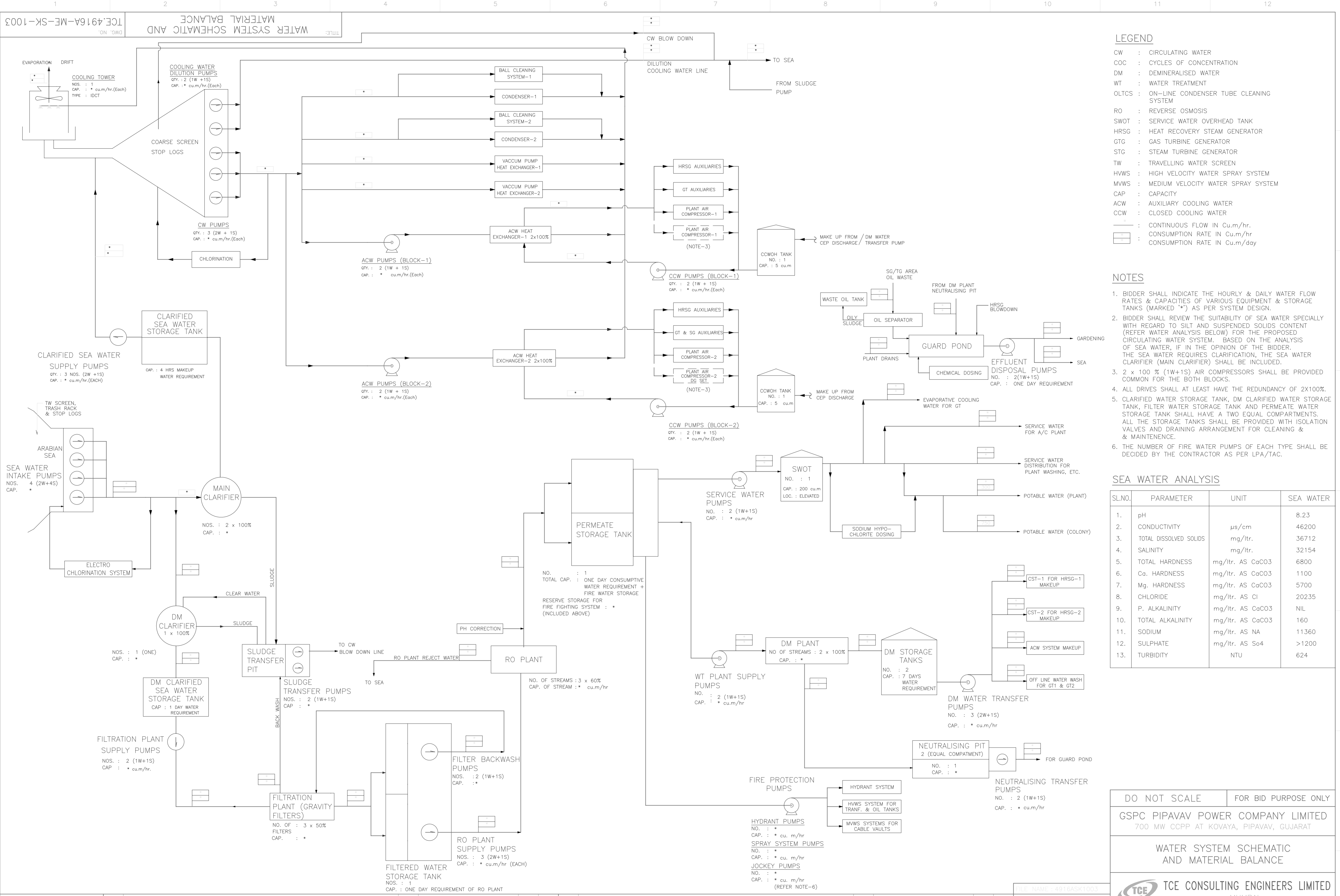
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CIVIL													
ELEC													
I&C													
MECH													

TCE CONSULTING ENGINEERS LIMITED
MUMBAI

CLIENT : GSPC PIPAVAV POWER COMPANY LTD

PROJECT : 700 MW (2x350 MW) CCPP NEAR PIPAVAV

DO NOT SCALE		FOR BID PURPOSE ONLY	
FLOAT CUM BOOST CHARGER WITH 2x100% BATTERY			
SCALE: NONE	APPROVED Sd/-SJ	DATE (RO ISSUE)	
DIV. DB-EL	Sd/-GVC	Sd/-GVC	DATE (CURRENT ISSUE) 02.06.2006
DRN. MR	DWG. NO. TCE.4916A-EL-SK-2004		ISSUE P1
CHD. Sd/-RP			



FOR RO ISSUE ONLY			REVISIONS										FOR RO ISSUE ONLY			REVISIONS													
DEPT	SIGNATURE	DATE	ISSUE	DRN	CHEM	CIVIL	ELEC	I&C	MECH	APPD	DATE	ISSUE	DRN	CHEM	CIVIL	ELEC	I&C	MECH	APPD	DATE	ISSUE	DRN	CHEM	CIVIL	ELEC	I&C	MECH	APPD	DATE

DO NOT SCALE FOR BID PURPOSE ONLY

GSPC PIPAVAV POWER COMPANY LIMITED
700 MW CCPP AT KOVAYA, PIPAVAV, GUJARAT

WATER SYSTEM SCHEMATIC AND MATERIAL BALANCE

TCE CONSULTING ENGINEERS LIMITED
MUMBAI

SCALE : NONE APPROVED DATE: OCT 2006

DRN: R/P/R/L DATE: OCT 2006

FILE NAME : F041R1.DWT

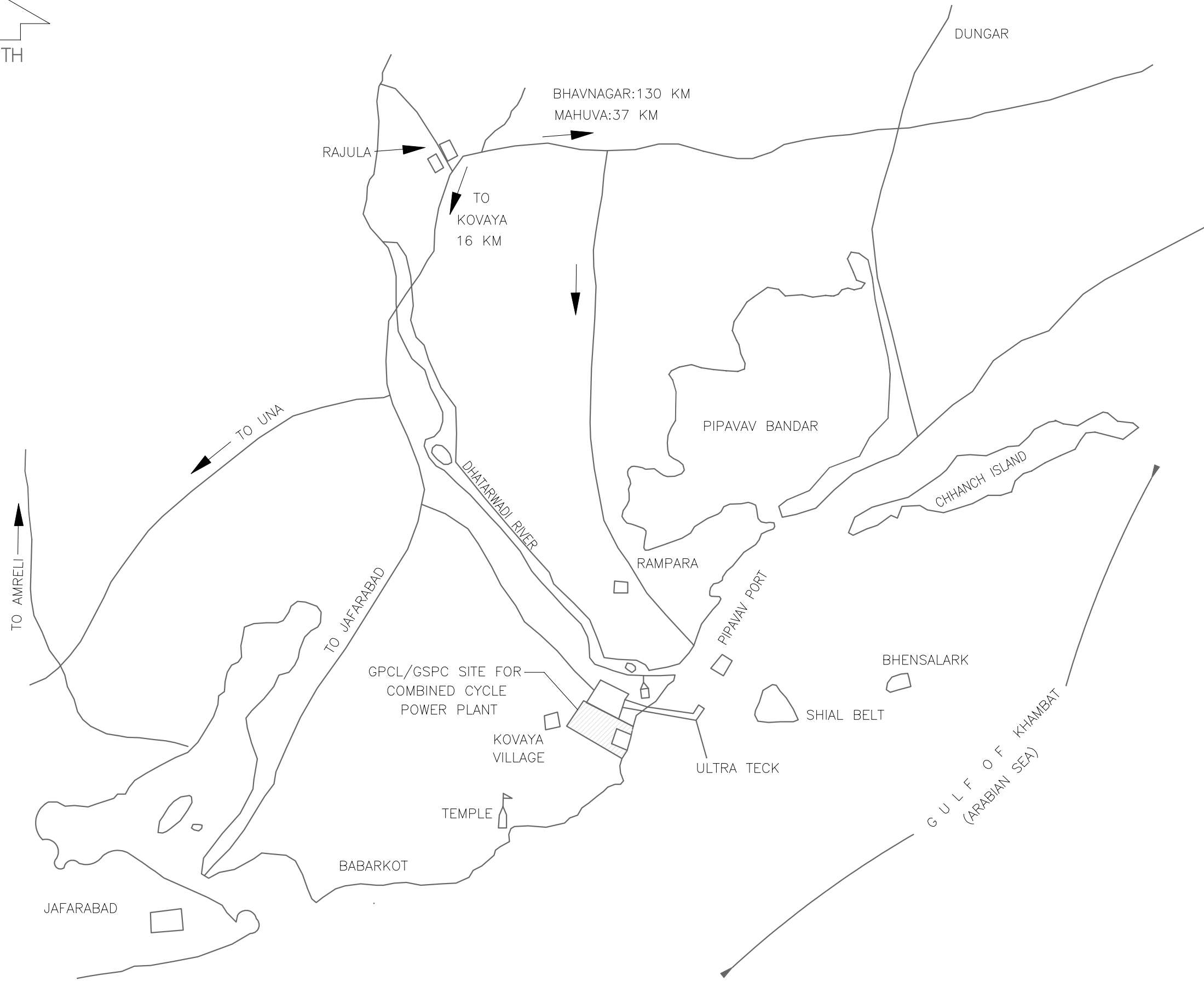
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INFORMATION CONTAINED WITHIN THIS DRAWING IS TO BE USED FOR CONSTRUCTION / FABRICATION ONLY. NO PART OF THIS DRAWING IS TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT THE WRITTEN PERMISSION OF TCE CONSULTING ENGINEERS LIMITED.

DRG. NO. TCE.4916A-ME-SK-1003


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FOR RO ISSUE ONLY		
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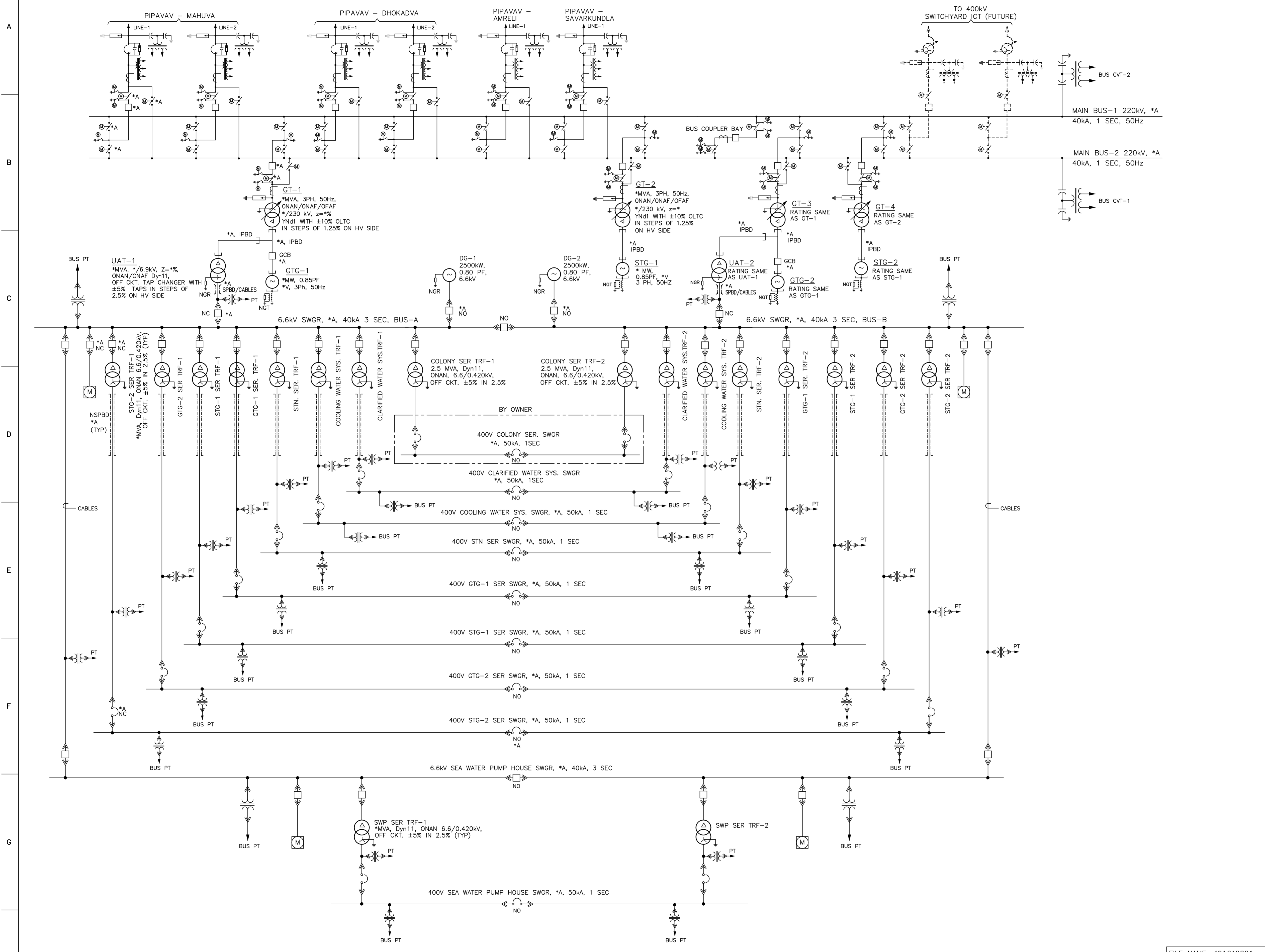
ISSUE	REVISIONS

DRN	CLEARED					APPD	DATE	FILE NAME : 4916A-1004
	CHEM	CIVIL	ELEC	I&C	MECH			


TCE CONSULTING ENGINEERS LIMITED
MUMBAI
 CLIENT : **GSPCL**
 PROJECT : 700 MW GAS BASED CCPP, AT PIPAVAV

DO NOT SCALE		FOR BID PURPOSE ONLY	
POWER PLANT SITE LOCATION			
SCALE: NONE	APPROVED	DATE (RO ISSUE) OCT 2006	
DIV. DB-ME		DATE (CURRENT ISSUE) OCT 2006	
DRN. RL		DWG. NO. TCE.4916A-100-GA-1004	ISSUE RO
CHD. sd/-			

07/11/06



LEGEND

	CAPACITOR VOLTAGE TRANSFORMER		NEUTRAL GROUNDING RESISTOR
	CIRCUIT BREAKER		NEUTRAL GROUNDING TRANSFORMER
	CIRCUIT BREAKER(LV)		NSPBD
	CURRENT TRANSFORMER		SPBD
	DOUBLE BREAK MOTOR OPERATED ISOLATOR		SWITCH
	DRAW OUT FEATURE		THREE PHASE TRANSFORMER
	EARTH SWITCH (MOTOR OPERATED)		
	EM VOLTAGE TRANSFORMER		
	GROUP OF MOTORS		
	IPBD		

CVT	CAPACITOR VOLTAGE TRANSFORMER
DG	DIESEL GENERATOR
GTG	GAS TURBINE GENERATOR
GCB	GENERATOR CIRCUIT BREAKER
GT	GENERATOR TRANSFORMER
HRSG	HEAT RECOVERY STEAM GENERATOR
ICT	INTERCONNECTING TRANSFORMER
IPBD	ISOLATED PHASE BUS DUCT
MCC	MOTOR CONTROL CENTRE
NSPBD	NON SEGREGATED PHASE BUSDUCT
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
SPBD	SEGREGATED PHASE BUSDUCT
SER	SERVICE
STN.	STATION
STG	STEAM TURBINE GENERATOR
SWGR	SWITCHGEAR
SWYD	SWITCHYARD
SYS	SYSTEM
UAT	UNIT AUXILIARY TRANSFORMER

NOTES

1. ALL EQUIPMENT RATINGS/PARAMETERS SHOWN ARE INDICATIVE ONLY. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL EQUIPMENTS / ACCESSORIES TO MAKE THE SYSTEM COMPLETE (AS DEEMED BY OWNER) IN ALL RESPECTS AND NO EXTRAS ON ANY ACCOUNT WILL BE ENTERTAINED.

DO NOT SCALE FOR BID PURPOSE ONLY
 GSPC PIPAVAV POWER COMPANY LTD
 700 MW (2x350 MW) CCPP NEAR PIPAVAV, GUJARAT

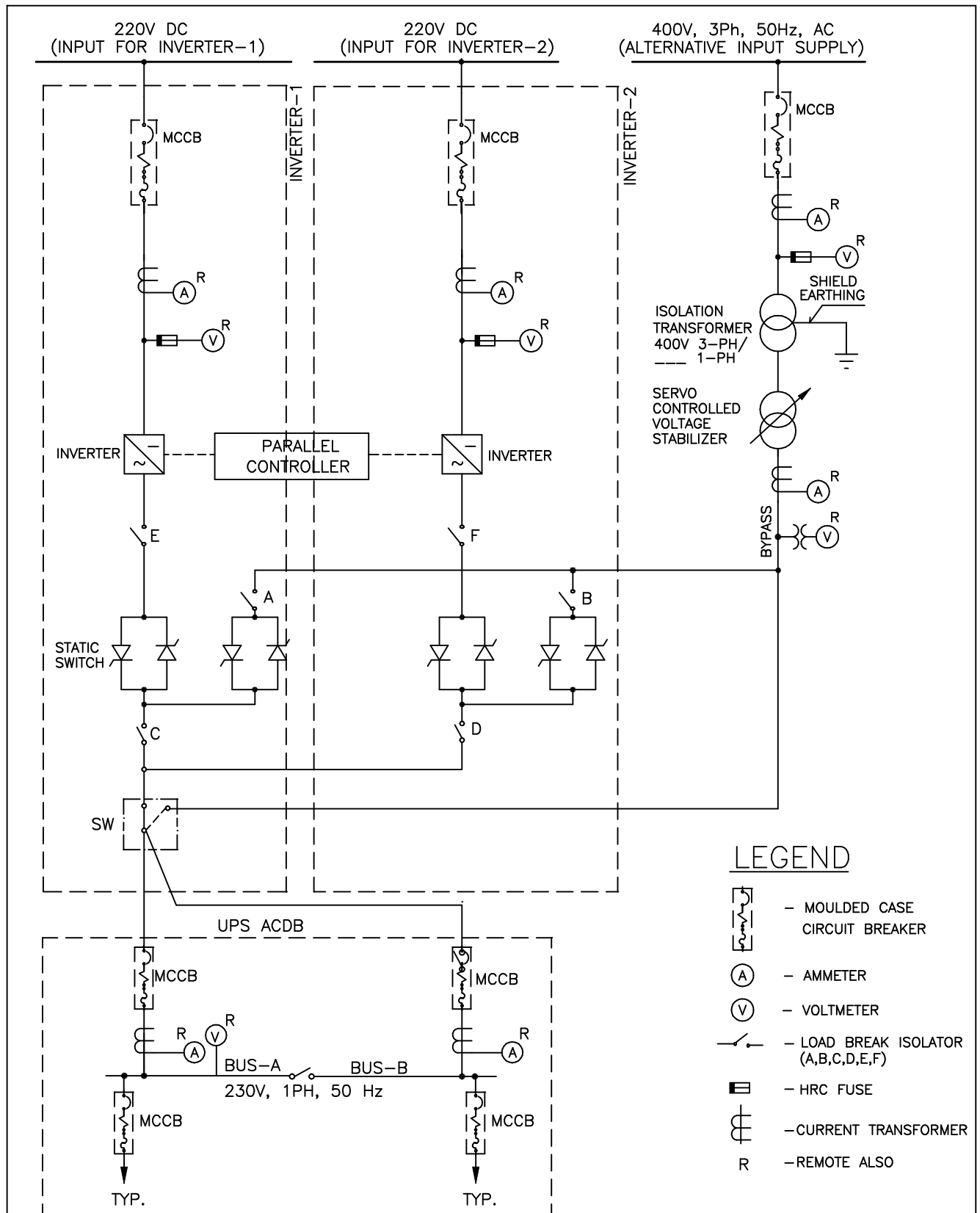
KEY ONE LINE DIAGRAM
 TCE CONSULTING ENGINEERS LIMITED
 MUMBAI

FOR RO ISSUE ONLY		ISSUE		REVISIONS		DRN	CLEARED		APPD	DATE	ISSUE	REVISIONS		DRN	CLEARED		APPD	DATE	
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I&C																			
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FILE NAME : F041R1.DWT

SCALE : NONE	APPROVED	DATE (RO ISSUE)
DIV. DB-ELEC	Sd/-SJ CHIEF ELECTRICAL ENGINEER	DATE (CURRENT ISSUE) 07.09.06
DRN. MR	Sd/-GVC	Sd/-GVC
CHD_Sd/-RP	DWG. NO. TCE.4916A-EL-SK-2001	ISSUE P2

FILE NAME : 4916A2001
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 INFORMATION CONTAINED WITHIN "HOLD" IS NOT RELEASED FOR CONSTRUCTION / FABRICATION. FIELD MUST GET DESIGN OFFICE TO CLEAR "HOLDS" IN TIME BEFORE PROCEEDING WITH ANY CONSTRUCTION / FABRICATION WORK RELATED TO "HOLD".



LEGEND

- MOULDED CASE CIRCUIT BREAKER
- AMMETER
- VOLTMETER
- LOAD BREAK ISOLATOR (A,B,C,D,E,F)
- HRC FUSE
- CURRENT TRANSFORMER
- REMOTE ALSO

NOTES

- ALL EQUIPMENT RATING/PARAMETERS SHOWN ARE INDICATIVE ONLY. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL EQUIPMENTS / ACCESSORIES TO MAKE THE SYSTEM COMPLETE (AS DEEMED BY OWNER) IN ALL RESPECTS AND NO EXTRAS ON ANY ACCOUNT WILL BE ENTERTAINED.

DO NOT SCALE		FOR BID PURPOSE ONLY	
UPS SCHEME (PARALLEL REDUNDANT UPS WITH STATIC BYPASS TO REGULATED SUPPLY)			
TCE CONSULTING ENGINEERS LIMITED MUMBAI			
SCALE: DNS	APPROVED	DATE (RO ISSUE)	
DIV. DB-EL	CHIEF ELECTRICAL ENGINEER	DATE (CURRENT ISSUE)	
DRN. MRK			
CHD.	DWG. NO. TCE.4916A-EL-SK-2003	ISSUE	P1

FOR RO ISSUE ONLY		
CLEARED		
DEPT	SIGNATURE	DATE
CHEM		
CIVIL		
ELEC		
I&C		
MECH		

FILE NAME : TCE.4916A-EL-SK-2003
 CLIENT : GSPC PIPAVAV POWER COMPANY LTD
 PROJECT : 700 MW (2x350 MW) CCPP
 NEAR PIPAVAV GUJARAT