

TENDER SPECIFICATION

Ref: BHEL/PSSR/SAS/SCT/T-24/2022-23

Date: 02.12.2022

Rectification of boiler vertical water wall fin cracks and other works in Boiler as per SOW at KPCL -Bellary TPS for UNIT#3 – 1 X 700MW

DUE DATE FOR SUBMISSION: 11.00 Hrs. – 13.12.2022

**VOLUME-1
TECHNICAL BID & PRICE BID**



BHARAT HEAVY ELECTRICALS LIMITED
(A Government of India Undertaking)
Power Sector – Southern Region
Services After Sales Division - Ek Tara Building
39, Sarojini Devi Road, Secunderabad-500 003.

Contd./-

NOTICE INVITING TENDER (NIT)

Submission only through E-Procurement Portal

<https://eprocurebhel.co.in>

Note: Bidder may download Tender Documents from web sites

To

Dear Sir / Madam

Sub: NOTICE INVITING TENDER

Online Sealed offers in two part bid system are invited from reputed & experienced bidders (meeting PRE QUALIFICATION CRITERIA as mentioned below) **through E-Procurement Portal <https://eprocurebhel.co.in> only**, 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.

This tender shall be under category of National Competitive Bidding (NCB).

1.0 Salient Features of NIT

Sl. No	ISSUE	DESCRIPTION	
i	TENDER NUMBER	BHEL/PSSR/SAS/SCT/T-24/2022-23 Date:02.12.2022	
ii	BROAD SCOPE OF JOB	Rectification of boiler vertical water wall fin cracks and other works in Boiler as per SOW at KPCL -Bellary TPS for UNIT#3 – 1 X 700MW	
iii	DETAILS OF TENDER DOCUMENT		
A	VOLUME-1 (Technical Bid)	1. NIT, Technical Conditions of contract and Annexures 2. HEALTH, SAFETY AND ENVIRONMENT PLAN FOR SITE OPERATION by SUBCONTRACTORS (Doc. No.HSEP:14 (Rev.01) Dtd.20.01.2020) 3. GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	Applicable
B	VOLUME-2 (Price Bid)	1. Price Bid	Applicable
iv	Issue of Tender Documents	1. This is an E-tender floated online through our E-Procurement Portal https://eprocurebhel.co.in 2. Download Start: 13.12.2022	Applicable
v	Due Date & Time of Offer Submission	Date: 13.12.2022, Time: 11:00 Hrs The bidder should submit their offer online in e-Procurement portal at https://eprocurebhel.co.in	Applicable

		Offers are invited in two-parts only. Bidders are requested to upload their offer well in advance in order to avoid last minute congestion at this website. Hard copy bid or bids through E-mail / fax shall not be accepted.	
vi	Opening of Tender	Date: 13.12.2022, Time: 15:00 Hrs Notes: (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 witness the opening of tender through e-Procurement portal only.	Applicable
vii	EMD Amount	Rs.1,60,000/- (Rupees One Lakh Sixty Thousand only) Notes: (1) EMD Exemption for MSEs is not applicable for this tender. (2) One time EMD is applicable for this tender. Refer clause 2.0 of NIT for mode of deposit of EMD	Applicable
viii	Last Date For Seeking Clarification	Bidders may submit their queries at least 3 days before the scheduled due date of offer submission along with soft version also, addressing to undersigned & to others as per contact address of Tender issuing department given below: For any clarification on the tender document, you may seek the same in writing or through e-procurement portal/platform as per specified format within the last date of seeking clarification as per tender. BHEL shall not be responsible for receipt of queries after due date of seeking clarification due to postal delay, and receipt of any query after due date shall not be entertained.	Applicable
ix	Reverse Auction	BHEL shall be resorting to Reverse Auction (RA) (Guidelines as available on www.bhel.com on "supplier registration page") for this tender. RA shall be conducted among all the techno-commercially qualified bidders. Price bids of all techno-commercially qualified bidders shall be opened and same shall be considered as initial bids of bidders in RA. In case any bidder(s) do(es) not participate in online Reverse Auction, their sealed envelope	Applicable

		price bid along with applicable loading, if any, shall be considered for ranking.	
x	Latest updates	Latest updates on the important dates, Amendments, Correspondences, Corrigenda, Clarifications, Changes, Errata, Modifications, Revisions, etc to Tender Specifications will be hosted on e-tender portal https://eprocurebhel.co.in and not in the newspapers. Bidders to keep themselves updated with all such information. This also form part of tender hence the same shall be enclosed with their offer.	Applicable
xi	Tender issuing department contact details	Routine correspondences regarding the clarifications, time extensions or any other administrative queries, etc. on the tender issued shall be posted in https://eprocurebhel.co.in . Any other queries may be addressed directly to the tender issuing department as mentioned below: 1. Shri.MVN Rambabu Mobile: 9533099966 E-mail: mvnrambabu@bhel.in 2. Shri. T Sravana Kumar Phone: 040 27700827 Mobile: 9866734976 E-mail: sravankt@bhel.in	
xii	PRE QUALIFICATION CRITERIA (TECHNICAL)	A. Bidder must have valid special class Boiler repairer license/Erector license of Government of Karnataka. Bidder should have EXECUTED successfully replacement/overhaul / repair /erection of boiler pressure parts in unit of 190 MW rating or above in the last 5 years (from latest date of bid submission) against direct order from BHEL / PSUs / State electricity utilities/ Equipment owner. Note: 1) Relevant Supporting Documents of WORK ORDER COPY AND WORK COMPLETION CERTIFICATES shall be submitted. Work completion certificates are not required if works are executed under BHEL. 2) The word EXECUTED means: Boiler light up activity is completed.	Applicable

		B. Bidder should have valid PAN NUMBER. Relevant Supporting Documents shall be submitted. C. NO CONSORTIUM / JV bidding is allowed for this tender D. Bidder must NOT BE UNDER BANKRUPTCY CODE PROCEEDINGS (IBC) by NCLT OR UNDER LIQUIDATION / BIFR, which will render him INELIGIBLE for participation in this tender, and SHALL SUBMIT UNDERTAKING to this effect. After satisfactory fulfillment of all the above criteria & PRE QUALIFICATION CRITERIA (Financial), offer shall be CONSIDERED for further evaluation as per NIT and all other terms of the tender.	
xiii	PRE QUALIFICATION CRITERIA (Financial)	(a) Bidder Should have average annual turnover of minimum Rs.25.80 Lakhs for the last 3(THREE) consecutive Financial Years FYs i.e. FY to be considered shall be 2019-20, 2020-21 & 2021-22. Audited Balance Sheet and Profit & Loss Account for the three Financial Years (FY) as indicated above need to be submitted in support of above. In case audited Financial statements have not been submitted for all the three years as indicated above, then the applicable audited statements submitted by the bidders against the requisite three years, will be averaged for three years. If financial statements are not required to be audited statutorily, then instead of audited financial statements, financial statements are required to be certified by Chartered Accountant. (b) Net worth (only in case of companies) of the bidder should be positive. Note: Net worth shall be calculated based on the latest Audited Accounts as furnished above. Net worth = Paid up share capital + Reserves. (c) Bidders must have earned Profit in any one of the three financial years as applicable in para (a) above.	Applicable

		Note: PROFIT shall be "PBT" earned during any one of the three financial years as applicable in para (a) above.	
xiv	INTEGRITY PACT and Details of Independent External Monitor (IEM)		Not Applicable
xv	ORDER OF PRECEDENCE	In the event of any ambiguity or conflict between the Tender Documents, the order of precedence shall be in the order below: 1. Amendments/Clarifications/Corrigenda /Errata/Tender change notice (TCN) etc. issued in respect of the tender documents by BHEL 2. Notice Inviting Tender (NIT) 3. Price Schedule 4. Scope of work & technical conditions of contract, HSE PLAN FOR SITE OPERATIONS BY BHEL'S SUBCONTRACTORS and Annexures. 5. SPECIFIC TERMS AND CONDITIONS FOR SERVICES JOBS 6. GENERAL & SPECIAL CONDITIONS OF CONTRACT FOR SERVICES JOB	Applicable
xiv	Evaluation currency	INDIAN RUPEES (INR)	Applicable
xv	Cost of Tender	Free	--
xvi	Customer approval		Not Applicable

2.0 MODE OF DEPOSIT OF EMD (MSMED and NSIC are not acceptable towards EMD)

EMD for this tender shall be **Rs.1,60,000/-** (Rupees One Lakh Sixty Thousand only)

Offers submitted without EMD will be liable for rejection.

- Modes of Deposit: The EMD may be accepted only in the following forms
 - i) Cash deposit as permissible under the extant Income Tax Act (before tender opening).
 - ii) Electronic Fund Transfer credited in BHEL account (before tender opening).

For Electronic Fund Transfer the details are as below:-

I) Name of the Beneficiary -: Bharat Heavy Electricals Limited

II) Bank Particulars

- a) Bank Name -: State Bank of India
- b) Bank Telephone No.(with STD code)-: 044 – 2433 0583 / 2433 0407
- c) Branch Address-: SBI Saidapet Branch 00912, No.80-A, Chevalier Sivaji Ganesan Salai, South Boag Road, T.Nagar, Chennai-17
- d) Branch Code -: 00912
- e) 9 Digit MICR Code of the Bank Branch -: 600002045
- f) Bank Account Number -: 10610819499
- g) Bank Account Type -: Cash Credit Account
- h) 11 Digit IFSC Code of Beneficiary Branch-: SBIN0000912
- i) Details for SFMS (Structured Financial Messaging System) transmission of BG

Bank and Branch	SBI TFCPC Branch
Branch Code	5056
IFSC Code	SBIN0005056

On transfer of amount through EFT, receipt of the same to be submitted as mentioned in clause no. 4.0.

- iii) Banker's cheque/Pay order/Demand draft, in favor of BHEL payable at Chennai (along with offer).
- iv) Fixed Deposit Receipt (FDR) issued by Scheduled Banks/Public Financial Institutions as defined in the Companies Act (FDR should be in the name of the Contractor, a/c BHEL)
- v) In case EMD amount is more than Rs. Two Lakhs, Tenderer has the option to submit Rs. Two lakhs in the forms described above in clause no. 2.0 (i) to (iv) and the remaining amount over and above Rs. Two Lakhs in the form of Bank Guarantee from Scheduled Bank (along with the Offer).

Note:

- a) Proforma for Bank Guarantee for EMD- Form is enclosed with this Tender.
- b) The Bank Guarantee shall be valid for at least six months from the due date of tender submission mentioned in the Notice Inviting Tender.
- c) Date of Expiry of Claim shall be as given in Proforma of Bank Guarantee (in lieu of Earnest Money).

If EMD is submitted in the mode of (iii) Bankers cheque/pay order/DD or (iv) FDR or (v) BG, the same should be forwarded along with covering letter mentioning the tender reference, description & due date for tender submission (mention the same details on envelope also) to the following address so as to reach us on/before due date.

Manager - Sub Contracts,
Bharat heavy Electricals Ltd.,
Power Sector Services After Sales,
EK Tara Building,
39, Sarojini Devi Road,
SECUNDERABAD – 500 003.
Phone: 040 27700827.

EMD will be forfeited as per NIT Conditions, if:

- i) After opening the tender and within the offer validity period, the tenderer revokes his tender or makes a modification in his tender which is not acceptable to BHEL.
 - ii) The Contractor fails to deposit the required Security deposit or commence the work within the period as per LOI/Contract.
- EMD given by all unsuccessful tenderers will be refunded normally within 15 days of award of work.
 - EMD shall not carry any interest.
 - EMD of successful tenderer will be retained as part of Security Deposit.
 - EMD by the tenderer shall be withheld in case any action on the tenderer is envisaged under the provisions of extant” Guidelines on Suspension of Business dealings with suppliers/contactors” and forfeited / released based on the action determined under these guidelines.

(Note -: In case of E-Tenders, proof of remittance of EMD should be uploaded in the E-Procurement Portal and originals, as applicable, shall be sent to the officer inviting tender within a reasonable time, failing which the offer is liable to be rejected).

- 3.0 **Procedure for Submission of Tenders:** This is an E-tender floated online through our E-Procurement portal <https://eprocurebhel.co.in>. The bidder should respond by submitting their offer online only in our e-Procurement portal at <https://eprocurebhel.co.in>. Hard copy bid or bids through email/ fax shall not be accepted.

Documents Comprising the e-Tender

The tender shall be submitted online ONLY EXCEPT EMD (in physical form) as mentioned below:

a. Technical Tender (UN priced Tender)

All Technical details (as mentioned below) should be attached in e-tendering module, failing which the tender stands invalid & may be REJECTED. Bidders shall furnish the following information along with technical tender (preferably in pdf format):

- i. Earnest Money Deposit (EMD) furnished in accordance with NIT Clause 2.0.
- ii. Technical Bid (without indicating any prices).

b. Price Bid:

- i. Prices are to be quoted in the attached Price Bid format online on e-tender portal.
- ii. The price should be quoted for the accounting unit indicated in the e-tender document.
- iii. Note: It is the responsibility of tenderer to go through the Tender document to ensure furnishing all required documents in addition to above, if any. Any deviation would result in REJECTION of tender and would not be considered at a later stage at any cost by BHEL.
- iv. A person signing (manually or digitally) the tender form or any documents forming part of the contract on behalf of another shall be deemed to warrantee that he has authority to bind such other persons and if, on enquiry, it appears that the persons so signing had no authority to do so, the purchaser may, without prejudice to other civil and criminal remedies, cancel the contract and hold the signatory liable for all cost and damages.
- v. A tender, which does not fulfil any of the above requirements and/or gives evasive information/reply against any such requirement, shall be liable to be ignored and rejected.

DO NOT'S

Bidders are requested NOT to submit the hard copy of the Bid. In case offer is sent through hard copy/fax/telex/cable/electronically in place of e-tender, the same shall not be considered. Also, uploading of the price bid in prequalification bid or technical bid may RESULT IN REJECTION of the tender.

Digital Signing of e-Tender

Tenders shall be uploaded with all relevant PDF/zip format. The relevant tender documents should be uploaded by an authorized person having Class 3- SHA2- 2048 BIT- SIGNING & ENCRYPTION digital signature certificate (DSC).

The Requirement:

1. A PC with Internet connectivity &
2. DSC (Digital Signature Certificate) (Class 3- SHA2- 2048 BIT- SIGNING & ENCRYPTION)

BHEL has finalized the e-procurement service Provider:-

NIC PORTAL (<https://eprocurebhel.co.in>)

For E-PROCUREMENT ASSISTANCE & TRAINING, NIC PORTAL HELPDESK CONTACTS AS PER FOLLOWING: -

For any technical related queries please call at 24 x 7 Help Desk Number

0120-4001 002

0120-4200 462

0120-4001 005

0120-6277 787

1. Peter Raj, NIC, Ph: 9942069052

Email Support: support-eproc@nic.in

The process of utilizing e-procurement necessitates usage of DSC (Digital Signature Certificate) (Class 3- SHA2- 2048 BIT- SIGNING & ENCRYPTION) and you are requested to procure the same immediately, if not presently available with you. Please note that only with DSC, you will be able to login the eprocurement secured site and take part in the tendering process.

The contact details of the DSC Certifying Authority as given below:

Sl. No.	Name	Website Link
1	(n) Code solutions	https://www.ncodesolutions.com/
2	e-Mudhra	https://www.e-mudhra.com/
3	Safescrypt	www.safescrypt.com

Vendors are also requested to go through seller manual available on <https://eprocurebhel.co.in>

4.0 **DOCUMENTS TO BE UPLOADED & MODALITY OF UPLOADING in E-PROCUREMENT PORTAL <https://eprocurebhel.co.in> SHALL BE AS DETAILED BELOW:**

Sl.No	Description	Remarks
	Techno-Commercial Bid CONTAINING THE FOLLOWING:-	
i	Covering letter / Offer forwarding letter of Tenderer.	
ii	Duly filled-in 'No Deviation Certificate' as per prescribed format to be placed after document under Sl No (i) above. Note: 1. 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 attached along with document under sl no (i) above. It shall be specifically noted that deviation recorded elsewhere shall not be entertained. 2. BHEL reserves the right to accept / reject the deviations without assigning any reasons, and BHEL decision is final and binding.	Refer "Bidders Manual Kit" available at https://eprocurebhel.co.in .

	(i) In case of acceptance of the deviations, appropriate loading shall be done by BHEL (ii) In case of unacceptable deviations, BHEL reserves the right to reject the tender.	
iii	All Amendments / Correspondences / Corrigenda / Clarifications / Changes / Errata etc. pertinent to this NIT.	
iv	NIT document along with Scope of works, specific conditions, HSE PLAN FOR SITE OPERATIONS BY BHEL'S SUBCONTRACTORS and GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB] and Un-priced price bid (price bid without disclosing rates/price, but mentioning only 'QUOTED' or 'UNQUOTED' against each item)	
v	EMD Remittance Proof	
vi	Declaration by bidder for price opening through Reverse Auction.	
vii	Declaration by bidder regarding NIL Insolvency proceedings.	
viii	Declaration regarding related firms	
ix	Declaration regarding minimum local content in line with revised public procurement (preference to Make In India), order 2017	
x	Declaration regarding compliance to restrictions under rule 144 (xi) of GFR 2017.	
xi	Work order copies & work completion certificates as mentioned in pre-qualification criteria	
xii	Certificate of valid special class Boiler repairer license/Erector license of Government of Karnataka	
xiii	Financial documents as mentioned in pre-qualification criteria	
xiv	PAN NO & Photo Copy of PAN CARD.	
xv	Photo Copy of GSTN Registration Certificate.	
xvi	Photo Copy of PF Registration certificate	
xvii	Photo Copy of ESI Registration certificate	
xviii	Bank Account Details for E-Payment	
xix	Attested copies of partnership deed, power of attorney.	
xx	Any other details preferred by bidder	

	with proper indexing.	
Caution to Bidders: - The duly signed & stamped copies of NIT document along with Scope of works, specific conditions, HSE PLAN FOR SITE OPERATIONS BY BHEL'S SUBCONTRACTORS and GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB] and Un-priced price bid are to be attached under the form Techno-commercial Bid. For any further queries, Refer "Bidders Manual Kit" available at https://eprocurebhel.co.in .		

Sl.No	Description	Remarks
i	Price/ Total Amount corresponding to the total works as specified shall be quoted in the format named 'PRICE BID. Format to quote Total Amount' available in e-Procurement portal under 'Packet details -> Tender covers -> Finance '(Cover Type Description – Price Bid). Bidders to note that total amount quoted by the bidder in this format shall be considered for evaluation of offer.	Refer "Bidders Manual Kit" available at https://eprocurebhel.co.in .

SPECIAL NOTE:

- i) All documents / annexures submitted with the offer shall be properly attached / entered / uploaded in the respective sections. BHEL shall not be responsible for any missing documents.
 - ii) Your offer & documents submitted along with offer shall be signed & stamped in each page/digitally signed on cover page by your authorized representative. No overwriting / correction in tender documents by bidders shall be allowed. However, if correction is unavoidable, the same may be signed by authorized signatory.
- 5.0 No deviation with respect to tender clauses and no additional clauses/ suggestions/clarification in Techno-commercial bid/Price bid shall normally be considered by BHEL. Bidders are requested to positively comply with the same. Offers with deviation are liable for rejection.
 - 6.0 Since the job shall be executed at site, the bidders are advised to visit site/ work area and study the job content, facilities available, availability of materials, prevailing site conditions including Law and Order situation, applicable Wage structure, Wage rules, present condition of machines 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. No additional claim shall be entertained by BHEL in future, on account of non-acquaintance of site/machine conditions at the time of bidding.
 - 7.0 BHEL may decide holding Pre-bid Discussion [PBD] with all intending bidders. On such communication from BHEL, the bidder shall ensure

- participation for the same at the appointed time, date and place as may be decided by BHEL. Outcome of PBD (if any) shall also form part of tender.
- 8.0 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/ contradictions between any two clauses of tender document, the same to be brought to the knowledge of BHEL by bidders in writing for clarification before due date of seeking clarification, otherwise, more stringent requirement as may be interpreted by BHEL shall prevail and shall be binding on you. Any typing error/missing pages/ other clerical errors in the tender documents, noticed by bidder must be pointed out before submission of offer, or else, BHEL's interpretation shall prevail & binding on you.
- 9.0 Unless specifically mentioned otherwise, bidder's quoted price shall deemed to be in compliance with tender including PBD.
- 10.0 Bidders are requested to note that the accepted / agreed tender terms (technical, commercial or on Reverse Auction) in their original offer cannot be altered / withdrawn by their own during the processing of tender.
- 11.0 Bid should be free from correction, over writings using any interlineation, cutting or overwriting shall be valid only if they are attested under full signature(s) of person(s) signing the bid else bid shall be liable for rejection.
- 12.0 After opening of Technical Bids, if found suitable, there is a possibility of opening the price bid on the same day and to the need of urgency, **Bidder should be in a position to mobilize the work force immediately.**
- 13.0 **Total price:**
- Price to be quoted in the enclosed Price Schedule Format–Annexure-3.
 - **Total price to be quoted for all activities as per the scope mentioned in the Technical Conditions of Contract and break-up as mentioned in the Annexure-2.**
 - GST REGISTRATION NUMBER TO BE QUOTED SEPARATELY BELOW THE TOTAL PRICE.
 - Prices quoted will be taken as the TOTAL PRICE FOR CARRYING OUT THE ENTIRE WORK AS PER THE SCOPE OF WORK SPECIFIED AND ALL THE RELEVANT DETAILS FURNISHED IN THIS TENDER.
- 13.1 The rates offered shall be firm inclusive of everything and no variation will be allowed whether in cost of labour or any other factor affecting the price of the contract.
- 13.2 In case offered price is mentioned in multiple documents by the bidder and in case of variation between offered price, the offered price advantageous to BHEL shall be taken as final for all purposes. BHEL decision in this regard shall be final and binding on contractor.
- 13.3 BHEL does not bind itself to accept the lowest tender. BHEL reserves the right to accept or reject the lowest or any other tender without assigning any reason and the work may be allotted to one or more than one contractors.
- 13.4 Incomplete price bid is liable to be rejected.

14.0 Validity:

- 14.1 Validity of the offer shall be for six months from the latest due date of offer submission (including extension, if any) unless specified otherwise for awarding works.
- 14.2 The period of contract shall be for One year from the date of start of the contract.
- 14.3 PVC shall be applicable as per clause 2.15 of GSCC.
- 14.4 ORC is not applicable for this tender.

15.0 Security Deposit:

- 15.1 As per clause 1.8 of GSCC.
- 15.2 The validity of Bank Guarantees towards Security Deposit shall be initially up to the completion period as stipulated in the Letter of Intent/ Award + Guarantee Period + 3 months, and the same shall be kept valid by proper renewal by the contractor till the acceptance of Final Bills of the Contractor by BHEL.

16.0 Defect liability/Workmanship guarantee:

Even though the work will be carried out under supervision of BHEL Engineers. The contractor shall guarantee against defects attributable to faulty workmanship or procedure adopted in the overhaul for items covered in the contract for a period of six months from the date of recommissioning of the set after the capital overhaul. The guarantee should cover all defects notified during this period and shall have to be attended to free of cost immediately or at the time our clients are able to give shut down of the set for the required period. when necessary. In case of failure of contractor to attend to such defects as and when required in time, BHEL shall arrange to attend the defects and the charges shall be levied to contractor's account and shall be recoverable from the security deposit / progressive payments.

17.0 Commencement of work-expected:

After award of works successful bidder has to contact BHEL PSSR Site office, Bellary TPS for mobilization instructions. Works are to be executed under supervision of BHEL Engineers from BHEL PSSR Site office, Bellary TPS.

Successful bidder has to mobilize the site within 07 days from intimation of communication from BHEL for fulfilling all statutory requirements like Police verification, Medical fitness, Gate/Entry pass formalities etc. However, in case of urgency, bidder may be asked to mobilise the site immediately on getting intimation from BHEL. We shall inform to the successful bidder through any available mode of communication. The successful bidder has to specifically confirm that all required resources and manpower will be mobilized immediately after intimation.

In view of the Post COVID scenario, successful bidder must abide by the statutory requirement and guidelines issued by central government/state governments/customer (from time to time) during

mobilisation and execution of the work. BHEL shall not compensate against any claim of the successful bidder on above account.

For making gate pass for overhauling works, mobilization is to be done immediately for fulfilling all statutory requirements and undergoing COVID test as per customer requirement for all workers/supervisors/engineers due to the ongoing COVID-19 pandemic.

18.0 The entire work shall be carried out by the successful bidder as decided by Resident Manager / BHEL / SAS with the best skills and know how available. The scope of work is only an indicated and not exhaustive. However, successful bidder should abide by the decision of the Resident Manager for any variations of the work.

19.0 Completion Period for this Contract:

19.1 The entire work covered under the scope of this contract is to be completed **within 65 days from start of Work.** However, for any additional work the completion period shall be proportionately increased.

19.2 For any other additional works as mutually agreed between BHEL & Successful bidder, completion period will be suitably increased.

20.0 LIQUIDATED DAMAGES/PENALTY:

In the event of failure to complete the work in given time, an amount equal to ½% [half percent] of the contract value per day subject to a maximum of 10% [ten percent] of the contract value will be levied as penalty, in case the balance work is allowed to be completed by the contractor beyond the scheduled time of completion, which is at the discretion of BHEL. In case of delays on contractor's part, at any stage during the scheduled period or after, BHEL shall have the option of ensuring completion of the job by any other means at its disposal and the charges on this account shall be levied on the contractor. These shall be adjusted against contractor's bills or Security Deposit. Contract Value for this purpose, shall be the final executed value exclusive Extra Works executed on Manday rate basis, Supplementary / Additional Items and PVC.

In case of LD recovery, the applicable GST shall also be recovered from vendor.

21.0 **Compulsory Three shift operation** to be taken up as decided by BHEL/Site In-charge: All the works are to be taken up round the clock (i.e. 24 hours) in three shift operation. Hence all the works are to be planned round the clock without any break. No extra claim will be entertained for three shift operation, idling of manpower due to delay in arrangement of inputs etc. The entire work is to be taken up on war footing with maximum effort. Successful bidder has to engage sufficient manpower to ensure work with equal pace in all the three shifts.

22.0 Terms of payment:

22.1 Activity- wise percentage breakup has been indicated against each activity in the scope of work in Annexure-2. In case of reduction in quantum of work at site, payment shall be released only for the activities actually carried out as per the percentage allotted. Contract value shall be revised accordingly.

22.2 GST compliant tax invoice **as per Cl. No. 23.2 (Taxes and Duties)** is mandatory for releasing of payment and **GST remittance proof as per Cl. No. 23.2 (Taxes and Duties)** has to be enclosed for reimbursement of GST. E-invoice as applicable is mandatory for releasing of payment.

22.3 A minimum time of 30 days will be required for the processing of bills (received with all required documents) presented and for their payment.

22.4 Check list (**CHECK LIST TO BE SUBMITTED WITH EACH RUNNING BILL**) attached with this tender shall be submitted with each running bill.

22.5 TERMS OF PAYMENT:

22.5.1 Payment terms are as follows

a. Up to 90% of the contract value shall be payable against submission of up to three progressive running bills. Each of the billed amount shall correspond to the quantum of job actually completed and to that effect the claim can be preferred based on percentage allotments (given in the work order) made. This, however, has to be certified by the resident manager / engineer of the site.

i) The Following documents are to be submitted with 1st RAB provided the value of such bill should not exceed 40% of CV.

1. Workmen compensation Insurance (should be taken for the full period of the contract. In case any defects attended during defect liability period Insurance should be taken during such period.) or Copy of e-Pehchan cards .
2. Joint protocol / letter of commencement of work.
3. Labour License application copy (Labour license shall be applied online as per customer requirement)

However, if the value of 1st RA Bill exceeds 40% of CV, all the documents specified for 2nd & 3rd RA Bill (as mentioned below) shall be required in addition to Joint Protocol/Letter of commencement of work.

ii) The Following documents are to be submitted with 2nd and 3rd RAB

1. Workmen compensation Insurance/ESI, PF, Third party liability policy (as per customer requirement) & Wage register/Bank statement of workmen payment verified by EIC for the completed months of execution period.
2. Labour license (Labour license shall be applied online as per customer requirement)
3. Duly filled pro-forma of Form 36B.
4. HR Pro-forma to be submitted along with bill.

5. Test reports (like NDT, Electrical etc., as applicable) (03 hard copies each)
- b. Final bill shall be payable after successful synchronization / commissioning. Value of such final bill shall be total executed contract value less previous RAB(s) values.

The following documents are to be submitted with final bill.

1. Workmen compensation Insurance/ ESI, PF, Third party liability policy (as per customer requirement) & Wage register/Bank statement of workmen payment verified by EIC for the balance period of execution, if applicable.
2. HR Pro-forma to be submitted along with bill.
3. Applicable time extension copy shall also be submitted

Note: The above mentioned are only the major compliances required, however EIC shall inform submission of any other documents from time to time.

22.6 RETENTION AMOUNT

Retention amount shall be 10% of executed contract value including extra works if any, and the vendor may submit the same in the form of (a) or (b) below.

(a) CASH (DD/Online payment), 10% of the full contract Value towards Retention amount, before commencing the contract. (Retention amount for extra works if any, shall be deposited by the vendor separately)

(or)

(b) Recover 10% from Each Running/Final/Extra works bill towards Retention amount.

22.7 Refund of Retention amount:

Retention amount shall be refunded on submission of duly signed (for certification of contractor portion only) REFUND OF RETENTION AMOUNT (format attached –Format No. PS:SR:SAS:SCT:Retention:REFUND:001) along with covering letter with the following documents.

- a. Certification to the effect that “No further claim” will be made against this contract.
- b. Submission of a “NO DUES” certificate from our principal customer regarding returning of materials, T&P, tackles, fixtures etc. if any supplied to the successful bidder by the principal customer through BHEL during the execution of work to the effect that all the items have been received intact or as part or after fabrication.
- c. Retention amount shall be refunded only after internal clearances from different departments like Commercial, HR, Subcontracting & Services.

23.0 **TAXES AND DUTIES**

23.1 **All taxes and duty other than GST & Cess and BOCW Cess**

The successful bidder shall pay all (save the specific exclusions as enumerated in this contract) taxes, fees, license charges, deposits, duties, tolls, royalty, commissions, Stamp Duties, or other charges / levies, 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.

23.2 **Goods and service Tax (GST) & Cess**

Bidder's price/rates shall be exclusive of GST & Cess (if applicable) (herein after termed as GST). Successful bidder shall submit to BHEL the GST compliant tax invoice/debit note/revised tax invoice on the basis of which BHEL will claim the input tax credit in its return.

Agency shall furnish proof of GST registration with GSTN Portal covering the services under this contract. Registration should also bear endorsement for the premises from where the billing shall be done by the successful bidder on BHEL for this project/ work.

Bidder shall note that the GST Tax Invoice complying with GST Invoice Rules wherein the 'Bill To' details as per Clause 25.0.

GST charged in the tax invoice/debit note/revised tax invoice by the successful bidder shall be released separately to the successful bidder only after successful bidder files the outward supply details in GSTR-1 on GSTN portal and input tax credit of such invoice is matched with corresponding details of outward supply of the successful bidder and has paid the GST at the time of filing the monthly return.

In case BHEL has to incur any liability (like interest etc.) due to denial/reversal of input tax credit in respect of the invoice submitted by the successful bidder, for the reasons attributable to the successful bidder, the same shall be recovered from the successful bidder.

In case BHEL is deprived of the Input tax credit due to any reason attributable to successful bidder, the same shall not be paid to the successful bidder. Tax invoice/debit Note/revised tax invoice shall contain the particulars as prescribed in GST law.

TDS under GST is applicable and shall be deducted at prevailing rates on gross invoice value from the running bills. E-way bills / Transit passes / Road Permits, if required for materials / T&P etc., bought into the project site is to be arranged by the successful bidder only.

23.3 **Statutory Variations**

Statutory variations are applicable under the GST Acts, against production of proof. The changes implemented by the Central / State Government during the tenure of the contract viz. increase / decrease in the rate of taxes, applicability, etc. and its impact on upward revision / downward revision are to be suitably paid/ adjusted from the date of respective variation. The bidder shall give the benefit of downward revision in favour of BHEL. No other variations shall be allowed during the tenure of the contract.

23.4 **Modalities of Tax Incidence on BHEL:**

Where GST law permits more than one option or methodology for discharging liability of tax/ levy/ duty; the contractor shall approach BHEL before choosing any option to discharge his tax liability. BHEL shall have the right to direct the contractor to adopt the appropriate option

considering the amount of tax liability on BHEL as well as procedural simplicity with regard to assessment of the liability.

The option chosen by BHEL shall be binding on the contractor for discharging the obligation of BHEL in respect of the tax liability to the contractor.

23.5 BUILDING & OTHER CONSTRUCTION WORKERS (REGULATION OF EMPLOYMENT AND CONDITIONS OF SERVICE) ACT, 1996 (BOCW Act) AND RULES OF 1998 READ WITH BUILDING & OTHER CONSTRUCTION WORKERS CESS Act, 1996 & CESS RULES, 1998

In case any portion of work involves execution through building or construction workers, then compliance to the above titled Acts shall be ensured by the contractor and contractor shall obtain license and deposit the cess under the Act. In the circumstances it may be ensured as under:-

It shall be the sole responsibility of the contractor in the capacity of employer to forthwith (within a period of 15 days from the award of work) apply for a licence to the Competent Authority under the BOCW Act and obtain proper certificate thereof by specifying the scope of its work. It shall also be responsibility of the contractor to furnish a copy of such certificate of licence / permission to BHEL within a period of one month from the date of award of contract.

It shall be the sole responsibility of the contractor as employer to ensure compliance of all the statutory obligations under these act and rules including that of payment / deposit of 1% cess on gross payment made for value of work involving building or construction workers engaged by the contractor within a period of one month from the receipt of payment.

It shall be the responsibility of the sub-contractor to furnish the receipts /challans towards deposit of the cess together with the number, name and other details of beneficiaries (building workers) engaged by the sub-contractor during the preceding month.

It shall be the absolute responsibility of the sub-contractor to make payment of all statutory payments & compensations to its workers including that is provided under the Workmen's Compensation Act, 1923.

The contractor shall, however ensure before deposit of any BOCW Cess, that customer is not depositing the same in order to avoid excess deposit of cess.

The contractor shall bear cost of BOCW cess either by way of deposit or through recovery by BHEL in case the same is deposited by the customer.

In case of failure in above mentioned compliances, BOCW Cess @ 1% as well as applicable penalty as specified in BOCW Act/Rules shall be deducted from the contractor.

23.6 Direct Tax

BHEL shall not be liable towards Income Tax of whatever nature including variations thereof arising out of this contract as well as tax liability of the bidder and their personnel. Deduction of tax at source at the prevailing rates shall be effected by BHEL before release of payment as a statutory

obligation, unless exemption certificate is produced by the bidder. TDS certificate will be issued by BHEL as per the provisions of Income Tax Act.

24.0 Demobilization and remobilization

As per clause 2.7.7 of GSCC

25.0 Invoice submission:

25.1 The bills are to be submitted through BHEL/Resident Manager addressed to

**BHEL PSSR,
BELLARY THERMAL POWER PLANT,
KUDATHINI, KUDATHINI,
Ballari (Bellary), Karnataka, 583152**

BHEL GST Registration No: 29AAACB4146P1ZB.

Note: Bill processing shall be done from BHEL PSSR Site office, Bellary TPS.

26.0 Safety / Penalty:

26.1 The bidder will be fully responsible for the safety of his workmen and shall provide necessary safety appliances like safety Helmets, Safety Shoes, Safety belts, Safety goggles and Safety apron, etc., to all workmen as per Safety Rules as enforced by BHEL / **Customer** at site without any additional cost.

26.2 Penalty will be imposed for not wearing the safety appliances as per HEALTH, SAFETY AND ENVIRONMENT PLAN FOR SITE OPERATION by SUBCONTRACTORS (Doc. No.HSEP:14 (Rev.01) Dtd.20.01.2020) attached with this tender.

In case of penalty imposed by customer is higher compared to penalty specified in above mentioned HSE Plan, customer penalty will be imposed.

26.3 Luminous safety jackets should be provided to all the Engineers, Supervisors and Workers deployed by contractor at site. All the contractor manpower should use the luminous safety jackets inside the plant premises.

26.4 In view of COVID-19, sufficient number of PPEs like face masks, disposable gloves, facility for frequent sanitization etc., for the contractor manpower shall be arranged by the contractor at work location.

26.5 Contractor shall strictly follow the guidelines/standard operating procedures regarding COVID-19 issued by State Government, Central Government, Local authorities and Customer.

26.6 Separate experienced supervisors are needed to be provided round the clock for supervising the safety practices.

27.0 For office and stores open site will be given. Any other facilities required have to be arranged at the bidder's cost.

28.0 The bidder should obtain statutory permission if any required for carrying out the contract at his own cost.

29.0 The bidder's personnel should follow all the rules in vogue at site.

30.0 In case of doubt, clarification or ambiguity, decision of BHEL will be final.

- 31.0 The bidder should execute the work to the satisfaction of concerned BHEL officials as per the job requirement as decided by BHEL. In case the work carried out is not satisfactory, BHEL reserves the right to terminate the contract with 3 days advance notice and get the balance works carried out by any other agency and recover the entire extra cost if any from any of the amounts of the bidder available with BHEL.
- 32.0 No part of the contract shall be sublet without written permission of BHEL/SAS nor shall transfer be made by power of attorney authorizing others to receive the payment on behalf of the bidder.
- 33.0 **Calibration of IMTE:**
All measuring instruments including temperature and pressure measuring devices used at site are to be duly calibrated and certified by recognized agency with traceability to NPL or equivalent standards which should be valid during the entire period of execution of work at site. The calibration certificate having validity shall be produced at the time of establishment of site, and as and when required by BHEL.
- 34.0 **Hire charges for T&P, instruments etc., provided from BHEL or through BHEL:**
- 34.1 If the bidder fails to supply the required fit for use T&Ps, measuring instruments etc., during the execution of work, and if the same are provided by BHEL or through BHEL, the hire charges as decided by BHEL, will be levied on the basis of certification from BHEL/Resident Manager at site. Further on return of the items after usage, if BHEL is to incur any expenditure due to any damage/loss/repair/rectification on the above items, charges incurred and as decided by BHEL on this account will be levied in addition to the hire charges.
- 35.0 **Additional Information to be noted by the Bidder:**
- 35.1 **Completion on emergency:**
In case if the work has to be completed by compressing the completion schedule if so decided by BHEL on emergency, the bidder has to arrange immediately on intimation all required necessary inputs and additional efforts at no extra cost. In the event of any failure on the part of the bidder to meet such requirements on emergency, BHEL reserves the right to arrange all the inputs at its discretion and deduct the entire cost from the bidder as per BHEL procedures.
- 35.2 **Safe custody of Components:**
All the dismantled components should be stored safely in polythene covering with proper identification tags for easy traceability required polythene covers and identification tags to be arranged by the bidder. Bidder has to take care of all the components including the dismantled items under his custody and ensure the immediate safe availability of all those items as and when required by BHEL, till commissioning of the equipment or for handing over to the concerned before vacation of the site as decided by BHEL. In case of any loss, damage or theft of these materials/components, BHEL will have the right to impose total recovery along with all charges including penalty in arranging the materials.
- 35.3 The entire work is time bound, and most of the activities are precision jobs. Hence, bidder has to deploy highly qualified skilled Engineers/ Supervisors/Fitters/ technicians as per site requirement as advised by

- BHEL. Any delay or failure by the bidder to meet such manpower requirements at site will be viewed seriously. Any suitable remedial action from BHEL side including manpower deployment will be at the cost of the bidder to the extent of charging entire cost including BHEL Daily Service Rates for manpower deployed.
- 35.4 List of tools, jigs & fixtures, testing kits available with the bidder in fit for use condition and which can be provided by the bidder during the execution of work. If some special fixtures are required, bidder has to fabricate the same and hand over to customer. Material for the same will be provided but welding rods and machining is in bidder's scope.
- 35.5 Bidder has to make payment to his workmen/employees as per the provisions of state/central laws.
- 35.6 Any testing such as UT/DPT/Radiography required at site for completion of the work as stipulated in the scope of work will be under the purview of the bidder. In this regard the bidder has to arrange the testing agency having required experience as acceptable to BHEL along with kit, and testing consumables and keep them ready as and when required from the starting date itself.
- 35.7 Transport and accommodation at site for the bidder's personnel to be arranged by the bidder at his own cost.
- 35.8 Transportation of materials from **Customer** stores to location at site and returning of the unused materials back to **Customer** stores will be under bidder's scope including all required arrangements (manpower & handling equipment).
- 35.9 **HSE requirements to be fulfilled by the sub-contractor (Integration of ISO 15001 environmental management system and OHSAS 18001 for Occupational Health and Safety Management System).**
- 36.0 **Statutory Requirement:**
- 36.1 Bidder should obtain the labour license from labour inspector of respective state. Labour insurance coverage for all the workmen before start of the work. Insurance coverage should be obtained for all the workmen and not for a few workmen. It is the responsibility of contractor to provide medical insurance for all the workmen engaged for COVID-19 ailments.
- 36.2 Statutory requirements like PF, ESI etc., as applicable should be fully complied with.
- 36.3 Any deductions made by customer from BHEL towards non-compliance of statutory requirement, safety requirement, etc. by the contractor engaged by BHEL, will be recovered from any of the dues payable to contractor.
- 37.0 **Extra work:**
- 37.1 The works which are of minor in nature and beyond the scope of work shall be considered as extra work on manday rate basis and this will be considered at the discretion of Resident Manager / BHEL-SAS.
- 37.2 Single composite average labour man-hour rate, including overtime if any, supervision, use of tools and tackles and other site expenses and incidentals, consumables for carrying out any major rework / repairs / rectification / modification / fabrication as certified by site as may arise during the course of erection, testing, commissioning or extra works arising

out of transit, storage and erection damages, payment, if found due will be at Rs.108/- per man hour.

Above man day rates are inclusive of charges towards consumables (except Special Alloy Steel Welding Electrodes) and T&P. Contractor has to submit log sheets consisting of details of manpower engaged (showing start hour and end hour) for execution of extra works duly certified by Resident engineer.

37.3 The works which are of major in nature and beyond the scope of work shall be considered as extra work on lumpsum negotiable basis and this will be considered at the discretion of Resident Manager / BHEL-SAS.

38.0 The offers of the bidders who are on the banned/hold list as also the offer of the bidders, who engage the services of the banned/hold firms, shall be rejected. The list of banned/hold firms is available on BHEL web site "www.bhel.com → tender notification".

39.0 Integrity commitment, performance of the contract and punitive action thereof:

a) Commitment by BHEL:

BHEL commits to take all measures necessary to prevent corruption in connection with the tender process and execution of the contract. BHEL will during the tender process treat all Bidder(s) in a transparent and fair manner, and with equity.

b) Commitment by Bidder/ Supplier/ Contractor:

i) The bidder/ supplier/ contractor commit to take all measures to prevent corruption and will not directly or indirectly influence any decision or benefit which he is not legally entitled to nor will act or omit in any manner which tantamount to an offence punishable under any provision of the Indian Penal Code, 1860 or any other law in force in India.

ii) The bidder/ supplier/ contractor 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 and shall adhere to relevant guidelines issued from time to time by Govt. of India/ BHEL.

iii) The bidder/ supplier/ contractor will perform/ execute the contract as per the contract terms & conditions and will not default without any reasonable cause, which causes loss of business/ money/ reputation, to BHEL.

If any bidder/ supplier/ contractor during pre-tendering/ tendering/ post tendering/ award/ execution/ post-execution stage includes in mal-practices, cheating, bribery, fraud or and other misconduct or formation of cartel so as to influence the bidding process or influence the price or acts or omits in any manner which tantamount to an offence punishable under any provision of the Indian Penal code, 1860 or any other law in force in India, then, action may be taken against such bidder/ supplier/ contractor as per extant guidelines of the company available on www.bhel.com and/ or under applicable legal provisions.

- 40.0 The bidder shall submit documents in support of possession of 'Qualifying Requirements' duly self-certified and stamped/ digitally signed (as applicable) 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.
- 41.0 The bidder may have to produce original document for verification if so decided by BHEL.
- 42.0 "The Bidder along with its associate/ collaborators/ sub-contractors/ sub-vendors/ consultants/ service providers shall strictly adhere to BHEL Fraud Prevention Policy displayed on BHEL website <http://www.bhel.com> and shall immediately bring to the notice of BHEL Management about any fraud or suspected fraud as soon as it comes to their notice."
- 43.0 **Suspension of business dealings**
"BHEL reserves the right to take action against contractors who either fail to perform or Tenderers/Contractor who indulge in malpractices, by suspending business dealings with them in line with BHEL guidelines issued from time to time displayed on BHEL website <http://www.bhel.com>".
- 44.0 The Bidder declares that they will not enter into any illegal or undisclosed agreement or understanding, whether formal or informal with other Bidder(s). 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.

In case, the Bidder is found having indulged in above activities, suitable action shall be taken by BHEL as per extant policies/ guidelines.

Bidder shall submit duly filled & signed DECLARATION REGARDING RELATED FIRMS along with their techno-commercial offer.
- 45.0 ***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 qualify for the subject job on the basis of pre-qualification evaluation & Techno- Commercial bids etc. BHEL reserves the right to reject the bidders with unsatisfactory past performance in the execution of a contract. BHEL's decision in this regard shall be final & binding.***
- 46.0 "For this procurement, the local content to categorize a supplier as a Class-I local supplier/ Class-II local supplier/ Non-Local supplier and purchase preference to Class-I local supplier, is as defined in Public Procurement (Preference to Make in India), Order 2017 dated 04-06-2020 issued by DPIIT. In case of subsequent orders issued by the Nodal Ministry, changing the definition of local content for the items of the NIT, the same shall be applicable even if issued after issue of this NIT, but before opening of Part-II bids against this NIT".

Duly filled & signed Form (Declaration regarding minimum local content in line with revised public procurement (preference to Make In India), order 2017), as applicable, to be submitted by bidders along with their techno-commercial offer.

47.0 Compliance to Restrictions under Rule 144 (xi) of GFR 2017

- I. Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority. The Competent Authority for the purpose of this Clause shall be the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT).
- II. "Bidder" (including the term 'tenderer', 'consultant' or 'service provider' in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such person, participating in a procurement process.
- III. "Bidder from a country which shares a land border with India" for the purpose of this order means: -
 - a. An entity incorporated, established or registered in such a country; or
 - b. A subsidiary of an entity incorporated, established or registered in such a country; or
 - c. An entity substantially controlled through entities incorporated, established or registered in such a country; or
 - d. An entity whose beneficial owner is situated in such a country; or
 - e. An Indian (or other) agent of such an entity; or
 - f. A natural person who is a citizen of such a country; or
 - g. A consortium or joint venture where any member of the consortium or joint venture falls under any of the above
- IV. The beneficial owner for the purpose of (III) above will be as under:
 1. In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has a controlling ownership interest or who exercises control through other means.

Explanation

 - a. "Controlling ownership interest" means ownership of or entitlement to more than twenty-five per cent. of shares or capital or profits of the company;
 - b. "Control" shall include the right to appoint majority of the directors or to control the management or policy decisions including by virtue of their shareholding or management rights or shareholders agreements or voting agreements;
 2. In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership;
 3. In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has ownership of or entitlement to more than fifteen percent of the property or capital or profits of such association or body of individuals;

4. Where no natural person is identified under (1) or (2) or (3) above, the beneficial owner is the relevant natural person who holds the position of senior managing official;
 5. In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.
- V. An agent is a person employed to do any act for another, or to represent another in dealings with third person.
- VI. The successful bidder shall not be allowed to sub-contract works to any contractor from a country which shares a land border with India unless such contractor is registered with the Competent Authority. However, in this regard, relevant provisions of GSCC shall also be applicable.

Note: The bidder shall provide undertaking for their compliance to this Clause, in the Format (DECLARATION REGARDING COMPLIANCE TO RESTRICTIONS UNDER RULE 144 (xi) OF GFR 2017). Registration of the bidder with Competent Authority should be valid at the time of submission as well as acceptance of the bids.

- 48.0 *In the course of evaluation, if more than one bidder happens to occupy L-1 status, effective L-1 will be decided by soliciting discounts from the respective L-1 bidders. In case more than one bidder happens to occupy the L-1 status even after soliciting discounts, the L-1 bidder shall be decided by a toss/draw of lots, in the presence of the respective L-1 bidder(s) or their representative(s). Ranking will be done accordingly. BHEL's decision in such situations shall be final and binding.*
- 49.0 ***Guidelines/rules in respect of Suspension of Business dealings, Vendor evaluation format, Quality, Safety & HSE guidelines, Experience Certificate, etc. may undergo change from time to time and the latest one shall be followed. The abridged version of extant 'Guidelines for suspension of business dealings with suppliers/contractors' is available on www.bhel.com on "supplier registration page".***
- 50.0 ***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).***

For and on behalf of BHEL,

Sd/-

**(T Sravana Kumar)
Manager/SCT**

ANNEXURE – 1

TECHNICAL CONDITIONS for Rectification of boiler vertical water wall fin cracks and other works in Boiler as per SOW at KPCL -Bellary TPS for UNIT#3 – 1 X 700MW

1. Statutory requirements like labour license from labour Inspector (form-III from customer is to be collected well before the start works to avoid delay in obtaining gate passes), workmen compensation insurance, third party liability insurance, PF registration and ESI registration certificates from statutory authority are to be submitted. Power of attorney for Successful Bidder's representative to be submitted to BHEL Resident Manager.
2. Contractor has to get safety clearance and work permit from customer before start of work.
3. For NDT purpose, Level-II supervisor, with valid credentials, shall be arranged by the contractor for the evaluation of DPT, UT of bearings, retaining rings etc., radiography of weld joints if required.
4. Major consumables like Argon, Acetylene, Oxygen gases, required welding electrodes etc., shall be arranged by the contractor.
5. Arrangement and removal of all platforms at all locations which are required for dismantling and re-assembly activities is in the scope of contractor.
6. If any person found not fit or not having suitable experience for the job, our Resident Manager has the discretion to remove or contractor has to replace the person immediately with suitable experienced person.
7. Transportation of the new materials from stores and returning of the removed materials to the notified area of the customer shall be arranged by the contractor. The contractor shall arrange necessary manpower, lifting, transportation arrangements required for drawing and returning spares/tools/other equipment required for execution of job.
8. Machining of small components shall be done by the contractor without any additional cost.
9. All consumables like petrol, kerosene, grease etc., cleaning agents such as CRC electracleam, etc, adhesive like anabond loctite etc., and consumables for DP test such as cleaner, penetrant and developer etc. including silicon sealant RTV732 / RTV 736, hylomer are to be supplied by contractor.
10. All tools & tackles are to be arranged by contractor except for special fixtures which are supplied along with original equipment.
11. Calibrated instruments are to be arranged by contractor for carrying out the tests in your scope.
12. Any repair /modification work and minor works required for the successful commissioning shall be done by the contractor without any additional cost.
13. Any special fixtures required for successful completion of works are to be fabricated at site by contractor. Any fixtures required during execution of scope of works not available at site shall be fabricated by the contractor. Such fixtures fabricated at site shall be handed over to BHEL.
14. Portable cabin for safe custody of T&P near the work place to be arranged by the contractor.
15. Contractor has to arrange necessary T&Ps required for the overhauling jobs (like all standard sizes of spanners, Chain blocks, Dial gauges, bore gauges, slip gauges, Magnetic stand, Micrometers, Straight edges, Filler gauge, Spirit level, Hack saw frame, Tarpaulins, Grinding machines, Welding machines, Gas cutting machine, Measuring tape, SS Scale, lifting & pulling tools, hydraulic jacks & pumps, slings, portable tool/bench grinders, vice

- etc). Party shall also submit calibration certificate for all measuring instruments & load test certificate for slings / chain pulley blocks / D-shackles / eye bolts etc., before use.
16. Sub-contractor has to arrange for medical check-up as per the procedures of Customer prior to applying for gate passes.
 17. PF, ESI, Insurance, medical check-up documents, labour identity cards, Adhaar cards etc., should be submitted for availing gate pass.
 18. As a safety regulation LPG should never be used in place of DA gas.
 19. Only 24V hand lamps should be used. Transformers (230V to 24V single phase) to be arranged by contractor.
 20. Rolling of all compressed gas cylinders are not permitted. All cylinders are to be transported in upright position through hand trolley and must be stored away from open flames and other sources of heat.
 21. Gas cutting torches must be lighted by means of friction flames or similar other methods and not with matches. Flash back arrestor to be used while gas cutting.
 22. All scaffolding shall be securely supported or suspended and whenever necessary be properly braced to ensure stability.
 23. Use of jute or cotton waste at site is not permitted. Contractor shall strictly comply with the same.
 24. The contractor is responsible for taking all precautionary measures, for ensuring safety, health and welfare of the workmen engaged on the specified work
 25. The contractor shall owe complete responsibility for all the accidents to their workers taken place within and outside the premises and the consequences there from. BHEL and Customer will not pay any compensation.
 26. Successful bidder shall fully indemnify BHEL against all claims of whatsoever nature arising during the course of erection / overhauling / performing work under the contract. Indemnity bond as per customer requirement has to be submitted by the successful bidder.
 27. Contractor has to arrange necessary Truck / Hydra / Crane/ trailer/tractor etc., for shifting of materials & T&Ps from customer store & back. Man power required for shifting of materials shall be provided by the party.
 28. Successful bidder has to mobilize the site immediately and make necessary arrangements for getting gate passes and completion of Police Verification of workers.
 29. The contractor and all persons engaged by him on the work shall conform in all respects with the preventions of all acts, orders, regulations etc., made by the competent authority with regard to safety, health and welfare of the persons engaged.
 30. In case, BHEL/Customer becomes liable to pay any wages / dues/ penalties to any statutory authority/ Govt. Agency under any of the provisions of the factories act, Minimum wages act, workmen compensation act, employment of children act or any other loss, due to omission of the contractor, BHEL/Customer may make such payment and shall recover the same from the contractor's bills.
 31. The contractor shall provide necessary first aid facilities for all his employees, representatives, workers etc., engaged at site. Enough number of his personnel shall be trained in administering first aid.
 32. The contractor shall ensure that all persons deployed are thoroughly conversant with the Statutory requirements and safety rules governing the

- work and they have to undertake which may include, erection of barriers with identified danger marks around holes or openings, display of warning notices during day time and red lamps in the darkness, etc.
33. Any testing equipment required during overhauling shall be arranged by the contractor.
 34. Sufficient service personnel may be engaged day & night by the contractor for exercising proper supervision of the above works in time.
 35. Bidders are advised to visit site for studying scope works and familiarize themselves thoroughly with the site conditions.
 36. Qualified NDT agency to be arranged by contractor for conducting DP & UT as per scope of work.
 37. Consumables like welding rods, DP-Test kits, Rustolene spray, Kerosene, Gada cloth, emery sheets, 24V bulbs, oil stones, blue tube, Emery grinding wheels & stones, burr cutters, wire brush etc; required for the overhaul work shall be brought by the contractors in sufficient quantities.
 38. Necessary scaffolding pipes, tarpaulins required for the work shall be brought by the contractor
 39. Oxygen & DA gas for the Strainer work shall be brought by the contractors in sufficient quantities.
 40. Any Attachments that are required for the purpose of removal or assembly of components etc. are to be fabricated by the contractor and it shall be handed over to customer after overhaul.
 41. *Contractors are advised to cover all contract labours engaged by them under Pradhan Mantri Jeevan Jyoti Bima Yojna (PMJJBY) and Pradhan Mantri Surakshya Bima Yojna (PMSBY).*
 42. Compressed air, water and power for the jobs as per requirement at specified locations shall be provided. Arrangements for further distribution shall be in the scope of the contractor.
 43. Party has to arrange necessary water jars etc for measurement of catenary. T&Ps required for the overhauling jobs (like all standard sizes of spanners, Chain blocks, Dial gauges, bore gauges, slip gauges, Magnetic stand, Micrometers, Straight edges, Filler gauge, Spirit level, Hack saw frame, Tarpaulins, Grinding machines, Welding machines, Gas cutting machine, Measuring tape, SS Scale, lifting & pulling tools, hydraulic jacks & pumps, slings, portable tool/bench grinders, vice etc). Party shall also submit calibration certificate for all measuring instruments & load test certificate for slings / chain pulley blocks before start of work. The above have to be recalibrated / load tested as per instruction of BHEL/customer EIC/safety department. If required, lifting tools & tackles to be load tested & certified by competent authority within the customer premises.
 44. If any T&P not mobilised then deduction shall be made as per terms and conditions of the contract or as per the recommendation of BHEL resident manager.
 45. All NDT inspection including all accessories, consumables and manpower. (eg. DPT / MPI / NFT & ultrasonic testing) is in the scope of the contractor. Water washable type chlorine free fluorescent type DP kit for DP testing (Magnaflux/Orion make). Suitable color paint to repaint the weld joint after DPT along with required accessories and consumables.
 46. Party has to arrange all scaffolding materials, wooden planks, sleepers, packers, tarpaulins etc.

47. Party has to give necessary assistance for drawl of spares from stores & returning the damaged / surplus spares to store and scrap to the identified location as per instructions of EIC.
48. The contractor has to engage competent / skilled manpower as per the requirement of the respective jobs. BHEL/customer reserve the right to disallow any worker to continue the work, if found unsuitable for the specific job. The party shall submit list of proposed foreman / skilled / semi-skilled man power (Equal strength of work group in 2 shifts) for each schedule of jobs to be deployed indicating field experience and grade in the organization within two days of intimation of the date of commencement of overhauling. This list shall be approved by EIC before commencement of overhaul.
49. Equal strength of work group, as indicated by BHEL/SAS Resident Manager, shall be deployed in 12 hrs shifts.
50. Following contractor personnel shall be deployed round the clock basis:
 - a. Qualified safety officer
 - b. Certified NDT person for NDT inspections (DPT, MPI, NFT & ultrasonic testing, radiography, stress relieving etc.)
 - c. Certified IBR welders certified by FQA
 - d. Qualified and certified electrician on round the clock basis
 - e. General welder and gas-cutter on round the clock basis
 - f. Designated group for housekeeping manpower on daily basis for maintaining clean working area.
51. Progress review and next day plan/targets to be discussed on daily basis in meeting contractor with BHEL & customer. Contractor has to meet daily and has to submit the works under progress and the works planned for the next day. This is mandatory. Contractor has to maintain the daily register for works being executed, plan & review and has to be shown to EIC on daily basis.
52. The contractor shall be fully responsible for the safety of his personnel during the work at site, and shall ensure the use of safety appliances by his workmen.
53. Party has to engage his manpower for 24 hour work in all working days/ holidays during overhaul. The teams are to be headed by responsible and experienced Engineers/Supervisors. The party has to submit detailed manpower deployment program for round the clock work before commencing overhauling works.
54. The contractor shall have to take utmost care of spares parts/materials during dismantling, assembly, storage and handling of equipment etc., as applicable.
55. After completion of work, the area shall be cleared up to the satisfaction of EIC without any extra charge on daily basis. Scrap materials have to be disposed to the scrap yard before completion of work as per instruction of EIC.
56. The contractor has to carry out the work as per the details given in "Scope of work" in general. However, the Manufacturer's maintenance catalogue and standard Engineering practices also need to be adhered to.
57. The contractor shall erect approach platform as per requirement and dismantle the same.
58. The contractor shall be fully responsible for maintenance of records of his employees including statutory requirements.
59. The contractor shall start the work only after instruction by EIC.

60. The party shall provide all necessary assistance while commissioning back the unit including governing checking and setting and shall rectify any defects attributable to party's workmanship.
61. Contractor shall follow all the relevant practices implemented by Customer in respect of Safety, 5-S, ISO-14000, OHSAS etc. to the extent possible from proper cleanliness of site and records point of view.
62. Party shall comply all statutory requirements such as PF, ESI etc., as applicable.
63. Party shall carry out all the work in line with BHEL protocols regarding clearance, dimensional checks, blue matching, Alignment etc. All the reading/values/critical works to be witnessed by BHEL & customer executive.
64. Clauses of Deduction
- Any job if carried out leads to safety regulation violation then the contractor will be penalized appropriately by the management.
 - Failure to comply with EHS guidelines.
 - Any activity that leads to the disruption in the production activities that are being carried out without any written approval will be penalized.
 - Damage to property will be recovered from the contractor.
 - Non-compliance of statutory requirements.
65. **LABOUR LAWS:**
The Governing Acts as applicable and as amended shall be strictly followed. Some of such acts are given below. List of Labour legislation under which compliance, maintenance of registers and sending of returns shall be ensured by contractor. While complying with the Act complying with relevant rules issued under the said Acts and administrative circulars there on shall also be ensured by the contractor.
- The Factories Act, 1948
 - The Contract Labour (R&A) Act, 1970
 - The Employees Provident Fund and Misc. Provision Act, 1952
 - The Employees' Compensation Act, 1923
 - The Minimum Wages Act, 1948
 - The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996
 - The Building and Other Construction Workers Welfare Cess Act, 1996
 - The Inter State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979
 - The Payment of Wages Act, 1936
 - The Payment of Bonus Act, 1965
 - Maternity Benefit Act, 1971
 - The Child Labour (Prohibition And Regulation) Act, 1986
 - The Employees' State Insurance Act, 1948
 - Equal Remuneration Act, 1976
 - The Industrial Disputes Act, 1947
 - The Payment of Gratuity Act, 1972
 - The Trade Union Act, 1926
 - The Apprentices Act, 1961
 - Industrial Employment (Standing Orders) Act, 1946
 - The Employment Exchanges (Compulsory Notification of Vacancies) Act, 1959.
 - Any other acts/rules as may be applicable from time to time

66. MAN POWER REQUIREMENT

- 66.1 Customer has insisted to provide experienced diploma holders and engineers. This should be strictly adhered. It may strictly be noted that if experienced engineers and diploma holders are not deployed, accordingly recovery shall be made from your bill based on recommendation by Resident Manager.
- 66.2 Resident Engineer – 1 – 10 to 15 years' experience must be an Engineering Graduate. Supervisors must be diploma holders with sufficient experience in Boiler area.
- 66.3 Exclusively two qualified safety supervisors (for day and night shifts) having diploma in safety, should be arranged by the contractor mandatorily for supervising the safety activities. If not deployed, accordingly recovery shall be made from your bill based on recommendation by Resident Manager.**
- 66.4 The sub-contractor man power deployed shall have hand over the gate passes to the security through the Resident Manager / BHEL.
- 66.5 Safety of the equipment to be given utmost attention.
- 66.6 You should make sufficient man power available for taking up this work with accent on quality.
- 67. Successful bidder shall follow HEALTH, SAFETY AND ENVIRONMENT PLAN FOR SITE OPERATION by SUBCONTRACTORS (Doc. No.HSEP:14 (Rev.01) Dtd.20.01.2020) attached with tender.
- 68. Contractor has to deploy experienced NDT agency for conducting NDT. Contractor has to submit credentials of NDT agency to BHEL resident engineer for acceptance before deployment. Certain tests need to be repeated after rectification works and till satisfactory results are obtained. Agency has to arrange for repeating the tests as per the instruction of BHEL resident engineer and as per the requirement of site. No additional payment will be made in case of any test is repeated.
- 69. Any activity not covered in scope of work but required to be executed as per site requirement for successful completion of overhauling works is in the scope of the Contractor. No extra payment will be made towards execution of such activities.
- 70. Any consumables not specifically mentioned in scope of work/special conditions but required to be arranged for successful completion of overhauling works is to be arranged by the Contractor without any additional cost.

IMPORTANT NB : STATUTORY REQUIREMENTS LIKE PF, ESI ETC., AS PER Karnataka GOVT. AND AS PER KPCL Bellary – HRD TO BE FULLY COMPLIED WITH. ANY SPECIAL RULES OR ALLOWANCES APPLICABLE AS PER KPCL Bellary – HRD TO BE FULLY COMPLIED WITH.

ANNEXURE-2**WEIGHTAGE BREAKUP OF TOTAL PRICE**

Rear arch panel (S08) work				
S.N.	Item Description	Qty	Unit	Weightage for total price of each item
1	Removal and replacement of rear arch panel including scaffolding arrangement	1	LPS	0.1102745
2	Welding of HP tube joint	70	No.	0.027558
3	Carryout RT (Elliptical shot as per condn)	70	No.	0.0039458
4	Welding of tube attachments	55	No.	0.0092567
5	Hanger tightness inspection & correction	1	LPS	0.0050765
Header (S09) stub replacement				
1	Removal and replacement of Header stub including scaffolding arrangement	1	LPS	0.007424571
2	Welding of HP tube joint	20	No.	0.0095671
3	Carryout RT (Elliptical shot as per condn)	10	No.	0.0018791
4	Carryout DPT	0.01	LPU	0.0010278
5	Stress Relieving	0.4545	No.	0.00174381
Vertical water wall (VWW) panel replacement @ fin crack				
1	Removal and replacement of VWW panel including scaffolding arrangement	1	LPS	0.1678701
2	Welding of HP tube joint	400	No.	0.1451951
3	Carryout RT (Elliptical shot as per condn)	400	No.	0.0167896
4	Welding of tube attachments	600	No.	0.0088127
5	Hanger tightness inspection & correction	1	LPS	0.0048976
6	Buckstay inspection & correction	1	LPS	0.0687645
SH spray control valve and ERV				
1	Removal and erection of SH spray control valve and ERV	1	LPS	0.0711229
2	Welding and UT of pipe joint	6	No.	0.0258224
3	Stress relieving	6	No.	0.0159021
FSH fluid cooled spacer tube				
1	Scaffolding arrangement Stopper plate fixing	1	LPS	0.0079978
2	Welding of tube attachment	10	No.	0.0018085
3	Carryout DPT	0.01	LPU	0.0006002
Mill board fixing in access door and observation door				
1	Removal and erection of access door and observation door	14	No.	0.019045

Air leak protection system (ALPS) application in seal box and skin casing				
1	ALPS application	1	LPS	0.0390215
Insulation wool and Refractory work				
1	Application of insulation wool	44.36	MT	0.1293250
2	Application of refractory	6.6	MT	0.0159721
Manpower and T&Ps support				
1	Separator safety valve (SSV2) 01 No. servicing by BHEL Trichy technician	1	LPS	0.0019211
2	Boiler left side main steam line stop valve servicing by BHEL Trichy technician	1	LPS	0.0012247
Arrangement of hydrotest				
1	Arrangement of hydrotest	1	No.	0.0801532
Grand Total				1.0000000

Note:

1) Welding of tube attachment:

- In case of fin/skin casing/crown plate welding etc one BOQ shall be paid for per one meter welding.
- In case of tube connector/spacer cleats/lugs/ anti rubbing pads-one BOQ shall be paid for two no. welding.
- In case of seal box welding -one BOQ shall be paid for welding seal box around two tubes.
- In case of header/pipe attachment-one no.BOQ shall be paid for one attachment
- In case of fixing mechanical spacers, alignment bands, vibration arrestors-one BOQ shall be paid per each No.

2) Carrying out DPT at various location:

- For measurement purpose, DPT in case of circular dimensions the quantity shall be counted as follows:
 - up to dia. 100 mm-counted as one point
 - from 101 to 200 mm- counted as two points
 - from 201 to 300 mm- counted as three points
 - from 301 mm and above- counted as four points
- In case of DPT carried out on locations other than circular dimensions, measurement shall be done on prorata basis, converting to equivalent dia.
- For payment purpose, DPT done upto 1000 points (or part thereof) shall be counted as one lump sum qty.

3) Stress Relieving

For payment purpose,

- SR of one to twenty two(22) weld joints/attachment at a single location as finalised by EIC shall be considered as one BOQ.
- In case of more joints /attachments at a single location, proportionate BOQ shall be paid.
- In case of header to header joint or pipe to pipe joint one joint shall be considered as one BOQ.

IMPORTANT NOTES:

1. Successful Bidder has to deploy experienced NDT agency (having executed similar works) for conducting NDT Tests. Successful Bidder has to submit credentials of NDT agency to BHEL resident engineer for acceptance before deployment. Certain tests need to be repeated after rectification works and till satisfactory results are obtained. Successful Bidder has to arrange for repeating the tests as per the instruction of BHEL resident engineer and as per the requirement of site. No additional payment will be made in case of any test is repeated.
2. Any activity not covered in above scope of work but required to be executed as per site requirement for successful completion of overhauling works is in the scope of the Successful Bidder. No extra payment will be made towards execution of such activities.
3. In case any activity mentioned in the scope has to be repeated based on the condition and requirement at site, the vendor shall execute the same without any extra cost to BHEL.
4. Any consumables not specifically mentioned in above scope of work/special conditions but required to be arranged for successful completion of overhauling works is to be arranged by the Successful Bidder without any additional cost.

ANNEXURE-3**PRICE SCHEDULE FORMAT****Tender Specification No: T-24/2022-23****Dt: 02.12.2022****Time & Date of submission Before 11:00 Hrs. on 13.12.2022**

DESCRIPTION	TOTAL AMOUNT excl. GST (in Rs.[Figs. And words])
Total amount for Rectification of boiler vertical water wall fin cracks and other works in Boiler as per SOW at KPCL -Bellary TPS for UNIT#3 – 1 X 700MW	} 100% } Rs. _____

In words: Rupees

COMPLETION PERIOD: The entire work covered under the scope of this tender is to be completed within 65 days from start of Work.

GST SHALL BE TREATED AS EXTRA

Note:

1. Work to be taken up as advised by BHEL/SAS in line with customer schedule.
2. Payment shall be on completion of works as per terms of payment envisaged in the Tender.
3. The price quoted will be FIRM for a period of 06 months from latest due date of offer submission (including extension, if any) unless specified otherwise.
4. The rates should be quoted **both in figures and in words.**

We have quoted in line with the tender specification and we confirm our acceptance to the above mentioned conditions.

Signature of Bidder with Seal

NO DEVIATION CERTIFICATE

(To be typed and submitted in the Letter Head of the Company/Firm of Bidder)

To,

The General Manager/SAS,
Bharat Heavy Electricals Limited,
PSSR-SAS Secunderabad,
EK Tara Building,
39, SD Road,
Secunderabad – 500 003.

Dear Sir,

Sub: No Deviation Certificate

Ref: 1) NIT/Tender Specification No:,
 2) All other pertinent issues till date

We hereby confirm that we have not changed/ modified/materially altered any of the tender documents as downloaded from the website/ issued by BHEL and in case of such observance at any stage, it shall be treated as null and void.

We also hereby confirm that we have neither set any Terms and Conditions and nor have we taken any deviation from the Tender conditions together with other references applicable for the above referred NIT/Tender Specification.

We further confirm our unqualified acceptance to all Terms and Conditions, unqualified compliance to Tender Conditions, Integrity Pact (if applicable) and acceptance to Reverse Auctioning process.

This is to confirm that, we have noted the job content and we are fully aware of the site condition etc., before submission of our offer.

We confirm to have submitted offer in accordance with tender instructions and as per aforesaid references.

Thanking you,

Yours faithfully,

(Signature, date & seal of authorized representative of the bidder)

BIDDER FOR PRICE OPENING THROUGH REVERSE AUCTION

(To be typed and submitted in the Letter Head of the Company / Firm of Bidder)

To,

The General Manager/SAS,
Bharat Heavy Electricals Limited,
PSSR-SAS Secunderabad,
EK Tara Building,
39, SD Road,
Secunderabad – 500 003.

Dear Sir,

Sub: Declaration by Bidder for Price opening through Reverse Auction

Ref: 1) NIT/Tender Specification No:,
2) All other pertinent issues till date

I have studied and understood the clauses of Reverse Auction Guidelines published at <http://www.bhel.com>. I, hereby declare that we shall be participating in the Reverse Auction in case BHEL opts for opening the price bid through Reverse auction.

Below are the contact person details for participating in reverse auction:

Name : _____.

Mobile/Phone No. : _____.

E-Mail ID : _____.

Yours faithfully,

Date: (Signature, Date & Seal of Authorized Signatory of the Bidder)

UNDERTAKING

(To be typed and submitted in the Letter Head of the Company/Firm of Bidder)

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir/Madam,

Sub: DECLARATION REGARDING INSOLVENCY/ LIQUIDATION/ BANKRUPTCY PROCEEDINGS

Ref: 1) NIT/Tender Specification No:,

2) All other pertinent issues till date

I/We, _____ declare that,

I/We am/are not under insolvency resolution process or liquidation or Bankruptcy Code Proceedings (IBC) as on date, by NCLT or any adjudicating authority/ authorities, which will render us ineligible for participation in this tender.

Sign. of the AUTHORISED SIGNATORY

(With Name, Designation and Company seal)

Place:

Date:

DECLARATION

(To be typed and submitted in the Letter Head of the Company/Firm of Bidder)

Date: _____

To: _____

Address: BHEL , _____

email: _____

Sub: Details of related firms and their area of activities

Ref: 1) NIT/Tender Specification No:,

2) All other pertinent issues till date

Dear Sir/ Madam,

Please find below details of firms owned by our family members ("Family" shall mean: (a). parent, (b). husband/wife (c). sons/daughters (including adopted children) and their spouse, (d). full blood siblings (brothers & sisters from common parents) and their spouse) that are doing business/ registered for same item with BHEL, _____ (NA, if not applicable)

01	Material Category/ Work Description	
	Name of Firm	
	Address of Firm	
	Nature of Business	
	Name of Family Member	
	Relationship	
02	Material Category/ Work Description	
	Name of Firm	
	Address of Firm	
	Nature of Business	
	Name of Family Member	
	Relationship	

Note: I certify that the above information is true and I agree for penal action from BHEL in case any of the above information furnished is found to be false.

Regards,

(_____)

From: M/s _____

Supplier Code: _____

Address: _____

Note: Please mention NIL or Not Applicable in the above table if no related firms is available.

**DECLARATION REGARDING MINIMUM LOCAL CONTENT IN LINE WITH
REVISED PUBLIC PROCUREMENT (PREFERENCE TO MAKE IN INDIA),
ORDER 2017**

DATED 04TH JUNE, 2020) AND SUBSEQUENT ORDER(S)

(To be typed and submitted in the Letter Head of the Entity/Firm providing certificate as applicable)

To,

The General Manager/SAS,
Bharat Heavy Electricals Limited,
PSSR-SAS Secunderabad,
EK Tara Building,
39, SD Road,
Secunderabad – 500 003.

Dear Sir,

Sub: Declaration reg. minimum local content in line with Public Procurement (Preference to Make in India), Order 2017-Revision, dated 04th June, 2020 and subsequent Orders)

Ref : 1) NIT/Tender Specification No:,

2) All other pertinent issues till date

We hereby certify that the items/works/services offered by _____ (SPECIFY ORGANIZATION NAME HERE) has a local content of _____ % and this meets the local content requirement for 'Class-I local supplier' / 'Class II local supplier' ** as defined in Public Procurement (Preference to Make in India), Order 2017-Revision dated 04.06.2020 issued by DPIIT and subsequent order(s).

The details of the location(s) at which the local value addition is made are as follows:

- | | |
|----------|----------|
| 1. _____ | 2. _____ |
| 3. _____ | 4. _____ |

Thanking you,
Yours faithfully,

(Signature, Date & Seal of Authorized Signatory of the Bidder)

** - Strike out whichever is not applicable.

Note:

1. Bidders to note that above format Duly filled & signed by authorized signatory, shall be submitted along with the techno-commercial offer.
2. In case the bidder's quoted value is in excess of Rs. 10 Crores, the authorized signatory for this declaration shall necessarily be the statutory auditor or cost auditor of the company (in the case of companies) or a practising cost accountant or practicing chartered accountant (in respect of suppliers other than companies).
3. In the event of false declaration, actions as per the above order and as per BHEL Guidelines shall be initiated against the bidder.

**DECLARATION REGARDING COMPLIANCE TO RESTRICTIONS UNDER RULE
144 (xi) OF GFR 2017**

(To be typed and submitted in the Letter Head of the Entity/Firm providing
certificate as applicable)

To,

The General Manager/SAS,
Bharat Heavy Electricals Limited,
PSSR-SAS Secunderabad,
EK Tara Building,
39, SD Road,
Secunderabad – 500 003.

Dear Sir,

Sub: Declaration regarding compliance to Restrictions under Rule 144 (xi) of GFR 2017

Ref : 1) NIT/Tender Specification No:,
2) All other pertinent issues till date

I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries. I certify that _____ (specify the name of the organization here), is not from such a country / has been registered with the Competent Authority (attach valid registration by the Competent Authority, i.e., the Registration Committee constituted by the Dept. for Promotion of Industry and Internal Trade (DPIIT)); and will not sub-contract any work to a contractor from such countries unless such contractor is registered with the Competent Authority. (attach relevant valid registration, if applicable) I hereby certify that we fulfil all requirements in this regard and is eligible to be considered.

Thanking you,

Yours faithfully,

(Signature, Date & Seal of Authorized Signatory of the Bidder)

Note:

Bidders to note that in case above certification given by a bidder, whose bid is accepted, is found to be false, then this would be a ground for immediate termination and for taking further action in accordance with law and as per BHEL guidelines.

BANK ACCOUNT DETAILS FOR E-PAYMENT

(To be given on Letter head of the Company /Firm of Bidder, and ENDORSED (SIGNED & STAMPED) BY THE BANK to enable BHEL release payments through Electronic Fund Transfer (EFT/RTGS)

1. Beneficiary Name and Address:
2. Beneficiary Account No.:
3. Type of A/C (CC/Current)
4. Bank Name & Branch:
5. City/Place:
6. 9 digit MICR Code of Bank Branch:
7. IFSC Code of Bank Branch:
8. PAN Number of Beneficiary:
9. Beneficiary E-mail ID:
(for payment confirmation)

Note: In case Bank endorsed certificate regarding above has already been submitted earlier, kindly submit photocopy of the same.

Form WAM 10

BHARAT HEAVY ELECTRICALS LIMITED**DIVISION****Claim for Refund of Security Deposit****(Para 4.7.4 of Works Accounts Manual)**

Ref No.:

Date:

- 1 Name and address of the contractor
- 2 Contract Agreement/Work Order No.
- 3 Date of contract agreement/work order
- 4 Name of the work undertaken
- 5 Date of commencement of the work
- 6 Date of completion of the work
- 7 Period of Maintenance
- 8 Date on which the final bill was paid
- 9 Last date of making good the defect, if any, during maintenance period
- 10 Expenditure incurred by BHEL during maintenance period, if any, recoverable
- 11 Date on which security deposit refund falls due as per contract
- 12 Amount deposited/recovered

Details	Mode	Amount

- 13 LESS amounts recoverable (with details)
 - (i) Amount spent by BHEL on maintenance:
 - (ii) Payments made on behalf of contractor :
 - (iii) Court dues / penalties / compensation :
 - (iv) Other recoveries for services etc. :
 - (v) Security deposit released with final bill (%):
- 14 Net amount recommended for release (12-13):

Details	Mode	Amount

Date:

Signature of Engineer in Charge

Form WAM 10 (Contd.)

CERTIFICATE TO BE FURNISHED BY THE CONTRACTOR

I/We have no claim or demand outstanding against BHELfor the work done or for labor or material supplied or any other account arising out of or connected with the contract agreement/work order (No.....dated) and the payment of this bill shall be in full and final

Date:**Signature of Contractor****CERTIFICATE TO BE FURNISHED BY SENIOR ENGINEER**

Certified that

- The payment recommended for release is in order and there are no demands other than those included in the claim outstanding from the contractor;
- The maintenance period as per the contract agreement is over and the contractor has carried out the works required to be carried out by him during the period of maintenance to our satisfaction, and all expenses incurred by the company on carrying out such works have been included for adjustment;
- All the objections raised so far have been settled;
- A note of refund of security deposit has been made in the measurement book and contract agreement/work order.

Date:**Signature of Senior Engineer****FOR USE IN FINANCE DEPARTMENT**

Passed for

Rs.....(Rupees.....
.....only)

Accountant**Accounts Officer**

SUB AGENCY LETTER HEAD

.....
Ref. No: BHEL/PS/SR/SAS/No Due/SITE:DATE:.....

To,

The engineer Incharge,

Dept:

Project:.....

Unit:.....

(Through BHEL Site In-charge)

Sub : Request for issuance of "NO DUES CERTIFICATE "

Ref : 1) Customer P.O/LOI :
.....

2) BHEL P.O/LOI :
... ..

Dear Sir,

With reference to the above we request for issuance of "NO DUES CERTIFICATE" for the works for the Project:
....., Unit:

Kindly do the needful at your end please.

Thanking you

Yours faithfully,

(Name:)

Site In-charge

Company: M/s.....

Project:..... ,Unit No:

.....
Kindly issue "No Due certificate" for the above subject works after due verification of your stores.

With thanks and regards

Site In-charge

BHEL/PSSR/SAS

PROJECT: Unit:

NO DUES CERTIFICATE

Date:

Ref:1) P.O No:

2) Your Lr .No: BHEL/PS/SR/SAS/No Due/Site: Dtd:

This is to certify that, with the above references, M/s
....., Sub contractor of M/s BHEL/PSSR/SAS returned all the T&P and materials in
healthy condition which were received during execution of the works :

..... at project :

..... of unit No : in the period of

This "No dues certificate" issued after due verification of our stores.

Signature of principal customer

Dept :

Seal :

BHARAT HEAVY ELECTRICALS LIMITED
POWER SECTOR, SOUTHERN REGION

REFUND OF RETENTION AMOUNT

Format No.PS:SR:SAS:SCT:Retention:REFUND:001

Ref No:	Date:
1. Name and Address of Contractor : 2. Contract Agreement/LOI No : 3. Date of Contract Agreement/LOI : 4. Name of the Work undertaken : 5. Date of commencement of the Work : 6. Date of Completion of the Work : 7. Retention Amount to be refunded : 8. Less Amounts recoverable (with details) a. Amount spent by BHEL on maintenance : b. Payments made by BHEL on behalf of Contractor: c. Court dues/penalties/compensation : d. Safety/quality/Material recoveries e. Other recoveries for Services, etc : F. Total of 'a' to 'e' : 9. Net Amount recommended for release (12-13) : 10. Remarks.	
Signature of BHEL Engineer	

CERTIFICATE TO BE FURNISHED BY CONCERNED DEPARTMENT

HR DEPT:

HR related documents submitted w.r.t. the mentioned contract are/are not to the satisfaction of BHEL. Hence it is recommended for: 1. Payment of Retention Amount (OR) 2. Recovery of Rs _____ towards the following reason. Reasons: A. B. C.	
Date:	Head/HR/SAS

CONTRACTS DEPT:

All contractual requirements w.r.t the mentioned contract are/are not complied to the satisfaction of BHEL. Hence it is recommended to:

1. Payment of Retention Amount (OR)
2. Recovery of Rs _____ towards the following reason.

Reasons:

A.

B.

C.

Date:

Head/Contracts/SAS

COMMERCIAL DEPT:

All documents and compliances as desired are/are not fulfilled to the satisfaction of BHEL. Hence it is recommended to:

1. Payment of Retention Amount (OR)
2. Recovery of Rs _____ towards the following reason.

Reasons:

A.

B.

C.

Date:

Head/Commercial/SAS

CERTIFICATE TO BE FURNISHED BY THE CONTRACTOR

I / We have no claim or demand outstanding against BHEL _____, for the work done or for labour or material supplied or any other account arising out of or connected with the Contract Agreement / LOI

(No _____ dated _____) and the payment of this bill shall be in full and final settlement of all my/our claims and demands of the Contract Agreement / LOI referred to. Further, I/We agree for a recovery of Rs _____ (Rupees. _____) as per breakup mentioned above.

Date:

Signature of Contractor

CERTIFICATE TO BE FURNISHED BY HEAD - SERVICES

A. All objections raised so far have been settled

B. The payment recommended for release is in order

Total Retention Amount:

(-) Recovery: _____

Payable: _____

Date:

Head/Services/SAS

 BHEL-PSSR, SAS Secunderabad CHECK LIST TO BE SUBMITTED WITH EACH RUNNING BILL					
Brief Description of Work :			Name of The Agency :		
Work Order Ref.			RA Bill No. & date :		
Sl.No.	DESCRIPTION	Check list for 40% invoice (Tick in the box)	Check list for 50% invoice (Tick in the box)	Check list for final 10% invoice (Tick in the box)	Remarks
1) Documents to be submitted by the Contractor with Invoices					
1.1	GST number and billing address should be as per work order. BHEL GST and vendor GST should be present in invoice. HSN Code to be specified in the invoice.				
1.2	Bill/Execution period to be mentioned in Invoice				
1.3	GST remittance Proof to be submitted				
1.4	Contractor signed in M-Book with "Measurement accepted" with stamp.				
1.5	Submitted Supporting Doc-Labour License Note: Labour License Application with 30% bill & Labour License with 60% bill to be submitted.			Not Applicable	
1.6	Submitted Supporting Doc-Wage Sheets	Not Applicable			
1.7	Submitted Supporting Doc-PF	Not Applicable			
1.8	Submitted Supporting Doc-ESI/Insurance	Not Applicable			
1.9	Submitted Supporting Doc-HR Format	Not Applicable			
1.10	Submitted 36B Format (Statement for Wages and PF for the month) enclosed	Not Applicable			
1.11	Submitted Work commencement letter		Not Applicable	Not Applicable	
1.12	Submitted No dues certificate	Not Applicable	Not Applicable		
1.13	Submitted No further claims	Not Applicable	Not Applicable		
1.14	Any additional works claims pending	Not Applicable	Not Applicable		
Note : 1) Above details are to be filled by the contractor with each running bill, checklist to be signed and to be submitted in indexed form alongwith invoice. 2) If the contract period has expired during execution period, vendor to take up with resident engineer for initiating Time extension proposal. As far as possible, M Book entry / Invoice should be made only after extension of contract to avoid delay in further processing of the bills. 3) With out the completed check list, invoices are liable to be returned to the contractor. 4) Almost all our work orders for SAS Jobs are having Payment split of 40%, 50% and 10% (Final Bill) to facilitate regular cash flow to vendors. All the vendors and resident engineers to ensure that invoices are raised accordingly to reduce the cycle time for processing of the Bills. Final 10% Bill must be submitted separately unless otherwise specified in Work order.					
Signature of contractor					

Sl.No.	DESCRIPTION	Check list (Tick in the box)	Remarks
2) To be filled by BHEL Resident Engineer/Resident Manager			
2.1	To ensure the compliance of all the points listed at Sl. No. 1 above		
2.2	Ensure Invoice is as per the WO payment terms. Recoveries/amount to be withheld if any, with reasons to be specified in M-book and claim to be generated accordingly with supporting documents. In case of recommendations for recoveries/amount to be withheld, Vendor's acceptance should also be taken in M-Book to avoid dispute at later stage.		
2.3	If there is any delay in completion of works w.r.t work order completion period, Time extension proposal should be initiated. Proactive action should be taken in this regard to avoid delay in processing of bills.		
2.4	RAB No. & WO Ref. to be certified in M-book.		
2.5	Certification on back side of original invoice.		
2.6	Claim generated and signed by Resident Engineer & Site In-charge.		
2.7	Entry to be made in Payables Management System (PMS) & acknowledgment number generated in PMS to be mentioned in the claim generated.		
BHEL Resident Engineer/Resident Manager			

BHEL: _____ Site, _____ State**HR Clearance for releasing of First and subsequent Monthly Bill (Details check list)**

(To be enclosed along with First and subsequent Monthly Running Bills)

1. LABOUR LICENCE	AVL/NOT AVL/NA
LABOUR LICENCE – VALIDITY	CURRENT/OLD/NA
DISPLAY OF LICENCE	DONE/ NOT DONE/NA
NOTICE OF COMMENCEMENT (FORM VI A)	SENT/ NOT SESENT/NA
2. NOTICE BOARD	AVL/NOT AVL/NA
3. ABSTRA OF CL (R & A) ACT /MINIMUM	DISPLAYED /
WAGES ACT/CHILD LABOUR ACT	NOT DISPLAYED/NA
4. REGISTERS TO BE MAINTAINED	
WAGES REGISTER	YES / NO/NA
MUSTER ROLL	YES / NO/NA
FINES REGISTER	YES / NO/NA
DEDUCTIONS REGISTER	YES / NO/NA
OVER TIME REGISTER	YES / NO/NA
LIST OF PERSONS EMPLOYED	YES / NO/NA
5. EMPLOYMENT CARD	ISSUED/ NOT ISSUED/NA
6. WAGE SLIPS	ISSUED/ NOT ISSUED/NA
7. FIRST AID FACILITY	AVL/NOT AVL/NA
8. LATRINES/ URINALS	AVL/NOT AVL/NA
9. DRINKING WATER PROVISION	AVL/NOT AVL/NA
10. WASHING FACILITIES	AVL/NOT AVL/NA
11. NOTICE OF COMMENCEMENT OF WORK	SENT/ NOT SENT/NA
12. HALF YEARLY RETURN – CL (R & A) ACT	SENT/ NOT SENT/NA
13. ANNUAL RETURN – MIN. WAGES ACT	SENT/ NOT SENT/NA
14. REGISTRATION UNDER BOCW(RE & CS) Act	AVAIALBLE/NOT AVAILABLE
15. BOCW CESS PAID IN THE MONTH	YES/NO/NA
16. PF RECOVERY / REMITTANCES (*)	DONE / NOT DONE/NA
17. ESI RECOVERY / REMITTANCE (*)- IF APPLICABLE	DONE / NOT DONE/NA
18. WC INSURANCE AVAILABILITY / VALIDITY	AVL/NOT AVL/ VALIDITY EXPIRED/NA

Certified that the details furnished above are true and correct. Further wages / other payments due to the workmen deployed by us are paid full and in time.

Sing. Of Contractor
Seal

The above details have been verified and found to be correct. In addition, payment of wages to the workmen witnessed and certified that correct wages are paid.

(Sign. Of Resident Engineer)

(Sign. Of HR In-charge)

(Sign. Of Head/Services)

PROFORMA OF BANK GUARANTEE (in lieu of SECURITY DEPOSIT)

(On non-Judicial paper of appropriate value)

(Para 4.7.6 of Works Accounts Manual)

Bank Guarantee No.....

Date.....

To,

Bharat heavy Electrical Ltd.,
Power Sector Southern Region,
Services After Sales,
EK Tara Building,
39, Sarojini Devi Road,
SECUNDERABAD – 500 003

In consideration of Bharat Heavy Electricals Limited (hereinafter referred to as the 'Employer' which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns) incorporated under the Companies Act, 1956 and having its registered office at *BHEL House, Siri Fort, Asiad, New Delhi – 110049* through its unit at *Bharat Heavy Electricals Limited, Power Sector Southern Region, Tek Towers, No.11, Old Mahabalipuram Road, Okkiyam Thoraipakkam, Chennai - 600097* having agreed to exempt _____¹ (Name of the Vendor /

Contractor / Supplier) with its registered office at _____² (hereinafter called the said "Contractor" which term includes supplier), from demand under the terms and conditions of the Contract arising vide Letter of Intent (LOI) reference No. _____ dated _____³ valued at Rs. _____⁴ (Rupees _____ only)⁴ (hereinafter called the said Contract), of Security Deposit for the due fulfilment by the said Contractor of the terms and conditions contained in the said Contract, on production of a Bank Guarantee for Rs. _____⁵ (Rupees _____ only),

We, the _____ (Name & address of the Bank) _____ having our Head Office at _____ (hereinafter referred to as the Bank), at the request of _____ [Contractor(s)], being the Guarantor under this Guarantee, do hereby irrevocably and unconditionally undertake to forthwith and immediately pay to the Employer, an amount not exceeding Rs. _____ without any demur, immediately on demand from the Employer and without any reservation, protest, and recourse and without the Employer needing to prove or demonstrate reasons for its such demand

Any such demand made on the bank, shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. _____⁵.

We undertake to pay to the Employer any money so demanded notwithstanding any dispute or disputes raised by the Contractor(s) in any suit or proceeding pending before any Court or Tribunal or

Arbitrator or any other authority, our liability under this present being absolute and unequivocal.

(Page 01 of 03)

The payment so made by us under this guarantee shall be a valid discharge of our liability for payment hereunder and the Contractor(s) shall have no claim against us for making such payment.

We, further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Contract and that it shall continue to be enforceable till all the dues of the Employer under or by virtue of the said Contract have been fully paid and its claims satisfied & the Employer certifies that the terms and conditions of the said Contract have been fully and properly carried out by the said contractor(s) or acceptance of the final bill or discharge of this guarantee by the Employer, whichever is earlier. This guarantee shall initially remain in force upto and including _____⁶ and shall be extended from time to time for such period as may be desired by the Employer. Unless a demand or claim under this guarantee is made on us in writing on or before the _____⁷, we shall be discharged from all the liability under this guarantee thereafter.

We, _____(indicate the name of the Bank) further agree with the Employer that the Employer shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Contract or to extend time of performance by the said contractor(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by the Employer against the said contractor(s) and to forbear or enforce any of the terms and conditions relating to the said Contract and we shall not be relieved from our liability by any reason of any such variation or extension being granted to the said contractor(s) or for any forbearance, act or omission on the part of the Employer or any indulgence by the Employer to the said contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would but for this provision have effect of so relieving us.

The Bank also agrees that the Employer at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance without proceeding against the Contractor and notwithstanding any security or other guarantee that the Employer may have in relation to the Contractor's liabilities.

This Guarantee shall not be determined or affected by liquidation or winding up, dissolution or change of constitution or insolvency of the Contractor but shall in all respects and for all purposes be binding and operative until payment of all money payable to the Employer in terms thereof. This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor(s).

We, BANK lastly undertake not to revoke this guarantee during its currency except with the previous consent of the Employer in writing.

Notwithstanding anything to the contrary contained hereinabove:

- a) The liability of the Bank under this Guarantee shall not exceed.....⁵
- b) This Guarantee shall be valid up to⁶
- c) Unless the Bank is served a written claim or demand on or before _____⁷ all rights under this guarantee shall be forfeited and the Bank shall be relieved and discharged from all liabilities under this guarantee irrespective of whether or not the original bank guarantee is returned to the Bank.

We, _____ Bank, have power to issue this Guarantee under law and the undersigned as a duly authorized person has full powers to sign this Guarantee on behalf of the Bank.

Date _____ Day of _____

for _____ (indicate the name of the Bank)

(Signature of Authorised signatory)

¹ NAME OF VENDOR /CONTRACTOR / SUPPLIER

² REGISTERED OFFICE ADDRESS OF THE VENDOR /CONTRACTOR / SUPPLIER.

³ LETTER OF INTENT(LOI) REFERENCE NO. WITH DATE

⁴ CONTRACT VALUE (AS MENTIONED IN LOI)

⁵ BG AMOUNT IN FIGURES AND WORDS

⁶ VALIDITY DATE

⁷ DATE OF EXPIRY OF CLAIM PERIOD (CLAIM PERIOD SHALL BE MINIMUM OF 3 MONTHS AFTER VALIDITY DATE)

Note:

1. The BG should be on Non-Judicial Stamp paper/e-stamp paper of appropriate value as per Stamp Act prevailing in the State(s) where the BG is submitted or is to be acted upon or the rate prevailing in the State where the BG was executed, whichever is higher. The Stamp Paper/e-stamp paper shall be purchased in the name of Vendor/Contractor/Supplier /Bank issuing the guarantee.
2. In Case of Bank Guarantees submitted by Foreign Vendors-
 - a. From Nationalized/Public Sector / Private Sector/ Foreign Banks (BG issued by Branches in India) can be accepted subject to the condition that the Bank Guarantee should be enforceable in the town/city or at nearest branch where the Unit is located i.e. Demand can be presented at the Branch located in the town/city or at nearest branch where the Unit is located.
 - b. From Foreign Banks (wherein Foreign Vendors intend to provide BG from local branch of the Vendor Country's Bank)
 - b.1 In such cases, in the Tender Enquiry/ Contract itself, it may be clearly specified that Bank Guarantee issued by any of the Consortium Banks only will be accepted by BHEL. As such, Foreign Vendor needs to make necessary arrangements for issuance of Counter- Guarantee by Foreign Bank in favour of the Indian Bank's (BHEL's Consortium Bank) branch in India. It is advisable that all charges for issuance of Bank Guarantee/ counter- Guarantee should be borne by the Foreign Vendor. The tender stipulation should clearly specify these requirements.
 - b.2 In case, Foreign Vendors intend to provide BG from Overseas Branch of our Consortium Bank (e.g. if a BG is to be issued by SBI Frankfurt), the same is acceptable. However, the procedure at sl.no. b.1 will required to be followed.
 - b.3 The BG issued may preferably be subject to Uniform Rules for Demand Guarantees (URDG) 758 (as amended from time to time).

PROFORMA OF BANK GUARANTEE (in lieu of EARNEST MONEY if permissible under Works Policy)

(On non-Judicial paper of appropriate value)
(Para 4.7.6 of Works Accounts Manual)

Bank Guarantee No.....
Date.....

To
Bharat heavy Electrical Ltd.,
Power Sector Southern Region,
Services After Sales,
EK Tara Building,
39, Sarojini Devi Road,
SECUNDERABAD – 500 003

Dear Sirs,

In accordance with the terms and conditions of Invitation for Bids/Notice Inviting Tender No.....¹ (Tender Conditions), M/s.² having its registered office at³ (hereinafter referred to as the 'Tenderer'), is submitting its bid for the work of.....⁴ invited by Bharat Heavy Electricals Limited (hereinafter referred to as the 'Employer' which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns) incorporated under the Companies Act, 1956 and having its registered office at *BHEL House, Siri Fort, Asiad, New Delhi – 110049* through its unit at *Bharat Heavy Electricals Limited, Power Sector Southern Region, Tek Towers, No.11, Old Mahabalipuram Road, Okkiyam Thoraipakkam, Chennai – 600097*.

The Tender Conditions provide that the Tenderer shall pay a sum of Rs⁵ as Earnest Money Deposit in the form therein mentioned. The form of payment of Earnest Money Deposit includes Bank Guarantee executed by a Scheduled Bank.

In lieu of the stipulations contained in the aforesaid Tender Conditions that an irrevocable and unconditional Bank Guarantee against Earnest Money Deposit for an amount of⁶ is required to be submitted by the Tenderer as a condition precedent for participation in the said Tender and the Tenderer having approached us for giving the said Guarantee,

we, the(Name & address of the Bank)
..... having our Head Office at
.....(hereinafter referred to as the Bank) being the Guarantor under this Guarantee, hereby irrevocably and unconditionally undertake to forthwith and immediately pay to the Employer without any demur, merely on your first demand any sum or sums of Rs.....⁶ (in words Rupees.....) without any reservation, protest, and recourse and without the beneficiary needing to prove or demonstrate reasons for its such demand.

(Page 01 of 03)

Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. _____.⁶

We undertake to pay to the Employer any money so demanded notwithstanding any dispute or disputes raised by the Tenderer in any suit or proceeding pending before any Court or Tribunal, Arbitrator or any other authority, our liability under this present being absolute and unequivocal.

The payment so made by us under this Guarantee shall be a valid discharge of our liability for payment hereunder and the Tenderer shall have no claim against us for making such payment.

We Bank further agree that the Employer shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Tender or to extend the time of submission of from time to time or to postpone for any time or from time to time any of the powers exercisable by the Employer against the said Tenderer and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Tenderer or for any forbearance, act or omission on the part of the Employer or any indulgence by the Employer to the said Tenderer or by any such matter or thing whatsoever which under the law relating to sureties would but for this provision have effect of so relieving us.

The Bank also agrees that the Employer at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance without proceeding against the Tenderer and notwithstanding any security or other guarantee that the Employer may have in relation to the Tenderer's liabilities.

This Guarantee shall be irrevocable and shall remain in force upto and including.....⁷ and shall be extended from time to time for such period as may be desired by the Employer.

This Guarantee shall not be determined or affected by liquidation or winding up, dissolution or change of constitution or insolvency of the Tenderer but shall in all respects and for all purposes be binding and operative until payment of all money payable to the Employer in terms hereof. However, unless a demand or claim under this Guarantee is made on us in writing on or before the⁸ we shall be discharged from all liabilities under this Guarantee.

We, Bank lastly undertake not to revoke this guarantee during its currency except with the previous consent of the Employer in writing.

Notwithstanding anything to the contrary contained hereinabove:

- a) The liability of the Bank under this Guarantee shall not exceed.....⁶
- b) This Guarantee shall be valid up to⁷
- c) Unless the Bank is served a written claim or demand on or before⁸ all rights under this guarantee shall be forfeited and the Bank shall be relieved and discharged from all liabilities under this guarantee irrespective of whether or not the original bank guarantee is returned to the Bank

We, _____ Bank, have power to issue this Guarantee under law and the undersigned as a duly authorized person has full powers to sign this Guarantee on behalf of the Bank.

For and on behalf of
(Name of the Bank)

(Signature of Authorised signatory)

Date.....

Place of Issue.....

- ¹ Details of the Invitation to Bid/Notice Inviting Tender (Tender Ref. No. Eg. – BHEL/PSSR/SAS/SCT/XXX)
- ² Name of Tenderer
- ³ REGISTERED Office Address of the Tenderer
- ⁴ Details of the Work i.e Tender Description
- ⁵ EMD Amount as mentioned in Notice Inviting Tender
- ⁶ BG Amount in words and Figures (BG Amount shall be Minimum of EMD amount less Rs. 2 Lakhs)
- ⁷ Validity Date
- ⁸ Date of Expiry of Claim Period (Claim Period shall be minimum of 3 Months after the validity date of Bank Guarantee)

Note:

1. The BG should be on Non-Judicial Stamp paper/e-stamp paper of appropriate value as per Stamp Act prevailing in the State(s) where the BG is submitted or is to be acted upon or the rate prevailing in the State where the BG was executed, whichever is higher. The Stamp Paper/e-stamp paper shall be purchased in the name of Vendor/Contractor/Supplier /Bank issuing the guarantee.
2. In Case of Bank Guarantees submitted by Foreign Vendors-
 - a. From Nationalized/Public Sector / Private Sector/ Foreign Banks (BG issued by Branches in India) can be accepted subject to the condition that the Bank Guarantee should be enforceable in the town/city or at nearest branch where the Unit is located i.e. Demand can be presented at the Branch located in the town/city or at nearest branch where the Unit is located.
 - b. From Foreign Banks (wherein Foreign Vendors intend to provide BG from local branch of the Vendor Country's Bank)
 - b.1 In such cases, in the Tender Enquiry/ Contract itself, it may be clearly specified that Bank Guarantee issued by any of the Consortium Banks only will be accepted by BHEL. As such, Foreign Vendor needs to make necessary arrangements for issuance of Counter- Guarantee by Foreign Bank in favour of the Indian Bank's (BHEL's Consortium Bank) branch in India. It is advisable that all charges for issuance of Bank Guarantee/ counter- Guarantee should be borne by the Foreign Vendor. The tender stipulation should clearly specify these requirements.
 - b.2 In case, Foreign Vendors intend to provide BG from Overseas Branch of our Consortium Bank (e.g. if a BG is to be issued by SBI Frankfurt), the same is acceptable. However, the procedure at sl.no. b.1 will required to be followed.
 - b.3 The BG issued may preferably be subject to Uniform Rules for Demand Guarantees (URDG) 758 (as amended from time to time).

PROFORMA STATEMENT TO BE OBTAINED FROM THE CONTRACTOR (36B)

NAME & ADDRESS OF THE PRINCIPAL EMPLOYER

TN/7835

MONTH

NAME & ADDRESS OF THE CONTRACTOR

TN/

SL NO	Name of the Employee	Father's name	Date of joining (DD/MM/YY)	PF A/c no	No.of days	Total wages paid	Wages for PF (in Rupees)	Contribution

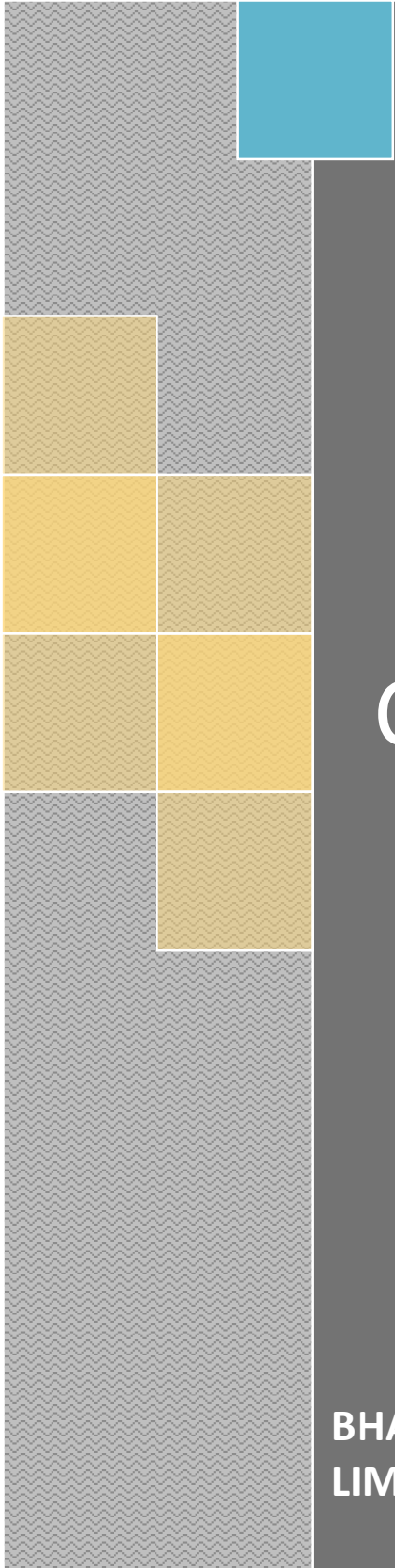
I/We certify that all the above employees who were actually deployed in your establishment during _____ 2021, have all been covered under EPF & MP Act 2852 and the contributions in respect of them for the month of _____ 2021 have been remitted by me/us under Code No.TN/_____ maintained at _____ RO/SRO on _____

DATE:

SIGNATURE OF THE CONTRACTOR

Contd./-

TENDER SPECIFICATION



VOLUME – IA Part I TECHNICAL CONDITIONS OF CONTRACT (TCC)

**BHARAT
LIMITED**

HEAVY

ELECTRICALS



TECHNICAL CONDITIONS OF CONTRACT (TCC)

CONTENTS

Sl No	DESCRIPTION	Chapter	No. of Pages
Vol I A	Part-I: Contract specific details		
1	Project Information	Chapter-I	01
2	Scope of works	Chapter-II	13
3	Facilities in the scope of Contractor / BHEL (Scope Matrix)	Chapter-III	04
4	T&Ps and MMEs to be deployed by Contractor	Chapter-IV	01
5	T&Ps and MMEs to be deployed by BHEL on sharing basis	Chapter-V	01
6	Time Schedule	Chapter-VI	01
7	Weight schedule	Chapter-VII	04
8	General	Chapter-VIII	06
9	Handling & storage	Chapter-IX	01
10	Erection	Chapter-X	03
11	Progress of work	Chapter-XI	01
12	Welding	Chapter-XII	14
13	Testing & Commissioning	Chapter-XIII	02
14	Drawing	Chapter-XIV	10

TECHNICAL CONDITIONS OF CONTRACT (TCC)

VOLUME-IA PART – I CHAPTER – I PROJECT INFORMATION

KPCL-Bellary Thermal Power Station

1 Project Name	Boiler Pressure Parts Modification work
2 No. of Units x Capacity	1X700 MW
3 Project setting up by	KPCL
4 Location and approach	(i) Kudathini (ii) District: Bellary (iii) State: Karnataka
5 Nearest railway station	Toranagallu junction, 12 Km
6 Nearest town & Dist.	Bellary, 25Km
7 Nearest airport & Dist.	1.JSW Vidyanagar, around 12 km 2.Hubli ,around 198 Km
8 Nearest Highway & Dist.	NH 67,passing in front of Plant
9 Temperature:	Absolute Max. 42.5°C Absolute Min. 14.6°C
10 Relative Humidity	Maximum : 70% Minimum : 11%
11 Annual average rainfall	492 to 846 mm
12 Annual mean wind speed	8.4 Km/hr
13 Seismic Data	Zone II

TECHNICAL CONDITIONS OF CONTRACT (TCC)

VOLUME-IA PART – I CHAPTER – II SCOPE OF WORKS

NAME OF THE WORK: Pressure Parts Modification work in Unit-3,700 MW of KPCL Bellary TPS, Karnataka

1. Vertical water wall (VWW) panel replacement at fin crack location :

Following tentative activities involve for the replacement:

- 1.1 Removal of insulation, refractory and cladding sheet from VWW panel from 54.9 meters to 80.9 meters elevation according to requirement.
- 1.2 Checking of Boiler left and right side buckstay from 54.90 meters to 80.9 meters.
- 1.3 Correction of buckstay and its attachments.
- 1.4 Panel bow correction.
- 1.5 Panel hanger tightness inspection and correction.
- 1.6 VWW panel replacement at fin crack location.
- 1.7 100% NDT as per BHEL instruction.
- 1.8 Boiler hydro test in presence of IBR authority of govt. of Karnataka.
- 1.9 Insulation, refractory and cladding sheet restoration.

2. Rectification of rear arch undulated butterfly panel (S08) and S09 header stub:

Following tentative activities involve for the rectification:

- 2.1 Removal of insulation/refractory & cladding sheet under/over rear arch panel.
- 2.2 Replacement of wavy panel as per BHEL supply (15 tube-12 Mtr length, 02 Nos.)
- 2.3 Rectification of buckstays, attachments, beam assembly under the panel.
- 2.4 Rectification of S09 header stub after DPT.
- 2.5 Rear arch panel bow correction.
- 2.6 Furnace rear water wall panel hanger tightness inspection and correction.
- 2.7 100% NDT as per BHEL WPS and instruction.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

2.8 Rectification of seal box.

2.9 ALPS work over/under the seal box.

2.10 Insulation, refractory and cladding work.

3. Replacement of Two number Electric Relief valve (ERV) at 78 Mtr elevation:

Following tentative activities involve for the replacement:

3.1 Cutting of existing ERV welding joint from Main steam pipeline stub and shifting to BHEL/KPCL BTPS designated location.

3.2 Erection of two numbers ERV.

3.3 Related drain, vents and exhaust pipe connection.

3.4 100% NDT as per BHEL WPS and instruction.

3.5 Related insulation work.

3.6 Power cable, C&I etc. item restoration.

3.7 Commissioning of two numbers ERV.

4. Replacement of One number superheater spray control valve at 25 mtr elevation :

Following tentative activities involve for the replacement:

4.1 Cutting and removal of existing valve.

4.2 Erection of new valve.

4.3 100% NDT as per BHEL WPS and instruction.

4.4 Related minor insulation work.

4.5 Commissioning of new valve.

5. Stopper fixing of superheater front coil assy. spacer tube :

Following tentative activities involve for stopper fixing:

5.1 Scaffolding arrangement for approach.

5.2 Existing stopper removal if required.

5.3 Stopper welding by High pressure welder.

5.4 DPT of Welding Joints

5.5 Scaffolding removal.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

6. Mill board fixing in furnace access door and observation door :

Following tentative activities involve for mill board fixing:

- 6.1 Removal of access door and observation door.
- 6.2 Insertion of extra layer of mill board.
- 6.3 Re-fixing of doors.

7. Expansion tramp fixing in three elevation of 1st pass buckstays between 55 meters to 70 meter :

Following tentative activities involve for expansion tramp fixing:

- 7.1 Cutting and removal of existing expansion tramp.
- 7.2 Erection and welding new expansion tramp and required approach.

8. Manpower and T&Ps support for miscellaneous work :

- 8.1 Manpower and T&P support for Separator safety valve (SSV2) servicing in presence of BHEL Trichy technician.
- 8.2 Manpower and T&P support for boiler left main steam line stop valve servicing in presence of BHEL Trichy technician.

9. 1st Pass Screen tube spool replacement:

- 9.1 Checking of bow in existing screen tubes
- 9.2 Cutting of existing bowed tubes
- 9.3 Replacement with new tubes

TECHNICAL CONDITIONS OF CONTRACT (TCC)

- Based on the reported Fin Crack history select the backstays adjacent elevation where cracks were reported.
- Crack reported so far as per below table
Furnace Vertical wall_ Right side (based on the sketch provided)

1	Fin crack observed on F-19U-1 (Elevation not mentioned) Tube No. not available
2	In between 6 th and 7 th tube from scaffolding door front wall side edge (towards rear wall) Panel No. F-19U-4 (Elevation not mentioned)
3	In between 5 th and 6 th tube from scaffolding door front wall side edge (towards rear wall) Panel No. F-19U-4 (Elevation not mentioned)
4	In between 28 th and 29 th tube from scaffolding door front wall side edge (towards rear wall) Panel No. F-19U-4 (Elevation not mentioned)
5	In between 29 th and 30 th tube from scaffolding door front wall side edge (towards rear wall) Panel No. F-19U-4 (Elevation not mentioned). Boiler Tube Leak observed at 69.5Mtr elevation.
6	In between 2 nd and 3 rd tube from scaffolding door front wall side edge (towards front wall) Panel No. F-19U-4 (Elevation not mentioned)
7	In between 2 nd and 3 rd tube from scaffolding door front wall side edge (towards front wall) Panel No. F-19U-4 (Elevation not mentioned)
8	In between 1 st and 2 nd tube from scaffolding door front wall side edge (towards front wall) Panel No. F-19U-4 (Elevation not mentioned)
9	In between 56 th and 57 th tube from scaffolding door front edge (towards rear wall) Panel No. F-19U-5 (Elevation not mentioned)

Furnace Vertical wall_ Left side (based on the sketch provided)

1	Fin crack observed on F-19U-11 (71m to 89m) Between Tube No.127 and 128.
2	Fin crack observed on F-19U-11 (70m to 73m) Between Tube No.117 and 118.
3	Fin crack observed on F-19U-11 (66m to 70m) Between Tube No.116 and 117.
4	Fin crack observed on F-19U-11 (From forged elbow to 68m) Between Tube No.127 and 128.
5	Fin crack observed on F-19U-12 (63 to 66m) Between Tube No.163 and 164.

- Buckstays where insulation cladding to be removed are as below table.

Buck stay on	Elevation
Right Side wall	EL+80900
Right Side wall	EL+78800
Right Side wall	EL+76700
Right Side wall	EL+74700
Right Side wall	EL+72800

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Right Side wall	EL+70400
Right Side wall	EL+69050
Right Side wall	EL+65700
Right Side wall	EL+62750
Right Side wall	EL+59550
Right Side wall	EL+56550
Right Side wall	EL+54900
Left Side wall	EL+80900
Left Side wall	EL+78800
Left Side wall	EL+76700
Left Side wall	EL+74700
Left Side wall	EL+72800
Left Side wall	EL+70400
Left Side wall	EL+69050
Left Side wall	EL+65700
Left Side wall	EL+62750
Left Side wall	EL+59550
Left Side wall	EL+56550
Left Side wall	EL+54900

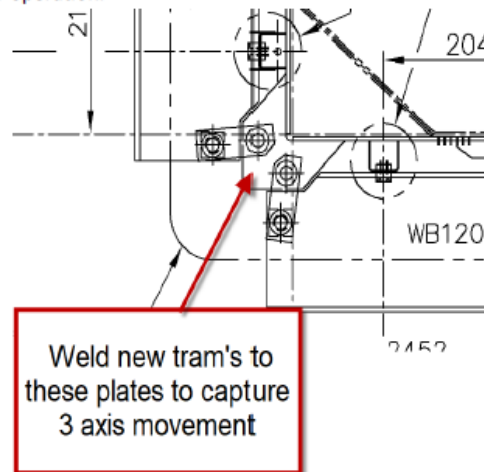
4. Check as per the Buckstay inspection check list as attached.
5. Tentative material to be made available prior to remove the insulation.
 - a. Insulation material
 - b. Refractory material
 - c. Some of small items like J rod, V Clip, tie plates, scallop, stirrup assly, corner links etc.

'25 mm Dia.- 'J' Rod (Nos)	150	Nos.
V' Clips for 20 thk TP	240	Nos.
V' Clip for 25 thk TP	60	Nos.
Hanger Rod assembly	70	Nos.
Plate-12, 191X380	24	Nos.
Retainer Angle modified	48	Nos.
Plate-12, 203X380	100	Nos.
Retainer Angle	200	Nos.
Scallop Plate	20	Nos.
Corner Link & Pin set C40	10	Nos.
Corner Link & Pin set C60	4	Nos.
Tie plate 20x200x7.5 mtr	6	Nos.
Tie plate 25x300x7.5 mtr	3	Nos.

6. Inspection of Pressure Parts i.e., Panel tube adjacent to fin crack area. If the site repair weld is excessive it is suggested to replace with 4 tube new panel at that area. Water wall tube panels to be made ahead of outage and be ready at site if needed. Suggest 10 to 12-meter length. BHEL is checking the raw material availability/feasibility to make number of panels each with 4 tubes and 12m length (10 Nos for 10 cracks locations at different elevations + 1 or 2 Nos additional for contingency. 14 nos sub panels may be made available.
7. Fire side inspection of all walls and fix any minor additional cracks found.

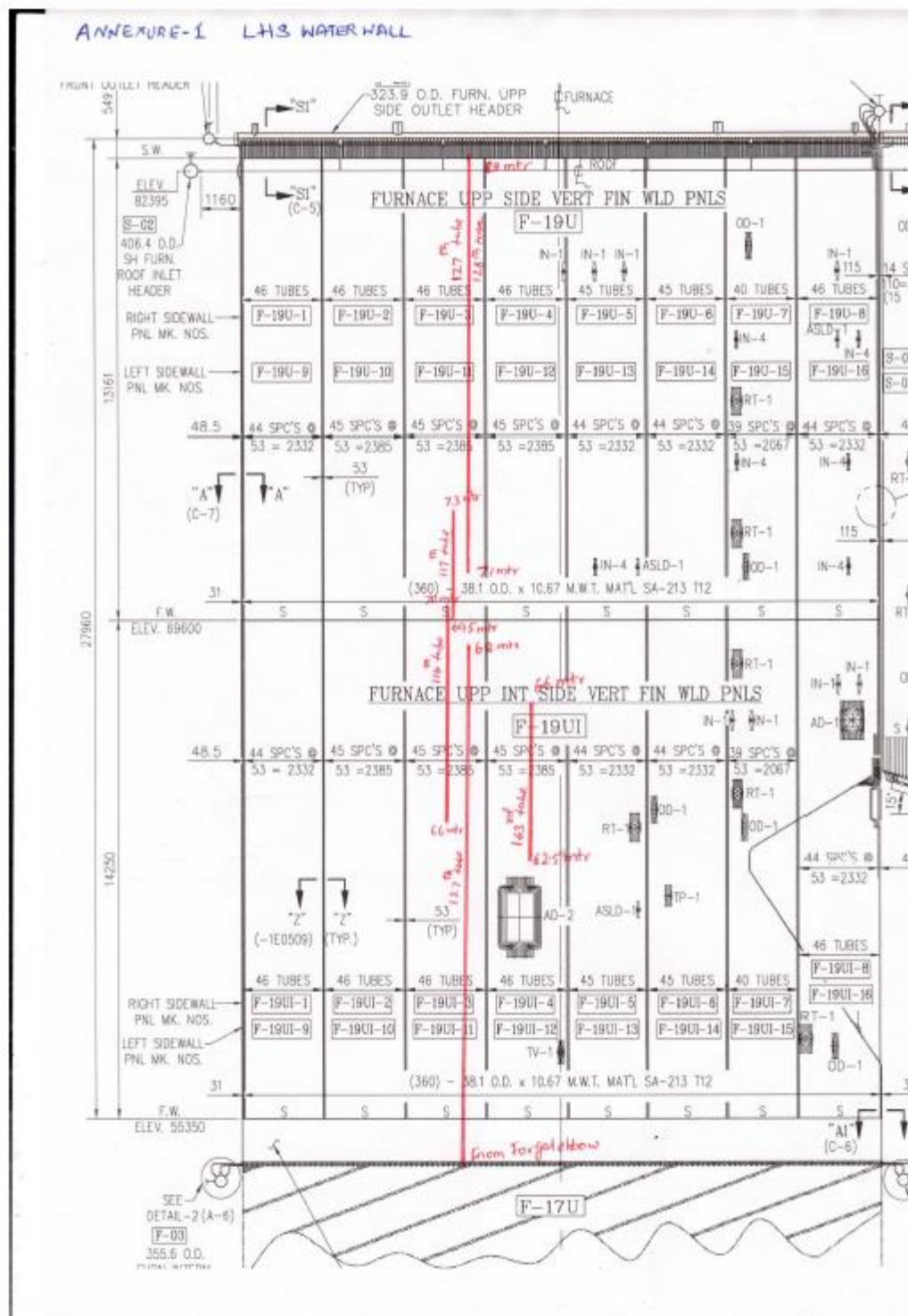
TECHNICAL CONDITIONS OF CONTRACT (TCC)

8. Furnace Water wall Hanger rods (all) correct & even tightness inspection.
9. Arch springs on both side walls need to be realigned per drawing.
10. Record of existing tram readings before and after.
11. **New expansion trams to be fitted at all current furnace elevations.** Expansion Trams to be clearly & accurately marked in cold position with clean and smooth surfaces for ease of expansion tracking in all three axis. (X,Y,Z). Trams to be mounted/welded to buckstay corner tie plates (which directly mount to Pressure part furnace wall.) Target plates must be mounted to stationary steel that will not move position with boiler operation.

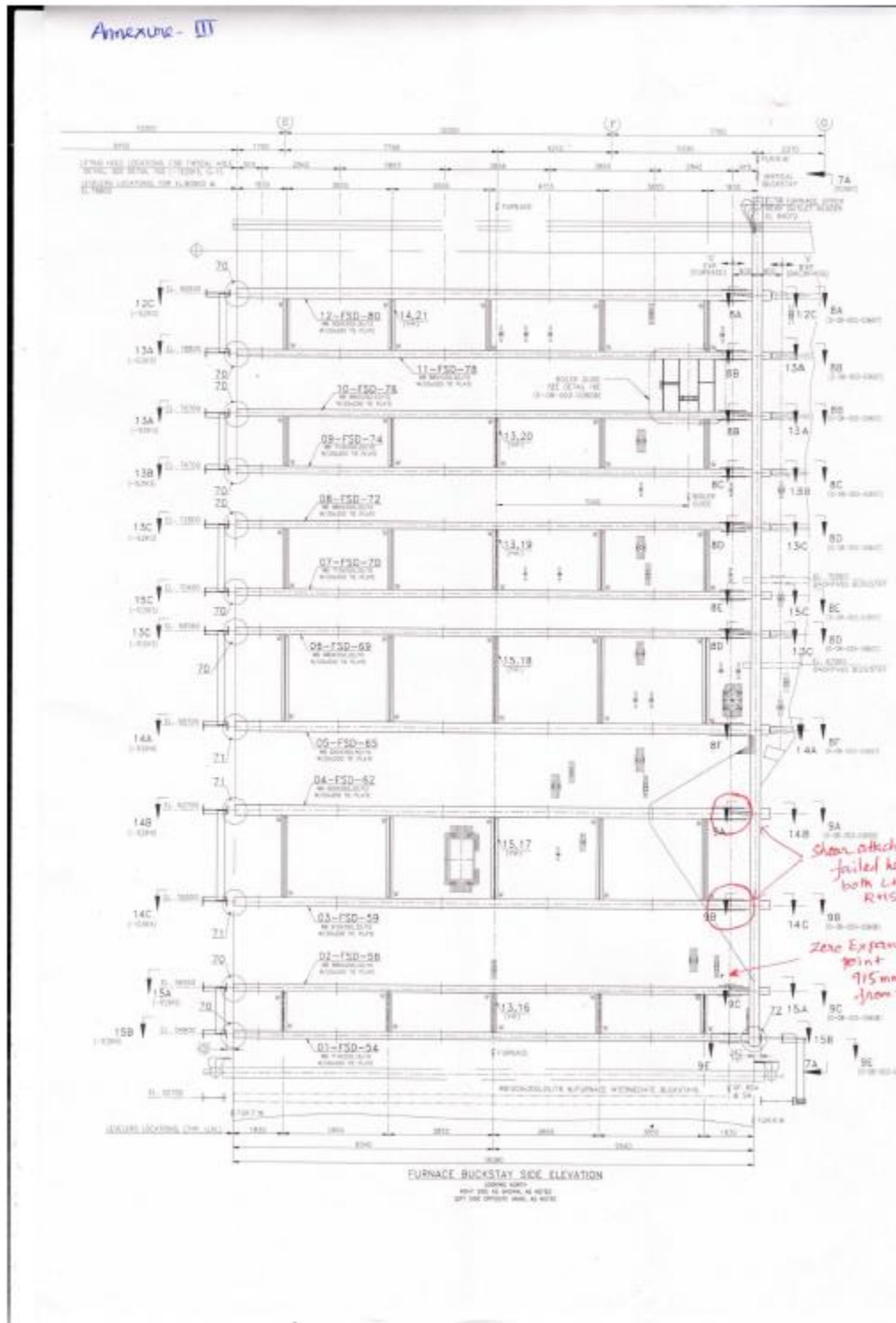


12. Local water wall thermocouples- Areas with previous fin cracks identified in above section 2 shall have temporary thermocouples on outlet tubes. A grouping of four tubes each side of crack location to be monitored & data logger system to be installed for capturing/review of operation temperature data. Sixteen or as many as required to cover four tubes at the cracked locations- Thermocouples & associated equipment are required at site. We request KPCL to spare the above for temporary use.

Page 10 of 62



TECHNICAL CONDITIONS OF CONTRACT (TCC)



TECHNICAL CONDITIONS OF CONTRACT (TCC)

S. No	Buckstay checklist
1	Failure reported (Wall, Panel/Tube nos, Elevation, Length)
2	Proper installation of Buckstay components & attachment pins to "V " clips
3	Ensure that all stirrups are free to slide along buckstay flanges. a. Typical stirrups should have a 2mm gap minimum maximum of 3mm per drawing 1E2992. Locations or stirrups are on arrangement drawings. The stirrup should move along the flange of the buckstay as the wall moves as the PP heat up. b. Modified stirrups have a larger gap between flange and stirrup
4	Confirm that all horizontal buckstays are in fact horizontal. a. If not, stirrups could bind up along the flanges
5	Confirm all zero expansion points have proper attachments a. Buckstay guide elevations have shear attachments i. Properly welded to PP walls ii. Correct size Shear attachments b. Non-Guide elevations have fixed stirrups i. Are the stopper bars installed ii. Scalloped bar is at correct location iii. Proper welds
6	Levelers a. Double levelers should be able to slide on one end and are fixed on the other.
7	Corner assemblies a. Confirm that corner links have proper presets b. Confirm corner links have in fact rotated during operation
8	Boiler Guides Check clearances and ability to slide Check that boiler guides and structural steel are not bent Measure length of scraped finish at contact points if present
9	Furnace Side Wall Vertical Buckstay Check that vertical buckstay is not twisted or bent to one side Top Link to F-14 Furnace Upper Rear Outlet Header - Cold Preset Boiler Guide Link to Steel - Clearance Check that half rounds are in contact and free to slide Check channel retainers clearance and ability to slide Stability Links' Cold Preset Check that keyway is free to slide Mid Link Across Rear Wall - Cold Preset Bottom Link to Horizontal Buckstay - Cold Preset
10	Buckstay bow (lateral) cold / operation
11	Pictures from inside furnace enclosure - extreme left and right side (where Roof (S-04) and F-04U tubes meet). Site to investigate any rubbing or damage due to excess expansion from increased temperature differences
12	Site expansions of Furnace & Backpass enclosure compared to calculated/design expansions

TECHNICAL CONDITIONS OF CONTRACT (TCC)

13	Identify requirement of additional trams
14	Windbox supporting CLH cold / hot readings
15	Squareness of Furnace

Pre shutdown activities to be carried out

1. Before start of work the contractor has to take all necessary statutory clearances (like repair order or any other necessary clearance) from the IBR authority of Govt. of karnataka including liasoning for carrying out the job.

SPECIAL CONDITIONS :

1. Contractor must have valid special class Boiler repairer license/Boiler erector license of govt. of Karnataka to carry out the subject work and copy of certificate must be submitted to BHEL SAS office.
2. Contractor is requested to send their Engineers to inspect the site condition and facilities available at site to make themselves fully conversant with the job and site requirements before quoting.
3. The workmanship shall be guaranteed as per the Guarantee clause.
4. **All T&Ps and consumables such as gas and all types of welding electrodes, filler etc., should be borne by the contractor.**
5. Material transportation from storage yard to site, loading, unloading and erection including trucks, hydra, chain pulley blocks are in contractor's scope.
6. Workmen compensation Act and third party insurance etc., shall be under contractor's scope only.
7. The necessary assistance for stage inspection by joint Director of Boiler should be arranged.
8. Joint Director of Boiler, Govt. of Karnataka clearance has to be obtained before boiler filling for Hydraulic test.
9. Before commencement of overhaul work the contractor should furnish the pert chart and bar chart for the entire replacement work to BHEL and complete the work within the time schedule.
10. Approved NDT companies should be engaged for radiography and other testing works.
11. Water and Electricity will be given at one point and further distribution shall be contractor's scope.
12. Only 24V supply should be used inside the boiler for lighting and all required lighting arrangements of the work should be arranged by the contractor.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

13. The contractor has to strictly ensure the use of safety belt, helmet etc by all workmen engaged while working inside boiler apart from adhering to general safety requirement in all area of works.
14. Welding electrode to be used should be purchased from BHEL approved supplier only & must clearly bear AWS code marking. The electrodes are to be purchased from BHEL approved supplier and challan for the same are to be entered at CISF gate of KPCL-Bellary TPS. These challan and the corresponding manufacturer's batch (test) certificates are to be submitted to BHEL manager-in-charge on demand.
15. Necessary safety appliances for the workmen & arrangement for welding, cutting, grinding etc. are to be made available by the contractor. In case of use of gas set by cutting torch, contractor has to use flash-back arrestor. Trolleys only has to be used for movement of gas cylinder.
16. All lifting tools used by the contractor are to be certified for safe working by the authorized agency of the statutory authority of Govt. of Karnataka and certificates are to be provided on demand.
17. Necessary manpower assistance has to be provided as per instruction of BHEL during hydro test and light up of boiler after completion of job.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

VOLUME-IA PART – I CHAPTER – III FACILITIES IN THE SCOPE OF CONTRACTOR / BHEL (SCOPE MATRIX)

Sl.No	Description PART I	Scope to be taken care by		Remarks
		BHEL	Bidder	
1.3.1.1.0	ESTABLISHMENT			
1.3.1.1.1	FOR CONSTRUCTION PURPOSE:			
A	Open space for office	Yes		
B	Open space for storage	Yes		
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	
1.3.1.1.2	FOR LIVING PURPOSES OF THE BIDDER			
A	Open space		Yes	
B	Living accommodation		Yes	
1.3.1.2.0	ELECTRICITY			
1.3.1.2.1	Electricity For construction purposes			
1.3.1.2.1.1	Single point source	Yes		One energy meter to be installed at suitable location
1.3.1.2.1.2	Further distribution for the work to be done which include supply of materials and execution		Yes	

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Sl.No	Description	Scope to be taken care by		Remarks
		BHEL	Bidder	
	PART I			
1.3.1.2.2	Electricity for the office, stores, canteen etc. of the bidder which include:			
1.3.1.2.2.1	Distribution from single point including supply of materials and service		Yes	
1.3.1.2.2.2	Duties and deposits including statutory clearances for the above		Yes	
1.3.1.2.2.3	Living facilities for office use including charges		Yes	
1.3.1.2.2.4	Demobilization of the facilities after completion of works		Yes	
1.3.1.2.5	Electricity for living accommodation of the bidder's staff, engineers, supervisors etc on the above lines.(in case BHEL provides this facility, the scope should be given without ambiguity)		Yes	
1.3.1.3.0	WATER SUPPLY			
1.3.1.3.1	For construction purposes:			
1.3.1.3.1.1	Making the water available at single point	Yes		
1.3.1.3.1.2	Further distribution as per the requirement of work including supply of materials and execution		Yes	
1.3.1.3.2	Water supply for bidder's office, stores, canteen etc		Yes	
1.3.1.4.0	LIGHTING			
1.3.1.4.1	For construction work (supply of all the necessary materials) At office storage area At the preassembly area At the construction site /area		Yes	

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Sl.No	Description	Scope to be taken care by		Remarks
		BHEL	Bidder	
1.3.1.5.0	COMMUNICATION FACILITIES for site operations of the bidder	-		
1.3.1.5.1	Telephone, Fax, internet, intranet, email etc		Yes	

Sl.No	Description	Scope to be taken care by		Remarks
		BHEL	Bidder	
	PART II			
	ERECTION FACILITIES			
1.3.2.1.0	Engineering works for construction			
1.3.2.1.1	Providing the erection drawings for all the equipment covered under this scope	Yes		
1.3.2.1.2	Drawings of method statement for Pressure parts modification work		Yes	In consultation with BHEL
1.3.2.1.3	As-built drawings – wherever deviations observed and executed and also based on the decisions taken at site- example – routing of small bore pipes	Yes	Yes	”
1.3.2.1.4	Shipping lists etc for reference and planning the activities	Yes		”
1.3.2.1.5	Preparation of site erection schedules and other input requirements		Yes	”
1.3.2.1.6	Review of performance and revision of site erection schedules in order to achieve the end dates and other commitments	Yes	Yes	
1.3.2.1.8	Daily erection / work plan based on		Yes	For daily monitoring meeting at site
1.3.2.1.9	Periodic visit of the senior official of the bidder to site to review the progress so that works are completed as per schedule.		Yes	

TECHNICAL CONDITIONS OF CONTRACT (TCC)

1.3.3 **OPEN SPACE:**

Open space for building of temporary office shed, contractor's stores shed(s) will be provided free of hire charges. Contractor has to make his own arrangements for worker and staff accommodation.

1.3.4 **ELECTRICITY:**

1.3.4.1 The contractor shall be provided with supply of Electricity for the purpose of execution of work at single point only at work site. For further distribution contractor shall make his own arrangements.

1.3.4.2 Any duty, deposit involved in getting the Electricity shall be borne by the bidder.

1.3.4.3 Provision of distribution of electrical power from the given single central common point to the required places with proper distribution boards, approved cables and cable laying including supply of all materials like cables, switch boards, pipes etc., observing the safety rules laid down by electrical authority of the State / BHEL / their customer with appropriate statutory requirements shall be the responsibility of the tenderer / contractor.

1.3.4.4 BHEL is not responsible for any loss or damage to the contractor's equipment as a result of variations in voltage / frequency or interruptions in power supply.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

VOLUME-IA PART – I CHAPTER – IV T&PS and MMEs TO BE DEPLOYED BY CONTRACTOR

The following major Tools & Plants shall be deployed by the contractor:

S.N.	Description	Capacity	Quantity
1	Pick & Carry crane shall be made available for loading of material including insulation wool, etc.in customer's store to trailer.	14 MT	01 No.
2	Truck/Trailer shall be made available for shifting of material including insulation wool etc. from customer's store to work spot and vice versa.	10 MT	01 No.
3	Winch machine for lifting and lowering of material including insulation etc.	5 MT	02 No.

The above list is only tentative. The contractor has to provide required type and capacity of lifting tools for satisfactory completion of work within a given outage time. The contractor to visit site to study the site layout/conditions and assess the T&P required based on the site conditions and customer recommendations before quoting the tender.

NOTE:

1. As there are bound to be interruptions in regular power supply, power cut/ load shedding in any construction site due to inherent power shortage in state; it shall be the responsibility of the contractor to have minimum numbers of diesel operated welding generator sets to get urgent and important work to go on without interruptions. The consumables required to operate the generators are to be provided by the bidders at their cost. No separate payment shall be made for this contingency.
2. All the T&Ps required for this scope of work, except the T&Ps provided by BHEL are to be arranged by the contractor within the quoted rates.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

VOLUME-IA PART – I CHAPTER - V T&Ps AND MMEs TO BE DEPLOYED BY BHEL ON SHARING BASIS

--Nil--

TECHNICAL CONDITIONS OF CONTRACT (TCC)

VOLUME-IA PART – I CHAPTER-VI TIME SCHEDULE

1.6.1 TIME SCHEDULE

- 1.6.1.1 The entire scope of work is to be completed within 65 days from start of dismantling.
- 1.6.1.2 The work shall be commenced on the mutually agreed date between the bidder and BHEL engineer. The decision of BHEL in this regard shall be final and binding to the contractor. The scope of work under this contract is deemed to be completed only when so certified by the site Engineer.
- 1.6.2 In order to meet above schedule in general, and any other intermediate targets set, to meet customer / project schedule requirements, contractor shall arrange & augment all necessary resources from time to time on the instructions of BHEL.
- 1.6.3 In case any requirement is there to compress the schedule of activities to achieve project completion, bidder shall arrange & augment all necessary resources from time to time to meet the project schedule with in a quoted price. No extra amount shall be payable on such accounts.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

VOLUME-IA PART – I CHAPTER - VII WEIGHT SCHEDULE

Sl. No.	Item Des.	PGMA	DU	DU Des.	Qty	Unit	Weight (Kg)
1	Vertical Water Wall panel	6751	026	FURNACE SIDE VERTICAL WALL PANEL (SPOOL)	18	No.	7567.54
2		6751	027	FURNACE SIDE VERTICAL WALL PANEL (SPOOL)	11	No.	2313.94
3		6751	028	FURNACE SIDE VERTICAL WALL PANEL (SPOOL)	2	No.	801.49
4		6751	029	FURNACE SIDE VERTICAL WALL PANEL (SPOOL)	1	No.	503.02
5		6751	030	FURNACE SIDE VERTICAL WALL PANEL (SPOOL)	1	No.	668.2
6		6751	031	V-CLIP 6THK	76	No.	46.36
7		6751	032	V-CLIP 6THK	24	No.	17.04
8		6751	033	SUPPORT BRACKET ASSEMBLY	10	No.	15.6
9	Furnace Screen tubes	7223	905	TUBE OD 57.15 X 15.09 X 5000- SA213T22	10	No.	816
10	Furnace rear arch buckstay	8111	001	BUILT-UP TIE CHANNEL	1	No.	600.11
11		8111	901	RETAINER ANGLE	32	No.	80.51
12		8111	902	STIRRUP	16	No.	152.93
13		8111	903	LUG	32	No.	5.38
14		8111	904	SCALLOPED BAR	8	No.	10.32
15	Furnace rear arch buckstay upper & Expansion tramp	8901	100	BENT ROD	378	No.	907.2
16		8901	101	HANGER ROD ASSEMBLY	40	No.	52.16
17		8901	102	MODIFIED STIRRUP PLATE 12	24	No.	163.92
18		8901	103	MODIFIED RETAINER ANGLE	48	No.	84
19		8901	104	STIRRUP PLATE 12	184	No.	1444.4
20		8901	105	RETAINER ANGLE	368	No.	570.4
21		8901	106	SCALLOPED PLATE	20	No.	7.22
22		8901	107	BUCKSTAY CORNER ARRANGEMENT (C-40	6	No.	523.92
23		8901	108	BUCKSTAY CORNER ARRANGEMENT (C-60	3	No.	405
24		8901	109	PLATE 20	3	No.	706.5
25		8901	110	PLATE 25	3	No.	1324.69
26		8901	111	EXPANSION MOVEMENT MEASURING GUIDE ASSEM	12	No.	16.5
27		8901	112	EXPANSION MOVEMENT MEASURING ROD	12	No.	21.49

TECHNICAL CONDITIONS OF CONTRACT (TCC)

28		8901	113	EXPANSION MOVEMENT MEASURING PLATE	12	No.	87.16
29	Rear Arch area panel	11694	001	ARRNGMNT.OF BP EXTD. FLOOR PANEL(S-08-1)	1	No.	1769.58
30		11694	010	ARRNGMNT.OF BP EXTD. FLOOR PNL (S-08-10)	1	No.	1836.16
31	Boiler trim piping	24800	001	PIPE D33.4 X 9.09	16	Mtr	87.2
32		24800	002	PIPE D26.7 X 7.82	6	Mtr	21.85
33		24800	003	90 DEG BEND SS D26.7 X 7.82	4	No.	4.97
34		24800	004	90DEG BEND(AS) D33.4 X 9.09	6	No.	11.68
35		24800	005	CONDENCING LOOP FOR ERV CONTROLLER(SH)	2	No.	7.6
36		24800	006	CONNECTING PIECE FORERV CONTROLLER (SH)	2	No.	0.6
37	Exhaust Pipe For Safety Valves	24820	13	NUT -M20 -GR7	96	No.	6.24
38		24820	15	PRE STUDBOLT A T425-550 M24X160 BPS41106	48	No.	20.02
39		24820	018	ERW TUBE NB20 MEDIUM	65	Mtr	99.58
40		24820	019	ERW TUBE NB25 MEDIUM	3	Mtr	7.13
41		24820	020	PIPE D114.3X6.02	2	No.	0.03
42		24820	021	PRE STUDBOLT A T425-550 M24X160 BPS41106	20	No.	8.34
43		24820	022	NUT -M24 -GR7	80	No.	8.8
44		24820	023	SPIRAL WOUND GASKET 4" 600# ANSIB16.5	3	No.	1.5
45		24820	024	PIPE D21.3X4.78	10	Mtr	19.5
46		24820	025	1/2" SOCKET FOR SV DRAIN(AS) SH ERV	2	No.	1.86
47		24820	026	1/8" SOCKET FOR SV DRAIN(AS) SH ERV	4	No.	3.72
48		24820	027	SLIP-ON WELDED FLANG4"-600#(FOR SH ERV)	2	No.	34.5
49		24820	028	PUN WASHER-M24 - IS2016-A	40	No.	1.2
50	ERV	24860	002	NB100 GV 2850SPL H C12A BW	2	No.	500
51		24880	005	MS ERV/1538BVXHT SETPR 266.2	2	No.	640
52	Mill board	28220	001	MILL BOARD 25 MM TP 23296	550	Kg	550
53	ALPS Partially	30215	008	SS FIXING PIN L 80 for ALPS	340	No.	6.46
54		30215	009	SS RETAINER TYPE-C	340	No.	14.62
55		30215	901	SS FIXING PIN	12000	No.	648
56		30215	902	RETAINER TYPE-C	24000	No.	1008

TECHNICAL CONDITIONS OF CONTRACT (TCC)

57		30215	904	ANCHOR-SS304-6MTR LENGTH	20	No.	27.36
58	Furnace rear arch skin casing	31104	008	EXPANSION SHEET	1	No.	23.87
59		31104	009	EXPANSION SHEET	1	No.	17.38
60		31104	010	EXPANSION BELLOWASSEMBLY	1	No.	3.32
61		31104	011	EXPANSION BELLOWASSEMBLY	1	No.	2.39
62		31104	012	EXPANSION BELLOWASSEMBLY	1	No.	3.32
63		31104	013	EXPANSION BELLOWASSEMBLY	1	No.	2.39
64		31104	014	EXPANSION SHEET	2	No.	1.87
65		31104	015	EXPANSION SHEET	13	No.	69.12
66		31104	016	EXPANSION SHEET	1	No.	3.24
67		31104	017	EXPANSION SHEET	2	No.	1.08
68		31104	018	EXPANSION SHEET	13	No.	39.77
69		31104	019	EXPANSION SHEET	1	No.	1.86
70		31104	020	EXPANSION SHEET	1	No.	2.17
71		31104	021	EXPANSION SHEET	2	No.	3.92
72		31104	022	EXPANSION SHEET	13	No.	146.73
73		31104	023	EXPANSION SHEET	1	No.	4.14
74		31104	028	CASING SHEET	2	No.	2.71
75		31104	046	COVER PLATE	11	No.	40.32
76		31104	047	SHEET 3.15	1	No.	49.46
77		31104	049	STUD M10-28	150	No.	3.75
78		31104	050	NUT -M10 -CL4-IS1363P3	150	No.	1.5
79		31104	051	PUN WASHER-M10 - IS2016-A	150	No.	1.5
80	ALPS Partially	33021	006	25MM CERAMIC WOOL DENSITY 128KG/CU.M	550	M2	1760
81		33021	908	WOOL-150KG/CU.M-50MM-ONE SIDE GI WIRENET	1200 (M2)	M2	9600
82		33021	909	WOOL-150KG/CU.M-50MM-BOTH SIDE SS WIRENE	1200	M2	10200
83		33021	910	WOOL-150KG/CU.M-60MM-ONE SIDE GI WIRENET	2400	M2	22800
84		33210	902	CASTABLEREFRACTORY GR A	1000	Kg	1000
85		33210	904	CASTABLEREFRACTORY GR A	5600	Kg	5600
	Total weight (kg)						78645.32
	Round off total weight (kg)						78645
	Total weight (MT)						78.645

TECHNICAL CONDITIONS OF CONTRACT (TCC)

NOTE FOR WEIGHT SCHEDULE:

1. The weights given are only approximate and for general guidance and they are subject to variation as per design consideration.
2. The information furnished is only a description regarding the items to be erected by the contractor. BHEL reserves the right to add or exclude any components / items / system according to the site requirements/ customer requirements to complete the systems in all respects

TECHNICAL CONDITIONS OF CONTRACT (TCC)

VOLUME-IA PART –I CHAPTER -VIII GENERAL

The scope of the work will comprise of but not limited to the following:

- 1.9.1 Vertical water wall panel and rear arch panel fin cutting is to be carried out by cutting wheel. Gas cutting shall not be permitted.
- 1.9.2 All the works such as cleaning, leveling, aligning, trial assembly, dismantling of certain components for checking and cleaning, surface preparation, fabrication of sheets, tubes and pipes as per general engineering practice and as per BHEL Engineer's instructions at site, cutting, weld depositing, grinding, straightening, chamfering, filing, chipping, drilling, reaming, scrapping, lapping, fitting-up etc., as may be applicable in such erection works and are necessary to complete the work satisfactorily, shall be carried out by the contractor as part of the work within the quoted rate. Major machining work, which is only to be carried out in workshops, will be arranged by BHEL.
- 1.9.3 The work shall conform to dimensions and tolerances given in various drawings and quality manuals provided by BHEL. If any portion of work is found to be defective in workmanship not conforming to drawings or other stipulations, the contractor shall dismantle and redo the work duly replacing the defective materials at his cost, failing which the job will be carried out by BHEL by engaging other agencies and recoveries will be effected from contractor's bill towards expenditure incurred including BHEL's overhead charges.
- 1.9.4 Contractor shall execute the work as per sequence and procedure prescribed by BHEL at site. BHEL engineer, depending upon the availability of materials, fronts etc, will decide the sequence of erection and methodology. No claims for extra payment from the contractor will be entertained on the grounds of deviation from the method of erection adopted in erection of similar jobs or for any reason whatsoever.
- 1.9.5 Contractor has to work in close co-ordination with other erection agency at site. BHEL engineer will co-ordinate area clearance. In a operation plant, it is possible that the area clearance and space may be less. Activities and erection program have to be planned in such a way that the milestones are achieved as per schedule/plans. Contractor shall arrange & augment the resources accordingly.
- 1.9.6 The contractor is strictly prohibited from using BHEL's regular components like angles, channels, beams, plates, pipe/tubes, and handrails etc for any temporary supporting or scaffolding works. Contractor shall arrange himself all such materials. In case of such

TECHNICAL CONDITIONS OF CONTRACT (TCC)

misuse of BHEL materials, a sum as determined by BHEL engineer will be recovered from the contractor's bill. The decision of BHEL engineer is final and binding on the contractor.

- 1.9.7 The contractor will be responsible for the safe custody and proper accounting of all materials in connection with the work. If the contractor has drawn materials in excess of design requirements, recoveries will be effected for such excess drawls at the rate prescribed by manufacturing units.
- 1.9.8 No member of the already erected structure/ platform, pipes, grills, platform, other component and auxiliaries should be cut without specific approval of BHEL engineer.
- 1.9.9 Contractors shall ensure that all their Staff/Employees are exposed to periodical training programme conducted by qualified agencies/ personnel on ISO 9001 – 2000 Standards.
- 1.9.10 The terminal points decided by BHEL are final and binding on the contractor for deciding the scope of work and effecting the payment for the work done up to the terminals.
- 1.9.11 For the purpose of planning, contractor shall furnish the estimated requirement of power for execution of work in terms of maximum KW demand.
- 1.9.12 On Completion of work, all the temporary buildings, structures, pipe lines, cable etc. shall be dismantled and leveled and debris shall be removed as per instruction of BHEL by the contractor at his cost. In the event of his failure to do so, the expenditure towards clearance of the same will be recovered from the contractor. The decision of BHEL Engineer in this regard is final.
- 1.9.13 All the necessary certificates and license required to carry out this scope of work are to be arranged by the contractor then and there at no extra cost.
- 1.9.14 The contractor must obtain the signature and permission of the security personnel of the customer for bringing any of their materials inside the plant premises. Without the Entry Gate Pass these materials will not be allowed to be taken outside.
- 1.9.15 **SITE INSPECTION**

The owner/employer or his authorized agents may inspect during various stages of work. The contractor shall make necessary arrangements for such inspection and carry out the rectification pointed out by the owner/employer without any extra cost to the owner/ employer/BHEL. No cost whatsoever such duplication of inspection of work be entertained.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

1.9.16 **UTILITY POINTS**

The utility points shall be located at convenient point to handle. Contractor to locate the utility points as advised by site engineer.

1.9.17 **MISCELLANEOUS WORKS**

As the work is to be carried out in running plant with confined space, miscellaneous works like shifting of material, power cables pipe line etc may arise during execution of work. Such works have to be carried out under guidance and close supervisions of customer and BHEL. The quoted rate shall include such sundry works and no separate amount shall be paid. However, the materials required for such works shall be provided by customer/BHEL free of charges.

1.9.18 **T&P,CRANE,ERECTION TOOLS etc:**

All the tools tackles, crane, Derik arrangements required for satisfactory and safe execution of work to arranged by tenderer at his cost. No T&P will be provided by BHEL except open space for their office and as listed in BHEL scope. The quoted rate includes total completion of work including arrangements for worker colony form their workers stay. However, any arrangement provided by customer for worker stay will be extended as per the customer norms.

All the above activities included in the quoted rate. No separate amount will be paid for any work

1.9.19 **SAFETY**

- 1) The contractor shall conform to EHS requirement as notified by customer from time to time. Contractor shall at its own expense defend, indemnify and hold harmless to BHEL and its customer against any and all loss, cost, expense, damages, claims, proceedings, actions, demands or liabilities including legal counsel fees and expenses incurred or suffered by BHEL and its customer resulting from bodily injury, sickness, disease or death of person or damage to property arising out of or in connection with contractor performance of this order including but not limited to:
 - a) Non- compliance with BHEL's customer EHS requirement;
 - b) Non-compliance with code of conduct and business ethics;

TECHNICAL CONDITIONS OF CONTRACT (TCC)

- c) Defect in workmanship, service or work performed by the contractor;
- d) Failure to comply with central, state and local laws; or
- e) Breach of this order;

The indemnity in this clause is a continuing indemnity and survives termination or expiration of order. Without limiting the indemnity contained in this clause, if any of person employed or engaged by the contractor or customer's employee for any action and/ or inaction of the contractor, contractor person suffers injury, disablement (full or partial) and fatality and become ill while at BHEL customer's premises on site and requires medical treatment and/or transportation, the contractor shall pay and indemnify BHEL and its customer for all cost and liability suffered or incurred by BHEL's customer arising out of or in connection with the provision of or arrangement for such medical treatment and/or transportation.

- 2) The contractor shall comply with all applicable legal requirements as well as with any existing industry standards, agreement and guidelines regarding the environment and sustainability but at the very least (i.e. in the event that the legal requirements and any industry standards, agreements and guidelines are less strict than the requirements below or do not exist at all) with the following requirements:
 - a) All chemical or other substance posing a potential hazard if released to environment is to be clearly identified as such and used sparingly and appropriately. The contractor ensures safe handling, movement, storage, use, recycling and/or reuse and environmentally-friendly disposal of such substances.
- 3) The contractor shall provide safe working environment that poses no risk to health. The contractor shall provide all necessary personnel protective equipments (as per ISI standard) to their workers like safety helmets, Safety goggles, welding screen, hand gloves, safety belts, safety shoes, face mask etc depending upon working condition & nature of Job /work and should be worn by the contractor and his workmen while at work.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

- 4) The contractor must pay salary and employment benefits that are at least equal to the normal local salary.
- 5) If contractor fails in providing safe work environment as per safety rules or continue the work even after instruction to stop work by BHEL or and customer's representative the contractor shall promptly pay to BHEL as a compensation. However in the case of accident taking place causing injury to any individual BHEL shall deduct the amount of compensation from contract price, where contractor fails to pay the same.
- 6) In case of accident occurs during the execution of work thereby causing near miss, minor/major or fatal injury to contractor's employee, worker due any reason whatsoever it shall be the responsibility of the contractor and contractor shall promptly inform the same to BHEL's resident engineer/manager in prescribed format with a copy to BHEL's customer and to all statutory authorities envisaged under the applicable state laws .For detailed instructions on safety please refer BHEL's safety manual.
- 7) All the appropriate and relevant safety measures stipulated under the factories Act 1948 and odisha factories rules 1950 made there under should be scrupulously complied with by the contractor and his workmen.
- 8) In case of any accidents / injuries to the contract workers takes place due to non supply (or) Non-ISI standard safety equipments or due to careless working or due to improper handling of the equipment / tools the same shall be at the risk and cost of the contractor only. BHEL will not be responsible in any way either legally or financially to the same and the contractor will have to pay compensation to his relative in such cases.
- 9) The contractor should not allow his workmen to wear loose garments like lungies, dhotis, and smoke cigarettes, beedies etc., while at work inside the plant premises.
- 10) No workmen below the completed age of 18 years should be engaged by the contractor for any works inside Nalco and no women workers shall be allowed to work in night hours inside customer plant except between hours of 6 AM to 6 PM.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

- 11) The contractor shall indemnify Nalco and BHEL against all actions, suits, claims, compensation towards accidents/death, cost of expenses arising in connection with injuries suffered by persons employed by the contractor whether under the general law of ESI scheme & EPF scheme or any other statutory in force during the period of contract/and to undertake steps properly to insure against any claims there under.

1.9.20 **Compliance of ESI Act**

- 1) The Contractor shall be responsible for the payment of necessary ESI contributions both Employer's and Employee's contributions as per the provisions of the ESI Act in respect of the actual workers engaged for the specified works.
- 2) The Contractor shall submit necessary returns to the ESI corporation within the stipulated time as required under the said ESI Act.
- 3) The Contractor shall produce the proof of payment of contributions both Employer's and Employee's contributions made to ESI corporation in order to claim the Bills for the respective work at BHEL.
- 4) The Contractor shall be fully liable to meet and fulfil all the relevant provisions of the ESI Act in respect of the execution of the Tendered work.

1.9.21 **Compliance of EPF Act**

- 1) The Contractor shall be responsible for the payment of necessary EPF contributions both Employer's and Employee's contributions as per the provisions of the EPF Act in respect of the actual workers engaged for the specified works.
- 2) The Contractor shall submit necessary returns to the EPF Corporation within the stipulated time as required under the said EPF Act.
- 3) The contractor shall produce the proof of payment of contributions—both Employer's and Employee's contributions made to EPF Corporation in order to claim the Bills for the respective work at BHEL.
- 4) The contractor shall be fully liable to meet and fulfil all the relevant provisions of the EPF Act in respect of the execution of the Tendered work.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

VOLUME-IA PART -I CHAPTER -IX MATERIAL HANDLING AND SITE STORAGE

The scope of the work will comprise of but not limited to the following:

- 1.10.1 The equipments / materials from the storage yard shall be moved in sequence to the actual site of erection /location at the appropriate time as per the direction of BHEL Engineer so as to avoid damage/loss of such equipment at site.
- 1.10.2 Sometimes it may become necessary for the contractor to handle certain unrequired components in order to take out the required materials. The contractor has to take this contingency also into account. No extra payment is payable for such contingencies.
- 1.10.3 Materials shall be stacked neatly, preserved and stored in the contractor's shed/work area in an orderly manner. In case it is necessary to shift and re-stack the materials kept at work area/site to enable other agencies to carry out their work, same shall be done by the contractor at no extra cost.
- 1.10.4 All pipe and tube ends shall be covered with plastic caps.
- 1.10.5 The contractor shall provide any fixtures, concrete blocks & wooden sleepers, which are required for temporary supporting of the components at site.
- 1.10.6 Contractor has to arrange required fire proof tarpaulins to protect the machined components / assembled parts drawn from BHEL before and after erection at their cost.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

VOLUME-IA PART – I CHAPTER- X ERECTION

The scope of the work will comprise of but not limited to the following:

- 1.11.1 The work space is to be cleaned from generated scrap on daily basis.
- 1.11.2 If any damage occurs to the customer property during execution of work, then the same is to be repaired/replaced by contractor as per instruction of BHEL engineer in-charge.
- 1.11.3 Contractor has to use 24V inspection lamp along with proper guard in working area.
- 1.11.4 Contractor is required to return the balance unusable material to customer as per the direction of BHEL engineer in-charge.
- 1.11.5 Quality of workmanship shall be in accordance with modern engineering practice and contractor will be responsible for overall quality and workmanship.
- 1.11.6 In the case of structural members / ducts in certain cases, the raw material will be supplied in random lengths and the contractor will have to make up the length / prepare the edges to suit the matching profiles, weld / bolt connect the joints at no extra cost.
- 1.11.7 Fine fittings and other small bore piping have to be routed according to site conditions and hence shall be done only in position as per the site requirement. Necessary sketch for routing these lines should be got approved from BHEL by the contractor. There is a possibility of slight change in routing the above pipelines when after completion, to suit the site conditions. The contractor should absorb this cost in his quoted rate.
- 1.11.8 All welded joints should be painted with anti corrosive paint, once NDE works are over.
- 1.11.9 The temporary structures/items welded to permanent members/pipes are to be cut and removed without any damage. Any damage so to be made good by the contractor at his cost.
- 1.11.10 Before lifting the heavy components, soft materials like gunny bags to be used while lashing the rope to avoid dents, rubbing marks etc. The capacity, number of sheave pulleys, size of the rope, guide pulley locations are to be decided at site with respect to the capacity and positioning of the winch. The end caps provided at shop for various stubs are to be removed during final fit up only.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

- 1.11.11 Prior to erection of any components inspection to be done for any foreign materials and damages and they are to be removed/attended as per BHEL engineer. The fixing / welding of all the above items will be contractor's responsibility even if the
- i) Product groups under which these items are not specifically indicated in the Tender Specification.
 - ii) Items are supplied by an agency other than BHEL
- 1.11.12 All the equipments /material to be taken inside the plant building shall be cleaned thoroughly before taking them inside and erect
- 1.11.13 Wherever equipments are supplied in pre-fabricated assembled packages, there may be necessity to make minor changes, including strengthening by additional welds. This shall be treated as part of the contractor's scope.
- 1.11.14 Additional platforms of permanent nature for approaching different equipments, as per site requirement which may not be indicated in drawings shall be fabricated and installed by the contractor. The material required for platform will be supplied by BHEL free of cost.
- 1.11.15 Contractor shall also weld small length of piping with root valve to the pressure, flow and level tapping points on piping or flow nozzles/orifices/ metering elements fixed on piping as per the instructions of BHEL Engineer.
- 1.11.16 Welding of all thermo wells, draft, pressure and temperature instrumentation points and all other instrumentation points and welding of thermocouple pads are in the scope of work.
- 1.11.17 No separate payment will be made for the edge preparation of pipes, standard fittings such as bends, Tees etc.,
- 1.11.18 Contractors has to carryout fabrication works such as welding of stubs / nipples, attachments etc., preparation of surface for rust preventive coating and application of rust preventive paint is within the quoted / accepted rate.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

VOLUME-IA PART – I CHAPTER - XI PROGRESS OF WORK

The scope of the work will comprise of but not limited to the following:

- 1.12.1 Progress review meetings will be held at site during which actual progress against scheduled program shall be discussed. Contractor shall also present the program for subsequent day. The contractor shall constantly update / revise his work program to meet the overall requirement. All quality problems shall also be discussed during above review meetings. Necessary preventive and corrective action shall be discussed and decided upon in such review meetings and shall be implemented by the contractor in time bound manner so as to eliminate the cause of nonconformities.
- 1.12.2 The contractor shall submit daily progress reports, manpower reports and other reports as per performa considered necessary by the Engineer as per the format enclosed with this tender document.
- 1.12.3 The manpower reports shall clearly indicate the manpower deployed, category wise specifying also the activities in which they are engaged.
- 1.12.4 During the course of erection, if the progress is found unsatisfactory, or if the target dates fixed from time to time for every milestone are to be advanced, or in the opinion of BHEL, if it is found that the skilled workmen like fitters, operators, technicians employed are not sufficient BHEL will induct required additional workmen to improve the progress and recover all charges incurred on this account including all expenses together with BHEL overheads from contractor's bills.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

VOLUME-IA PART – I CHAPTER - XII WELDING

The scope of the work will comprise of but not limited to the following:

- 1.13.1 High pressure welder required to deploy for IBR related welding and these welder has to be endorsed by director of factory & boiler odisha.
- 1.13.2 All welders including tack welders, structural and high pressure welder shall be tested and approved by BHEL Engineer before they are actually engaged on work even though they may possess a valid certificate. BHEL reserves the right to reject any welder if the welder's performance is not found to be satisfactory. The contractor shall maintain the records of qualification and performance of welders. BHEL Engineer will issue welder ID card to all the welders qualified for the work. Welders has to keep the same with him at work place at all times. He may be stopped from work if he is not found in possession of the same.
- 1.13.3 Engineer may stop any welder from the work if his performance is unsatisfactory for any technical reason or if there is a high percentage of rejection in the joints welded by him. The welders having passed qualification tests does not absolve the contractor of contractual obligation to continuously check the welder's performance.
- 1.13.4 Faulty welds caused by the poor workmanship shall be cut and re-welded at the contractor's expense. The Engineer prior to any repair being made shall approve the procedure for the repair of defective welds. After the repair has been carried out, the compliance shall be submitted to the quality engineer.
- 1.13.5 All expenses for testing of contractor's welders including destructive and Non- destructive tests conducted by BHEL at site or at laboratory shall have to be borne by the contractor only. Only BHEL approved electrodes and filler wire will be used. All electrodes shall be baked and dried in electrode-drying oven to the required temperature for the period specified by the Engineer before these are used in erection work. All welders shall have electrodes drying portable oven at the work spot.
- 1.13.6 The contractor shall also be equipped for carrying out NDT like RT/UT/LPI /MPI / Hardness test etc. as required as per welding schedules / drawings within the finally accepted price / rates.
- 1.13.7 REPAIR OF WELD JOINTS:
 - 1.13.7.1 Weld repair at root:

TECHNICAL CONDITIONS OF CONTRACT (TCC)

If any surface defect is revealed at the time of visual inspection during root welding, the following steps shall be followed:

1. Maintain the temperature at 80-100°C for 1 hour.
2. Perform inter-stage PWHT.
3. Remove the defect by grinding.
4. After complete removal of defect, preheat the weld area to 220°C and reweld with GTAW before starting SMAW, if required.

1.13.7.2 Weld repair on completion:

1.13.7.2.1 Any defect observed on the weld shall be brought to the notice of Site engineer. Any repair on weld shall be carried out with their approval only.

1.13.7.2.2 If any defects are noticed on the fully completed weld while performing UT after completion of PWHT, the depth of the defect shall be located from the weld outside surface. The defect area shall be marked and repaired as below:

- a) The weld shall be removed by grinding (gouging not permitted) such that the area for repair welding shall be free from sharp corners and provided with sufficient slope towards the weld face sides.
- b) Surface examination (MPI/LPI) on the ground area shall be performed to ensure complete defect removal before re-welding. Repair welding shall be carried as per the applicable WPS as for original welding.

1.13.8 HARDNESS SURVEY:

Hardness shall be measured using portable hardness tester. The equipment used for the hardness measurement shall be calibrated as recommended by the equipment manufacturer. The surface shall be cleaned and prepared as per hardness test instrument manufacturer's recommendation prior to hardness survey. Hardness survey shall be done on each joint at three locations along the circumference. At each location three readings shall be taken on weld and parent metal. The readings on the parent metal shall be taken within 15mm from the edge of the weld. All the hardness values shall be recorded. Joints having hardness above 300HB shall be re-heat treated and hardness shall be checked again. If hardness is still more, the case shall be referred to concerned MUs/ECs. In case Hardness falls below 160HB also, the case shall be referred to the concerned MUs/ECs. Cautionary note: To achieve meaningful

TECHNICAL CONDITIONS OF CONTRACT (TCC)

and consistent hardness results, below recommendations should be followed:

- The accuracy of the instrument shall be verified prior to use.
- The surface to be tested shall be reasonably flat and free of scale and oxides grease, paint, etc.
- Prior to hardness test, the de-carburized surface layer with a thickness up to 0.8mm shall be removed by grinding/buffing, without encroaching the specified minimum wall thickness of the pipe/tube.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Repair procedure for excess weld observed on fins in Waterwall panel at NTPC Sites

1.0 Scope:

This procedure is applicable for repair of excess weld observed on fins in Waterwall panel at NTPC Sites. This procedure is valid only for the component referred herein.

2.0 Background:

It was reported through FES vide email dated 10-03-2021 that the gap created due to fin cracking in waterwall panels lead to excess weld on the fin (refer figure 1). It is planned to provide a panel wherever excess welding on the fin has been done at site. Hence FES has requested to provide repair procedure for replacing the excess weld area on the fins by replacing with spool panel.



Figure-1 Photograph of excess welding on the fin

3.0 Material Specification & Size:

Tube	-SA213 T22	D38.1x9.1 mm
Fin	-SA387 Gr22	6 mm thick
Tube	-SA213 T12	D38.1x9.1 mm
Fin	-SA387 Gr12	6 mm thick

4.0 Reference Documents:

IBR
ASME Section I

5.0 Repair Procedure:

- 5.1 Obtain necessary approval from the Statutory Authorities as required.
- 5.2 Only IBR qualified welders shall be used.
- 5.3 Drain the line and dry it for repair.
- 5.4 Identify the locations on the panel where excess welding on the fin has been observed and cut that portion of the panel including the fin and adjacent tubes (The panel width may vary from minimum 2 tubes to as required at site). Cutting shall be done by grinding or saw cutting only.
- 5.5 Prepare a spool panel of equivalent length, width and tube & fin size and specification of cut portion (same number of tubes and fins). Edge prepare the spool panel tube & fin weld ends and existing panel tube and fin weld ends as per the drawing. Carry out LPI on the edge prepared surfaces.
- 5.6 Do the fit up of the spool panel.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

- 5.7 Welding details for panel having T22 tube and Gr22 fins:**
- 5.7.1** During welding inter-pass temperature shall not exceed 350 °C.
- 5.7.2** Preheat the weld area (150 mm radius around the joint) as per applicable WPS.
- 5.7.3** **Butt weld of SA 213T22+ SA 213T22:** Carry out the welding by GTAW process using ER90S-B3 filler wire of diameter 2.4 mm for root layer and by SMAW process using E9018-B3 electrode of diameter 2.5 mm for subsequent layers. Carry out PWHT at 740±10°C for a soaking time of 60 minutes (Refer site WPS No. 1084/Rev 00).
- 5.7.4** **Welding of tube to fin (SA213 T22 + SA387 Gr22) and fin to fin (SA387 Gr22 + SA387 Gr22):** Carry out the welding by SMAW process using E9018-B3 electrode of diameter 2.5 mm. Carry out PWHT at 740±10°C for a soaking time of 60 minutes (Refer site WPS No. 1133/Rev 00).
- 5.7.5** In addition to the above, the requirements mentioned in SIP:PP:29 (latest) - General Guidelines for Welding of T22 grade Panel Joints at Site, shall also be followed.
- 5.8 Welding details for panel having T12 tube and Gr12 fins:**
- 5.8.1** During welding inter-pass temperature shall not exceed 350 °C.
- 5.8.2** Preheat the weld area as per applicable WPS.
- 5.8.3** **Butt weld of SA 213T12+ SA 213T12:** Carry out the welding by GTAW process using ER80S-B2 filler wire of diameter 2.4 mm for root layer and by SMAW process using E8018-B2 electrode of diameter 2.5 mm for subsequent layers. Carry out PWHT at 650-670°C for a soaking time of 30 minutes (Refer site WPS No. 1094/Rev 00).
- 5.8.4** **Welding of tube to fin (SA213 T12 + SA387 Gr12) and fin to fin (SA387 Gr12 + SA387 Gr12):** Carry out the welding by SMAW process using E8018-B2 electrode of diameter 2.5 mm. Carry out PWHT at 650-670°C for a soaking time of 30 minutes (Refer site WPS No. 1134/Rev 00).
- 5.9 The following points shall be followed for PWHT requirements:**
- 5.9.1** Minimum of two thermocouples shall be placed for each joint 180° apart.
- 5.9.2** Length of the heating band should be 175-180 mm and to be fixed from both side inside/outside. The Insulation band around 580-600 mm both side to be fixed on both side.
- 5.9.3** Post weld heat treatment temperature cycle shall be measured and monitored by use of thermocouples with calibrated recorders.
- 5.9.4** In addition to the above, the heat treatment requirements mentioned in Site heat treatment manual shall also be followed.
- 5.10** Carry out 100% RT on the butt joints and 100% LPI on tube to fin & fin to fin weld to ensure defect free welds.
- 6.0 Documentation:**
- Record the details of repair carried out on the tube with correlation to welder(s), NDE reports and Heat Treatment reports.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

1. PURPOSE

The purpose of the procedure is to rectify the water wall panel (T12/ T22) distorted during welding and PWHT at site.

2. SCOPE

This procedure is applicable for longitudinal & lateral bow of the panel after PWHT, adjusting of panel by turn buckle / Chain pulley block / hydraulic jack. This procedure applies to bows up to 100mm. If greater than 100mm, please advise with engineering.

3. REFERENCE

FQP – Pressure Part

4. PROCEDURE

1. Remove all the temporary steel and attachments welded during welding / alignment / heat treatment from the panel. Structural steel designer shall advise which structural beam can be used as load point to push the wall back into place. Site to identify what beam load to be applied & SS Eng. to review for acceptance. The span of the bow and number of tubes to be corrected will govern the force necessary. Suggest no more than 250LB (113 KG) force per tube be applied. (Ex. 113 kg x 6 tubes to be straightened = 678 KG force)
 2. Mark the bowed area of the panel. Measure & record the bow.
 3. Make the fixture arrangement with the help of steel / plate/ chain pulley block/turn buckle/ hydraulic jack.
 4. Slitting of fins at bowing locations shall be made with cutting wheel only, no thermal cutting methods allowed. Max of 300mm pitch to be adopted & if bow could not be corrected or structural interference, pitch can be reduced.
 5. Install the Buckstay adjacent top and bottom of the field weld as per the erection drawing, V clip arrangement are shop welded. Buckstay is tied with the V Clip using the bent rod (for details please refer site specific drawings).
 6. Pressing the panel by turn buckle or pull the panel towards buckstay by chain pulley block parallelly and insert the bent pin. Pin should be able to be inserted easily, no heavy hammering. Strength of any PP attachments for pull can be completed by the two options detailed below, which will aid in straightening the wall. PT of attachment welds are required after straightening.
 - a) Drill holes on fin with backing plate, use eye bolt to pull gradually.
 - b) Bridge plate to be welded with fins, then can be pulled with help of hook on bridge plate.
 7. Complete the corner tube weld with adjacent panel tubes as per the drawing & per approved WPS
 8. Leave the whole arrangement for the time being (GE suggests 48 hours)
 9. Check the verticality of the panel and compare and record the dimension with respect to the FQP.
5. Perform PT on the area where load is applied for correction including fin welding & any attachments used in straightening. PT longitudinal fin corner seam welds. Also, PT 100% of the butt welds that were included in any bent section.

6. ACCEPTANCE CRITERIA

GE recommends the bow dimensions as detailed below:

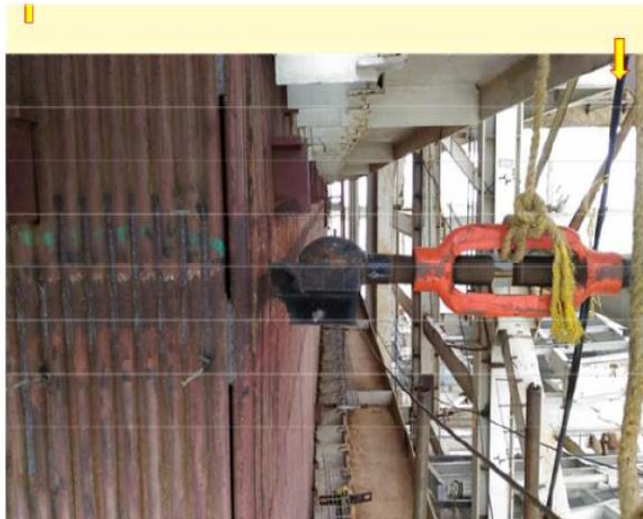
- a) Allowable bow in panel: 6 mm.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

- b) Verticality within 10 mm for the overall total length of the panel.

If above tolerances are not able to be achieved, then cutting of butt welds shall be considered to aid in adjustment.

Arrangement Pictures:



Notes: If verticality of the overall panel is not achieved cut the joints and try to optimize the excess panel length and achieve the desired dimension.

It is advisable to perform 100% Radiography Test on all butt joints, which where cut in correcting the bow.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

 101-401		BHARAT HEAVY ELECTRICALS LIMITED TIRUCHIRAPPALLI-620014 WELDING TECHNOLOGY CENTRE		Page 1 of 2																																							
WELDING PROCEDURE SPECIFICATION																																											
WPS No :	1009	Date :	06/11/1993	Supporting PQR No: 528																																							
Rev No :	03	Date :	09/09/2014																																								
Welding Process :	GTAW + SMAW		Type :	Manual (Auto/Semi-Auto/Manual/Machine)																																							
Application :	Welding of P4 Gr.1 Tubes / Pipes with P4 Gr.1 Tubes/Pipes with Preheat and without PWHT.																																										
JOINTS (QW-402) Joint Design : As per production drawing Root Spacing : As per production drawing Backing (Yes/No) : GTAW : No SMAW : Yes Backing Material (Type) : GTAW : Nil SMAW : Metal (Metal/Non fusing metal/Non metallic/other) Retainers : Nil																																											
BASE METAL (QW-403) P.No : 4 Group No : 1 TO P.No : 4 Group No : 1 OR Specification and type / grade or UNS Number: NA To Specification and type / grade or UNS Number : NA OR Chem. Analysis & Mech. Prop. : NA To Chem. Analysis & Mech. Prop. : NA Thickness Range of Base material Groove: 1.5 mm to 13.0 mm Fillet: NA Max. Pass Thickness ≤13 mm : Yes Other : Nil																																											
FILLER METALS (QW-404) <table border="1"> <thead> <tr> <th></th> <th>GTAW</th> <th>SMAW</th> </tr> </thead> <tbody> <tr> <td>AWS No. (Class)</td> <td>ER80S-B2</td> <td>E8018-B2</td> </tr> <tr> <td>Specn.No. (SFA)</td> <td>5.28</td> <td>5.5</td> </tr> <tr> <td>F.No.</td> <td>6</td> <td>4</td> </tr> <tr> <td>A.No.</td> <td>3</td> <td>3</td> </tr> <tr> <td>Filler Metal Production form</td> <td>Solid</td> <td>NA</td> </tr> <tr> <td>Supplemental filler metal</td> <td>Nil</td> <td>Nil</td> </tr> <tr> <td>Size of filler metal</td> <td>Refer table</td> <td>Refer table</td> </tr> <tr> <td>Flux trade name</td> <td>NA</td> <td>NA</td> </tr> <tr> <td>Electrode-flux (Class)</td> <td>NA</td> <td>NA</td> </tr> <tr> <td>Consumable Insert</td> <td>NA</td> <td>NA</td> </tr> <tr> <td>Alloy Element</td> <td>Nil</td> <td>Nil</td> </tr> <tr> <td colspan="3"> Weld Metal Thickness range Groove: Max. 13.0 mm : Max. 5.0 mm Max. 9.0 mm Fillet : NA Other : Nil </td> </tr> </tbody> </table>						GTAW	SMAW	AWS No. (Class)	ER80S-B2	E8018-B2	Specn.No. (SFA)	5.28	5.5	F.No.	6	4	A.No.	3	3	Filler Metal Production form	Solid	NA	Supplemental filler metal	Nil	Nil	Size of filler metal	Refer table	Refer table	Flux trade name	NA	NA	Electrode-flux (Class)	NA	NA	Consumable Insert	NA	NA	Alloy Element	Nil	Nil	Weld Metal Thickness range Groove: Max. 13.0 mm : Max. 5.0 mm Max. 9.0 mm Fillet : NA Other : Nil		
	GTAW	SMAW																																									
AWS No. (Class)	ER80S-B2	E8018-B2																																									
Specn.No. (SFA)	5.28	5.5																																									
F.No.	6	4																																									
A.No.	3	3																																									
Filler Metal Production form	Solid	NA																																									
Supplemental filler metal	Nil	Nil																																									
Size of filler metal	Refer table	Refer table																																									
Flux trade name	NA	NA																																									
Electrode-flux (Class)	NA	NA																																									
Consumable Insert	NA	NA																																									
Alloy Element	Nil	Nil																																									
Weld Metal Thickness range Groove: Max. 13.0 mm : Max. 5.0 mm Max. 9.0 mm Fillet : NA Other : Nil																																											
POSITION (QW-405) Position(s) of Groove : All Position(s) of Fillet : NA Weld Progression : Vertical up Other : Nil		PREHEAT (QW-406) Preheat Temp. (Min) : 150°C Interpass Temp. (Max) : 350°C Post heat : Nil Other : Nil																																									

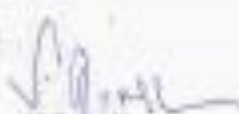
TECHNICAL CONDITIONS OF CONTRACT (TCC)

BHEL Tiruchirappalli-14		WPS No. : 0005	Page 2 of 2 Rev. No. : 03																																																													
PWHT (QW-407) Temp. Range : Nil Time Range : Nil Other : Nil		GAS (QW-408) <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <thead> <tr> <th colspan="4" style="text-align: center; padding: 2px;">Percent Composition</th> </tr> <tr> <th style="width: 15%;"></th> <th style="width: 25%;">Gas (Gas)</th> <th style="width: 25%;">(Mixture)</th> <th style="width: 35%;">Flow Rate</th> </tr> </thead> <tbody> <tr> <td>Shielding :</td> <td>Argon</td> <td>Single</td> <td>10 - 25 LPM</td> </tr> <tr> <td>Trailing :</td> <td>NA</td> <td>---</td> <td>---</td> </tr> <tr> <td>Backing :</td> <td>NA</td> <td>---</td> <td>---</td> </tr> <tr> <td>Other :</td> <td>Nil</td> <td></td> <td></td> </tr> </tbody> </table>			Percent Composition					Gas (Gas)	(Mixture)	Flow Rate	Shielding :	Argon	Single	10 - 25 LPM	Trailing :	NA	---	---	Backing :	NA	---	---	Other :	Nil																																						
Percent Composition																																																																
	Gas (Gas)	(Mixture)	Flow Rate																																																													
Shielding :	Argon	Single	10 - 25 LPM																																																													
Trailing :	NA	---	---																																																													
Backing :	NA	---	---																																																													
Other :	Nil																																																															
ELECTRICAL CHARACTERISTICS (QW-409) <table style="width: 100%;"> <tr> <td style="width: 35%;">Current (AC/DC) :</td> <td style="width: 25%;">Refer table</td> <td style="width: 15%;">Polarity :</td> <td style="width: 25%;">Refer table</td> </tr> <tr> <td>Amps (Range) :</td> <td>Refer table</td> <td>Volts :</td> <td>Refer table</td> </tr> <tr> <td>Tungsten Electrode type and size :</td> <td colspan="3">EW Th-2/EW Ce-2 Ø2.4 mm</td> </tr> <tr> <td>Mode of metal transfer for GMAW :</td> <td colspan="3">NA</td> </tr> <tr> <td>Electrode wire feed speed range :</td> <td colspan="3">NA</td> </tr> <tr> <td>Pulsing current (GTAW) :</td> <td colspan="3">Nil</td> </tr> <tr> <td>Heat Input (max) :</td> <td colspan="3">NA</td> </tr> </table>					Current (AC/DC) :	Refer table	Polarity :	Refer table	Amps (Range) :	Refer table	Volts :	Refer table	Tungsten Electrode type and size :	EW Th-2/EW Ce-2 Ø2.4 mm			Mode of metal transfer for GMAW :	NA			Electrode wire feed speed range :	NA			Pulsing current (GTAW) :	Nil			Heat Input (max) :	NA																																		
Current (AC/DC) :	Refer table	Polarity :	Refer table																																																													
Amps (Range) :	Refer table	Volts :	Refer table																																																													
Tungsten Electrode type and size :	EW Th-2/EW Ce-2 Ø2.4 mm																																																															
Mode of metal transfer for GMAW :	NA																																																															
Electrode wire feed speed range :	NA																																																															
Pulsing current (GTAW) :	Nil																																																															
Heat Input (max) :	NA																																																															
TECHNIQUES (QW-410) <table style="width: 100%;"> <tr> <td style="width: 35%;">String or Weave Bead :</td> <td colspan="3">String or Weave (weave: Max.3 Diameter of electrode)</td> </tr> <tr> <td>Oscillation/Weaving :</td> <td colspan="3">NA</td> </tr> <tr> <td>Initial and interpass cleaning :</td> <td colspan="3">Brushing/Chipping/Grinding</td> </tr> <tr> <td>Method of back gouging :</td> <td colspan="3">Nil</td> </tr> <tr> <td>Orifice or Gas cup size :</td> <td colspan="3">Ø/9 mm</td> </tr> <tr> <td>Contact tube to work distance :</td> <td colspan="3">NA</td> </tr> <tr> <td>Multiple or single pass per side :</td> <td colspan="3">Multiple</td> </tr> <tr> <td>Multiple or single Electrode :</td> <td colspan="3">Single</td> </tr> <tr> <td>Electrode spacing :</td> <td colspan="3">NA</td> </tr> <tr> <td>Travel speed range :</td> <td colspan="3">NA</td> </tr> <tr> <td>Use of thermal process :</td> <td colspan="3">Nil</td> </tr> <tr> <td>Closed to out chamber :</td> <td colspan="3">NA</td> </tr> <tr> <td>Manual or Automatic :</td> <td colspan="3">Manual</td> </tr> <tr> <td>Peening :</td> <td colspan="3">Nil</td> </tr> <tr> <td>Other :</td> <td colspan="3">Nil</td> </tr> </table>					String or Weave Bead :	String or Weave (weave: Max.3 Diameter of electrode)			Oscillation/Weaving :	NA			Initial and interpass cleaning :	Brushing/Chipping/Grinding			Method of back gouging :	Nil			Orifice or Gas cup size :	Ø/9 mm			Contact tube to work distance :	NA			Multiple or single pass per side :	Multiple			Multiple or single Electrode :	Single			Electrode spacing :	NA			Travel speed range :	NA			Use of thermal process :	Nil			Closed to out chamber :	NA			Manual or Automatic :	Manual			Peening :	Nil			Other :	Nil		
String or Weave Bead :	String or Weave (weave: Max.3 Diameter of electrode)																																																															
Oscillation/Weaving :	NA																																																															
Initial and interpass cleaning :	Brushing/Chipping/Grinding																																																															
Method of back gouging :	Nil																																																															
Orifice or Gas cup size :	Ø/9 mm																																																															
Contact tube to work distance :	NA																																																															
Multiple or single pass per side :	Multiple																																																															
Multiple or single Electrode :	Single																																																															
Electrode spacing :	NA																																																															
Travel speed range :	NA																																																															
Use of thermal process :	Nil																																																															
Closed to out chamber :	NA																																																															
Manual or Automatic :	Manual																																																															
Peening :	Nil																																																															
Other :	Nil																																																															
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Weld Layer(s)</th> <th rowspan="2">Process</th> <th colspan="2">Filler metal</th> <th colspan="2">Current</th> <th rowspan="2">Voltage (Range)</th> <th rowspan="2">Travel Speed (Range)</th> <th rowspan="2">Other</th> </tr> <tr> <th>Classification</th> <th>Diameter (mm)</th> <th>Type & Polarity</th> <th>Amps. (Range)</th> </tr> </thead> <tbody> <tr> <td>Root</td> <td>GTAW</td> <td>ER80S-B2</td> <td>2.4</td> <td>DCEN</td> <td>70-110</td> <td>15-20</td> <td>NA</td> <td>Nil</td> </tr> <tr> <td>Further</td> <td>SMAW</td> <td>E8018-B2</td> <td>2.5</td> <td>DCEP</td> <td>70-100</td> <td>18-22</td> <td>NA</td> <td>Nil</td> </tr> <tr> <td>Further</td> <td>SMAW</td> <td>E8018-B2</td> <td>3.15</td> <td>DCEP</td> <td>100-140</td> <td>22-24</td> <td>NA</td> <td>Nil</td> </tr> </tbody> </table>					Weld Layer(s)	Process	Filler metal		Current		Voltage (Range)	Travel Speed (Range)	Other	Classification	Diameter (mm)	Type & Polarity	Amps. (Range)	Root	GTAW	ER80S-B2	2.4	DCEN	70-110	15-20	NA	Nil	Further	SMAW	E8018-B2	2.5	DCEP	70-100	18-22	NA	Nil	Further	SMAW	E8018-B2	3.15	DCEP	100-140	22-24	NA	Nil																				
Weld Layer(s)	Process	Filler metal		Current			Voltage (Range)	Travel Speed (Range)	Other																																																							
		Classification	Diameter (mm)	Type & Polarity	Amps. (Range)																																																											
Root	GTAW	ER80S-B2	2.4	DCEN	70-110	15-20	NA	Nil																																																								
Further	SMAW	E8018-B2	2.5	DCEP	70-100	18-22	NA	Nil																																																								
Further	SMAW	E8018-B2	3.15	DCEP	100-140	22-24	NA	Nil																																																								
Prepared by  (L. Praveen Kumar) Sr./Welding Engineer/ WTC		Approved by  (S. Singaravelu) SDGM / WTC																																																														

TECHNICAL CONDITIONS OF CONTRACT (TCC)

BHARAT HEAVY ELECTRICALS LIMITED		Form No. 101-401	
THIRUCHIRAPPALLI-630014			
WELDING TECHNOLOGY CENTRE			
WELDING PROCEDURE SPECIFICATION			
Page 1 of 2			
WPS No. : 1017	Date : 06/11/91	Supporting PQR No. :	528,529
Rev. No. : 02	Date : 04/04/96		
Welding Process : SMAW		Type : Metal (Auto/Semi-Auto/Manual/Machine)	
Application : Welding of 1 1/2 Cr 1/2 Mo / 3 Cr 1/2 Mo Tubes / Pipes & Carbon steel / 1 1/2 Cr 1/2 Mo / 3 Cr 1/2 Mo / 3 Cr 1/2 Mo attachments with Pre heat & without PWHT.			
JOINTS (QW-402)			
Joint Design	Groove as per Production Dwg.		
Burking (Yes/No)	As per Production Dwg.		
Burking Material (Type)	Metal		
Metal/Non-fusing metal			
Non-metallic/Other			
BASE METAL (QW-403)			
P.No. : 4	Group No. : 1	TD	P.No. : 1 : Group No. 1 or 2
Spec. Type & Grade	N.A.		
Chem. Analysis & Mech. Prop.	N.A.		
Thickness Range :-	Fillet : 12 mm		
groove : N.A.			
Pipe diameter range :-	Unlimited		
groove : Nil			
FILLER METALS (QW-404)			
AWS No.(Class) : E3018-B2	Size of filler metal	Refer table	
Specs. No.(SFA) : 3.5	Flux trade Name	N.A.	
F.No. : 4	Consumable insert	N.A.	
A.No. : 3	Electrode flux class	N.A.	
Deposited weld metal thickness range :-			
groove : N.A.			
Fillet : 12 mm max. (Max. 4 mm / pass)			
POSITION (QW-405)		PREHEAT (QW-406)	
Position of Groove	ALL	Preheat Temp. (min)	PA + P1 : 125 °C; P4 + P5 : 125 °C
Position of Filler	ALL		P4 + P-5A : 150 °C
Weld Progression (Up/Down)	Vertical up	Inter pass temp. (max.)	300 °C
		Post heat treatment	Nil
		Other	Nil

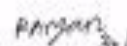
TECHNICAL CONDITIONS OF CONTRACT (TCC)

BHEL Tinschingpurli - 14		WPS No : 1107		Page 2 of 3 Rev : 02				
PWHT (QW-407)		GAS (QW-408)						
Temp. Range: Nil		Gases		Partic. 5	Flare 10			
Time Range: Nil		Shielding: N.A.		—	—			
Others : Nil		Trailing : N.A.		—	—			
		Backing : N.A.		—	—			
ELECTRICAL CHARACTERISTICS (QW-409)								
Current (AC/DC) : Refer table		Polarity : Refer table						
Amper (Range) : Refer table		Volts : N.A.						
Tungsten Electrode type and size : N.A.								
Mode of Metal transfer for (GMAW) : N.A.								
Electrode wire feed speed range : N.A.								
Pulsing current (GTAW) : N.A.								
TECHNIQUES (QW-410)								
String or Weave Bead : String / Weave (3 dia. Max.)								
Oriflow or Gas cup size : N.A.								
Initial and Inter pass Cleaning : Brushing/ Chipping/ Grinding								
Method of Back Gouging : Air arc Gouging / Grinding								
Oscillation : N.A.								
Contact tube to work distance : N.A.								
Multiple or single pass (per side) : Single or multiple								
Multiple or single Electrode : Single								
Electrode spacing : N.A.								
Peeling : Nil								
Others : Nil								
Weld layer	Process	Filler		Current		Volt Range	Travel speed Range	Minimum Root Gap length mm Electrode
		Class	Dia mm	Type	Amper			
AB	SMAW	ER6018-B2	2.5	DCSP	70-100	N.A.	N.A.	N.A.
AD	SMAW	ER6018-B2	3.15	DCSP	100-140	N.A.	N.A.	N.A.
Approved by:  (S.Ramesh) SDGM / WTC & WCMC Prepared by:  (Dr.K.P.Dhundupuri) DGM / WTC & WCMC								

TECHNICAL CONDITIONS OF CONTRACT (TCC)

 183-401 Dt: 26/04/2025		BHARAT HEAVY ELECTRICALS LIMITED TRICHIRAPPALLU-620014 WELDING TECHNOLOGY CENTRE		Page 1 of 2
WELDING PROCEDURE SPECIFICATION-ASME Sec-IX				
WPS No. :	1266	Date :	30/10/2021	Supporting PQR No: 674
Rev No. :	00	Date :	---	
Welding Process :	SMW	Type :	Manual	(Auto/Temi-Auto/Manual/Machine)
Application :	Welding of P4 Gr.1 Fin/plate material to P4 Gr.1 Fin/plate material with Preheat and without PWHT			
JOINTS (QW-402) Joint Design : All groove & fillet designs Root Spacing : As per production drawing Backing (Yes/No) : As per production drawing Backing Material (Type) : As per production drawing (Other/Non fusing metal/Non metallic/other) Other : Nil				
BASE METAL (QW-403) P.No. : 4 Group No. : 1 TO P.No. : 4 Group No. : 1 OR Specification and type / grade or UNS Number NA to Specification and type / grade or UNS Number : NA OR Chem. Analysis & Mech. Prop. : NA to Chem. Analysis & Mech. Prop. : NA Thickness Range of Base material Groove : 1.5 mm to 12.0 mm Fillet: Unlimited Max. Pass Thickness ≤13 mm? : Yes Other : Nil				
FILLER METALS (QW-404) AWS No. (Class) : E8018-G2 Spec.No. (SFA) : 5.5 F.No. : 4 A.No. : 3 Filler Metal Production form : NA Supplemental filler metal : Nil Size of filler metal : Refer table Flux trade name : NA Electrode-Flux (Class) : NA Current & Voltage (Amperes) : NA Alloy Element : Nil <u>Weld Metal Thickness range</u> Groove: Max 12.0 mm Fillet : Max 13.5 mm Other : Nil				
POSITION (QW-405) Position(s) of Groove : All Position(s) of Fillet : All Weld Progression : Vertical up Other : Nil		PREHEAT (QW-406) Preheat Temp. (Min) : 150 °C Interpass Temp. (Max) : 350 °C Preheat maintenance : Nil Other : Nil		

TECHNICAL CONDITIONS OF CONTRACT (TCC)

BHEL Tiruchirappalli-14		WPS No. : 1266		Page 2 of 2 Rev. No. : 00																																
PWHT (QW-403) Temp Range : Nil Time Range : Nil Other : Nil			GAS (QW-408) <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: center;">Percent Composition</th> </tr> <tr> <th style="text-align: center;">Gas (in)</th> <th style="text-align: center;">(Mixture)</th> <th style="text-align: center;">Flow Rate</th> </tr> </thead> <tbody> <tr> <td>Shielding : NA</td> <td style="text-align: center;">---</td> <td style="text-align: center;">---</td> </tr> <tr> <td>Trailing : NA</td> <td style="text-align: center;">---</td> <td style="text-align: center;">---</td> </tr> <tr> <td>Backing : NA</td> <td style="text-align: center;">---</td> <td style="text-align: center;">---</td> </tr> <tr> <td>Other : Nil</td> <td></td> <td></td> </tr> </tbody> </table>			Percent Composition			Gas (in)	(Mixture)	Flow Rate	Shielding : NA	---	---	Trailing : NA	---	---	Backing : NA	---	---	Other : Nil															
Percent Composition																																				
Gas (in)	(Mixture)	Flow Rate																																		
Shielding : NA	---	---																																		
Trailing : NA	---	---																																		
Backing : NA	---	---																																		
Other : Nil																																				
ELECTRICAL CHARACTERISTICS (QW-409) Current (AC/DC) : Refer table Polarity : Refer table Amps (Range) : Refer table Volts : Refer table Tungsten Electrode type and size : NA Mode of metal transfer for GTAW : NA Electrode wire feed speed range : NA Pulsing current (GTAW) : Nil Heat input (max) : NA																																				
TECHNIQUES (QW-410) String or Weave Bead : String or Weave (weaver: Max. 3 Diameter of electrode) Oscillation/Weaving : NA Initial and interpass cleaning : Brushing/Chipping/Grinding Method of back gouging : Grinding, When required Orifice or Gas cup size : NA Contact tube to work distance : NA Multiple or single pass per side : Single / Multiple Multiple or single Electrode : Single Electrode spacing : NA Travel speed range : NA Use of thermal process : Nil Closed to out chamber : NA Manual or Automatic : Manual Peening : Nil Other : Nil																																				
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Weld Layer(s)</th> <th rowspan="2">Process</th> <th colspan="2">Filler metal</th> <th colspan="2">Current</th> <th rowspan="2">Voltage (Range)</th> <th rowspan="2">Travel Speed (Range)</th> <th rowspan="2">Other</th> </tr> <tr> <th>Classification</th> <th>Diameter (mm)</th> <th>Type & polarity</th> <th>Amps. (Range)</th> </tr> </thead> <tbody> <tr> <td>All</td> <td>SMAW</td> <td>ER5018-B2</td> <td>1.5</td> <td>DCSP</td> <td>70-100</td> <td>18-22</td> <td>NA</td> <td>Nil</td> </tr> <tr> <td>All</td> <td>SMAW</td> <td>ER5018-B2</td> <td>3.15</td> <td>DCSP</td> <td>100-140</td> <td>20-24</td> <td>NA</td> <td>Nil</td> </tr> </tbody> </table>						Weld Layer(s)	Process	Filler metal		Current		Voltage (Range)	Travel Speed (Range)	Other	Classification	Diameter (mm)	Type & polarity	Amps. (Range)	All	SMAW	ER5018-B2	1.5	DCSP	70-100	18-22	NA	Nil	All	SMAW	ER5018-B2	3.15	DCSP	100-140	20-24	NA	Nil
Weld Layer(s)	Process	Filler metal		Current				Voltage (Range)	Travel Speed (Range)	Other																										
		Classification	Diameter (mm)	Type & polarity	Amps. (Range)																															
All	SMAW	ER5018-B2	1.5	DCSP	70-100	18-22	NA	Nil																												
All	SMAW	ER5018-B2	3.15	DCSP	100-140	20-24	NA	Nil																												
Prepared by  R. Aravindhan Deputy Manager/ WTC			Approved by  R. Aravindhan Senior Manager/ WTC																																	

TECHNICAL CONDITIONS OF CONTRACT (TCC)

		ERECTION WELDING SCHEDULE										PG NO : 24								
		CUST No : 1705										PG NAME : Boiler Integral Piping and Fittings								
		PROJECT : Bellary TPS unit 3 1x700mw ,Bellary , Karnataka (KA)										SYSTEM DESCRIPTION : Safety Valve exhaust piping								
		WELDING CODE : IBR										CUST DOC NO : - CUST DOC REV : -								
SL. NO	DRG NO. FOR WELD LOCATION & IDENTIFICATION MARK	DESCRIPTION OF PARTS TO BE WELDED	MATERIAL SPEC.	DIMENSIONS		PROCESS OF WELDING	TYPE OF WELD	ELECTRODE FILLER SPEC					WPS NO/REV NO.	MIN. PRE HEAT TEMP. in °C	PWHT TEMP. in °C	NDT METHOD/ QUANTUM	* REF.		REMARKS	REV
								GTAW	SMAW											
									Qty in Nos.											
				SIZE	THICK		Qty in Nos.	Qty in gms	Ø2.5	Ø3.15	Ø4.0	TIME in mins		SPEC NO			ACC NORM REF.			
1	-	PIPE+PIPE(OR)BEND (OR)CONDENSING LOOP	SA335P91 + SA335P91	33.4	9.09	GTAW + SMAW	9.09 	ER90S-B9	E9015-B91			1036/09	220	745 ± 15	100% RT			NDT after SR; 100% HC, 180 HB TO 300HB		
							20	185	398	-	-			30						
2	-	PIPE+PIPE(OR)BEND	SA213TP304H + SA213TP304H	26.7	7.82	GTAW + SMAW	7.82 	ER347	E347			1016/02	Nil	Nil	20% RT subject to min 2 weld/ welder/ shift					
							12	41	87	-	-									
3	-	PIPE+PIPE(OR)BEND	SA213TP304H + SA213TP304H	26.7	7.82	GTAW + SMAW	7.82 	ER347	E347			1016/02	Nil	Nil	20% RT subject to min 2 weld/ welder/ shift					
							12	41	87	-	-									
4	-	C LOOP + ERV CONNECTOR	SA335P91 + SA182F91	33.4	9.09	GTAW + SMAW	9.09 	ER90S-B9	E9015-B91			1036/09	220	745 ± 15	100% RT			NDT after SR; 100% HC, 180 HB TO 300HB		
							2	19	40	-	-			30						
5	-	STUB+ ERV ISOLATION VALVE	SA182F91 + SA217C12A	127	32.5	GTAW + SMAW	32.5 	ER90S-B9	E9015-B91			1050/06	220	740-770	100% UT			NDT after SR; 100% HC, 180 HB TO 300HB		
							2	59	31	41	79			85						
6	-	ERV ISOLATION VALVE + ERV	SA217C12A + SA182F91	150	40.1	GTAW + SMAW	40.05 	ER90S-B9	E9015-B91			1050/06	220	740-770	100% UT			NDT after SR; 100% HC, 180 HB TO 300HB		
							2	66	36	48	136			105						
PREPARED				CHECKED (W.T.C)				APPROVED				DATE		DOC NO.		REV NO :		PAGE NO.		
DEEPAK KUMAR PRADHAN				MANIKANDAN C				V GUNASEKRAN				18.05.22		1705-24-SVX-EWS		0		1/1		
CAUTION :		THE INFMN ON THIS DOCUMENT IS THE PROPERTY OF BHEL. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO INTEREST OF BHEL.										* REFER NDE MANUAL No.PS:CMX:002 REV.No.01/12-98								

TECHNICAL CONDITIONS OF CONTRACT (TCC)

VOLUME-IA PART - I CHAPTER- XIII TESTING AND COMMISSIONING

The scope of the work will comprise of but not limited to the following:

1.14 TESTING, PRE – COMMISSIONING & COMMISSIONING

(All the works mentioned hereunder shall be carried out within the quoted and accepted rate)

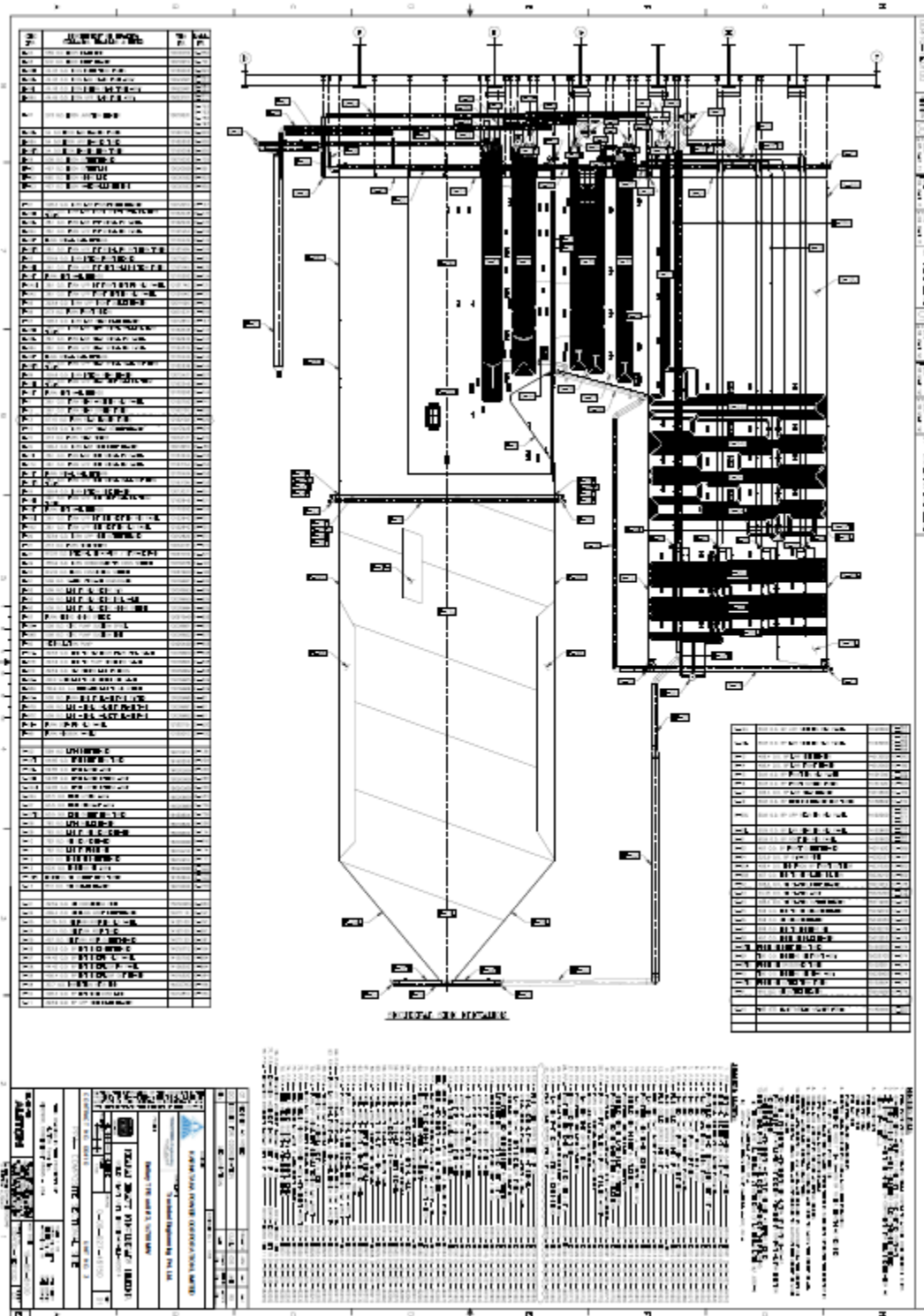
- 1.14.1 Contractor to provide necessary commissioning assistance from pre-commissioning state onwards and up to continuous operation of the unit & handing over to customer.
- 1.14.2 All required tests (Mechanical and electrical) indicated by BHEL and their clients for successful commissioning are included in the scope of these specifications. These tests / activities may not have been listed in these specifications. All the tests should be repeated till all the equipment satisfy the requirement / obligation of BHEL to their customer. All the repairs (shop welded or site welded) arising out of the failures during testing shall be done by the contractor as part of the work.
- 1.14.3 The contractor shall carryout any other test as desired by BHEL Engineer on erected equipment covered under the scope of this contract during testing, pre-commissioning, commissioning, and operation, to demonstrate the completion of any part or whole work performed by the contractor.
- 1.14.4 In case, any rework is required because of contractor's faulty erection, which is noticed during pre-commissioning and commissioning, the same has to be rectified by the contractor at his cost. If any equipment / part is required to be inspected during pre-commissioning and commissioning, the contractor will dismantle / open up the equipment / part and reassemble / redo the work without any extra claim.
- 1.14.5 In case any erection defect is detected during various tests / operations trial runs such as loose components undue noises or vibration strain on connected equipment steam or oil or water leakage etc. the contractor shall immediately attend these defects and take necessary corrective measures. If any readjustment and realignments are necessary the same shall be done as per BHEL Engineer's instructions. If any part needs repairs rectification and replacement the same shall be done by the contractor at no extra cost. The parts to be replaced shall be provided by BHEL free of cost, If insulation is to be removed to attend any of the defects the cost of removal and reapplication of insulation should be borne by the contractor.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

- 1.14.6 Contractor shall cut / open works if needed, as per BHEL engineer's instructions during commissioning for inspection, checking and make good the works after inspection is over. This contingency shall be included within the quoted value. During commissioning opening of valves, changing of gaskets, attending to leakages, minor modification / rectification works may arise. The contractor has to carry out these works at his cost by providing required manpower in all the three shifts. In case any rework is required because of contractor's faulty erection and which is noticed during commissioning the same has to be rectified by the contractor at his cost.
- 1.14.7 After charging of the system, the commissioning activities will continue. It shall be the responsibility of the contractor to provide manpower including necessary consumables, hand tools and supervision as part of commissioning assistance.
- 1.14.8 It shall be the responsibility of the contractor to provide various categories of workers in sufficient numbers along with Supervisors during pre-commissioning, commissioning and post commissioning of equipment and attending any problem in the equipment erected by the contractor till handing over. The contractor will provide necessary consumables, T&Ps, IMTEs etc., and any other assistance required during this period. Association of BHEL's / Client's staff during above period will not absolve contractor from above responsibilities.
- 1.14.9 It shall be specifically noted that the contractor and employees of the contractor may have to work round the clock during the pre-commissioning, commissioning and post-commissioning period along with BHEL Engineers / customer officials. Hence contractor's quoted rate shall take into consideration of all expenses that will be incurred for such arrangement of personnel including engineers/supervisors.
- 1.14.10 During commissioning any improvement / repair / rework / rectification / fabrication / modification due to design improvement / requirement is involved, the same shall be carried out by the contractor promptly and expeditiously.
- 1.14.11 Contractor shall lay all necessary electric cables and switches etc. required for the tests and maintain the system till the tests are completed satisfactorily.
- 1.14.12 Necessary scaffolding and approaches for conducting the tests shall also be within the scope of the contract.

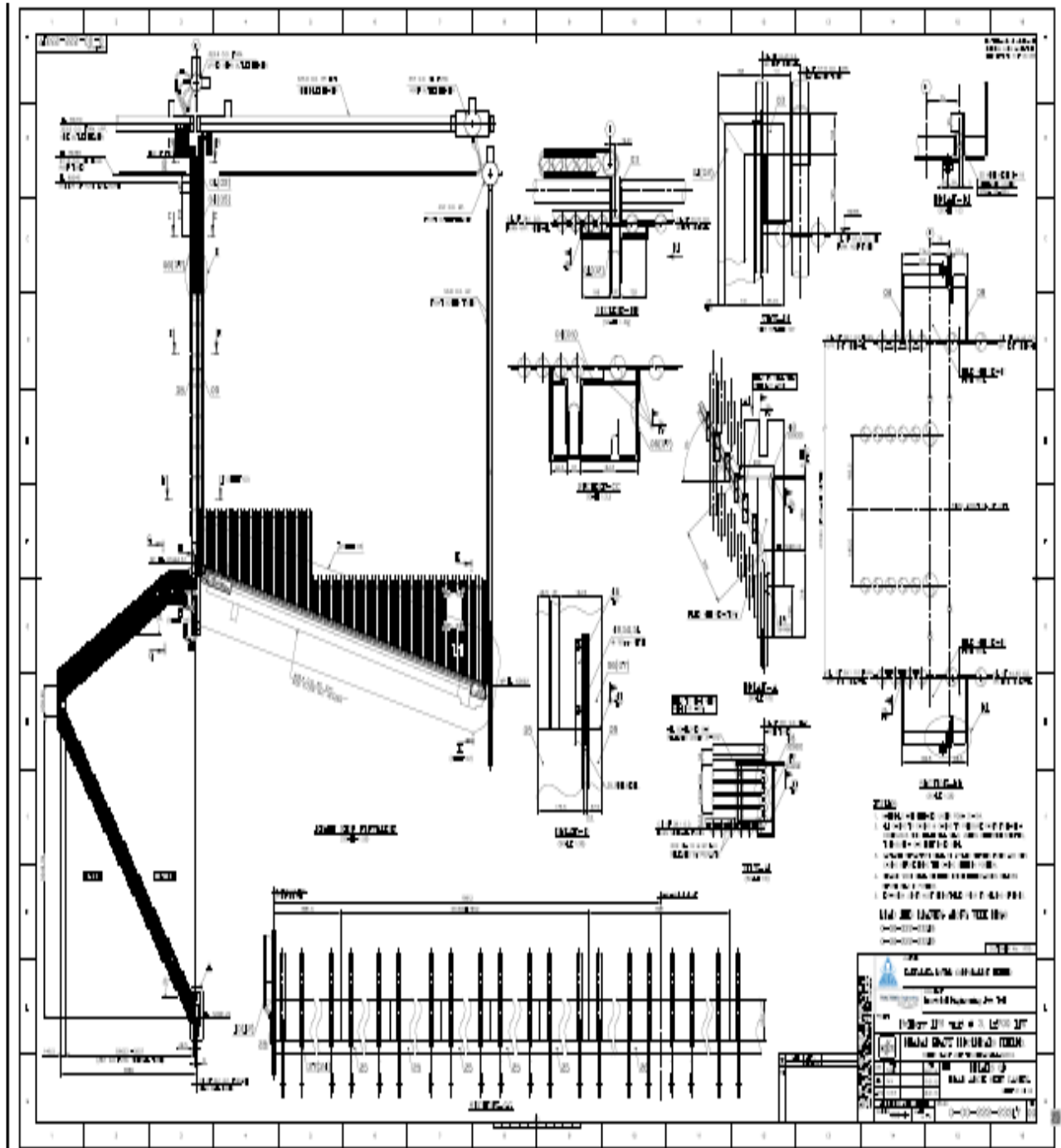
TECHNICAL CONDITIONS OF CONTRACT (TCC)

VOLUME-IA PART - I CHAPTER- XIV DRAWING

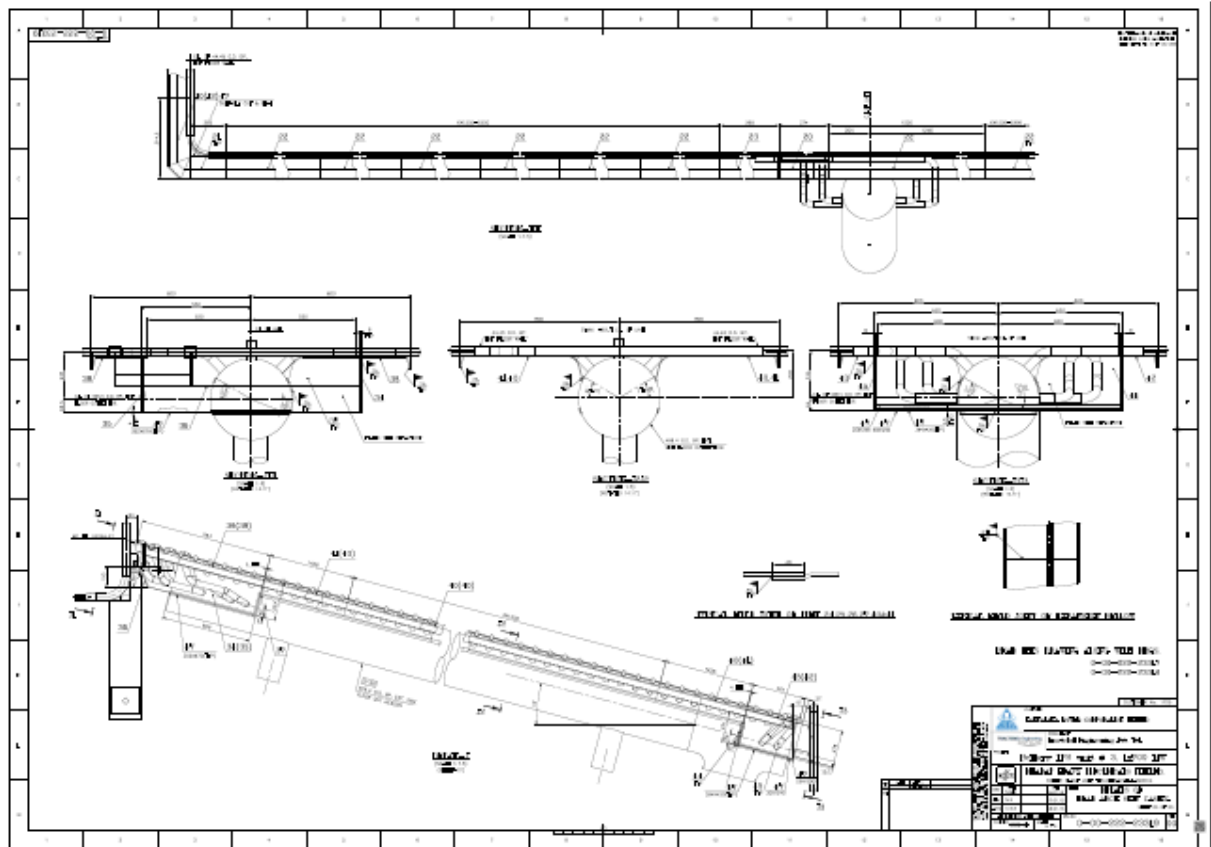


Page 55 of 62

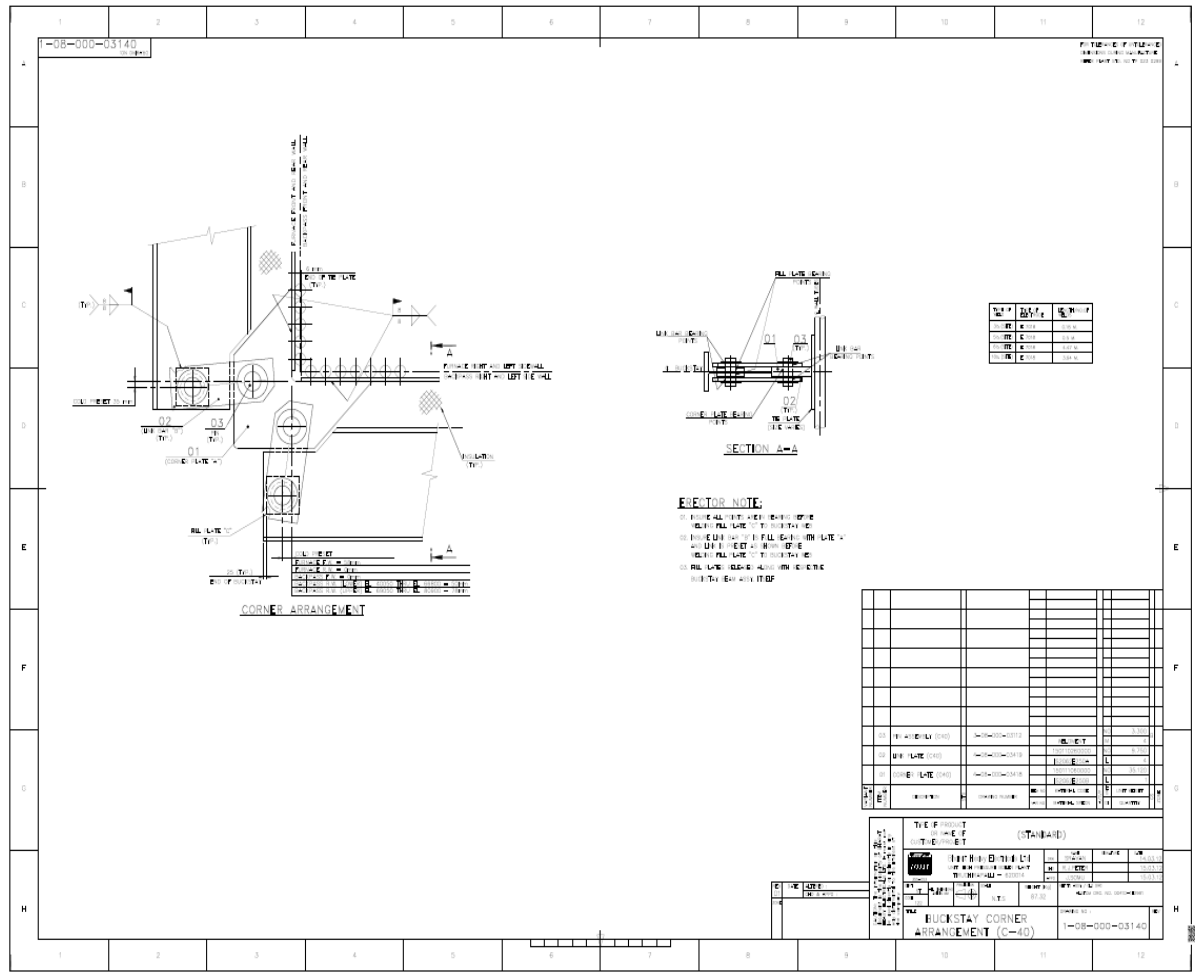
TECHNICAL CONDITIONS OF CONTRACT (TCC)



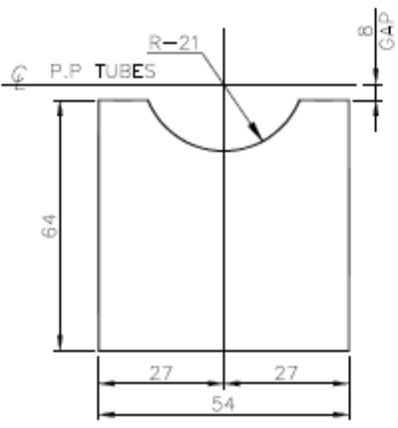
TECHNICAL CONDITIONS OF CONTRACT (TCC)



TECHNICAL CONDITIONS OF CONTRACT (TCC)



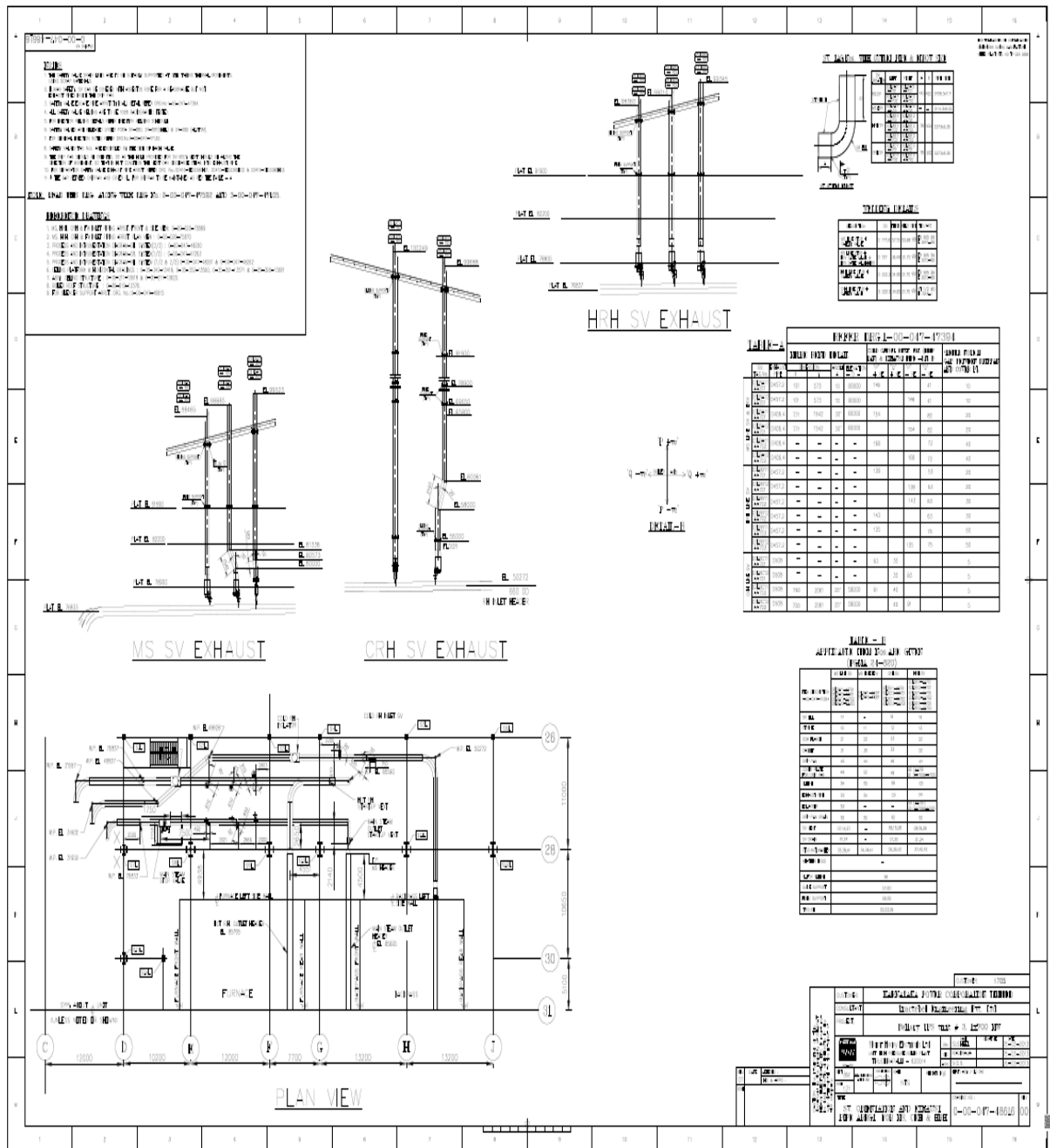
TECHNICAL CONDITIONS OF CONTRACT (TCC)

THE INK ON THE DOCUMENT IS THE PROPERTY OF BHEL. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF BHEL. CAUTION:	REV 01	DATE	ALTERED : CHD & APPD :	FOR TOLERANCES OF UNTOLERANCED DIMENSIONS DURING MANUFACTURE REFER PLANT STD. NO TP 023 0299			
							
VARIANT NUMBER		DESCRIPTION		STD	MATERIAL CODE	A/C/P	UNIT
PLATE 6 54 X 64		159422770000 SA 387GR.12 CL2					0.145
MATERIAL SPECN		UNIT WEIGHT		QUANTITY			
 Bharat Heavy Electricals Ltd UNIT: HIGH PRESSURE BOILER PLANT TIRUCHIRAPALLI - 620014 355-056				DRN	NAME	SIGNATURE	DATE
				CHD	S.SHARAN		07/07/2011
				APPD	R.J.PETER		24/08/2011
				APPD	J.SOMU		24/08/2011
DEPT ST	ALL DIMENSIONS ARE IN MM	PROJECTION 	SCALE N.T.S	WEIGHT (Kg) 0.145	REF TO ASSY / OLD DWG ALSTOM DRG. NO. 00509-1E2939		
CODE 122					DRAWING NO : 4-08-111-03864		
TITLE LUG					REV		

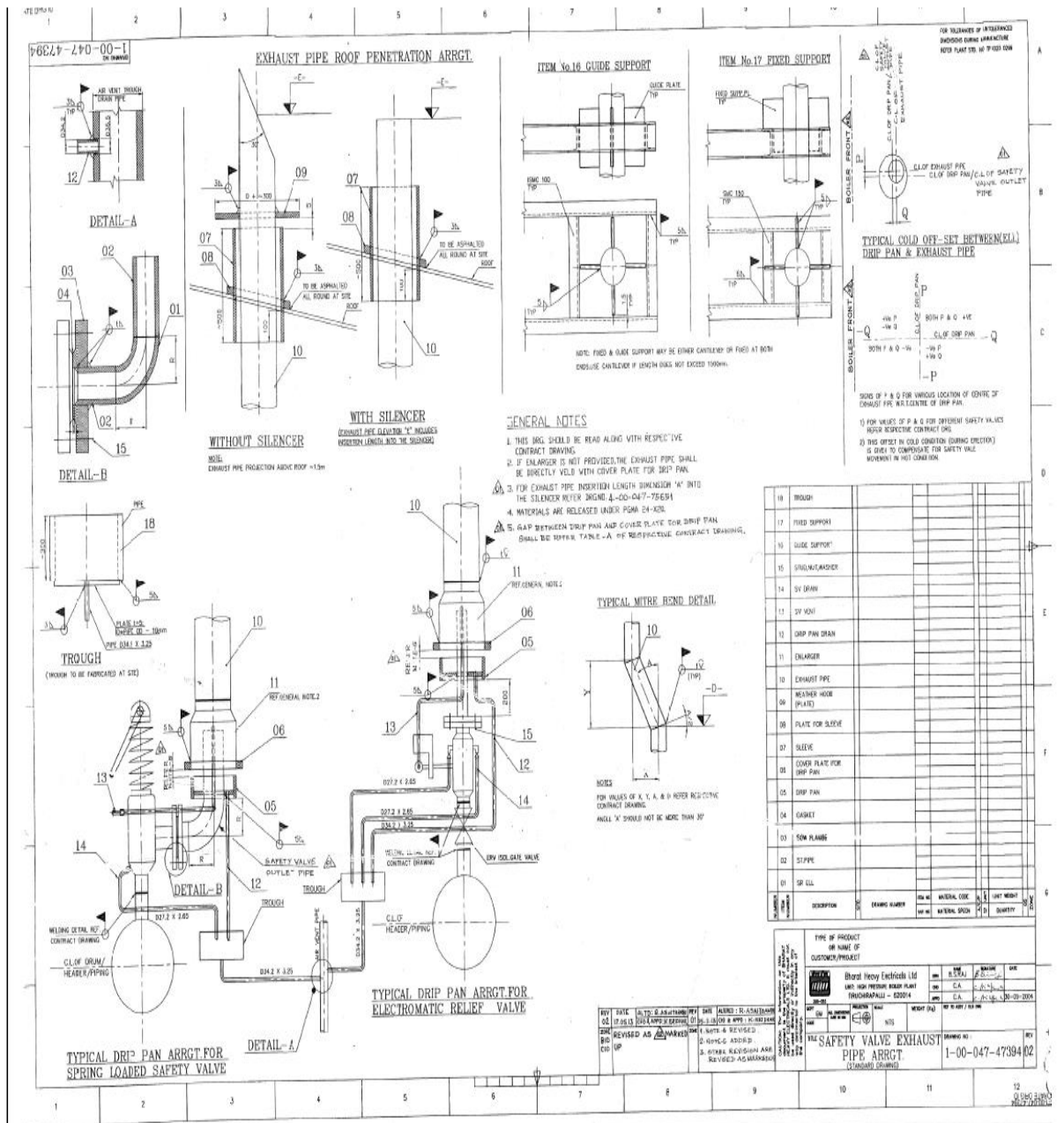
TECHNICAL CONDITIONS OF CONTRACT (TCC)

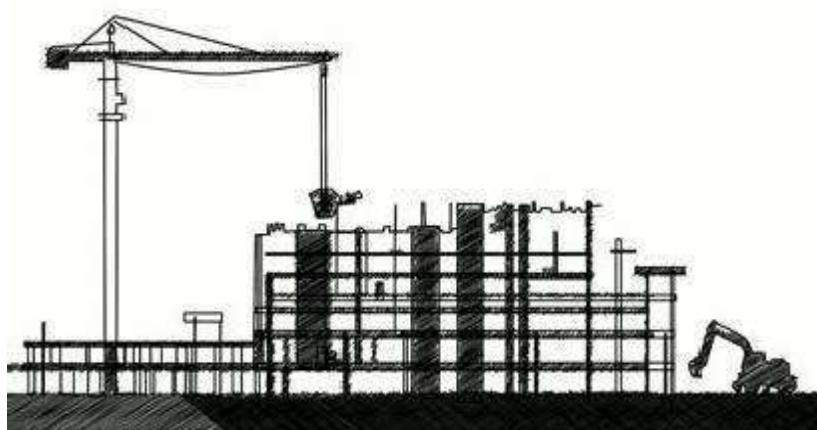
3-08-111-03669 ON DRAWING			FOR TOLERANCE OF UNLATERAL DIMENSIONS DURING MANUFACTURE REFER PLANT STAND P-023-0299																																										
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>TYPE OF WELD</th> <th>TYPE OF ELECTRODE</th> <th>LENGTH/NO. OF WELDS</th> </tr> </thead> <tbody> <tr> <td></td> <td>E6018B2</td> <td>41.0 M</td> </tr> </tbody> </table>			TYPE OF WELD	TYPE OF ELECTRODE	LENGTH/NO. OF WELDS		E6018B2	41.0 M																																					
TYPE OF WELD	TYPE OF ELECTRODE	LENGTH/NO. OF WELDS																																											
	E6018B2	41.0 M																																											
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>ITEM NO.</th> <th>DESCRIPTION</th> <th>QTY</th> <th>DRAWING NUMBER</th> <th>ITEM NO.</th> <th>MATERIAL CODE</th> <th>QTY</th> <th>UNIT WEIGHT</th> </tr> </thead> <tbody> <tr> <td>02</td> <td>PLATE 10 176 X 21474</td> <td></td> <td></td> <td></td> <td>159422790000</td> <td></td> <td>296.685</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td>SA387GR.12 CL-2</td> <td></td> <td>1</td> </tr> <tr> <td>01</td> <td>PLATE 12 75 X 21474</td> <td></td> <td></td> <td></td> <td>159422800000</td> <td></td> <td>151.714</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td>SA387GR.12 CL-2</td> <td></td> <td>2</td> </tr> </tbody> </table>			ITEM NO.	DESCRIPTION	QTY	DRAWING NUMBER	ITEM NO.	MATERIAL CODE	QTY	UNIT WEIGHT	02	PLATE 10 176 X 21474				159422790000		296.685						SA387GR.12 CL-2		1	01	PLATE 12 75 X 21474				159422800000		151.714						SA387GR.12 CL-2		2			
ITEM NO.	DESCRIPTION	QTY	DRAWING NUMBER	ITEM NO.	MATERIAL CODE	QTY	UNIT WEIGHT																																						
02	PLATE 10 176 X 21474				159422790000		296.685																																						
					SA387GR.12 CL-2		1																																						
01	PLATE 12 75 X 21474				159422800000		151.714																																						
					SA387GR.12 CL-2		2																																						
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>REV</th> <th>DATE</th> <th>ALTERED</th> <th>BY</th> <th>APPRO.</th> </tr> </thead> <tbody> <tr> <td>01</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>			REV	DATE	ALTERED	BY	APPRO.	01					<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2"> TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT </td> <td> DATE 28.03.12 </td> </tr> <tr> <td colspan="2"> Bharat Heavy Electricals Ltd UNIT BHEL PRAKASH WHEEL PLANT TRUCHIRAPALLI - 620014 </td> <td> DATE 29.03.12 </td> </tr> <tr> <td colspan="2"> PROJECT 122 </td> <td> DATE 29.03.12 </td> </tr> </table>			TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT		DATE 28.03.12	Bharat Heavy Electricals Ltd UNIT BHEL PRAKASH WHEEL PLANT TRUCHIRAPALLI - 620014		DATE 29.03.12	PROJECT 122		DATE 29.03.12																					
REV	DATE	ALTERED	BY	APPRO.																																									
01																																													
TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT		DATE 28.03.12																																											
Bharat Heavy Electricals Ltd UNIT BHEL PRAKASH WHEEL PLANT TRUCHIRAPALLI - 620014		DATE 29.03.12																																											
PROJECT 122		DATE 29.03.12																																											
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td> PROJECT 122 </td> <td> ALL DIMENSIONS ARE IN MM </td> <td> SCALE N.T.S. </td> <td> WEIGHT (kg) 600.113 </td> <td> IF TO ASY / ALL DRG ALSTOM DRG. NO:00410-IC2939 </td> </tr> </table>			PROJECT 122	ALL DIMENSIONS ARE IN MM	SCALE N.T.S.	WEIGHT (kg) 600.113	IF TO ASY / ALL DRG ALSTOM DRG. NO:00410-IC2939	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2"> TITLE BUILT-UP TIE CHANNEL </td> <td> DRAWING NO 3-08-111-03669 </td> </tr> </table>			TITLE BUILT-UP TIE CHANNEL		DRAWING NO 3-08-111-03669																																
PROJECT 122	ALL DIMENSIONS ARE IN MM	SCALE N.T.S.	WEIGHT (kg) 600.113	IF TO ASY / ALL DRG ALSTOM DRG. NO:00410-IC2939																																									
TITLE BUILT-UP TIE CHANNEL		DRAWING NO 3-08-111-03669																																											

TECHNICAL CONDITIONS OF CONTRACT (TCC)



TECHNICAL CONDITIONS OF CONTRACT (TCC)





HEALTH, SAFETY and ENVIRONMENT PLAN

for

**SITE
OPERATIONS**

by

**SUB-
CONTRACTORS**

POWER SECTOR

HSE PLAN FOR SITE OPERATIONS BY BHEL'S SUBCONTRACTORS

AT A GLANCE

BEFORE START	SIGNING OF MOU	
	Agree to comply to HSE requirement- Statutory and BHEL’s	
PLAN	HSE ORGANISATION	
	Manpower 1 (one) safety officer for every 500 workers or part thereof 1(one) safety-steward/ supervisor for every 100 workers Qualification As per Cl. 7.1	HSE Roles and responsibilities - Site In-charge- As per clause 7.2.1 - Safety officer- As per clause 7.2.2
	HSE Planning for Man, Machinery/Equipment/Tools & Tackles	
PROVIDE	HSE INFRASTRUCTURE	
	- PPEs - Drinking Water - Washing Facilities - Latrines and Urinals - Provision of shelter for rest - Medical facilities	- Canteen facilities - Labour Colony - Emergency Vehicle - Pest Control - Scrapyard - Illumination
TRAIN	HSE TRAINING , AWARENESS & PROMOTION	
	Training - Induction training - Height work and other critical areas - Tool Box talk & Pep Talk	Awareness & Promotion - Signage - Poster - Banner - Competition - Awards
COMMUNICATE	HSE COMMUNICATION	
	Incident Reporting - Accident- Fatal & Major - Property damage - Near Miss	Event Reporting - Celebrations - Training - Medical camp

EXECUTE SAFELY

OPERATIONAL CONTROL PROCEDURES

PERMIT TO WORK

Height work (above 2 metres), Hot Work, Heavy Lifting, Confined Space, Radiography, excavation (More than 4 metres)

SAFETY DURING WORK EXECUTION

- | | |
|--|---|
| <ul style="list-style-type: none"> • Welding • Rigging • Cylinder- storage & Movement • Demolition work • T&Ps • Chemical Handling • Electrical works | <ul style="list-style-type: none"> • Fire • Scaffolding • Height work • Working Platform • Excavation • Ladder • Lifting • Hoisting appliance |
|--|---|

HOUSE KEEPING

WASTE MANGEMENT

TRAFFIC MANAGEMENT

ENVIRONMENTAL CONTROL

EMERGENCY PREPAREDNESS AND RESPONSE PLAN

CHECKS

HSE AUDITS & INSPECTION

- | | |
|---|--|
| <ul style="list-style-type: none"> • Daily Checks • Inspection of PPEs • Inspection of T& Ps • Inspection of Cranes & Winches | <ul style="list-style-type: none"> • Inspection of Height work • Inspection of Welding and Gas cutting • Inspection of elevators etc. |
|---|--|

HSE PERFORMANCE EVALUATION PARAMETERS

NON CONFORMANCE

PENALTY for NON CONFORMANCE

Refer Clause 16

Incremental penalty

For repeated violation by the same person, the penalty would be double of the previous penalty

For repeated fatal incident in the same Unit incremental penalty to be imposed. The subcontractor will pay 2 times the penalty compared to previously paid in case there are repeated cases of fatal incidents under the same subcontractor for the same package in the same unit.

	HEALTH, SAFETY AND ENVIRONMENT PLAN FOR SITE OPERATION by SUBCONTRACTORS		Doc no.: HSEP: 14
	POWER SECTOR		REV: 01
			Date: 20.01.2020

REVISION HISTORY SHEET

Date	Revision No.	Details of Changes	Reason	Prepared	Reviewed	Approved
12.08.2014	00	First Issue	First Issue	S. B. Jayant, Dy Manager- FQA & Safety	A. K. Sinha, GM-FQA & Safety	Anuj Bhatnagar, ED-FQA & Safety
20.01.2020	01	Formats added: HSEP:14-F30 – Monthly HSE Planning & Review (Page 11, Clause 8.0 - updated) HSEP:14-F13E-Excavation Inspection Format (part of F30)) HSEP:14-F32B – Job Safety Analysis Format (part of F30) HSEP:14-F31A – Daily HSE Reporting (Page 18, Clause 10.3 – added) HSEP:14-F33 – HSE Performance Evaluation (Page 31, Clause 13 – revised)	IOM No. PSHQHSE/M ONREP/02 Dated 08-Jan-2020	Rohit Kumar	Santosh Nair, GM (MSX & HSE)	



**HEALTH, SAFETY AND ENVIRONMENT
PLAN FOR
SITE OPERATION by SUBCONTRACTORS**

POWER SECTOR

Doc no.: HSEP: 14

REV: 01

Date: 20.01.2020

Page: 1 of 43

Sr. No.	Description	Page No.
1.0	PURPOSE	4
2.0	SCOPE	4
3.0	OBJECTIVES AND TARGETS	4
4.0	HEALTH, SAFETY & ENVIRONMENT POLICY	5
5.0	MEMORANDUM OF UNDERSTANDING	6
6.0	TERMS & DEFINITIONS	7
7.0	HSE ORGANIZATION	8
7.1	QUALIFICATION FOR HSE PERSONNEL	8
7.2	RESPONSIBILITIES	9
8.0	PLANNING BY SUBCONTRACTOR	11
8.1	MOBILISATION OF MACHINERY/EQUIPMENT/TOOLS	11
8.2	MOBILISATION OF MANPOWER BY SUBCONTRACTOR	11
8.3	PROVISION OF PPEs	12
8.4	ARRANGEMENT OF INFRASTRUCTURE	13
9.0	HSE TRAINING & AWARENESS	16
9.1	HSE INDUCTION TRAINING	16
9.2	HSE TOOLBOX TALK	17
9.3	TRAINING ON HEIGHT WORK	17
9.4	HSE TRAINING DURING PROJECT EXECUTION	17



**HEALTH, SAFETY AND ENVIRONMENT
PLAN FOR
SITE OPERATION by SUBCONTRACTORS**

POWER SECTOR

Doc no.: HSEP: 14

REV: 01

Date: 20.01.2020

Page: 2 of 43

9.5	HSE PROMOTION-SIGNAGE, POSTERS, COMPETITION, AWARDS ETC	18
10.0	HSE COMMUNICATION	18
10.1	INCIDENT REPORTING	18
10.2	HSE EVENT REPORTING	18
11.0	OPERATIONAL CONTROL	19
11.1	HSE ACTIVITIES	19
11.2	WORK PERMIT SYSTEM	20
11.3	SAFETY DURING WORK EXECUTION	20
11.4	ENVIRONMENTAL CONTROL	24
11.5	HOUSEKEEPING	24
11.6	WASTE MANAGEMENT	25
11.7	TRAFFIC MANAGEMENT SYSTEM	26
11.8	EMERGENCY PREPAREDNESS AND RESPONSE	28
12.0	HSE INSPECTION	29
12.1	DAILY HSE CHECKS	29
12.2	INSPECTION OF PPE	29
12.3	INSPECTION OF T&Ps	30
12.4	INSPECTION OF CRANES AND WINCHES	30
12.5	INSPECTION ON HEIGHT WORKING	30
12.6	INSPECTION ON WELDING AND GAS CUTTING OPERATION	30



**HEALTH, SAFETY AND ENVIRONMENT
PLAN FOR
SITE OPERATION by SUBCONTRACTORS**

POWER SECTOR

Doc no.: HSEP: 14

REV: 01

Date: 20.01.2020

Page: **3 of 43**

12.7	INSPECTION ON ELECTRICAL INSTALLATION / APPLIANCES	31
12.8	INSPECTION OF ELEVATOR	31
12.9	INSPECTION OF EXCAVATION ACTIVITIES	31
13.0	HSE PERFORMANCE	31
14.0	HSE PENALTIES	32
15.0	OTHER REQUIREMENTS	32
16.0	NON COMPLIANCE	33
17.0	HSE AUDIT/INSPECTION	34
18.0	MONTHLY HSE REVIEW MEETING	34
19.0	FORMATS USED	34
20.0	Annexures	36

	HEALTH, SAFETY AND ENVIRONMENT PLAN FOR SITE OPERATION by SUBCONTRACTORS	Doc no.: HSEP: 14
		REV: 01
	POWER SECTOR	Date: 20.01.2020
		Page: 4 of 43

1.0 PURPOSE

- 1.1 The purpose of this HSE Plan is to provide for the systematic identification, evaluation, prevention and control of general workplace hazards, specific job hazards, potential hazards and environmental impacts that may arise from foreseeable conditions during installation and servicing of industrial projects and power plants.
- 1.2 This document shall be followed by BHEL's subcontractors at all installation and servicing sites. In case customer specific documents are to be implemented, this document will be followed in conjunction with customer specific documents.
- 1.3 Although every effort has been made to make the procedures and guidelines in line with statutory requirements, in case of any discrepancy relevant statutory guidelines must be followed.
- 1.4 In case the customer has any specific requirement, the same is to be fulfilled.

2.0 SCOPE

The document is applicable for BHEL's Subcontractors at all installation / servicing activities of BHEL Power Sector as per the relevant contractual obligations.

3.0 OBJECTIVES AND TARGETS

The HSE Plan reflects that BHEL places high priority upon the Occupational Health, Safety and Environment at workplaces.

- Ensure the Health and Safety of all persons at work site is not adversely affected by the work.
- Ensure protection of environment of the work site.
- Comply at all times with the relevant statutory and contractual HSE requirements.
- Provide trained, experienced and competent personnel. Ensure medically fit personnel only are engaged at work.
- Provide and maintain plant, places and systems of work that are safe and without risk to health and the environment.
- Provide all personnel with adequate information, instruction, training and supervision on the safety aspect of their work.
- Effectively control, co-ordinate and monitor the activities of all personnel on the Project sites including subcontractors in respects of HSE.
- Establish effective communication on HSE matters with all relevant parties involved in the Project works.
- Ensure that all work planning takes into account all persons that may be affected by the work.
- Ensure fitness testing of all T&Ps/Lifting appliances like cranes, chain pulley blocks etc. are to be certified by competent person.
- Ensure timely provision of resources to facilitate effective implementation of HSE requirements.
- Ensure continual improvements in HSE performance
- Ensure conservation of resources and reduction of wastage.
- Capture the data of all incidents including near misses, process deviation etc. Investigate and analyze the same to find out the root cause.
- Ensure timely implementation of correction, corrective action and preventive action.



**HEALTH, SAFETY AND ENVIRONMENT
PLAN FOR
SITE OPERATION by SUBCONTRACTORS**

POWER SECTOR

Doc no.: HSEP: 14

REV: 01

Date: 20.01.2020

Page: 5 of 43

HSE TARGETS

EXPLOSION	ZERO
FATALITY	ZERO
LOST TIME INJURY	ZERO
FIRE	ZERO
VEHICLE INCIDENTS	ZERO
ENVIRONMENTAL INCIDENTS	ZERO

4.0 BHEL POWER SECTOR HEALTH, SAFETY & ENVIRONMENT POLICY

Health, Safety & Environment Policy of BHEL

In BHEL, Health, Safety and Environment (HSE) responsibilities are driven by our commitment to protect our employees and people we work with, community and environment. BHEL believes in zero tolerance for unsafe work/non-conformance to safety and in minimizing environmental footprint associated with all its business activities. We commit to continually improve our HSE performance by:

- Developing safety and sustainability culture through active leadership and by ensuring availability of required resources.
- Ensuring compliance with applicable legislation, regulations and BHEL systems.
- Taking up activities for conservation of resources and adopting sound waste management by following Reduce/Recycle/Reuse approach.
- Continually identifying, assessing and managing environmental impacts and Occupational Health & Safety risks of all activities, products and services adopting approach based on elimination/substitution/reduction/control.
- Incorporating appropriate Occupational Health, Safety and Environment criteria into business decisions, design of products & systems and for selection of plants, technologies and services.
- Imparting appropriate structured training to all persons at workplace and promoting awareness amongst customers, contractors and suppliers on HSE issues.
- Reviewing periodically this policy and HSE Management Systems to ensure its relevance, appropriateness and effectiveness.
- Communicating this policy within BHEL and making it available to interested parties.

sd/-

CMD, BHEL

	HEALTH, SAFETY AND ENVIRONMENT PLAN FOR SITE OPERATION by SUBCONTRACTORS	Doc no.: HSEP: 14
		REV: 01
	POWER SECTOR	Date: 20.01.2020
		Page: 6 of 43

5.0 MEMORANDUM OF UNDERSTANDING:

After award of work, subcontractors are required to enter into a memorandum of understanding as given below:

Memorandum of Understanding

BHEL, Power Sector _____ Region is committed to Health, Safety and Environment Policy (HSE Policy).

M/s _____ do hereby also commit to comply with the same HSE Policy while executing the Contract Number _____

M/s _____ shall ensure that safe work practices as per the HSE plan. Spirit and content therein shall be reached to all workers and supervisors for compliance.

In addition to this, M/S _____ shall comply to all applicable statutory and regulatory requirements which are in force in the place of project and any special requirement specified in the contract document of the principal customer.

M/s _____ shall co-operate in HSE audits/inspections conducted by BHEL /customer/ third party and ensure to close any non-conformity observed/reported within prescribed time limit.

Signed by authorized representative of M/s -----

Name :

Place & Date:



**HEALTH, SAFETY AND ENVIRONMENT
PLAN FOR
SITE OPERATION by SUBCONTRACTORS**

POWER SECTOR

Doc no.: HSEP: 14

REV: 01

Date: 20.01.2020

Page: 7 of 43

6.0 TERMS AND DEFINITIONS

6.1 DEFINITIONS

6.1.1 INCIDENT

Work- related or natural event(s) in which an injury, or ill health (regardless of severity), damage to property or fatality occurred, or could have occurred.

6.1.2 NEAR MISS

An incident where no ill health, injury, damage or other loss occurs, but it had a potential to cause, is referred to as "Near-Miss".

6.1.3 MAN-HOURS WORKED

The total number of man hours worked by all employees including subcontractors working in the premises. It includes managerial, supervisory, professional, technical, clerical and other workers including contract labours. Man-hours worked shall be calculated from the payroll or time clock recorded including overtime. When this is not feasible, the same shall be estimated by multiplying the total man-days worked for the period covered by the number of hours worked per day. The total number of workdays for a period is the sum of the number of men at work on each day of period. If the daily hours vary from department to department separate estimate shall be made for each department and the result added together.

6.1.4 FIRST AID CASES

First aids are not essentially all reportable cases, where the injured person is given medical treatment and discharged immediately for reporting on duty, without counting any lost time.

6.1.5 LOST TIME INJURY

Any work injury which renders the injured person unable to perform his regular job or an alternative restricted work assignment on the next scheduled work day after the day on which the injury occurred.

6.1.6 MEDICAL CASES

Medical cases come under non-reportable cases, where owing to illness or other reason the employee was absent from work and seeks Medical treatment.

6.1.7 TYPE OF INCIDENTS & THEIR REPORTING:

The three categories of Incident are as follows:

Non-Reportable Cases:

An incident, where the injured person is given medical help and discharged for work without counting any lost time.



**HEALTH, SAFETY AND ENVIRONMENT
PLAN FOR
SITE OPERATION by SUBCONTRACTORS**

POWER SECTOR

Doc no.: HSEP: 14

REV: 01

Date: 20.01.2020

Page: 8 of 43

Reportable Cases:

In this case the injured person is disable for 48 hours or more and is not able to perform his duty.

Injury Cases:

These are covered under the heading of non-reportable cases. In these cases the incident caused injury to the person, but he still continues his duty.

6.1.8 TOTAL REPORTABLE FREQUENCY RATE

Frequency rate is the number of Reportable Lost Time Injury (LTI) per one Million Man hours worked. Mathematically, the formula read as:

$$\frac{\text{Number of Reportable LTI} \times 1,000,000}{\text{Total Man Hours Worked}}$$

6.1.9 SEVERITY RATE

Severity rate is the Number of days lost due to Lost Time Injury (LTI) per one Million Man hours worked. Mathematically, the formula reads as:

$$\frac{\text{Days lost due to LTI} \times 1,000,000}{\text{Total Man Hours Worked}}$$

6.1.10 INCIDENCE RATE

Incidence Rate is the Number of LTI per one thousand manpower deployed. Mathematically, the formula reads as:

$$\frac{\text{Number of LTI} \times 1000}{\text{Average number of manpower deployed}}$$

7.0 HSE ORGANISATION

Number of safety officers:

The subcontractor must deploy one safety officer for every 500 workers or part thereof in each package. In addition, there must be one safety-steward/safety-supervisor for every 100 workers.

Deployment: The subcontractor should deploy sufficient safety officers and safety-steward/Safety-supervisor, as per requirement given above, since initial stage and add more in proportion to the added strength in work force. Any delay in deployment will attract a penalty of Rs.30,000/- per man month for the delayed period.

7.1 QUALIFICATION FOR HSE PERSONNEL

Sl.no	Designation	Qualification	Experience
1	Safety officer (Construction Agency)	Degree or Diploma in Engineering with full time diploma in Industrial Safety with construction safety as one of the subjects	Minimum two years for degree holder and five years for diploma holder in the field of Construction of power plant/ major industries

	HEALTH, SAFETY AND ENVIRONMENT PLAN FOR SITE OPERATION by SUBCONTRACTORS	Doc no.: HSEP: 14
		REV: 01
	POWER SECTOR	Date: 20.01.2020
		Page: 9 of 43

2	Safety-Steward/ Safety-Supervisor	Degree or diploma in any discipline with full time diploma in Industrial Safety with construction safety as one of the subjects	Minimum two years
---	-----------------------------------	---	-------------------

7.2 RESPONSIBILITIES

7.2.1 SITE IN -CHARGE OF SUBCONTRACTOR

- Shall sign Memorandum of Understanding (MoU) for compliance to BHEL's HSE Plan for Site Operations as per clause 5.0
- Shall engage qualified safety officer(s) and steward (s) as per clause 7.0
- Shall adhere to the rules and regulations mentioned in this code, practice very strictly in his area of work in consultation with his concerned engineer and the safety coordinator.
- Shall screen all workmen for health and competence requirement before engaging for the job and periodically thereafter as required.
- Shall not engage any employee below 18 years.
- Shall arrange for all necessary PPEs like safety helmets, belts, full body harness, shoes, face shield, hand gloves etc. before starting the job. Shall ensure that no working men/women carry excessive weight more than stipulated in Factory Rule Regulation R57.
- Shall ensure that all T&Ps engaged are tested for fitness and have valid certificates from competent person.
- Shall ensure that provisions stipulated in contract Labour Regulation Act 1970, Chapter V C.9, canteen, rest rooms/washing facilities to contracted employees at site.
- Shall adhere to the instructions laid down in Operation Control Procedures (OCPs) available with the site management.
- Shall ensure that person working above 2.0 meter should use Safety Harness tied to a life line/stable structure.
- Shall ensure that materials are not thrown from height. Cautions to be exercised to prevent fall of material from height.
- Shall report all incidents (Fatal/Major/Minor/Near Miss) to the Site engineer /HSE officer of BHEL.
- Shall ensure that Horseplay is strictly forbidden.
- Shall ensure that adequate illumination is arranged during night work.
- Shall ensure that all personnel working under subcontractor are working safely and do not create any Hazard to self and to others.
- Shall ensure display of adequate signage/posters on HSE.
- Shall ensure that mobile phone is not used by workers while working.
- Shall ensure conductance of HSE audit, mockdrill, medical camps, induction training and training on HSE at site.
- Shall ensure full co-operation during HQ/External /Customer HSE audits.



**HEALTH, SAFETY AND ENVIRONMENT
PLAN FOR
SITE OPERATION by SUBCONTRACTORS**

POWER SECTOR

Doc no.: HSEP: 14

REV: 01

Date: 20.01.2020

Page: 10 of 43

- ☐ Shall ensure submission of look-ahead plan for procurement of HSE equipment's and PPEs as per work schedule.
- Shall ensure good housekeeping.
- Shall ensure adequate valid fire extinguishers are provided at the worksite.
- Shall ensure availability of sufficient number of toilets /restrooms and adequate drinking water at work site and labour colony.
- Shall ensure adequate emergency preparedness.
- Shall be member of site HSE committee and attend all meetings of the committee
- Power source for hand lamps shall be maximum of 24 v.
- ☐ Temporary fencing should be done for open edges if Hand – railings and Toe-guards are not available.

7.2.2 HEALTH, SAFETY AND ENVIRONMENT OFFICER OF SUBCONTRACTOR

- Carry out safety inspection of Work Area, Work Method, Men, Machine & Material, P&M and other tools and tackles.
- Facilitate inclusion of safety elements into Work Method Statement.
- Highlight the requirements of safety through Tool-box / other meetings.
- Help concerned HOS to prepare Job Specific instructions for critical jobs.
- Conduct investigation of all incident/dangerous occurrences & recommend appropriate safety measures.
- Advice & co-ordinate for implementation of HSE permit systems, OCPs & MPs.
- Convene HSE meeting & minute the proceeding for circulation & follow-up action.
- Plan procurement of PPE & Safety devices and inspect their healthiness.
- Report to PS Region/HQ on all matters pertaining to status of safety and promotional program at site level.
- Facilitate administration of First Aid
- Facilitate screening of workmen and safety induction.
- Conduct fire Drill and facilitate emergency preparedness
- Design campaigns, competitions & other special emphasis programs to promote safety in the workplace.
- ☐ Apprise PS– Region on safety related problems.
- Notify site personnel non-conformance to safety norms observed during site visits / site inspections.
- Recommend to Site In charge, immediate discontinuance of work until rectification, of such situations warranting immediate action in view of imminent danger to life or property or environment.
- To decline acceptance of such PPE / safety equipment that do not conform to specified requirements.
- Encourage raising Near Miss Report on safety along with, improvement initiatives on safety.
- Shall work as interface between various agencies such customer, package-in-charges, subcontractors on HSE matters



**HEALTH, SAFETY AND ENVIRONMENT
PLAN FOR
SITE OPERATION by SUBCONTRACTORS**

POWER SECTOR

Doc no.: HSEP: 14

REV: 01

Date: 20.01.2020

Page: 11 of 43

8.0 PLANNING BY SUBCONTRACTOR

Monthly planning and review of HSE activities shall be carried out by subcontractor as per format No. HSEP:14-F30 jointly along with BHEL.

8.1 MOBILISATION OF MACHINERY/EQUIPMENT/TOOLS BY SUBCONTRACTOR

- As a measure to ensure that machinery, equipment and tools being mobilized to the construction site are fit for purpose and are maintained in safe operating condition and complies with legislative and owner requirement, inspection shall be arranged by in-house competent authority for acceptance as applicable.
- The machinery and equipment to be embraced for this purpose shall include but not limited to the following:
 - o Mobile cranes.
 - o Side Booms.
 - o Forklifts.
 - o Grinding machine.
 - o Drilling machine.
 - o Air compressors.
 - o Welding machine.
 - o Generator sets.
 - o Dump Trucks.
 - o Excavators.
 - o Dozers
 - o Grit Blasting Equipment.
 - o Hand tools.
- Subcontractor shall notify the engineer, of his intention to bring on to site any equipment or any container, with liquid or gaseous fuel or other substance which may create a hazard. The Engineer shall have the right to prescribe the condition under which such equipment or container may be handled and used during the performance of the works and the subcontractor shall strictly adhere to such instructions. The Engineer shall have the right to inspect any construction tool and to forbid its use, if in his opinion it is unsafe. No claim due to such prohibition will be entertained.

8.2 MOBILISATION OF MANPOWER BY SUBCONTRACTOR

- The subcontractor shall arrange induction and regular health check of their employees as per schedule VII of BOCW rules by a registered medical practitioner.
- The subcontractor shall take special care of the employees affected with occupational diseases under rule 230 and schedule II of BOCW Rules. The employees not meeting the fitness requirement should not be engaged for such job.
- Ensure that the regulatory requirements of excessive weight limit (to carry/lift/ move weights beyond prescribed limits) for male and female workers are complied with.
- Appropriate accommodation to be arranged for all workmen in hygienic condition.



HEALTH, SAFETY AND ENVIRONMENT PLAN FOR SITE OPERATION by SUBCONTRACTORS

POWER SECTOR

Doc no.: HSEP: 14

REV: 01

Date: 20.01.2020

Page: 12 of 43

8.3 PROVISION OF PPEs

- Personnel Protective Equipment (PPEs), in adequate numbers, will be made available at site & their regular use by all concerned will be ensured
- The following matrix recommends usage of minimum PPEs against the respective job.

Sl. No	Type of work	PPEs
1	Concrete and asphalt mixing	Nose mask, hand glove, apron and gum boot
2	Welders/Grinders/ Gas cutters	Welding/face screen, apron, hand gloves, nose mask and ear muffs if noise level exceeds 90dB. Helmet fitted with welding shield is preferred for welders
3	Stone/ concrete breakers	Ear muffs, safety goggles, hand gloves
4	Electrical Work	Rubber hand glove, Electrical Resistance shoes
5	Insulation Work	Respiratory mask, Hand gloves, safety goggles
6	Work at height	Double lanyard full body harness, Fall arrestor (specific cases)
7	Grit/Sand blasting	Blast suit, blast helmet, respirator, leather gloves
8	Painting	Plastic gloves, Respirators (particularly for spray painting)
9	Radiography	As per BARC guidelines

- The PPEs shall conform to the relevant standards as below and bear ISI mark.

Relevant is-codes for personal protection

IS: 2925 – 1984	Industrial Safety Helmets.
IS: 4770 – 1968	Rubber gloves for electrical purposes.
IS: 6994 – 1973 (Part-I)	Industrial Safety Gloves (Leather & Cotton Gloves).
IS: 1989 – 1986 (Part-I-II)	Leather safety boots and shoes.
IS: 5557 – 1969	Industrial and Safety rubber knee boots.
IS: 6519 – 1971	Code of practice for selection, care and repair of Safety footwear.
IS: 11226 – 1985	Leather Safety footwear having direct molding sole.
IS: 5983 – 1978	Eye protectors.
IS: 9167 – 1979	Ear protectors.
IS: 1179-1967	Eye & Face protection during welding
IS: 3521 – 1983	Industrial Safety Belts and Harness
IS: 8519 -1977	Guide for selection of industrial Safety equipment for body protection
IS: 9473-2002, 14166-1994, 14746-1999	Respiratory Protective Devices

The list is not exhaustive. The safety officer may demand additional PPEs based on specific requirement.



**HEALTH, SAFETY AND ENVIRONMENT
PLAN FOR
SITE OPERATION by SUBCONTRACTORS**

POWER SECTOR

Doc no.: HSEP: 14

REV: 01

Date: 20.01.2020

Page: 13 of 43

- Where workers are employed in sewers and manholes, which are in use, the subcontractor shall ensure that the manhole covers are opened and ventilated at least for an hour before the workers are allowed to get into manhole, and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent incident to the public
- Besides the PPEs mentioned above, the persons shall use helmet and safety shoe. The visitors shall use Helmet and any other PPEs as deemed appropriate for the area of work.

Colour scheme for Helmets:

1. Workmen: Yellow
 2. Safety staff: Green or white with green band
 3. Electrician: Red
 4. Others including visitors: White
- All the PPEs shall be checked for its quality before issue and the same shall be periodically checked. The users shall be advised to check the PPEs themselves for any defect before putting on. The defective ones shall be repaired/ replaced.
 - The issuing agency shall maintain register for issue and receipt of PPEs.
 - The Helmets shall have logo or name (abbreviation of agency name permitted) affixed or printed on the front.
 - The body harnesses shall be serial numbered.

8.4 ARRANGEMENT OF INFRASTRUCTURE

8.4.1 DRINKING WATER

- Drinking water shall be provided and maintained at suitable places at different elevations.
- Container should be labeled as "Drinking Water"
- Cleaning of the storage tank shall be ensured atleast once in 3 months indicating date of cleaning and next due date.
- Potability of water should be tested as per IS10500 at least once in a year.

8.4.2 WASHING FACILITIES

- In every workplace, adequate and suitable facilities for washing shall be provided and maintained.
- Separate and adequate cleaning facilities shall be provided for the use of male and female workers. Such facilities shall be conveniently accessible and shall be kept in clean and hygienic condition and dully illuminated for night use.
- Overalls shall be supplied by the subcontractor to the workmen and adequate facilities shall be provided to enable the painters and other workers to wash during the cessation of work.

8.4.3 LATRINES AND URINALS

- Latrines and urinals shall be provided in every work place.
- Urinals shall also be provided at different elevations.
- They shall be adequately lighted and shall be maintained in a clean and sanitary condition at all times, by appointing designated person.
- Separate facilities shall be provided for the use of male and female worker if any.



**HEALTH, SAFETY AND ENVIRONMENT
PLAN FOR
SITE OPERATION by SUBCONTRACTORS**

POWER SECTOR

Doc no.: HSEP: 14

REV: 01

Date: 20.01.2020

Page: 14 of 43

8.4.4 PROVISION OF SHELTER DURING REST

Proper Shed & Shelter shall be provided for rest during break

8.4.5 MEDICAL FACILITIES

8.4.5.1 MEDICAL CENTRE (As per Schedule V, X and XI of BOCW central Rules, 1998)

- A medical centre shall be ensured/identified at site with basic facilities for handling medical emergencies. The medical center can be jointly developed on proportionate sharing basis with permission from BHEL
- A qualified medical professional, not less than MBBS, shall be deployed at the medical centre
- The medical centre shall be equipped with one ambulance, with trained driver and oxygen cylinder.
- Medical waste shall be disposed as per prevailing legislation (Bio-Medical Waste –Management and Handling Rules, 1998)

8.4.5.2 FIRST AIDER

- Ensure availability of Qualified First-aider throughout the working hours.
- Every injury shall be treated, recorded and reported.
- Refresher course on first aid shall be conducted as necessary.
- List of Qualified first aiders and their contact numbers should be displayed at conspicuous places.

8.4.5.3 FIRST AID BOX (as per schedule III of BOCW)

- The subcontractor shall provide necessary first aid facilities as per schedule III of BOCW. At every work place first aid facilities shall be provided and maintained.
- The first aid box shall be kept by first aider who shall always be readily available during the working hours of the work place. His name and contact no to be displayed on the box.
- The first aid boxes should be placed at various elevations so as to make them available within the reach and at the quickest possible time.
- The first aid box shall be distinctly marked with a Green Cross on white background.
- Details of contents of first aid box is given in Annexure No. 01
- Monthly inspection of First Aid Box shall be carried out by the owner as per format no. HSEP:14-F01
- The subcontractor should conduct periodical first –aid classes to keep his supervisor and Engineers properly trained for attending to any emergency.

8.4.5.4 HEALTH CHECK UP (As per schedule VII and Form XI)

The persons engaged at the site shall undergo health checkup as per the format no. HSEP:14-F02 before induction. The persons engaged in the following works shall undergo health checkup at least once in a year:

- a. Height workers
- b. Drivers/crane operators/riggers



**HEALTH, SAFETY AND ENVIRONMENT
PLAN FOR
SITE OPERATION by SUBCONTRACTORS**

POWER SECTOR

Doc no.: HSEP: 14

REV: 01

Date: 20.01.2020

Page: 15 of 43

- c. Confined space workers
- d. Shot/sand blaster
- e. Welding and NDE personnel

8.4.6 PROVISION OF CANTEEN FACILITY

- Canteen facilities shall be provided for the workmen of the project inside the project site.
- Proper cleaning and hygienic condition shall be maintained.
- Proper care should be taken to prevent biological contamination.
- Adequate drinking water should be available at canteen.
- Fire extinguisher shall be provided inside canteen.
- Regular health check-up and medication to the canteen workers shall be ensured.

8.4.7 PROVISION OF ACCOMODATION/LABOUR COLONY

- || The subcontractor shall arrange for the accommodation of workmen at nearby localities or by making a labour colony.
- || Regular housekeeping of the labour colony shall be ensured.
- || Proper sanitation and hygienic conditions to be maintained.
- || Drinking water and electricity to be provided at the labour colony.
- || Bathing/ washing bay
- || Room ventilation and electrification.

8.4.8 PROVISION OF EMERGENCY VEHICLE

- Dedicated emergency vehicle shall be made available at workplace by each subcontractor to handle any emergency

8.4.9 PEST CONTROL

Regular pest control should be carried out at all offices, mainly laboratories, canteen, labour colony and stores.

8.4.10 SCRAPYARD

- In consultation with customer, scrapyard shall be developed to store metal scrap, wooden scrap, waste, hazardous waste.
- Scrap/Waste shall be segregated as Bio-degradable and non-bio-degradable and stored separately.

8.4.11 ILLUMINATION

- The subcontractor shall arrange at his cost adequate lighting facilities e.g. flood lighting, hand lamps, area lighting etc. at various levels for safe and proper working operations at dark places and during night hours at the work spot as well as at the pre-assembly area.
- Adequate and suitable light shall be provided at all work places & their approaches including passage ways as per IS: 3646 (Part-II). Some recommended values are given below:



**HEALTH, SAFETY AND ENVIRONMENT
PLAN FOR
SITE OPERATION by SUBCONTRACTORS**

Doc no.: HSEP: 14

REV: 01

Date: 20.01.2020

POWER SECTOR

Page: **16 of 43**

S. No.	Location	Illumination (Lux)
A. Construction Area		
1.	Outdoor areas like store yards, entrance and exit roads	20
2.	Platforms	50
3.	Entrances, corridors and stairs	100
4.	General illumination of work area	150
5.	Rough work like fabrication, assembly of major items	150
6.	Medium work like assembly of small machined parts	300
	rough measurements etc.	
7.	Fine work like precision assembly, precision	700
	measurements etc.	
8.	Sheet metal works	200
9.	Electrical and instrument labs	450
B. Office		
1.	Outdoor area like entrance and exit roads	20
2.	Entrance halls	150
3.	Corridors and lift cars	70
4.	Lift landing	150
5.	Stairs	100
6.	Office rooms, conference rooms, library reading tables	300
7.	Drawing table	450
8.	Manual telephone exchange	200

- Lamp (hand held) shall not be powered by mains supply but either by 24V or dry cells.
- Lamps shall be protected by suitable guards where necessary to prevent danger, in case of breakage of lamp.
- Emergency lighting provision for night work shall be made to minimise danger in case of main supply failure.

If the subcontractor fails to take appropriate safety precautions or to provide necessary safety devices and equipment or to carry out instructions issued by the authorized BHEL official, BHEL shall have the right to take corrective steps at the risk and cost of the subcontractor

9.0 HSE TRAINING& AWARENESS

9.1 HSE INDUCTION TRAINING

All persons entering into project site shall be given HSE induction training by the HSE officer of BHEL /subcontractor before being assigned to work.

In-house induction training subjects shall include but not limited to:

- Briefing of the Project details.
- Safety objectives and targets.
- Site HSE rules.
- Site HSE hazards and aspects.
- First aid facility.
- Emergency Contact No.
- Incident reporting.
- Fire prevention and emergency response.
- Rules to be followed in the labour colony (if applicable)



**HEALTH, SAFETY AND ENVIRONMENT
PLAN FOR
SITE OPERATION by SUBCONTRACTORS**

POWER SECTOR

Doc no.: HSEP: 14

REV: 01

Date: 20.01.2020

Page: 17 of 43

- Proper safety wear & gear must be issued to all the workers being registered for the induction (i.e., Shoes/Helmets/Goggles/Leg guard/Apron etc.)
- They must arrive fully dressed in safety wear & gear to attend the induction.
- Any one failing to conform to this safety wear& gear requirement shall not qualify to attend.
- On completing attending subcontractor's in-house HSE induction, each employee shall sign an induction training form (format no. HSEP:14-F03) to declare that he had understood the content and shall abide to follow and comply with safe work practices. They may only then be qualified to be issued with a personal I.D. card, for access to the work site.

9.2 HSE TOOLBOX TALK

- HSE tool Box talk shall be conducted by frontline foreman/supervisor of subcontractor to specific work groups prior to the start of work. The agenda shall consist of the followings:
 - o Details of the job being intended for immediate execution.
 - o The relevant hazards and risks involved in executing the job and their control and mitigating measures.
 - o Specific site condition to be considered while executing the job like high temperature, humidity, unfavorable weather etc.
 - o Recent non-compliances observed.
 - o Appreciation of good work done by any person.
 - o Any doubt clearing session at the end.
- Record of Tool box talk shall be maintained as per format no. HSEP:14-F04
- Tool box talk to be conducted at least once a week for the specific work.

9.3 TRAINING ON HEIGHT WORK

Training on height work shall be imparted to all workers working at height by in-house/external faculty at least twice in a year. The training shall include following topics:

- Use of PPEs
- Use of fall arrester, retractable fall arrester, life line, safety nets etc.
- Safe climbing through monkey ladders.
- Inspection of PPEs.
- Medical fitness requirements.
- Mock drill on rescue at height.
- Dos & Don'ts during height work.

9.4 HSE TRAINING DURING PROJECT EXECUTION

- Other HSE training shall be arranged by BHEL/ subcontractor as per the need of the project execution and recommendation of HSE committee of site.
- The topics of the HSE training shall be as follows but not limited to:
 - o Hazards identification and risk analysis (HIRA)
 - o Work Permit System
 - o Incident investigation and reporting
 - o Fire fighting
 - o First aid
 - o Fire-warden training
 - o EMS and OHSMS
 - o T & Ps fitness and operation



**HEALTH, SAFETY AND ENVIRONMENT
PLAN FOR
SITE OPERATION by SUBCONTRACTORS**

POWER SECTOR

Doc no.: HSEP: 14

REV: 01

Date: 20.01.2020

Page: 18 of 43

- o Electrical safety
- o Welding, NDE & Radiological safety
- o Storage, preservation & material handling.
- A matrix shall be maintained to keep an up-to-date record of attendance of training sessions carried out.

9.5 HSE PROMOTION-SIGNAGE, POSTERS, COMPETITION, AWARDS ETC

9.5.1 Display of HSE posters and banners

- Site shall arrange appropriate posters, banners, slogans in local/Hindi/English languages at work place

9.5.2 Display of HSE signage

- Appropriate HSE signage shall be displayed at the work area to aware workmen and passersby about the work going on and do's and don'ts to be followed

9.5.3 Competition on HSE and award

- Site will arrange different competition (slogan, poster, essay etc.) on HSE time to time (Safety day, BHEL day, World Environment Day etc.) and winners will be suitably awarded.

9.5.4 HSE awareness programme

- Subcontractor shall arrange HSE awareness programme periodically on different topics including medical awareness for all personnel working at site

10.0 HSE COMMUNICATION

10.1 INCIDENT REPORTING

- The subcontractor shall submit report of all incidents, fires and property damage etc to the Engineer immediately after such occurrence, but in any case not later than 24 hours of the occurrence. Such reports shall be furnished in the manner prescribed by BHEL. (Refer HSE procedure for incident investigation, analysis and reporting for details)
- In addition, periodic reports on safety shall also be submitted by the subcontractor to BHEL from time to time as prescribed by the Engineer. Compiled monthly reports of all kinds of incidents, fire and property damage to be submitted to BHEL safety officer as per prescribed formats.
- HSE incidents of site shall be reported to BHEL site Management as per Procedure for Incident Investigation and Reporting in format no. HSEP:14-F15. Corrective action shall be immediately implemented at the work place and compliance shall be verified by BHEL HSE officer and until then, work shall be put on hold by Construction Manager.

10.2 HSE EVENT REPORTING

- Important HSE events like HSE training, Medical camp etc. organized at site shall be reported to BHEL site management in detail with photographs for publication in different in-house magazines
- Celebration of important days like National Safety Day, World Environment Day etc. shall also be reported as mentioned above.

10.3 DAILY HSE ACTIVITY REPORTING

Daily HSE activities shall be reported by subcontractor to BHEL as per Format No. HSEP:14-F31A



HEALTH, SAFETY AND ENVIRONMENT PLAN FOR SITE OPERATION by SUBCONTRACTORS

POWER SECTOR

Doc no.: HSEP: 14

REV: 01

Date: 20.01.2020

Page: 19 of 43

11.0 OPERATIONAL CONTROL

All applicable OCPs (Operational control procedures) will be followed by subcontractor as per BHEL instructions. This will be done as part of normal scope of work. List of such OCPs is given below. In case any other OCP is found to be applicable during the execution of work at site, then subcontractor will follow this as well, within quoted rate. These OCPs (applicable ones) will be made available to subcontractor during work execution at site. However for reference purpose, these are kept with Safety Officer of BHEL at the Power Sector Regional HQ, or available in downloadable format in the website, which may be refereed by subcontractor, if they so desire.

LIST OF OCPs

Safe handling of chemicals	Safety in use of cranes	Hydraulic test
Electrical safety	Storage and handling of gas cylinders	Spray insulation
Energy conservation	Manual arc welding	Trial run of rotary equipment
Safe welding and gas cutting operation	Safe use of helmets	Stress relieving
Fire safety	Good house keeping	Material preservation
Safety in use of hand tools	Working at height	Cable laying/tray work
First aid	Safe excavation	Transformer charging
Food safety at canteen	Safe filling of hydrogen in cylinder	Electrical maintenance
Illumination	Vehicle maintenance	Safe handling of battery system
Handling and erection of heavy metals	Safe radiography	Computer operation
Safe acid cleaning	Waste disposal	Storage in open yard
Safe alkali boil out	Working at night	For sanitary maintenance
Safe oil flushing	Blasting	Batching
Steam blowing	DG set	Piling rig operation
Safe working in confined area	Handling & storage of mineral wool	Gas distribution test
Safe operation of passenger lift, material hoists & cages	Drilling, reaming and grinding(machining)	Cleaning of hotwell / deaerator
Electro-resistance heating	Compressor operation	O&M of control of AC plant & system
Air compressor	Passivation	Safe Loading of Unit
Safe EDTA Cleaning	Safe Chemical cleaning of Pre boiler system	Safe Boiler Light up
Safe Rolling and Synchronization		

11.1 HSE ACTIVITIES

HSE activities shall be conducted at site based on the HSEMSM developed by Power Sector and issued to site by Regions.

While planning for any activity the following documents shall be referred for infrastructural requirements to establish control measures:

- 1) HSE Procedure for Register of OHS Hazards and Risks
- 2) HSE Procedure for Register of Environmental Aspects and Impacts
- 3) HSE Procedure for Register of Regulations



**HEALTH, SAFETY AND ENVIRONMENT
PLAN FOR
SITE OPERATION by SUBCONTRACTORS**

POWER SECTOR

Doc no.: HSEP: 14

REV: 01

Date: 20.01.2020

Page: 20 of 43

- 4) Operational Control Procedures
- 5) HSE Procedure for Emergency Preparedness and Response Plan
- 6) Contract documents

11.2 WORK PERMIT SYSTEM

- 11 The following activities shall come under Work Permit System
 - a. Height working above 2 metres
 - b. Hot working at height
 - c. Confined space
 - d. Radiography
 - e. Excavation more than 4 meter depth
 - f. Heavy lifting above 50 tonRefer Annexure 05 for Work permit formats.
- "HSE Procedure for Work Permit System" shall be followed while implementing permit system. Where customer is having separate Work Permit System the same shall be followed.
- 11 Permit applicant shall apply for work permit of particular work activity at particular location before starting of the work with Job Hazard Analysis.
- 11 Permit signatory shall check that all the control measures necessary for the activity are in place and issue the permit to the permit holder.
- 11 Permit holder shall implement and maintain all control measures during the period of permit .He will close the permit after completion of the work. The closed permit shall be archived in HSE Department of site.

11.3 SAFETY DURING WORK EXECUTION

Respective OCPS are to be followed and adherence to the same would be contractually binding

11.3.1 WELDING SAFETY

All safety precautions shall be taken for welding and cutting operations as per IS-818. All safety precautions shall be taken for foundation and other excavation marks as per IS-3764.

11.3.2 RIGGING

Rigging equipment shall not be loaded in excess of its recommended safe working load. Rigging equipment, when not in use, shall be removed from the original work area so as not to present a hazard to employees.

11.3.3 CYLINDERS STORAGE AND MOVEMENT

All gas cylinders shall be stored in upright position. Suitable trolley shall be used. There shall be flash-back arrestors conforming to IS-11006 at both cylinder and burner ends. Damaged tube and regulators must be immediately replaced. No of cylinders shall not exceed the specified quantity as per OCP

Cylinders shall be moved by tilting and rolling them on their bottom edges. They shall not be intentionally dragged, struck or permitted to strike each other violently.

	HEALTH, SAFETY AND ENVIRONMENT PLAN FOR SITE OPERATION by SUBCONTRACTORS	Doc no.: HSEP: 14
		REV: 01
	POWER SECTOR	Date: 20.01.2020
		Page: 21 of 43

When cylinders are transported by powered vehicle they shall be secured in a vertical position.

11.3.4 DEMOLITION WORK

Before any demolition work is commenced and also during the process of the work the following shall be ensured:

- All roads and open areas adjacent to the work site shall either be closed or suitably protected.
- No electric cable or apparatus which is liable to be a source of danger nor a cable or an apparatus used by the operator shall remain electrically charged.
- All practical steps shall be taken to prevent danger to persons employed from the risks of fire or explosion or flooding. No floor, roof or other part of the building shall be so overloaded with debris or materials as to render them unsafe.

11.3.5 T&Ps

All T&Ps/ MMEs should be of reputed brand/appropriate quality & must have valid test/calibration certificates bearing endorsement from competent authority of BHEL..Subcontractor to also submit monthly reports of T&Ps deployed and validity test certificates to BHEL safety Officer as per the format/procedure of BHEL.

11.3.6 CHEMICAL HANDLING

Displaying safe handling procedures for all chemicals such as lube oil, acid, alkali, sealing compounds etc , at work place.Where it is necessary to provide and/or store petroleum products or petroleum mixture & explosives, the subcontractor shall be responsible for carrying out such provision / storage in accordance with the rules & regulations laid down in the relevant petroleum act, explosive act and petroleum and carbide of calcium manual, published by the chief inspector of explosives of India. All such storage shall have prior approval if necessary from the chief inspector of explosives or any other statutory authority. The subcontractor shall be responsible for obtaining the same.

11.3.7 ELECTRICAL SAFETY

- Providing adequate no. of 24 V sources and ensure that no hand lamps are operating at voltage level above 24 Volts.
- Fulfilling safety requirements at all power tapping points.
- High/ Low pressure welders to be identified with separate colour clothings. No welders will be deployed without passing appropriate tests and holding valid welding certificates. Approved welding procedure should be displayed at work place.
- The subcontractor shall not use any hand lamp energized by Electric power with supply voltage of more than 24 volts in confined spaces like inside water boxes, turbine casings, condensers etc.
- All portable electric tools used by the subcontractor shall have safe plugging system to source of power and be appropriately earthed. Only electricians licensed by appropriate statutory authority shall be employed by the subcontractor to carry out all types of electrical works. Details of earth resource and their test date to be given to BHEL safety officer as per the prescribed formats of BHEL
- The subcontractor shall use only properly insulated and armored cables which conform to the requirement of Indian Electricity Act and Rules for all wiring, electrical applications at site.



**HEALTH, SAFETY AND ENVIRONMENT
PLAN FOR
SITE OPERATION by SUBCONTRACTORS**

POWER SECTOR

Doc no.: HSEP: 14

REV: 01

Date: 20.01.2020

Page: 22 of 43

- BHEL reserves the right to replace any unsafe electrical installations, wiring, cabling etc. at the cost of the subcontractor.
- All electrical appliances used in the work shall be in good working condition and shall be properly earthed.
- No maintenance work shall be carried out on live equipment.
- The subcontractor shall maintain adequate number of qualified electricians to maintain his temporary electrical installations.
- Area wise Electrical safety inspection is to be carried out on monthly basis as per "Electrical Safety Inspection checklist" and the report is to be submitted to BHEL safety officer
- Adequate precautions shall be taken to prevent danger for electrical equipment. No materials on any of the sites of work shall be so stacked or placed as to cause danger or inconvenience to any person or the public
- The subcontractor shall carefully follow the safety requirement of BHEL/ the purchaser with the regard to voltages used in critical areas.

11.3.8 FIRE SAFETY

- Providing appropriate fire fighting equipment at designated work place and nominate a fire officer/warden adequately trained for his job.
- Subcontractor shall provide enough fire protecting equipment of the types and numbers at his office, stores, temporary structure in labor colony etc. Such fire protection equipment shall be easy and kept open at all times.
- The fire extinguishers shall be properly refilled and kept ready which should be certified at periodic intervals. The date of changing should be marked on the Cylinders.
- All other fire safety measures as laid down in the "codes for fire safety at construction site" issued by safety coordinator of BHEL shall be followed.
- Non-compliance of the above requirement under fire protection shall in no way relieve the subcontractor of any of his responsibility and liabilities to fire incident occurring either to his materials or equipment or those of others.
- Emergency contacts nos must be displayed at prominent locations
- Tarpaulin being inflammable should not be used (instead, only non-infusible covering materials shall be used) as protective cover while preheating, welding, stress relieving etc. at site.

11.3.9 SCAFFOLDING

- Suitable scaffolds shall be provided for workman for all works that cannot safely be done from the ground, or from solid construction except in the case of short duration of work which can be done safely from ladders.
- When a ladder is used, it shall be of rigid construction made of steel. The steps shall have a minimum width of 45 cm and a maximum rise of 30 cm. Suitable handholds of good quality wood or steel shall be provided and the ladder shall be given an inclination not steeper than $\frac{1}{4}$ horizontal and 1 vertical.
- Scaffolding or staging more than 3.6 m above the ground floor, swung or suspended from an overhead support or erected with stationery support shall have a guard rail properly bolted, braced or otherwise secured, at least 90 cm above the floor or platform of such scaffolding or staging and extending along the entire length of the outside and ends thereof with only such openings as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from savor, from swaying, from the building or structure.

11.3.10 WORK AT HEIGHT:

- Guardrails and toe-board/barricades and sound platform conforming to IS:4912-1978 should be provided.



**HEALTH, SAFETY AND ENVIRONMENT
PLAN FOR
SITE OPERATION by SUBCONTRACTORS**

POWER SECTOR

Doc no.: HSEP: 14

REV: 01

Date: 20.01.2020

Page: 23 of 43

- Wherever necessary, life-line (pp or metallic) and fall arrestor along with Polyamide rope or Retractable lifeline should be provided.
- Safety Net as per IS:11057:1984 should be used extensively for prevention/ arrest of men and materials falling from height. The safety nets shall be fire resistant, duly tested and shall be of ISI marked and the nets shall be located as per site requirements to arrest or to reduce the consequences of a possible fall of persons working at different heights.
- Reaching beyond barricaded area without lifeline support, moving with support of bracings, walking on beams without support, jumping from one level to another, throwing objects and taking shortcut must be discouraged.
- Use of Rebar steel for making Jhoola and monkey-ladder (Rods welded to vertical or inclined structural members), temporary platform etc. must be avoided.
- Monkey Ladder should be properly made and fitted with cages.
- Jhoola should be made with angles and flats and tested like any lifting tools before use.
- Lanyard must be anchored always and in case of double lanyard, each should be anchored separately.
- In case of pipe-rack, persons should not walk on pipes and walk on platforms only.
- In case of roof work, walking ladder/ platform should be provided along with lifeline and/ or fall arrestor.
- Empty drums must not be used.
- For chimney or structure painting, both hanging platform and men should be anchored separately to a firm structure along with separate fall arrestor. Rope ladder should be discouraged.

11.3.11 WORKING PLATFORM

Working platforms, gangways and stairways shall be so constructed that they do not sag unduly or unequally and if the height of the platform gangways provided is more than 3.6 m above ground level or floor level, they shall be closely boarded and shall have adequate width which shall not be less than 750 mm and be suitably fenced as described above. Every opening in the floor or a building or in a working platform shall be provided with suitable means to prevent the fall of persons or materials by providing suitable fencing or railing whose minimum height shall be 90 cm.

11.3.12 EXCAVATION

Wherever there are open excavation in ground, they shall be fenced off by suitable railing and danger signals installed at night so as to prevent persons slipping into the excavations.

11.3.13 LADDER SAFETY

Safe means of access shall be provided to all working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9 m in the length while the width between side rails in rung ladder shall in no case be less than app. 29.2 cm for ladder upto and including 3 m in length. For longer ladders this width shall be increased at least ¼" for each additional foot of length.

A sketch of the ladders and scaffolds proposed to be used shall be prepared and approval of the Engineer obtained prior to Construction.

11.3.14 LIFTING SAFETY

- It will be the responsibility of the subcontractor to ensure safe lifting of the equipment, taking due precaution to avoid any incident and damage to other equipment and personnel.



**HEALTH, SAFETY AND ENVIRONMENT
PLAN FOR
SITE OPERATION by SUBCONTRACTORS**

POWER SECTOR

Doc no.: HSEP: 14

REV: 01

Date: 20.01.2020

Page: 24 of 43

- All requisite tests and inspection of handling equipment, tools & tackle shall be periodically done by the subcontractor by engaging only the Competent Persons as per law.
- Defective equipment or uncertified shall be removed from service.
- Any equipment shall not be loaded in excess of its recommended safe working load.

11.3.15 HOISTING APPLIANCE

- Motors, gearing, transmission, electric wiring and other dangerous parts of hoisting appliances should be provided with efficient safe guards.
- Hoisting appliance should be provided with such means as will reduce to the minimum the risk of any part of a suspended load becoming incidentally displaced.
- When workers employed on electrical installations which are already energized, insulating mats, wearing apparel, such as gloves, sleeves and boots as may be necessary should be provided.
- The worker should not wear any rings, watches and carry keys or other materials which are good conductor of electricity.

11.4 ENVIRONMENTAL CONTROL

Environment protection has always been given prime importance by BHEL. Environmental damage is a major concern of the principal subcontractor and every effort shall be made, to have effective control measures in place to avoid pollution of Air, Water and Land and associated life. Chlorofluorocarbons such as carbon tetrachloride and trichloroethylene shall not be used. Waste disposal shall be done in accordance with the guidelines laid down in the project specification.

Any chemical including solvents and paints, required for construction shall be stored in designated bonded areas around the site as per Material Safety Data Sheet (MSDS).

In the event of any spillage, the principle is to recover as much material as possible before it enters drainage system and to take all possible action to prevent spilled materials from running off the site. The subcontractor shall use appropriate MSDS for clean-up technique

All subcontractors shall be responsible for the cleanliness of their own areas.

The subcontractors shall ensure that noise levels generated by plant or machinery are as low as reasonably practicable. Where the subcontractor anticipates the generation of excessive noise levels from his operations the subcontractor shall inform to Construction Manager of BHEL accordingly so that reasonable & practicable precautions can be taken to protect other persons who may be affected.

It is imperative on the part of the subcontractor to join and effectively contribute in joint measures such as tree plantation, environment protection, contributing towards social upliftment, conversion of packing woods to school furniture, keeping good relation with local populace etc.

The subcontractor shall carry out periodic air and water quality check and illumination level checking in his area of work place and take suitable control measure.

11.5 HOUSEKEEPING

- Keeping the work area clean/ free from debris, removed scaffoldings, scraps, insulation/sheeting wastage /cut pieces, temporary structures, packing woods etc. will be in the scope of the subcontractor. Such cleanings has to be done by



**HEALTH, SAFETY AND ENVIRONMENT
PLAN FOR
SITE OPERATION by SUBCONTRACTORS**

POWER SECTOR

Doc no.: HSEP: 14

REV: 01

Date: 20.01.2020

Page: 25 of 43

subcontractor within quoted rate, on daily basis by an identified group. If such activity is not carried out by subcontractor / BHEL is not satisfied, then BHEL may get it done by other agency and actual cost along with BHEL overheads will be deducted from contractor's bill. Such decisions of BHEL shall be binding on the subcontractor

- Proper housekeeping to be maintained at work place and the following are to be taken care of on daily basis.
- All surplus earth and debris are removed/disposed off from the working areas to identified locations.
- Unused/Surplus cables, steel items and steel scrap lying scattered at different places/elevation within the working areas are removed to identified locations.
- All wooden scrap, empty wooden cable drums and other combustible packing materials, shall be removed from workplace to identified locations. Sufficient waste bins shall be provided at
- Different work places for easy collection of scrap/waste. Scrap chute shall be installed to remove scrap from high location.
- Access and egress (stair case, gangways, ladders etc.) path should be free from all scrap and other hindrances.
- Workmen shall be educated through tool box talk about the importance of housekeeping and encourage not to litter.
- Labour camp area shall be kept clear and materials like pipes, steel, sand, concrete, chips and bricks, etc. shall not be allowed in the camp to obstruct free movement of men and machineries.
- Fabricated steel structures, pipes & piping materials shall be stacked properly.
- No parking of trucks/trolleys, cranes and trailers etc. shall be allowed in the camp, which may obstruct the traffic movement as well as below LT/HT power line.
- Utmost care shall be taken to ensure over all cleanliness and proper upkeep of the working areas

11.6 WASTE MANAGEMENT

Take suitable measures for waste management and environment related laws/legislation as a part of normal construction activities. Compliance with the legal requirements on storage/ disposal of paint drums (including the empty ones), Lubricant containers, Chemical Containers, and transportation and storage of hazardous chemicals will be strictly maintained.

11.6.1 BINS AT WORK PLACE

- Sufficient rubbish bins shall be provided close to workplaces.
- Bins should be painted yellow and numbered.
- Sufficient nos. of drip trays shall be provided to collect oil and grease.
- Sufficient qty. of broomsticks with handle shall be provided.
- Adequate strength of employees should be deployed to ensure daily monitoring and service for waste management.

11.6.2 STORAGE AND COLLECTION

- Different types of rubbish/waste should be collected and stored separately.
- Paper, oily rags, smoking material, flammable, metal pieces should be collected in separate bins with close fitting lids.
- Rubbish should not be left or allowed to accumulate on construction and other work places.
- Do not burn construction rubbish near working site.

	HEALTH, SAFETY AND ENVIRONMENT PLAN FOR SITE OPERATION by SUBCONTRACTORS	Doc no.: HSEP: 14
		REV: 01
	POWER SECTOR	Date: 20.01.2020
		Page: 26 of 43

11.6.3 SEGREGATION

- Earmark the scrap area for different types of waste.
- Store wastes away from building.
- Oil spill absorbed by non-combustible absorbent should be kept in separate bin.
- Clinical and first aid waste stored and incinerated separately.

11.6.4 DISPOSAL

- Sufficient containers and scrap disposal area should be allocated.
- All scrap bin and containers should be conveniently located.
- Provide self-closing containers for flammable/spontaneously combustible material.
- Keep drainage channels free from choking.
- Make schedule for collection and disposal of waste.

11.6.5 WARNING AND SIGNS

- Appropriate sign to be displayed at scrap storage area
- No toxic, corrosive or flammable substance to be discarded into public sewage system.
- Waste disposal shall be in accordance with best practice.
- Comply with all the requirements of Pollution Control Board (PCB) for storage and disposal of hazardous waste.

11.7 TRAFFIC MANAGEMENT SYSTEM

11.7.1 SAFE WORKPLACE TRANSPORT SYSTEM

- Traffic routes in a work place shall be suitable for the persons or vehicles using them. This shall be sufficient in number and of sufficient size. This shall reflect the suitability of traffic routes for vehicles and pedestrians.
- Where vehicles and pedestrians use the same traffic routes there shall be sufficient space between them. Where necessary all traffic routes must be suitably indicated. Pedestrians or vehicles must be able to use traffic routes without endangering those at work. There must be sufficient separation of traffic routes from doors, gates and pedestrian traffic routes.
- For internal traffic, lines marked on roads / access routes and between buildings shall clearly indicate where vehicles are to pass.
- Temporary obstacles shall be brought to the attention of drivers by warning signs or hazard cones.
- Speed limits shall be clearly displayed. Speed ramps preceded by a warning signs or marker are necessary.
- The traffic route should be wide enough to allow vehicles to pass and re-pass oncoming or parked traffic and it may be advisable to introduce on-way system or parking restrictions.
- Safest route shall be provided between places where vehicles have to call or deliver.
- Avoid vulnerable areas/items such as fuel or chemicals tanks or pipes, open or unprotected edges and structures likely to collapse



**HEALTH, SAFETY AND ENVIRONMENT
PLAN FOR
SITE OPERATION by SUBCONTRACTORS**

POWER SECTOR

Doc no.: HSEP: 14

REV: 01

Date: 20.01.2020

Page: 27 of 43

- Safe areas shall be provided for loading and unloading.
- Avoid sharp or blind bends. If this is not possible hazards should be indicated e.g. blind corner.
- Ensure road crossings are minimum and clearly signed.
- Entrance and gateways shall be wide enough to accommodate a second vehicle without causing obstruction.
- Set sensible speed limits which are clearly sign posted.
- Where necessary ramps should be used to retard speed. This shall be preceded by a warning sign or mark on the road.
- Forklift trucks shall not pass over road hump unless of a type capable of doing so.
- Overhead electric cable, pipes containing flammable hazardous chemical shall be shielded by using goal posts height gauge posts or barriers.
- Road traffic signs shall be provided on prominent locations for prevention of incidents and hazards and for quick guidance and warning to employees and public. Safety signs shall be displayed as per the project working requirement and guideline of the state in which project is done. Vehicles hired or used shall not be parked within the 15m radius of any working area. Any vehicle, that is required to be at the immediate/near the vicinity, shall be approved by the person in-charge of the site.

11.7.2 TRAFFIC ROUTE FOR PEDESTRIANS

- Where traffic routes are used by both pedestrians and vehicles road shall be wide enough to allow vehicles and pedestrians safely.
- Separate routes shall be provided for pedestrians to keep them away from vehicles. Provide suitable barriers/guard at entrances/exit and the corners or buildings.
- Where pedestrian and vehicle routes cross, appropriate crossing shall be provided.
- Where crowd is likely to use roadway e.g. at the end of shift, stop vehicles from using them at such times.
- Provide high visibility clothing for people permitted in delivery area.

11.7.3 WORK VEHICLE

Work vehicle shall be as safe stable efficient and roadworthy as private vehicles on public roads. Site management shall ensure that drivers are suitably trained. All vehicle e.g. heavy motor vehicle forklift trucks dump trucks mobile cranes shall ensure that the work equipment conforms to the following:

- o A high level of stability.
- o A safe means of access/egress.
- o Suitable and effective service and parking brakes.
- o Windscreens with wipers and external mirrors giving optimum all round visibility.
- o Provision of horn, vehicle lights, reflectors, reversing lights, reversing alarms.
- o Provision of seat belts.
- o Guards on dangerous parts.
- o Driver protection - to prevent injury from overturning and from falling objects/materials.
- o Driver protection from adverse weather.
- o No vehicle shall be parked below HT/LT power lines.
- o Valid Pollution Under Control certification for all vehicles



**HEALTH, SAFETY AND ENVIRONMENT
PLAN FOR
SITE OPERATION by SUBCONTRACTORS**

POWER SECTOR

Doc no.: HSEP: 14

REV: 01

Date: 20.01.2020

Page: 28 of 43

11.7.4 DAILY CHECK BY DRIVER

- There should also be daily safety checks containing below mentioned points by the driver before the vehicle is used.
 - o Brakes.
 - o Tires.
 - o Steering.
 - o Mirrors.
 - o Windscreen waters.
 - o Wipers.
 - o Warning signals.
 - o Specific safety system i.e. control interlocks
- Management should ensure that drivers carry out these checks.

11.7.5 TRANSPORTATION OF PERSONNEL AND MATERIALS BY VEHICLES

- All drivers shall hold a valid driving License for the class of vehicle to be driven and be registered as an authorized BHEL driver with the Administration Department.
 - Securing of the load shall be by established and approved methods, i.e. chains with patented tightening equipment for steel/heavy loads. Sharp corners on loads shall be avoided when employing ropes for securing.
 - All overhangs shall be made clearly visible and restricted to acceptable limits
 - Load shall be checked before moving off and after traveling a suitable distance.
 - On no account is construction site to be blocked by parked vehicles Drivers of vehicles shall only stop or park in the areas designate by the stringing foreman.
 - Warning signs shall be displayed during transportation of material.
- All vehicles used by BHEL shall be in worthy condition and in conformance to the Land Transport requirement.

11.7.6 MAINTENANCE

All Vehicles used for transportation of man and material shall undergo scheduled inspections on frequent intervals to secure safe operation. Such inspections shall be conducted in particular for steering, brakes, lights, horn, doors etc. Site management shall ensure that work equipment is maintained in an efficient, working order and in good repair. Inspections and services carried out at regular intervals of time and or mileage. No maintenance shall be carried below HT/LT power lines.

11.8 EMERGENCY PREPAREDNESS AND RESPONSE

- Emergency preparedness and response capability of site shall be developed as per Emergency Preparedness and Response plan issued by Regional HQ
- Availability of adequate number of first aiders and fire warden shall be ensured with BHEL and its subcontractors
- All the subcontractor's supervisory personnel and sufficient number of workers shall be trained for fire protection systems. Enough number of such trained personnel must be available during the tenure of contract. Subcontractor should nominate his supervisor to coordinate and implement the safety measures.
- Assembly point shall be earmarked and access to the same from different location shall be shown
- Fire exit shall be identified and pathway shall be clear for emergency escape.



**HEALTH, SAFETY AND ENVIRONMENT
PLAN FOR
SITE OPERATION by SUBCONTRACTORS**

POWER SECTOR

Doc no.: HSEP: 14

REV: 01

Date: 20.01.2020

Page: 29 of 43

- Appropriate type and number of fire extinguisher shall be deployed as per Fire extinguisher deployment plan and validity shall be ensured periodically through inspection
- Adequate number of first aid boxes shall be strategically placed at different work places to cater emergency need. Holder of the first aid box shall be identified on the box itself who will have the responsibility to maintain the same.
- First aid center shall be developed at site with trained medical personnel and ambulance
- Emergency contact numbers (format given in EPRP) of the site shall be displayed at prominent locations.
- Tie up with fire brigade shall be done in case customer is not having fire station.
- Tie up with hospital shall be done in case customer is not having hospital.
- Disaster Management group shall be formed at site
- Mock drill shall be arranged at regular intervals. Monthly report of the above to be given to BHEL safety Officer as per prescribed BHEL formats
- Mock drill shall be conducted on different emergencies periodically to find out gaps in emergency preparedness and taking necessary corrective action

12.0 HSE INSPECTION

Inspection on HSE for different activities being carried out at site shall be done to ensure compliance to HSEMS requirements. The subcontractor shall maintain and ensure necessary safety measures as required for inspection and tests HV test, Pneumatic test, Hydraulic test, Spring test, Bend test etc. as applicable, to enable inspection agency for performing Inspection. If any test equipment is found not complying with proper safety requirements then the Inspection Agency may withhold inspection, till such time the desired safety requirements are met.

12.1 DAILY HSE CHECKS

Both the Site Supervisors and safety officer of Subcontractor are to conduct daily site Safety inspection around work activities and premises to ensure that work methods and the sites are maintained to an acceptable standard. The following are to form the common subjects of a daily safety inspection:

- Personal Safety wears & gear compliance.
- Complying with site safety rules and permit-to-work (PTW).
- Positions and postures of workers.
- Use of tools and equipment etc. by the workers.

The inspection should be carried out just when work starts in beginning of the day, during peak activities period of the day and just before the day's work ends.

12.2 INSPECTION OF PPE

- PPEs shall be inspected by HSE officer at random once in a week as per format no. HSEP:14-F06 for its compliance to standard and compliance to use and any adverse observation shall be recorded in the PPE register.
- The applicable PPEs for carrying out particular activities are listed below.

	HEALTH, SAFETY AND ENVIRONMENT PLAN FOR SITE OPERATION by SUBCONTRACTORS	Doc no.: HSEP: 14
		REV: 01
	POWER SECTOR	Date: 20.01.2020 Page: 30 of 43

12.3 INSPECTION OF T&Ps

- A master list of T&Ps shall be maintained by each subcontractor.
- All T&Ps being used at site shall be inspected by HSE officer once in a month as per format no. HSEP:14-F07 for its healthiness and maintenance.
- The T&Ps which require third party inspection shall be checked for its validity during inspection. The third party test certificate should be accompanied with a copy of the concerned competent person's valid qualification record.
- The validity of T&P shall be monitored as per "Status of T&Ps" format no. HSEP:14-F08

12.4 INSPECTION OF CRANES AND WINCHES

- Cranes and winches shall be inspected by the operator through a daily checklist for its safe condition (as provided by the equipment manufacturer) before first use of the day.
- Cranes and Winches shall be inspected by HSE officer once in a month as per format no. HSEP:14-F09 for healthiness, maintenance and validity of third party inspection.
- The date of third party inspection and next due date shall be painted on cranes and winches.
- The operators/drivers shall be authorized by sub-contractor based on their competency and experience and shall carry the I-card.
- The operator should be above 18 years of age and should be in possession of driving license of HMV man & goods), vision test certificate and should have minimum qualification so that he can read the instructions and check list.

12.5 INSPECTION ON HEIGHT WORKING

- Inspection on height working shall be conducted daily by supervisors before start of work to ensure safe working condition including provision of
 - o Fall arrestor
 - o Lifelines
 - o Safety nets
 - o Fencing and barricading
 - o Warning signage
 - o Covering of opening
 - o Proper scaffolding with access and egress.
 - o Illumination
- Inspection on height working shall be conducted once in a week by HSE officer as per format no. HSEP:14-F10.
- Medical fitness of height worker shall be ensured.
- Height working shall not be allowed during adverse weather.

12.6 INSPECTION ON WELDING AND GAS CUTTING OPERATION

- Supervisor shall ensure that no flammable items are available in near vicinity during welding and gas cutting activity.
- Gas cylinders shall be kept upright.
- Use of Flash back arrestor shall be ensured at both ends.



**HEALTH, SAFETY AND ENVIRONMENT
PLAN FOR
SITE OPERATION by SUBCONTRACTORS**

POWER SECTOR

Doc no.: HSEP: 14

REV: 01

Date: 20.01.2020

Page: 31 of 43

- Inspection during welding and gas cutting operations shall be carried out by HSE officer once a month as per format no. HSEP:14-F11.
- Use of fire blanket to be ensured to avoid falling of splatters during welding or gas cutting operation at height.
- Availability of fire extinguisher at vicinity shall be ensured.

12.7 INSPECTION ON ELECTRICAL INSTALLATION / APPLIANCES

- Ensure proper earthing in electrical installation
- Use ELCB at electrical booth
- Electrical installation shall be properly covered at top where required
- Use appropriate PPEs while working
- Use portable electrical light < 24 V in confined space and potentially wet area.
- Monthly inspection shall be carried out as per format no. HSEP:14-F12.

12.8 INSPECTION OF ELEVATOR

- Elevators shall be inspected by concerned supervisors once in a week as per format no. HSEP:14-F13.
- All elevators shall be inspected by competent person and validity shall be ensured.
- The date of third party inspection and next due date shall be painted on elevator.

12.9 INSPECTION OF EXCAVATION

Excavation activities shall be inspected as per Format HSEP:14-F13A

13.0 HSE PERFORMANCE

- Contractor shall be assessed on monthly basis for HSE Compliance by BHEL Safety In-charge at site. The HSE compliance shall be based on Online HSE Evaluation System of BHEL as per Format No. HSEP:14-F33.
- BHEL shall reserve the right to use this assessment for evaluating bidder's capacity for future tenders
- Suitable HSE reward system shall be developed at site level to promote HSE compliance amongst workmen by the subcontractor.
To decide HSE reward, performance towards HSE shall be evaluated for workmen and it shall be awarded regularly in public gathering.
- If safety record of the subcontractor in execution of the awarded job is to the satisfaction of safety department of BHEL, issue of an appropriate certificate to recognize the safety performance of the subcontractor may be considered by BHEL after completion of the job.

	HEALTH, SAFETY AND ENVIRONMENT PLAN FOR SITE OPERATION by SUBCONTRACTORS	Doc no.: HSEP: 14
		REV: 01
	POWER SECTOR	Date: 20.01.2020
		Page: 32 of 43

14.0 HSE PENALTIES

- As per contractual provision HSE penalties shall be imposed on subcontractors for non-compliance on HSE requirement as per format no. HSEP:14-F14. The list in the format is only indicative. For any other violation, not listed in the format, the minimum penalty amount is to be decided as per BOCW act.
- If principal customer/statutory and regulatory bodies impose some penalty on HSE due to the non-compliance of the subcontractor the same shall be passed on to them.
- The penalty amount shall be recovered by Site Finance department from subcontractors from the RA/Final bill.

15.0 OTHER REQUIREMENTS

- In case of any delay in completion of a job due to mishaps attributable to lapses by the subcontractor, BHEL shall have the right to recover cost of such delay from the payments due to the subcontractor, after notifying the subcontractor suitably.
- If the subcontractor fails to improve the standards of safety in its operation to the satisfaction of BHEL after being given reasonable opportunity to do so and/or if the subcontractor fails to take appropriate safety precautions or to provide necessary safety devices and equipment or to carry out instruction regarding safety issued by BHEL, BHEL shall have the right to take corrective steps at the risk and cost of the subcontractor after giving a notice of not less than 7 days indicating the steps that would be taken by BHEL.
- If the subcontractor succeeds in carrying out its job in time without any fatal or disabling injury incident and without any damage to property BHEL may, at its sole discretion, favorably consider to reward the subcontractor suitably for the performance.
- In case of any damage to property due to lapses by the subcontractor, BHEL shall have the right to recover the cost of such damages from the subcontractor after holding an appropriate enquiry.
- The subcontractor shall take all measures at the sites of the work to protect all persons from incidents and shall be bound to bear the expenses of defense of every suit, action or other proceeding of law that may be brought by any persons for injury sustained or death owing to neglect of the above precautions and to pay any such persons such compensation or which may with the consent of the subcontractor be paid to compromise any claim by any such person, should such claim proceeding be filed against BHEL, the subcontractor hereby agrees to indemnify BHEL against the same.
- The subcontractor shall not employ men below the age of 18 years and women on the work of painting with products containing lead in any form. Wherever men above the age of 18 are employed on the work of lead painting, overalls shall be supplied by the subcontractor to the workmen and adequate facilities shall be provided to enable the working painters to wash during the cessation of work.
- The subcontractor shall notify BHEL of his intention to bring to site any equipment or material which may create hazard.
- BHEL shall have the right to prescribe the conditions under which such equipment or materials may be handled and the subcontractor shall adhere to such instructions.



HEALTH, SAFETY AND ENVIRONMENT PLAN FOR SITE OPERATION by SUBCONTRACTORS

POWER SECTOR

Doc no.: HSEP: 14

REV: 01

Date: 20.01.2020

Page: **33 of 43**

- BHEL may prohibit the use of any construction machinery, which according to the organization is unsafe. No claim for compensation due to such prohibition will be entertained by BHEL.

16. NON COMPLIANCE

NONCONFORMITY OF SAFETY RULES AND SAFETY APPLIANCES WILL BE VIEWED SERIOUSLY AND BHEL HAS RIGHT TO IMPOSE FINES ON THE SUBCONTRACTOR AS UNDER FOR EVERY INSTANCE OF VIOLATION NOTICED:

SN	Violation of Safety Norms	Fine (in Rs)
01	Not Wearing Safety Helmet	200/- *
02.	Not wearing Safety Belt or not anchoring life line	500/-*
03	Not wearing safety shoe	200/-*
04	Not keeping gas cylinders vertically	200/-
05	Not using flash back arrestors	100/-
06	Not wearing gloves	50/- *
07.	Grinding Without Goggles	50/- *
08.	Not using 24 V Supply For Internal Work	500/-
09.	Electrical Plugs Not used for hand Machine	100/-
10.	Not Sliding properly	200/-
11.	Using Damaged Sling	200/-
12.	Lifting Cylinders Without Cage	500/-
13.	Not Using Proper Welding Cable With Lot of Joints And Not Insulated Property.	200/-
14.	Not Removing Small Scrap From Platforms	500/-
15.	Gas Cutting Without Taking Proper Precaution or Not Using Sheet Below Gas Cutting	500/-
16.	Not Maintaining Electric Winches Which are Operated Dangerously	500/-
17.	Improper Earthing Of Electrical T&P	500/-
18	No or improper barricading	500/-
19.	Activity carried out without Safety work permit (Height work, Lifting activity, Hot work-each person/case)	1000/-
20.	Incident Resulting in Partial Loss in Earning Capacity	25,000/- per victim
21.	Fatal Incident Resulting in total loss in Earning Capacity	1,00,000/- per victim for first instance #

• Legend:-

*: per head. For repeated violation by the same person, the penalty would be double of the previous penalty. Date of "Repeated violation" will be counted from subsequent days.

#: or as deducted by customer, whichever is higher. For repeated fatal incident in the same Unit incremental penalty to be imposed. The subcontractor will pay 2 times the penalty compared to previously paid in case there are repeated cases of fatal incidents under the same subcontractor for the same package in the same unit.

Any other non-conformity noticed not listed above will also be fined as deemed fit by BHEL. The decision of BHEL engineer is final on the above. The amount will be deducted from running bills of the subcontractor. The amount collected above will be utilized for giving award to the employees who could avoid incident by following safety rules. Also the amount will be spent for purchasing the safety appliances and supporting the safety activity at site.



HEALTH, SAFETY AND ENVIRONMENT PLAN FOR SITE OPERATION by SUBCONTRACTORS

Doc no.: HSEP: 14

REV: 01

Date: 20.01.2020

Page: 34 of 43

POWER SECTOR

17.0 HSE AUDIT/INSPECTION

- Regular HSE Audit/inspection shall be carried out by Subcontractor as per Site HSE audit calendar.
- HSE checklist (**Annexure 02**) shall be used for carrying out audit/inspection and report shall be submitted to BHEL site management
- All non-conformities and observations on HSE identified during internal or external HSE audit shall be disposed off by site in a time bound manner and reported back the implementation status
- Corrective action and Preventive action on HSE issues raised by certification body issued by Regional HQs shall be implemented by site and reported to Site management.

18.0 MONTHLY HSE REVIEW MEETING

- II Site shall hold HSE review meeting every month to discuss and resolve HSE issues of site and improve HSE performance. It will also discuss the incidents occurred since previous meeting, its root cause and Corrective action and Preventive action. The agenda is given below:
 - o Implementation of earlier MOM
 - o HSE performance
 - o HSE inspection
 - o HSE audit and CAPA
 - o HSE training
 - o Health check-up camp
 - o HSE planning for the erection and commissioning and installation activities in the coming month
 - o HSE reward and promotional activities
- II The meeting shall be chaired by Construction Manager, convened by HSE coordinator and attended by all HOS, Site Incharge of Subcontractors and HSE officer of Subcontractors.
- MOM on the discussion will be circulated to the concerned for implementation.

19.0 FORMATS USED (Details available in Annexure-04)

SL. No.	Format Name	Format No.	Rev No.
01	Inspection of First Aid Box	HSEP:14-F01	00
02	Health Check Up	HSEP:14-F02	00
03	HSE Induction Training	HSEP:14-F03	00
04	Tool Box Talk	HSEP:14-F04	00
05	Monthly Site HSE Report	As specified by BHEL	00
06	Inspection of PPE	HSEP:14-F06	00



**HEALTH, SAFETY AND ENVIRONMENT
PLAN FOR
SITE OPERATION by SUBCONTRACTORS**

Doc no.: HSEP: 14

REV: 01

Date: 20.01.2020

Page: 35 of 43

POWER SECTOR

07	Inspection of T&Ps	HSEP:14-F07	00
08	Status of T&Ps	HSEP:14-F08	00
09	Inspection of Cranes and Winches	HSEP:14-F09	00
10	Inspection on Height Working	HSEP:14-F10	00
11	Inspection on Welding & Gas Cutting	HSEP:14-F11	00
12	Inspection on Electrical Installation	HSEP:14-F12	00
13	Inspection on Elevator	HSEP:14-F13	00
14	HSE Penalty	HSEP:14-F14	00
15	Accident /incident / property damage /fire incident report	HSEP:14-F15	00

	HEALTH, SAFETY AND ENVIRONMENT PLAN FOR SITE OPERATION by SUBCONTRACTORS	Doc no.: HSEP: 14
		REV: 01
	POWER SECTOR	Date: 20.01.2020
		Page: 36 of 43

20.0 ANNEXURES

ANNEXURE 01

As per Contract Labour (Regulation & Abolition Act), Central Rules, 1971,

- (1) The first-aid box shall be distinctively marked with a Red Cross on a white background and shall contain the following items, namely:

(a) For establishments in which the number of contract labour employed does not exceed fifty, each first aid box shall contain the following equipment:

(i)	6 small sterilized dressings
(ii)	3 medium size sterilized dressings
(iii)	3 large size sterilized dressings
(iv)	6 pieces of sterilized eye pads in separate sealed packets.
(v)	6 roller bandages 10 cm wide.
(vi)	6 roller bandages 5 cm wide.
(vii)	One tourniquet
(viii)	A supply of suitable splints
(ix)	Three packets of safety pins.
(x)	Kidney tray.
(xi)	3 large sterilized burn dressings.
(xii)	1 (30ml) bottle containing a two percent alcoholic solution of iodine
(xiii)	1 (30 ml) bottle containing Sal volatile having the dose and mode of administration indicated on the label
(xiv)	1 snake bite lancet
(xv)	1 (30gms) bottle of potassium permanganate crystals.
(xvi)	1 pair scissors
(xvii)	1 copy of the First-Aid leaflet issued by the Director General, Factory Advice Service and Labour Institutes, Government of India.
(xviii)	A bottle containing 100 tablets (each of 5 grains) of aspirin
(xix)	Ointment for burns
(xx)	A bottle of suitable surgical anti-septic solution

(b) For establishment in which the number of contract labour exceeds fifty each first-aid box shall contain the following equipment:

(i)	12 small sterilized dressings
(ii)	6 medium size sterilized dressings
(iii)	6 large size sterilized dressings.
(iv)	6 large size sterilized burn dressings
(v)	6 (15 grams) packets sterilized cotton wool
(vi)	12 pieces of sterilized eye pads in separate sealed packets.



**HEALTH, SAFETY AND ENVIRONMENT
PLAN FOR
SITE OPERATION by SUBCONTRACTORS**

POWER SECTOR

Doc no.: HSEP: 14

REV: 01

Date: 20.01.2020

Page: 37 of 43

(vii)	12 roller bandages 10 cm wide.
(viii)	12 roller bandages 5 cm wide.
(ix)	One tourniquet.
(x)	A supply of suitable splints.
(xi)	Three packets of safety pins.
(xii)	Kidney tray.
(xiii)	Sufficient number of eye washes bottles filled with distilled water or suitable liquid clearly indicated by a distinctive sign which shall be visible at all times.
(xiv)	4 per cent Xylocaine eye drops, and boric acid eye drops and soda by carbonate eye drops.
(xv)	1 (60ml) bottle containing a two percent alcoholic solution of iodine
(xvi)	One (two hundred ml) bottle of mercurochrome (2 per cent) solution in water.
(xvii)	1 (120ml) bottle containing Sal volatile having the dose and mode of administration indicated on the label.
(xviii)	1 roll of adhesive plaster (6 cmX1 meter)
(xix)	2 rolls of adhesive plaster (2 cmX1 meter)
(xx)	A snake bite lancet.
(xxi)	1 (30 grams) bottle of potassium permanganate crystals.
(xxii)	1 pair scissors
(xxiii)	1 copy of the First-Aid leaflet issued by the Director-General, Factory Advice service and labour Institutes, Government of India.
(xxiv)	a bottle containing 100 tablets (each of 5 grains) of aspirin
(xxv)	Ointment for burns
(xxvi)	A bottle of a suitable surgical anti septic solution.

(2) Adequate arrangement shall be made for immediate recoupment of the equipment when necessary.



HEALTH, SAFETY AND ENVIRONMENT PLAN FOR SITE OPERATION by SUBCONTRACTORS

POWER SECTOR

Doc no.: HSEP: 14

REV: 01

Date: 20.01.2020

Page: 38 of 43

ANNEXURE 02

HSE AUDIT/INSPECTION CHECKLIST CUM COMPLIANCE REPORT

PROJECT: _____

SUBCONTRACTOR: _____

DATE : _____

OWNER : _____

INSPECTION BY: _____

Note : write 'NA' wherever the items is not applicable

Item	Y e s	N o	Remarks	Action
HOUSEKEEPING				
Waste containers provided and used				
Passageways and walkways clear				
General neatness of working area				
Other				
PERSONNEL PROTECTIVE EQUIPMENTS				
Goggles; shields				
Face protection				
Hearing protection				
Respiratory masks etc.				
Safety belts				
Other				
EXCAVATIONS / OPENINGS				
Openings properly covered or barricaded				
Excavations shored				
Excavations barricaded				
Overnight lighting provided				
Other				
WELDING, CUTTING				
Gas cylinders chained upright				
Cable and hoses not obstructing				
Fire extinguisher (s) accessible				
Others				
SCAFFOLDING				
Fully decked platforms				
Guard and intermediate rails in place				
Toe boards in place				
Adequate shoring				
Adequate access				
Others				
LADDER				
Extension side rails 1 m above				
Top of landing				
Properly secured				



HEALTH, SAFETY AND ENVIRONMENT PLAN FOR SITE OPERATION by SUBCONTRACTORS

Doc no.: HSEP: 14

REV: 01

Date: 20.01.2020

Page: 39 of 43

POWER SECTOR

Angle + 70° from horizontal				
Other				
HOISTS, CRANES AND DERRICKS				
Condition of cables and sheaf OK				
Condition of slings, chains, hooks OK				
Inspection & maintenance log maintained				
Outriggers used				
Signals observed and understood				
Qualified operators				
Others				
MACHINERY, TOOLS & EQUIPMENT				
Proper instruction				
Safety devices				
Proper cords				
Inspection and maintenance				
Other				
VEHICLE AND TRAFFIC				
Rules and regulations observed				
Inspection and maintenance				
Licensed drivers				
Other				
TEMPORARY FACILITIES				
Emergency instructions posted				
Fire extinguishers provided				
Fire-aid equipment available				
General neatness				
Others				
FIRE PREVENTION				
Personnel instructed				
Fire extinguishers checked				
No smoking in prohibited areas.				
Hydrants				
Clearance				
Others				
ELECTRICAL				
Proper wiring				
ELCB's provided				
Ground fault circuit interrupters				
Protection against damage				
Prevention of tripping hazards				
Other				
HANDLING & STORAGE OF MATERIALS				
Properly stored or stacked				
Passageways clear				
Other				
FLAMMABLE GASES AND LIQUIDS				
Containers clearly identified				
Proper storage				
Fire extinguisher nearby				



HEALTH, SAFETY AND ENVIRONMENT PLAN FOR SITE OPERATION by SUBCONTRACTORS

POWER SECTOR

Doc no.: HSEP: 14

REV: 01

Date: 20.01.2020

Page: 40 of 43

Other				
WORKING AT HEIGHT				
Safety nets				
Safety belts				
Safety helmets				
Anchoring of safety belt to the life line rope				
ENVIRONMENT				
Lubricant waste/engine oils properly dispose.				
Waste from Canteen, offices, sanitation etc. disposed properly.				
Disposal of surplus earth, stripping materials, expired batteries, oily rags and combustible materials done properly.				
HEALTH CHECKS				
Hygienic conditions at labor camps O.K.				
Availability of first-aid facilities				
Proper sanitation at site, office & labor camps.				
Arrangement of medical facilities.				
Measures for dealing with illness.				
Availability of potable drinking water for workmen & staff.				
Provision of crèches for children.				



**HEALTH, SAFETY AND ENVIRONMENT
PLAN FOR
SITE OPERATION by SUBCONTRACTORS**

POWER SECTOR

Doc no.: HSEP: 14

REV: 01

Date: 20.01.2020

Page: 41 of 43

ANNEXURE 03

REFERENCES

- Contract documents
- Relevant legislations
- HSEMSM
- Relevant Indian standards as listed below (illustrative only):

SL NO	CODE NAME	TITLE
(1)	IS : 818-1888 (Reaffirmed 2003)	Code of Practice for safety and health requirements in Electric and Gas Welding and Cutting operations.
(2)	IS: 1179-1967 (Reaffirmed 2003)	Specification for Equipment for Eye & Face protection during welding.
(3)	IS : 1989 (Part 2):1986 (Reaffirmed 1997)	Specification for Leather Safety Boots & Shoes
(4)	IS:2925 – 1984 (Reaffirmed 2010)	Specification for Industrial Safety Helmets
(5)	IS:3521 : 1999 (Reaffirmed 2002)	Industrial Safety Belts & Harnesses-Specification
(6)	IS:3646(Part II) – 1966 (Reaffirmed 2003)	Code of Practice for Interior Illumination
(7)	IS:3696 (Part I) – 1987 (Reaffirmed 2002)	Safety Code for Scaffolds and Ladders
(8)	IS: 3696(Part 2) : 1991 (Reaffirmed 2002)	Scaffolds and Ladders-Code of Safety
(9)	IS:3786 – 1983 (Reaffirmed 2002)	Method for Computation of Frequency and Severity Rates for Industrial Injuries and Classification of Industrial Incidents
(10)	IS:4770 : 1991 (Reaffirmed 2006)	Rubber Gloves – Electricals purposes-Specification
(11)	IS:4912 : 1978 (Reaffirmed 2002)	Safety Requirements for Floor and Wall Openings, Railings and Toe Boards
(12)	IS: 5983 – 1980 (Reaffirmed 2002)	Specification for Eye-Protectors
(13)	IS:6519 – 1971 (Reaffirmed 1997)	Code of Practice for Selection, Care and Repair of Safety Footwear
(14)	IS:9167:1979	Specification for Ear-Protectors
(15)	IS:6994(Part I)-1973 (Re affirmed 1996)	Specification for Industrial Safety Gloves Leather and Cotton Gloves
(16)	IS:8519 – 1977 (Reaffirmed 1983)	Guide for Selection of Industrial Safety Equipment for Body Protection.
(17)	IS 11006 : 2011	Flash Back(Flame Arrestor) Specification



**HEALTH, SAFETY AND ENVIRONMENT
PLAN FOR
SITE OPERATION by SUBCONTRACTORS**

Doc no.: HSEP: 14

REV: 01

POWER SECTOR

Date: 20.01.2020

Page: **42 of 43**

(18)	IS:8520 – 1977 (Reaffirmed 2002)	Guide for Selection of Industrial Safety Equipment for Eye, Face and Ear Protection.
(19)	IS:9473:2002	Respiratory Protective Devices-Filtering Half Masks to protect against Particles-Specification.
(20)	IS:9944:1992 (Reaffirmed 2003)	Natural and Man-made Fiber Rope Slings-Recommendations on Safe working loads.
(21)	IS:11057 – 1884 (Reaffirmed 2001)	Specification for Industrial Safety Nets
(22)	IS:12254:1993 (Reaffirmed 2002)	Polyvinyl Chloride (PVC) Industrial Boots-Specification
(23)	IS:13367(Part 1):1992 (Reaffirmed 2003)	Safe Use of Cranes-Code of Practice
(24)	IS:14166:1994 (Reaffirmed 2002)	Respiratory Protective Devices-Full Face Masks Specification
(25)	IS:14746 : 1999 (Reaffirmed 2003)	Respiratory Protective Devices-Half Masks and Quarter Masks - Specification
(26)	IS : 15397 :2003 (Reaffirmed 2008)	Portable Extinguisher Mechanical Foam Type(Stored Pressure)-Specification
(27)	IS: 19011:2002	Guidelines for Quality and/or Environmental Management Systems Auditing



**HEALTH, SAFETY AND ENVIRONMENT
PLAN FOR
SITE OPERATION by SUBCONTRACTORS**

POWER SECTOR

Doc no.: HSEP: 14

REV: 01

Date: 20.01.2020

Page: **43 of 43**

**ANNEXURE 04 : SAFETY FORMATS
&
ANNEXURE 05 : WORK PERMIT FORMATS**

**POWER SECTOR****INSPECTION OF FIRST AID BOX**

FORMAT NO: HSEP:14-F01

REV NO.: 00

PAGE NO. 01 OF 02

Name of Site :	
Name of Sub-Contractor :	
Inspected by :	
Date of Inspection :	

Number of employees on the site: - _____

Sl.No.	Item	No. Available	Remarks
1	No. of small sterilized dressings		
2	No of medium sized sterilized dressings		
3	No of large sized sterilized dressings.		
4	No of large sized sterilized burn dressings		
5	No of (15 grams) packets sterilized cotton wool		
6	No of pieces of sterilized eye pads in separate sealed packets.		
7	No of roller bandages 10 cm wide.		
8	No of roller bandages 5 cm wide.		
9	Whether tourniquet available		
10	Whether supply of Suitable splints available.		
11	No of packets of safety pins.		
12	Whether kidney tray available		
13	Whether sufficient number of eye wash bottles, filled with distilled water or suitable liquid, clearly indicated by a distinctive sign which shall be visible at all times, available.		
14	Whether 4%-xylocaine eye drops, and boric acid eye drops and soda by carbonate eye drops available.		
15	Whether (60ml) bottle containing a two percent alcoholic solution of iodine available		
16	Whether (two hundred ml) bottle of mercurochrome (2 per cent) solution in water available.		

**POWER SECTOR****INSPECTION OF FIRST AID BOX**

FORMAT NO: HSEP:14-F01

REV NO.: 00

PAGE NO. 02 OF 02

Sl.No.	Item	No. Available	Remarks
17	Whether 120ml bottle containing Sal volatile having the dose and mode of administration indicated on the label, available.		
18	Whether roll of adhesive plaster (6 cmX1 meter) available		
19	No of rolls of adhesive plaster (2 cmX1 meter)		
20	Whether snake bite lancet available.		
21	Whether (30 grams) bottle of potassium permanganate crystals available.		
22	Whether a pair scissors available		
23	Whether copy of the First-Aid leaflet issued by the Director-General, Factory Advice service and labour Institutes, Government of India available.		
24	Whether bottle containing 100 tablets (each of 5 grains) of aspirin available		
25	Whether Ointment for burns available		
26	Whether bottle of a suitable surgical anti-septic solution available		

Signature of Subcontractor's Site I/C:

**POWER SECTOR****HEALTH CHECK UP**

FORMAT NO: HSEP:14-F02

REV NO.: 00

PAGE NO. 1 OF 02

Name of Site :	
Name of Sub-Contractor :	
Name of Employee :	

NAME:

History Of Past Illness	H/O Epilepsy
	H/O Drug Allergy
	H/O Diabetics/ Hypertension
	H/O Unconsciousness
Personal History	
EXAMINATION	
OBSERVATION	
<u>General Physical Examination</u>	
Height	:
Weight	:
BMI	:
Built And nourishment	:
Pallor	:
Temperature	:
Chest Expansion	: Inspiration Expansion
Lymph Node Enlargement	:
<u>Ear, Nose, Throat</u>	:
Ear	:
Nose	:
Throat	:

**POWER SECTOR****HEALTH CHECK UP**

FORMAT NO: HSEP:14-F02

REV NO.: 00

PAGE NO. 2 OF 02

EXAMINATION	OBSERVATION
<u>Cardiovascular System Examination :</u>	
Inspection :	
Palpation :	Pulse BP
Auscultation (Heart Sounds) :	
<u>Respiratory System :</u>	
Inspection :	Respiratory Rate
Palpation:	
Percussion :	
Auscultation (Breath Sounds) :	
<u>Examination of Abdomen :</u>	
Inspection :	
Palpation :	
Auscultation (Bowel Sounds) :	
Any Other :	
Clinical Impression	

Signature of the examining doctor

	POWER SECTOR	FORMAT NO: HSEP:14-F03 REV NO.: 00 PAGE NO. 01 OF 01
	HSE INDUCTION TRAINING	

Name of Site :	
Name of Sub-Contractor :	
Date :	
Name of Training Co-ordinator	

Sl No.	Name	Designation	Organisation	Signature

Signature of Training co-ordinator :

	POWER SECTOR	FORMAT NO: HSEP:14-F04 REV NO.: 00 PAGE NO. 01 OF 01
	TOOL-BOX TALK	

Name of Site :	
Sub-Contractors Name :	
Date :	

Topic	Name of person delivered Tool Box Talk	No. of Participants attended	Remarks

Signature of Site I/C of Subcontractor :

	POWER SECTOR	FORMAT NO: HSEP:14-F06 REV NO.: 00 PAGE NO. 01 OF 01
	PERSONAL PROTECTIVE EQUIPMENTS	

Name of Site :	
Name of Sub-Contractor :	
Inspected by :	
Date of Inspection :	

Item	Issued this Month	Nos. Issued up to the Month	Percentage of usage at site
Safety Helmet			
Safety Shoes			
Full Body Harness			
Fall Arrestor			
Safety Nets			
Other PPEs.			

Signature of Site I/C of Subcontractor :

	POWER SECTOR	FORMAT NO: HSEP:14-F07 REV NO.: 00 PAGE NO. 01 OF 01
	INSPECTION OF T&Ps	

Name of Site :	
Name of Sub-Contractor :	
Date of Inspection :	

Sl.No.	Description	Remarks
1.0	Name of equipment	
2.0	Basic Information of equipment	
2.1	Specification	
2.2	Sr. No. of equipment	
2.3	Make	
2.4	Year of manufacture	
3.0	Major repairs / overhauls(Furnish details of work carried out)	Date(s) of major repair/overhaul
3.1		
3.2		
3.3	Repairs carried out at site	
4.0	Any performance test conducted	Yes/No
5.0	Document Submitted	Yes/No
6.0	Manufacturer's test / guarantee certificate	Available/ Not available
7.0	Performance test	Done/ Not Done
8.0	Acceptance Norms	
9.0	Committee Observations	
10.0	Date of next review (if accepted)	

Signature-Site Safety Officer (BHEL)	Signature-Subcontractor/ Subcontractor's Safety Officer
--	--

	POWER SECTOR	FORMAT NO: HSEP:14-F08 REV NO.: 00 PAGE NO. 01 OF 01
	STATUS OF T&Ps	

Name of Site	
Name of Sub-Contractor	
Date of Inspection	

Item	Nos. Deployed	Identification No.	Nos. Tested by competent person	Validity of Test Certificate
Winches				
Chain Blocks				
Wire Rope Slings				
Man Cages				
D-Shackles				
Air Compressors				
Crawler Cranes				
Mobile Cranes				
Hydra Cranes				
Others				

Signature of Site I/C of subcontractor:

**POWER SECTOR****INSPECTION OF CRANES AND WINCHES**

FORMAT NO: HSEP:14-F09

REV NO.: 00

PAGE NO. 01 OF 03

Name of Site :	
Name of Sub-Contractor :	
Inspected by :	
Date of Inspection:	

Crane Reg. No (Make/Model)

Name of Driver/Operator

Sl.no.	Description	Observation	Measures
1	Valid Driving license		
2	Hook & Hook Latch		
3	Over Hoist limit switch		
4	Boom limit switch		
5	Boom Angle Indicator		
6	Boom limit cutoff switch		
7	Condition of Boom		
8	Condition of ropes		
9	Number of load lines		
10	Size and condition of the slings		
11	Stability of the cranes		
12	Soil Condition		
13	Swing Break And Lock		
14	Proper Break And Lock		
15	Hoist Break And Lock		
16	Boom Break And Lock		
17	Main Clutch		
18	Leakage in Hydraulic Cylinders		
19	Out riggers fully extendable		
20	Tyre pressure		
21	Condition of Battery And Lamps		

**POWER SECTOR****INSPECTION OF CRANES AND WINCHES**

FORMAT NO: HSEP:14-F09

REV NO.: 00

PAGE NO. 2 OF 03

Sl.no.	Description	Observation	Measures
22	Guards of moving and rotating parts		
23	Load chart provided		
24	Number and position of pedant ropes		
25	Reverse Horn		
26	Load Test Details		
27	Operator's fitness		
28	Pollution under control certificate		
29	Fire extinguisher of appropriate type.		
30	Training of the operator		

WINCH

Sl. No.	Description	YES	NO	NA	Remarks
1	Has the copy of Third Party Inspection certificate been provided in winch machine shed?				
2	Is winch machine operator experienced enough to operate the winch machine?				
3	Is the winch machine operated by someone other than the winch machine operator?				
4	Is there guard provided in all moving parts like wheel and motor's shaft?				
5	Will it protect against unforeseen operational contingencies?				
6	Are brakes, clutch and locking arrangement working properly?				
7	Has it been ensured that the guard does not constitute a hazard by itself?				
8	Are the cranks and the connecting rods protected by guardrails?				
9	Is there provision for fully covered shed with wooden plank roof?				

**POWER SECTOR****INSPECTION OF CRANES AND WINCHES**

FORMAT NO: HSEP:14-F09
REV NO.: 00
PAGE NO. 3 OF 03

Sl. No.	Description	YES	NO	NA	Remarks
10	Is wire rope free from any kind of damage or wear and tear?				
11	Is split pin provided for the protection of clutch and brake locking arrangement?				
12	Is pulley inspected by competent person and certified before use?				
13	Is pulley free from any wear and tear visually?				
14	Is winch rope barricaded with clipsheet for the protection of rope and person?				
15	Is the wire rope lubricated by cardium oil?				
16	Is there any friction in wire rope which may damage the wire rope rather than the rolling parts?				
17	Is there any oil leakage in the hydraulic system of the winch machine?				
18	Has it been ensured that the guard will not cause discomfort or inconvenience to operator?				
	Total Number of NO:				
	Total Number of NA:				
	% Compliance :				

Signature of Site I/C of subcontractor :

	POWER SECTOR	FORMAT NO: HSEP:14-F10 REV NO.: 00 PAGE NO. 01 OF 02
	INSPECTION OF HEIGHT WORKING	

Name of Site :	
Name of Sub-Contractor :	
Inspected by :	
Date of Inspection:	

Sl. No.	Descriptions	Observation (Yes/No)	Remarks
1	All the workers have been explained safe work method?		
2	An established communication system has been established and explained to the workers.		
3	Adequate illumination has been ensured.		
4	Work area inspected prior to the start of the work.		
5	Area below the work place barricaded, particularly below hot work.		
6	Workers provided with bags /box to carry bolts, nuts and hand tools		
7	Arrangement for fastening hand tools made.		
8	All work platforms ensured to be of adequate strength and ergonomically suitable.		
9	Fabricated makeshift arrangements are checked for quality and type of material welding, anchoring etc.		
10.	Work at more than one elevation at the same segment is restricted.		
	ACCESS/EGRESS		
1	Walkways provided with handrail, mid-rail and toe guard?		
2	All checkered plates, gratings properly welded/ bolted?		
3	Are ladders inspected and they are in good condition?		
4	Are ladders spliced?		
5	Are ladders properly secured to prevent slipping, sliding or falling?		
6	Do side rails extend 36" above top landing?		
7	Are built up ladders constructed of sound materials?		

**POWER SECTOR****INSPECTION OF HEIGHT WORKING**

FORMAT NO: HSEP:14-F10

REV NO.: 00

PAGE NO. 02 OF 02

Sl. No.	Descriptions	Observation (Yes/No)	Remarks
8	Are rugs and cleats not over 12" on center?		
9	Metal ladders not used around electrical hazards.		
10	Proper maintenance and storage.		
11	Ladders placed at right slope.		
12	Ladders / staircases welded/ bolted properly.		
13	Any obstruction in the stairs.		
14	Are landing provided with handrails, knee rails, toe boards etc.?		
15	Whether ramp is provided with proper slope.		
16	Proper hand rails / guards provided in ramps.		
	Housekeeping		
1	Walkways, aisles & all overhead workplaces cleared of loose material.		
2	Flammable materials, if any, are cleared.		
3	All the de shuttering materials are removed after de shuttering is done.		
4	Platforms and walkways free from oil/grease or other slippery material.		
5	Collected scrap are brought down or lowered down and not dropped from height.		
	PPE And Safety Devices		
1	Use of safety helmet, safety belts ensured for all workers		
2	Anchoring points provided at all places of work.		
3	Common lifeline provided wherever linear movement at height is required.		
4	Safety nets are use wherever required.		
5	Proper fall arrest system is deployed at critical workplaces.		
6	Crawler boards/Safety system or works on fragile roof are used.		

Signature of Site I/C of subcontractor :

**POWER SECTOR****INSPECTION OF WELDING AND GAS
CUTTING**

FORMAT NO: HSEP:14-F11
REV NO.: 00
PAGE NO. 1 OF 02

Name of Site	
Name of Sub-Contractor	
Inspected by	
Date of Inspection	

Welding				
Sl.no.	Description	Y e s	N o	Remarks
1	Is electric connection given through 30 mA ELCB/RCCB to welding m/c?			
2	Is electric cable fitted properly in junction box on m/c?			
3	Is electrical cable free from joints?			
4	Are the joints attached firmly & insulated with tape?			
5	Is double earthing given to body of m/c?			
6	Is the physical condition of the m/c good?			
7	Is ON/OFF switch connected to the m/c is working and in good condition?			
8	Are indication lamps on m/c working?			
9	Is the electrode holder in good condition?			
10	Are the cables of the welding m/c lugged & tight properly?			
11	Are return lead connected properly (Rod, Angle, Channels shall not be used)			
	Total No of NO			
	Total No of YES			

**POWER SECTOR****INSPECTION OF WELDING AND GAS
CUTTING**

FORMAT NO: HSEP:14-F11
REV NO.: 00
PAGE NO. 2 OF 02

Gas Cutting				
Sl. no	Description	Yes	No	Remarks
1	Are Cylinders kept on trolleys?			
2	Physical condition of Gas cylinders Good?			
3	Is there Oil/Grease on valve of the cylinder?			
4	Are pressure regulators in good condition?			
5	Condition of hose pipe OK?			
6	Are hose pipe clamped with hose clip?			
7	Is flash back arrestor & NRV fitted on torch both for O2 and LPG cylinder?			
8	Is nozzle of the torch cleaned?			
	Total Number of NO			
	Total No of YES			
	% Compliance			

Signature of Site I/C of subcontractor :

	POWER SECTOR	FORMAT NO: HSEP:14-F12 REV NO.: 00 PAGE NO. 01 OF 02
	INSPECTION OF ELECTRICAL INSTALLATION	

Name of Site	
Name of Sub-Contractor	
Inspected by	
Date of Inspection:	

Sr. No.	Contents	Yes/No	Remarks
A	Cable		
1.	Whether the condition of cable is checked?		
2.	Are cables received from other sites checked for insulation resistance before putting them into use?		
3.	Are all main cables taken either underground / overhead?		
4.	Are welding cables routed properly above the ground?		
5.	Are welding and electrical cables overlapping?		
6.	Is any improper joining of cables/wires prevailing at site?		
B	DBs/SDBs		
1.	Is earth conductor continued up to DB / SDB?		
2.	Whether DBs and extension boards are protected from rain / water?		
3.	Is there any overloading of DBs / SDBs?		
4.	Are correct / proper fuses & CBs provided at main boards and sub-boards?		
5.	Is energized wiring in junction boxes, CB panels & similar places covered all times?		
C	ELCB		
1.	Whether the connections are routed through ELCB?		
2.	Is ELCB sensitivity maintained at 30 mA?		

**POWER SECTOR****INSPECTION OF ELECTRICAL INSTALLATION**

FORMAT NO: HSEP:14-F12

REV NO.: 00

PAGE NO. 02 OF 02

Sr. No.	Contents	Yes/No	Remarks
3.	Are the ELCB numbered and tested periodically & test results recorded in a logbook countersigned by a competent person?		
D	Grounding		
1.	Is natural earthing ensured at the source of power (main DB at Generator or Transformer)?		
2.	Whether the continuity and tightness of the earth conductor are checked?		
3.	Mention the gauge of the earth conductor used at the site.		
4.	Mention the value of Earth Resistance.		
E	Electrically operated Machines or Accessories.		
1.	Whether the plug top is provided everywhere.		
2.	Are all metal parts of electrical equipment and light fittings / accessories grounded?		
3.	Is there any shed or cover for welding machines?		
4.	Are halogen lamps fixed at proper places?		
5.	Are portable power tools maintained as per norms?		
6.	Any other information:		

Signature of Site I/C of subcontractor :

**POWER SECTOR****INSPECTION OF ELEVATOR**

FORMAT NO: HSEP:14-F13

REV NO.: 00

PAGE NO. 01 OF 01

Name of Site	
Name of Sub-Contractor	
Inspected by	
Date of Inspection	

Sr. No.	Description	Remarks
1.0	Name of equipment	
2.0	Basic Information of equipment	
2.1	Specification	
2.2	Sr. No. of equipment	
2.3	Make	
2.4	Year of manufacture	
3.0	Major repairs/overhauls(Furnish details of work carried out)	Date(s) of major repair/overhaul
3.1		
3.2		
3.3	Repairs carried out at site	
4.0	Any performance test conducted	Yes/No
5.0	Document Submitted	Yes/No
6.0	Manufacturer's test / guarantee certificate	Available/ Not available
7.0	Performance test	Done/ Not Done
8.0	Acceptance Norms	
9.0	Committee Observations	
10.0	Date of next review (if accepted)	

Signature-Subcontractor/ Subcontractor's
Safety Officer

Signature-Site Safety Officer (BHEL)

	POWER SECTOR	FORMAT NO: HSEP:14-F13E REV NO.: 00 PAGE NO. 01 OF 01
	Inspection of Excavation	

Name of Site :	
Name of Sub-Contractor :	
Inspected by :	
Date of Inspection :	

Sl.no.	Description	Yes	No	Remarks
1	Precautions taken for Underground Electrical Cable			
2	Precautions taken for Under / Above ground sewer/ Drinking Water Line			
3	Precautions taken for Underground Telecommunication Line			
4	Precautions taken for Underground Product/Utility Line			
5	Precautions taken for Underground Fire Water Line			
6	Shoring / Shuttering / Sheet piling done to prevent collapse of excavation walls. Strength of Excavation wall ensured at all times			
7	Slope Cutting / Angle Maintained			
8	Hard Barricading & Edge Protection provided			
9	Separate Safe Access for Man and Vehicle			
10	Lighting arrangement			
11	Banksman Provided			
12	Required basic PPEs provided			
13	Excavated soil / Construction Material / equipment kept away from the edge.			
14	First aid in attendance.			
15	Other:			
	Total No of YES			

Signature-Subcontractor/ Subcontractor's Safety Officer

Signature-Site Safety Officer (BHEL)

**POWER SECTOR****HSE PENALTY**

FORMAT NO: HSEP:14-F14

REV NO.: 00

PAGE NO. 1 OF 02

Sub: MEMO for Penalty for non-compliances in Safety

Following lapse (tick marked) was observed and penalty is imposed as stated at the bottom of this memo. It is requested that such occurrences be please avoided in future.

Safety Area

SN	Violation of Safety Norms	Fine (in Rs)
01.	Not Wearing Safety Helmet	200/- *
02.	Not wearing Safety Belt or not anchoring life line	500/-*
03.	Not wearing safety shoe	200/-*
04.	Not keeping gas cylinders vertically	200/-
05.	Not using flash back arrestors	100/-
06.	Not wearing gloves	50/- *
07.	Grinding Without Goggles	50/- *
08.	Not using 24 V Supply For Internal Work	500/-
09.	Electrical Plugs Not used for hand Machine	100/-
10.	Not Slings properly	200/-
11.	Using Damaged Sling	200/-
12.	Lifting Cylinders Without Cage	500/-
13.	Not Using Proper Welding Cable With Lot of Joints And Not Insulated Property.	200/-
14.	Not Removing Small Scrap From Platforms	500/-
15.	Gas Cutting Without Taking Proper Precaution or Not Using Sheet Below Gas Cutting	500/-
16.	Not Maintaining Electric Winches Which are Operated Dangerously	500/-
17.	Improper Earthing Of Electrical T&P	500/-
18.	No or improper barricading	500/-
19.	Activity carried out without Safety work permit (Height work, Lifting activity, Hot work-each person/case)	1000/-
20.	Incident Resulting in Partial Loss in Earning Capacity	25,000/- per victim
21.	Fatal Incident Resulting in total loss in Earning Capacity	1,00,000/- per victim for first instance #

Legend: -

*: per head. For repeated violation by the same person, the penalty would be double of the previous penalty. Date of "Repeated violation" will be counted from subsequent days.

#: or as deducted by customer, whichever is higher. For repeated fatal incident in the same Unit incremental penalty to be imposed. The subcontractor will pay 2 times the penalty compared to previously paid in case there are repeated cases of fatal incidents under the same subcontractor for the same package in the same unit.

1 Copy to Site Construction Manager (BHEL)

	POWER SECTOR- HQ	FORMAT NO: HSEP:14-F15 REV NO.: 00 PAGE NO. 01 OF 01
	Incident Report (To be submitted within 24 hours of time of incident)	

Type of incident: Fatal/Major/ Minor/Fire/Property Damage/Near-miss

1	NAME OF SITE		3	ACTIVITY AREA	
2	SCOPE OF WORK		4	NAME OF CONTRACTOR	
			5	NAME & DESIGNATION OF BHEL ACTIVITY I/C	
6	DATE & TIME OF ACCIDENT		7	DATE RESUMED	
8	NO. OF WORK-DAYS LOST BY VICTIM (If duty not resumed, give estimated figure)				
9	NO. OF MANHOURS LOST BY OTHERS				
10	PERSONAL DETAILS OF INJURED AND / OR DETAILS OF MATERIALS / EQUIPMENT / PROPERTY DAMAGED				
NAME			NAME OF MATERIAL / EQUIPMENT / PROPERTY		
PERIOD OF EMPLOYMENT					
AGE	YRS	SEX	MALE/ FEMALE	ESTIMATED COST	ACTUAL COST
MARITAL STATUS		SINGLE / MARRIED			
OCCUPATION		NATURE OF DAMAGE			
PART OF BODY INJURED					
NATURE OF INJURY					
AGENCY (OBJECT / EQUIPMENT / SUBSTANCE) MOST RESPONSIBLE FOR CAUSING ACCIDENT / INJURY / DAMAGE					
12	PERSON (NAME & DESIGNATION) WITH MOST CONTROL OVER AGENCY (OBJECT / EQUIPMENT / SUBSTANCE) CAUSING ACCIDENT INJURY / DAMAGE				
13	DESCRIBE CLEARLY HOW THE ACCIDENT OCCURRED (USE ADDITIONAL SHEET, IF REQUIRED)				
ANALYSIS					
14	WHAT ACTS AND / OR CONDITIONS CONTRIBUTED MOST DIRECTLY TO THIS ACCIDENT				
15	WHAT ARE THE BASIC REASON FOR THE EXISTENCE OF THESE ACTS AND / OR CONDITION ?				
16	WHAT CORRECTIVE ACTIONS HAVE BEEN TAKEN TO PREVENT ACCIDENT RECURRENCE ?				
	DATE :		SIGNATURE OF SITE HSE COORDINATOR		
17	COMMENTS OF HEAD / SOX				
	DATE:		SIGNATURE OF HEAD/SOX		



POWER SECTOR

Format for Monthly HSE Planning & Review

FORMAT NO: HSEP:14-F30

REV NO.: 00

PAGE NO. 01 OF 3

Note: This is a template and can be modified in consultation with BHEL

Name of the Site		Name of the Subcontractor	
Scope of Work		Date	
PART- A: PLAN OF HSE ACTIVITIES FOR THE MONTH OF.....		PART-B: REVIEW ON	
SN.	Description of HSE Activity & Formats	Plan & Targets for the month	Review
1	Availability of First Aid Box at Required Places and Inspection thereof as per Format: Fo1	Areas 1.	
2	Health check-up as per Format: Fo2	Health check-up for Nos 1. New inductees 2. Drivers & Operators 3. Workers in following high risk areas: a. ...	
3	Induction training of newly joined workers as per Format: Fo3	Minimum No. of workers:	
4	Toolbox talks (TBT) conducted before start of work as per Format: Fo4	Locations of TBTs & No. of workers 1. ...	
5	PPE usage and issue as per Format: Fo6		
6	Inspection of T&Ps as per Format: Fo7	List of T&Ps to be inspected 1.	
7	Identification & Inspection Status of T&Ps as per Format: Fo8		
8	Inspection of Cranes & Winches as per Format: Fo9	List of Cranes & Winches & Nos. 1. ...	
9	Inspection of Height Working as per Format: F10	Areas: 1. ...	
10	Inspection of Welding & Gas Cutting operations as per Format: F11	Areas: 1. ...	
11	Inspection of Electrical Installations as per Format: F12	Locations: 1. ...	
12	Inspection of Elevators (as applicable) as per Format: F13	Locations: 1. ...	
13	Inspection of Excavation as per Format: F13E	Locations: 1. ...	



POWER SECTOR

Format for Monthly HSE Planning & Review

FORMAT NO: HSEP:14-F30

REV NO.: 00

PAGE NO. 02 OF 3

SN.	Description of HSE Activity & Formats	Plan & Targets for the month	Review
14	Job Safety Analysis as per Format F32B	Activities: 1. ...	
15	Regular Job Specific Training (Re-training) for workers involved in hazardous activities	Topics/ Hazards & No. of workers 1. ...	
16	Mass housekeeping (HK) drive in work areas	Areas 1. ...	
17	Vertigo Test of Height workers	Minimum No. of workers:	
18	Deployment of qualified HSE Officers as per contract	Location(s) & Nos. 1. ...	
19	Deployment of qualified HSE Stewards as per contract	Location(s) & Nos. 1. ...	
20	Deployment of Safety tools & Equipment (Safety Nets, Lifelines, Fall arrestors, Man-cages, flashback arrestors, scaffolding etc.)	Tool/ Equipment & Location 1. ...	
21	Safety Walks by site in charge of agency (4 -Weekly once)	Dates:	
22	Safety walks by departmental head (8-Weekly twice)	Dates:	
23	Availability/ deployment of Safety posters/ placards/ signage at strategic locations	Locations: Nos. 1. ...	
24	Provision of clean drinking water sources for workers	Locations: Nos. 1. ...	
25	Provision of toilets for workers (separate for male & female workers)	Locations: Nos. 1. ...	
26	Rest sheds for workers during lunchtime, rain, dust storm etc.	Locations: Nos. 1. ...	
27	Availability of following in Labor colony	1. Clean drinking water 2. Toilets 3. Cleanliness & Hygiene 4. Grass cutting, 5. Fogging 6. Electrical Inspection ...	



POWER SECTOR

Format for Monthly HSE Planning & Review

FORMAT NO: HSEP:14-F30

REV NO.: 00

PAGE NO. 03 OF 3

SN.	Description of HSE Activity & Formats	Plan & Targets for the month	Review
28	Availability of dust/ waste bins at various locations	Locations: 1. ...	
29	Availability of Ambulance (individual/ joint) in each shift	Ambulance No.	
30	Availability of emergency vehicle in each shift	Emergency vehicle	
31	Deployment/ Availability of tested Fire Extinguishers	Locations & Nos. 1. ...	
32	Tree plantation	Locations & Nos. 1. ...	
33	Waste disposal & Scrap Bins	Locations 1. ...	
34	Illumination checks	Locations 1. ...	
35	Safety award function: 1. Display of good practices Award presentation	Minimum 1 per month	
36	Submission of Daily Reports as per Format No.F31A	Daily Reports (Night & Day Shifts)	

PLAN		REVIEW	
<u>Agency</u> Name:	<u>BHEL</u> Name:	<u>Agency</u> Name:	<u>BHEL</u> Name:
Sign:	Sign:	Sign:	Sign:
Date:	Date:	Date:	Date:



	POWER SECTOR	FORMAT NO: HSEP:14-F31 A REV NO.: 00 PAGE NO. 01 OF 1
	Format for Daily HSE Reporting	

	POWER SECTOR	FORMAT NO: HSEP:14-F31 A REV NO.: 00 PAGE NO. 01 OF 1
	Format for Daily HSE Reporting	

	POWER SECTOR	FORMAT NO: HSEP:14-F31 A REV NO.: 00 PAGE NO. 01 OF 1
	Format for Daily HSE Reporting	

	POWER SECTOR	FORMAT NO: HSEP:14-F31 A REV NO.: 00 PAGE NO. 01 OF 1
	Format for Daily HSE Reporting	

	POWER SECTOR	FORMAT NO: HSEP:14-F31 A REV NO.: 00 PAGE NO. 01 OF 1
	Format for Daily HSE Reporting	

	POWER SECTOR	FORMAT NO: HSEP:14-F31 A REV NO.: 00 PAGE NO. 01 OF 1
	Format for Daily HSE Reporting	

Night		Day	SHIFT	Year	Site
			Submitted By		
			Work Area(s)		
			Staff		
			Man-Power		
			Safety Officers		
			Safety Stewards		
			Tool Box (Topics and No. of Participants)		
			Induction Training (No. of Participants)		
			Vertigo Test (Numbers Tested)		
			On-the-Job Training (Topic & participants)		
			Work Permits		
			Job Safety Analyses conducted		
			Height Work Inspection		
			Other Hazardous Activities Inspection		
NA			T&P Inspection (Names & Nos. Inspected)		
			Safety Walk (Designation, Areas)		
NA			HSE Meeting		
NA			Safety Reward (Details)		
NA			Housekeeping/ Dust Suppression/ Tree Plantation Activities (Locations/Details)		
			Lost time Accident		
			Restricted Work Case		
			Medical Treatment Case		
			First Aid Case		
			Near miss		
			Property Damage/ Fire		
			Non-Compliances Submitted by BHEL		
			Complied by Agency		
			Any other Remarks/ Inputs		



POWER SECTOR

Job Safety Analysis Format

FORMAT NO: HSEP:14-F32B

REV NO.: 00

PAGE NO. 01 OF 1

Name of the Site	
Name of the Subcontractor	
Activity, Area	

HAZARDS				PRECAUTIONS	

(Name)	Submitted By (Agency HSE)		Reviewed By (BHEL Execution)		Approved By (BHEL HSE)	
(Sign)						
(Date)						



POWER SECTOR- HQ

Checklist for Evaluation of HSE Performance

FORMAT NO: HSEP:14-F33

REV NO.: 00

PAGE NO. 01 OF 3

SL	Parameter for Measurement	M/ O	Wt	Supporting Documents
1a	Induction training for new workers conducted through audio-visual medium & documented ?	M	1	Induction Training Records
1b	Tool box talk conducted regularly as per plan, and documented?	M	1	Toolbox Talk Records
1c	Contractor in charge and safety in charge attended safety meetings?	M	2	Minutes of Meeting
1d	Whether observations in safety meetings are complied before next meeting?	M	2	-do-
1e	Preparation and submission of Monthly HSE report within stipulated time	M	1	Report submission date
1f	Preparation and submission of Incident/near-miss report and RCA Report (as applicable) within stipulated time	M	1	Incident/ Near Miss Records
1g	Carrying out Inspections and submission of Inspection reports within stipulated time	M	1	Inspection Records
1h	Regular Job Specific Training ensured for High Risk Workers (through audio-visual medium) as per plan	M	1	Training & Attendance Records
2a	Whether the contractor is registered under BOCW	M	2	BOCW Registration Certificate
2b	Availability of Qualified safety officer (1 for every 500 labour)	M	2	Safety Officer qualification & experience records
2c	Availability of Qualified safety supervisor (1 for every 100 labour)	M	2	Safety Officer qualification & experience records
2d	All the workers are provided and using safety helmets and safety shoes/gum boots	M	2	PPE Issue Records, Inspection/ non-conformity records
2e	Housekeeping done on regular basis and scrap removal at site	M	1	Housekeeping records, Inspection/ non-conformity records
2f	Usage of Goggles/Face shields and Hand gloves for gas cutter and grinders		1	PPE Issue Records, Inspection/ non-conformity records
2g	Wall openings & floor openings are guarded?		1	Inspection/ non-conformity records
2h	Adequate illumination provided in all working area?		1	Inspection/ non-conformity records
2i	Safety posters, sign boards and emergency contact numbers in all prominent location are displayed?		1	Inspection/ non-conformity records
2j	Availability of automatic reverse horns, Main horn, hook latches for Vehicles, mobile cranes, Hydras		1	Inspection/ non-conformity records
2k	Ban of carrying mobile phones to work place is implemented for workers		1	Inspection/ non-conformity records
2l	Availability of Tags & Inspection Certificates for Cranes of all capacities		1	Master T&P List with internal & external test details
2l.2	Availability of Tags & Inspection Certificates for Winches of all capacities		1	Master T&P List with internal & external test details
2l.3	Availability of Tags & Inspection Certificates, color coding for Chain pulley blocks		1	Master T&P List with internal & external test details
2l.4	Availability of Tags & Inspection Certificates for Vehicles - Trailers, Dozers, Dumpers, Excavators. Mixers etc.		1	Master T&P List with internal & external test details
2l.5	Availability of Tags & Inspection Certificates for Welding machines, grinders, Drilling machines, etc.		1	Master T&P List with internal & external test details
2l.6	Availability of Tags & Inspection Certificates, colour coding for Wire rope slings etc.		1	Master T&P List with internal & external test details
2l.7	Availability of Tags & Inspection Certificates for Batching plants		1	Master T&P List with internal & external test details

**POWER SECTOR- HQ**

FORMAT NO: HSEP:14-F33

REV NO.: 00

PAGE NO. 02 OF 3

Checklist for Evaluation of HSE Performance

SL	Parameter for Measurement	M/ O	Wt	Supporting Documents
2m.1	Use of Lifting Permit as per requirement		1	Permit Records
2m.2	Use of Height Permit as per requirement		1	Permit Records
2m.3	Use of Hot Work Permit as per requirement		1	Permit Records
2m.4	Use of Excavation permit as per requirement		1	Permit Records
2m.5	Use of Confined space work permit as per requirement		1	Permit Records
2m.6	Use of Grating removal and safety net removal permit as per requirement		1	Permit Records
2m.7	Use of Lockout-Tag out permit as per requirement		1	Permit Records
2m.8	Use of Radiography permit as per requirement		1	Permit Records
2m.9	Use of Night/ Holiday Work Permit as per requirement		1	Permit Records
2m.10	Use of Any other Applicable Permit as per requirement		1	Permit Records
3a	Material safety data sheet(MSDS) available for all chemicals and displayed in usage and storage area?		1	Inspection/ non-conformity records
3b	Spillages of oil/concrete and other chemical is controlled and cleaned by proper method in case of spill?		1	Inspection/ non-conformity records
3c	Availability of adequate number of urinals in workplace and in elevations and maintained	M	1	
3d	Availability of rest rooms for workers at site	M	1	
3e	Availability of Drinking water facility at work spot		1	
3f	Hygienic Labour colony is provided for workers.		1	
4a	Is heavy/complex critical lifting permit obtained for heavy, complex materials before handling/erection activity?		1	Work Permit records
4b	Whether area below lifting activities barricaded		1	Inspection/ non-conformity records
4c	Availability of experienced rigging foreman		1	Experience details of rigging foreman
4d	Is agency is following proper storage and handling procedure as per manufacturer standard for all hazardous material?		1	Procedure for storage & handling
4e	Are oxygen and acetylene cylinders are transported to work place from storage area in trolleys		1	
5a	Whether all deep excavation has been protected by barrier		1	Inspection/ non-conformity records
5b	Sloping/benching & shoring provided for excavation as per requirement?		1	-do-
5c	Proper access and egress provided for excavations?		1	-do-
5d	Blasting is done in controlled manner?		2	-do-
6a	Whether Electrical booth is equipped with Co ₂ fire extinguishers and fire buckets filled with sand?		2	Inspection/ non-conformity records
6b	Availability of Illumination lamp in electric booth?		1	-do-
6c	whether Caution Boards have been displayed?		1	-do-
6d	Usage of Metal Plug top for all hand power tools ?		1	-do-
6e	Usage of Insulated welding cables.		1	-do-
6f	Electrical Booth/Distribution Board to be covered by proper Canopy.		1	-do-
6g	Availability of functional & individual 30mA ELCB / RCCB and MCB for protection and conducting periodical check-up?		1	-do-
6h	Double earthing for panel boards and all machinery & proper earth pit with regular inspection available?		1	-do-
6i	Whether Electrician is qualified and experienced		1	Qualification & Experience records of electrician
6j	Availability and usage of Rubber hand gloves by electrician?		1	Inspection/ non-conformity records

**POWER SECTOR- HQ****Checklist for Evaluation of HSE Performance**

FORMAT NO: HSEP:14-F33

REV NO.: 00

PAGE NO. 03 OF 3

SL	Parameter for Measurement	M/ O	Wt	Supporting Documents
7a	Whether Scaffolding pipes made with steel or aluminum, are being used and checked periodically by experienced/ certified scaffolder?		2	Inspection/ non-conformity records
7b	8mm Stainless Steel wire rope with plastic cladding is provided for life line (Vertical / Horizontal) during height work?		2	-do-
7c	Availability of emergency lighting in case of power failure		1	-do-
7d	Whether all the openings are covered with Safety Nets made of fire proof Nylon?		1	-do-
7e	Whether MS pipe rails around staircases & platforms in usage are provided with top, middle rails and toe guard ?		1	-do-
7f	Whether Ladder with vertical life line /Fall arrestor is available to climb?		1	-do-
7g	Whether all workers deployed for working at height have been issued height pass after undergoing vertigo test?		1	Height Pass records
7h	Whether all workers deployed for height work / climbing ladder are provided and using Double lanyard safety belt?		1	PPE Issue records, inspection/ non-conformity reports
7i	Is all hand tools/Small material used by height workers is tied firmly to prevent fall?		1	-do-
8a	Flash back arrestors for all gas cutting sets is available on Torch side and cylinder side		1	Inspection/ non-conformity records
8b	Oxygen/Acetylene/LPG cylinders not in use have caps in place and stored separately?		1	-do-
8c	Availability of Face screen, Hand gloves, and Apron, for welders		1	-do-
8d	Protection from falling hot molten metal during metal cutting / welding at height by providing GI sheet below the cutting area especially in fire prone areas		1	-do-
9a	Pre-employment medical check-up done for all workers and submitted?		1	Medical check records
9b	Availability of first aid center, with MBBS doctor(Own or Sharing basis)	M	2	Attendance records
9c	Availability of Ambulance facility 24 hours (Own or sharing basis)	M	2	-do-
9d	Is First aid trained personnel's are available and their names are displayed at site?	M	1	-do-
9e	Availability of Emergency vehicle at site		1	
9f	Periodical medical check-up is conducted for all the workers and submitted?		1	Medical check records
9g	Availability of sufficient number of first aid box as per standard list and maintaining record		1	Inspection records
10a	Availability of Fire extinguishers, buckets at all vulnerable points		2	Fire extinguisher records
10b	Periodic fire mock drill conducted?		1	Fire, Mock drill records
10c	Are all flammable materials are stored separately?		1	
10d	Periodic grass cutting is done in material storage area?		1	
10e	Availability of 24V DC lighting in confined space work area		1	
10f	Availability of exhaust fan in confined space work area		1	

Note:

- **M: Mandatory; O: Optional.** Points other than mandatory can be excluded with appropriate justification (scope etc.) by BHEL
- Additionally: 30 Marks for each Fatal Accident and 10 mark for each major accident shall be deducted.



SAFETY WORK CLEARANCE

Permit no. _____

Project: _____

Emergency Contact Nos: _____

Subcontractor: _____

BURNING/WELDING /HOT WORK PERMIT

Area : _____ Date: _____ Time: _____

Name of Site Engineer (Permit Requesting Authority): _____ Sign: _____

Name of Work Performing Contractor: _____

Name of Package In charge: _____ Sign: _____ Date: _____

Description of Work: _____

Work Execution Date: _____ Time Valid from: _____ to _____

The above signing person(s) will be responsible to ensure that the above described work will be done under all the safety precautions mentioned on the permit to work.

The following precautions are to be taken:

No.	Item	Yes	Not required
1.	Proper Access/Exit available		
2.	Proper ventilation and /or lighting provided.		
3.	Proper and safe scaffolding, platform, ladder provided.		
4.	Welding machine located in a clean and dry area.		
5.	Welding machine grounded at the equipment and proper leakage current protection device (ELCB) provided for welding machine.		
6.	Emergency STOP buttons are in working condition. Welder /Helper knows how to operate it.		
7.	Welding machine input/output cables, welding holder and weld return clamp (Holder) are insulated and in good condition.		
8.	Welder & Fitter trained to connect ground/work return clamps (Holder) to work place prior to energization of welding machine.		
9.	Gas cylinders are stacked vertically and not below the welding / cutting area. Regulator key is available with cylinder.		
10.	Pressure gauges/Flash back arrestor provided and in working condition.		
11.	Personal Protective equipment Minimum applicable: safety helmet, safety goggles, welding helmet, safety shoes, leather gloves, long sleeve and nose mask -provided		
12.	In case of pits, water removed from the pit and wood/rubber insulation provided.		
13.	Safety signboards are in place.		
14.	Adequate and Suitable nos. of fire fighting extinguisher provided.		
15.	Nearby combustible material removed. Housekeeping done.		
16.	Other		

Name of Contractor Safety Officer: _____ Sign: _____ Date: _____ Time: _____

Reviewed and approved by BHEL Site Engineer (Permit Issuing Authority):

Name: _____ Sign: _____ Date: _____ Time: _____

Name of BHEL Safety Representative: _____ Sign: _____

I understand the precaution to be taken as described above and as per project requirement and hereby confirm that work will be executed under my supervision by following all precaution and Safety Rules.

Name of Work Performing Authority: _____ **Sign:** _____ **Date:** _____ **Time:** _____**Permit Cancellation:**

I hereby declare that the work is complete, all workers under my control have been withdrawn and the site restored to safe tidy condition.

Name of Work performing Authority: _____ Sign: _____ Date: _____ Time: _____

Name of Site Engr. (Permit Requesting Authority): _____ Sign: _____ Date: _____ Time: _____

Name of BHEL Site Engr. (Permit Issuing Authority): _____ Sign: _____ Date: _____ Time: _____

(This permit is valid only for the date it is issued)

Original at BHEL site

Second Copy – BHEL SAFETY

Third Copy : Contractor



SAFETY WORK CLEARANCE

Permit no. _____

Project: _____

Emergency Contact Nos: _____

Subcontractor: _____

LIFTING ACTIVITY PERMIT

Area : _____ Date: _____ Time: _____

Name of Site Engineer (Permit Requesting Authority): _____ Sign: _____ Name of Work

Performing Contractor: _____

Name of Package In charge: _____ Sign: _____ Date: _____

Description of Work: _____

Work Execution Date: _____ Time Valid from: _____ to _____

The above signing person(s) will be responsible to ensure that the above described work will be done under all the safety precautions mentioned on the permit to work.

The following precautions are to be taken:

No.	Item	Yes	Not required
1.	Crane used for lifting activity tested, certified and approved for rated lifting		
2.	All lifting tackles, gears/appliances are tested and certified for lifting works.		
3.	Crane operator is trained and competent for lifting operation.		
4.	Lifting sling/ belt is protected against sharp edge of the jobs to be lifted.		
5.	Access and exit marked and without obstruction.		
6.	Lifting arrangement adequate.		
7.	Unwanted rubbish material removed from work platform.		
8.	Minimum 2 guidelines have been provided for balancing and guiding jobs to be lifted.		
9.	Periphery area of crane booms as well as lifting job is barricaded and unauthorized/no-entry sign board posted.		
10.	Rigger and signal man is trained and competent for lifting work.		
11.	No lifting activity to be carried out during lightening, heavy wind/rain.		
12.	If scaffolding to be used during lift, scaffolding with valid tag available for use.		
13.	Double lanyards safety harness/belt checked and in working condition.		
14.	Safety shoes (non-slip), helmet with chin strap available with employees.		
15.	Others.		

Name of Contractor Safety Officer: _____ Sign: _____ Date: _____ Time: _____

Reviewed and approved by BHEL Site Engineer (Permit Issuing Authority):

Name: _____ Sign: _____ Date: _____ Time: _____

Name of BHEL Safety Representative: _____ Sign: _____

I understand the precaution to be taken as described above and as per project requirement and hereby confirm that work will be executed under my supervision by following all precaution and Safety Rules.

Name of Work Performing Authority: _____ **Sign:** _____ **Date:** _____ **Time:** _____**Permit Cancellation:**

I hereby declare that the work is complete, all workers under my control have been withdrawn and the site restored to safe tidy condition.

Name of Work performing Authority: _____ Sign: _____ Date: _____ Time: _____

Name of Site Engr. (Permit Requesting Authority): _____ Sign: _____ Date: _____ Time: _____

Name of BHEL Site Engr. (Permit Issuing Authority): _____ Sign: _____ Date: _____ Time: _____

(This permit is valid only for the date it is issued)

Original at BHEL site**Second Copy – BHEL SAFETY****Third Copy : Contractor**



SAFETY WORK CLEARANCE

Permit no. _____

Project: _____

Emergency Contact Nos: _____

Subcontractor: _____

WORKING AT HEIGHT PERMIT

Area : _____ Date: _____ Time: _____

Name of Site Engineer (Permit Requesting Authority): _____ Sign: _____ Name of Work

Performing Contractor: _____

Name of Package In charge: _____ Sign: _____ Date: _____

Description of Work: _____

Work Execution Date: _____ Time Valid from: _____ to _____

The above signing person(s) will be responsible to ensure that the above described work will be done under all the safety precautions mentioned on the permit to work.

The following precautions are to be taken:

No.	Item	Yes	Not required
1.	All workers on job are medically fit for working at height (Person should not have vertigo)		
2.	Scaffolding with valid tag available for use		
3.	Safety harness with life line support/ fall arrester are checked and in working condition		
4.	Safety shoes (non-slip), Helmet with chin strip available with employees		
5.	Safety nets are provided as per design and provided 25 ft. below working area & extending 8 ft beyond.		
6.	Horizontal life lines are provided to cater to design specification of 2300kg per person.		
7.	Ladders have been inspected and provided as per BHEL standard/contract.		
8.	All lifting / tightening tools, hand tools/equipment checked and in good condition		
9.	Access and exit marked and without obstruction.		
10.	Lighting arrangement adequate.		
11.	Unwanted and rubbish material removed from working platform.		
12.	Electrical cable, welding Hose/Compressed air hose properly secured and lay down without obstruction.		
13.	Signboards provided on working platforms		
14.	Hazards in the vicinity are identified and communicated to the worker.		
15.	Other		

Name of Contractor Safety Officer: _____ Sign: _____ Date: _____ Time: _____

Reviewed and approved by BHEL Site Engineer (Permit Issuing Authority):

Name: _____ Sign: _____ Date: _____ Time: _____

Name of BHEL Safety Representative: _____ Sign: _____

I understand the precaution to be taken as described above and as per project requirement and hereby confirm that work will be executed under my supervision by following all precaution and Safety Rules.

Name of Work Performing Authority: _____ **Sign:** _____ **Date:** _____ **Time:** _____**Permit Cancellation:**

I hereby declare that the work is complete, all workers under my control have been withdrawn and the site restored to safe tidy condition.

Name of Work performing Authority: _____ Sign: _____ Date: _____ Time: _____

Name of Site Engr. (Permit Requesting Authority): _____ Sign: _____ Date: _____ Time: _____

Name of BHEL Site Engr. (Permit Issuing Authority): _____ Sign: _____ Date: _____ Time: _____

(This permit is valid only for the date it is issued)

Original at BHEL site**Second Copy – BHEL SAFETY****Third Copy : Contractor**

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

INDEX

Section	Description	Page Nos
SECTION – I	Instructions to Tenderers GENERAL INSTRUCTION TO TENDERERS	1-8
SECTION – II	GENERAL TERMS & CONDITIONS OF THE CONTRACT	9-27
SECTION – III	SPECIAL CONDITIONS OF CONTRACT	28-34
	SPECIFIC TERMS AND CONDITIONS FOR SERVICES JOB	35-47

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

SECTION – I
Instructions to Tenderers
GENERAL INSTRUCTION TO TENDERERS

- 1.1 Submission of Tender in “Three Parts”.
- (1) Technical Tender: All particulars asked for from the Vendor except the Price Bid & E.M.D in an envelope.
 - (2) EMD in a sealed envelope clearly superscribing on the envelope “E.M.D”, the Tender Number, Name of Work, addresses of Vendor and addressee. One time EMD holders needn’t enclose this provided that proof of EMD remittance is enclosed in the technical tender.
 - (3) Price Bid in the price schedule enclosed in the tender, in sealed envelope, clearly superscribing “Price Bid”, Tender Number, Name of Work, Name of the Vendor and addressee.

Note: However, in case of e-tender instructions mentioned in the NIT document to be followed.

- 1.1.1 This Tender specification as a whole, duly furnishing the following details
- 1.1.1.1 Earnest Money Deposit.
 - 1.1.1.2 Income Tax Certificate.
 - 1.1.1.3 Detailed organisation chart for manpower resources available with the tenderer and to be employed for the present jobs.
 - 1.1.1.4 A list of experience as mentioned in the tender document.
 - 1.1.1.5 The details of the present jobs being handled.
 - 1.1.1.6 A certificate from the Scheduled Bank to prove his financial capacity/capability to undertake the work or solvency certificate from the concerned authority.
 - 1.1.1.7 Attested copies of partnership deed, power of attorney and tender specifications duly signed as mentioned in the tender documents.
 - 1.1.1.8 Price schedule and other relevant information.

NOTE: All Xerox copies enclosed by the Vendor should be attested and sealed for authenticity.

- 1.1.2 The tender shall be addressed to:
- Head/SCT
BHARAT HEAVY ELECTRICALS LIMITED,
POWER SECTOR SOUTHERN REGION,
SERVICE AFTER SALES,
EK TARA BUILDING, 39 SD ROAD,
SECUNDERABAD – 500003.

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

- 1.1.3 Tenders shall be opened by the authorised officer of BHEL at his office at the time and date as specified in the tender notice in the presence of such of those tenderers or their authorised representatives who may be present.
- 1.1.4 The Tenderer shall closely peruse all the clauses, specifications and drawings indicated in the Tender Documents before quoting. Should the tenderer have any doubt about the meaning of any portion of the Tender Specifications or find discrepancies or omission in the drawings or the tender documents issued are incomplete or shall require clarification on any of the technical aspect, scope of work etc., he shall at once contact the authority inviting the tender for clarification before the submission of the offer.
- 1.1.5 Before tendering, the tenderer is advised to inspect the site of work and the environments and be well acquainted with the actual working and other prevalent conditions, facilities available, position of material and labour. No claim will be entertained later on the ground of lack of knowledge.
- 1.1.6 Tenderers must fill up all the schedules and furnish all the required information as per the instructions given in various sections of the tender specification. Each and every page of the Tender Specification & declaration must be signed bearing seal and submitted along with the offers by the Tender in token of complete acceptance thereof. The information furnished shall be complete by itself. The booklet of G.S.C.C may be retained by the bidder if declaration is enclosed along with the bid duly filled in and signed and sealed. In case of e-tendering document digitally signing on cover page is also acceptable.
- 1.1.7 The tender shall quote the rates in English language and international numerals. The rates shall be in whole rupees. These rates shall be entered in figures as well as in words. For the purpose of the tender, the metric system of units shall be used.
- 1.1.8 All entries in the tender shall either be typed or be in ink. Erasures and overwriting are not permitted and may render such tenders liable to summary rejection. All cancellations and insertions shall be duly attested by the tenderer.
- 1.2 **Qualifications of Tenderers:**
Only tenderers who have previous experience in work of this nature and description detailed in this tender specification and/or registered with BHEL, PSSR-SAS for such works are expected to quote for this work duly detailing their experience along with the offer. Offers from tenderers who do not have established experience in the field are not likely to be considered.

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	---

1.3 Data to be enclosed:

Full information shall be given by the tender in respect of following. Non- submission of this information may lead to rejection of the offer/tender.

1.3.1 Financial Status:

- a) A certificate from the Scheduled Bank to prove his financial capacity/capability to undertake the work or solvency certificate from the concerned authority.
- b) Contractors other than those who are registered in PSSR SAS, should submit their audited annual accounts for three years preceding the financial year in which tenders are called for.

1.3.2 Previous Experience:

A statement giving particulars duly supported by documentary evidence of the various services rendered for each similar work by the tenderer indicating the particulars and value of each work, the site location and the duration and date of completion and also a list of site locations and particulars and value of various services that are under progress.

1.3.3 Organisation Chart:

The organisation pattern that is totally available with the tenderer and that will be employed by the tenderer for this work duly indicating the number of Engineers and Supervisors, their qualification and experience in the line, the number of skilled and unskilled workmen etc.

1.3.4 An attested copy of the Power of Attorney, in case the tender is signed by an individual other than the sole proprietor, shall also be attached.

1.3.5 In case of an individual:

His full name, address and place and nature of business.

1.3.6 In case of Partnership firms:

The name of all the partners and their addresses. A copy of the Partnership Deed (Instrument of partnership) duly certified by the Notary Public shall be enclosed.

1.3.7 In case of Companies:

Date and place of registration including Date of Commencement Certificate in case of public companies (certified copies of Memorandum and Articles of Associations are also to be furnished).

1.3.8 Nature of business carried on by the Company and the provision of the Memorandum relating thereof.

1.3.9 Names and particulars including addresses of all the Directors and their previous experience.

1.3.10 A list of tools and tackles that the tenderer is having and those that will be earmarked for this job.

1.3.11 In addition to the above, the particulars required in various annexures.

1.4 EARNEST MONEY DEPOSIT (EMD):

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

- 1.4.1 Every tender Must be accompanied by the prescribed amount of Earnest Money Deposit in any one of the following forms:
 - 1.4.1.1 Cash deposit as permissible under the extant Income Tax Act (Before tender opening)
 - 1.4.1.2 Electronic Fund Transfer credited in Bharat Heavy Electricals Limited, PSSR SAS' account (before tender opening). RTGS details of BHEL-PSSR SAS is available in tender.
 - 1.4.1.3 Banker's Cheque/Pay Order/Demand Draft payable at Secunderabad duly pledged in Favour of Bharat Heavy Electricals Limited, Secunderabad (along with offer).
 - 1.4.1.4 Fixed Deposit Receipt (FDR) issued by Scheduled Banks/ Public Financial Institutions as defined in the Companies Act (FDR should be in the name of the Contractor, a/c BHEL).
 - 1.4.1.5 Any other mode as per latest guidelines issued by Govt. of India.
 - 1.4.1.6 In addition to above, the EMD amount in excess of Rs. 2 Lakh may also be accepted in the form of Bank Guarantee from scheduled bank. The Bank Guarantee in such cases shall be valid for atleast six months.
 - 1.4.1.7 Parties/bidders who have submitted/submits One Time EMD (OEMD) in this Power Sector Region (i.e. BHEL-PSSR) for Service After Sales (SAS) a sum of amount Rs. 5,00,000/- (Rupees Five Lakh only) are exempted from payment of E.M.D. on each such tender in that unit on case to case basis.
- 1.4.2 Tenders received without Earnest Money in full in the manner prescribed above are liable to be rejected. EMD shall not carry any interest.
- 1.4.3 The Earnest Money Deposit of the successful tenderer will be retained as part of Security Deposit.
- 1.4.4 EMD given by all unsuccessful tenderers shall be refunded normally within 15 days of award of work.
- 1.4.5 BHEL reserves the right of forfeiture of Earnest Money Deposit submitted by the tenderer if:-
 - a) After opening the tender and within the offer validity period, the tenderer revokes his tender or makes any modification in his tender which is not acceptable to BHEL.
 - b) The Contractor fails to deposit the required Security Deposit or commence the work within the period as per LOI/Contract.

EMD by the tenderer shall be withheld in case any action on the tenderer is envisaged under the provisions of extant "Guidelines on Suspension of business dealings with suppliers/contractors" and forfeited/released based on the action as determined under these guidelines".
- 1.5 **Authorisation and Attestation:**

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

- 1.5.1 Tenders shall be signed by persons duly authorised/empowered to do so. Certified copies of such authority and relevant documents shall be submitted along with the tenders.
- 1.6 **Validity of Offer:**
The rates in the tender shall be kept open for acceptance for a minimum period of six months from the due date of opening of tenders. If a tenderer withdraws or revokes his tender or increases the tender rates and/or conditions for any item within the aforesaid period, his Earnest Money Deposit is liable to be forfeited. In case the Bharat Heavy Electricals Limited calls for negotiations, such negotiation shall not amount to cancellation or withdrawal of the original offer which shall be binding on the tenderers.
- 1.7 **Execution of Contract:**
The successful tender's responsibility under this contract commences from the date of issue of the Letter of Intent by Bharat Heavy Electricals Limited.
- 1.8 **Security Deposit (SD):**
- 1.8.1 Security Deposit means the security provided by the contractor towards fulfilment of any obligations in terms of the provisions of the contract. Upon acceptance of tender, the successful tenderer within the time specified in the Letter of Intent must deposit the required amount towards Security Deposit before start of the work. The Security Deposit shall not carry any interest.
- 1.8.2 The total amount of Security Deposit will be 5% (Five percent) of the contract value. EMD of the successful tenderer shall be converted and adjusted towards the required amount of Security Deposit.
- 1.8.3 If the value of the work done at any time exceeds the accepted agreement value, the Security Deposit shall be correspondingly enhanced and the additional Security Deposit shall immediately be deposited by the contractor or recovered from payments due to the contractor.
- 1.8.4 Regarding adjustment of Earnest Money Deposit towards part of Security Deposit, refer clause 1.8.2 above, the successful tenderer shall not commence any work under the contract before remitting the Security Deposit except as directed by BHEL.
- 1.8.5 Failure to deposit the Security within the stipulated time may lead to forfeiture of Earnest Money and cancellation of the award of work.
- 1.8.6 The balance amount to make up the required Security Deposit of 5% of the contract value may be furnished in any one of the following forms:
- Cash (as permissible under the Income Tax Act)

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

- ii) Local cheques of scheduled banks (subject to realization)/Pay Order/Demand Draft/Electronic Fund Transfer credited in Bharat Heavy Electricals Limited, PS-SR' account.
- iii) Bank Guarantee from Scheduled Banks / Public Financial Institutions as defined in the Companies Act. The Bank Guarantee format should have the approval of BHEL. Bank Guarantee for S.D. must be posted by the Bank by registered post directly to us, and it should not be submitted by the bidder directly to us.
- iv) Fixed Deposit Receipt issued by Scheduled Banks / Public Financial Institutions as defined in the Companies Act (FDR should be in the name of the contractor, A/C BHEL).
- v) Securities available from Indian Post Offices such as National Savings Certificates, Kisan Vikas Patras etc. (held in the name of Contractor furnishing the security and duly endorsed/hypothecated/ pledged, as applicable, in favour of BHEL).
- vi) Any other mode as per latest guidelines issued by Govt. of India.

Note: BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith.

1.8.7 Collection of Security Deposit:

- 1.8.7.1 At least 50% of the required Security Deposit, including EMD, should be collected before start of work. Balance of the Security Deposit can be collected by deducting 10% of the gross amount progressively from each of the running bills of the contractor till the amount of the required Security Deposit is collected.
- 1.8.7.2 If the value of the work done at any time exceeds the accepted agreement value, the Security Deposit shall be correspondingly enhanced and the additional Security Deposit shall immediately be deposited by the contractor or recovered from payments due to the contractor.
- 1.8.7.3 The recoveries made from running bills (cash deduction towards balance SD amount) can be released against submission of equivalent Bank Guarantee in acceptable form, but only once, before completion of work, subject to approval of BHEL.
- 1.8.7.4 Security Deposit should cover up to the period of guarantee also.
(Note: In case of SAS jobs, work can be started before the required Security Deposit is collected. However, payment can be released only after collection/ recovery of initial 50% Security Deposit).

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

- 1.8.8 BHEL reserves the right of forfeiture of Security Deposit in addition to other claim and penalties in the event of the contractor's failure to fulfil any of the contractual obligations including statutory or in the event of termination of contract as per terms and conditions of contract.
- 1.8.9 **Return of Security Deposit:**
If the contractor duly performs and completes the contract in all respects to the entire satisfaction of BHEL, and presents an absolute "No Demand Certificate" in the prescribed form and return properties belonging to BHEL handed over, lent or hired by him for carrying out the said works the security deposit will be released to the contractor after deducting all costs or expenses or other contracts entered into with the contractor, only after the satisfactory completion of guarantee period as per clause 2.12.
- 1.8.10 No interest shall be payable by BHEL on Earnest Money / Security Deposit or any money due to the contractor from BHEL.
- 1.8.11 In no case Security Deposit can be released before settling all claims under this contract.
- 1.9 **Rejection of Tender and other conditions:**
- 1.9.1 The acceptance of tender will rest with BHEL which does not bind itself to accept the lowest tender or any tender and reserves to itself full rights for the following without assigning any reasons whatsoever:
- to reject any or all of the tenders.
 - To split up the work amongst two or more tenderers.
 - To award the work in part.
 - Either of the contingencies stated in (b) and (c) to modify the time for completion suitably.
 - To modify the scope of work after mutual agreement.
- 1.9.2 Conditional and unwitnessed tenders:
Tenders containing absurd or unworkable rates and amounts and tenders which are incomplete and otherwise considered defective and tenders not in accordance with the tender conditions, specifications etc. are liable to be rejected.
- 1.9.3 If a tenderer expires after his submission of the tender or after the acceptance of his tender, BHEL may at their discretion, cancel such tender. If a partner of a firm expires after the submission of the tender or after the acceptance of the tender, BHEL may cancel such tender at their discretion unless the firm retains its character.
- 1.9.4 BHEL will not be bound by any Power of Attorney granted by the tenderer or by changes in the compositions of the firm made subsequent to the execution of the contract. They may, however, recognise such

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

- power of Attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the contractor concerned.
- 1.9.5 If the tenderer deliberately gives wrong information in his tender, BHEL reserves the right to reject such tender at any stage or to cancel the contract, if awarded and forfeit the Earnest Money/Security Deposit.
- 1.9.6 Canvassing in any form in connection with the tenders is strictly prohibited and the tenders submitted by the contractor who resort to canvassing are liable to rejection.
- 1.9.7 Should a tenderer or contractor or in the case of a firm or Company of Contractors one or more of its Partners/shareholders/Directors have a relation or relations employed in the capacity of an officer of BHEL, the authority inviting tender shall be informed of the fact along with the offer, failing this, BHEL may at its sole discretion, reject the tender or cancel the contract and forfeit the Earnest Money/Security Deposit.
- 1.9.8 The successful tenderer should not sub-contract the part or complete work detailed in this tender specification undertaken by him without permission of BHEL. The tenderer is solely responsible to BHEL for the work awarded to him. Any deviation in this regard will entail termination of such contract by BHEL at the risk and responsibility of contractor.
- 1.9.9 The successful tenderer shall inform /keep BHEL informed if he has already undertaken any work/is likely to be awarded any job with the same customer with whom BHEL is entering into contract.

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

SECTION – II

GENERAL TERMS & CONDITIONS OF THE CONTRACT

2.1 **Definition:**

The following terms and expressions shall have the meaning hereby assigned to them except where they context otherwise requires:

- 2.1.1 'BHEL' (or B.H.E. Ltd.) shall mean Bharat Heavy Electricals Limited, a company registered under Indian Companies Act., 1956, with its Registered Office at BHEL House, SIRI FORT, NEW DELHI-110049 and SAS Office address Power Sector Southern Region-Services After Sales, EK Tara Building, 39 SD Road, Secunderabad – 500003 or its Administrative officers or its site Engineer or the employees authorised to deal with any matters with which these persons are concerned on its behalf.
- 2.1.2 "GENERAL MANAGER"/DEPUTY IN CHARGE" shall mean the Officer in Administrative charge of BHEL, PS-SR, SAS – Services, Secunderabad.
- 2.1.3 "ENGINEER" or "ENGINEER IN CHARGE" shall mean Engineer deputed by BHEL. The terms include "SITE ENGINEER", "RESIDENT ENGINEER" and "ASSISTANT SITE ENGINEER" of BHEL at the site as well as the officers in-charge at SAS Secunderabad office.
- 2.1.4 "SITE" shall mean the place or places at which the plants/equipment are to be overhauled and services are to be performed as per the specification of this contract.
- 2.1.5 "CLIENTS OF BHEL" or "CUSTOMER" shall mean the Project authorities to whom BHEL is supplying the equipment/services.
- 2.1.6 "CONTRACTOR" shall mean the individual, firm or company who enters into this contract with BHEL and shall include their executors, administrators, successors and permitted assigns.
- 2.1.7 "CONTRACT" or "CONTRACT DOCUMENT" shall mean and include the agreement or work order, the accepted appendices of rates, schedule of quantities, if any and general condition of contract, the special conditioning of contract instructions of the tenderers, the drawings, the specifications, the special specification, if any, the tender specifications, the special specification, if any, the tender documents and the Letter of Intent/Accepting Letter issued by BHEL. Any conditions or terms stipulated by the contractor in the tender documents or supporting letters shall not form part of the contract unless specifically accepted in writing by BHEL and incorporated in the agreement.
- 2.1.8 "GENERAL CONDITIONS OF CONTRACT" shall mean the instructions to tenderers and general conditions of contract pertaining to the work detailed.

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

- 2.1.9 "TENDER SPECIFICATION" shall mean the "Specific Conditions, technical specifications, appendices, site information and drawings, "pertaining to the work for which the tenderers are required to submit their offer. Also this will include the specifications detailed in NIT of client of BHEL for overhauling, erection, testing and commissioning of plant. Individual specification no. will be assigned to each tender specification.
- 2.1.10 "TENDER DOCUMENTS" shall mean the General conditions of contract (2.1.8) and tender specification (2.1.9)
- 2.1.11 "LETTER OF INTENT" shall mean the intimation by a letter to the tenderer that the tender has been accepted in accordance with provisions contained in that letters. The responsibility of the contractor commences from the date of issue of this letter and all the terms and conditions of contract are applicable from this date.
- 2.1.12 "COMPLETION TIME" shall mean the period by date specified in the acceptance of tender for handing over the overhauled equipment/plant which are found acceptable by the engineer being of required standard and conforming to the specification of the contract or recommissioning of the machine Successfully whichever is later. Completion time will be reckoned from the date of LOI with the period for mobilisation as prided with LOI, added to the same.
- 2.1.13 "PLANT" shall mean and connote the entire assembly of the plant and equipments covered by the contract.
- 2.1.14 "EQUIPMENT" shall mean all equipments, machineries, materials, structurals, electricals and other components of the plant covered by the contract.
- 2.1.15 "TESTS" shall mean and include such test or tests to be carried out on the part of the contractor as are prescribed in the contract or considered necessary by BHEL, in order to ascertain the quality workmanship, performance and efficiency of the contract work or part thereof.
- 2.1.16 "APPROVED" "DIRECTED" or "INSTRUCTED" shall mean approved, directed or instructed by BHEL.
- 2.1.17 "WORK OR CONTRACT WORK" shall mean and include supply of all categories of labour, specified consumables, tools and tackles required for complete and satisfactory site Transportation, handling, stacking, storing, overhauling erection, testing and commissioning of the equipment to the entire satisfaction of BHEL.
- 2.1.18 "SINGULAR AND PLURAL ETC" words carrying singular number shall also include plural and vice versa, where the context so requires, words importing the masculine gender shall be taken to include any company or Association or body of individuals, whether incorporated or not.

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

- 2.1.19 "HEADINGS" The Leadings in these general conditions are solely for the purpose of facilitating reference and shall not be deemed to be part thereof or be taken into consideration in interpretation or construction thereof or of the contract.
- 2.1.20 "MONTH" shall mean calendar month.
- 2.1.21 "WRITING" shall include any manuscript, type written or printed statement under the signature or seal as the case may be.
- 2.2 **Law governing the contract and Court Jurisdiction:**
The contract shall be governing by the Law for the time being in force in the Republic of India. The Civil Court having ordinary original civil jurisdiction, Hyderabad shall alone have exclusive Jurisdiction in regard to all claims in respective of this contract.
- 2.3 **Issue of Notice:**
The contractor shall furnish to the BHEL Engineer the name, designation and address of his authorised agent and all complaints, notices, communications and reference shall be deemed to have been duly given to the contractor if delivered to the contractor or his authorised agent or left at or posted to the address either of the contractor or of his representative and shall be deemed to have been so given in the case of posting on the day on which they would have reached such address in the ordinary course of post or on which they were so delivered or left.
- 2.4 **Use of Land:**
No land belonging to BHEL or their customer, under temporary possession of BHEL shall be occupied by the contractor without the written permission of BHEL.
- 2.5 **Commencement of Work:**
- 2.5.1 The contractor shall commence the work within the time indicated in the Letter of Intent from BHEL and shall proceed with the same with due expedition without delay. For computing the scheduled completion date, commencement of work will be reckoned from the date of complete mobilisation as per LOI, unless specifically amended by Head (Services), BHEL, PSSR SAS.
- 2.5.2 If the successful tenderer fails to start the work within the stipulated time, BHEL as its discretion will have the right to cancel the contract. His Earnest Money and / or Security Deposit with BHEL will stand forfeited without any further reference to him, without prejudice to any and all of BHEL's other rights and remedies in this regard.
- 2.5.3 All the works shall be carried out under the direction and to the satisfaction of BHEL.

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

- 2.5.4 The erected overhauled plant or work performed under the contract shall be taken over when it has been completed in all respects and or satisfactorily put into operation at site.
- 2.6 **Mode of payment and measurement of the work completed.**
- 2.6.1 “All payment due to the contractor shall be paid only by Account payee Cheques” or through NEFT.
- 2.6.2 The contractor shall present his bill on the format prescribed by BHEL for every payment. After verification of such bills by BHEL, all items having financial value shall be entered and certified in BHEL Measurement Book by BHEL Engineer and the bills prepared based on the same and connected technical documents which form part of this tender specification.
- 2.6.3 Lump sum omission will be entered for deduction. Measurement shall be restricted to that for which it is required to ascertain the financial liability of BHEL under this Contract.
- 2.6.4 Work which is to be measured in details shall be measured as per standard procedure without reference to any local procedures excepting where it is otherwise stated in the tender documents. The measurement shall be taken jointly by person duly authorised on the part of BHEL and by the contractor.
- 2.6.5 If, at any time due to reason whatsoever, it becomes necessary to remeasure the work done in full or in part, the expenses towards such remeasurement shall be borne by the contractor.
- 2.6.6 The contractor shall bear the expenditure involved, if any in making the measurement. The Contractor shall, without extra charges, provide all the assistance with appliances and other things necessary for measurement.
- 2.6.7 The measurement entered in the Measurement Books and the bills prepared shall be signed with dates by both the contracting parties.
- 2.6.8 The Contractor will be intimated in writing by the site Engineer, the proposed date of measurement. If the contractor, representative fails to participate in the joint measurement, the BHEL engineer shall have the power to proceed by himself to take measurement in which case the measurement shall be accepted by the contractor as final.
- 2.6.9 Passing of measurement as per bills does not amount to acceptance of the completion of work mentioned. Any left out work has to be completed if pointed out by BHEL at a later date.
- 2.7 **Rights of BHEL:**
- 2.7.1 To withdraw any portion of work and/or to restrict / alter the quantum of work as indicated in the contract during the progress of work and get it done through other agency and/or by departmental labour to suit BHEL’s commitment to its customer or in case BHEL decides to advance

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

the date of completion due to other emergency reasons / BHEL's obligation to its customer.

2.7.2 To terminate the contract or withdraw portion of work and get it done through other agency, at the risk and cost of the contractor after due notice of a period of 14 days' by BHEL in any of the following cases:

- i) Contractor's poor progress of the work vis-à-vis execution timeline as stipulated in the Contract, backlog attributable to contractor including unexecuted portion of work does not appear to be executable within balance available (#) period considering its performance of execution.
- ii) Withdrawal from or abandonment of the work by contractor before completion of the work as per contract.
- iii) Non-completion of work by the Contractor within scheduled completion period as per Contract or as extended from time to time, for the reasons attributable to the contractor.
- iv) Termination of Contract on account of any other reason (s) attributable to Contractor.
- v) Assignment, transfer, subletting of Contract without BHEL's written permission.
- vi) Non-compliance to any contractual condition or any other default attributable to Contractor.

(#) In-case inputs from BHEL/Customer are likely to be delayed or are actually delayed, this delay may also be taken into account while considering balance period available for execution of Contract.

Risk & Cost Amount against Balance Work:

Risk & Cost amount against balance work shall be calculated as follows:

Risk & Cost Amount= $[(A-B) + (A \times H/100)]$

Where,

A= Value of Balance scope of Work (*) as per rates of new contract

B= Value of Balance scope of Work (*) as per rates of old contract being paid to the contractor at the time of termination of contract i.e. inclusive of PVC, if any.

H = Overhead Factor to be taken as 5

In case (A-B) is less than 0 (zero), value of (A-B) shall be taken as 0 (zero).

(*) Balance scope of work (in case of termination of contract):

Difference of Contract Quantities and Executed Quantities as on the date of issue of Letter for 'Termination of Contract', shall be taken as balance scope of Work for calculating risk & cost amount. Contract quantities are the quantities as per original contract. If, Contract has been amended, quantities as per amended Contract shall be considered as Contract Quantities.

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

Items for which total quantities to be executed have exceeded the Contract Quantities based on drawings issued to contractor from time to time till issue of Termination letter, then for these items total Quantities as per issued drawings would be deemed to be contract quantities.

Substitute/ extra items whose rates have already been approved would form part of contract quantities for this purpose. Substitute/ extra items which have been executed but rates have not been approved, would also form part of contract quantities for this purpose and rates of such items shall be determined in line with contractual provisions.

However, increase in quantities on account of additional scope in new tender shall not be considered for this purpose.

NOTE: In-case portion of work is being withdrawn at risk & cost of contractor instead of termination of contract, contract quantities pertaining to portion of work withdrawn shall be considered as 'Balance scope of work' for calculating Risk & Cost amount.

LD against delay in executed work in case of Termination of Contract:

LD against delay in executed work shall be calculated in line with LD clause as per GCC/SCC/TCC/Special note/any other annexure of tender document (in compliance with order of precedence), for the delay attributable to contractor. For limiting the maximum value of LD, contract value shall be taken as Executed Value of work till termination of contract.

Method for calculation of "LD against delay in executed work in case of termination of contract" is given below.

- i) Let the time period from scheduled date of start of work till termination of contract excluding the period of Hold (if any) not attributable to contractor = T1
- ii) Let the value of executed work till the time of termination of contract= X
- iii) Let the Total Executable Value of work for which inputs/fronts were made available to contractor and were planned for execution till termination of contract = Y
- iv) Delay in executed work attributable to contractor i.e. $T2 = [1 - (X/Y)] \times T1$
- v) LD shall be calculated in line with LD clause [as per GCC/SCC/TCC/Special note/any other annexure of tender document (in compliance with order of precedence)] of the Contract for the delay attributable to contractor taking "X" as Contract Value and "T2" as period of delay attributable to contractor.

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	---

2.7.3 Recoveries arising out of Risk & Cost and LD or any other recoveries due from Contractor

Following sequence shall be applicable for recoveries from contractor:

- a) Dues available in the form of Bills payable to contractor, SD, BGs against the same contract.
- b) Demand notice for deposit of balance recovery amount shall be sent to contractor, if funds are insufficient to effect complete recovery against dues indicated in (a) above.
- c) If contractor fails to deposit the balance amount to be recovered within the period as prescribed in demand notice, following action shall be taken for balance recovery:
 - i) Dues payable to contractor against other contracts in the same Region shall be considered for recovery.
 - ii) If recovery cannot be made out of dues payable to the contractor as above, balance amount to be recovered, shall be informed to other Regions/Units for making recovery from the Unpaid Bills/Running Bills/SD/BGs/Final Bills of contractor.
 - iii) In-case recoveries are not possible with any of the above available options, Legal action shall be initiated for recovery against contractor.

2.7.4 To terminate the contract or to restrict the quantum of work and pay for the portion of work executed in case BHEL's contract with their customers are terminated for any reason.

2.7.5 While every endeavour will be made by BHEL they cannot guarantee uninterrupted work due to conditions beyond their control. Contractor will not be entitled to any compensation / extra payment on this account.

2.7.6 Short closure of contract

In the unforeseen event of inordinate delay in receipt of materials, drawings, fronts, etc, due to which inordinate discontinuity of work is anticipated, BHEL at its discretion may consider contractor's request to short close the contract in following cases:

- a) The balance works (including but not limited to successful commissioning etc.) are minor vis a vis the scope of work envisaged as per the contract.
- b) There has been no significant work in past 6 months OR no significant work is expected in next 6 months (example in Hydro projects or in projects where work has stopped due to reasons beyond the control of BHEL)
- c) The balance works cannot be done within a reasonable period of time as they are dependent on unit shut down or on other

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

facilities of customer or any other reasons not attributable to the contractor

At the point of requesting for short closure, contractor shall establish that he has completed all works possible of completion and he is not able to proceed with the balance works due to constraints beyond his control. In such a case, the estimated value of the unexecuted portion of work (or estimated value of services to be provided for carrying out successful commissioning etc.) as mutually agreed, shall however be reduced from the final contract value.

- 2.7.7 In case the execution of works comes to a complete halt or reaches a stage wherein worthwhile works cannot be executed and there is no possibility of commencement of work for a period of not less than two months, due to reasons not attributable to the contractor and other than Force Majeure conditions, BHEL may consider permitting the contractor to de mobilize forthwith and re mobilize at an agreed future date. Cost of such demobilization/remobilization shall be mutually agreed. The duration of contract/time extension shall accordingly get modified suitably. In case of any conflict, BHEL decision in this regard shall be final and binding on the contractor.

2.8 **Responsibilities of the Contractor:**

The following are the responsibilities of the contractor in respect of observation of local laws, employment of personnel, payment of taxes and execution of job etc.

- 2.8.1 As far as possible, unskilled workers shall be engaged from the local areas in which the work is being executed.
- 2.8.2 The Contractor at all times during the continuance of this contract, shall in all his dealing with local labour for the time being employed on or in connection with the work, have due regard to all local festivals and religious and other customs.
- 2.8.3 The contractor shall comply with all state and central Laws, Statutory Rules, Regulations etc., such as:
The payment of wages Act, Minimum Wage Act, Workmen compensation Act, Employers Liability Act, Industrial Disputes Act, Employees Provident Fund Scheme, Employees Insurance Scheme, Contract Labour (Regulation & Abolition) Act 1970 and other Acts, Rules & Regulations

for labour as may be enacted by the Government during the tenure of the Contract and having force or jurisdiction at site. The Contractor shall give to the local Governing Body, Police and other relevant authorities all such notices as may be required by law.

- 2.8.4 The Contractor shall pay all taxes, fees, licence charges, deposits duties, tolls, royalty, commission or other charges which may be leviable on

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

account of any 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 the contractor either from his bills or otherwise as deemed fit.

- 2.8.5 The Contractor shall be responsible for provision of health and sanitary arrangements, more particularly described in contract Labour (Regulation & Abolition Act) safety precautions etc., as may be required of same and satisfactory execution of the contract.
- 2.8.6 The contractor shall fulfil all his obligation in respect of accommodation including proper medical facilities for the personnel employed by him.
- 2.8.7 The contractor shall be responsible for the proper behaviour at site and observance of all regulations by the staff employed by him.
- 2.8.8 The Contractor shall ensure that no damage is caused to any person / property of other parties working at site. If any such damages is caused, it is the responsibility of the contractor to make the losses or compensate for the same.
- 2.8.9 All the properties / equipments / components of BHEL / their client loaned with or without deposit to the contractor in connection with the contract shall remain the properties of BHEL / their client. The Contractor shall use such properties for the purpose of execution of this contract. All such properties / equipment / components shall be deemed to be in good condition when received by the contractor unless he notified within 48 hours to the contrary. The Contractor shall return them in good conditions as and when required by BHEL / their client. In case of case of non-return, loss damage, repairs, etc. the cost thereof, as may be fixed by the site Engineer, will be recovered from the contractor.
- 2.8.10 It is not obligatory on the part of BHEL to supply any tools and tackles or other materials other than those specifically agreed to do so by BHEL. However, depending upon the availability / possibility BHEL's customers' handling equipment and other plants may be made available to the contractor on payment of the hire charges / free of charges as fixed, subject to the condition laid down by BHEL & Customer from time to time, Unless paid in advance, such hire charges if applicable shall be recovered from contractor's bill / security Deposit in one instalment.
- 2.8.11 The contractor shall not claim any compensation of the scope of the work, due to changes in design which curtails quantum.
- 2.8.12 The Contractor shall fully indemnify BHEL against all claims of whatsoever nature arising during the course of erection / overhauling / performing work under the contract.

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

- 2.8.13 In case the contractor is required to undertake any major work outside the scope of this contract the rates payable shall be decided by BHEL Resident Engineer.
- 2.8.14 The contractor shall keep the area of work clean and shall remove debris etc., while executing day to day work. Upon completion of work, the contractor shall remove from the vicinity of work, all scrap, packing materials, rubbish, unused and other materials and deposit them in places to be specified by the BHEL Engineer. The contractor will also demolish all hutments, sheds, partitions, offices, constructed and used by him and shall clean the debris. In the event of his failure to do so, the same will be arranged to be removed by the BHEL. The expenses thereof will be recovered from contractor.
- 2.8.15 The contractor shall arrange and co-ordinate his work in such a manner as to cause no inconvenience to other agencies working in the area.
- 2.8.16 All safety rules and codes applied by the client / BHEL at site shall be observed by the contractor without exception. The contractor shall be responsible for the safety of the equipment / material and work to be performed by him and shall maintain all light, fencing guards, signs etc. or other protection necessary for the purpose. Contractor shall also take such additional precautions as may be indicated from time to time by the Engineer with a view to prevent pilferage, accidents, fire hazards and atmospheric conditions. Suitable number of electrical staff, watch and ward, store keepers to take care of the equipment, materials and construction tools and tackles, shall be posted at site by the contractor till completion of the work under this contract. The contractor shall arrange for such safety devices as are necessary for such type of work and carry out the requisite tests of handling equipment, lifting tools, tackles etc., as per prescribed standards and practices.
- 2.8.17 The contractor will be directly responsible for payment of wages to his workmen. A pay roll sheet giving all the payments given to workers and duly signed by the contractor's representative should be furnished to BHEL site office for record purpose. BHEL site In-charge may be intimated the date of disbursement of wages to the workmen engaged for the work, so that his representative can witness the same.
- 2.8.18 The intent of specification, is to provide services according to most modern and proven techniques and codes. The omission of specific reference to any method, requirement or material necessary for the proper and efficient performance of work shall not relieve the contractor of the responsibility of providing such facilities to complete the work.
- 2.8.19 In case of any clause of the work for which there is no such specification as laid down in the contract, such work shall be carried out in

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

accordance with the instructions and requirements of the BHEL Engineer.

- 2.8.20 No levy or payment or charge made or imposed shall be impeached by reason of any clerical error or by reason of any mistake in the amount levied or demanded or charged.
- 2.8.21 The details drawings, specifications, instructions manual, if any available with the BHEL Engineer will form part of tender specification. These documents will be made available for reference only to the contractor during execution of work.
- 2.8.22 Should any error or ambiguity be discovered in the specification or information, the contractor shall forthwith bring the same to the notice of BHEL before commencement of work. BHEL's interpretation in such cases shall be final and binding on the contractor.
- 2.8.23 No idle labour charges will be admissible in the event of any stoppage caused in the work resulting in contractor's labour being rendered idle due to any cause of any type.
- 2.8.24 No overrun charges shall be paid in the event of the completion period being extended for any reason whatsoever.
- 2.8.25 It is possible that some repair/rectification, modification may be needed on the equipments to be overhauled / work to be performed under this specification, for reasons not attributions to the contractor. All such repair / rectification / modification work which can be done, with the available facilities at site shall be carried out by the contractor free of cost and no extra charges shall be paid to contractor.
- 2.8.26 The quality and progress of work will be regularly reviewed. The schedule and progress of work will be given to the contractor in advance and it will be the obligation / responsibility of the contractor to achieve the desired quality and progress of work by suitably reinforcing their labour force and/or by working extra hours or in more than one shift without any extra cost. Workmen found unsuitable for the work will be replaced immediately by the contractor on being informed by BHEL.
- 2.8.27 During the overhauling work under the contract it is very essential that proper and adequate inspection should made constantly to maintain the quality or workmanship so that any deviation from design dimension does not exceed permissible limits. The proper functioning of the unit, while in operation, depends to a great extent on the above factors. The fact that effective supervision and inspection at the execution stage is less costly than any down time of running unit even for a short period need not be over emphasized. For the details regarding alignment and permissible dimensional deviations in the sub-assemblies BHEL Engineer may be consulted.

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

- 2.8.28 The contractor shall furnish daily labour report showing by classification of number of employees engaged in various categories or work date wise and submit a progress report of work as required by BHEL Engineer.
- 2.8.29 The contractor shall execute the work in the most substantial and workmen-like manner in stipulated time. Accuracy of work and timely execution are the essence of this contract. The contractor shall be responsible to ensure that the assembly and workmanship conform to the dimensions and clearances given in the drawings and/or as per instructions of BHEL Engineers.
- 2.8.30 The contractor shall take all responsible care to protect the materials and work till such time the plant/equipment has been taken over by BHEL / their client. Where necessary, suitable temporary fencing and lighting shall have to be provided by the contractor as a safety measure against accident and damage of property of BHEL. Suitable caution notice shall be displayed where access to any part may be deemed to be unsafe and hazardous.
- 2.8.31 It will be the responsibility of the contractor to ensure safe lifting of the equipments taking due precautions to avoid any accidents and damage to other equipments and personnel.
- 2.9 **Insurance:**
- 2.9.1 BHEL / their customer shall arrange for insuring the materials / properties of BHEL/customer covering risks during transit, storage, overhauling, erection and commissioning.
- 2.9.2 It is the sole responsibility of the contractor to insure his workman against accident and injury while at work as required by relevant rules and to pay compensation, if any, to workmen as per workmen's compensation Act. Contractor shall insure his staff against accidents. The work will be carried out in a protected area and all the rules and regulations of the client / BHEL in the area of project which are in force from time to time, will have to be followed by the contractor.
- 2.9.3 If due to negligence and /or non-observations of safety and other precautions, any accident / injury occurs to any other person/public, the Contractor shall have to pay necessary compensation and other expenses, if so decided by the appropriate authorities. Third party insurance coverage is to be made by the contractor.
- 2.9.4 If due to contractor's carelessness, negligence or non-observance of safety precautions damage to BHEL's /Customer's property and personnel should occur, and if BHEL is unable to recover, in full, cost from the Insurance Company, the balance will be recovered from the Contractor.

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

2.10 Strikes & Lockouts :

The contractor will be fully responsible for all the disputes and other issues connected with his labour. In the event of the contractor's labour resorting to strike or the lockout declared is not settled within a period of one week BHEL shall have the right to get the work executed employing the own labour or through any other agencies or both and the cost so incurred by BHEL, shall be deducted from the contractor's bills as per clause 2.7. For all purposes whatsoever, the employees of the contractor shall not be deemed to be in the employment of BHEL.

2.11 Force Majeure :

2.11.1 The following shall amount to Force Majeure:

Acts of God, Acts of any Government, war, sabotage, riots, civil commotion, police action, revolution, flood, fire, cyclones, earthquake and epidemic and other similar causes over which the contractor has no control.

2.11.2 If the contractor suffers delay in the due execution of the contractual obligation due to delays caused by Force Majeure as defined above, the agreed time of completion of the job covered by this contract or the obligations of the Contractor shall be extended by a period of time equal to the period of delay provided that on the occurrence of any such contingency the Contractor immediately reports to BHEL in writing the causes of delay and the contractor shall not be eligible for any compensation.

2.12 Performance Guarantee:

Even though the work will be carried out under supervision of BHEL Engineers. The contractor shall guarantee against defects attributable to faulty workmanship or procedure adopted in the overhaul for items covered in the contract for a period of six months from the date of re-commissioning of the set after the capital overhaul. The guarantee should cover all defects notified during this period and shall have to be attended to free of cost immediately or at the time our clients are able to give shut down of the set for the required period. when necessary. In case of failure of contractor to attend to such defects as and when required in time, BHEL shall arrange to attend the defects and the charges shall be levied to contractor's account and shall be recoverable from the security deposit / progressive payments.

2.13 ARBITRATION & CONCILIATION:

2.13.1 ARBITRATION:

2.13.1.1 Except as provided elsewhere in this Contract, in case Parties are unable to reach amicable settlement (whether by Conciliation to be conducted as provided in Clause 2.13.2 herein below or otherwise) in

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

respect of any dispute or difference; arising out of the formation, breach, termination, validity or execution of the Contract; or, the respective rights and liabilities of the Parties; or, in relation to interpretation of any provision of the Contract; or, in any manner touching upon the Contract (hereinafter referred to as the 'Dispute'), then, either Party may, commence arbitration in respect of such Dispute by issuance of a notice in terms of section 21 of the Arbitration & Conciliation Act, 1996 (hereinafter referred to as the 'Notice'). The Notice shall contain the particulars of all claims to be referred to arbitration in sufficient detail and shall also indicate the monetary amount of such claim. The arbitration shall be conducted by a sole arbitrator to be appointed by the Head of the BHEL Power Sector Southern Region issuing the Contract within 60 days of receipt of the complete Notice. The language of arbitration shall be English.

The Arbitrator shall pass a reasoned award.

Subject as aforesaid, the provisions of Arbitration and Conciliation Act 1996 (India) or statutory modifications or re-enactments thereof and the rules made thereunder as in force from time to time shall apply to the arbitration proceedings under this clause. The seat of arbitration shall be Hyderabad (the place from where the contract is Issued). The Contract shall be governed by and be construed as per provisions of the laws of India. Subject to this provision 2.13.1.1 regarding ARBITRATION, the principal civil court exercising ordinary civil jurisdiction over the area where the seat of arbitration is located shall have exclusive jurisdiction over any DISPUTE to the exclusion of any other court.

2.13.1.2 In case of Contract with Public Sector Enterprise (PSE) or a Government Department, the following shall be applicable:

In the event of any dispute or difference relating to the interpretation and application of the provisions of commercial contract(s) between Central Public Sector Enterprises (CPSEs)/ Port Trusts inter se and also between CPSEs and Government Departments/Organizations (excluding disputes concerning Railways, Income Tax, Customs & Excise Departments), such dispute or difference shall be taken up by either party for resolution through AMRCD (Administrative Mechanism for

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

Resolution of CPSEs Disputes) as mentioned in DPE OM No. 4(1)/2013-DPE(GM)/FTS-1835 dated 22-05-2018 as amended from time to time.

2.13.1.3 The cost of arbitration shall initially be borne equally by the Parties subject to the final allocation thereof as per the award/order passed by the Arbitrator.

2.13.1.4 Notwithstanding the existence of any dispute or differences and/or reference for the arbitration, the Contractor shall proceed with and continue without hindrance the performance of its obligations under this Contract with due diligence and expedition in a professional manner unless the dispute inter-alia relates to cancellation, termination or short-closure of the Contract by BHEL.

2.13.2 CONCILIATION:

If at any time (whether before, during or after the arbitral or judicial proceedings), any Disputes (which term shall mean and include any dispute, difference, question or disagreement arising in connection with construction, meaning, operation effect, interpretation or breach of the agreement, contract), which the Parties are unable to settle mutually, arise inter-se the Parties, the same may, be referred by either party to Conciliation to be conducted through Independent Experts Committee (IEC) to be appointed by competent authority of BHEL from the BHEL Panel of Conciliators.

Notes:

1. *No serving or a retired employee of BHEL/ Administrative Ministry of BHEL shall be included in the BHEL Panel of Conciliators.*
2. *Any other person(s) can be appointed as Conciliator(s) who is/are mutually agreeable to both the parties from outside the BHEL Panel of Conciliators.*

The proceedings of Conciliation shall broadly be governed by Part-III of the Arbitration and Conciliation Act 1996 or any statutory modification thereof and as provided in Procedure 2.3 : “Procedure for conduct of conciliation proceedings” (as available in www.bhel.com). The Procedure 2.3: “Procedure for conduct of conciliation proceedings” (as available in www.bhel.com) together with its Formats (as available in www.bhel.com) will be treated as if the same is part and parcel hereof and shall be as effectual as if set out herein in this GCC.

The Contractor hereby agrees that BHEL may make any amendments or modifications to the provisions stipulated in the Procedure 2.3 : “Procedure for conduct of conciliation proceedings” (as available in www.bhel.com) from time to time and confirms that it shall be bound by such amended or modified provisions of the Procedure 2.3 : “Procedure for conduct of conciliation proceedings” (as available in www.bhel.com) with effect from the date as intimated by BHEL to it.

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	---------------------------------------

2.14 NO INTEREST PAYABLE TO CONTRACTOR:

Notwithstanding anything to the contrary contained in any other document comprising in the Contract, no interest shall be payable by BHEL to Contractor on any moneys or balances including but not limited to the Security Deposit, EMD, Retention Money, RA Bills or the Final Bill, or any amount withheld and/or appropriated by BHEL etc., which becomes or as the case may be, is adjudged to be due from BHEL to Contractor whether under the Contract or otherwise.

2.15 PRICE VARIATION COMPENSATION

2.15.1 In order to take care of variation in cost of execution of work on either side, due to variation in the index of LABOUR, HIGH SPEED DIESEL OIL, WELDING ROD, CEMENT, STEEL, MATERIALS, Price Variation Formula as described herein shall be applicable.

2.15.1.1 PVC shall be applicable only if execution of works starts after contract validity period mentioned in the original work order or LOI, if any, subject to other conditions as described in this section. However, date of start of work to be reckoned as the date of mobilization intimated by BHEL to vendor. In case of any conflict, BHEL decision in this regard shall be final and binding on the contractor.

2.15.1.2 If the work starts within the contract validity period of original work order or LOI, the contract validity period will get extended automatically till completion of works and no PVC shall be applicable.

2.15.1.3 In case of demobilization of vendor, due to reasons not attributable to vendor, PVC shall be applicable for balance portion of works after remobilization provided there is a gap of minimum two months between demobilization and remobilization and work period of balance portion of works falls beyond contract validity period original work order or LOI. In case of any conflict, BHEL decision in this regard shall be final and binding on the contractor.

2.15.2 85% component of executed Contract Value shall be considered for PVC calculations and remaining 15% shall be treated as fixed component. The basis for calculation of price variation in each category, their component, Base Index, shall be as under:

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	---------------------------------------

Sl.No.	CATEGORY	BASE INDEX	PERCENTAGE COMPONENT ('K')				
			CIVIL PACKAGES (See Note A/B/C)			MECHA NICAL PACKA GES	Electrical, C&I, Material Management / Handling and other labour oriented packages
			A	B**	C		
i)	LABOUR (ALL CATEGORIES)	'MONTHLY ALL-INDIA AVERAGE CONSUMER PRICE INDEX NUMBERS FOR INDUSTRIAL WORKERS' published by Labour Bureau, Ministry of Labour and Employment, Government of India. (Website: labourbureau.nic.in)	40	25	30	65	80
ii)	HIGH SPEED DIESEL OIL	Name of Commodity: HSD Commodity code: 1202000005 (See Note E)	5	3	5	5	5
iii)	WELDING ROD	Name of Commodity: MANUFACTURE OF BASIC METALS Commodity code: 1314000000 (See Note E)				15	
iv)	CEMENT	Name of Commodity: ORDINARY PORTLAND CEMENT Commodity code: 1313050003 (See Note E)		20	30		
v)	STEEL (Structural and Reinforcement Steel)	Name of Commodity: MILD STEEL: LONG PRODUCTS Commodity code: 1314040000 (See Note E)		25			
vi)	ALL OTHER MATERIALS (Other than Cement & Steel)	Name of Commodity: ALL COMMODITIES Commodity code: 1000000000 (See Note E)	40	12	20		

Note:

- A) Cement & Steel: Free Issue (BHEL Scope)
- B) Cement & Steel: In Contractor Scope
- C) Cement in Contractor Scope, and Steel is Free Issue (BHEL Scope)
- D) For Composite packages (i.e. Civil + Mechanical + Electrical and / or CI or Civil + Mechanical or Mechanical + Electrical and / or CI), the Component ('K') for various categories shall be as per respective packages as above

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

E) As per the 'MONTHLY WHOLE SALE PRICE INDEX' for the respective Commodity and Type, published by Office of Economic Adviser, Ministry of Commerce and Industry, Government of India. (Website: http://www.eaindustry.nic.in/download_data_0405.asp). Revisions in the index or commodity will be re adjusted accordingly.

2.15.3 Payment / recovery due to variation in index shall be determined on the basis of the following notional formula in respect of the identified component ('K') viz LABOUR, HIGH SPEED DIESEL OIL, WELDING ROD, CEMENT, STEEL, MATERIALS.

$$P = K \times R \times (XN - X_o) / X_o$$

Where

P = Amount to be paid/recovered due to variation in the Index for Labour, High Speed Diesel Oil, Welding Rod, Cement, Steel and Materials

K = Percentage component ('K') applicable for Labour, High Speed Diesel Oil, Welding Rod, Cement, Steel and Materials

R = Value of work done for the billing month (Excluding Taxes and Duties if payable extra)

XN = Revised Index for Labour, High Speed Diesel Oil, Welding Rod, Cement, Steel and Materials for the billing month under consideration

X_o = Index for Labour, High Speed Diesel Oil, Welding Rod, Cement, Steel and Materials as on the Base date.

2.15.4 Base date shall be the date of calendar month of expiry date of contract validity as per Letter of Intent or work order.

2.15.5 PVC shall not be payable for the Supplementary / Additional Items, Extra works. However, PVC will be payable for items executed under quantity variation of BOQ items under originally awarded contract.

2.15.6 The contractor shall furnish necessary monthly bulletins in support of the requisite indices from the relevant websites along with his Bills.

2.15.7 The contractor will be required to raise the bills for price variation payments on a monthly basis along with the running bills irrespective of the fact whether any increase/decrease in the index for relevant categories has taken place or not. In case there is delay in publication of bulletins (final figure), the provisional values as published can be considered for payments and arrears shall be paid/recovered on getting the final values.

2.15.8 PVC shall be applicable only, during extended period of contract (if any) after the scheduled completion period and for the portion of work delayed/backlog for the reasons not attributable to the contractor.

However, the total Quantum of Price Variation Amount payable/recoverable shall be regulated as follows:

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

- i) For the portion of shortfall/backlog not attributable to contractor, PVC shall be worked out on the basis of indices applicable for the respective month in which work is done. Base index shall be applicable as defined in clause 2.15.4
- ii) In case of Force Majeure, the PVC shall be regulated as per (a) or (b) below.
 - a) Force Majeure is invoked before “Base Date” / “revised base date” (as explained below) OR immediately after “base date” / “revised base date” in continuation (i.e. during the period when PVC is not applicable):
 1. Base date shall be revised: Revised Base date = Previous base date + duration of Force Majeure. No PVC will be applicable for the work done till revised base date.
 2. PVC will be applicable for the work done after “base date”/“revised date” as the case may be (during extended period when delay is not attributable to contractor). PVC shall be worked out on the basis of indices applicable for the respective month in which work is done with base index as on “base date”/ “revised base date” as the case may be.
 - b) Force Majeure is invoked after “base date”/ “revised base date” as the case may be (during extended period when delay is not attributable to contractor).
 1. PVC shall be applicable for the work done after revocation of Force Majeure.
 2. PVC for the work done after revocation of Force Majeure shall be worked out on the basis of indices applicable for the respective month on which work is done excluding the effect of change in indices during total period of Force Majeure(s) invoked after “base date” / “revised base date” as the case may be. Base index shall be taken as on “base date” / “revised base date” as the case may be.

The total amount of PVC shall not exceed 15% of the cumulatively executed contract value.

Executed Contract value for this purpose is exclusive of PVC, Supplementary / Additional items and Extra works except items due to quantity variation.

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

SECTION – III SPECIAL CONDITIONS OF CONTRACT

3.1 **Quantum of Work:**

3.1.1 The scope of work given in the tender specification is only approximate and is liable to variation and alternation at the discretion of BHEL Resident Engineer. No compensation on this account shall be payable to the contractor unless specifically recommended by BHEL Resident Engineer as the variation forming major additions to the original scope of work. All repair / rectification work arising out of normal wear and tear, seizure of parts etc. have to be done by the contractor and the same will be covered by the scope of work of the contract.

3.1.2 The scope of work details out the major activities only. However, as per the general maintenance requirement and site condition, certain related activities may have to be carried out without any extra cost.

3.2 **Commencement and completion of work :**

3.2.1 The starting time and completion time is the essence of the tender. As the time bound programme is firmly committed to customer, the starting time and completion time should be strictly adhered to. It will not be possible to grant extension in completion time except in extraordinary circumstance, which will be decided entirely at the discretion of BHEL Resident Engineer. Work should normally be carried out in two shifts and sometimes also in three shifts in consultation with BHEL Resident Engineer.

A detailed programme of the various activities covered under this contract with specific time period to fall in the overall frame work of the above dates should be prepared and got approved by BHEL Resident Engineer. The progress against this programme shall be reviewed with BHEL Resident Engineer at the end of each day and critical areas identified and suitable steps taken in time.

If during the review, at any stage of overhauling, BHEL Resident Engineer feels that the delays are not likely to be made up, BHEL reserves the right to take corrective steps as considered necessary by BHEL Resident Engineer to complete work in scheduled time and debit the cost incurred thereon to the contractor. This does not however absolve the contractor of his own efforts in consultation with BHEL Resident Engineer. Every endeavour will be made to see that work proceeds uninterruptedly.

3.2.2 The Contractor shall ensure completion of the job in all respects within the day from the date of commencement of work as given in contract.

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

3.3 **Penalty for delay:**

In the event of failure to complete the work in given time, an amount equal to ½% [half percent] of the contract value per day subject to a maximum of 10% [ten percent] of the contract value will be levied as penalty, in case the balance work is allowed to be completed by the contractor beyond the scheduled time of completion, which is at the discretion of BHEL. In case of delays on contractor's part, at any stage during the scheduled period or after, BHEL shall have the option of ensuring completion of the job by any other means at its disposal and the charges on this account shall be levied on the contractor. These shall be adjusted against contractor's bills or Security Deposit. Contract Value for this purpose, shall be the final executed value exclusive Extra Works executed on Manday rate basis, Supplementary / Additional Items and PVC.

In case of LD recovery, the applicable GST shall also be recovered from vendor.

3.4 **Terms of Payment:**

A minimum time of 30 days will be required for processing the bills and release of payment after the bills are presented to BHEL.

3.4.1 All payments are subjects to income tax TDS as per Central Government Laws. No request for advance payment will be entertained by BHEL.

3.5 **Inspection and Completion:**

The work being carried out by the contractor will be supervised and inspected by our Site Engineers under the overall supervision of BHEL Resident Engineer.

3.6 The work will be deemed as complete when it is finally accepted by BHEL Resident Engineer and job completion certificate is issued. No extra payment will be made for any rework carried out by the contractor to rectify any defective work.

3.6.1 The contractor shall not be entitled for labour idling charges under any circumstances.

3.6.2 Tools, Tackles, Test Equipments & Consumables:

All tools and tackles and consumables required for day-to-day work like gas and gas cutting sets with accessories, AC/DC welding sets, TIG welding kits, welding cables, electrodes, all necessary power connection at his own cost. However, in case of emergency, BHEL may supply certain items if available, to contractor at actual cost plus handling charges, these will be deducted from contractors' running bills, testing equipment for conducting various tests, during the progress of overhauling / re- commissioning shall have to be provided by the contractor. Spare parts going into permanent installation shall only be provided by BHEL.

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

3.7 **Accommodation for site staff and store space:**

3.7.1 Contractor has to arrange for the stores and office at site; space for the same shall be made available as per the availability at site. The contractor shall be responsible to provide all necessary facilities like residential accommodation with sanitary facilities, transport, electricity, water, medical bonus etc. as required under various labour laws and statutory rules and regulations framed thereunder to the personnel employed by him.

3.8 **Responsibilities of the contractor:**

3.8.1 Supervisory staff and labour:

The contractor shall employ, specially skilled labour, supervisor and engineers thoroughly conversant with particular type of work to ensure quality work. BHEL reserves the right to decide on the suitability of the workers and other staff employed by the contractor. BHEL reserves the right to insist on removal of any employees of the contractor at any time if they find him unsuitable and the contractor should forthwith remove him.

3.8.2 Planning and Execution:

Contractor shall submit a job planning in form of Bar Chart or PERT Chart. A List of manpower category wise, indicating individuals responsibility job activity wise, shall have to be submitted. Daily programme of job shall be displayed on board near work site on day in advance. A daily progress report along with Manpower utilities has to be submitted and backlog of the work, if any, shall be covered up in consultation with BHEL Resident Engineer.

3.8.3 Safety and Accident Coverage

Contractor shall ensure safety of all his employees at site of work. All employees shall be covered by insurance (workmen compensation) against accident, failing which proper action will be taken against the contractor. Contractor shall ensure proper safety of the equipments under overhauling by deputing personnel to guard the equipments round the clock. Open oil spaces, steam spaces shall be covered properly against ingress of foreign materials while working.

RESPONSIBILITIES OF THE CONTRACTOR IN RESPECT OF SAFETY OF MAN, EQUIPMENT, MATERIAL AND ENVIRONMENT

3.8.3.1 Before commencing the work, contractor shall submit a 'SAFETY PLAN' to the authorised BHEL official. The 'Safety Plan' shall indicate in detail the measures that would be taken by the contractor to ensure safety of men, equipment, material and environment during execution of the work. The plan shall take care to satisfy all requirements specified here under. The contractor shall submit safety plan along with his offer.

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

During negotiations before placing of work order and during execution of the contract, BHEL shall have right to review and suggest modifications in the safety Plan. Contractor shall abide by BHEL decision in this respect.

- 3.8.3.2 The contractor shall take all necessary safety precautions and arrange for appropriate appliances as per direction of BHEL or it's authorised officials to prevent loss of human lives, injuries to personnel engaged, and damage to property and environment.
- 3.8.3.3 The contractor shall provide to it's work force and ensure the use of the following personal protective equipment as found necessary and as directed by the authorised BHEL officials:
- Safety Helmets conforming to IS-2925 : 1984
 - Safety Belts confirming to IS – 3521 : 1983
 - Safety shoes conforming to IS-1989 : 1978
 - Eye & Face Protection devices conforming to IS-8520 : 1987 and IS-8940 : 1978
 - Hand & body protection devices conforming to : IS – 2573: 1975
IS – 6994: 1973
IS – 8807: 1973
IS – 8513: 1977
- 3.8.3.4 All tools tackles, lifting appliances, material handling equipment scaffolds, cradles, safety nets, ladders, equipment etc. used by the contractor shall be of safe design and construction. These shall be tested and certificate of fitness obtained before putting them to use and from time to time as instructed by authorised BHEL official who shall have the right to ban the use of any item.
- 3.8.3.5 All electrical equipment, connections and wiring for construction power, its distribution and use shall conform to the requirements of Indian Electricity Act & Rules. Only electricians licensed by the appropriate statutory authority shall be employed by the contractor to carry out all types of electrical works. All electrical appliance including portable electrical tools used by the contractor shall have safe plugging system to source of power and be appropriately earthed.
- 3.8.3.6 The contractor shall not use any hand – lamp energised by electric power with supply voltage of more than 24 volts DC. For work in confined spaces, lighting shall be arranged with power source not more than 24 volts.
- 3.8.3.7 The contractor shall adopt all fire safety measures as laid down in the “Code for Fire Safety at Construction Sites’ issued by the safety Department of the Construction Management (HQ) of BHEL and as per directions of the authorised BHEL official. A copy of the above referred

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

“Code for Fire Safety at Construction Sites” shall be made available by BHEL to the contractor for reference, on demand by the contractor, during tendering stage itself.

- 3.8.3.8 Where it become necessary to provide and / or store petroleum products, explosives, chemicals, and liquid or gaseous fuel or any other substance that may cause fire or explosion, the contractor shall be responsible for carrying out such provisions and / or storage in accordance with the rules and regulations laid down in the relevant government acts, such as Petroleum Act, Explosives Act, Petroleum & Carbides of Calcium Manual of the Chief Controller of Explosives, Govt. of India, etc. Prior approval of the authorised BHEL official at the site shall also be taken by the contractor in all such matters.
- 3.8.3.9 The contractor shall arrange at his cost (wherever not specified) appropriate illumination at all work spots for safe working, when natural daylight may not be adequate for clear visibility.
- 3.8.3.10 The contractor shall be held responsible for any violation of statutory regulations (local, state or central) and BHEL instructions, that may endanger safety of men, equipment, material and environment in his scope of work or another contractor’s or agency’s Cost of damage if any, to life and property arising out of such violation of statutory regulations and BHEL instructions shall be borne by the contractor.
- 3.8.3.11 In case of a fatal or disabling injury, accident to any person at construction site due to lapses by the contractor, the victim and / or his / her dependents shall be compensated by the contractor as per statutory requirements. However, if considered necessary, BHEL shall have the right to impose appropriate financial penalty on the contractor and recover the same from payments due to the contractor for suitably compensating the victim and / or his/her dependents. Before imposing any such penalty, appropriate enquiry shall be held by BHEL giving opportunity to the contractor to present his case.
- 3.8.3.12 In case of any damage to property due to lapses by the contractor, BHEL shall have the right to recover cost of such damages from payments due to the contractor after holding an appropriate enquiry.
- 3.8.3.13 In case of any delay in the completion of a job due to mishaps attributable to lapses by the contractor, BHEL shall have right to recover cost of such delay from payments due to the contractor, after notifying the contractor suitably and giving him opportunity to present his case.
- 3.8.3.14 If the contractor fails to improve the standards of safety in its operation to the satisfaction of BHEL after being given a reasonable opportunity to do so, and/or if the contractor fails to take appropriate safety precautions or to provide necessary safety devices and equipment or to

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

carry out instructions regarding safety issued by the authorised BHEL official, BHEL shall have the right to take corrective steps at the risk and cost of the contractor after giving a notice of not less than seven days indicating the steps that would be taken by BHEL.

- 3.8.3.15 The contractor shall submit report of the accidents, fires and property damage, dangerous occurrences, to the authorised BHEL official immediately after such occurrence, but in any case not later than twelve hours of the occurrence. Such reports shall be furnished in the manner prescribed by BHEL. In addition, periodic reports on safety shall also be submitted by the contractor to the authorised BHEL official from time to time as prescribed.
- 3.8.3.16 Before commencing the work, the contractor shall appoint / nominate a responsible officer to supervise implementation of all safety measures and liaison with his counterpart of BHEL.
- 3.8.3.17 If safety record of the contractor in execution of the awarded job is to the satisfaction of safety Department of BHEL, issue of an appropriate certificate to recognise the safety performance of the contractor may be considered by BHEL after completion of the jobs.

3.9 **Housekeeping and preservation:**

- 3.9.1 Work floor/area shall be cleaned every day and be kept absolutely clean. A regular cleaning gang may be engaged for the purpose. All dismantled components of the equipments under overhauling should be tag marked and stored properly according to type of components, namely all loose/small parts shall be kept in boxes bearing and matching components shall be kept on wooden planks. A list of such components shall be maintained to identify / locate be preserved properly against probable damages. No floor shall be damaged while working and necessary steps shall be taken by the contractor for repair in case of any damage.
- 3.9.2 Tools stores and Consumables:
Tools & tackles, other than special tools and tackles supplied along with the equipments, shall be arranged and kept properly by the contractor. A register must be maintained and updated regularly. All consumables, other than those going permanently into the equipment, shall be stored by the contractor for daily use. Regular check shall be made at end of each day's work and exhausted consumables shall be replenished immediately. The store may be visited by BHEL Engineers without notice for verification.
- 3.9.3 The contractor shall make all necessary arrangement to receive spares from BHEL/Customer's stores, as and when required. The unused and scrap materials shall be returned to BHEL / Customer's stores on completion of the work. A detailed account shall be submitted by the

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

contractor to this effect at the end of the work certifying no dues remained against them duly signed by Resident Engineer BHEL/Customer.

3.9.4 General:

- 3.9.4.1 Standard printed conditions if enclosed with the offer by the tenderers will not be accepted and only those in main body of the offer will be considered for acceptance.
- 3.9.4.2 The tenders are likely to be rejected if the tendered is not acceptable to the customer.
- 3.9.4.3 It will be the responsibility of the contractor to carry out trial run of all the equipments overhauled and confirm the satisfactory operation of equipment. The contractor's personnel shall also be present at time of final commissioning and attend to any defects that shall occur during this time.

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

SPECIFIC TERMS AND CONDITIONS FOR SERVICES JOB

A. TENDERING

1. Each and every page of tender documents should be signed by the tenderer providing his / their seal and date as taken of their full acceptance of the scope of work, terms and conditions etc., and should be returned along with the tender offers. In case of e-tendering document digitally signing on cover page is also acceptable.
2. The tenders should be quoted in English language and international numbers.
3. All entries in the tender shall be typed in ink legibly written without ambiguity.
4. Qualifications of Tenderers: for open tenders only, the tenderers who have previous experience in the similar nature of work as detailed in this tender specifications are expected to quote duly detailing their relevant experience / credentials along with the offer. Offers of other than the above are not likely to be considered. (List of similar jobs done) - Enclosure – 1
5. Financial Status : A current / valid certificate from a scheduled bank to provide the financial soundness / capability of the bidder to undertake the work, is required to be submitted along with offer.- Enclosure – 2
6. Organization Chart: The organization pattern and that will be deployed by the tenderer for this work duly indicating the number of supervisors, their qualifications and experience in the line, the number of skilled and unskilled persons / etc. is required to be indicated in the offer.- Enclosure – 3
7. THE FOLLOWING DOCUMENTS SHOULD ALSO BE ENCLOSED.
 - a. An attested copy of the power of attorney in case the tender is signed by an individual other than the sole proprietor.
 - b. In case of an individual his full name, address, nature of business and valid trade licence.
 - c. In case of partnership firm, the names of all partners and their addresses. (A copy of the partnership deed / instrument of partnership, duly attested by the Notary public shall be enclosed.)
 - d. In case of companies, date and place of incorporation / registration including date of commencement certificate (for public companies). (Certified copies of Memorandum and articles of association are also to be furnished).

B. EARNEST MONEY DEPOSIT :

For this, please refer article 1.4 of the General and special conditions of contract (GSCC) enclosed / supplied with the form issued for empanelment.

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

C. **VALIDITY OF OFFER :**

The rates in the tender shall be kept open for acceptance for a minimum period of six months from the due date of opening of tenders. For details, please refer article 1.6 of GSCC enclosed.

D. **SECURITY DEPOSIT:**

As per clause no. 1.8 of GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB].

Return of Security Deposit:

If the contractor duly fulfils the contractual obligations as per contract in all respects to the entire satisfaction of BHEL, and presents an absolute “No Demand Certificate” in the prescribed form and return properties belonging to BHEL handed over, lent or hired by him for carrying out the said works the security deposit will be released to the contractor after deducting all costs or expenses or other contracts entered into with the contractor, only after the satisfactory completion of guarantee period. In no case Security Deposit can be released before settling all claims of BHEL on contractor under this contract.

No interest shall be payable by BHEL on Earnest Money / Security Deposit or any money due to the contractor from BHEL.

E. **ACCEPTANCE / REJECTION OF TENDERS:**

For this, please refer article 1.9 of GSCC enclosed. Also acceptance of customer is pre-requisite for consideration of bid, wherever applicable.

F. **ADDITIONAL SPECIFIC TERMS AND CONDITIONS :**

01. EXECUTION.

- i. If the site in question is subjected to industrial relations unrest / disturbances / problems, then the successful bidder should take adequate precautionary measures against dislocation of the job on account short problems. Any liability on this account, lies entirely with the contractor.
- ii. The contractor shall commence the work at site with full manpower, T&P etc. and complete as specified in the particulars of the tender. In case of any delay on the completion of work attributable to the contractor BHEL reserves full rights to cancel the contract fully or partly and to award the job in full or part to an alternate agency and recover the costs towards the same including BHEL's overheads from the contractor.
- iii. In the event of termination of contract or restriction of quantum of job by our client, before or during the execution of contract, BHEL reserves the right to terminate

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

- the contract or restrict the quantum of work of sub-contractors accordingly without paying any compensation.
- iv. **Manpower:**
The contractor shall engage proper skilled / qualified personnel and ensure the expected quality of work. If any of their personnel has been found to be unsuitable, by BHEL / or their client, the contractor shall withdraw them and provide suitable replacement immediately, failing which BHEL reserves full rights to get the job done by alternate suitable persons at risk and cost of the contractor. The delay on this account is attributable to the contractor.
- v. **TOOLS (TACKLES & PLANTS):** All tools, tackles and plants including precision measuring instruments, lifting devices shall have to be arranged by the contractor. (List of recommended T&P, for guidance, is provided in the tender enquiry). All lifting tackles and pulling devices to be used must bear valid / latest test certificates for their suitability. Also certificates of test / calibration with date of validity for various measuring / test instruments have to be submitted by the tenderer preferably along with the offer itself, or else the same is required to be produced at site before start of job failing which the LOI / W.O. is liable to be cancelled without any compensation.
Successful bidder shall provide valid calibration certificates for IMTEs, fitness certificates for T&Ps and Construction Equipment (e.g. wire ropes, hand operated chain pulley blocks, pulling and lifting machines, electric welding generators, arc welding transformers etc.). Calibration of IMTEs is to be arranged from the accredited agencies. Calibration certificates should have the traceability as per national/international standards. At work site the IMTEs, T&Ps and Construction Equipment shall be checked/tested/inspected by BHEL engineers. The procedure for fitness testing and storage preservation and maintenance of Construction Equipment and T&Ps shall be as per BHEL standards available with BHEL site engineers.
- vi. **CONSUMABLES:** All consumables required (list for guidance is given in the tender enquiry) for the job shall be arranged by the contractor at his cost. However, any spares / components / consumables / materials going

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

permanently into the clients equipment shall be provided to the contractor.

- vii. Successful bidder has to arrange proper storing facilities at site with traceabilities for IMTEs, T&Ps, construction equipments and consumables used during job execution.

- viii. All the T&Ps, consumables etc. must be mobilized at site at least three days prior to actual start of the job. They must be in accordance with those recommended in the Tender Enquiry and must be got verified to that effect. Formal clearance in writing must be obtained from BHEL's resident engineer before the contractor starts the job.

T&P found defective / improper / insufficient or not having valid test / calibration certificate should be made good immediately.

If the contractor fails to mobilize recommended T&P and manpower within the stipulated period, the order on the contractor is liable to be cancelled without paying any compensation on to him.

- ix. Storage: The contractor shall be responsible for proper storing of all dismantled components, spares, T&P etc., identify them properly and preserve them throughout the execution of the job. Any loss or damage of the components caused due to the lapses attributable to the contractor or his personnel shall be chargeable to the contractor.

- x. Transportation of Spares / materials / consumables :
Any material / components / spares required for the work must be collected by the vendor and carried safely to the work site from the point of issue in our clients premises, through his own resources and cost.

Similarly, excess materials / spares etc. must be returned to the client's stores /any other place, within the client's premises, indicated by site-in-charge of BHEL.

Any debris, rubbish at the work spot must be cleared very day by the contractor using his own resources and cost, and disposed off at a placement for, as to be informed to him.

- xi. Space / Accommodation :
The contractor will be allowed to have his site office, stores etc. by erecting temporary partitions / chambers / sheds etc. at the work spot according to the availability of space, which will have to be vacated and dismantled at the end of the jobs to restore the space to the client. The contractor

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

should make his own arrangements for the security / watch and ward.

No residential accommodation / spare can be provided by BHEL to the contractor for any residential accommodation of his personnel. Contractor has to make arrangements/accommodation at site at his cost.

xii. The contractor shall ensure responsible execution of the job and proper behavior of their personnel and observance of all the rules and regulations of our clients.

xiii. Safety :

a. Standard safety norms/ regulations shall be conserved by the contractor during the execution of the job. The contractor should provide the necessary / stipulated safety devices to his personnel deputed to the site, such as grinding / welding goggles, masks, safety belts, helmets etc. No worker will be permitted to work without necessary safety appliances. That Delay of work due to these lapses are attributable to the contractor.

b. All norms related to Health, Safety & Environmental (HSE) norms conforming to ISO-14001 & OHSAS-18001 shall be followed by successful bidder. Bidders may contact PSSR-SAS office for getting detailed norms to be followed by bidder at Site

c. The contractor shall comprehensively insure all his site personnel against any hazard / accident and submit a copy of the insurance certificate covering all his site personnel to our resident engineer before commencement of work.

d. In case of any accident / hazard, the contractor shall arrange for medical attendance immediately shall compensate the personnel concerned in accordance with the workmen's compensations act in force and shall keep BHEL indemnified against any provisions of the act.

e. The successful bidder is to arrange a full set of First Aid kit for attending to manpower deployed by him at site as per requirement.

f. Successful bidder should follow all safety norms at work site. The Doc. No. HSEP:14 Rev.01 Dtd.20.01.2020 and subsequent

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

revisions/amendments in this regard is available with BHEL engineer at site.

02. STATUTORY COMPLIANCE :

- i. The contractor shall comply with all state and central laws, statutory rules regulations etc. such as :
The payment of wages act, minimum wages act, workmen's compensation act., industrial disputes act, employees provident funds act / scheme, Employees' state insurance scheme, contract labour (Regulation & abolition) act, 1970 etc. and all other acts, rules & regulations for employment of labour as may have been and as may be enacted by the Government during the tenure of the contract and having force or jurisdiction at site. The contractor shall give to the local government body, police, labour authorities and other relevant authorities and all such intimation and notices as may be required by law and appraise BHEL site- in-charge of such compliance.
- ii. The contractor shall pay all taxes, fees, licence charges, deposits, duties, fines, royalty commissions or other charges which may be leviable on account of any 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 the contractor either from his bills or other issue as deemed fit.
- iii. The contractor shall obtain requisite licence from appropriate authority of the ministry of labour under the provision of the contract labour (Regulation and abolition) Act as soon as the work is avoided to him and indemnify BHEL against the application of any provisions of the act.
- iv. The contractor shall be responsible for provision of welfare and health of his employees / workmen, more particularly described in the contract labour (Regulation & abolition) act / rules, and safety precautions etc., as may be required for satisfactory execution of the contract.
- v. The contractor shall fulfil all his obligations in respect of canteens, rest rooms, accommodation including proper medical facilities etc. for the personnel employed by him, more particularly described in the contract labour (regulation & abolition) act / rules.
- vi. The contractor will be directly responsible for payment of wages to his workmen more specifically described in the

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

contract labour (regulation and abolition) act / rules. A pay roll sheet showing all the wage payments representative should be furnished to BHEL site office for record purpose. BHEL site in-charge may be intimated the date of disbursement of wages to the workmen engaged for the work; so that his representative can witness the same. The contractor shall indemnify BHEL against any statutory liability on account of dues to his workmen.

- vii. The bidders should be having appropriate licence from the local Boiler Inspectorate if the job involves welding of pressure parts. Also they should be having alloy steel / carbon steel high pressure welders (for TIG and submerged arc welding approved by the local Boiler Inspectorate for welding the pressure parts. The bidders should clearly indicate the same in the offer.

03. TERMS OF PAYMENT:

- i. No advance shall be payable to the contractor unless specifically spelt out in the tender enquiry.
- ii. A minimum time of 30 days will be required for the processing of bills (received with all required documents) presented and for their payment.
- iii. Payment terms are as follows
 - a. Up to 90% of the contract value shall be payable against submission of up to three progressive running bills. Each of the billed amount shall correspond to the quantum of job actually completed and to that effect the claim can be preferred based on percentage allotments (to be given in the work order) made. This, however, has to be certified by the resident manager / engineer of the site.

The Following documents are to be submitted with 1st RAB provided the value of such bill should not exceed 40% of CV.

1. Workmen compensation Insurance (should be taken for the full period of the contract. In case any defects attended during defect liability period Insurance should be taken during such period.)
2. Joint protocol / letter of commencement of work.
3. Labour License application copy (Labour license shall be applied online as per customer requirement)

However, if the value of 1st RA Bill exceeds 40% of CV, all the documents specified for 2nd & 3rd RA Bill (as mentioned below)

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

shall be required in addition to Joint Protocol/Letter of commencement of work.

The Following documents are to be submitted with 2nd and 3rd RAB

1. Workmen compensation Insurance/ESI, PF, Third party liability policy (as per customer requirement) & Wage register/Bank statement of workmen payment verified by EIC for the completed months of execution period.
 2. Labour license (Labour license shall be applied online as per customer requirement)
 3. Duly filled pro-forma of Form 36B.
 4. HR Pro-forma to be submitted along with bill.
 5. Test reports (like NDT, Electrical etc., as applicable) (03 hard copies each)
- b. Final bill shall be payable after successful synchronization / commissioning Value of such final bill shall be total executed contract value less previous RAB(s) values.

The following documents are to submitted with final bill.

1. Workmen compensation Insurance/ ESI, PF, Third party liability policy (as per customer requirement) & Wage register/Bank statement of workmen payment verified by EIC for the balance period of execution, if applicable.
2. HR Pro-forma to be submitted along with bill.

Note: BHEL at its discretion may further split up the percentage break up given in billing schedule and effect payment to suit site condition, cash flow requirement etc. according to progress of work.

iv. PERFORMANCE SECURITY DEPOSIT (PSD)

Performance security deposit shall be 10% of executed contract value including extra works if any, and the vendor may submit the same in the form of (a) or (b) below.

- (a) CASH (DD/Online payment), 10% of the full contract Value towards Performance security deposit, before commencing the contract. (PSD for extra works if any, shall be deposited by the vendor separately)

(or)

- (b) Recover 10% from Each Running/Final/Extra works bill towards Performance security deposit.

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

- v. Refund of Performance Security deposit:
Performance security deposit shall be refunded on submission of duly signed (for certification of contractor portion only) REFUND OF PERFORMANCE SECURITY DEPOSIT (format attached –Format No. PS:SR:SCT:PSD:REFUND:001) along with covering letter with the following documents.
 - a. Certification to the effect that “No further claim” will be made against this contract.
 - b. Submission of a “NO DUES” certificate from our principal customer regarding returning of materials, T&P, tackles, fixtures etc. if any supplied to the successful bidder by the principal customer through BHEL during the execution of work to the effect that all the items have been received intact or as part or after fabrication.
 - c. PSD shall be refunded only after internal clearances from different departments like Commercial, HR, Sub-contracting & Services.
- vi. The bidder should be financially sound to maintain the site establishment with regard to timely payment of wages to his workmen, arrangements of other inputs viz. T&P consumables etc.
- vii. Non-receipt of progressive payment from BHEL due to any reasons should not be a constraint for the smooth execution of the job at site.
- viii. The bidder should make all out efforts to provide all inputs in consultation with BHEL engineers at site for completing the job in the specified time frame.
- ix. No overrun/escalation / idle charges are payable against any services job under any circumstances. (in exceptional cases such claims may be considered provided BHEL’s customer admits of such payment).
- x. Extra work rate being admitted off by BHEL for other similar contracts have been stated on the page no.46 of this annexure.
For any additional work not envisaged in the scope of work or quantities exceeding the stated quantities, these rates shall be applicable.
- xi. All claims for extra works should be settled before claiming the final (10%) bill. The contractor should prefer the final claim with the certificate that ‘no other claim is due from BHEL against this contract’, without which final bill cannot be processed for payment.

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

- xii. For reduction / deletion / withdrawal in the scope of work proportionate deduction in contract value will be made.
04. PERFORMANCE:
- i. As soon as job is awarded, the contractor has to submit a barchart to the resident engineer nominated showing the detailed schedule for all activities. This schedule will be reviewed by the resident engineer from time to time to enable the contractor to recast the barchart matching the planned completion of the job.
 - ii. It shall be the responsibility of the contractor's supervisor to distribute the work among his workmen deployed at site and get day to day activities executed as per BHEL's requirement. BHEL's engineers / supervisors will check the correctness of the job done and will also give the daily programme of work to the contractors supervisor. The contractor has to ensure completion of daily programme and if there is any spill over, the same has to be completed by putting in same additional resources. (Technical guidance wherever required will be provided by BHEL).
 - iii. The scope of work mentioned in this tender enquiry gives the broad outline of the actual work involved and it not is possible to mention all minute details of the work. For proper evaluation, the bidders may seek clarifications from this office. Or else, they may visit site and study the job content before submitting offers and be well informed and acquainted with the actual working and other prevalent conditions of the site, facilities available etc. No claim will be entertained later on the ground of lack of knowledge.
 - iv. The bidders have to furnish the bio-data and experience details of the site-in-charge, other key workmen, supervisors, safety officers, senior technicians etc. to be deployed. In case of award of contract, the key members of the contractor's team may be interviewed at site by BHEL's resident engineer to ascertain their suitability. Replacement of non-acceptable personnel will have to be arranged by the contractor immediately at his own cost.
 - v. Penalty for the delay in job completion will be 0.5% per day of delay, limiting to maximum 10% of the contract value, to be imposed on the contractor in case the delay in work completion is attributable to the lapses on the part of the contractor. In case of LD recovery, the applicable GST shall also be recovered from vendor.

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

- vi. Performance Guarantee: Even though the work will be carried out under supervision of BHEL Engineers, the contractor shall guarantee against defects attributable to faulty workmanship or procedure adopted in the overhaul for items covered in the contract for a period of Six months from the date of re-commissioning of the set after the overhaul. The guarantee should cover all defects notified during this period and shall have to be attended free of cost immediately or at the time our clients are able to give shutdown of the set for the required period, when necessary. In case of failure of contractor to attend to the defect as and when required in time, BHEL shall arrange to attend the defects and the charges shall be levied to the contractor's account and shall be recoverable from the security deposit / progressive payments.

05. MISCELLANEOUS :

- i. The bidders shall submit a list of jobs being carried out by them or expected to be taken up by them during the period as called for in the participation of the tender. Enclosure – 6.
- ii. The contractor has to engage a cleaning gang at site to ensure continuous cleaning of the floor at work site to protect the parts and to give safe access at the work site.
- iii. Obtaining licenses / permits / road permits in connection with the fulfillment of the contractual obligations is entirely the contractors responsibility. However, wherever applicable BHEL can only offer support to the extent possible.
- iv. For all matters bearing on the execution of the job at site, the decisions of the resident engineer are final and binding upon the contractor.
- v. The contractor has to retain suitable minimum work force at site till successful completion of commissioning activities/handling over of unit to attend any small/miscellaneous problems, as leakage etc.
- vi. The contractor has to mobilize on a short notice to attend any troubles encountered in the equipment worked on, during warranty period of six months.
- vii. After dismantling and during execution of the job, successful bidder has to suitably tag the components and sub-assemblies for traceability and store properly before

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

final assembly. This is as per BHEL standards available with BHEL site engineers.

- viii. Process control of Special Processes like Welding and Heat Treatment shall be carried by successful bidder as per BHEL standards available with BHEL site engineers.
- ix. Proper segregation, identification, tagging and up-keep of all dismantled items at work site during job execution have to be done by successful bidder.
- x. Successful bidder is to obtain necessary "No Dues" certificates before de- mobilisation from site.
- xi. Any NDT within the scope shall be as per Non-Destructive Examination manual (BHEL standards available with BHEL site engineer).
- xii. Unless otherwise mentioned specifically in this tender elsewhere, the storage & preservation of components, sub-assemblies, IMTEs, T&Ps, Construction Equipments etc, maintenance of stores, watch and ward of stores and BHEL site office is in the scope of the successful bidder.
- xiii. The successful bidder is to arrange extra illumination at work site to augment the existing site illumination if required to enable round-the-clock safe working.

Note: Any of the documents mentioned above can be referred before submission of tender at the office of PSSR-SAS.

06. EXTRA WORK RATES CURRENTLY BEING ADMITTED BY BHEL, PS-SR SAS

- i. MAN-HOUR RATE FOR ELIGIBLE EXTRA WORKS: Single composite average labour man-hour rate, including overtime if any, supervision, use of tools and tackles and other site expenses and incidentals, consumables for carrying out any major rework/repairs/rectification/modification/fabrication as certified by site as may arise during the course of erection, testing, commissioning or extra works arising out of transit, storage and erection damages, payment, if found due will be at Rs.108/- per man hour.
- ii. The following all inclusive rates will be applicable for modification work involving welding of high pressure butt joints only. Extra work involving other types of joints will be done on the above manpower basis.

	GENERAL & SPECIAL CONDITIONS OF CONTRACT [FOR SERVICES JOB]	PSSR SAS
---	--	----------

Unit rate per equivalent joint of size OD 63.5 mm x 6.3 mm thick

Average unit rate per equivalent joint, including NDT and stress relieving.

Carbon Steel Rs.200/- (Rs. Two hundred only)

Alloy Steel Rs.250/- (Rs. Two hundred fifty only)

List of enclosure to be furnished by the bidder along with tender documents.

- | | | |
|----|--|---------------|
| a) | Experience certificate | Enclosure 1* |
| b) | Banker's certificate of financial soundness | Enclosure 2* |
| c) | Organisation Chart | Enclosure 3.* |
| d) | List of concurrent jobs held by the contractor / bidder. | Enclosure 4. |
- (*Vendors registered with BHEL should submit documents in support of sl. no. d only.)

List of documents to be furnished by the contractor to the resident engineer before commencement of the jobs / during the execution.

- a) Barchart (if not furnished in the offer)
- b) List of T&P being mobilized. Test / Calibration certificate with date of validity for lifting / pulling devices and measuring / test instrument (if not furnished in the offer).
- c) Category wise list of manpower being mobilized.
- d) List of consumables being mobilized.
- e) Licence from the department of Labour under contract Labour (Regulation & Abolition) Act / Proof of Application for Licence.
- f) ESI coverage, if applicable.
- g) Insurance certificate covering the site personnel.
- h) Proof of remittance of provident fund to the concerned authorities, for all workmen employed for this job.
- i) Third party insurance coverage.