



ಭಾರತ್ ಹೆವಿ ಎಲೆಕ್ಟ್ರಿಕಲ್ಸ್ ಲಿಮಿಟೆಡ್
भारत हेवी इलेक्ट्रिकल्स लिमिटेड

Bharat Heavy Electricals Ltd.,
(A Government of India undertaking)
Electronics Division
PB 2606 , Mysore Road Bangalore , 560026 INDIA

Tender Document for " Supply of 24V DC SMPS Charger to NTPC RAMMAM HEP 3X40MW "

TENDER REFERENCE	NJP0000050
TENDER DOCUMENT AVAILABLE FROM	As per https://eprocurebhel.co.in website
LAST DATE AND TIME FOR SUBMISSION OF TENDER	
DATE AND TIME FOR TENDER OPENING	
SUBMISSION OF TENDER	The bidder should submit their offer in eProcurement portal only : https://eprocurebhel.co.in

Note: Bidder to refer E-procurement portal(<https://eprocurebhel.co.in>) for any corrigendum, due date extension, etc. index:

This tender Document contains documents as per below Index:

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4	TECHNICAL SPECIFICATION WITH PRE-QUALIFICATION REQUIREMENTS

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Bharat Heavy Electricals Ltd.,
(A Government of India undertaking)
Electronics Division

CE: PR: 003- Rev 02

PB 2606 , Mysore Road Bangalore , 560026 INDIA

SPECIAL COMMERCIAL CONDITIONS OF CONTRACT

Reference is brought to BHEL's Instructions to Bidders (Document Ref: CE: PR: 001- Rev 05) and General Commercial Conditions for Contract (Document Ref: CE: PR: 002- Rev 03).

These two documents along with Special Conditions of Contract annexed to this RFQ will form an integral part of the contract as and when the RFQ culminates into a Purchase Order / Contract.

RFQ No. : **NJP0000050**
RFQ Date : As per E-procurement website
RFQ Due Date : As per E-procurement website
Customer/Project : **NTPC RAMMAM HEP 3X40MW**
Scope Description : **24V DC SMPS CHARGER**

Kindly submit your quotation as **two part bid** (Pre-Qualification Criteria & Techno-Commercial bid-1st part & Price bid-2nd Part) in E-Procurement System portal: <https://eprocurebhel.co.in> within the Due- Date of ____ As per E-procurement website ____ before ____ As per E-procurement website ____ hours IST and note that tenders will be opened on the same day at ____ As per E-procurement website ____ hours IST.

Purchase Executives: Clarifications with regard to the tender shall be addressed to purchase officers whose e-mail IDs are given below:

nandjee@bhel.in or rk.pandey@bhel.in

Splitting of tendered quantity to MSE vendors for Purchase preference: Non-Splitable

Destination: For Indigenous scope of supply, items are to be directly despatched to BHEL site office/stores located at **DARJEELING** in **WEST BENGAL** state respectively, India. Detailed Consignee details will be issued by BHEL along with Despatch Clearance.

Terms of Delivery:

- **Indigenous scope of supply:** Ex-works, ____ <indicate station of dispatch> ____ (including Packing & Forwarding charges but excluding Taxes).

Under-mentioned details shall be provided against indigenous supplies & services:

- a. GSTIN of place of supply : _____
- b. HSN (Harmonized System of Nomenclature) code : _____
Applicable tax and Rate : _____ & _____
- c. GSTIN of place of supply of service : _____
- d. SAC (Service Accounting Code) : _____
Applicable tax and Rate : _____ & _____
- e. GeM Seller ID mandatorily required for PO placement: _____

f. MSE vendor : Yes-MSE supporting documents enclosed/No
(If MSE, supporting documents such as Udyam certificate to be enclosed)

I. Bidders to mandatorily provide confirmation/compliance for the under-mentioned terms:

SL NO	TERMS	BHEL ACCEPTABLE TERM	BIDDER'S CONFIRMATION	REMARKS,if any
01	Delivery Period	<p>Within 14 weeks from the date of issue of Manufacturing clearance along with approved document.</p> <p>Delay in contractual delivery will attract Penalty as per GCC Clause no.:04.b. Manufacturing clearance will be as per the latest site delivery schedule. Present delivery schedule is DEC'2024</p>	<p>AGREE</p> <p>..... weeks</p>	
02	Terms of Payment at the time of material supply	<p>Refer Clause "F" of Instructions to Bidder for BHEL standard Payment terms and loading factors applicable for non-compliance against payment terms:</p> <p>Indigenous Scope-Main supply: a) Supply with Service(s)</p> <p>Mandatory Spares: b) Supply only</p> <p><u>Note:</u> MSME vendors may opt to get payment through Trade Receivables electronic Discounting System (TReDS)</p>	AGREE	
03	Declaration of local content : The 'Class-I local supplier' shall be required to indicate percentage of local content and provide certification that the item offered meets the local content requirement for 'Class-I local supplier'.	<p>'Local content' means the amount of value added in India which shall, unless otherwise prescribed by the Nodal Ministry, be the total value of the item procured (excluding net domestic indirect taxes) minus the value of imported content in the item (including all customs duties) as a proportion of the total value, in percent. (Refer Clause 'A' Sl. No. 12 of Instructions to Bidders).</p> <p>Note: Non Local suppliers are also eligible to participate in the tender</p>	<p>Percentage of local content : _____%</p> <p>Details of the Location(s) at which the local value addition is made : _____</p>	

II. Bidder to note that Deviations shall not be permitted for the below mentioned terms and are deemed to be complied. In case of non-compliance/deviation, offer shall be liable for rejection:

- (1) **Submission of documents post PO viz., drawings /data sheet etc. as indicated in Cl: 04 of GCC:** Within **02** weeks from the date of receipt of Purchase Order. Delay in submission of complete set of specified documents in NIT, will attract Penalty as per GCC Clause no.:04.a.
- (2) **Validity:** The offer will be valid for a period of **90** days from the date of part-I bid opening and in case of Negotiation/ Counter-offer/RA, price validity will apply afresh for a period of **60** days from the date of according final price by bidder (or) up to original validity period, whichever is later.
- (3) **Warranty:** **24** months from the date of dispatch of goods or **18** months from date of commissioning whichever is earlier.
- (4) **Despatch Documents:** Complete set of despatch documents (original + 1 photocopy set) as per Purchase Order shall be forwarded to Purchase Executive/BHEL directly. Depending upon the project/customer demands, Despatch documents may include one (or) more documents from the following:
Invoice (01 original and 01 copy with original sign & seal / digitally signed invoice), Lorry Receipt (L/R), Packing List, NIL Short-Shipment Certificate, Warranty certificate, insurance intimation letter, E-way bill, original Performance Bank Guarantee (directly from issuing bank to BHEL) and original POD (Proof of Delivery) on L/R.

The precise list of despatch documents needed for the project will be specified in the Purchase Order.

One set of Invoice, Packing List, Lorry Receipt (or) AWB/BOL shall be e-mailed immediately to BHEL-EDN at the time of despatch.

Note: Detailed Packing List should indicate package-wise content details and also Net & Gross weight of each package.

- (5) **Freight Charges:** Freight charges for complete scope of supply shall be to vendor's account. Bidder to quote reasonable Freight charges along with applicable tax, in price bid.
- (6) **Evaluation criteria to determine L1 bidder:** Items will not be split on item-wise lowest offer. The Procuring Entity reserves its right to grant preferences to eligible Bidders under various Government Policies/ directives (policies relating to Make in India, MSME etc.)
 - a. Preference to Micro & Small Enterprises (MSEs): Purchase preference will be given to MSEs as defined in *Public Procurement Policy* for Micro and Small Enterprises (MSEs) Order, 2012 dated 23.03.2012 issued by Ministry of MSME (and its subsequent Orders/Notifications issued by concerned Ministry) & the latest *Office Memorandum* issued by Department of Expenditure dt:18.05.2023.

If the bidder wants to avail the Purchase preference, the bidder must be the manufacturer of the offered product in case of bid for supply of goods. Traders are excluded from the purview of Public Procurement Policy for Micro and Small Enterprises. Relevant documentary evidence in this regard shall be uploaded along with the bid in respect of the offered product.
 - b. Preference to Make in India (MII) products: Preference shall be given to Class 1 local supplier as defined in public procurement (Preference to Make in India) order 2017 as amended from time to time (and

its subsequent Orders/Notifications issued by concerned Nodal Ministry for specific Goods/Products) & the latest *Office Memorandum* issued by Department of Expenditure dt:18.05.2023 and Revision dt.19-07-2024

{‘Class-I local supplier’ means a supplier or service provider, whose goods, services or works offered for procurement, has local content equal to or more than 50%, as defined under Public procurement order no.P-45021/2/2017-PP (BE-II) dt: 16.09.2020.

‘Class-II local supplier’ means a supplier or service provider, whose goods, services or works offered for procurement, has local content more than 20% but less than 50%, as defined under Public procurement order no.P-45021/2/2017-PP (BE-II) dt: 16.09.2020.

In the event of any Nodal Ministry prescribing higher or lower margin of purchase preference and/or higher or lower percentage of local content in respect of this procurement, same shall be applicable.’}

If the bidder wants to avail the Purchase preference, the bidder must upload a certificate from the OEM regarding the percentage of the local content and the details of locations at which the local value addition is made along with their bid, failing which no purchase preference shall be granted.

Default margin of purchase preference shall be 20% to local suppliers with default minimum local content of 50%.

Operation methodology of Purchase preference clause to MSE & MII bidders is as detailed under clause:4.c.b) in the Office Memorandum issued by Department of Expenditure dt:18.05.2023 (ref. Annexure-VIII of ITB).

Note: In case of negotiations, the margin of purchase preference (20% for Class-I Non-MSE or 15% for MSE) shall be based on pre-negotiated L1 price and the eligible Class-I & MSE local bidder will have to match the negotiated L1 price.

- (7) **Performance Bank Guarantee:** PBG will be applicable for a period of 24 months from the date of dispatch of goods + claim period of 03 months, for a value equal to 10% of the basic value of purchase order. PBG is not applicable towards supply of Mandatory spares.

Refer Clause “H” of Instructions to Bidders. Also note that PBG should be in the format specified in Annexure-VII of ITB and no deviation to this format will be allowed.

The Performance Bank Guarantee shall be returned to the supplier, without payment of any interest, on successful completion of all the contractual formalities.

Note: In case PBG is not furnished, the 10% basic amount will be withheld from the supply invoice. This withheld amount will be paid either against submission of supplementary invoice & Original PBG (or) against supplementary invoice without PBG after expiry of Warranty period.

- (8) **Erection Supervision & Commissioning - Evaluation methodology:**

E&C charges should not be less than 05% of the Main-item supply value i.e, excluding Mandatory spares. In case the quoted total E&C value is less than 05% of the Main-item supply value, BHEL shall evaluate Bidder’s Price deducting differential amount from supply price proportionally from all items and apportioning towards E&C charges.

Payment terms for E&C charges: 100% E&C charges along with tax as applicable, will be paid in 15 days from the date of submission of supplementary invoice/documents against proof of successful completion of installation & commissioning.

Note: Wherever bidders doesn't agree for such apportioning, the differential charges shall be retained from main supply invoice and retention amount will be paid after successful completion of Erection & Commissioning.

- (9) **Based on the under-mentioned declarations of Bidder as insisted under Rule 144(Xi) of General Financial Rules, 2017 amendment dt 24.02.2023, eligibility of offer will be ascertained in the tender:**

"I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; I certify that our firm is not from such a country or, if from such a country, has been registered with the Competent Authority. I hereby certify that our firm fulfils all requirements in this regard and is eligible to be considered."

Note: Wherever applicable, evidence of valid registration by the Competent Authority shall be attached.

Additional declaration by Bidder in the cases of specified Transfer of Technology (ToT):

"I have read the clause regarding restrictions on procurement from a bidder having Transfer of Technology (ToT) arrangement. I certify that our firm does not have any ToT arrangement requiring registration with the Competent Authority."

OR

"I have read the clause regarding restrictions on procurement from a bidder having Transfer of Technology (ToT) arrangement. I certify that our firm has valid registration to participate in this procurement."

- (10) **Integrity Pact:** Not applicable.
(11) **EMD/Bid security:** Not Applicable
(12) **Reverse Auction:** Not applicable for this tender.

With this, we hereby confirm that all the terms & conditions as indicated in Instructions to Bidders (Document Ref: CE: PR: 001- Rev 05) & General Commercial Conditions for Contract (Document Ref: CE: PR: 002- Rev 03) are accepted without any deviation.

Vendor's Signature with Seal



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Bharat Heavy Electricals Ltd.,
(A Government of India undertaking)
Electronics Division

PB 2606 , Mysore Road Bangalore , 560026 INDIA

CE:PR:001- Rev 05

INSTRUCTIONS TO BIDDERS

Bidder is requested to read the instructions carefully and submit their quotation taking into consideration of all the points:

A. GENERAL INSTRUCTIONS:

1. Any Purchase Order resulting from this enquiry shall be governed by the Instructions to Bidders (document reference: CE: PR: 001 – Rev 05), General Conditions of Contract (document reference: CE: PR: 002 - Rev 03) and Special Conditions of Contract, if any, of the enquiry. If any term mentioned in Special Conditions of Contract (SCC) contradicts relevant clause in either Instructions to Bidders (ITB) or General Conditions of Contract (GCC), the term mentioned in SCC will supersede the corresponding term in ITB / GCC.
2. Any deviations from or additions to the “General Conditions of Contract” or “Special Conditions of Contract” require BHEL’s express written consent. The general terms of business or sale of the bidder shall not apply to this tender.
3. Regret letter (either through post or by mail or by EPS) indicating reasons for not quoting must be submitted without fail, in case of non-participation in this tender.

Supplier shall be liable for removal as a registered vendor of BHEL when the supplier fails to quote against four consecutive tender enquiries for the same item or all enquiries in last two years for the same item, whichever is earlier.

4. Procurement directly from the manufacturers is preferred. However, if the OEM/ Principal insist on engaging the services of an agent, such agent shall not be allowed to represent more than one manufacturer/ supplier in the same tender.

Moreover, either the agent could bid on behalf of the manufacturer/ supplier or the manufacturer/ supplier could bid directly but not both. Agent/Representative authorized by the OEM/Principal in turn cannot further sub authorize any other firm for submitting the offer or for placement of order.

In case bids are received from the manufacturer/ supplier and his agent, bid received from the agent shall be ignored.

5. Consultant / firm (and any of its affiliates) shall not be eligible to participate in the tender/s for the related goods for the same project if they were engaged for consultancy services for the same project.
6. If an Indian representative/associate/liaison office quotes on behalf of a foreign based bidder, such representative shall furnish the following documents:
 - a. Authorization letter to quote and negotiate on behalf of such foreign-based bidder.
 - b. Undertaking from such foreign based bidder that such contract will be honored and executed according to agreed scope of supply and commercial terms and conditions.

c. Undertaking shall be furnished by the Indian representative stating that the co-ordination and smooth execution of the contract and settlement of shortages/damages/replacement/repair of imported scope till the equipment is commissioned and handed over to customer will be the sole responsibility of the Indian representative/associates/agent/liaison office.

d. Refer **Annexure I** on “Guidelines for Indian Agents”.

7. In case of imported scope of supply, customs clearance & customs duty payment will be to BHEL account after the consignment is received at Indian Airport /Seaport. Bidders must provide all original documents required for completing the customs clearance along with the shipment.

Warehousing charges due to incomplete or missing documentation will be to supplier's account. All offers for imported scope of supply by air, must be made from any of the gateway ports (within the country) indicated **(Refer Annexure II)**.

8. The offers of the bidders who are on the banned list and also the offers of the bidders, who engage the services of the banned firms, shall be rejected. The list of the banned firms is available on BHEL website: http://www.bhel.com/vender_registration/vender.php
9. Business dealings with bidders will be suspended if they are found to have indulged in any malpractices/misconduct which are contrary to business ethics like bribery, corruption, fraud, pilferage, cartel formation, submission of fake/false/forged documents, certificates, information to BHEL or if they tamper with tendering procedure affecting the ordering process or fail to execute a contract, or rejection of 3 consecutive supplies or if their firms / works are under strike/lockout for a long period. Bidder may refer “Guidelines for Suspension of Business Dealings with Suppliers/ Contractors” available on www.bhel.com for more details.

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.

10. 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 your notice.

11. Offer is to be submitted in English language only.

12. 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 16.09.2020 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 price bids against this NIT. Default margin of purchase preference shall be 20% for Class-I local supplier only.

13. The Bidder shall mandatorily submit Declaration as mentioned under Rule 144(xi) of General Financial Rules, 2017 amendment dt 23.07.2020 issued by Ministry of Finance, Govt. of India. Where applicable, evidence of valid registration by the Competent Authority shall be attached.

The Competent Authority for the purpose of registration under this Order shall be the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT). Refer Annexure-IX for 'Restrictions under Rule 144(Xi) of General Financial Rules, 2017 amendment dt: 23.07.2020'.

B. GUIDELINES FOR PREPARATION OF OFFER:

1. Quotation shall be submitted in Single Part Bid, Two Part Bid or Three Part Bid, as called for in the tender:

- **SINGLE PART BID:** Technical and Commercial Bid with prices along with price summary & filled in BHEL Standard Commercial terms and conditions in a single sealed envelope.
- **TWO PART BID:** Unpriced offer i.e. "Techno-commercial Bid" with filled in BHEL Standard Commercial terms and conditions in a sealed envelope **along with the copy of the "Price Bid" without the prices** should be enclosed in one cover and the cover must be super scribed "**Techno-commercial offer**) and Priced offer i.e. "Price Bid "containing price summary in a separate sealed envelope and must be super scribed "**Price Bid**".

Both these envelopes shall be enclosed in a single sealed envelope superscribed with enquiry number, due date of tender and any other details as called for in the tender document.

- **THREE PART BID:** Pre-qualification Bid (Part-I), Techno Commercial Bid with filled in BHEL Standard Commercial terms and conditions (Part-II), and Price Bid (Part-III). All three envelopes shall be enclosed in a single sealed envelope superscribed with enquiry number, due date of tender and any other details as called for in the tender document.

If any of the offers (Part I, Part II or Part III) are not submitted before the due date and time of submission (or) if any part of the offer is incomplete, the entire offer of the bidder is liable for rejection.

2. Supplier shall ensure to superscribe each envelope with RFQ number, RFQ Date, RFQ Due date and time, Item Description and Project clearly & boldly. Also mention on the envelope whether it is "Techno Commercial Bid" or "Price Bid" or "Pre-Qualification Bid".

Please ensure complete address, department name and purchase executive name is mentioned on the envelope (before dropping in the tender box or handing over) so that the tender is available in time for bid opening.

3. BHEL standard Commercial Terms and Conditions (duly filled, signed & stamped) must accompany Technical-Commercial offer without fail and should be submitted in original only.

The above indicated submission of Offers in "sealed envelope/hard copy" as mentioned in points B.1-B.3 is applicable for tenders that are not floated through E-Procurement System (EPS).

4. Validity: Unless otherwise specified in SCC (special commercial conditions of contract), the offer will be valid for a period of 90 days from the date of part-I bid opening and in case of Negotiation/Counter-offer/Reverse Auction, price validity will apply afresh for a period of 60 days from the date of according final price by bidder (or) up to original validity period, whichever is later.
5. Any of the terms and conditions not acceptable to supplier, shall be explicitly mentioned in the Techno-Commercial Bid.

If no deviations are brought out in the offer it will be treated as if all terms and conditions of this enquiry are accepted by the supplier without deviation.

6. Deviation to this specification/item description, if any, shall be brought out clearly indicating “DEVIATION TO BHEL SPECIFICATION” without fail, as a part of Techno-Commercial Bid.

If no deviations are brought out in the offer it will be treated as if the entire specification of this enquiry is accepted without deviation.

7. Suppliers shall submit one set of original catalogue, datasheets, bill of materials, dimensional drawings, mounting details and/or any other relevant documents called in purchase specification as part of Technical Bid.
8. “Price Bid” shall be complete in all respects containing price break-up of all components along with all applicable taxes and duties, freight charges (if applicable) etc. Once submitted no modification / addition / deletion will be allowed in the “Price Bid.” Bidders are advised to thoroughly check the unit price, total price to avoid any discrepancy.
9. In addition, bidder shall also quote for erection & commissioning charges/erection supervision & commissioning charges (E&C service charges), documentation charges, testing Charges (type & routine), training charges etc. if & as applicable along with corresponding tax. The price summary must indicate all the elements clearly.
10. Wherever applicable, bidders should indicate “lumpsum” Erection and Commissioning (or) Erection Supervision and Commissioning charges, as applicable (including To & Fro Fare, Boarding, Lodging, Local Conveyance etc.) for carrying out E&C activity and further handing over to customer.

The quotation shall clearly indicate scope of work, likely duration of commissioning, pre-commissioning checklist (if any).

11. Wherever bidders require PAC (Project Authority Certificate)/applicable certificates for import of raw materials, components required for DECC, EPCG Power Projects, Export Projects or other similar projects wherein supplies are eligible for customs duty benefits, lists and quantities of such items and their values (CIF) has to be mentioned in the offer. Prices must be quoted taking into account of such benefits.
12. Prices should be indicated in both figures & words. Bid should be free from correction/overwriting, using corrective fluid, etc. Any interlineation, cutting, erasure 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.

Any typographical error, totalling mistakes, currency mistake, multiplication mistake, summing mistakes etc. observed in the price bids will be evaluated as per **Annexure III** “Guidelines for dealing with Discrepancy in Words & Figures – quoted in price bid” and BHEL decision will be final.
13. Documents submitted with the offer shall be signed and stamped in each page by authorized representative of the bidder. However, this requirement is not mandatory for offers uploaded through E-Procurement System (EPS).

C. GUIDELINES FOR OFFER SUBMISSION:

The under-mentioned clauses 1, 2&3 will not be applicable for EPS tenders.

1. Offers / Quotations must be dropped in tender box before 13.00 Hrs. on or before due date mentioned in RFQ. The offers are to be dropped in the proper slot of the Tender Box kept in our reception area with caption “CE, SC&PV, DEFENCE”.

Tenders are opened on 3 days in a week (Monday/Wednesday/Friday). Tender must be deposited in the slot corresponding to the day (Monday - Box no.4/Wednesday - Box no. 6 /Friday - Box no.8) while depositing the offer.

2. E-Mail/ Internet/EDI offers received in time shall be considered only when such offers are complete in all respects. In case of offers received through E-mail, please send the offer to the email ID specified in the SCC document of the tender.
3. Offers of Vendors who already have a valid Technical/Commercial MOU with BHEL-EDN for the items of the RFQ shall mention the relevant MOU reference no. and give only such other details not covered in the MOU.
4. In cases where tender documents are bulky, or due to some reasons tender documents are required to be submitted by hand or through posts/couriers, the offers are to be handed over either of the two purchase officers whose names are mentioned in the SCC document of tender RFQ.
5. Tenders will be opened on due date, time and venue as indicated in the RFQ in the presence of bidders at the venue indicated in the RFQ. For EPS tenders, e-mail notifications will be automatically generated and forwarded to registered e-mail ID/s of bidders during opening of tenders.
6. Bidder will be solely responsible:
 - a. For submission of offers before due date and time. Offers submitted after due date and time will be treated as "Late offers" and will be rejected.
 - b. For submission of offers in the correct compartment of the tender box based on the day of due date (Monday/Wednesday/Friday). Please check before dropping your offer in the correct tender box.
 - c. For depositing offers in proper sealed condition in the tender box. If the bidder drops the tender in the wrong tender box (or) if the tender document is handed over to the wrong person, BHEL will not be responsible for any such delays.
 - d. For offers received through email etc., suppliers are fully responsible for lack of secrecy on information and ensuring timely receipt of such offers in the tender box before due date & time (This clause will not be applicable for EPS tenders).

The above indicated submission of Offers as mentioned in points 6.a-6.d is applicable for tenders that are not floated through EPS.

- e. In case of e-tender, all required documents should be uploaded before due date and time. Availability of power, internet connections, system/software requirements etc. will be the sole responsibility of the bidder.

Wherever assistance is needed for submission of e-tenders, help-line numbers as available in the web-site of service provider of BHEL may be contacted.

Purchase Executive/ BHEL shall not be responsible for any of the activities relating to submission of offer.

D. PROCESSING OF OFFERS RECEIVED:

1. Any discount/ revised offer submitted by the supplier on its own shall be accepted provided it is received on or before the due date and time of offer submission (i.e. Part-I bid).
The discount shall be applied on pro-rata basis to all items unless specified otherwise by the bidder.
2. Changes in offers or Revised offers given after Part-I bid opening shall not be considered as a part of the original offer unless such changes/revisions are requested by BHEL.

In case of withdrawal of any Technical/Commercial deviation(s) by the bidder before opening of price bids/conducting the Reverse Auction, revision of price/impact bid will not be accepted.

3. In case there is no change in the technical scope and/ or specifications and/ or commercial terms & conditions, the supplier will not be allowed to change any of their bids after Technical bids are opened (after the due date and time of tender opening).
4. In case of changes in scope and/ or technical specifications and/ or commercial terms & conditions by BHEL and it accounts for price implications from bidders, all techno-commercially acceptable bidders shall be asked by BHEL (after freezing the scope, technical specifications and commercial terms & conditions) to submit the impact of such changes on their price bid.

Impact price will be applicable only for changes in technical specification / commercial conditions by BHEL. The impact price must be submitted on or before the cut-off date specified by BHEL and the original price bid and the price impact bid will be opened together at the time of price bid opening.

5. Un-opened bids (including price bids) will be returned to the respective bidders after release of Purchase order.

Regarding Offers for EPS tenders that get rejected on PQC/ techno-commercial grounds, the bids for the subsequent parts will not be opened i.e., both technical bid and price bid (Parts-II & III) will not be opened in case of rejection on PQC ground and price bid (Part-II/Part-III, as applicable) will not be opened in case of rejection on techno-commercial ground.

6. After receipt of Purchase Order, supplier should submit required documents viz., specified drawings, bill of materials, datasheets, catalogues, quality plan, test procedure, type test report, O & M Manuals and/or any other relevant documents as per Specification/Purchase Order, as and when required by BHEL/Customer.
7. Any deviation to the terms and conditions not mentioned in the quotation by supplier in response to this enquiry will not be considered, if put forth subsequently or after issue of Purchase Order, unless clarification is sought for by BHEL and agreed upon in the Purchase Order.
8. Evaluation shall be on the basis of delivered cost (i.e. "Total Cost to BHEL").

"Total Cost to BHEL" shall include total basic cost, packing & forwarding charges, taxes and/or duties (as applicable), freight charges, taxes on Services, customs clearance charges for imported items, any other cost indicated by bidder for execution of the contract and loading factors (for non-compliance to BHEL Standard Commercial Terms & Conditions).

Benefits arising out of Nil Import Duty on DEEC, EPCG, DFIA Projects, Physical Exports or such 100% exemptions (statutory benefits), project imports, customer reimbursements of statutory duties (like Basic Customs Duty and cess on customs duty), Input tax credits as applicable will also be taken into account for arriving at the Total cost to BHEL (wherever applicable and as indicated in SCC document of tender).

For EPS tenders, it shall be noted that the prices (including discounts) vis-a-vis currency quoted in EPS portal only will be considered as Final for the purpose of evaluation of the lowest bidder.

Bidder shall ensure to indicate the applicable taxes against each line item in online portal, failing to which the same will be considered as inclusive/NIL.

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.

9. The evaluation currency for this tender shall be INR. For evaluation of offers in foreign currency, the exchange rate (TT selling rate of SBI) shall be taken as under:

Single part bids: Date of tender opening

Two/three part bids: Date of Part-I bid opening

Reverse Auction: Date of Part-I bid opening

In case of Performance Bank Guarantee (PBG) also, exchange rate will be considered as mentioned above for converting foreign currency to Indian currency and vice versa.

If the relevant day happens to be a bank holiday, then the exchange rate as on the previous working day of the bank (SBI) shall be taken.

10. Ranking (L-1, L-2 etc.) shall be done only for the techno-commercially acceptable offers.
11. GeM Seller ID shall be mandatory before placement of order/award of contract for goods and services to the successful bidder(s), for orders exceeding Rs.25 lakhs (including all taxes etc.). Department of Expenditure (DoE) OM no.6/9/2020-PPD dated: 24.08.2020 may be referred in this regard.

E. INFORMATION ON PAYMENT TERMS:

1. All payments will be through Electronic Fund transfer (EFT). Vendor has to furnish necessary details as per BHEL standard format (**Refer Annexure IV**) for receiving all payments through NEFT. (Applicable for Indian vendors only).
2. In case of High Sea Sales transaction, customs clearance of the consignment landed on Indian Sea/Air ports will be done by BHEL based on the original HSS documents provided by vendors.

All warehousing charges due to delay in submission of complete and or correct HSS documents to BHEL will be to supplier's account only. Such recovery will be made out of any of the available bills (**Refer Annexure V**).

3. Statutory deductions, if any, will be made and the deduction certificate shall be issued.
 - A. In case vendor does not provide PAN details, the TDS deduction shall be at the maximum percentage stipulated as per the provisions of Income Tax Act.
In addition to the above, Foreign vendors shall also submit relevant details of their bankers like Swift Code, Banker's Name & Address etc.
 - B. TDS deduction as per section 51 of CGST Act, 2017 shall be applicable as per Gazette Notification No. 50/2018-Central Tax, Dated: 13th September 2018 and subsequent notification/s, as and when released by Govt. authorities.

4. Procurement of Goods/ Works/ Services/ Consultancy Services [under clause relating to "Income Tax and Corporate Tax" or "TDS"]

a) Provision w.r.t. TDS on Purchase of Goods under section 194Q of Income Tax Act applicable from 01.07.2021 is as under:

- i. TDS as applicable will be deducted by BHEL under section 194Q of the Income Tax Act, 1961 on Purchases exceeds, the amount of Rupees. 50 Lakhs or limit defined therein from time to time during the financial year under the Indian Income Tax act 1961.

ii. Since BHEL is liable to deduct Income Tax TDS under section 194Q, the provision of TCS as per section 206C(1H) of the Income Tax Act, 1961 shall not be applicable.

b) Higher rate of TDS for non-filers of ITR as per Section 206AB of Income Tax Act, 1961, in case of any vendor who does not filed their Income Tax Return for both of the two previous years preceding to current year and aggregate amount of TDS is more than or equal to Rs. 50,000/- in each of those previous two years (or limit defined by Govt. from time to time), then TDS will be deducted at the higher of following rates:

(i) Twice the rate mentioned in relevant TDS section.

(ii) Twice the rate or rates in force

(iii) 5%.

5. Incomplete documentation will not be accepted. Delayed submission of invoice / documents may result in corresponding delay in payment. In this connection, request to also refer clause: G about invoicing & payment formalities under GST regime.

Applicable documents shall be submitted to the purchaser at the time of execution of supplies/services for availing GST input credits.

F. STANDARD PAYMENT TERMS OF BHEL-EDN:

<u>PURCHASE ORDERS FOR:</u>	<u>SUPPLY WITH SERVICE(S)</u>	<u>SUPPLY ONLY</u>
<u>INDIGENOUS PROCUREMENT</u>	<p>a. 100% of basic value with taxes and freight will be paid in 45 days from the date of dispatch or 15 days from the date of submission of complete set of documentation, whichever is later.</p> <p><u>Note:</u> In case PBG is not furnished, only 90% payment will be released against 100% claim without the consent of Vendor. This 10% basic amount withheld towards PBG will be paid either against submission of supplementary invoice & Original PBG (or) against supplementary invoice without PBG after expiry of Warranty period.</p>	<p>b. 100% of PO value with taxes and freight will be paid in 45 days from the date of dispatch or 15 days from the date of submission of complete set of documentation, whichever is later.</p>
<u>IMPORT PROCUREMENT</u>	<p>c. 100% of basic value will be paid against usance draft of 45 days from the date of AWB/BOL on submission of complete set of documents.</p> <p><u>Note:</u> In case PBG is not furnished, only 90% payment will be released against 100% claim without the consent of Vendor. This 10% basic amount withheld towards PBG will be paid either against submission of supplementary invoice & Original PBG (or) against supplementary invoice without PBG after expiry of Warranty period.</p>	<p>d. 100% of PO value will be paid against usance draft of 45 days from the date of AWB/BOL on submission of complete set of documents.</p>

<u>HIGH-SEA SALES PROCUREMENT</u>	<p>e. 100% of basic value will be paid in 45 days from the date of signing of High Sea Sale agreement or 15 days from the date of submission of complete set of documentation, whichever is later</p> <p><u>Note:</u> In case PBG is not furnished, only 90% payment will be released against 100% claim without the consent of Vendor. This 10% basic amount withheld towards PBG will be paid either against submission of supplementary invoice & Original PBG (or) against supplementary invoice without PBG after expiry of Warranty period.</p>	<p>f. 100% of basic value will be paid in 45 days from the date of signing of High Sea Sale agreement or 15 days from the date of submission of complete set of documentation, whichever is later.</p>
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g. Erection and Commissioning:

Evaluation methodology: Unless and otherwise specified in SCC, E&C charges should not be less than 05% of the main supply value. In case the quoted total E&C value is less than 05% of the main supply value, BHEL shall evaluate Bidders Price deducting differential amount from main supply price proportionally from all items and apportioning towards E&C charges.

Payment term: 100% E&C charges along with tax as applicable, will be paid in 15 days from the date of submission of supplementary invoice/documents against proof of completion of E&C.

h. Erection Supervision and Commissioning:

Evaluation methodology: Unless and otherwise specified in SCC, Commissioning charges should not be less than 05% of the main supply value. In case the quoted total Commissioning charges is less than 05% of the main supply value, BHEL shall evaluate Bidders Price deducting differential amount from main supply price proportionally from all items and apportioning towards Commissioning charges.

Payment term: 100% Commissioning charges along with tax as applicable, will be paid in 15 days from the date of submission of supplementary invoice/documents against proof of completion of Commissioning.

i. Comprehensive Annual Maintenance Contract:

Evaluation methodology: Unless and otherwise specified in SCC, CAMC will be applicable for a period of 04 years from the date of expiry of warranty period (or) from the date of completion of commissioning of equipment, whichever is later and the total CAMC value should not be less than 20% of the main supply value. In case the quoted total CAMC value is less than 20% of the main supply value, BHEL shall evaluate Bidders Price deducting differential amount from main supply price proportionally from all items and apportioning towards CAMC charges.

Payment terms: 100% CAMC charges along with tax as applicable, will be paid in 15 days from the date of submission of supplementary invoice/documents against proof of completion of CAMC on yearly basis.

j. Terms of Payment for Training: 100% payment will be made in 45 days from the date of completion of Training or 15 days from the date of submission of complete set of invoice along with documentary evidence, whichever is later.

LOADING FACTORS FOR DEVIATION IN PAYMENT TERMS:**i) INDIGENOUS PROCUREMENT:**

For payment term with credit period of less than 45 days for indigenous supply, 'Base rate of SBI (as applicable on the date of bid opening; Techno-commercial bid opening in case of two part bids) +6%', shall be considered for loading for the period of relaxation sought.

ii) IMPORT PROCUREMENT:

- 1) For offers received with Sight draft payment term in place of Usance draft, loading applicable will be 1.0% of basic value.
- 2) For offers received with Letter of Credit payment term with Usance of 45 days, loading applicable will be 2.5% of basic value. Additional loading of 2% will be applicable for payment term as Letter of Credit at Sight.

k. Any other variation of payment terms are liable for rejection.

l. Standard payment terms indicated in Clauses: F (a), (b), (c), (d), (e), (f), (g), (h), (i) & (j) will not attract any loading.

Note 1: Basic value of Purchase Order mentioned above will include all components of the purchase order and will exclude only taxes, duties, freight, training charges, E&C and AMC charges (wherever applicable). Wherever the Purchase Order is split into import portion and indigenous portion of supply, minimum % to be quoted for Services, wherever mentioned, will be of both purchase order values put together.

Note 2: In case of multiple packages/units in a power plant, payment of E&C charges will be processed on pro-rata basis.

Note 3: No deviation will be permitted from the duration of Guarantee/Warranty and/or Comprehensive Annual Maintenance Contract period specified in SCC.

Note 4: Indigenous bidder opting to quote with usance LC payment term of 120 days shall note that LC processing charges viz., opening, amendment/ discrepancy (if & as applicable) will be to supplier's account. Bank charges of Seller's bank shall be to Seller's account and bank charges of Owner's bank other than Bill collection charges shall be to Owner's account. Bill collection charges will be borne by Seller.

G. Terms & Conditions to be complied under GST regime:

1. All invoices to contain BHEL-EDN (buyer) GSTIN number: 29AAACB4146P1ZB. However for CGST +SGST/UGST billing outside the state of Karnataka, invoice has to be generated with BHEL's Nodal Agency GSTIN number. Address of Nodal Agency along with GSTIN number will be provided by BHEL at the time of issuing dispatch clearance.
2. The Bidder shall mention Bidder's GSTIN number in all quotations and Invoices submitted.
3. The Bidder shall also mention HSN (Harmonized System of Nomenclature) / SAC (Services Accounting Code) mandatorily in all quotations and invoices submitted.
4. Invoice submitted should be in the format as specified under GST Laws viz., all details as mentioned in Invoice Rules like GST registration number(GSTIN), invoice number with date of issue, quantity, rate, value, taxes with

nomenclature – CGST, SGST, UGST, IGST mentioned separately, HSN Code / SAC Code etc. Invoice should be submitted in original for buyer plus duplicate for credit availment.

5. Payment of GST to Vendor will be made only if it is matching with data uploaded by the Vendor in GST portal.
6. For invoices paid on Reverse charge basis – “Tax payable on reverse charge basis” to be mentioned on the invoice.
7. In case GST credit is delayed/denied to BHEL due to non/delayed receipt of goods and/or tax invoice or expiry of timeline prescribed in GST law for availing such ITC, or any other reasons not attributable to BHEL, GST amount will be recoverable from vendor along with interest levied/ leviable on BHEL.
8. In case vendor delays declaring such invoice in his return and GST credit availed by BHEL is denied or reversed subsequently as per GST law, GST amount paid by BHEL towards such ITC reversal as per GST law will be recoverable from vendor/contractor along with interest levied/ leviable on BHEL.
9. Vendor should intimate BHEL immediately on the same date of invoicing without any delay.
10. In case of discrepancy in the data uploaded by supplier in the GSTN portal or in case of any shortages or rejection in the supply, then BHEL will not be able to avail the tax credit and will notify the supplier of the same. Supplier has to rectify the data discrepancy in the GSTN portal or issue credit note (details to be uploaded in GSTN portal) for the shortages or rejections in the supplies, within the calendar month notified by BHEL.
11. Bidders to note that Rules & Regulations pertaining to E-way bill system are to be strictly adhered to, as and when notified by Govt. authorities.
12. As per Notification no.17/2022-Central Tax dated 01st August,2022 (applicable w.e.f. 01st day of October, 2022), the turnover for applicability of E-invoicing provisions has been reduced from 20 crore rupees to 10 crore rupees. In other words, registered person [other than a SEZ unit and those referred in Rule 54(2), 54(3), 54(4) and 54(4A) of the CGST Rules], whose aggregate turnover in any of the previous FY beginning from 2017-18 and onwards exceeds 10 crores, is required to comply with the requirement of IRN and QR code in respect of supply of goods or services or both to a registered person or for exports.

H. Performance security: To ensure due performance of the contract, Performance Bank Guarantee (PBG) or Security Deposit (SD), hereafter referred as performance security has to be submitted by successful bidder for 05% (unless specified otherwise) of the contract value.

Modes of deposit:

- a) Performance security may be furnished in the following forms:
 - (i) Local cheques of Scheduled Banks (subject to realization)/ Pay Order/ Demand Draft/ Electronic Fund Transfer in favour of BHEL.
 - (ii) Bank Guarantee from Scheduled Banks / Public Financial Institutions as defined in the Companies Act. PBG should be in the format specified in Annexure-VII of ITB and no deviation to this format will be allowed.

(iii) 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).

(iv) 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).

(v) Insurance Surety Bond.

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)

- b) PBG has to be furnished within 14 days (unless specified otherwise) after notification of the award and it should remain valid for a period of 60 days beyond the date of completion of all contractual obligations, including warranty obligations.
- c) The Performance security will be forfeited and credited to BHEL's account in the event of a breach of contract by the supplier.
- d) Performance security shall be refunded to the supplier without interest, after duly performing and completing the contract in all respects but not later than 60 days of completion of all such obligations including the warranty under the contract.
- e) The Performance security shall not carry any interest.

I. PURCHASE PREFERENCE FOR MSE (MICRO AND SMALL ENTERPRISES) VENDORS:

Purchase preference will be given to MSEs as defined in Public Procurement Policy for Micro and Small Enterprises (MSEs) Order, 2012 dated 23.03.2012 issued by Ministry of Micro, Small and Medium Enterprises and its subsequent Orders/Notifications issued by concerned Ministry. If the bidder wants to avail the Purchase preference, the bidder must be the manufacturer of the offered product in case of bid for supply of goods.

Traders are excluded from the purview of Public Procurement Policy for Micro and Small Enterprises. Relevant documentary evidence in this regard shall be uploaded along with the bid in respect of the offered product. Purchase preference to Micro and Small Enterprises clause in the bid, the same will get precedence over this clause.

1. If tendered quantity is Splitable: In tender, participating MSEs quoting price within price band of L1+15 percent shall also be allowed to supply a portion of requirement by bringing down their price to L1 price in a situation where L1 price from someone other than a MSE and such MSE shall be allowed to supply at least 25% of total tendered value. In case of more than one such MSE, the supply shall be shared proportionately (to tendered quantity).

- 3% of the 25% will be earmarked for women owned MSEs.
- 25% of the 25% (i.e., 6.25% of the total enquired quantity) will be earmarked for SC/ST owned MSE firms provided conditions as mentioned in (1) & (2) are fulfilled.

- In case where no SC/ST category firms are meeting the conditions mentioned in (1) and (2) or have not participated in the tender, the 6.25% of earmarked quantity for SC/ST owned MSE firms will be distributed among the other eligible MSE vendors who have participated in the tender.

2. If tendered quantity is Non-Splittable: If L-1 is not an MSE and MSE Seller (s) has/have quoted price within L-1+ 15% of margin of purchase preference /price band defined in relevant policy, such Seller shall be given opportunity to match L-1 price and contract will be awarded for 100% of total value.

Operation methodology of Purchase preference clause to MSE & MII bidders is as detailed in the attached Office Memorandum issued by Department of Expenditure dt:18.05.2023 (Annexure-VIII).

J. INTEGRITY COMMITMENT IN THE TENDER PROCESS, AND EXECUTION OF CONTRACTS:

1. 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 / suppliers in a transparent and fair manner, and with equity.
2. Commitment by Bidder(s)/ Contractor(s):
 - a. The Bidder(s)/ Contractor(s) commit(s) to take all measures to prevent corruption and will not directly or indirectly try to influence any decision or benefit which he is not legally entitled to.
 - b. The Bidder(s)/ Contractor(s) will not enter with other Bidder(s) into any undisclosed agreement or understanding or any actions to restrict competition.
 - c. The Bidder(s)/ Contractor(s) will not commit any offence under the relevant Acts. The Bidder(s)/ Contractor(s) will not use improperly, for purposes of competition or personal gain or pass on to others, any information or document provided by BHEL as part of business relationship.
 - d. The Bidder(s)/ Contractor(s) will, when presenting his bid, disclose any and all payments he has made, and is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract and shall adhere to the relevant guidelines issued from time to time by Government of India/ BHEL.

If the Bidder(s) / Contractor(s), before award or during execution of the Contract commit(s) a transgression of the above or in any other manner such as to put his reliability or credibility in question, BHEL is entitled to disqualify the Bidder(s) / Contractor (s) from the tender process or terminate the contract and/ or take suitable action as deemed fit.

K. Integrity Pact (IP):

- (a) IP is a tool to ensure that activities and transactions between the Company and its Bidders/ Contractors are handled in a fair, transparent and corruption free manner. Following Independent External Monitors (IEMs) on the present panel have been appointed by BHEL with the approval of CVC to oversee implementation of IP in BHEL.

Sl	IEM	Email
1.	Shri Otem Dai, IAS (Retd.)	iem1@bhel.in
2.	Shri Bishwamitra Pandey, IRAS (Retd.)	iem2@bhel.in
3.	Shri Mukesh Mittal, IRS (Retd.)	iem3@bhel.in

- (b) The IP as enclosed with the tender is to be submitted (duly signed by authorized signatory) along with techno-commercial bid (Part-I, in case of two/ three part bid). Only those bidders who have entered into such an IP with BHEL would be competent to participate in the bidding. In other words, entering into this Pact would be a preliminary qualification.
- (c) Please refer Section-8 of IP for Role and Responsibilities of IEMs. In case of any complaint arising out of the tendering process, the matter may be referred to any of the above IEM(s). All correspondence with the IEMs shall be done through email only.

Note: No routine correspondence shall be addressed to the IEM (phone/ post/ email) regarding the clarifications, time extensions or any other administrative queries, etc. on the tender issued. All such clarification/ issues shall be addressed directly to the tender issuing (procurement) department's officials whose contact details are provided in SCC document of tender.

L. Conflict of Interest among Bidders/Agents:

*"A bidder shall not have conflict of interest with other bidders. Such conflict of interest can lead to anti-competitive practices to the detriment of Procuring Entity's interests. **The bidder found to have a conflict of interest shall be disqualified.** A bidder may be considered to have a conflict of interest with one or more parties in this bidding process, if:*

- a) they have controlling partner (s) in common; **or***
- b) they receive **or** have received any direct or indirect subsidy/ financial stake from any of them; **or***
- c) they have the same legal representative/agent for purposes of this bid; **or***
- d) they have relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the bid of another Bidder; **or***
- e) Bidder participates in more than one bid in this bidding process. Participation by a Bidder in more than one Bid will result in the disqualification of all bids in which the parties are involved. However, this does not limit the inclusion of the components/ sub-assembly/ Assemblies from one bidding manufacturer in more than one bid; **or***

- f) *In cases of agents quoting in offshore procurements, on behalf of their principal manufacturers, one agent cannot represent two manufacturers or quote on their behalf in a particular tender enquiry. One manufacturer can also authorise only one agent/dealer. There can be only one bid from the following:*
- 1. The principal manufacturer directly or through one Indian agent on his behalf; and*
 - 2. Indian/foreign agent on behalf of only one principal;*
- or**
- g) *A Bidder or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the contract that is the subject of the Bid; or*
- h) *In case of a holding company having more than one independently manufacturing units, or more than one unit having common business ownership/management, only one unit should quote. Similar restrictions would apply to closely related sister companies. Bidders must proactively declare such sister/ common business/ management units in same/ similar line of business."*

Annexure

Annexure I
Guidelines for Indian Agents

- **Definition of Indian Agent:** An Indian Agent of foreign principal is an individual, a partnership, an association of persons, a private or public company, that carries out specific obligation(s) towards processing of BHEL tender or finalization or execution of BHEL's contract on behalf of the foreign supplier.

In case of yes, vendor to note the following and reply accordingly:

- i. BHEL shall deal directly with foreign vendors, wherever required, for procurement of goods. However, if the foreign principal desires to avail of the services of an Indian agent, then the foreign principal should ensure compliance to regulatory guidelines - which require mandatory submission of an Agency Agreement.
- ii. It shall be incumbent on the Indian agent and the foreign principal to adhere to the relevant guidelines of Government of India, issued from time to time.
- iii. The Agency Agreement should specify the precise relationship between the foreign OEM / foreign principal and their Indian agent and their mutual interest in the business. All services to be rendered by agent/ associate, whether of general nature or in relation to the particular contract, must be clearly stated by the foreign supplier/ Indian agent. Any payment, which the agent or associate receives in India or abroad from the OEM, whether as commission or as a general retainer fee should be brought on record in the Agreement and be made explicit in order to ensure compliance to laws of the country.
- iv. Any agency commission to be paid by BHEL to the Indian agent shall be in Indian currency only.
- v. Tax deduction at source is applicable to the agency commission paid to the Indian agent as per the prevailing rules.
- vi. In the absence of any agency agreement, BHEL shall not deal with any Indian agent (authorized representatives / associate / consultant, or by whatever name called) and shall deal directly with the foreign principal only for all correspondence and business purposes.
- vii. The "Guidelines for Indian Agents of Foreign Suppliers" enclosed at annexure - 'A' shall apply in all such cases.

- viii. The supply and execution of the Purchase Order (including indigenous supplies/ service) shall be in the scope of the OEM/ foreign principal. The OEM/ foreign principal should submit their offer inclusive of all indigenous supplies/ services and evaluation will be based on 'total cost to BHEL'. In case OEM/ foreign principal recommends placement of order(s) towards indigenous portion of supplies/ services on Indian supplier(s)/ agent on their behalf, the credentials/ capacity/ capability of the Indian supplier(s)/ agent to make the supplies/ services shall be checked by BHEL as per the extant guidelines of Supplier Evaluation, Approval & Review Procedure (SEARP), before opening of price bids. In this regard, details may be checked as per Annexure-B (copy enclosed). It will be the responsibility of the OEM/ foreign principal to get acquainted with the evaluation requirements of Indian supplier/ agent as per SEARP available on www.bhel.com.

The responsibility for successful execution of the contract (including indigenous supplies/ services) lies with the OEM/ foreign principal. All bank guarantees to this effect shall be in the scope of the OEM/ foreign principal.

—X—

Vendor's Signature with Seal

Guidelines for Indian Agents of Foreign Suppliers

- 1.0 There shall be compulsory registration of agents for all Global (Open) Tender and Limited Tender. An agent who is not registered with BHEL shall apply for registration in the registration form in line with SEARP.
- 1.1 Registered agents will file an authenticated Photostat copy duly attested by a Notary Public/Original certificate of the Principal confirming the agency agreement and giving the status being enjoyed by the agent and the commission/ remuneration/ salary/ retainership being paid by the principal to the agent before the placement of order by BHEL.
- 1.2 Wherever the Indian representatives have communicated on behalf of their principals and the foreign parties have stated that they are not paying any commission to the Indian agents, and the Indian representative is working on the basis of salary or as retainer, a written declaration to this effect should be submitted by the party (i.e. Principal) before finalizing the order.
- 2.0 **Disclosure of particulars of agents/ representatives in India, if any.**
- 2.1 Tenderers of Foreign nationality shall furnish the following details in their offers:
 - 2.1.1 The Bidder(s)/ Contractor(s) of foreign origin shall disclose the name and address of the agents/ representatives in India if any and the extent of authorization and authority given to commit the Principals. In case the agent/ representative be a foreign Company, it shall be confirmed whether it is existing Company and details of the same shall be furnished.
 - 2.1.2 The amount of commission/ remuneration included in the quoted price(s) for such agents/ representatives in India.
 - 2.1.3 Confirmation of the Tenderer that the commission/ remuneration, if any, payable to his agents/ representatives in India, may be paid by BHEL in Indian Rupees only.
- 2.2 Tenderers of Indian Nationality shall furnish the following details in their offers:
 - 2.2.1 The Bidder(s)/ Contractor(s) of Indian Nationality shall furnish the name and address of the foreign principals, if any, indicating their nationality as well as their status, i.e. whether manufacturer or agents of manufacturer holding the Letter of Authority of the Principal specifically authorizing the agent to make an offer in India in response to tender either directly or through the agents/ representatives.
 - 2.2.2 The amount of commission/ remuneration included in the price (s) quoted by the Tenderer for himself.
 - 2.2.3 Confirmation of the foreign principals of the Tenderer that the commission/ remuneration, if any, reserved for the Tenderer in the quoted price(s), may be paid by BHEL in India in equivalent Indian Rupees on satisfactory completion of the Project or supplies of Stores and Spares in case of operation items.
- 2.3 In either case, in the event of contract materializing, the terms of payment will provide for payment of the commission/ remuneration, if any payable to the agents/ representatives in India in Indian Rupees on expiry of 90 days after the discharge of the obligations under the contract.
- 2.4 Failure to furnish correct and detailed information as called for in paragraph 2.0 above will render the concerned tender liable to rejection or in the event of a contract materializing, the same liable to termination by BHEL. Besides this there would be a penalty of banning business dealings with BHEL or damage or payment of a named sum.

ANNEXURE - II
LIST OF INTERNATIONAL GATEWAY AIRPORTS

For air based consignment, terms of delivery will be on FCA basis from following listed airports only. Vendors are requested to verify this list for use before submission of offer.

SCHEDULE NO	COUNTRY	CURRENCY CODE	AIRPORT
D01	UK	GBP	LONDON (HEATHROW)
D02	UK	GBP	NEW CASTLE
D03	UK	GBP	OXFORD. CHETLAM
D04	UK	GBP	BRISTOL. WELLINGBOROUGH
D05	UK	GBP	BIRMINGHAM
D06	UK	GBP	EAST MIDLANDS
D07	UK	GBP	MANCHESTER
D08	UK	GBP	LEEDS
D09	UK	GBP	GLASGOW
D10	FRANCE	EURO	PARIS (ROISSY) & LYON
D11	SWEDEN	EURO	STOCKHOLM
D12	SWEDEN	EURO	GOTHENBERG & MALMO
D13	ITALY	EURO	ROMA, MILAN
D14	ITALY	EURO	TURIN, BOLOGNA, FLORENCE
D15	NETHERLANDS	EURO	AMSTERDAM, ROTTERDAM
D16	AUSTRIA	EURO	VIENNA, LINZ, GRAZ
D17	BELGIUM	EURO	ANTWERP, BRUSSELS
D18	DENMARK	DKK	COPENHAGEN
D19	JAPAN	JPY	TOKYO, OSAKA
D20	SINGAPORE	SGD	SINGAPORE
D21	CANADA	CAD	TORONTO
D22	CANADA	CAD	MONTREAL
D23	USA	USD	NEW YORK, BOSTON
D24	USA	USD	CHICAGO
D25	USA	USD	SAN FRANCISCO, LOS ANGELES
D26	USA	USD	ALANTA, HOUSTON
D27	GERMANY	EURO	MUNICH, KOLN, DUSSELDORF, HANNOVER, HAMBURG, STUTTGART, DAMSTADT, MANIHIEM, NURUMBERG
D28	GERMANY	EURO	FRANKFURT
D29	GERMANY	EURO	BERLIN
D30	SWITZERLAND	SFR	BASLE, ZURICH, GENEVA
D31	SPAIN	EURO	BARCELONA
D32	AUSTRALIA	AUD	SYDNEY
D33	AUSTRALIA	AUD	MELBOURNE
D34	AUSTRALIA	AUD	PERTH
D35	CZECH	EURO	PRAGUE
D36	HONG KONG	HKD	HONG KONG
D37	NEW ZELAND	NZD	AUCKLAND
D38	RUSSIA	USD	MOSCOW
D39	SOUTH KOREA	USD	KIMPO INTERNATIONAL, INCHEON
D40	FINLAND	EURO	HELSINKI
D41	ROMANIA	EURO	BUCHAREST
D42	NORWAY	EURO	OSLO
D43	IRELAND	EURO	DUBLIN
D44	ISRAEL	USD	TEL AVIV
D45	UAE	USD	DUBAI
D46	OMAN	USD	MUSCAT
D47	EGYPT	USD	CAIRO
D48	TAIWAN	USD	TAIPEI
D49	UKRAINE	USD	KIEV
D50	CHINA	USD	SHANGHAI, SHENZHEN
D51	PHILIPINES	USD	MANILA
D52	MALAYSIA	USD	KUALALUMPUR, PE NANG
D53	CYPRUS	USD	LARNACA
D54	SOUTH AFRICA	USD	JOHANNESBERG, DURBAN
D55	SLOVAKIA	EURO	BARTISLOVA
D56	SAUDI ARABIA	SAR	RIYADH
D57	TURKEY	EURO	ISTANBUL
D58	THAILAND	USD	BANGKOK
D59	BRAZIL	USD	SAO PAULO, RIO DE JANEIRO

ANNEXURE – III

DISCREPANCY IN WORDS & FIGURES – QUOTED IN PRICE BID

Following guidelines will be followed in case of discrepancy in words & figures-quoted in price bid:

(a) If, in the price structure quoted for the required goods/services/works, there is discrepancy between the unit price and the total price (which is obtained by multiplying the unit price by the quantity), the unit price shall prevail and the total price corrected accordingly, unless in the opinion of the purchaser there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price corrected accordingly.

(b) If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and

(c) If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above.

(d) If there is such discrepancy in an offer, the same shall be conveyed to the bidder with target date upto which the bidder has to send his acceptance on the above lines and if the bidder does not agree to the decision of the purchaser, the bid is liable to be ignored.

ANNEXURE - IV
Electronic Funds Transfer (EFT) OR
Paylink Direct Credit Form

Please Fill up the form in **CAPITAL LETTERS** only.

TYPE OF REQUEST(Tick one): ☐ CREATE ☐ CHANGE

BHEL Vendor / Supplier Code:

Company Name :

Permanent Account Number(PAN):

Address

City:

PINCODE

STATE

Contact Person(s)

Telephone No:

Fax No:

e-mail id:

1 Bank Name:

2 Bank Address:

3 Bank Telephone No:

4 Bank Account No:

5 Account Type: Savings/Cash Credit

6 9 Digit Code Number of Bank and branch

appearing on MICR cheque issued by Bank

7 Bank IFSC Code(applicable for NEFT)

8 Bank IFSC code(applicable for RTGS)

(Indian Financial System Code)

- A I hereby certify that the particulars given above are true, correct and complete and that I, as a representative for the above named Company, hereby authorise BHEL, EDN, Bangalore to electronically deposit payments to the designated bank account.
- B If the transaction is delayed or not effected at all for reasons of incomplete or incorrect information, I would not hold BHEL / transferring Bank responsible.
- C This authority remains in full force until BHEL, EDN, Bangalore receives written notification requesting a change or cancellation.
- D I have read the contents of the covering letter and agree to discharge the responsibility expected of me as a participant under ECS / EFT.

Date:

Authorised Signatory:

Designation:

Telephone No. with STD Code

Company Seal

Bank Certificate

We certify that _____ has an Account No _____ with us and we confirm that the bank details given above are correct as per our records.

Date:

(.....)

Place:

Signature

Please return completed form along with a blank cancelled cheque or photocopy thereof to:

Bharath Heavy Electricals Ltd,

Attn:

Electronics Division, Mysore Road,

BANGALORE - 560 026

In case of any Query, please call concerned purchase executive.

ANNEXURE - V
PRESENT PROCEDURE FOR SALE IN TRANSIT (HIGH SEA SALES)

In case of High Sea Sales, vendor should submit following documents:

1. ORIGINAL HIGH SEA SALES AGREEMENT

- Sale agreement (on Rs. 200/- non-judicial stamp paper & notarised with 2 witnesses with identity) has to be signed between BHEL and the Party importing material. The date of the sale documents should be in between the date of House Air Way Bill / Bill of Lading and before landing of the goods in Indian origin.
- Following shall be included in the High Sea Sales Agreement:
"THE BUYER ALSO UNDERTAKE DISCHARGES, THE OBLIGATION AND FULFILLMENT OF CONDITIONS, IF ANY, ATTACHED TO THE IMPORTATION, ASSESSMENT AND CLEARANCE OF THE GOODS IN TERMS CUSTOMS TARIFF ACT 1975, THE CUSTOMS ACT 1962 & RULES & REGULATIONS MADE THERE UNDER AND OTHER RELEVANT ACTS, ORDERS, NOTIFICATIONS".

2. ORIGINAL INVOICES: INDIGENOUS RUPEE INVOICE & FOREIGN CURRENCY INVOICE

- Prices should be C.I.F., designated airport/seaport basis.
- I.E.C., C.S.T., K.S.T. Nos. to be mentioned.
- Description of item (Nomenclature), Unit & Quantity in both the Foreign Currency & the Indigenous Invoice in Rupee shall be exactly as per Purchase Order Description of item, Quantity and Unit. The Indigenous Invoice value shall be exactly as per Purchase Order value.
- Seller should give Foreign Currency Invoice from the original consignor. The Foreign Currency Invoice value should be at least 2% (two per cent) less than the Indigenous Rupee Invoice value in equivalent foreign currency.

4. ORIGINAL HOUSE AIR WAY BILL/ BILL OF LADING

- The sale agents should duly endorse House Air Way Bill (HAWB) for air shipments or original Bill of Lading (O.B.L.) for sea shipments and Foreign Currency Invoice in favour of BHEL-EDN.

5. ORIGINAL CARGO ARRIVAL NOTICE FROM FORWARDER.

6. ORIGINAL DELIVERY ORDER ISSUED IN NAME OF BHEL-EDN.

7. ORIGINAL PACKING LIST.

8. A LETTER TO THE COMMISSIONER OF CUSTOMS FOR EFFECTING ABOVE SALE.

9. A LETTER TO THE DEPUTY ASSESSOR (OCTROI) FOR EFFECTING ABOVE SALE IN FAVOUR OF BHEL.

REMARKS: In case vendor needs any clarifications on the above, the same may be sought in writing.

Sl. No.	Name of the bank
1	State Bank of India
2	Canara Bank
3	IDBI Bank Limited
4	ICICI Bank Limited
5	HDFC Bank Limited
6	Axis Bank
7	IndusInd Bank Limited
8	Bank of Baroda
9	Exim Bank
10	Indian Bank
11	Punjab National Bank
12	Union Bank of India
13	Yes Bank Limited
14	RBL Bank Ltd.
15	Standard Chartered Bank
16	Indian Overseas Bank
17	Kotak Mahindra Bank Limited
18	Federal Bank Limited
19	Hongkong and Shanghai Banking Corporation Ltd

Annexure-X

BANK GUARANTEE FOR PERFORMANCE SECURITY

Bank Guarantee No:

Date:

To
NAME
& ADDRESSES OF THE BENEFICIARY

Dear Sirs,

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 _____¹ through its Unit at.....(name of the Unit) having awarded to (Name of the Vendor / Contractor / Supplier) with its registered office at _____² hereinafter referred to as the 'Vendor / Contractor / Supplier', which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns), a contract Ref No.....dated³ valued at Rs.....⁴ (Rupees -----)/FC.....(in words.....) for⁵ (hereinafter called the 'Contract') and the Vendor / Contractor / Supplier having agreed to provide a Contract Performance Bank Guarantee, equivalent to% (.... Percent) of the said value of the Contract to the Employer for the faithful performance of the Contract,

we, (hereinafter referred to as the Bank), having registered/Head office at and inter alia a branch at being the Guarantor under this Guarantee, hereby, irrevocably and unconditionally undertake to forthwith and immediately pay to the Employer any sum or sums upto a maximum amount of Rs —⁶ (Rupees -----) without any demur, immediately on first 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. _____.

We undertake to pay to the Employer any money so demanded notwithstanding any dispute or disputes raised by the Vendor / Contractor / Supplier 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 thereunder and the Vendor / Contractor / Supplier shall have no claim against us for making such payment.

We thebank 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/satisfactory completion of the performance guarantee period as per the terms of the 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 or discharged.

WeBANK 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 Vendor / Contractor / Supplier 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 Vendor / Contractor / Supplier 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 reason of any such variation, or extension being granted to the said Vendor / Contractor / Supplier or for any forbearance, act or omission on the part of the Employer or any indulgence by the Employer to the said Vendor / Contractor / Supplier 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 Vendor / Contractor / Supplier and notwithstanding any security or other guarantee that the Employer may have in relation to the Vendor / Contractor / Supplier's liabilities.

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

This Guarantee shall not be determined or affected by liquidation or winding up, dissolution or change of constitution or insolvency of the Vendor / Contractor / Supplier 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.

Unless a demand or claim under this guarantee is made on us in writing on or before the⁵ we shall be discharged from all liabilities under this guarantee thereafter.

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)

Dated.....

Place of Issue.....

¹ NAME AND ADDRESS OF EMPLOYER i.e Bharat Heavy Electricals Limited

² NAME AND ADDRESS OF THE VENDOR /CONTRACTOR / SUPPLIER.

³ DETAILS ABOUT THE NOTICE OF AWARD/CONTRACT REFERENCE

⁴ CONTRACT VALUE

⁵ PROJECT/SUPPLY DETAILS

⁶ BG AMOUNT IN FIGURES AND WORDS

⁷ VALIDITY DATE

⁸ DATE OF EXPIRY OF CLAIM PERIOD

F. No. DPE/3(3)/10-Fin.
Government of India
Ministry of Finance
Department of Public Enterprises

Block No. 14, CGO Complex,
Lodi Road, New Delhi-110003
Dated the 29th May, 2023

To,

Chief Executives of all CPSEs

Subject:- Concurrent application of Public Procurement Policy for Micro and Small Enterprises Order, 2012 and Public Procurement (Preference to Make in India) Order, 2017 - regarding

Sir/Madam,

The undersigned is directed to forward herewith a copy of Department of Expenditure O.M. dated 18th May, 2023 on the subject mentioned above for information and strict compliance.

Encl : As stated


(Kailash Bhandari)
Deputy Director
Tel : 2436-6247

Copy to :- Shri Kanwalpreet, Director, Department of Expenditure, Room No. 264-C,
North Block, New Delhi.

No.F.1/4/2021-PPD
Government of India
Ministry of Finance
Department of Expenditure
Public Procurement Division

264-C, North Block, New Delhi.
18.05.2023.

OFFICE MEMORANDUM

Subject: Concurrent application of Public Procurement Policy for Micro and Small Enterprises Order, 2012 and Public Procurement (Preference to Make in India) Order, 2017.

The undersigned is directed to refer two Preferential Procurement Orders mandated for the Public Procurement in India, namely:

- i. Public Procurement Policy for Micro and Small Enterprises (MSEs) Order dated 23.03.2012 (PPP-MSE Order) issued by Ministry of Micro, Small and Medium Enterprises (MoMSME) in exercise of the powers conferred in Section 11 of the MSME Development Act, 2006. (Last revised on 09.11.2018)
 - ii. Public Procurement (Preference to Make in India) Order, 2017 (PPP-MII order), under Rule 153(iii) of the General Financial Rules (GFRs) 2017, approved by the Cabinet. Implementation of this PPP-MII order is monitored by Department for Promotion of Industry and Internal Trade (DPIIT). (Last revised on 16.09.2020.)
2. It has been brought to the notice of this Department that concurrent application of these two orders are creating confusion to the procuring entities and different procuring entities interpret them differently. In order to bring predictability both to the procuring entities as well as bidders, following guidelines are being issued.

Guidelines

3. The Class-I local suppliers, under PPP-MII Order, participating in any government tender, may or may not be MSEs, as defined under the MSME Act. Similarly, MSEs participating in any government tender, may or may not be Class-I local suppliers. Suppliers may be categorised in following four broad categories for consideration or applicability of purchase preference:

Category	Terminology
Supplier is both MSE & Class-I local supplier.	"MSE Class-I local supplier"
Supplier is MSE but not Class-I local supplier.	"MSE but non-Class-I local supplier"
Supplier is not MSE but is Class-I local supplier.	"Non-MSE but Class-I local supplier"
Supplier is neither MSE nor Class-I local.	"Non-MSE non-Class-I local supplier"

4. The applicability of PPP-MSE Order and PPP-MII Order in various scenarios, involving simultaneous purchase preference to MSEs and Class-I local suppliers under PPP-MSE Order and PPP-MII Order respectively, shall be as under:

a) *Items covered under Para 3(a) of PPP- MII Order, 2017 for which Nodal Ministry has notified sufficient local capacity and competition:* For these items, only Class-I local suppliers are eligible to bid irrespective of purchase value. Hence, Class-II local suppliers or Non-local suppliers, including MSEs which are Class-II local suppliers/ Non-local suppliers, are not eligible to bid. Possible scenarios can be as under:

- (i) L-1 is "MSE Class-I local supplier" - 100% of the tendered quantity is to be awarded to L-1.
- (ii) L-1 is "Non-MSE but Class-I local supplier" - Purchase preference is given to MSEs as per PPP-MSE Order. Balance quantity is to be awarded to the L-1 bidder.

b) *Items reserved exclusively for procurement from MSEs as per PPP-MSE Order:* These items are reserved exclusively for purchase from MSEs. Hence, non-MSEs are not eligible to bid for these items. Possible scenarios can be as under:

- (i) L-1 is "MSE Class-I local supplier" - 100% of the tendered quantity is to be awarded to L-1.
- (ii) L-1 is "MSE non-Class-I local supplier" - Purchase preference is to be given to Class-I local supplier as per PPP-MII Order. Balance quantity, is to be awarded to L-1 bidder.

c) *If items are neither notified for sufficient local capacity nor reserved for MSEs, then the process will be as follows:*

c (a) Items covered under Para 3A(b) of PPP-MII Order are divisible items and both MSEs as well as Class-I local suppliers are eligible for purchase preference. Possible scenarios can be as under:

- (i) L-1 is "MSE Class-I local supplier" - 100% of the tendered quantity is to be awarded to L-1.
- (ii) L-1 is "Non-MSE but Class-I local supplier" - Purchase preference is to be given to MSEs, if eligible, as per PPP-MSE Order. Balance quantity is to be awarded to L-1 bidder.
- (iii) L-1 is "MSE but non-Class-I local supplier" - Purchase preference is to be given to Class-I local suppliers, if eligible, as per PPP-MII Order. Balance quantity is to be awarded to L-1 bidder.
- (iv) L-1 is "Non-MSE non-Class-I local supplier" - Purchase preference is to be given to MSEs as per PPP-MSE Order. Thereafter, purchase preference is to be given to Class-I local suppliers for "50% of the tendered quantity minus quantity allotted to MSEs

above" as per PPP- MII Order. For the balance quantity, contract is to be awarded to L-1 bidder. *(Kindly refer to the illustrative example in the annexure).*

- c (b) Items covered under Para 3A(c) of PPP-MII Order, 2017 are non-divisible items and both MSEs as well as Class-I local suppliers are eligible for purchase preference. Possible scenarios can be as under:
- (i) L-1 is "MSE Class-I local supplier" - Contract is awarded to L-1.
 - (ii) L-1 is not "MSE Class-I local supplier" but the "MSE Class-I local supplier" falls within 15% margin of purchase preference - Purchase preference is to be given to lowest quoting "MSE Class-I local supplier". If lowest quoting "MSE Class-I local supplier" does not accept the L-1 rates, the next higher "MSE Class-I local supplier" falling within 15% margin of purchase preference is to be given purchase preference and so on.
 - (iii) If conditions mentioned in sub paras (i) and (ii) above are not met i.e. L-1 is neither "MSE Class-I local supplier" nor "MSE Class-I local supplier" is eligible to take benefit of purchase preference, the contract is to be awarded/ purchase preference to be given in different possible scenarios as under:
 - A. L1 is "MSE but non-Class-I local supplier" or "Non-MSE but Class-I local supplier" – Contract is to be awarded to L1.
 - B. L1 is "Non-MSE non-Class-I local supplier" - First purchase preference to be given to MSE as per PPP-MSE Order. If MSE not eligible/ does not accept - purchase preference to be given to Class- I Local supplier as per PPP-MII Order. If Class-I Local supplier also not eligible/ does not accept – contract to be awarded to L-1.
- d) *Items reserved for both MSEs and Class-I local suppliers:* These items are reserved exclusively for purchase from MSEs as well as Class-I local suppliers. Hence, only "MSE Class-I local supplier" are eligible to bid for these items. Non-MSEs/Class-II local suppliers/ Non-local suppliers cannot bid for these items. Hence the question of purchase preference does not arise.
- e) Non-local suppliers, including MSEs falling in the category of Non-local suppliers, shall be eligible to bid only against Global Tender Enquiry.


(Kanwalpreet)
Director

Tel.: -223093811; email: - kanwal.irss@gov.in

To

1. Secretaries of all Central Government Ministries/ Departments.
2. Secretary Department of Public Enterprises with a request for issuing suitable instructions to all Central Public Sector Enterprises in this regard.

Example explaining applicability in scenario explained in para 4 c (a)(iv)

(Scenario: Divisible items, both MSEs as well as Class-I local suppliers eligible for purchase preference and L-1 is "Non-MSE non-Class-I local supplier")

Item – Desktop computer

Qty – 50 Nos.

Details of bids received

Sr. No.	Name of bidder	Rates quoted	Price Ranking	Status of bidder
1.	A	100	L1	"Non-MSE non- Class-I local supplier"
2.	B	110	L2	"Non-MSE but Class-I local supplier"
3.	C	112	L3	"MSE but non- Class-I local supplier"
4.	D	115	L4	"Non-MSE but Class-I local supplier"
5.	E	118	L5	"MSE but non- Class-I local supplier"
6.	F	120	L6	"MSE Class-I local supplier"

1. In this case, first purchase preference is to be given to MSEs as per PPP-MSE Order for 25% of tendered quantity of 50 Nos. i.e. 12.5 Nos. (rounded off to the next whole number say 13 Nos). Accordingly, invite L3 (bidder C), whose quoted rates falls within 15% margin of purchase preference to match L1 price i.e. Rs. 100/- for quantity of 13 Nos. Bidder "E" and "F", although MSEs, will not get purchase preference since their quoted rates don't fall within 15% margin of purchase preference. Bidder C will be considered for order of 13 Nos. on confirmation of reduction of price.
2. For 50% of balance quantity of 37 number (tendered quantity of 50 – 13 awarded to bidder C; assuming bidder C has confirmed to accept L1 rates), purchase preference will be given to lowest Class-I local supplier as per PPP-MII Order. Accordingly, bidder B will be invited to match L-1 price for 50% of 37 Nos i.e. 18.5 (say 19 Nos of computers). If bidder "B" does not accept the L1 price i.e. price of Rs. 100/- per unit, next higher Class-I local supplier falling within 20% margin of purchase preference, i.e. bidder "D", may be invited to match L-1 price for 19 Nos. of computers and so on.
3. For remaining quantity i.e. 18 Nos (50-13-19), the contract will be awarded to lowest quoting bidder i.e. Bidder "A", who is L-1 in the example.

Annexure-X

Restrictions under Rule 144(xi) of General Financial Rules, 2017 amendment dt: 23.07.2020

- 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.
- 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.



ಭಾರತ್ ಹೆವಿ ಎಲೆಕ್ಟ್ರಿಕಲ್ಸ್ ಲಿಮಿಟೆಡ್
भारत हेवी इलेक्ट्रिकल्स लिमिटेड

Bharat Heavy Electricals Ltd.,
(A Government of India undertaking)
Electronics Division

PB 2606 , Mysore Road Bangalore , 560026 INDIA

CE: PR: 002- Rev 03

GENERAL COMMERCIAL CONDITIONS FOR CONTRACT

These 'General Commercial Conditions for Contract for Purchase' herein after referred to as GCC apply to all enquiries, tenders, requests for quotations, orders, contracts and agreements concerning the supply of goods and the rendering of related services (hereinafter referred to as "deliveries") to Bharat Heavy Electricals Limited and any of its units, regions or divisions (hereinafter referred to as "BHEL" or the Purchaser) or its projects/ customers.

Any deviations from or additions to these GCC require BHEL's express written consent. The general terms of business or sale of the vendor shall not apply to BHEL. Acceptance, receipt of shipments or services or effecting payment shall not mean that the general terms of business or sale of the vendor have been accepted.

Orders, agreements and amendments thereto shall be binding if made or confirmed by BHEL in writing. Only the Purchasing department of BHEL is authorized to issue the Purchase Order or any amendment thereof.

Definitions: Throughout these conditions and in the specifications, the following terms shall have the meanings assigned to them, unless the subject matter or the context requires otherwise.

- a) 'The Purchaser' means Bharat Heavy Electricals Limited, Electronics division, Mysore road, Bangalore 560 026, a Unit of Bharat Heavy Electricals Limited (A Govt. of India Undertaking) incorporated under the Companies Act having its registered office at BHEL House, Siri Fort, New Delhi-110049, India and shall be deemed to include its successors and assigns. It may also be referred to as BHEL.
- b) 'The vendor' means the person, firm, company or organization on whom the Purchase Order is placed and shall be deemed to include the vendor's successors, representative heirs, executors and administrator as the case may be. It may also be referred to as Seller, Contractor or Supplier.
- c) 'Contract' shall mean and include the Purchase Order incorporating various agreements, viz. tender/ RFQ, offer, letter of intent/acceptance/ award, the General Conditions of Contract and Special Conditions of Contract for Purchase, Specifications, Inspection/ Quality Plan, Schedule of Prices and Quantities, Drawings, if any enclosed or to be provided by BHEL or his authorized nominee and the samples or patterns if any to be provided under the provisions of the contract.
- d) 'Parties to the Contract' shall mean the 'The Vendor' and the Purchaser as named in the main body of the Purchase Order.

Order of Precedence:

In case of any inconsistency or contradiction between any of the documents, the order of precedence shall be Purchase Order, LOI / LOA, Special Conditions of Contract and General Conditions of Contract for commercial conditions; and specific agreement on technical conditions, RFQ/offer and specification for Technical Conditions.

Interpretation:

In the contract, except where the context requires otherwise:

- a) words indicating one gender include all genders;
- b) words indicating the singular also include the plural and words indicating the plural also include the singular;

- c) provisions including the word "agree", "agreed" or "agreement" require the agreement to be recorded in writing, and
- d) "Written" or "in writing" means hand-written, type-written, printed or electronically made, and resulting in a permanent record.

Applicable Conditions:

1. **Price Basis:** All prices shall be firm until the purchase order is executed / completed in all respects. No price variations / escalation shall be permitted.
2. **Ordering and confirmation of Order:** Vendor shall send the order acceptance on their company letter head/ through e-mail within a week from the date of receipt of Purchase Order or such other period as specified/ agreed by BHEL. BHEL reserves the right to revoke the order placed if the order confirmation differs from the original order placed. The acceptance of goods/services/supplies by BHEL as well as payments made in this regard shall not imply acceptance of any deviations.
The purchase order will be deemed to have been accepted if no communication to the contrary is received within one week (or the time limit as specified/agreed by BHEL) from the date of receipt of the purchase order.

3. **Documentation:** After receipt of Purchase Order, vendor should submit necessary documents (if & as applicable) like drawings specified, bill of materials, datasheets, catalogues, quality plan, test procedure, type test report, O & M Manuals and/or any other relevant documents as per Specification/Purchase Order, as and when required by BHEL/Customer.
At any stage within the contract period, the vendor shall notify of any error, fault or other defect found in BHEL's documents /specifications or any other items for reference. If and to the extent that (taking account of cost and time) any vendor exercising due care would have discovered the error, fault or other defect when examining the documents/specifications before submitting the tender, the time for completion shall not be extended. However if errors, omissions, ambiguities, inconsistencies, inadequacies or other defects are found in the vendor's documents, they shall be corrected at his cost, notwithstanding any consent or approval.

4. **Penalty:**

- a. **For delay in documentation:** In the event of delay in submission of complete set of specified documents ((like drawings, bill of materials, datasheets, catalogues, quality plan etc. as called in tender specifications including soft copies wherever applicable) in required sets beyond two(02) weeks (or as agreed/indicated in the SCC/Purchase Order) from the date of receipt of Purchase Order(by email), penalty at 0.5% (half percent) per week or part thereof, limited to a maximum of 5% (five percent) of the basic material value of the Purchase Order will be applicable.

Penalty for delayed documentation if applicable, shall be deducted at the time of first supply payment. If penalty is applicable for duration of less than a week, penalty @ 0.5% (half percent) of the basic material value will be deducted. GST as applicable will be recovered along with penalty amount.

- b. **For delay in delivery:** In the event of delay in agreed contractual delivery as per Purchase Order, penalty @ 0.5 % (half percent) per week or part thereof but limited to a max of 10% (ten percent) value of undelivered portion (basic material cost) will be applicable. Delivery will commence from the date of issue of Manufacturing clearance along with approved document. The date for which Inspection call is issued by vendor along with test certificates / test reports /Certificate of Conformance / calibration reports, as proof of completion of manufacturing will be treated as date of deemed delivery for penalty calculation. In the absence of furnishing such document indicated above as proof of completion of manufacturing along with inspection call, actual date of inspection will be considered as date of deemed delivery and BHEL will not be responsible for delay in actual date of inspection.

Penalty for delayed delivery if applicable, shall be deducted at the time of first supply payment. If penalty is applicable for duration of less than a week, penalty @ 0.5% (half percent) of the basic material value will be

deducted.

5. Contract variations (Increase or decrease in the scope of supply): BHEL may vary the contracted scope as per requirements at site. If vendor is of the opinion that the variation has an effect on the agreed price or delivery period, BHEL shall be informed of this immediately in writing along with technical details. Where unit rates are available in the Contract, the same shall be the basis for such additional work. Vendor shall not perform additional work before BHEL has issued written instructions/ amendment to the Purchase Order to that effect. The work which the vendor should have or could have anticipated in terms of delivering the service(s) and functionality (i.e.) as described in this agreement, or which is considered to be the result of an attributable error on the vendor's part, shall not be considered additional work.
6. Pre-dispatch inspection at Seller premises: Before dispatch, the goods will be inspected by Buyer / Consignee or their Authorized Representative or by Nominated External Inspection Agency (independently or jointly with Buyer or Consignee as decided by the Buyer) at Seller premises (or at designated place for inspection as declared / communicated by the seller) for their compliance to the contract specification. For in-house testing, the Sellers will provide necessary facilities free of cost.

Prior written notice of at least 10 days shall be given along with internal test certificates/COC and applicable test certificates. Buyer will notify the Seller about the Authorized Representative/ Nominated External Inspection Agency and the date for testing. Scope of inspection is limited to 'approved Quality plan or QA Checklist or Purchase specification'. BHEL reserves the right for conducting repeat test, if required. All tests have to be conducted as applicable in line with approved Quality plan or QA Checklist or Purchase specification and original reports shall be furnished to BHEL-EDN, Bangalore for verification/acceptance for issue of dispatch clearance.

All costs related to re-inspection(s) shall be borne by vendor. Whether the Contract provides for tests on the premises of the vendor or any of his Sub-contractor/s, vendor shall be responsible to provide such assistance, labour, materials, electricity, fuel, stores, apparatus, instruments as may be required and as may be reasonably demanded to carry out such tests efficiently. Cost of any type test or such other special tests shall be borne by BHEL only if specifically agreed to in the purchase order.

7. Transit Insurance: Transit insurance coverage between vendor's works and project site shall be to the account of BHEL, unless specifically agreed otherwise. However, vendor shall send intimation directly to insurance agency (as mentioned in dispatch instructions issued by BHEL) through fax/courier/e-mail, immediately on dispatch of goods for covering insurance. A copy of such intimation sent by vendor to insurance agency shall be given to BHEL along with dispatch documents. Dispatch documents will be treated as incomplete without such intimation copy. BHEL shall not be responsible for sending intimations to insurance agency on behalf of the vendor.
8. Mode of dispatch:
Indigenous Scope: By road on Door Delivery Consignee Copy attached basis through your approved transporter (unless otherwise indicated in Dispatch Instructions), only on receipt of Despatch Clearance from BHEL.
Import Scope: By Air/Sea through BHEL approved Freight Forwarder/supplier approved Consolidator respectively as per agreed contractual terms, only on receipt of Dispatch Clearance from BHEL.
9. Changes in Statutory levies:
 If any rates of Tax are increased or decreased, a new Tax is introduced, an existing Tax is abolished, or any change in interpretation or application of any Tax occurs in the course of the execution of Contract, which was or will be assessed on the bidder in connection with performance of the Contract, an equitable adjustment of the Contract Price shall be made to fully take into account any such change by addition to the Contract Price or deduction there from, as the case may be. However, these adjustments would be restricted to direct transactions between BHEL and the bidder /agent of foreign bidder (if applicable). These adjustments shall not be applicable on procurement of raw materials, intermediary components etc. by the bidder /agent.

It is the obligation on the part of supplier to discharge his liability by payment of GST to Government of India in cash (or) utilization of input Tax credit in respect of such supply or services through GST invoice under this contract, so that BHEL will avail input tax credit on such supply. In the event that the input tax credit of the GST charged by the supplier is denied by the tax authorities to BHEL due to reasons attributable to supplier, BHEL shall be entitled to recover such amount from the supplier by way of adjustment from the next invoice or from Bank Guarantee. In addition to the amount of GST, BHEL shall also be entitled to recover interest and penalty, in case same is imposed by the tax authorities on BHEL.

If BHEL is not able to avail the credit of CGST & SGST/IGST, partially or entirely because the supplier issued a defective invoice or failed to produce the requisite documents, then the supplier shall immediately indemnify BHEL for such loss of tax credit which would be otherwise available to BHEL. BHEL, in such case, may, at its sole discretion, decide to recover such loss by way of deduction from payment due to the supplier or invoking the contract Performance Bank Guarantee.

The classification of goods as per GST should be correctly done by the supplier to ensure that ITC benefit is not lost to the BHEL on account of any error on the part of the supplier.

Any statutory increase in the CGST & SGST / IGST or any new or additional taxes or duties imposed within the Contractual Delivery Period or extended Contractual Delivery Period shall be to BHEL's account whereas if it is after Contractual Delivery period, it shall be to supplier's account. Any corresponding decrease on account of above shall be passed on to BHEL.

In case GST or any taxes or duties is not applicable at present but become applicable at the time of contractual delivery period due to any reason other than statutory, the same shall be borne by supplier.

10. Availing duty/tax exemption benefits by bidder, wherever applicable: BHEL shall issue the required Certificate/s, as per relevant policies of the Govt. of India, to facilitate the bidders to avail any such benefits under the Contract. In case of failure of the bidders to receive the benefits partly or fully from the Govt. of India and/or in case of any delay in receipt of such benefits, BHEL shall neither be liable nor responsible in any manner whatsoever.
11. Taxes against sub-vendor dispatches: All taxes/levies, as applicable in respect of all components, equipments and material to be despatched directly from the sub-vendor's works to Site irrespective of the fact whether such taxes and levies are assessable and chargeable on Vendor or the BHEL, shall be to the vendor's account and no separate claim in this regard will be entertained by BHEL.
12. High Sea Sales (HSS): Customs clearance of the consignment landed on Indian Sea/Air ports will be done by BHEL based on the original HSS documents provided by vendors.
Any delay in submission of complete/correct HSS documents to BHEL may incur demurrage charges. All demurrage charges on account of incomplete /incorrect HSS documents submission by vendor will be to vendor's account and all such charges will be recovered from any of the available vendor bills with BHEL.
13. Packaging and dispatch: The Seller shall package the goods safely and carefully and pack them suitably in all respects considering the peculiarity of the material for normal safe transport by Sea/ Air / Rail/ Road to its destination suitably protected against loss, damage, corrosion in transit and the effect of tropical salt laden atmosphere. The packages shall be provided with fixtures/ hooks and sling marks as may be required for easy and safe handling. If any consignment needs special handling instruction, the same shall be clearly marked with standard symbols / instructions. Hazardous material should be notified as such and their packing, transportation and other protection must conform to relevant regulations.
The packing, shipping, storage and processing of the goods must comply with the prevailing legislation and regulations concerning safety, the environment and working conditions. *For facilitating smooth movement of shipment, the consignment has to be in stackable condition.* Any Imported/Physical Exports items packed with raw/ solid wood packing material should be treated as per ISPM – 15 (fumigation) and accompanied by Phytosanitary/ Fumigation certificate. If safety information sheets (MSDS – Material Safety Data Sheet)

exist for an item or the packaging, vendor must provide this information without fail along with the consignment.

Each package must be marked with Consignee name, Purchase order number, Package number, Gross weight and net weight, dimensions (LxBxH) and Seller's name. Packing list of goods inside each package with PO item number and quantity must also be fixed securely outside the box to indicate the contents of each box. Total number of packages in the consignment must also be indicated in the packing list.

Separate packing & identification of items should be as follows.

1. Main Scope - All items must be tagged with part no. & item description.
2. Commissioning accessories/spares - All items must be tagged with part no. & item description.
3. Mandatory spares - All items must be tagged with part no. & item description.

Nevertheless, vendor shall adhere to dispatch & packing instructions issued by BHEL at the time of dispatch.

14. Assignment of Rights & Obligations; Subcontracting: Vendor is not permitted to subcontract the delivery or any part thereof to third party or to assign the rights and obligations resulting from this agreement in whole or in part to third parties without prior written permission from BHEL. Any permission or approval given by the BHEL shall, however, not absolve the vendor of the responsibility of his obligations under the Contract.
15. Progress report: Vendor shall render such report as to the progress of work and in such form as may be called for by the concerned purchase officer from time to time. The submission and acceptance of such reports shall not prejudice the rights of BHEL in any manner.
16. Non-disclosure and Information Obligations: Vendor shall provide with all necessary information pertaining to the goods as it could be of importance to BHEL. Vendor shall not reveal any specified confidential information that may be divulged by BHEL to Vendor's employees not involved with the tender/ contract & its execution and delivery or to third parties, unless BHEL has agreed to this in writing beforehand. Vendor shall not be entitled to use the BHEL name in advertisements and other commercial publications without prior written permission from BHEL.
17. Cancellation /Termination of contract: BHEL shall have the right to completely or partially terminate the agreement by means of written notice to that effect. Termination of the Contract, for whatever reason, shall be without prejudice to the rights of the parties accrued under the Contract up to the time of termination.
BHEL shall have the right to cancel/foreclose the Order/ Contract, wholly or in part, in case it is constrained to do so on account of any decline, diminution, curtailment or stoppage of the business.
18. Breach of Contract, Remedies & Termination: In case of breach of contract (failure of supplier), wherever the value of Performance security available with BHEL against the said contract is atleast 10% of the contract value, the same shall be encashed.

In case the value of the security instruments available with BHEL is less than 10% of the contract value, the balance amount will be recovered from other financial remedies (i.e. available bills of the contractor, retention amount, etc. with BHEL) or legal remedies shall be pursued.

Further, levy of liquidated damages, debarment, termination, de-scoping, short-closure, etc. shall be applied as per provisions of the contract.

19. Shortages: In the event of shortage on receipt of goods and/or on opening of packages at site, all such shortages, caused by supplier's act or omission, shall be made good at free of cost within a reasonable time that BHEL may allow from such intimation.

Transit Damages: In the event of receipt of goods in damaged condition or having found them so upon opening of packages at site, supplier shall make good of all such damages within a reasonable time from such intimation by BHEL. In case BHEL raises an insurance claim, the cost of material limited to insurance settled amount less handling charges will be reimbursed to supplier.

20. Remedial work: Notwithstanding any previous test or certification, BHEL may instruct the vendor to remove and replace materials/goods or remove and re-execute works/services which are not in accordance with the purchase order. Similarly BHEL may ask the vendor to supply materials or to execute any services which are urgently required for any safety reasons, whether arising out of or because of an accident, unforeseeable event or otherwise. In such an event, Vendor shall provide such services within a reasonable time as specified by BHEL.
21. Indemnity Clause: Vendor shall comply with all applicable safety regulations and take care for the safety of all persons involved. Vendor is fully responsible for the safety of its personnel or that of his subcontractor's men / property, during execution of the Purchase Order and related services. All statutory payments including PF, ESI or other related charges have to be borne by the vendor. Vendor is fully responsible for ensuring that all legal compliances are followed in course of such employment. Vendor shall fully indemnify and keep indemnified BHEL against all claims of whatsoever nature arising during the course and out of execution of this Order/Contract.
22. Product Information, Drawings and Documents: All specified drawings, technical documents or other technical information received by Vendor from BHEL or vice versa shall not, without the consent of the other party, be used for any other purpose than that for which they were provided. They may not, without the consent of the Disclosing party, otherwise be used or copied, reproduced, transmitted or communicated to third parties. All information and data contained in general product documentation, whether in electronic or any other form, are binding only to the extent that they are by reference expressly included in the contract.

Vendor, as per agreed date/s but not later than the date of delivery, provide free of charge information and drawings which are necessary to permit and enable BHEL to erect, commission, operate and maintain the product. Such information and drawings shall be supplied in as many numbers of copies as may be agreed upon.

All intellectual properties, including designs, drawings and product information etc. exchanged during the formation and execution of the Contract shall continue to be the property of the disclosing party.

23. Intellectual Property Rights, Licenses: If any Patent, design, Trade mark or any other intellectual property rights apply to the delivery (goods/related service) or accompanying documentation shall be the exclusive property of the Vendor and BHEL shall be entitled to the legal use thereof free of charge by means of a non-exclusive, worldwide, perpetual license. All intellectual property rights that arise during the execution of the Purchase Order/ contract for delivery by vendor and/or by its employees or third parties involved by the vendor for performance of the agreement shall belong to BHEL. Vendor shall perform everything necessary to obtain or establish the above mentioned rights. The Vendor guarantees that the delivery does not infringe on any of the intellectual property rights of third parties. The Vendor shall do everything necessary to obtain or establish the alternate acceptable arrangement pending resolution of any (alleged) claims by third parties. The Vendor shall indemnify BHEL against any (alleged) claims by third parties in this regard and shall reimburse BHEL for any damages suffered as a result thereof.
24. Force Majeure: If at any time during the continuance of the Contract, the performance in whole or in part by either party of any obligation under this Contract shall be prevented or delayed by the reasons of any war, hostility, acts of the public enemy, epidemics, civil commotion, sabotage, fires, floods, explosion, quarantine restrictions, strikes, lockouts or act of God provided notice of happening of such event duly evidenced with documents is given by one party to the other within 10 days from the date of occurrence thereof, neither party shall be by reasons of such event, be entitled to terminate the Contract nor shall either party have any claim for damages against the other in respect of such non-performance or the delay in performance, and deliveries under the contract shall be resumed as soon as practicable after such event has come to an end or ceased to exist, and the decision of the Buyer as to whether the deliveries have been so resumed or not, shall be final and conclusive.

If force majeure applies, dates by which performance obligations are scheduled to be met will be extended for a period of time equal to the time lost due to any delay so caused.

Notwithstanding above provisions, in an event of Force Majeure, BHEL reserves for itself the right to cancel the order/ contract, wholly or partly, in order to meet the overall project schedule and make alternative arrangements for completion of deliveries and other schedules.

25. Warranty:

Wherever required, and so provided in the specifications/ Purchaser Order, the Seller shall ensure that the goods supplied shall comply with the specifications laid down, for materials, workmanship and performance.

Unless otherwise specified in SCC, warranty period shall be applicable for a period of 24 months from the date of delivery of goods or 18 months from the date of commissioning of goods, whichever is earlier.

The warranty period as described above shall apply afresh to replaced, repaired or re-executed parts of a delivery. Unless otherwise specifically provided in the Purchase Order, Vendor's liability shall be co terminus with the expiration of the applicable warranty period.

26. Limitation of Liability: Vendor's liability towards this contract is limited to a maximum of 100% of the contract value and consequential damages are excluded. However the limits of liability will have no effect in cases of criminal negligence or wilful misconduct.

The total liability of Vendor for all claims arising out of or relating to the performance or breach of the Contract or use of any Products or Services or any order shall not exceed the total Contract price.

27. Liability during warranty: Vendor shall arrange replacement / repair of all the defective materials / services under its obligation during the warranty period. The rejected goods shall be taken away by vendor and replaced / repaired. In the event of the vendor's failure to comply, BHEL may take appropriate action including disposal of rejections and replenishment by any other sources at the cost and risk of the vendor.

In case, defects attributable to vendor are detected during Warranty period or where the commissioning call is issued within the warranty period, vendor shall be responsible for replacement/ repair of the goods as required by BHEL at vendor's cost even after expiry of warranty period.

Further if the equipment or any part thereof cannot be used by reason of such defect and/or making good of such defect, the warranty period of the equipment or such part, as the case may be, shall be extended by a period equal to the period during which the equipment or such part cannot be used by BHEL because of any of the aforesaid reasons. Upon correction of the defects in the facilities or any part thereof by repair/replacement, such repair/replacement shall have the warranty period for a period of twelve (12) months from the time such replacement/repair of the equipment or any part thereof has been completed.

28. Liability after warranty period: At the end of the warranty, the Vendor's liability ceases except for latent defects. For the purpose of this clause, latent defects shall be the defects inherently lying within the material or arising out of design deficiency which do not manifest themselves during the warranty Period, but later. The Contractor's liability for latent defects warranty for the equipment including spares shall be limited to a period of six months from the end of the warranty period of the respective equipment including spares or first time commissioning, whichever is later but not later than one (01) year from the date of expiry of warranty period.

29. Compliance with Laws: Vendor shall, in performing the contract, comply with all applicable laws. The vendor shall make all remittances, give all notices, pay all taxes, duties and fees, and obtain all permits, licences and approvals, as required by the laws in relation to the execution and completion of the contract and for remedying of any defects; and the Contractor shall indemnify and hold BHEL harmless against and from the consequences of any failure to do so.

30. Settlement of Disputes: Except as otherwise specifically provided in the Purchase Order, decision of BHEL shall be binding on the vendor with respect to all questions relating to the interpretation or meaning of the

terms and conditions and instructions herein before mentioned and as to the completion of supplies/work/services, other questions, claim, right, matter or things whatsoever in any way arising out of or relating to the contract, instructions, orders or these conditions or otherwise concerning the supply or the execution or failure to execute the order, whether arising during the schedule of supply/work or after the completion or abandonment thereof. Any disputes or differences among the parties shall to the extent possible be settled amicably between the parties thereto, failing which the disputed issues shall be settled through arbitration. Vendor shall continue to perform the contract, pending settlement of dispute(s).

31. Arbitration Clause in case of Contract with vendors other than Public Sector Enterprise (PSE) or a Government Department:

Arbitration & Conciliation:

The parties shall attempt to settle any disputes 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, or in connection with this contract through friendly discussions. In case no amicable settlement can be reached between the parties through such discussions, in respect of any dispute; then, either Party may, by a notice in writing to the other Party refer such dispute or difference to the sole arbitration of an arbitrator appointed by Head of the BHEL–EDN. Such Sole Arbitrator appointed, shall conduct the arbitration in English language.

The Arbitrator shall pass a reasoned award and the award of the Arbitration shall be final and binding upon the Parties.

Subject as aforesaid, the provisions of Arbitration and Conciliation Act 1996 (India) or statutory modifications or re-enactments thereof and the rules made thereunder and for the time being in force shall apply to the arbitration proceedings under this clause. The seat of arbitration shall be Bangalore.

The cost of arbitration shall be borne as decided by the Arbitrator upon him entering the reference.

Subject to the Arbitration Clause as above, the Courts at Bangalore alone shall have exclusive jurisdiction over any matter arising out of or in connection with this Contract.

Notwithstanding the existence or any dispute or differences and/or reference for the arbitration, the parties shall proceed with and continue without hindrance the performance of its obligations under this Contract with due diligence and efficiency in a professional manner except where the Contract has been terminated by either Party in terms of this Contract.

Arbitration Clause in case of Contract with a Public Sector Enterprise (PSE) or a Government Department:



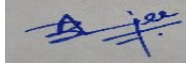
In the event of any dispute or difference relating to the interpretation and application of the provisions of the Contract, such dispute or difference shall be referred by either party for Arbitration to the Sole Arbitrator in the Department of Public Enterprises to be nominated by the Secretary to the Government of India in-charge of the Department of Public Enterprises. The Arbitration and Conciliation Act, 1996 shall not be applicable to arbitration under this clause. The award of the Arbitrator shall be binding upon the parties to the dispute, provided, however, any Party aggrieved by such Award may make further reference for setting aside or revision of the Award to the Law Secretary, Department of Legal Affairs, Ministry of Law and Justice, Government of India. Upon such reference the dispute shall be decided by the Law Secretary or the Special Secretary or Additional Secretary when so authorized by the Law Secretary, whose decision shall bind the Parties hereto finally and conclusively. The Parties to the dispute will share equally the cost of arbitration as intimated by the Arbitrator.'


32. Applicable Laws and Jurisdiction of Courts: Prevailing Indian laws both substantive and procedural, including modifications thereto, shall govern the Contract. Subject to the conditions as aforesaid, the competent courts in Bangalore alone shall have jurisdiction to consider over any matters touching upon this contract.




33. General Terms: That any non-exercise, forbearance or omission of any of the powers conferred on BHEL and /or any of its authorities will not in any manner constitute waiver of the conditions hereto contained in these presents.

That the headings used in this agreement are for convenience of reference only.

That all notices etc., to be given under the Purchase order shall be in writing, type script or printed and if sent by registered post or by courier service to the address given in this document shall be deemed to have been served on the date when in the ordinary course, they would have been delivered to the addressee.

			TECHNICAL SPECIFICATION FOR 24V DC CHARGER & DCDB SYSTEM FOR 3X40MW RAMMAM STAGE-III HYDRO ELECTRIC PROJECT FOR NTPC (HYDRO)		CE/416/RAMMAM/24VDC
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COPY RIGHT AND CONFIDENTIAL THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY.		<p>PROJECTS : RAMMAM STAGE-III HYDRO ELECTRIC PROJECT (3 X 40 MW) EPC PACKAGE</p> <p>CUSTOMER : M/s NTPC (HYDRO)</p> <p>TECHNICAL SPECIFICATION</p> <p>FOR</p> <p>24V DC CHARGER & DCDB SYSTEM</p>			
		REVISION:00		CHECKED & APPROVED  Amit Kr Sharma	
			PREPARED  Albert Banerjee		ISSUED 416 DATE 13 / 8 /24

			TECHNICAL SPECIFICATION FOR 24V DC CHARGER & DCDB SYSTEM FOR 3X40MW RAMMAM STAGE-III HYDRO ELECTRIC PROJECT FOR NTPC (HYDRO)	CE/416/RAMMAM/24VDC																									
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			TECHNICAL SPECIFICATION FOR 24V DC CHARGER & DCDB SYSTEM FOR 3X40MW RAMMAM STAGE-III HYDRO ELECTRIC PROJECT FOR NTPC (HYDRO)		CE/416/RAMMAM/24VDC
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		REVISION:00			CHECKED & APPROVED  Amit Kr Sharma
					PREPARED  Albert Banerjee



TECHNICAL SPECIFICATION FOR 24V DC CHARGER & DCDB SYSTEM FOR 3X40MW RAMMAM STAGE-III HYDRO ELECTRIC PROJECT FOR NTPC (HYDRO)

CE/430/RAMMAM/24VDC

REV 00

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Each package (location*) of 24V DC system shall comprise of the following.

Sl no	Item	Qty
1	2x100% for main power house and 1 x 100% for other locations capacity microprocessor controlled, intelligent, modular rectifier banks & controller (incoming for charger shall be through MCCB of suitable rating)	2 sets
2	1x 100 % battery (Ni-Cad type) with accessories for one hour duty cycle at 100% load	2 sets
3	DCDB with bus-coupler arrangement (DCDB and Charger Panel to be joined together with Busbar arrangement). For smaller charger, integral DCDB is acceptable	2 sets
4	Battery Health Management System for both sets of battery of a package including cables/hardware/software for connectivity to charger/DCS.	1 set
5	Battery Isolation comprising of MCCB mounted in charger panel	2 sets
6	Serial link with MODBUS protocol with 100 mtrs. cable for connecting to DCS. (Single connection is also acceptable provided it carries data to DCS of both Chargers/BHMS)	2 sets
7	Erection, supervision, commissioning & handing over of (a) Chargers/DCDB and BHMS and (b) of complete system after batteries have been commissioned by battery vendor	1 lot
9	Any software/hardware ,if applicable, to be provided to complete the system	1 set

Notes:


1. Sl.no. 2 is NOT in bidder's scope of supply and are indicated only to provide the details of complete 24V DC system at each location.

*** LOCATION WISE SUPPLY**


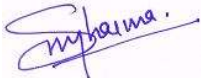

Following location (with project site) wise details as per BOQ has to be considered by the supplier

- 1) MAIN POWER HOUSE AREA
- 2) BARRAGE AREA
- 3) BUTTERFLY VALVE AREA

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			TECHNICAL SPECIFICATION FOR 24V DC CHARGER & DCDB SYSTEM FOR 3X40MW RAMMAM STAGE-III HYDRO ELECTRIC PROJECT FOR NTPC (HYDRO)	CE/416/RAMMAM/24VDC	
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		2.0 GENERAL TERMS & CONDITIONS:			
		2.1 Pre-qualification requirement:			
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		Bidder's should submit PO copy and commissioning /handling over protocol signed by user like approved design/datasheet for type and rating.			
		If bidder does not submits required document mentioned above, the offer of such bidder will be rejected.			
		2.2 Though charger and battery are being procured separately, the total overall responsibility of system integration at site for satisfactory operation of 24V DC system lies with charger vendor only. Site acceptance tests for complete system need to be successfully performed and support of Battery vendor for this, as necessary, shall be extended. Bidder has to consider and offer separate lump-sum unit rates for erection supervision & commissioning considering these aspects.			
		2.3 Each DCDB shall have, apart from the bus-bars for 24 V DC (+) and (-) buses, 4(FOUR) tinned copper bus-bars of adequate dimension, to terminate cables. The exact dimension shall be finalized during detail engineering. The DCS Earthing scheme shall also be furnished by BHEL during detailed Engg. The Shield bus-bar and the (-) 24 V DC bus bar shall have suitable terminals, as per the earthing scheme, to extend cables to the Electronic earth pit. The Charger panel body Earth shall be extended, at site, to floor Earth mat / nearest riser (external earthing Cabling not in Charger vendor scope). The power supply distribution box shall include necessary change over circuitry, switch fuse units, MCB, terminal blocks etc as suitable.			
		2.4 There can be changes in final rating and composition of DCDB even after finalization of order. These may require updation/revision of documents 3 to 4 times. BHEL approved documents shall be given along with manufacturing clearance. In certain cases, there can be changes in approved document also for which the bidder shall have to revise the documents and submit. The bidder should consider such engineering and documentation cost in their offer.			
		2.5 The changes, if any, in technical specification or scope of supply shall be communicated to participating vendor. Therefore this specification does not prohibit any vendor to participate with deviations.			
		2.6 The make of various components used in charger/DCDB shall be NTPC approved makes.			

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		3.0 DOCUMENTS TO BE FURNISHED:		
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		3.2 Along with the Technical offer: For technical evaluation, vendor must submit following documents. Non submission of all documents shall result in rejection of offer.		
		A) Unpriced BOM including mandatory spares		
		B) SLD		
		C) Catalog of rectifier, controller & BHMS		
		D) Clause-wise compliance of this specification		
		3.3 After placement of Purchase Order within 2 week: For BHEL/Consultant/Customer approval, Vendor must send one set of the following documents in hard copy & one (01) CD in soft copy, for each project.		
		a) All documents as above.		
		b) Interfacing diagram & cable type details used or suggested.		
		c) Quality Plan format enclosed as part of the specification.		
d) Type test reports (if the same is not to be conducted for the project)				
		3.4 Before Inspection: For BHEL/Consultant/Customer approval, vendor must send one Set of the following documents in hard copy & one in soft copy.		
		01. Type test reports/Certificates as per specification/approved QP		
		02. Preliminary Instruction /O&M Manual		
		3.5 Along with the materials being dispatched: Vendor must send five (5) sets of the following “As Built & Approved” status documents four (4) in hard copies & one (1) in soft copy.		
		(a) Instruction/O&M Manual		
		(b) Bill of Material		
		(c) Data Sheets		
		(d) Technical literatures/Catalogs		
		(e) Drawings GA/layout/wiring/interconnection/schematic, etc.		

			TECHNICAL SPECIFICATION FOR 24V DC CHARGER & DCDB SYSTEM FOR 3X40MW RAMMAM STAGE-III HYDRO ELECTRIC PROJECT FOR NTPC (HYDRO)		CE/416/RAMMAM/24VDC/TR
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		REVISION:00			CHECKED & APPROVED  Amit Kr Sharma
					PREPARED  Albert Banerjee
					DATE: 13-Aug-24



**TECHNICAL SPECIFICATION FOR 24V DC
CHARGER & DCDB SYSTEM FOR 3X40MW
RAMMAM STAGE-III HYDRO ELECTRIC
PROJECT FOR NTPC (HYDRO)**

CE/416/RAMMAM/24VDC/TR

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24V DC POWER SUPPLY SYSTEM

1.0 GENERAL REQUIREMENTS

This specification covers the requirement of a **Microprocessor based, Intelligent, Modular 24V DC Power Supply System** comprising of microprocessor controlled, Intelligent, Modular rectifier banks and DC distribution boards. The vendor shall be responsible for engineering and furnishing complete and operation system fully meeting the intent and requirement of this specification. All system, cabinet, enclosure and distribution boards shall be manufactured, assembled, wired and fully tested as a complete assembly as per requirements of this specification. **Further it has to be supplied to the site and commissioned by the charger system vendor. Battery will be commissioned by the battery system vendor separately. However overall responsibility lies with the charger vendor for the integration and testing at site.**

The equipment covered under this specification shall meet the requirements of latest edition of all applicable codes and standards like IEEE, IEC or equivalent Indian standards like IS. **The offered 24V DC charger system shall be type tested for surge withstand capability (SWC) as per ANSI C37.90a, IEEE Standard 472 or equivalent India standard.** The requirements of 24 V DC System are specified herein on system basis. The bidder shall be responsible for engineering and furnishing a complete and operational system fully meeting the intent and requirements of this specification and BHEL/Consultant/Customer approved drawings.

All equipment and accessories required for completeness of this system shall be furnished by the Bidder within the quoted price whether these are specifically mentioned herein or not.


All non-interrupting components of 24 V DC system shall be capable of withstanding all available short circuit currents without damage. Additionally, all circuits interrupting components shall be capable of withstanding and interrupting all encountered short circuit currents without damage.

24 V DC provided with fuse free circuit breaker shall be preferred. However In case, it is the standard practice of manufacturer to use fast current limiting fuses at inverter output etc. to protect its power semiconductor devices, the same shall be acceptable. However, in DCDB, MCB with fuse shall be provided. In any case selective fuse (fuse free circuit breaker) coordination shall be provided by Bidder to ensure that only the fuse (fuse free circuit breaker) nearest to the fault will open and isolate the faulted circuit. Other branches of the distribution system will be unaffected and the fault will not cause more than one fuse to open. The selection and selective coordination of all the protecting devices including fuse free circuit breakers / fuses shall conform to the requirements of National Electric Code (NEC) 1984 / other applicable Indian standards. The selectivity ratios of the fuses (fuse free breakers) shall be such that there is a sufficient margin between the total electric energy of the downstream fuse and the total melting energy of the 24 V DC upstream fuse. The selective ratio shall be as finalized during detailed engineering stage but the same shall be not less than 2:1 in any case

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<p>Following general requirements shall be met for ensuring proper branch and circuit protection.</p> <p>I. The feeder fuse ampere rating and feeder conductor capacity must be at least 100% of the non continuous load plus 125% of the continuous load as calculated per Article 220 (220-10G) of NEC code - 1984. The feeder conductor must be protected by a fuse not greater than the conductor capacity.</p> <p>II. For circuit with transformers requirements for conductor protection articles 240 and 310 of NEC must be observed. If secondary fuse protection is not provided then the primary fuses must not be sized larger than 125% of the transformer primary full-load amperes.</p> <p>If secondary fuses are sized not greater than 125% of transformer secondary current, individual transformer fuses are not required in the primary provided the primary feeder fuses are not larger than 250% of the transformer rated primary current.</p> <p>General technical requirements to be complied</p> <p>1 The charger equipment should have circuits to prevent malfunctioning of control panels & ensure protection of the same, in case of variations in the AC mains, which, among others include sudden voltage spikes in the input 3- phase AC supply, irregular waveform and phase imbalances. In such cases, the charger should respond in shortest possible time to trip itself and switch panel load to battery equipment. The response time of charger equipment for such responses shall be provided by the vendor for BHEL consideration.</p> <p>2 The cable termination points in the DCDB should be sufficiently distanced to ensure flexibility to have a minor change (increase) in the cable size if site conditions require the same.</p> <p>3 The equipment shall employ latest state of the art technology to guard against obsolescence. In any case, Bidder shall be required to ensure supply of spare parts for atleast 10 years from supply. In case, it is felt by the Bidder that certain equipment/component is likely to become obsolete the bidder shall clearly bring out the same in his offer and indicate steps proposed to deal with such obsolescence.</p> <p>4 All components like diodes, SCRs, ICs, capacitors, resistors etc. shall be properly chosen and de-rated such that failure rate is reduced to absolute minimum</p> <p>5. Bidder shall ensure that under no circumstance, voltage higher than prescribed limit should go to loads. Bidder should also ensure that surge/spike in output is to be totally avoided by incorporating surge arrestor and other circuits in the charger.</p> <p>NOTE: The technical requirements enumerated above are broad guidelines & vendor shall furnish a complete and fully operational system suiting to the requirements of this section, and for the said purpose, if any extra accessories or sub-systems are required, the same shall be provided by the vendor at no extra cost implication to BHEL in future.</p>					

			TECHNICAL SPECIFICATION FOR 24V DC CHARGER & DCDB SYSTEM FOR 3X40MW RAMMAM STAGE-III HYDRO ELECTRIC PROJECT FOR NTPC (HYDRO)	<div>CE/416/RAMMAM/24VDC/TR</div> <div>REV 00</div> <div>PAGE 10 OF 22</div>
		<p>2.00 <u>DC POWER SUPPLY SYSTEM (24V)</u></p> <p>2.1. <u>Microprocessor based, Intelligent, Modular Power Supply</u></p> <p>2.1.1 Microprocessor based, Intelligent, Modular Power Supply shall be sized for continuous duty to meet connected 100% load requirements and keep the connected battery full charged in Float. A provision of design margin shall be kept over and above load requirement. Either of the banks of rectifier modules shall be able to re-charge the fully discharged battery within 8 hours. It shall also be possible to discharge batteries periodically manually. Each rectifier bank shall be provided with N+1 rectifier modules of all ratings and maximum number of rectifier modules shall not be more than 25nos. The exact sizing of the rectifier in one bank shall be subject to end customer's approval during detailed engineering. It shall be ensured that all rectifier modules in one rectifier bank shall be of same rating and not more than 3 rating of rectifier module shall be used in various rectifier banks. Provision for manual boost charging with isolation of loads shall also be provided. While selecting the components and finalizing the cooling arrangements, vendor to note that these rectifier modules are require to operate at 30-40% of the rated load for most of the time. While sizing, the temperature derating factor, as applicable, is to be considered for arriving at the rating of the modules if the modules are rated to operate at less than 50Deg C ambient. For the rectifier bank, matching controller along with applicable software shall be provided to meet the system requirement under all modes of operation.</p> <p>2.1.2 The rectifier module shall be microprocessor controlled, IGBT/Power MOSFET based, high frequency with active load sharing, designed for single and parallel operation with battery and shall have automatic voltage regulators for a close voltage stability even when AC supply voltage and DC load fluctuates, effective current limiting features, front access design, programmable temperature compensation feature for battery charging and filters on both input and output to minimize harmonics. The rectifier module output regulation shall be $\pm 1\%$ or better from no load to full load with an input power supply variation of $\pm 10\%$ in voltage and $\pm 5\%$ in frequency. In addition to indication/display on rectifier panel, alarms like O/P voltage high and low, battery isolated, multiple rectifier module fail, AC input supply out of specified range, communication fault, Battery fuse blown, Surge protection failure, controller faulty, system overload, battery feeding the load etc, along with relevant analog measurements shall also be provided by employing RS485 port MODBUS protocol / Ethernet TCP/IP protocol for use in DDCMIS. Further, isolated 4-20 mA signals shall be provided for important parameters like rectifier module voltage, rectifier bank current, battery voltage, battery current, DCDB voltage, DCDB current etc. The list of alarm output & 4-20 mA signals shall be as approved by end customer during detailed engineering.</p> <p>2.1.3 "Float/Boost" charge functions shall be provided with alarm/indications.</p> <p>2.1.4 Each rectifier bank shall be rated for 100% load requirement and keep the connected battery full charged and one spare rectifier module.</p> <p>2.1.5 The rectifier module circuitry shall be of fail-safe design and failure of any component should not result in any rectifier bank output voltage to increase beyond acceptable limits of the C & I system being fed from it.</p>		



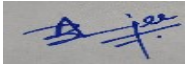
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COPY RIGHT AND CONFIDENTIAL THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED . IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY.		2.1.6 The rectifier module shall be current limited for circuit protection and protection of battery from overcharge. The current limit shall be continuously programmable.			
		2.1.7 The rectifier module shall have slow walk-in circuit which shall prevent application of full load DC current in less than 10 seconds after AC power is energized.			
		2.1.8 The rectifier module shall be fed from 415V AC, 50 HZ; 3 phase, 3 wire system.			
		2.1.9 The full load efficiency at nominal input and output shall be 90%. The ripple content shall be limited to ±0.5 % of Charger output voltage.			
		2.1.10 The rectifier module design shall ensure that there is no component failure due to fluctuations of input supply or loss of supply and restoration. This feature shall be demonstrated during factory testing and various loads.			
		2.1.11 Bidder shall furnish the equipment complete in all respects along with rectifier module rating & voltage drop calculations, supporting curves/data etc.			
		2.1.12 The controller shall be intelligent, microprocessor controlled for monitoring & control of rectifier modules with features viz. Auto/manual battery discharge test, battery reserve time prediction, energy management, remote control, float/boost mode control etc.			
		2.1.13 All software and hardware including laptop & cables, as required for smooth operation and monitoring of rectifier modules in conjunction with controller & BHMS shall be provided.			
		2.1.8 The rectifier module shall be fed from 415V AC, 50 HZ; 3 phase, 3 wire system.			
		2.1.9 The full load efficiency at nominal input and output shall be 90%. The ripple content shall be limited to ±0.5 % of Charger output voltage.			
		2.1.10 The rectifier module design shall ensure that there is no component failure due to fluctuations of input supply or loss of supply and restoration. This feature shall be demonstrated during factory testing and various loads.			
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		2.1.13 All software and hardware including laptop & BHMS cables, as required for smooth operation and monitoring of rectifier modules in conjunction with controller & BHMS shall be provided.			

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		<div>3.0 Battery Health Monitoring system (BHMS)- Refer BOM for scope of supply</div> <div>BHMS shall include microprocessor based hardware and software to monitor the condition of each battery cell of 24 V DC battery banks on-line. With BHMS it shall be possible to measure & analyze the minimum and maximum voltage values of each battery-cell so that any damage to battery shall be prevented by pro-active maintenance. BHMS shall communicate with the DCS system. BHMS shall provide alarms as finalized by NTPC/BHEL during detailed engineering. BHMS shall be offered if all the features/functions listed herein are not a part of Controller. BHMS should be able to communicate with active charger all the time.</div> <div>4.0 DC DISTRIBUTION BOARDS (DCDB)</div> <div>Redundant DC feeders (one from each DCDB) shall supply each of the connected loads. The exact design, rating & number of feeders of the each redundant DCDB is mentioned in the BOQ and will be finalized during detail engineering & approval of the customer (NTPC-Hydro). However, 25% spare feeder (min 1no) with MCB & FUSES for each rating shall be provided in each DCDB.</div> <div>5.0 RELIABILITY & AVAILABILITY: -</div> <div>Each component and system offered by the Bidder shall be of established reliability. The minimum target reliability of each piece of equipment like each electronic module/card, Power supply, peripherals, etc. shall be established by the Bidder, considering its failure rate / mean time between failures (MTBF), meantime to repair (MTTR), such that the availability of the complete C&I system is assured for 99.7%. Further the Bidder shall ensure that all equipment/Part of its system shall have normal life expectancy exceeding the expected life of the plant i.e. thirty years.</div> <div>5.1 In order to ensure the target reliability the Bidder shall ensure selection of proper materials, control manufacturing process, use quality controlled components and parts, take adequate design margins & derating of electronic components and parts and carry out necessary tests, etc.</div> <div>5.2 The equipment shall employ latest state of the art technology to guard against obsolescence. In any case, Bidder shall be required to ensure supply of spare parts for life time of the plant. In case, it is felt by the Bidder that certain equipment/component is likely to become obsolete the bidder shall clearly bring out the same in his offer and indicate steps proposed to deal with such obsolescence.</div> <div>5.3 All components like diodes, SCRs, ICs, capacitors, resistors etc. Shall be properly chosen and de-rated such that failure rate is reduced to absolute minimum</div> <div>6.0 CABINETS/ENCLOSURES</div> <div>The construction details for Power supply system cabinets/Enclosure/Racks shall conform to the following requirements:</div> <div>6.1 Equipment enclosures shall match and line up in assemblies of freestanding floor mounted cabinets designed for indoor service. The cabinets shall be of IP-42 class. Mounting plate 3mm, Gland plate = 3mm</div>				

		<div><div>बी एच ई एल</div><div>BHEL</div></div>	TECHNICAL SPECIFICATION FOR 24V DC CHARGER & DCDB SYSTEM FOR 3X40MW RAMMAM STAGE-III HYDRO ELECTRIC PROJECT FOR NTPC (HYDRO)	CE/416/RAMMAM/24VDC/TR	
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COPY RIGHT AND CONFIDENTIAL THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED . IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY.		<p>6.2 The charger panels shall be ventilated switchboard type fabricated from not less than 1.6mm thick sheet steel. Panels shall be furnished with concealed hinges. Front and rear doors shall be designed to permit easy access to all components for maintenance or replacement. The enclosures shall be reinforced with formed steel members as required to form a rigid self-supporting structure. Doors shall have three point latches.</p> <p>6.3 Adequate ventilating louvers and enclosure top panels shall be included. All vent openings shall be covered with corrosion resistant fine screen coverings.</p> <p>6.4 The temperature rise inside all the cabinets/enclosures shall not exceed 10 deg.C above ambient temperature. Vendor shall furnish calculation to establish this during tender stage.</p> <p>6.5 Each assembly may be shipped in sections for ease of handling and field assembly. Terminal blocks shall be furnished as required adjacent to each shipping split to facilitate field assembly. Cable bundles cut to the required length and furnished with terminal lugs tagged for identification shall be provided for the wiring between shipping sections.</p> <p>6.6 The colour shade of panels exterior/interior shall be as per RAL9002, end panel colour shall be as per RAL 5012.</p> <p>7.0 Cooling System If the equipment supplied requires forced air cooling, the cooling system furnished shall meet the following requirements:</p> <p>(a) Reserve cooling equipment shall be furnished for each switch board assembly. Reserve fan capacity shall be equal to 100 % of cooling fan requirements for full load operation with only one bank of rectifier in service at the specified maximum ambient temperature</p> <p>(b) Completely independent duplicable wiring and control system shall be provided for the normal cooling fan system the reserve cooling fan system.</p> <p>(c) Each cooling fan shall normally run continuously and shall be powered from the output of the inverter whose enclosure it serves. Each cooling fan supply circuit shall be separately fused.</p> <p>(d) Each cooling fan shall be equipped with an airflow switch having an alarm contact that closes upon failure of air flow.</p>			

			TECHNICAL SPECIFICATION FOR 24V DC CHARGER & DCDB SYSTEM FOR 3X40MW RAMMAM STAGE-III HYDRO ELECTRIC PROJECT FOR NTPC (HYDRO)		CE/416/RAMMAM/24VDC /TT&RAT	
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		REVISION:00			CHECKED & APPROVED	
					 Amit Kr Sharma	
					PREPARED	ISSUED 416
					 Albert Banerjee	DATE: 13-Aug-24

			TECHNICAL SPECIFICATION FOR 24V DC CHARGER & DCDB SYSTEM FOR 3X40MW RAMMAM STAGE-III HYDRO ELECTRIC PROJECT FOR NTPC (HYDRO)	CE/416/RAMMAM/24VDC/ TT&RAT REV 00 PAGE 15 OF 22
		1. Routine/Acceptance Tests:		
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**TECHNICAL SPECIFICATION FOR 24V
DC CHARGER & DCDB SYSTEM FOR
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2. Functional test

On completion of installation and commissioning of the equipment the following tests/checks shall be carried out with the max. available load, which does not exceed the rated continuous load. These tests/checks shall include but not limited to the tests as indicated below.

1. Light Load Test

This test is carried out to verify that the Power supply system is correctly connected and all functions operate properly. The load applied is limited to some percent of rated value. The following points should be checked:

- (a) Output voltage, frequency and the correct operation of meters;
- (b) Operation of all control switches and other means to put units into operation.
- (c) Functioning of protective and warning devices.
- (d) Operation of remote signaling and remote control devices.

2. A. C Input Failure Test

The test is performed with a fully charged battery and is carried out by tripping input circuit breakers or may be simulated by switching off all Power supply system rectifiers and bypass feeder as at the same time. Output voltage variations are to be checked for specified limits with an oscilloscope or equivalent. Frequency variation is defined as the steady state frequency of the Power supply system with and without AC input. The rate of change of frequency is measured by the time it takes to reach steady-state values.

4. A. C Input Return Test

AC input return test is performed by closing AC input circuit breakers, or is simulated by energizing rectifiers and bypass feeders. Proper operation of rectifier starting and voltage and frequency variations are to be observed.

Note: This test is normally performed with a fully or partially charged battery.

5. Full load test

Load tests are performed by connecting the actual load to the Power supply system output. Large Power supply system in parallel connection may be load tested by testing the individual Power supply system units separately. Load tests are necessary for testing output voltage and frequency, rated stored energy, recharge time, ventilation, temperature rise and determination of efficiency. Load tests are performed to prove, transient voltage deviations specified under step load conditions.

6. Efficiency

Efficiency should be determined by measurement of the active power at input and output.

7. Actual Load Test

Conditions under actual load may differ from those with dummy load. Steady-state generation of current & voltage harmonics & transients a load switching conditions should be observed.

8. Current Division in Parallel -

Load sharing between the Modular DC power supply rectifier banks & Power supply system units shall be measured with actual load under conditions of parallel operation.



**TECHNICAL SPECIFICATION FOR 24V
DC CHARGER & DCDB SYSTEM FOR
3X40MW RAMMAM STAGE-III HYDRO
ELECTRIC PROJECT FOR NTPC
(HYDRO)**

CE/416/RAMMAM/24VDC//TT&RAT

REV 00

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9. Rated Restored Energy Time

Restored energy depends on the charging capacity of the rectifiers and the battery characteristics. If a certain recharging rate is specified, it shall be provided by repeating the discharge test after the specified charging period.

10. On site ventilation test

The test is performed with the actual load. Temperature conditions of all Modular DC power supply rectifiers and Power Supply System cubicles are to be observed.

11. Overload capability test

Overload capability test is a load test. Specified values of short time overload or starting up sequences of actual load are to be applied for the time interval specified. Specified values of voltage and current are to be recorded.

12 Restart

Automatic or other restart means are to be tested after a completed shut-down as specified.

13 Output overvoltage

Output overvoltage protection to be checked.

14 Periodic output voltage modulation

When this test is specified, it may be checked by voltage recording at different loads and operating conditions.


15 Earth-fault test

If the DC Power Supply output is isolated from earth, then an earth fault can be applied to any output terminals. DC Power Supply output transients (if any) shall be measured.

If the battery is isolated from earth, then an earth fault can be applied to any output terminals. DC Power Supply/ UPS output transient (if any) shall be measured.




3 Site-tests:

The vendor shall also carry out the site-tests. In case any other site tests are required to be conducted as a standard practice of the vendor or deemed necessary by BHEL/Customer, the same shall also be carried out.

			TECHNICAL SPECIFICATION FOR 24V DC CHARGER & DCDB SYSTEM FOR 3X40MW RAMMAM STAGE-III HYDRO ELECTRIC PROJECT FOR NTPC (HYDRO)	CE/416/RAMMAM/24VDC//TT&RAT REV 00 PAGE 18 OF 22
		<p>3 TYPE TEST REQUIREMENTS</p> <p>The contractor shall furnish type test reports of all type tests as per relevant codes and standards as well as other specific test indicated in this specification. If the vendor proposes a different standard/code from that indicated below, the same is acceptable provided the equivalence of proposed standard is established by the vendor.</p> <p>Type test report and certificates for earlier conducted test are acceptable provided:</p> <ol style="list-style-type: none"> 1. The same has been carried out by vendor on exactly same model and rating of equipment 2. There has been no change in the components from the offered equipment and tested equipment. 3. The test has been carried out as per latest standard along with amendments. <p>In case the approved equipment is different from one on which type test had been conducted earlier or any of the above three grounds, the test have to be repeated and the cost of such test shall be borne by vendor without any cost implication to BHEL.</p> <p>For type test to be conducted, the vendor shall submit type test procedure for approval by BHEL/Customer. This shall clearly specify test set up, instruments to be used, procedures, acceptance norms, recording of different parameters, interval of recording, precaution to be taken etc for the tests to be carried out. The vendor shall indicate in their price bids, the cost of type test for each item for which type test are to be conducted specifically for this project.</p> <p>TYPE TESTS FOR BATTERY CHARGER: Type tests are NOT to be specifically conducted for this project and type test report for following test are to provided along with technical offer on earlier conducted type test on similar charger conducted within last 10 years. Type test report for offered rectifier module and controller module irrespective of rectifier bank rating shall be acceptable.</p> <ol style="list-style-type: none"> i) SWC (Surge withstand capability test as defined is ANSI 37.90.1/IEE-472. Complete detail of the features incorporated in the electronic system to meet this requirement, the relevant test carried out, test certificates etc shall be submitted along with offer. As an alternate to above, suitable class of EN61000-4-12 which is equivalent to ANSI 37.90.1/IEE-472 may also be adopted for SWC test. ii) Dry Hest test as per IEC-68-2-2 or equivalent iii) Damp Hest test as per IEC-68-2-3 or equivalent iv) Vibration test test as per IEC-68-2-6 or equivalent v) Electrostatic discharge test as per EN61000-4-2 or equivalent vi) Radio Frequency Immunity test as per EN61000-4-6 or equivalent vii) Electromagnetic field immunity test as per EN61000-4-3 or equivalent viii) Degree of protection as per IS13947 or equivalent 		

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		<div><div><div>बी.एच.ई.एल</div><div></div></div><div>TECHNICAL SPECIFICATION FOR 24V DC CHARGER & DCDB SYSTEM FOR 3X40MW RAMMAM STAGE-III HYDRO ELECTRIC PROJECT FOR NTPC (HYDRO)</div></div>	CE/416/RAMMAM/24VDC/FLC	
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		REVISION:00	CHECKED & APPROVED	
			<div></div> <div>Amit Kr Sharma</div>	
			PREPARED	ISSUED
			<div></div> <div>Albert Banerjee</div>	416
				DATE:13-Aug-24

ANNEXURE-1

SUMMARY SHEET FOR CHARGERS

S.NO	CHARGER NAME	LOAD (Amps)	Battery Ah required	No of rectifiers (70Amps)	No of sets for project	
1	POWER HOUSE	396	787	7	2 sets	
2	BARRAGE	130	260	3	2 sets	
3	BFV	70	140	2	2 sets	

The DC Power Supply consist of two sets at each location, each set consisting of following.

1	2 x 100% for power house & 1 x 100% for other locations microprocessor controlled, intelligent, modular rectifier banks, Controller –one for each rectifier bank
2	1 x 100% Nickel - Cadmium batteries for one (1) hour duty
3	1 X 100% DC distribution board.
4	1x100% Microprocessor controlled Battery Health Monitoring System (BHMS)–common for both sets.
5	Serial link with MODBUS protocol with cable for connecting to DCS

Note:

1. The cable conductor resistance taken in cable sizing are as per IS:8130-1984, Table 2 for stranded Al conductor, Class 2
2. All the loads have been considered for sizing with suitable margin, in case any additional load required same shall be taken care by BHEL without any cost implication

POWER HOUSE

SI No.	DESCRIPTION OF LOAD	Feeder Load in Amps	MCB rating in Amps	Fuse rating in Amps	Suitable Cable Size (Sqmm Al)	
1	EHGC PANEL UNIT-1	10	16	20	2C x 70	
2		10	16	20	2C x 70	
3		20	25	32	2C x 70	
4	UCB PANEL UNIT-1	30	40	50	2C x 70	
5		30	40	50	2C x 70	
6	EHGC PANEL UNIT-2	10	16	20	2C x 70	
7		10	16	20	2C x 70	
8		20	25	32	2C x 70	
9	UCB PANEL UNIT-2	30	40	50	2C x 70	
10		30	40	50	2C x 70	
11	EHGC PANEL UNIT-3	10	16	20	2C x 70	
12		10	16	20	2C x 70	
13		20	25	32	2C x 70	
14	UCB PANEL UNIT-3	30	40	50	2C x 70	
15		30	40	50	2C x 70	
16	LCB FOR COMMON AUX PANEL	30	40	50	2C x 70	
17		30	40	50	2C x 70	
	TOTAL LOAD (Amps)	360				
	Total load with 10% spare	396				

NOTE : 2 X 100% CHARGER RATING 396 A SELECTED

SUMMARY OF FEEDER (MCB/FUSE) WITH SPARES

S.No	Rating	Qty.	25% spare	TOTAL
1	16A/20A	7	2	9
2	25A/32A	5	2	7
3	40A/50A	9	3	12
	TOTAL	21	7	28

Note:

1) The above feeders are mentioned for DCDB-1. DCDB1 and DCDB2 are identical.

BATTERY SIZING:

MAKE OF BATTERY	HBL	AMCO
LOAD FOR BATTERY SIZING	396	396
Permissible Voltage variation at Panels in volts (A)	18-32V	18-32V
Allowed Voltage drop from Battery to DCDB to DCS panels : (B)	3	3
Minimum voltage at Battery bank after discharge for 1 hour C=(A+B)	21	21
End cell voltage 'ECV' after discharge for 1 hour in Volts per cell (D)	1.16	1.16
Number of cells required F= (C /D)	19	19
Ageing factor (G)	0.8	0.8
Design Margin (H)	1	1
Float charge correction factor (I)	0.93	0.915
Temperature correction factor (J)	0.935	0.935
Capacity factor (K)	1.39	1.36
Considering Temp correction, Ageing factor, FCC & Design margin		
Required AH = (RATED LOAD x H x K) / (G x I x J)	792	787

POWER HOUSE

CABLE SIZE CALCULATION

Voltage drop from Battery to Charger

1	Number of cells	(A)	19	
2	Float Voltage per cell 1.40 to 1.42 V	(B)	1.42	
3	Float mode Voltage at Battery Charger	(C) = A x B	26.98	
4	Distance from Battery to Charger in mtrs (per run)	(D)	35	
5	Actual Load (Amps)	(E)	360	
6	Size of Cable from Battery to Charger (Sqmm Al)		400	
7	Resistance of cable at 20 deg.C in Ohms/Km	(F)	0.0778	
8	Resistance of cable at 40 deg.C in Ohms/Km	(G) = F/0.926	0.0840	
10	Number of runs of cable	(H)	1	
9	Voltage drop in Cable per run (Volts)	(I)=(ExGx2D)/(1000xH)	2.117	

Voltage drop from charger to DCDB

1	charger to DCDB connected by solid Cu bus bar	(Z)	0	
---	---	-----	---	--

Voltage drop from DCDB to Panels

1	Distance from DCDB to Panels (mtrs)	(K)	50	
2	Panel Load Current range (Amps)		0 - 30	
3	Max Load current considered (Amps)	(L)	30	
4	Size of Cable from DCDB to Panels (Sqmm Al)		70	
5	Resistance of cable at 20 deg.C (Ohms/Km)	(M)	0.443	
6	Resistance of cable at 40 deg.C (Ohms/Km)	(N) = M / 0.926	0.4784	
7	Number of runs of cable	(O)	1	
8	Voltage drop in Cable (Volts)	(P) =(2KxLxN)/(1000xO)	1.4352	
	Total Voltage drop (Battery to Charger to DCDB to Panels) Q = I + Z + P		3.552	
	Voltage available at panel on Full Load in Float Mode = C - P		25.545	

BARRAGE AREA

SI No.	DESCRIPTION OF LOAD	Feeder Load in Amps	MCB rating in Amps	Fuse rating in Amps	Suitable Cable Size (Sqmm Al)	
1	LCB PANEL	30	40	20	2C x 70	
2		30	40	20	2C x 70	
3	INTERFACING PANEL	25	32	36	2C x 70	
4		25	32	36	2C x 70	
5	SPARE	8	10	16	2C x 70	
TOTAL LOAD (Amps)		118				
Total load with 10% spare		130				

NOTE : 1 X 100% CAHRGER 130A SELECTED

SUMMARY OF FEEDER (MCB/FUSE) WITH SPARES					
S.No	Rating	Qty.	25% spare	TOTAL	
1	10A/16A	1	1	2	
2	32A/36A	2	1	3	
3	40A/50A	2	1	3	
TOTAL		5	3	8	

Note:

1) The above feeders are mentioned for DCDB-1. DCDB1 and DCDB2 are identical.

BATTERY SIZING:

MAKE OF BATTERY	HBL	AMCO
LOAD FOR BATTERY SIZING	130	130
Permissible Voltage variation at Panels in volts (A)	18-32V	18-32V
Allowed Voltage drop from Battery to DCDB to DCS panels : (B)	3	3
Minimum voltage at Battery bank after discharge for 1 hour C=(A+B)	21	21
End cell voltage 'ECV' after discharge for 1 hour in Volts per cell (D)	1.16	1.16
Number of cells required F= (C /D)	19	19
Ageing factor (G)	0.8	0.8
Design Margin (H)	1	1
Float charge correction factor (I)	0.93	0.915
Temperature correction factor (J)	0.935	0.935
Capacity factor (K)	1.39	1.36
Considering Temp correction, Ageing factor, FCC & Design margin		
Required AH = (RATED LOAD x H x K) / (G x I x J)	260	258

CABLE SIZE CALCULATION

Voltage drop from Battery to Charger			
1	Number of cells (A)	19	
2	Float Voltage per cell 1.40 to 1.42 V (B)	1.42	
3	Float mode Voltage at Battery Charger (C) = A x B	26.98	
4	Distance from Battery to Charger in mtrs (per run) (D)	35	
5	Actual Load (Amps) (E)	118	
6	Size of Cable from Battery to Charger (Sqmm Al)	400	
7	Resistance of cable at 20 deg.C in Ohms/Km (F)	0.0778	
8	Resistance of cable at 40 deg.C in Ohms/Km (G) = F/0.926	0.0840	
10	Number of runs of cable (H)	1	
9	Voltage drop in Cable per run (Volts) (I)=(ExGx2D)/(1000xH)	0.694	
Voltage drop from charger to DCDB			
1	charger to DCDB connected by solid Cu bus bar (Z)	0	
Voltage drop from DCDB to Panels			
1	Distance from DCDB to Panels (mtrs) (K)	50	
2	Panel Load Current range (Amps)	0 - 30	
3	Max Load current considered (Amps) (L)	30	
4	Size of Cable from DCDB to Panels (Sqmm Al)	70	
5	Resistance of cable at 20 deg.C (Ohms/Km) (M)	0.443	
6	Resistance of cable at 40 deg.C (Ohms/Km) (N) = M / 0.926	0.4784	
7	Number of runs of cable (O)	1	
8	Voltage drop in Cable (Volts) (P) =(2KxLxN)/(1000xO)	1.4352	
Total Voltage drop (Battery to Charger to DCDB to Panels) Q = I + Z + P		2.129	
Voltage available at panel on Full Load in Float Mode = C - P		25.545	

BUTTERFLY VALVE AREA

SI No.	DESCRIPTION OF LOAD	Feeder Load in Amps	MCB rating in Amps	Fuse rating in Amps	Suitable Cable Size (Sqmm Al)	
1	LCB PANEL	25	32	36	2C x 70	
2		25	32	36	2C x 70	
3	SPARE	13	16	20	2C x 70	
	TOTAL LOAD (Amps)	63				
	Total load with 10% spare	70				

SUMMARY OF FEEDER (MCB/FUSE) WITH SPARES

S.No	Rating	Qty.	25% spare	TOTAL
1	10A/16A	1	1	2
2	32A/36A	2	1	3
3	40A/50A	2	1	3
	TOTAL	5	3	8

Note:

1) The above feeders are mentioned for DCDB-1. DCDB1 and DCDB2 are identical.

NOTE : 1 X 100% CHARGER 70A SELECTED

BATTERY SIZING:

MAKE OF BATTERY	HBL	AMCO
LOAD FOR BATTERY SIZING	70	70
Permissible Voltage variation at Panels in volts (A)	18-32V	18-32V
Allowed Voltage drop from Battery to DCDB to DCS panels : (B)	3	3
Minimum voltage at Battery bank after discharge for 1 hour C=(A+B)	21	21
End cell voltage 'ECV' after discharge for 1 hour in Volts per cell (D)	1.16	1.16
Number of cells required F= (C /D)	19	19
Ageing factor (G)	0.8	0.8
Design Margin (H)	1	1
Float charge correction factor (I)	0.93	0.915
Temperature correction factor (J)	0.935	0.935
Capacity factor (K)	1.39	1.36
Considering Temp correction, Ageing factor, FCC & Design margin		
Required AH = (RATED LOAD x H x K) / (G x I x J)	140	139

CABLE SIZE CALCULATION

Voltage drop from Battery to Charger




1	Number of cells (A)	19	
2	Float Voltage per cell 1.40 to 1.42 V (B)	1.42	
3	Float mode Voltage at Battery Charger (C) = A x B	26.98	
4	Distance from Battery to Charger in mtrs (per run) (D)	35	
5	Actual Load (Amps) (E)	63	
6	Size of Cable from Battery to Charger (Sqmm Al)	400	
7	Resistance of cable at 20 deg.C in Ohms/Km (F)	0.0778	
8	Resistance of cable at 40 deg.C in Ohms/Km (G) = F/0.926	0.0840	
10	Number of runs of cable (H)	1	
9	Voltage drop in Cable per run (Volts) (I)=(ExGx2D)/(1000xH)	0.371	

Voltage drop from charger to DCDB

1	charger to DCDB connected by solid Cu bus bar (Z)	0	
---	---	---	--

Voltage drop from DCDB to Panels

1	Distance from DCDB to Panels (mtrs) (K)	50	
2	Panel Load Current range (Amps)	0 - 25	
3	Max Load current considered (Amps) (L)	25	
4	Size of Cable from DCDB to Panels (Sqmm Al)	70	
5	Resistance of cable at 20 deg.C (Ohms/Km) (M)	0.443	
6	Resistance of cable at 40 deg.C (Ohms/Km) (N) = M / 0.926	0.4784	
7	Number of runs of cable (O)	1	
8	Voltage drop in Cable (Volts) (P) =(2KxLxN)/(1000xO)	1.196	
	Total Voltage drop (Battery to Charger to DCDB to Panels) Q = I + Z + P	1.567	
	Voltage available at panel on Full Load in Float Mode = C - P	25.784	

			TECHNICAL SPECIFICATION FOR 24V DC CHARGER & DCDB SYSTEM FOR 3X40MW RAMMAM STAGE-III HYDRO ELECTRIC PROJECT FOR NTPC (HYDRO)	CE/416/RAMMAM/24VDC/QP
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		REVISION:00		CHECKED & APPROVED  Amit Kr Sharma
				ISSUED 416
				DATE 13 / 8 /24
				PREPARED  Albert Banerjee

ANNEXURE-2

CLAUSE NO.		QUALITY ASSURANCE AND INSPECTION												एन टी पी सी NTPC हाइड्रो hydro	
BATTERY CHARGER															
Attributes Characteristics / Items / Components / Sub- assembly	Make, Model, Type, Rating & Finish	Verification of Routine test reports as per relevant IS	Sheet Steel Pretreatment & Painting process checks	Conform to relevant Standard & NTPC spec	Dimensional check and Paint shade, thickness, adhesion & Finish checks	Complete physical examination for constructional features as per NTPC approved drgs & specification	Temperature Rise Test on one unit of each rating if Temperature rise test as a Type test witnessing is waived off	Ripple Content Test, Load Limiter & AVR Operation Test	Dynamic Response Test	Operational & Functional Checks	HV & IR Test	Burn-In Test at 50°C for 48 hrs in energised condition	Alternating current measurement test	Degree of Protection Test as per NTPC Spec.	
Rectifier Transformer and Reactors IS : 4540, 2026)	Y	Y		Y			Y				Y				
Electronic Components including Potentiometer (Vernier Type)	Y			Y		Y									
Electronic Cards	Y			Y								Y			
PCB & racks for electronic cards	Y					Y									
Control & Selector Switches (IS : 6875)	Y			Y						Y					
Indicating Meters (IS : 1248)	Y			Y						Y					
Indicating Lamps (IS: 13947)	Y			Y						Y					
Air Break Switches / Fuses (IS : 13947 / 13703)	Y			Y						Y					
Control Terminal Blocks (IS : 13947)	Y			Y											
Control Transformer (IS : 12021)	Y			Y						Y					
Push Buttons (IS : 4794)	Y			Y						Y					
MCB (IS : 8828)	Y			Y						Y					
PVC insulated Copper control wires (IS : 694)	Y			Y											
Sheet Steel (IS : 513)	Y		Y	Y											
Synthetic Rubber	Y			Y											
RAMMAM STAGE-III HYDRO ELECTRIC PROJECT (3 X 40 MW) ELECTRO MECHANICAL WORKS EPC CONTRACT PACKAGE BIDDING DOC NO. : CS-5602-003-9					TECHNICAL SPECIFICATION SECTION-VI				PART-QA SUB-SECTION-QE			Page 41 of 53			

Gaskets															
Annunciator	Y									Y		Y			
Battery Charger	Y				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Notes:



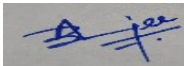
1. This is an indicative list of tests / checks. The manufacturer is to furnish a detailed Quality Plan indicating the practice and procedure along with relevant supporting documents.
2. Makes of all major Bought Out Items will be subject to NTPC approval.

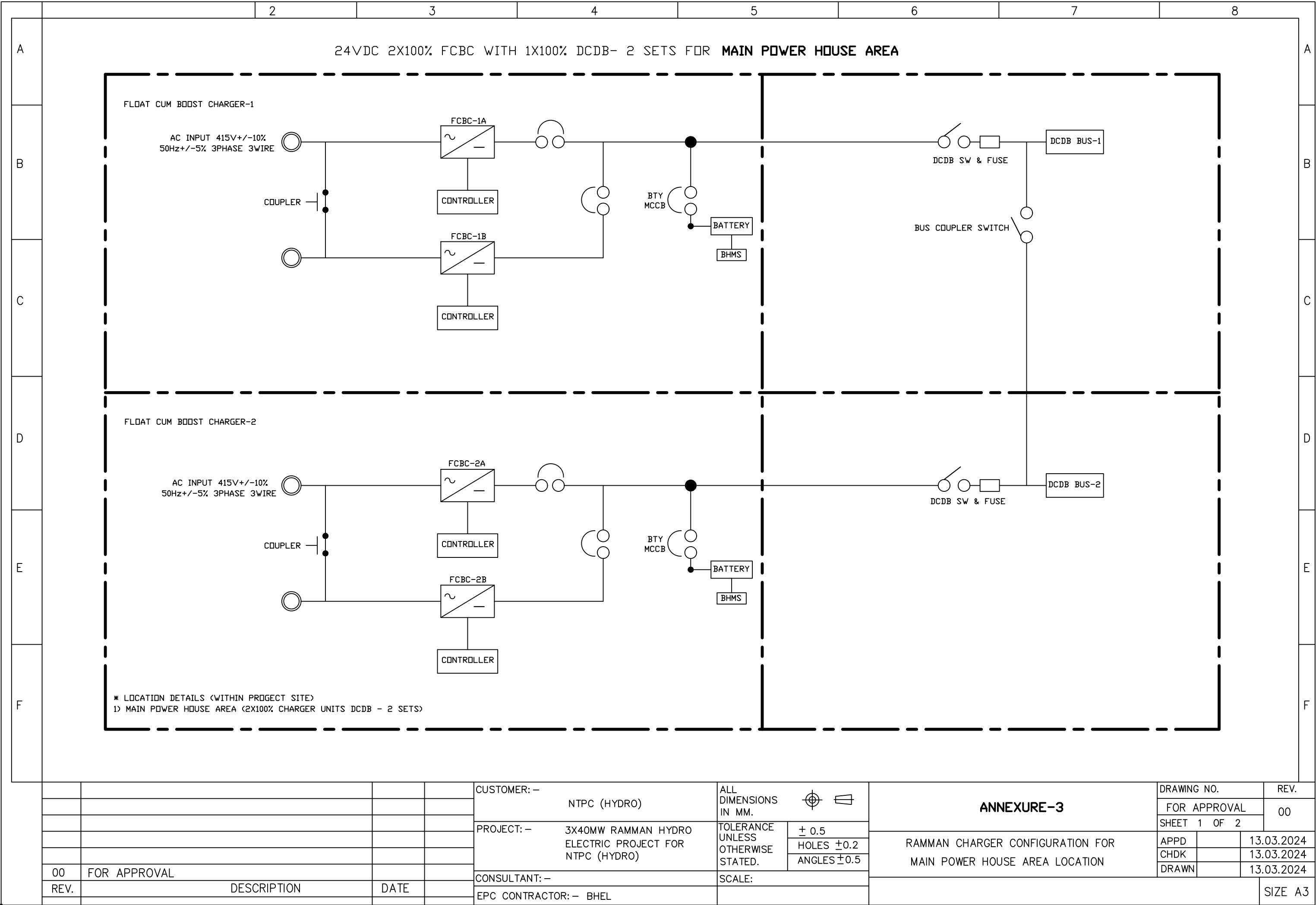
BATTERY CHARGER (of capacity upto 24 V / 48 V , 150 A DC)										
Attributes Characteristics										
Items / Components / Sub- assembly	Make, Model, Type, Rating	Dimensional check and Paint shade, thickness, adhesion & Finish checks	Complete physical examination for constructional features as per approved drgs	Ripple Content Test, Load Limiter operation & AVR Operation Test	Operational & Functional Checks of aux. Devices like annunciator, switches, indicators etc.	HV & IR Test	Environmental stress screening test	Dynamic response test	AC input current measurement test	Temperature rise test on one unit
Battery Charger	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Note 1. This is an indicative list of tests / checks. The manufacturer is to furnish a detailed Quality Plan indicating the practice and procedure along with relevant supporting documents. 2. Makes of all major Bought Out Items will be subject to NTPC approval.										

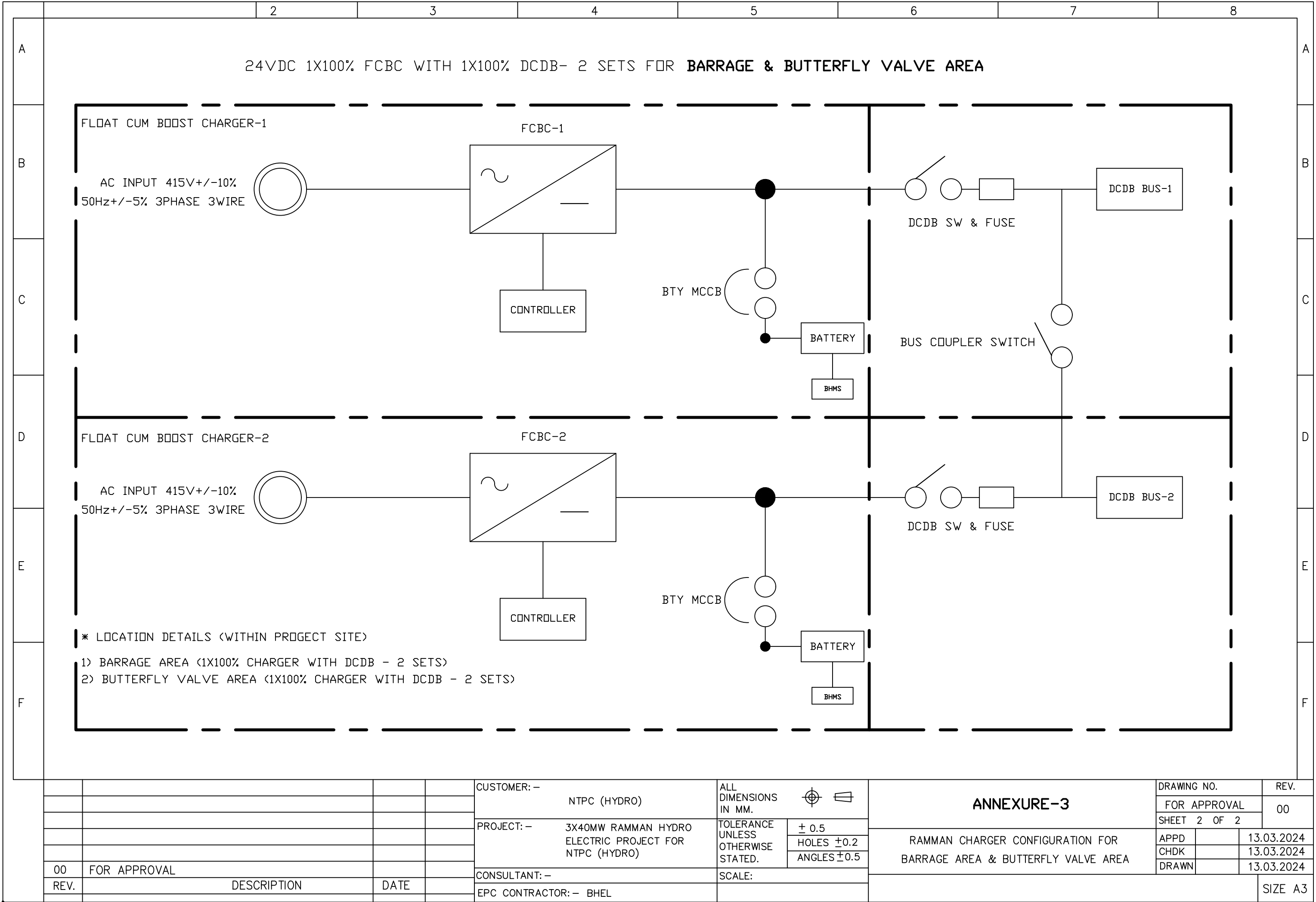
QUALITY ASSURANCE AND INSPECTION



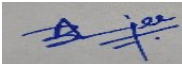


FINAL ASSEMBLY										
TESTS/CHECKS	Material Test	Dimension	WPS/PQR/Welding	NDT/DP/MPI/UT	Check completeness	Hydraulic/Leak/Pressure test	Functional Tests	All routine test as per Spec/ IS	No load test for one hour of the DG set assembly	Clearances & Alignment
ITEMS/COMPONENTS										
Base frame	Y	Y	Y	Y	Y					
Fuel Tank	Y	Y	Y	Y	Y	Y				
Battery								Y		
Battery Charger								Y		
Control Panel								Y		
Assembled DG Set		Y			Y		Y		Y	Y
<p>NOTES:</p> <ol style="list-style-type: none"> 1. This is an indicative list of tests / checks. The manufacturer is to furnish a detailed Quality Plan indicating the practice and procedure along with relevant supporting documents during finalization of QP. 2. Make of all major Bought Out Items will be subject to NTPC approval. 										

			TECHNICAL SPECIFICATION FOR 24V DC CHARGER & DCDB SYSTEM FOR 3X40MW RAMMAM STAGE-III HYDRO ELECTRIC PROJECT FOR NTPC (HYDRO)	CE/416/RAMMAM/24VDC/SLD
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		REVISION:00	CHECKED & APPROVED  Amit Kr Sharma	
			PREPARED  Albert Banerjee	ISSUED 416 DATE 13 / 8 /24





			TECHNICAL SPECIFICATION FOR 24V DC CHARGER & DCDB SYSTEM FOR 3X40MW RAMMAM STAGE-III HYDRO ELECTRIC PROJECT FOR NTPC (HYDRO)	CE/416/RAMMAM/24VDC/BOM-C	
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		REVISION:00		CHECKED & APPROVED	
				 Amit Kr Sharma	
				PREPARED	
		 Albert Banerjee		ISSUED: 416	
				DATE: : 13-Aug-24	

ANNEXURE-4

BOM FOR CHARGER SYSTEM

NAME OF CHARGER----->	RAMMAM HYDRO		
	POWER HOUSE	BARRAGE AREA	BFV AREA
RATING OF ONLINE FLOAT CUM BOOST CHARGER	396	130	70
TOTAL NO OF 2x100% CHARGER & DCDB SETS	2 SET	-	-
TOTAL NO OF 1x100% CHARGER & DCDB SETS	-	2 SET	2 SET
BHMS with CONNECTIVITY TO DCS with cable/lugs for 2 battery set with each charger	1 LOT	1 LOT	1 LOT
Serial link with MODBUS protocol with 100 mtrs cable for connecting to DCS.	1 LOT	1 LOT	1 LOT
BATTERY ISOLATION FOR BATTERY	2 SET	2 SET	2 SET
GLANDS AND LUGS FOR ALL CABLE TERMINATING IN CHARGER/DCDB/BATTERY	1LOT	1LOT	1LOT
ANY OTHER ACCESSORIES REQUIRED BY VENDOR	1 LOT	1 LOT	1 LOT
ROUTINE TEST AND ACCEPTANCE TESTS	1 LOT	1 LOT	1 LOT
ERECTION SUPERVISION AND COMMISSIONING	1 LOT	1 LOT	1 LOT
Training to end user personnel at site on System Design description Feature & Configuration Hardware Scheme Hardware Module Details Interface to third Party Systems	1 mandays		
LAPTOP (If required for programming/analysis/troubleshooting)	1 No		
MANDATORY SPARES	1 LOT		

MANDATORY SPARES BOM - TO BE OFFERED ON OVERALL BASIS

ITEM	RAMMAM HYDRO
1. Rectifier modules of each type and rating	10 % or min 1 no
2. Controller modules of each model	10% or min 1no
3. Electronic modules of all types	10% or min 2no whichever is more
4. AC, DC Isolators, Contactors, timers, relays	10% of each type
5. Fuse of each type and rating	200%
6. Fuse free circuit breaker of each type/rating	5 % or min 2no whichever is more
7. Cooling Fans	10% or min 2no
8. Relays of all types including overload relays	10%
9. Indicating Lamps & holders	10% or min 2no each type
10. Digital/Analog panel meters/indicators	10% or min 2no each type
11. Capacitors	1 set