

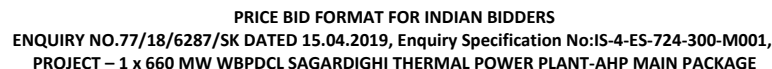


PRICE BID FORMAT FOR FOREIGN BIDDERS
BHEL ISG ENQUIRY NO.77/18/6287/SK DATED 15.04.2019, Enquiry Specification No:IS-4-ES-724-300-M001,
PROJECT – 1 x 660 MW WBPDC SAGARDIGHI THERMAL POWER PLANT
Item: Ash Handling System Package

Sl. No.	DESCRIPTION	Unit	Quantity	Unit CFR (Indian Port) Price (as per cl. no. 16 of SCC)CFR Indian port basis, inclusive of sea worthy packing & forwarding charges, applicable Basic Customs Duty, Education cess, anti-dumping duty, safeguard duty etc. after availing all benefits INCLUDING ALL OTHER TAXES (if any) (Currency)	Total CFR (Indian Port) Price (as per cl. no. 16 of SCC) (Currency)	Unit Basic Price (incl. of Packing & forwarding Charges , freight charges, all taxes & duties except Goods & Service Tax) (INR)	Total Basic Price (incl. of Packing & forwarding Charges , freight charges, all taxes & duties except Goods & Service Tax) (INR)	Total COST FOR IN LAND FREIGHT CHARGES (from Indian Port to Site) and LOADING UNLOADING charges and OTHER activities performed in india exclusive of GST (INR)	Total Price For Evaluati on (Curren cy)	Total Price For Evaluati on INR
				for items to be sourced from outside india		for items to be sourced from india		for items to be sourced from outside india		
a	b	c	d	e	f=d*e	g	h=d*g	i	j	k
	Supply Contract:									
A	Design,Engineering, selection of equipment, Manufacturing, Supply of mechanical, Civil and structural, electrical and C&I equipment / items, Supply of Paints, Inspection & Testing, shop floor testing, shop floor painting, packing & transportation to site including customs clearance/ port clearance, Receipt at Site, Unloading, Storage, Security, painting at site, Trial Run, Performance Guarantee Testing and Handing Over of complete Ash Handling									
A.1	Complete Ash handling system (Mechanical, Civil & structural,Electrical and C&I Equipment / items) as per the scope of specification.	Lot	1							
		Total A=A.1								
B	Spares-Manufacturing, Supply, Inspection & Testing, shop floor testing, shop floor painting, packing, Transportation including intra site handling and Handing over to WBPDC.									
B.1	Commisssioning spares as per the scope of specification	Lot	1							
B.2	Mechanical Mandatory Spares as per list specified in the specification.	Lot	1							
B.3	Electrical and C&I Mandatory Spares as per specification.	Lot	1							
		Total B=(B.1+B.2+B.3)								
	Total for Supply Contract (A+B)=									
Sl. No.	DESCRIPTION	Unit	Quantity	Unit Basic Price (incl. of all freight charges (if any), all taxes & duties except Goods & Service Tax) (Rs.)	Total Basic Price (as per cl. no. 16 of SCC) [Total Price for evaluation] (Rs.)					
a	b	c	d	e	f=d * e					
C	Service Contract:									
C.1	Operation and Maintenace of complete Ash handling plant of one unit with common facilities as per the scope of specification in all three shifts (considering 8hrs in a shift) of the day as per specification	Months	3							
C.2	Erection and commissioning for (Sl No A.1 above) Complete Ash handling system (Mechanical, Civil & structural,Electrical and C&I Equipment / items) as per the scope of specification	Lot	1							
	Total for Service Contract (C1 + C2)=									

	Grand Total in words=A+B+C (Currency +INR to be mentioned seperately):		
D	Total CIF content (in Numbers with currency):		
	Total CIF content (in Words with currency):		
NOTE :			
1.0	CFR Price (column 'E') quoted for each line item shall be inclusive of sea worthy packing & forwarding charges, applicable Basic Customs Duty, Education cess, anti-dumping duty, safeguard duty etc., port clearance charges and any other taxes & duties. price to be quoted in COLUMN "i" shall be inclusive of all LAND FREIGHT CHARGES (from Indian Port to Site) and LOADING UNLOADING charges at various location in india ,and OTHER activities performed in india exclusive of GST (Rs.) . Price for items/ works which are not specifically mentioned in the above BOQ but are covered in the scope of work as per the tender specifications/ terms & conditions, shall be included in the price quoted above.Currency for CFR price to be indicated by the bidder.column "g" to be quoted in INR only. E&C prices should be quoted in INR ONLY.		
2.0	This shall be read in conjunction with the description given in detailed Scope of work and the complete technical specifications along with all the terms & conditions of the tender. Bidder is urged to go through the detailed Technical Specification, terms & conditions carefully and understand completely. No deviation/ No extra claim shall be entertained later on after submission of offer/ during execution of the order. The above BOQ shall not be considered as scope of work. Scope of work shall be as per the tender specifications.		
3.0	Price evaluation shall be done as per relevant clause of Notice Inviting Tender (NIT).		
4.0	Price shall be quoted separately for each line item in the above format.		
5.0	Import benefits under the deemed export project shall be limited to the CIF content value indicated in the Price bid format subject to the ceiling limit indicated in the Special Conditions of Contract (SCC). For imports beyond the maximum CIF content, all import implications like applicable Basic Customs Duty, Education cess, anti-dumping duty, safeguard duty etc. shall be included in the basic price. Details as per the Special Conditions of Contract (SCC).		
6.0	Bidder to indicate the unit prices separately for each item, without unit price bidder's offer may get rejected. No flower bracket is allowed.		
7.0	Items/ equipment mentioned in the Price format doesn't indicate comprehensive scope of work & nor exhaustive and this price format must be read in conjunction with BHEL's enquiry specification (along with all enclosures therein), subsequent correspondence & MOM (Mechanical & Electrical) if made with the bidder.		
8.0	All Electrics, C & I which are required for completion of the system under this package in totality, shall be in bidder's scope of supply & works.		
9.0	Above quoted price is deemed to be inclusive of the supply of all consumables, flushing oil, first fill and topping up of oil till completion of PG test/ handing over, final painting after erection etc.		
10.0	Above quoted price is deemed to be inclusive of all equipments & item , accessories, hardware, foundation bolts, gaskets, couplings, grouting materials, painting, shim plates etc. including all electrical & instrumentation, items required for completing the system, other than specifically mentioned under exclusions.		
11.0	Above quoted price is deemed to be inclusive of design, engineering, detail engineering, manufacturing, inspection, supply, transportation, unloading receipt at site , construction of store & storage at site , security, erection & commissioning, handing over , demonstration of performance guarantee and safe operation of the equipment as required.		
12.0	Grand Total should be mentioned seperately in Bidding Currency & INR Seperately both in Nos & Words		
13.0	This tender is on EPC basis for the total scope specified in the NIT. Bidders to ensure that the scope is studied and understood before filling of price format.		
14.0	Further, bidders to note that cost towards the training/inspection of indigenous/ off shore equipments by WBPDC/ WBPDC nominated agency will be to Bidders account, which includes to & fro Airfare/Railway/Road fare charges, Boarding and Lodging, local transportation and other related expenses and the above quoted price should be inclusive of these expenses.		
15.0	The price to be Quoted strictly as per the price format with the detailed Price break up format enclosed and submitted as Part - II bid. Un price copy of price bid along with duly filled in format of Commercial terms and conditions (CTC) to be submittedas part of Part-I bid for techno-commercial evaluation.		
16.0	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 indicated in the qty column of the price format), the unit price shall prevail and the total 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 accordingly. c. If there is a discrepancy between price indicated in words and figures, the price mentioned in words will be considered for bid evaluation. d. If there is such discrepancy/error in an offer, the same shall be conveyed to the bidder with target date up to which the bidder has to send his acceptance on the above lines and if the bidder does not agree to the decision of the BHEL, the same may invite rejection of bid and necessary action against the bidder as per BHEL procedures and BHEL's decision is final.		
17.0	The prices for all the rows & columns to be filled, in case any row or column is left blank is deemed as price included. In the event of discrepancy between the value and declared in words, value declared in words will be considered.		
18.0	Un-priced price format indicating "quoted" for the respective items shall be submitted separately along with the Techno-commercial bid (Part - I).		
19.0	Tender evaluation will be done excluding optional items (Recommended spares if any), However, BHEL reserves the right to order optional items along with main equipment or separately at a later date if required. The prices of optional items quoted shall be valid till18 months after the placement of LOI.		
20.0	This tender is being floated to award the scope of work on package basis as per specifications and notes as in this price format. Hence Scope of work is not limited only to the items listed above but include all other items required for completion of AHP System as per the tender specification.		
21.0	Acceptance of offer for price bid opening shall be subject to satisfying the Techno Commercial conditions and approval by WBPDC.		

Vendors Seal and Signature



16.04.2019

All Figures are in Rupees

SI No	Description	Units (1)	Qty (2)	Unit Ex-works price including Freight, Packing & Forwarding Charges (3) Rs	Total Ex-works price including Freight, Packing & Forwarding charges (Rs.) (4=2X3) Rs	GST % as applicable (5) %	HSN No./ SAC Code (6)
A	Design,Engineering, selection of equipment, Manufacturing, Supply of mechanical, Civil and structural, electrical and C&I equipment / items, Supply of Paints, Inspection & Testing, shop floor testing, shop floor painting, packing & transportation to site including customs clearance/ port clearance, Receipt at Site, Unloading, Storage, Security, painting at site, Trial Run, Performance Guarantee Testing and Handing Over of complete Ash Handling System to WBPDC.						
A.1	Complete Ash handling system (Mechanical, Civil & structural,Electrical and C&I Equipment / items) as per the scope of specification.	Lot	1				
B	Spares-Manufacturing, Supply, Inspection & Testing, shop floor testing, shop floor painting, packing, Transportation including intra site handling and Handing over to WBPDC.						
B.1	Commissioning spares as per the scope of specification	Lot	1				
B.2	Mechanical Mandatory Spares as per list specified in the specification.	Lot	1				
B.3	Electrical and C&I Mandatory Spares as per specification.	Lot	1				
C	SERVICES						
C.1	Operation and Maintence of complete Ash handling plant of one unit with common facilities as per the scope of specification in all three shifts (considering 8hrs in a shift) of the day as per specification	Months	3				
C.2	Erection and commissioning for (Sl No A.1 above) Complete Ash handling system (Mechanical, Civil & structural,Electrical and C&I Equipment / items) as per the scope of specification	Lot	1				
D	Actual CIF Content for imported items, if any CIF Content (in Figure) INR: CIF Content (in Words) INR: The Total Price Quoted shall be with applicable rates over and above CIF allocation.						

NOTE:	
1	GST shall be payable extra at actuals at prevailing rates.
2	In Price bid submitted by the vendor, all the columns and rows should be filled
3	Any column/ row left blank the same shall be treated as included in the total price Quoted.
4	* In case of Indian agents of foreign bidders: - The basic exworks price indicated is inclusive of all import taxes, duties & marine freight etc. - Excise duty not applicable.
5	This tender is on EPC basis for the total scope specified in the NIT. Bidders to ensure that the scope is studied and understood before filling of price format.
6	Further, bidders to note that cost towards the training/inspection of indigenous/ off shore equipments by WBPDC/ WBPDC nominated agency will be to Bidders account, which includes to & fro Airfare/Railway/Road fare charges, Boarding and Lodging, local transportation and other related expenses and the above quoted price should be
7	The price to be Quoted strictly as per the price format with the detailed Price break up format enclosed and submitted as Part - II bid. Un price copy of price bid along with duly filled in format of Commercial terms and conditions (CTC) to be submitted as part of Part-I bid for techno-commercial evaluation.
8	Unit rate shall be applicable for Sl.No. C.1. Quantities of this item can be increased or reduced or deleted.Quantity of unit rate items may vary during the project execution and the order price will be adjusted based on the actual requirement. However the units rates of such items will remain valid till the end of the contract for any change in the quantity. Above is inclusive for all contractual obligations including submission of Drawings, Documents, QAP, Painting schedule, O&M manual, Erection manual etc in required number of hard and soft copies as per enquiry specification, bidder's offer and all recorded discussions etc.
9	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 indicated in the qty column of the price format), the unit price shall prevail and the total 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 accordingly. c. If there is a discrepancy between price indicated in words and figures, the price mentioned in words will be considered for bid evaluation. d. If there is such discrepancy/error in an offer, the same shall be conveyed to the bidder with target date up to which the bidder has to send his acceptance on the above lines and if the bidder does not agree to the decision of the BHEL, the same may invite rejection of bid and necessary action against the bidder as per BHEL procedures and BHEL's decision is final.
10	The prices for all the rows & columns to be filled, in case any row or column is left blank is deemed as price included. In the event of discrepancy between the value and declared in words, value declared in words will be considered.
11	Un-priced price format indicating "quoted" for the respective items shall be submitted separately along with the Techno-commercial bid (Part - I).
12	This tender is being floated to award the scope of work on package basis as per specifications and notes as in this price format. Hence Scope of work is not limited only to the items listed above but include all other items required for completion of AHP System as per the tender specification.
13	Acceptance of offer for price bid opening shall be subject to satisfying the Techno Commercial conditions and approval by WBPDC.
Bidder's Signature & Stamp	



1 X 660 MW WBPDCCL Sagardighi Thermal Power Station

Technical Enquiry Specification of
Ash Handling System Package

SPECIFICATION NO.

IS-1-ES- 724-300-M001



1 X 660 MW WBPDCCL SAGARDIGHI THERMAL POWER STATION

SAGARDIGHI, WEST BENGAL

TECHNICAL ENQUIRY SPECIFICATION FOR

ASH HANDLING SYSTEMS PACKAGE



BHARAT HEAVY ELECTRICALS LIMITED

INDUSTRIAL SYSTEMS GROUP

BANGALORE

TABLE OF CONTENTS

Section No.	Description	Page No.
M1	Applicable Standards	Page No. 3 - 4
M2	Technical Scope & Specification (Mechanical)	Page No. 5-30
M3	Technical Specification (Electrical)	Page No. 31
M4	Technical Specification (Civil & Structural)	Page No. 32
Serial No.	Drawings and Attachments	
1	Annexure – 01 Plot Plan - PDF Copy	
2	Annexure - 02 List of Do's and Don'ts for Ash handling system	
3	Annexure – 03 NIT Ash Flow Diagram	
4	Annexure – 04 HSE & PPE Manual	
5	Annexure – 05 Master List of Drawing, Documents & QAP	
6	Annexure – 06 Ash Distribution Data in Various Fields of ESP Hopper	
7	Annexure – 07 NIT Specification	
8	Annexure – 08 Clarifications & Amendments with WBPDCS	
9	Annexure – 9A List of Mandatory Spares	
10	Annexure – 9B List of Commissioning Spares	
11	Annexure – 10 Scope Matrix Civil & Structural	
12	Annexure – 11 Scope Matrix Electrical And C & I	
13	Annexure – 12 Guaranteed Power Consumption	
14	Annexure – 13 Pre-Qualification Requirement	
15	Annexure – 14 DMS Procedure	
16	Annexure – 15 Approved Data sheet of PLC and specification	
17	Annexure - 16 List of drawing for Payment	

Section – M1

Applicable Standards

1.0 Codes and Standards

The design, manufacturing, inspection & testing at Bidder's works and performance of the Ash Handling System shall be in accordance with all applicable laws and regulations of the Government of India and with the applicable local codes and ordinances.

- 1.1 Except where otherwise specified, the Plant shall comply with the appropriate Indian Standard or an agreed internationally accepted Standard Specification to this Section and mentioned in detailed specifications, each incorporating the latest revisions at the time of tendering.
- 1.2 Where the Bidder proposes alternative codes or standards commonly used by industrially advanced countries he shall include in his tender one copy (in English) of each Standard Specification to which materials offered shall comply. In such case, the adopted alternative standard shall be equivalent or superior to the standards mentioned in the specification.
- 1.3 Wherever specified or required the Plant shall conform to various statutory regulations such as Indian Boiler Regulations, Indian Electricity Rules, CEA Grid connectivity norms and I/O meters Indian Explosives Act, Factories Act, Environment (protection) Act, Ministry of Environment & Forest, etc. Wherever required, approval for the plant designed/supplied under the specification from statutory authorities shall be the responsibility of the Bidder. Owner shall only forward assistance/endorsement of documents/design/drawings to be submitted for approval as stipulated/required by statutory authorities.
- 1.4 In the event of any conflict between the codes and standards referred above, and the requirements of this specification, the requirements, which are more stringent, shall govern.
- 1.5 In case of any change of code, standards and regulations between the dates of purchase order and the date the Bidder proceeds with manufacturing the Owner shall have the option to incorporate the changed requirements. It shall be the responsibility of the BIDDER to advise Owner of the resulting effect.

1.6 List of Standards for Reference

1. International Standards Organization (ISO).
2. International Electro-technical Commission (IEC).
3. American Society of Mechanical Engineers (ASME).
4. American National Standards Institute (ANSI).
5. American Society for Testing and Materials (ASTM).
6. American Institute of Steel Construction (AISC).
7. American Welding Society (AWS).
8. Architecture Institute of Japan (AIJ).
9. National Fire Protection Association (NFPA).
10. National Electrical Manufacturer's Association (NEMA).

11. Japanese Electro-technical Committee (JEC).
12. Institute of Electrical and Electronics Engineers (IEEE).
13. Occupational Safety and Health Administration (OSHA) for noise pollution.
14. Instrument Society of America (ISA).
15. National Electric Code (NEC).
16. Heat Exchanger Institute (HEI).
17. Tubular Exchanger Manufacturer's Association (TEMA).
18. Hydraulic Institute Standards (HIS).
19. International Electro-Technical Commission Publications.
20. Power Test Code (PTC).
21. Applicable German Standards (DIN).
22. Applicable British Standards (BS).
23. Applicable Japanese Standards (JIS).
24. Electric Power Research Institute (EPRI).
25. Standards of Manufacturer's Standardization Society (MSS).
26. Bureau of Indian Standards Institution (BIS).
27. Indian Electricity Act and Rules and Regulations formed thereafter.
28. Indian Boiler Act and Regulations (IBR).
29. Indian Explosives Act and Rules and Regulations framed thereafter.
30. Indian Factories Act and Rules and Regulations framed thereafter.
31. Tariff Advisory Committee (TAC) rules.
32. Emission regulation of Central Pollution Control Board (CPCB).
33. Pollution Control regulations of Dept. of Environment, Govt. of India
34. Central Board of Irrigation and Power (CBIP) Publications.
35. Ministry of Environment & Forests (MOEF)
36. Any other statutory Codes/Standards/Regulations.

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Section – M2

Technical Scope & Specification (Mechanical)

2.0 Broad Scope of AHP Package Bidder

This scope of supply & services includes System Design, Engineering, Selection of Equipment, Detail Engineering, Manufacturing, Supply of Mechanical, structural (as per scope matrix) Electrical and C&I Equipment / items, Inspection & Testing, shop floor testing, shop floor painting, supply of equipment including commissioning & mandatory spares, packing & transportation to site including customs clearance/ port clearance (if any), Receipt at Site, Unloading, Storage, Security, Intra Site Transport & Handling at site including Erection & Commissioning, Supply of paint and Painting at site, System integration, Trial Run, Operation and maintenance, Performance Guarantee Test and Handing Over complete of Ash Handling System of 1 x 660 MW WBPDCS Sagardighi TPS to BHEL/WBPDCS. Bidder shall include the responsibility of getting the drawings approved from Customer / Customer's Consultant & BHEL. Bidder shall be solely responsible for submission and getting the Drawings / Data Sheets / QAP / Field Quality Plans / Commissioning procedures/ O& M manual/ PG Test Procedure/ Testing Procedures approved from BHEL / Customer / Customer's consultant in time and shall plan all the activities accordingly.

Operation Philosophy and control write-up and block Logic diagram for complete Ash Handling System is in the scope of Bidder.

Bidder shall depute a team of engineers with necessary tools/ instruments with valid calibration certificates who shall be made available to BHEL at project site for conducting PG Test of Ash Handling System.

The visit of bidder's manpower stay for the above E&C, O&M, Trial run and PG test shall be inclusive of entire expenses like accommodation at site, travel, transportation and food etc.

Overall guarantee, warranty, workman ship, any defect liability, demonstration & achieving the PG parameters (performance and power guarantee) for the equipment during PG test conducted for Ash handling system shall be the responsibility of the bidder.

Apart from the above, Bidder shall also include/ consider the following in their scope.

- 2.1 Any additional items required for the completeness and successful operation of the Ash Handling system though not explicitly mentioned in this enquiry specification but indicated elsewhere in WBPDCS specification/ clarification /amendment shall be also in Bidder's scope of supply & works as per the scope of the bidder.
- 2.2 The design, manufacture, inspection and testing of the equipment shall comply with all the currently applicable statutes, regulations and safety codes in the locality where the equipment is to be installed and shall also confirm to the latest edition of Indian and other international standards and codes. Nothing in this specification shall be construed to relieve the contractor of the required statutory responsibility. In case of any conflict & ambiguity in the standard to be followed the decision of the BHEL/customer shall be final and binding to the bidder.

- 2.3 The bidder shall be responsible for providing all materials, equipment and services, specified or otherwise (unless specifically excluded) which are required to fulfil the intent of ensuring operability and the reliability of the complete system covered under this specification.
- 2.4 In case of any ambiguity, conflict in the standard & specification &/ or interpretation of clauses in this enquiry spec. and its enclosures the decision of BHEL shall be final and binding and any change due to this shall have no price implication on BHEL and shall have to be absorbed by successful bidder.
- 2.5 Clarifications, if any shall be sorted out, before submission of the bid. Bidder's shall raise all ambiguities, conflict in the standard & specification and/or interpretation of clauses, if any, in this enquiry specification and its all enclosures during pre-bid stage itself, failing which it shall be understood that bidder has understood the requirement and don't have any issue and at later date successful bidder shall have no right to take any technical and commercial advantage out of any ambiguity, conflict in the standard & specification and/or interpretation of clauses and the decision of BHEL shall be final and binding and any change due to this shall have no price implication what so ever on BHEL and shall have to be completely absorbed by successful bidder.
- 2.6 Bidder shall strictly follow and adhere to the guidelines laid down in the enclosed BHEL's health, safety and Environment manual (HSE).
- 2.7 Bidder shall ensure the correctness of civil assignment drgs. which shall be an input for BHEL's civil design agency & structural design package bidder. Any issues like cutting/ chipping of floors, beams shall not be permitted. Any additional civil works arising if missed out things in civil assignment Drg. prepared by the bidder like pedestal, foundation etc. shall have to be taken care by the bidder without any cost implication to BHEL shall engage its own resources.
- 2.8 Minor chipping i.e. up to 50 mm thk, micro leveling, and providing shim plates for erection of machines equipment / items shall be in the scope of bidder.
- 2.9 Cleaning of any debris produced by the bidder during E&C shall be done immediately at each front.
- 2.10 As required, minimum two times cleaning of all debris and ash of Bottom Ash Hopper, ESP Hoppers and ECO/APH/DUCT/SCR Inlet/SCR Outlet Hoppers at the time of Boiler light up and coal synchronization is in bidder's scope, irrespective of whether AHP system is ready or not.
- 2.11 Application of Rust preventive after inspection at shop floor before dispatch shall be in bidder's scope.
- 2.12 Drilling of required holes or welding of angle, channel, beam etc. in the structure of pipe rack, structures etc. for erection of pipes, drives, valves, equipment shall be the bidder's scope.
- 2.13 Supply, fabrication & erection of any temporary supports/ platforms required for E& C of AHP Equipment / items shall be in the scope of bidder.
- 2.14 Necessary provisions shall be considered in the equipment/ items/ systems which are in bidder's scope for integrating with other equipment/ systems/ items which are part of other contractor's scope.
- 2.15 Bidder should consider the stipulated limits of ash emission of less than 30 mg/Nm³ as per revised MOEF policy.
- 2.16 Material of construction (MOC) for all equipment shall be subject to BHEL/WBPDCS/ WBPDCS Consultant approval during detail engineering. In general, recent WBPDCS approved drawings/documents shall be referred for MOC in case of any ambiguity.
- 2.17 **Consumables like lubricants, oils, grease etc. for initial flushing, first fill and initial operation with topping up to successful demonstration of Commercial Operation Declaration (COD) and trial operation, Special tools and tackles (as required) for the equipment / system shall be in the scope of the bidder.**
- 2.18 Bidder to adhere to the suggestive sub-vendor list furnished in the specification. If any additional vendors considered by bidder in their offer, same is subjected to approval from BHEL & WBPDCS/WBPDCS Consultant. If the same is not approved, then the original list shall be followed by bidder without any price implication to BHEL in such event. In general, recent WBPDCS approved vendors shall be considered by the bidder. However, approval shall be taken during detail engineering with submission of proper credentials and documents. There shall not be any delay in project for want of approval of additional sub vendors.

- 2.19 The minimum list of drawings, documents and QAPs is enclosed in the Annexure-05. Bidder to adhere to the drawings numbers mentioned in the drawing. However, any addition of drawings/ documents shall be done during detailed engineering during as per requirement.
- 2.20 Bidder shall make their own arrangements (like bigger cranes) well in advance for heavy equipment erection that are required for erection of equipment's which are at higher height.
- 2.21 The successful bidder has to submit all the Self Manufacturing Items (SMI) drawings and QAP within two months of issuance of Purchase Order (PO).
- 2.22 The successful bidder has to submit the GA of AHP buildings within 60 days of issuance of PO. Site visit by bidder is mandatory to understand the existing AHP facilities, equipment foundation details etc. The actual foundation details shall be incorporated in the respective GA after finalization of sub vendor of respective equipment.
- 2.23 P&I Diagram and Sizing Calculation of all the major bought out items like Water Pumps, Slurry Pumps, Vacuum Pumps, TAC & IAC, Blowers, Crane and hoist etc. shall be submitted by Successful bidder within 3 months of PO.
- 2.24 Successful bidder has to place the order of all the remaining BOI within 4 months of PO and provide the unpriced Copy of PO of the Bought Out Items (BOI) to BHEL for information & Record.
- 2.25 Successful Bidder has to submit the Material Receipt and storage Quality Plan for approval within three months of PO and the approved Material Receipt and storage Quality Plan shall be strictly applicable at site for all supplied material receipt and storage.
- 2.26 Successful Bidder has to submit the Field Quality Plan for Storage and E&C and Welding procedure for approval before start the erection activity at site and the approved Field Quality Plan shall be strictly applicable at site for all erection and commissioning activities.
- 2.27 List of engineering drawings submission/ approval for release of payment on prorated basis if any as per GCC/SCC is indicated at Annexure-16.
- 2.28 Bidder to furnish all documentary support for compliance and addressing any statutory issues raised by BHEL/WBPDCS/WBPDCS Consultant which pertains to the area / work under bidder's scope.
- 2.29 Bidder shall submit the signed and stamped copy of all the pages which constitutes this technical enquiry specification signed by authorized signatory and clearly mentioning each clause under following two categories to avoid any ambiguity in scope understanding & the scope division as a technical offer during bidding.
- i. **"Accepted without deviation and considered in scope of work"**
 - ii. **"Not considered in scope of work" strictly in BHEL Deviation format (Cost of withdrawal) as per GCC.** In the absence of duly filled schedules it will be assumed that the bid strictly conforms to the specification and does not contain any deviation.
- 2.30 Bidder to note "technical deviation" from the enclosed WBPDCS bid document and the pre-bid MOM, amendments and clarifications is not acceptable.
- 2.31 Quality of effluent outgoing from the plant shall conform to latest norms of Environment Pollution Control.
- 2.32 The layout of various water/slurry piping for the Ash Handling System shall ensure that all valves are located at conveniently accessible positions. Otherwise suitable access/ maintenance platforms shall be provided for valves/ field instruments under the bidder's scope.
- 2.33 All pipe joints inside pump houses shall be flanged type with suitable gaskets.
- 2.34 Suitable (minimum 1 no.) of min. 50 T cap. With 100 ft. boom crawler crane & suitable torque wrench for tightening HSFG bolt /HT bolts to be mobilized for erection.
- 2.35 All pads, shims plates, resilient pads of neoprene rubber etc. is in bidder's scope.
- 2.36 Access walkways/steps in the control room, compressor rooms, etc. shall be minimum 1000 mm wide. Suitable hand railing shall be provided for personnel safety, wherever required. Access/maintenance platform of 1000 mm width all around the BA hopper shall be provided.

- 2.37 Local control panels requiring operator's attention shall not be located in dust prone areas. Local panels in each area shall be housed in a dust proof cabin to minimize dust nuisance.
- 2.38 Facilities for carrying out maintenance of Ash Handling System and auxiliaries shall be provided. In general, this should include adequate handling equipment, working space, platforms and safety devices.
- 2.39 All Solenoid valves used in ash handling system shall be poppet type.
- 2.40 All pneumatic panels shall be supplied with air filter, air lubricator and isolation ball valve.
- 2.41 **All slurry duty knife gate valves and water and air line Valves above 80 NB shall be supplied with companion flanges, nuts, bolts, washers and gaskets.** The bolts, nuts and washers for these shall be galvanized.
- 2.42 Bidder's scope includes Supply of grouting cement and grouting of all mechanical equipment / items/ pipes etc. and its drives. Grouting of all the bases of equipment's and grouting of pockets in pedestal, minor chipping & make up of pedestals / pockets shall be in scope of Bidder. BHEL / BHEL's civil contractors shall provide only the foundation pockets for pedestals (wherever necessary) as per mech. GA drgs. The grouting height on foundations can be upto 200 mm.
- 2.43 For Technical discussions regarding any erection issues related to erection drawings/supplies, any modification at site due to site conditions, bidder shall depute concerned engineers to site/customer place to resolve the issue as well as submission of related revised drawings. As built drawings shall be submitted by the successful bidder after visiting the site from time to time by their engineering personnel to note the modifications and incorporate in drawings.
- 2.44 Bidder shall co-ordinate & attend meetings with Customer's consultant, customer and also with other units of BHEL for finalizing the AHP Layout, drawing approval and for any other input information as required.
- 2.45 Chipping and levelling/ grading near erection location is in Bidder scope.
- 2.46 Water for construction purposes shall be provided free at a single point and Electricity for construction purposes is chargeable.
- 2.47 **3D modelling of Vacuum cum compressor house, Fly ash silo, FAE towers, Bottom ash hopper, BA overflow tank, Ash conveying and ash slurry disposal line from respective areas up to Ash slurry sump, AHP pipe/cable racks shall be carried out by bidder using PDMs software. Along with GA/OGA drawings the 3D modelled drawings shall also be submitted for approval. 2D AutoCAD drawings of Vacuum cum compressor house, Fly ash silo, FAE towers, Bottom ash hopper, AHP pipe/cable racks shall also be provided.**
- 2.48 **3D Modelling of 2no AHP MCC buildings (by BHEL) shall also be in bidder's scope. BHEL shall provide 2D AutoCAD drawings as inputs for 3D modelling and integration by bidder. MCC buildings shall be designed and constructed by BHEL.**

3.0 Design Basis/Inputs.

Please Refer WBPDCS NIT specifications for ash handling system.

Note to Bidders

- 3.1 It is not the intent to specify herein all the details of design and manufacture. However, the equipment shall conform in all respects to high standards of design, engineering and workmanship, and shall be capable of performing the required duties in a manner acceptable to Engineer/Owner, who will interpret the meaning of drawing and specifications and shall be entitled to reject any component, work or material, which in his opinion is not in conformity with the duty requirements.
- 3.2 The bid shall be complete in all respects and shall necessarily contain but not limited to Technical description, Technical data sheets of equipment and systems, Schematic diagrams, System Process & Instrumentation

Diagrams (P&ID), Guarantee declaration schedules. Spares shall meet the project scope and technical specification requirement.

3.3 BHEL reserves the right of demanding any additional information and clarification from the Bidder after submission of his bid for examination and evaluation of bid, in which case, the Bidder shall furnish the same.

3.4 **In the interest of the Project execution, a site visit by the bidder is mandatory, to familiarize himself with the site conditions and understand entire job requirement for interface with existing AHP facilities, shut down requirement etc., local environment conditions and facilities available inside & outside the plant before submitting the offer. Bidder shall understand limitations/ constraints based on the location of the buildings etc. and in view of existing AHP facilities.**

3.5 The system shall generally be as per the layout & specification requirement in the enclosed enquiry specification.

3.6 Ash collection for 1x660 MW unit (as per post bid clarification):-

Total ash generation (at 100% BMCR) with worst coal (46.67%)= 249.68 TPH

Ash distribution data -t/h (BMCR) Per Boiler @

Types of Hoppers	% of ash	Ash generated T/H	No of hoppers	Elevation of hoppers
Furnace Bottom Hoppers	20 %	49.94	1	11.0
Economiser Hoppers	5 %	12.48	4	24.4
SCR Inlet duct Hoppers	4 %	9.98	4+4	30.0
SCR Outlet duct Hoppers	4 %	9.98	4+4	30.0
Air Preheater Hoppers	5 %	12.48	4+4	4.0
AH-ESP Duct Hoppers	5%	12.48	4+4	4.0
ESP Hoppers	90 %	224.71	108	3.5 (Hopper flange level)

3.7 Bulk densities of ash:

- Specific gravity of Bottom ash 0.75 T/m³ for volume consideration.
- Specific gravity of Fly ash 0.75 T/m³ for volume consideration.
- Specific gravity of Bottom ash and Fly ash 1.6T/m³ for load consideration.

3.8 Equipment and Stream line capacities:

- Bottom ash jet pump and clinker grinder capacity each 90 TPH
- No of Vacuum conveying 8W lines, each line capacity 56 TPH
- No of pressure conveying (4W+1S) lines, each line capacity 112 TPH
- No of Ash slurry pump 2W, each pump capacity 1270 m³/hr with head 29 MWC
- No of HP water pump 2W, each pump capacity 1000 m³/hr with head 70 MWC.
- No of LP water pump 1W, pump capacity 757 m³/hr with head 25 MWC.

- vii) No of Recycle water pump – (1W+1S), each pump capacity 1600 m³/hr

Note: - a) Above parameters are as per WBPDCS specification/subsequent amendments and further it shall be bidder's responsibility to verify the above mentioned parameters to check whether it is sufficient or not as per the actual system requirement. Also Bidder to note that in case any booster pump (HP and LP water pump with drives) is required to meet the actual requirement of the system then same shall be considered by the bidder in their scope of work.

- b) Bidder to select the equipment in such a way that equipment's base frame shall be suitable to mount on existing foundation and interchangeability of the equipment with existing equipment shall also be ensured.

4.0 Systems Description

4.1 Bottom Ash Handling

Wet Bottom Ash Handling System shall consist of Triple V water impounded Bottom Ash hopper with storage capacity of five and half (5.5) hours on 100% BMCR with worst coal basis and Jet pumps & clinker grinder for removal of bottom Ash, Economizer hopper ash, SCR inlet ash and SCR outlet ash.

Following major equipment's shall be considered for the system. Any other items required for completion of the system shall also be considered. Broad scope of work is as detailed under (Refer WBPDCS spec).

Sl. No.	Item Description	Quantity	Unit
A.	Bottom ash Removal and Overflow system		
1	Water impounded, refractory lined 3 V- type Bottom Ash Hopper with all accessories like poke door, inspection window, overflow louvers, seal trough, Overflow Seal Box, vent louvers, SS anchors, flushing nozzles etc., Capacity-5.5 Hrs.	1	Lot
2	BAH Feed gate (Air Oil operated)	6(3W+3S)	Nos.
3	Feed Sumps - with flushing connections & all accessories	6(3W+3S)	Nos.
4	Air Oil convertor tank	6(3W+3S)	Nos.
5	Jet Pump	6(3W+3S)	Nos.
6	Clinker Grinders complete with drive motors, zero speed switches Fluid Couplings, gearboxes, Chains & Sprockets, Protective guards & all other accessories.	6(3W+3S)	Nos.
7	Bottom Ash system water and air piping, Valves, fittings, coupling, supports, hangers etc.	1	Lot
8	BA Overflow weir box provided with abrasion resistant plates	1	No.
9	BA Overflow Transfer Pump complete with drive motors, – horizontal centrifugal type pump complete with accessories such as base frames, Fluid coupling, gear box etc.	2(1W+1SB)	Nos.
10	BA Drain Pumps with V-belt or direct driven drives (as applicable)	2(1W+1SB)	Nos.
11	Field Instruments as applicable	1	Lot
12	MS ERW steel pipes, 9.52 thk (min) as per IS:3589 Gr FE 410 Bottom ash slurry piping from BAH to slurry sump.	1	Lot
13	Ni-chrome-alloy CI or equivalent (min hardness 400 BHN) Integral wear back of min 20 mm thk / 20 mm thk cast basalt lined MS fittings (MS shell of 6 mm thk) Bottom ash slurry pipe fittings (Bends, Elbows, Laterals and spool pieces etc) from Bottom ash hopper to ash slurry sump	1	Lot



1 X 660 MW WBPDCS Sagardighi Thermal Power Station for Unit # 5

Technical Enquiry Specification of
Ash Handling System Package

SPECIFICATION NO.
IS-1-ES- 724-300-M001

Sl. No.	Item Description	Quantity	Unit
14	Pneumatic operated slurry duty knife gate valve with manual override (hand wheel) at Jet pump discharge	6	Nos.
15	Pneumatic operated plug valve at inlet and outlet of bottom ash overflow transfer pump and manual operated plug valve at inlet of existing ash slurry sump or existing clarifier.	1	LOT.
16	MS ERW steel pipes, 9.52 thk (min) as per IS:3589 Gr FE 410 BA overflow water piping from BA overflow pumps to existing AHP clarifier or existing ash slurry sump. Associated bends, fittings, coupling, flanges, gaskets, nuts & bolts etc. in BAOF water line	1	Lot

4.1.1 The following points also to be noted by bidder

- 4.1.2 Platform and access shall be provided all around BAH for its maintenance purpose. Two sets of min. 1000 mm clear wide staircases shall be provided for BAH.
- 4.1.3 Service Water terminal point may be provided by BHEL at 100 meters from BAH for taking additional source of refractory cooling water, seal water for clinker grinder and seal trough make up.
- 4.1.4 Access and maintenance platform minimum 1000 mm clear wide with Chequered plate covering all round the bottom ash hopper at suitable level shall be provided. In addition, local platforms as required for observation / poking / maintenance shall be provided
- 4.1.5 Air oil converter shall be fitted with relief valve, drain valve; all air & water/oil pipe works with four-way double coil center off type Solenoid Valves, isolation valves, pressure hoses etc. Solenoid valve shall have manual override and entire arrangement shall ensure keeping feed gate at intermediate position if required.
- 4.1.6 Seal water line shall be provided with a suitable interlock to the motor starting circuit, such that the clinker grinder does not start till sufficient pressure and flow is obtained in the seal water line.
- 4.1.7 Except for the items specifically excluded as per above scope matrix, all other items required for the completion of the system shall be designed and supplied by the bidder.
- 4.1.8 Clinker Crusher, Jet pump and other pumps & installation etc., if not specified otherwise shall be on/above ground level. Clinker crusher shall be installed on rails. The clinker crusher shall be able to crush clinkers of 400-500 mm size.
- 4.1.9 The motor KW rating of Clinker Grinder should not be less than 11 KW (1000rpm).
- 4.1.10 Gear Box should be of continuous operation duty & designed for heavy shock loading.
- 4.1.11 The Fluid Coupling should be of continuous duty operation and rated for selected motor KW rating.
- 4.1.12 Supply of sleeve couplings in BA slurry pipelines shall be in bidders' scope. Sleeve couplings shall be provided at 36 m intervals.
- 4.1.13 For pumps: Bearing temperature shall be within 90° C including maximum ambient temperature under normal operating condition.
- 4.1.14 For Gearbox:
- The maximum rise of oil temperature shall not be more than ambient +50° C.
 - Kerosene leak test shall be carried out for Casing.

4.1.15 Instrument airline and DM cooling water line shall be Stainless Steel pipes

4.2 Economizer, SCR inlet and SCR outlet hoppers Ash Removal System

From Economizer (4 nos.) hoppers, SCR Inlet (4+4 nos.) hoppers and SCR outlet (4+4 nos.) hopper coarse ash shall be extracted and conveyed in slurry form continuously through flushing apparatus system by mixing ash with water and fed to BA hopper. Coarse Ash slurry pipe shall have jetting nozzle positioned at strategic points. Water requirement shall be met through Eco water pump to be furnished by bidder and quantity shall be met the NIT water balance diagram. Broad scope of work is as detailed under.

Sl. No.	Item Description	Quantity	Unit
B.	ECONOMIZER ASH REMOVAL SYSTEM		
1	MS Adopters below ECO hoppers	4	Nos.
2	Manual chain wheel operated plate valve for isolation	4	Nos.
3	Pneumatic operated knife gate valve below Eco hoppers	4	Nos.
4	water seal type expansion joint	4	Nos.
5	Flushing Apparatus	4	Nos.
6	ECO Ash water and air system piping, Valves, couplings, bends, fittings, supports, flanges, nuts, bolts, gaskets, hangers etc.	1	Lot
7	MS ERW steel pipes, 9.52 thk (min) as per IS:3589 Gr FE 410 ECO ash slurry piping, sleeve couplings, hangers, supports, flanges, nuts, bolts, gaskets, clamps with pocket bolts, jetting nozzles etc.	1	Lot
8	Ni-chrome-alloy CI or equivalent (min hardness 400 BHN) Integral wear back of min 20 mm thk / 20 mm thk cast basalt lined MS fittings (MS shell of 6 mm thk) ECO ash slurry pipe, fittings (Bends, Elbows, Laterals and spool pieces etc) from ECO hopper to Bottom ash hopper		
9	Field Instruments as applicable	1	Lot
10	Maintenance, Access platforms for manually operated valves and flushing apparatus.	1	Lot
C.	SCR-Inlet and SCR-outlet hopper ash removal system		
11	MS Adopters below SCR-inlet and SCR-outlet hoppers	4+4 & 4+4	Nos.
12	Manual chain wheel operated plate valve for isolation	4+4 & 4+4	Nos.
13	Pneumatic operated knife gate valve below hoppers	4+4 & 4+4	Nos.
14	Water trough type Expansion Joint	4+4 & 4+4	Nos.
15	Flushing Apparatus	4+4 & 4+4	Nos.
16	SCR-inlet and SCR-outlet Ash water system piping, Valves, fittings, supports etc.	1	Lot
17	MS ERW steel pipes, 9.52 thk (min) as per IS:3589 Gr FE 410 SCR-inlet and SCR-outlet ash slurry piping, fittings, coupling, supports etc from respective hoppers to Bottom ash hopper.	1	Lot
18	Ni-chrome-alloy CI or equivalent (min hardness 400 BHN) Integral wear back of min 20 mm thk / 20 mm thk cast basalt lined MS fittings (MS shell of 6 mm thk) SCR inlet-outlet ash slurry pipe fittings (Bends, Elbows, Laterals and spool pieces etc) from respective hoppers to Bottom ash hopper	1	Lot
19	Field Instruments as applicable	1	Lot



1 X 660 MW WBPDCS Sagardighi Thermal Power Station for Unit # 5

Technical Enquiry Specification of
Ash Handling System Package

SPECIFICATION NO.
IS-1-ES- 724-300-M001

20	Maintenance, Access platforms for manually operated valves and flushing apparatus.	1	Lot
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4.2.1 The following points also to be noted by bidder

4.2.2 Bidder shall consider minimum 10-12 Cu.M/hr. water requirements for each flushing apparatus of Eco hoppers & SCR-inlet & SCR-outlet hoppers. Each flushing apparatus shall have minimum two nozzles.

4.3 Dry Fly Ash Evacuation System

Dry Fly ash shall be conveyed from ESP, APH and Duct to Fly Ash Silo in two stages described as below:

1st stage Vacuum Conveying

Fly ash collected in ESP, APH and Duct hoppers shall be pneumatically conveyed to Intermediate Buffer/ Surge Hopper through vacuum conveying system by means of vacuum pumps.

2nd stage Pressure Conveying

Fly ash collected at Intermediate Surge Hopper shall be evacuated to Fly Ash Silo by means of oil free screw compressors.

D.	Dry Fly Ash Removal System (1st Stage Vacuum Conveying system)		
1	Fluidizing pads with piping, fittings for ESP hoppers	108	Sets
2	MS Adapters below ESP hoppers	108	Nos.
3	Manual chain wheel Operated Plate Valve for isolation	108	Nos.
4	Ash Intake valve	108	Nos.
5	Ash level indicator (low level)	108	Nos.
6	ESP hopper cum Intermediate surge hopper Fluidizing Blower	2(1W+1SB)	Nos.
7	MS Adapters below APH/Duct hoppers	16	Nos.
8	Manual chain wheel Operated Plate Valve for isolation	16	Nos.
9	Ash Intake valve	16	Nos.
10	Air Heater for ESP hopper cum Intermediate surge hopper Fluidizing Blower	2(1W+1SB)	Nos.
11	Insulation for fluidizing Line	1	Lot
12	Liquid ring type Vacuum Pumps with drives	10(8W+2SB)	Nos.
13	Class D Cast Iron Pipes centrifugally cast conforming to IS 1536 or BS 1211 min. 450 BHN hardness for conveying ash from ESP hopper to Intermediate surge hopper	1	Lot
14	Ni hard / chrome alloy CI with min hardness 450 BHN for pneumatic ash transport line fittings (elbows, bends etc) and spool piece	1	Lot
15	Bag Filter Separator cum transfer hopper	8	Nos.
16	Intermediate surge hopper (min. 10 mm thk MS plate as per IS 2062)	2	Nos.
17	Intermediate surge hopper fluidizing pads with piping, fittings, clamps, couplings, nuts, bolts, gasket etc.	1	Lot
18	Air Intake valve	12 +4	Nos.
19	Wetting Unit	16	Nos.
20	Collector tank	16	Nos.

21	Air Washer	16	Nos.
22	Vacuum Breaker	24	Nos.
23	MS ERW sleet pipes, 9.52 thk (min) as per IS:3589 Gr FE 410, ESP Ash Slurry transport pipes from collector tank of FAE tower to slurry sump	1	Lot
24	20 mm thk Cast Basalt lined MS fittings or Alloy CI with min hardness 400 BHN bends, fittings, elbows, laterals and spool piece in Slurry Line from collector tank of FAE tower to slurry sump	1	Lot
25	Sleeve couplings, supports, flanges, nuts, bolts, gaskets & clamps with pocket bolts in slurry lines from collector tank of FAE tower to existing ash slurry sump as applicable	1	Lot
26	Maintenance, Access platforms as per system requirements	1	Lot
27	APH, Duct and ESP Ash System Piping, Valves, Fittings, Supports, flanges, nuts, bolts, gasket, hangers etc.	1	Lot
28	APH, Duct and ESP Ash System Instrument, Conveying, Fluidizing Air Piping, Valves, Fittings, Supports etc.	1	Lot
29	Water (Cooling) & air (Instrument, conveying, fluidizing) piping & valves with Bends, fittings, clamps, Interconnecting valves and piping with existing system, sleeve couplings, supports, flanges, hangers, nuts, bolts, gasket etc.,	1	Lot
30	Field Instruments as applicable	1	Lot
E. 2nd stage Pressure Conveying System			
1	Fluidizing pads with piping, fittings per Intermediate Surge hopper	1	Lot
2	MS Adapters below Surge Hopper	12	Nos.
3	Manual operated plate valve for isolation	12	Nos.
4	Ash Intake valve above ash transmitter vessels	12	Nos.
5	Ash Transmitter Vessel with complete pneumatic valve for ash intake, venting, boosting and discharge below buffer/ surge hopper	12	Nos.
6	Ash Intake valve below ash transmitter vessels	12	Nos.
7	Oil free screw type (water cooled) Conveying air compressors with drive motors	6(4W+2SB)	Nos.
8	External after cooler for conveying air compressor as applicable	6(4W+2SB)	Nos.
9	Air receiver for Conveying air compressors	6	Nos.
10	MS ERW pipe as per IS 1239 & IS 3589, Gr FE 410, min 9.52mm thk for conveying ash from Intermediate surge hopper to FA silo	1	Lot
11	20 mm thk Cast Basalt lined MS fittings or Ni hard / chrome alloy CI with min hardness 450 BHN for pneumatic ash transport line fittings (elbows, bends etc as applicable upto FA silo) and spool piece	1	Lot
12	Water (Cooling) & air (Instrument, conveying, fluidizing) piping & valves with Bends, fittings, clamps, Interconnecting valves and piping with existing system sleeve, couplings, supports, flanges, hangers, nuts, bolts, gasket etc.,	1	Lot
13	Drain Pump for Vacuum cum Compressor house area – Vertical centrifugal type-complete with accessories such as base frames, couplings, V-belt or direct drive, Foundation bolts, matching flanges etc.	2(1W+1SB)	Nos.
14	Field Instruments as applicable	1	Lot



1 X 660 MW WBPDCS Sagardighi Thermal Power Station for Unit # 5

Technical Enquiry Specification of
Ash Handling System Package

SPECIFICATION NO.
IS-1-ES- 724-300-M001

15	Vacuum pump cum compressor house drain water transport piping, bends, fittings, valves, clamps, sleeve, couplings, supports, flanges, hangers, nuts, bolts, gasket etc., as applicable in drain water transportation lines and drain sump jetting nozzles	1	Lot
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4.3.1 The following points also to be noted by bidder:

4.3.2 The clear headroom of 2.2 Mtrs should be available below AHP equipment (including fly ash pipe) in ESP area. Thus BOP of Fly ash vacuum pipe should not be below EL (+) 2.0 Mtrs. As FFL in ESP area is (-) 200mm.

4.3.3 Dry fly ash evacuation shall be strictly as per enclosed flow schemes.

4.3.4 System shall be designed to operate satisfactorily at designed rate considering outage of first two fields of ESP by one conveying line. Refer Annexure-06 for Ash Distribution in various fields of ESP hoppers.

4.3.5 The pneumatic connector fittings used for instrument air tubing connections inside/ outside pneumatic panel shall be quick connectors with sealing ring/ lock nut. Push fit or push on connectors shall not be acceptable. SS tubes shall be used below ESP.

4.3.6 Each vent filter/bag filter at Intermediate Surge Hopper/FA Silo must have a DP gauge and two nos. DP transmitter.

4.3.7 SS orifices as required for water/air balancing shall be in bidder's scope.

4.3.8 Air control valves/Pressure regulator shall be provided for pressure conveying system.

4.3.9 Clean air plenum on bag filter with clear man height shall be provided for easy access of bags for maintenance. Bag filter manhole shall have easy access through platform/stair etc.

4.3.10 Transition pieces and bends in Dry Fly ash pipes/Pneumatic Ash Conveying Pipes shall not be less than 3D.

4.3.11 Instrument air line and DM cooling water line shall be Stainless Steel.

4.4 Ash Slurry Disposal System

The bottom ash/coarse ash slurry will be discharged into existing ash slurry sumps through a distribution trough.

One (1) no slurry disposal lines of 450 NB MS ERW 9.52 mm thk shall be considered for ash disposal from existing ash slurry sump to ash dyke. Horizontal length of the ash slurry disposal pipe is 3750 m including garlanding. The ash slurry disposal points shall be blind flanged type. The slurry line pipe bends shall be of ACI/cast basalt lined. Broad scope of work is as detailed under.

Sl. No.	Item Description	Quantity	Unit
F.	Ash Slurry Disposal System		
1	Horizontal Centrifugal type Ash Slurry Disposal Pumps with drive (HT motor in BHEL scope)	2W	Nos.
2	Variable speed fluid coupling with manual scoop for 1 st stage slurry pump	1W	No.
3	Direct coupled drive with Gear box for 2nd stage slurry pump	1W	No.
4	Pneumatically operated Slurry Duty knife gate valve (Suction)	1	No.
5	Pneumatically operated Slurry Duty knife gate valve (Discharge)	1	No.
6	Manual operated Slurry Duty knife gate valve (Discharge) at crossover	9	Nos.



1 X 660 MW WBPDCS Sagardighi Thermal Power Station for Unit # 5

Technical Enquiry Specification of
Ash Handling System Package

SPECIFICATION NO.
IS-1-ES- 724-300-M001

Sl. No.	Item Description	Quantity	Unit
7	Manual Operated Plug Gate Valve at Slurry Sump common Trough	1	No.
8	Ash slurry pipes – Cast basalt pipe for inside the Ash slurry pump house	1	Lot
9	Ash slurry pipes –MSERW Steel pipes, 9.52 thk (min) as per IS 3589 Gr FE 410 (horizontal length) from outside the Ash slurry pump house to Ash dyke	3750	mtrs
10	20 mm thk cast basalt lined MS fittings (MS shell of 6 mm thk) or Alloy CI with min 400 BHN integral wear back of min 20 mm thk for ash slurry fittings (bends, Elbows, Laterals and spool piece etc.)	1	Lot
11	Sleeve Couplings, clamp with nuts & bolts for pockets in pedestal of slurry disposal line	1	lot
12	Filed instruments as applicable	1	Lot
13	20 mm thk Cast Basalt lined MS fittings or Alloy CI with min hardness 400 BHN bends, fittings, elbows, laterals and spool piece etc in Ash conveying line from ash slurry pump house to ash dyke	1	Lot
14	Dyke end Valves (Spectacle Blind Plate type) – minimum	16	Nos.
15	ACI Liners with 350 BHN inside 1 nos. ash slurry sump, Lining should be min 20 mm thick on side wall and 30 mm thick at bottom (as required)	1	Lot
16	Jetting nozzles in ash slurry sump	1	Lot
17	All water (slurry line flushing, 1st stage ASD pump fluid coupling cooling, ASD pump HP, LP seal, slurry sump make up and slurry sump jetting water piping) & air piping & valves with Bends, Interconnecting valves and piping with existing system fittings, clamps, sleeve, couplings, supports, flanges, hangers, nuts, bolts, gasket etc., as applicable	1	Lot

4.4.1 The following points also to be noted by bidder

- 4.4.2 Ash Slurry Disposal Pipe from Ash Slurry Pump Houses to Ash Dyke shall be supplied by successful bidder.
- 4.4.3 All pneumatic slurry duty Knife gate shall be with manual override.
- 4.4.4 Supply of sleeve couplings & dyke end valves in slurry disposal pipes shall be in bidder's scope. Sleeve coupling joint in straight length, flanged joint at fittings, bends, elbows, laterals etc shall be provided.
- 4.4.5 The common distribution trough shall be lined completely with ACI liner with 350 BHN (as required).
- 4.4.6 Pipe Sleeves (for overflow, drain and suction pipes) for ash slurry sumps shall be supplied by bidder.
- 4.4.7 Hydro-test of ash slurry pipes at 2 times the working pressure or at 1.5 times the design pressure whichever is higher shall be done by the bidder.
- 4.4.8 Instrument air line and DM cooling water line shall be Stainless Steel.

4.5 Fly Ash Storage & Unloading System

There shall be one (1) RCC fly ash storage silos of 2400 T capacity. Below one silo there shall be 5 outlets. One (1) outlet shall be for conditioned ash disposal into open trucks and two (2) outlets shall be for dry disposal into closed trucks & two (2) no. outlets shall be provided with manual plate valve for future use. Broad scope of work is as detailed under.



1 X 660 MW WBPDCS Sagardighi Thermal Power Station for Unit # 5

Technical Enquiry Specification of
Ash Handling System Package

SPECIFICATION NO.
IS-1-ES- 724-300-M001

Sl. No.	Item Description	Quantity	Unit
G.	Fly Ash Silo Unloading System		
1	RCC FA Silo - 2400 T (BHEL scope)	1	No.
2	Fluidizing pads with piping/ fittings per Silo	1	Set
3	MS Adapters below Silo	1	Lot
4	Manual chain wheel operated plate valve for isolation	5	Nos.
5	Fly ash Silo Fluidizing Blower with drive motors (Cap 1860 m ³ /hr at 10 MWC)	1W	No.
6	Air Heater (15 KW) for Silo hopper Fluidizing Blower	1W	No.
7	Insulation for fluidizing Line	1	Lot
8	Pneumatic operated knife gate valve above rotary feeder	3	Nos.
9	Rotary feeder with drive motor for dry ash line	2	Nos.
10	Rotary feeder with drive motors for semi wet ash line	1	No.
11	Ash Conditioner with drive motors	1	No.
12	Telescopic Unloading Spout with vent filter and fan and drive motors	2	Nos.
13	Pressure relief valve for FA Silo	1	No.
14	Vent Filters for FA Silo	1	No.
15	Vent fan with drive motors for silo	2	No.
16	Man Hole for Silo	1	No.
17	Instrument/fluidizing air & water piping, Valves, fittings, Interconnecting valves and piping with existing system supports etc.	1	Lot
18	Field Instruments as applicable	1	Lot
19	Ash Divertor Valves and target box (as applicable) on existing FA Silo No.1, 2, 3 and proposed silo no. 4 as per NIT flow diagram	1	Lot
20	Ash Divertor Valves on existing fly ash lines (10 nos.) and target box (as applicable) to discharge ash to proposed silo no. 4 as per NIT flow diagram	1	Lot
21	3D type Ultrasonic Level transmitter for FA Silo No. 4	1	Nos.
22	Target box on FA Silo No. 4 for unit # 5	1	Lot

Bidder's Scope

Design	Supply		Erection & Commissioning	
	Inclusion	Exclusion	Inclusion	Exclusion
Bidder shall submit their design for the described system.	Entire system	Sl no. 1	Entire system	Sl no. 1

4.5.1 **The following points also to be noted by bidder**

4.5.2 Mechanical GA, Civil & Structural drawings of Fly Ash Silo shall be in bidder's scope.

4.5.3 Except for the items specifically excluded, all other items required for the completion of the system shall be designed and supplied by the bidder.

4.5.4 Instrument air line shall be Stainless Steel.

4.6 **Instrument Air System**

The instrument air requirement for ash handling plant shall be catered by 1 No. Oil free screw type Instrument Air Compressors. Broad scope of work is as detailed under.

Sl. No.	Item Description	Quantity	Unit
H.	INSTRUMENT AIR SYSTEM		
1	Instrument Air Compressor with drive motors (FAD min. cap 900 m ³ /hr considering ambient temp as 50° C and 100 RH @ 8.0 Kg/cm ²) – Main plant area	1W	No.
2	HOC type or Rotary Drum type Air Dryer for instrument air compressor , design Pr. 10.5 Kg/ cm ² – Main plant area	1W	No.
3	Air receivers with accessories – Main plant area	1	No.
4	Air receivers with accessories– Silo area	1	No.
5	Stainless Steel Seamless pipe (≤50 NB)/ ERW (≥65 NB) as per ASTM A-312 Gr. 304, Thickness as per schedule 40S (for 50 NB and below) and 10S (for 65 /NB and above), ANSI B36.19 for Instrument air distribution piping and DM Colling water piping equal to 50 NB.	1	Lot
6	Water and air line Valves, Interconnecting valves and piping with existing system, solenoid valves, fittings, supports etc.	1	Lot
7	Field Instruments as applicable	1	Lot

4.6.1 **The following points also to be noted by bidder**

4.6.2 Instrument air supply shall be strictly as per enclosed flow scheme.

4.6.3 The air dryer capacity shall be same capacity of instrument air compressor

4.6.4 The air dryer must have a Dew Point indicator and transmitter.

4.6.5 There shall be flow transmitter at discharge header of IA header after air receiver.

4.7 **Common Water System**

The water requirement for the Ash Handling system shall be met through various water pumps as detailed below. The flow scheme may be referred for water distribution.

Sl. No.	Item Description	Quantity	Unit
I.	Common Water System		
1	Bottom ash LP water pumps with drive motors, accessories such as base frames, couplings, Foundation bolts, matching flanges etc.	1W	No.
2	Bottom ash HP water pumps with drive motors (HT motor in BHEL scope), accessories such as base frames, couplings, Foundation bolts, matching flanges etc.	2W	Nos.
3	Ash Conditioner Water Pumps with drive motors, accessories such as base frames, couplings, Foundation bolts, matching flanges etc.	1W	No.
4	Seal water pumps with drive motors, accessories such as base frames, couplings, Foundation bolts, matching flanges etc. for unit#5 AHP purpose	2(1W+1SB)	Nos.
5	Economizer ash water pumps with drive motors, accessories such as base frames, couplings, Foundation bolts, matching flanges etc.	2(1W+1SB)	Nos.
6	Suction valve, NRV& Discharge valve at the outlet of water pumps.	1	Lot
7	All water & air piping with valves Bends, fittings, clamps, Interconnecting valves and piping with existing system sleeve, supports, flanges, hangers, nuts, bolts, gasket etc.	1	Lot

**1 X 660 MW WBPDCS Sagardighi Thermal Power Station for Unit # 5****Technical Enquiry Specification of
Ash Handling System Package****SPECIFICATION NO.
IS-1-ES- 724-300-M001**

8	As applicable Booster HP and LP water ash water pumps with drive motors, accessories such as base frames, couplings, Foundation bolts, matching flanges etc.	1	Lot
9	Field Instruments as applicable	1	Lot

4.7.1 The following points also to be noted by bidder

- 4.7.2 Bidder shall limit the water requirement (consumptive and non-consumptive) as per the available water for the respective system of this project.
- 4.7.3 SS orifices as required for water balancing in HP, LP, ECO, ash conditioner, seal water lines etc. shall be in bidder's scope.
- 4.7.4 All water and air line manual valves equal and above 200 NB shall be Gear Operated.
- 4.7.5 Hydro test of all water pipes at 2 times the working pressure or at 1.5 times the design pressure whichever is higher shall be done by the bidder.
- 4.7.6 Bearing temperature shall be within 90°C including maximum ambient temperature under normal operating condition.

4.8 Ash Water Recycle System

There shall be 2 nos. (1W+1SB) recycle water pumps for pumping recovery water from existing recycle water sump to existing ash water sump. Pipeline shall be provided for the same distance.

Sl. No.	Item Description	Quantity	Unit
J.	Ash Water Recovery System		
1	Ash water Recycle pumps with drive motors	2(1W+1SB)	Nos.
2	Recovery water pipe (MS ERW as per IS 3589) from existing recycle water sump to existing ash water sump.	1	Lot
3	Water and air line Valves, Interconnecting valves and piping with existing system, solenoid valves, fittings, supports etc.	1	Lot
4	Field instruments as applicable	1	Lot

4.9 Miscellaneous Equipment

Miscellaneous broad scope of work is as under, for detailed specification refer the Annexures 07 & 08.

Sl. No.	Item Description	Quantity	Unit
K.	Miscellaneous		
O	Hoists/Crane		
1	EOT crane for new vacuum pump cum compressor house	1	Set
2	Electric hoist for silo top	1	Lot
3	Manual hoist for clinker grinder, silo working floor, BA overflow pump, ISH & collector tank (1 no per tower),	1	Lot
• In case if the hoist capacity is more than 3T then the same shall be considered as electric hoist			
P	Ventilation and Air Conditioner System		



1 X 660 MW WBPDCS Sagardighi Thermal Power Station for Unit # 5

Technical Enquiry Specification of
Ash Handling System Package

SPECIFICATION NO.
IS-1-ES- 724-300-M001

1	Pressurised Ventilation System for MCC rooms, cable spreader room	1	Lot
2	Ventilation System for Battery room, Pump House and toilets	1	Lot
3	Ventilation requirement (if any) for existing AHP buildings, which shall be equipped with unit # 5 (new unit) items.	1	Lot
4	Air cooled packaged (precision type) AC for Control room	1	Lot
5	Air cooled non duct able split air conditioner with 100% standby for Vacuum Pump house RIO room, office room etc.	1	Lot

We have listed the major equipment required for Ash handling system for understanding the scope and for reference only. However, Bidder should read carefully all the specification, amendment etc. and make/submit/supply their own BOQ for completeness of the Ash Handling system.

5.0 Mandatory Spares and Commissioning spares

Bidder shall indicate and include in his scope of supply all the necessary start-up, commissioning spares in addition to mandatory spares as specified elsewhere in the specification. Bidder shall also state for each item of spares both mandatory and recommended, the normal expected service life. Spares shall be despatched in pre-decided lots in containers/secure boxes. All boxes/containers shall be distinctly marked in red colour with boldly written "S" mark on each face of the containers/secure boxes as indication of items to be directly handed over to customer. BBU number should be put on the items in a durable manner (Punching/painting, etc.) so that the items can be easily linked with approved BBU for ease of handing over to customer. Expiry date for short shelf life items (oils, chemicals, insulation materials, etc.) should be put on the item as well as the packing box.

Bidder has to supply the commissioning spares as specified in Annexure-9B after the BLU of the unit or as intimated by BHEL. The list is minimum and in case additional spares are required for commissioning, the same shall be supplied by bidder without any commercial implication.

The following points also to be noted by bidder

1. In case spares indicated in the list are not applicable to the particular design offered by the bidder, the bidder should offer spares applicable to offered design with quantities generally in line with approach followed in the above list.
2. In case the bidder indicates against any item mentioned above as "Not applicable (NA)" and later it is found to be applicable, bidder shall supply such spares free of cost without any price implication.
3. The description of various items is only indicative and shall be supplied according to approved drawings/ Data sheets.
4. The spares for the equipment's shall pertain to the specific equipment's only. In case, if found at any stage of the project, that the spares supplied by the bidders are not fitting or not matching, the same shall be supplied again by the bidder without any cost implication to BHEL.

6.0 Terminal Points

The terminal points for the Ash Handling System are considered as follows:

6.1 Starting

- i. Boiler seal plate.
- ii. ECO, SCR-inlet, SCR-outlet Hoppers outlet flange
- iii. APH, ESP, Duct – Fly Ash Hopper Outlet Flange.
- iv. Recycle water – Existing recycle water sump.
- v. Input water to ash water tank, seal water tank, Ash conditioner water tank.
 - a. Seal water/Raw water header shall be provided 50 m far from Ash Water Pump House. Subsequent valves and piping to other locations of the requirement shall be provided by the bidder.
 - b. DMCW water for compressor shall be provided 50 m far from existing compressor house or AHP compressor cum vacuum pump house. Subsequent valves and piping to other locations of the requirement shall be provided by the bidder.
- vi. Service water header shall be provided 50 m away from AHP compressor cum vacuum pump house.
- vii. Drinking water header shall be provided 50 m away from AHP compressor cum vacuum pump house.
 - a. Subsequent piping with one isolation valve to all tanks above the building shall be in bidder's scope.

6.2 Ending

- i. For Dry Ash Unloading the outlet of Unloading spout.
- ii. For Semi wet Ash Unloading the outlet of Dust Conditioner.
- iii. For Lean Slurry Disposal – Ash Dyke.

7.0 Technical Documents and Drawings (Including Electrical and C&I)

7.1 Bidder shall furnish the following details in their technical offer:

- i. System capacities and all equipment ratings as per their scope of supply.
 - ii. Motor ratings of all equipment.
 - iii. BA and FA Slurry balance & Water balance (mainly HP water requirement).
 - iv. Total water consumption (Consumptive & Non-consumptive) per shift.
 - v. Electrical Load list/Feeder list with type/rating/power requirement.
 - vi. List of Self Manufacturing Items with indicating manufacturing place and Bought Out items.
 - vii. All Bidders Qualification details with documentary proof.
 - viii. Eligibility and Conformity of the facilities.
 - ix. Sub Vendor proposed list by Bidder.
 - x. List of Mechanical, Electrical, C&I, Civil and Structural items/equipment for ash handling package for loading/unloading and storage.
- 7.2 All drawing and data sheet are to be submitted in standard sheets having approved title blocks. Customer's, Customers' Consultant's and BHEL-ISG's name has to be incorporated in all the drawings.
- 7.3 As far as possible, first angle projection shall be followed.
- 7.4 Drawing shall be generally in A3 size. However, if inevitable, the size shall be A0, A1, and A2.
- 7.5 Drawing shall be complete. Incomplete drawing shall not be accepted.
- 7.6 Drawings and documents shall be submitted in Wrench/ any other BHEL specified DMS. Details of this DMS portal shall be intimated after award of contract.
- 7.7 All drawings submitted shall indicate the type, size, arrangement, weight of each component, breakdown for packing and shipping, the external connections, fixing arrangements required, the dimensions required for

installation with other equipment and material, clearances required between various portions of the equipment and any other information that is relevant or requested for.

- 7.8 Free hand drawing, lettering, overwriting etc., shall be totally avoided and the same shall be stencilled in ink.
- 7.9 The drawings mentioned for approval are to be submitted for approval. If drawings are approved with comments, then the same shall be resubmitted after incorporating the comments.
- 7.10 Test certificates shall invariably consist of details such as Nameplate data, projects and BHEL & Customer's /Customer's consultant's name.
- 7.11 Test certificates shall be strictly in A4 size.
- 7.12 Records of test results / readings etc., made during internal testing shall be available during testing/ inspection in customer's presence.
- 7.13 All drawings and test certificates etc., shall be marked as "CERTIFIED" and signed by the competent authority on the Bidder's side.
- 7.14 All Flow diagrams, Equipment drawings, GA Drawings/Schemes shall be submitted with separate sheet indicating complete BOM. The same shall be reflected in BBU. BBU shall be furnished by the successful bidder after award of contract considering the BBU system-wise like Bottom Ash Removal system, Coarse ash removal system, FA system, silo system etc. Also BBU shall indicate the amount towards Hardware, gaskets and Miscellaneous items.
- 7.15 Bidder shall submit Painting schedule for approval by customer and Painting for all equipment shall be as per approved painting schedule. All equipment shall be despatched in painted condition.
- 7.16 All items/equipment except pipes, structural steel, ash vessels and refractory shall be despatched in transport- worthy and storage - worthy packing/shipment boxes. BBU No, Quantity, Item Description details shall be legibly marked on at least 2 sides of packing/shipment boxes. Loose items are not acceptable.
- 7.17 **Successful bidder shall furnish the detailed packing /shipment box details with information such as packing box size, type of packing, weight of each consignment, sequence no. of dispatch, no. of consignment for each deliverable item against each billing break up units/ billable blocks.**
- 7.18 Successful bidder shall submit "Storage Instructions" for the storage (at site) for the entire equipment in bidder's scope of supply within 4 weeks from the date of LOI and the bidder shall ensure that the Shipment list/ Packing list and Storage Instructions are available at site before the items/equipment reach the site.
- 7.19 Successful bidder shall submit Field Quality Plan for Receipt & Storage within 4 weeks from the date of LOI.
- 7.20 Successful bidder shall submit Field Quality Plan for Erection & Commissioning within 8 weeks from the date of LOI.

8.0 Inspection and Testing (including electrical and C&I)

- 8.1 Bidder shall give 15 days' advance written notice of equipment being ready for testing. The customer / Inspector, unless the witnessing of the tests is virtually waived, will attend such tests within 15 days of the date on which the equipment is notified as being ready.

- 8.2 Type & routine test report / certificates shall include details of standard to which the tests are performed, test parameters, acceptance criteria, test set up etc. used during the testing along with the test piece details / rating and the detailed test record and final test result.
- 8.3 All inspection, measuring and test equipment used by the contractor shall be calibrated periodically. Bidder shall maintain all relevant records of periodic calibration, instrument identification, and shall provide for inspection by bidder wherever asked specifically; bidder shall calibrate measuring / testing equipment in the presence of employer.
- 8.4 The details of the checks to be carried out for various components (MQP) are to be submitted within one month from the date of Purchase order by bidder for customer approval. However, some indicative checks on different items are given below which should necessarily form part of the Quality Assurance Plan to be agreed with the customer.

9.0 Erection Conditions of Contract

Bidder to note that AHP fronts during erection will be given in a staggered manner. So, Bidder has to consider and envisage mobilization of all resources required, including manpower, in a shortest possible time during execution time. For this bidder has to consider advance resource planning so that erection by the successful bidder is not delayed.

10.0 Supervision of Civil Works at Site

For the supervision of entire civil and structural work of Ash Handling Plant, bidder shall depute minimum one graduate civil engineer having minimum 5 years of relevant experience for the entire period of civil & structural works as required till handing over of the systems to the customer. During such supervision work, Bidder shall be responsible to ensure correct implementation of their design of civil and structural works at site through the contractor engaged by BHEL for the work, in order to suit the civil & structural works for equipment erection requirement.

11.0 Site Activities

All site activities like unloading, receipt, storage, security & handling material, civil/structural works in the bidder's scope and free issue items in this package, erection and commissioning, trial run & PG test, handing over to customer the complete plant shall be in bidder's scope.

Bidder should have his site office (min. 50 Sq. mtrs), open storage yard (Min. 10000 Sq. mtrs) and 1 no. closed storage yard (min. 30(L)mtrsX20(W) mtrs X 10(H) mtrs). Bidder shall also keep at least 1 nos. container for keeping short items, instruments, rubber hoses etc.

For supervision of erection, commissioning, trial run & PG test, Bidder shall depute continuously and maintain minimum two graduate engineers (consists of Mechanical & Electrical) in addition to Site-in-charge and two diploma engineers having requisite relevant experience till handing over of the systems to the customer for each stage.

12.0 Operation and Maintenance of Ash Handling system till handing over

12.0 Scope of work for operation & Maintenance of the Plant

12.1 Bidder's Operation and Maintenance services shall be applicable after readiness of Wet Ash Slurry Disposal System with Bottom Ash, Coarse Ash, Fly Ash and Dry FA conveying system from respective ash hoppers to FAE tower.

12.2 The bidder shall be responsible for supervision of "round the clock trouble free operation" of the complete Ash Handling System (PLC based) for a period of 3 months of plants. Prior intimation for start of coal firing shall be given to bidder one or two days before. The above stated 3 months shall not be continuous and shall be unequally distributed over a span of 6 months from first coal firing date of the unit.

12.3 Bidder is also responsible for maintenance/repair/replacement of all the items and their components supplied by the bidder and including free issue items supplied by BHEL like HT Motors transformer, MCC etc.

12.4 All other consumables (gasket, rope, diesel, rustoline, waste cloth, lapping paste, jute, emery papers, welding electrodes, grinding wheel, hacksaw-blade, cutting gas, Electric items like Insulation Tape, Lugs, Fuses, Push Buttons, Electrical contact cleaner etc.) required shall be also in the scope of the bidder.

12.5 All tools, tackles, viz chain pulley block, pulling & lifting equipment, Trolley, Crane, Hydra, Truck, Trailer, winch, wire rope, grinding machine, sling, D-shackle, Coupler etc. including precision measuring instruments, welding machine & single phase portable welding machine that may be essential to execute the job shall be arranged by the bidder at no extra cost to BHEL. Portable diesel generator machine will have to be arranged by the bidder for carrying out maintenance job outside the plant where power supply could not be available.

12.6 For electrical job, Megger (1 no.), Multimeter (02 nos.), Clamp meter (1 no.), Tester and screw driver set (02 nos.), Spanners/ Pliers/ Small tools kit (1 set)/ Crimping tools for power and control cables/ cutter (2 nos.)/ wire stripper (2 nos.)/ Blower to be arranged by the bidder for at no extra cost to BHEL.

12.7 Necessary shifting of materials, spares, equipment etc. from store to work site and unserviceable materials from work site to store/yard, is to be done by the bidder at their own cost.

12.8 The bidder must have adequate resources to undertake routine, preventive maintenance jobs of AHP. They should have adequate resources to mobilize the site for carrying out three to four jobs simultaneously without any delay.

12.9 Bidder has to compulsorily maintain log book for the O & M staff engaged for O&M jobs and submit to Engineer in charge for certification for realization of the bills. After certification of the bill by Engineer in charge of BHEL, bidder shall claim the amount after completion of minimum 30 days.

12.10 In case bidder does not engage required O& M staff with tools and tackles as specified in the specification, O& M staff shall be engaged by BHEL at their risk and cost on monthly basis for a minimum period of 6 months and amount incurred shall be debited from the bidder's bills.

12.11 Additional responsibility of the bidder:

12.12 The bidder shall also be responsible for following operational activities:

- i. Top up of oil/grease/lubricant as required during operation of plant shall be done by the bidder.

- ii. Eco Hoppers, SCR Hoppers, APH Hoppers, Duct Hoppers & ESP Hoppers are to be ensured empty round the clock. In case of outage of ESP field due to accumulated ash in the ESP Hoppers, it will be the responsibility of the contractor to arrange evacuation of ash from the ESP Hoppers so that generation of the units does not get affected.
- iii. Bottom ash removal through feed gates/jet pumps of Bottom ash Hoppers to be carried out twice in each shift during coal firing of the boiler.
- iv. Removal of erection/technological waste which may come along with ash from BAH, ECO, SCR, APH, DUCT and ESP hoppers during the operation of the plant shall be done by the bidder. Cleaning of ash from BAH seal trough, from BAH ground floor area, SCR Hopper area, APH hopper area, Economizer Hopper area, ESP area, FAE Tower area and Silo area on regular basis and disposal of the same at specified location as directed by BHEL.
- v. The bidder should remove all the technical waste including ash in AHP area after each maintenance and operational activities to keep the place clean and according to the satisfaction of BHEL Engineer in charge within 3(three) days after completion of work, failing which BHEL will get the cleaning done at the risk and cost of the bidder.
- vi. Please refer Annexure 02 List of Do's and Don'ts for Ash handling system.
- vii. The bidder shall be vigilant and take necessary measure to prevent overflow from slurry sumps, BAOF sump, seal water sump, ash water sump, recovery water sump, drain sumps etc. to avoid discharge to the nearby drain.
- viii. In case there is chocking due to formation of clinker in running condition of Boiler, the utmost effort is to be given to remove those clinkers. Necessary safety arrangement as deemed fit is to be undertaken in course of removing clinkers.
- ix. The bidder shall do the servicing of field instruments like Limit/ Pressure/ Temperature / Level switches, Pressure/ Temperature/ Level Gauges, Flow Gauges/ indicators, transmitters, Solenoid valves, Cylinders, Air filters.
- x. To maintain the daily log book for shift wise plant operations which will include activities e.g. complete evacuation of fly-ash hoppers, BA Hopper, Eco. SCR, APH & DUCT Hoppers. A copy of observation and recording of salient operational readings of the unit to be submitted by the bidder to the Engineer-in-charge of BHEL for record and further processing.
- xi. **Housekeeping:** Cleaning of all equipment and housekeeping to be carried out dedicatedly in total Ash Plant area and its office premises.
- xii. All routine, preventive, predictive and breakdown maintenance of equipment of Ash Handling Plant inclusive of BHEL free supply items.
- xiii. Removal of all types of chocking in nozzles, pipes in ash disposal system.
- xiv. In case of dumping of ash from the hoppers (for reasons attributed to the bidder) on the floor, the same has to be cleaned by bidder. The ash has to be transported to the specified place by the bidder as per the instruction of the BHEL Engineer-in- charge.

- xv. Fabrication and erection of platform/extra support for AHP area if felt necessary during operation and maintenance of the plant has to be done by the bidder. Materials like channels, beam, angle etc. as required shall be supplied by bidder.
- xvi. Leakages/Spillages/Debris etc. generated on account of repairs during operation and maintenance of the plant at various locations in the ash handling system has to be collected, cleaned and disposed at designated area as marked by BHEL.
- xvii. Transportation of new pipes, spares, equipment from stores to site including loading, unloading and return the damaged pipes, spares, equipment to the designated place in the store.
- xviii. To maintain the daily Maintenance log book in which details of overhauling / breakdown/maintenance of any equipment including replacement of spares/components to be recorded. Recording of any abnormality of equipment, malfunctioning of system of the AHP also to be noted in the Log book.
- xix. Daily surveillance of all the running disposal lines (dry & wet) for any leakage etc. and the status is to be reported to the Engineer-in-charge of BHEL.
- xx. Bidder should submit weekly and monthly plan of erection activities.

12.13 Manpower Requirement

Bidder should have minimum man power for O&M of the unit

Sl. No.	Manpower	Nos.	Remarks
1	Mechanical Engineer/Supervisor	1	In each shift
2	Electrical supervisor	1	In each shift
5	Console Operator	2	In each shift
3.	Field Operator	03	In each shift
4	Electrician	1	In each shift
6	Technician /Fitter (Mech.)	1	General shift
7	Rigger Skilled	2	General shift
8	Welder	1	General shift
10	Gas cutter	1	General shift
11	Helper	03	In each shift

Note:

- If additional manpower is required for the operation and maintenance of the any of the unit, Bidder shall provide the same without any extra cost implication to BHEL.
- The bidder shall take approval from Engineer-in charge of BHEL by submitting organization Chart of O&M staff for this site clearly indicating man power deployment with their educational background & experience with supporting documents.
- EPF provisions for the workers shall be made by the bidder as per rule. Relevant documents regarding EPF for the workers of the bidder shall be submitted to the concerned authority before commencement of work.



1 X 660 MW WBPDC Sagardighi Thermal Power Station for Unit # 5

**Technical Enquiry Specification of
Ash Handling System Package**

**SPECIFICATION NO.
IS-1-ES- 724-300-M001**

4. The bidder shall be solely and wholly responsible for safety and security of workers engaged in the job and the BHEL property. In case of any accident the contractor shall pay proper compensation to the workers as per workmen's compensation act and repair/replace BHEL property at their own cost & arrangement. The bidder shall also make adequate provision of insurance for their workers at their own cost to cover them against the risk of accident.
5. The bidder and their workers engaged in the job shall follow all safety rules at the time of execution of work. It shall be responsibility of the bidder to supply all safety equipment as necessary to its O&M staff.
6. The bidder shall comply with all laws, rules & regulations of the land including but not limited to, i) Labour rules & Acts, ii) Factories Act, iii) Minimum wages Act, IV) Payment of Wages Act, V) Bonus Act, VI) EPF rules, VII) Contract Labour (Regulation & Abolition) Act as in vogue or comes into vogue from time to time. BHEL will be kept indemnified against any claim arising out of non-compliance of such Acts/rules.
7. The bidder shall not pay less than minimum wages to the workers under the Minimum Wages Act and the Govt. rules made there under subject to revision from time to time. The payment will be made to the workers in presence of the authorized representative of BHEL. The monthly payment is to be made on the 7th day of successive month. The bidder may change the place and time of payment to his workers under intimation to Engineer in charge of BHEL.
8. BHEL shall not be responsible in matters of employment of workers engaged in the job at any point of time. The bidder shall be fully responsible for his workers with regard to terms of employment of services. BHEL shall not be held responsible in any manner, whatsoever, in respect of workers engaged by the contractor for carrying out the works at site. Regarding engagement of workers, preference should be given towards experienced and competent workers with bonafide testimonials.
9. Beyond general shift if any trouble/breakdown occurs in the plant, Maintenance team must reach the plant without any delay along with Engineer/Site in charge.
10. No Person from the list of manpower shall leave the plant site without prior permission from the Engineer in charge of BHEL.
11. However, in operation part, if any person is absent, substitute must be given immediately otherwise proportionate deduction will be made.
12. The replacement / substitute personnel for maintenance, manpower shall have the same educational qualification and experience.
13. If any additional manpower is required during O&M whatsoever under the scope of contract the same shall be made available by bidder in time within the cost. To cater the need of time bound maintenance jobs, the bidder shall depute additional manpower without any cost implication to BHEL.
14. During execution of work if any personnel is found not suitable for the job or his presence inside power house premises is felt undesirable, the personnel has to be replaced within 15 days.
15. BHEL will not be responsible for payment towards idle labour charges.

12.14 Minimum qualification & experience of personnel & manpower required

Sl. No.	Category.	Educational qualification.	Work experience.
01.	Engineer (Mech & Elect.)	Degree / Diploma in Mech. & Elect Engg. from a recognized University/ college.	Min. Two(2) years of work experience for Degree holders and Min. Five (5) years of work experience for Diploma holders in Ash Handling system(wet & dry) and also having a working experience in DCS/PLC based Ash handling system of thermal power plant having unit capacity not less than 210 MW.
02.	Supervisor (Mech. & Elect.)	Diploma in Mech./Elect Engg. from a recognized University.	Min. two (2) years of working experience in Ash Handling system of large thermal power plant of unit capacity not less than 210 MW.
03.	Console Operator.	Degree / Diploma in Mech. & Elect Engg. from a recognized University/ college.	Min. One (1) year of work experience for Degree holders and Min. Three (3) years of work experience in DCS/PLC based Ash handling system of thermal power plant having unit capacity not less than 210 MW.
04.	Field Operators.	ITI (Mech.)/Elect trade institute certificate from recognized institute.	Min. two (2) years of working experience in Ash Handling system of large thermal power plant of unit capacity not less than 210 MW.
05.	Technician/ Fitter(Mech.)	ITI (Mech.) trade institute certificate from recognized institute.	Min. two (2) years of working experience in industry /Ash Handling system
06.	Rigger	-----	Min. two (2) years of working experience in industry.
07.	Welder	-----	Min. two (2) years of working experience in industry.
08.	Gas cutter	-----	Min. two (2) years of working experience in industry.
09.	Electrician	ITI (Electrician) trade institute certificate from recognized institute.	Min. five(5) years of working experience in Electrical and C&I.
10.	Helper	-----	

13.0 Tools & Tackles

Bidder's E&C contractor must have the following minimum tools and tackles at site for E&C activities. Minimum requirements are as follows:

- Motorized winch- 1nos.
- DG set capable of running minimum 2welding machines- 1 no.
- Hydra-1 no.
- Transport vehicle.
- Chain pulley Block- 6 nos.
- Welding machines- 8 Nos.
- Gas cutting equipment including cylinders- 4 sets
- Gas cutting torches- 8 sets
- Grinding machines- 4 sets.

- x. Drilling machines- 3 sets.
- xi. Welding electrodes oven- 4 sets.
- xii. Tong tester- 2 sets.
- xiii. Submersible pump- 1 sets
- xiv. Calibrated Testing equipment like hydro test pump (1 nos.), pressure gauges (5 nos.), temperature gun (2 nos.), vibration measurement equipment (1 set), noise level measurement (1 nos.), Vernier caliper (1 nos.) tachometer (1set), Multi meter (01 no), Tung Tester (01 no), HT < Megger (01 no) along with certified calibration certificates etc.
- xv. Other items like wire rope, sling, D-shackle, Coupler etc. including precision measuring instruments, single phase portable welding machine, Megger (1 no.), Multimeter (02 nos.), Clamp meter (1 no.), Tester and screw driver set (02 nos.), Spanners/ Pliers/ Small tools kit (1 set)/ Crimping tools for power and control cables/ cutter (2 nos.)/ wire stripper (2 nos.)/Blower etc.

Bidder's E&C Contractor should have the minimum tools & tackles mentioned above.

14.0 Erection & commissioning Manual

Erection & commissioning manual shall contain the following:

- 1. Erection strategy.
- 2. Sequence of erection.
- 3. Storage, Unloading and Erection instructions.
- 4. Detailed packing list for every Package/Equipment with Consignment details
- 5. Critical checks and permissible deviation/tolerances.
- 6. List of tool, tackles, heavy equipment like cranes, dozers, etc.
- 7. Bill of Materials
- 8. Erection drawings
- 9. Procedure for erection and General Safety procedures to followed during erection/installation.
- 10. Procedure for initial checking after erection.
- 11. Procedure for testing and acceptance norms.
- 12. Procedure / Check list for pre-commissioning activities.
- 13. Procedure / Check list for commissioning of the system.
- 14. Safety precautions to be followed in electrical supply distribution during erection.

15.0 Operation & Maintenance Manual

O & M manual shall contain the following.

- 1. Principle of operation of the equipment.
- 2. Details of preventive / repair maintenance for equipment and accessories used.
- 3. Details about the general specifications, design capacities of equipment, their function.
- 4. Equipment Bidder's address, telephone nos., contacts person details to be furnished.
- 5. Required Dismantling devices, tools etc.,
- 6. List of DO's and DO NOT's.

7. Test certificates.
8. All drawings.
9. Calculations.
10. Proper procedures & sequence of operation.
11. Identification system adopted for the various components
12. Master list of drawings (as built drawing - Drawings to be enclosed in as separate volume).
13. Lubrication Schedule including charts showing lubrication checking, testing and replacement procedure to be carried daily, weekly, monthly & at longer intervals to ensure trouble free operation.
14. Where applicable, fault location charts shall be included to facilitate finding the cause of mal operation or break down.
15. Detailed specifications for all the consumables including lubricant oils, greases, and chemicals etc. system/equipment/assembly/sub D assembly - wise required for the complete plant.

Note:

- i. All manual shall be supplied in proper bound books or in folders, preferably in A4 size. The manual shall be a two rim PVC bound stiff sided binder able to withstand constant usage. The cover shall be printed with the Project Name, Services covered and Volume / Book number
- ii. Prospective Bidder will submit the regular progress reports for self-manufactured & their bought out items equipment ordering /manufacturing status, drawings status once in fifteen days.



1 X 660 MW WBPDCS Sagardighi Thermal Power Station for Unit # 5

Technical Enquiry Specification of
Ash Handling System Package

SPECIFICATION NO.
IS-1-ES- 724-300-M001

Section – M3

Technical Specification (Electrical and C&I)

Broad scope is mentioned below:

1. HT Motors for Compressors is in the scope of bidder. However, HT Motors for Ash Slurry system and BA HP motor shall be supplied by BHEL.
2. All the applicable Electrical and C&I spares as per NIT Specification in the scope of bidder.
3. All the drg /docs shall be submitted by bidder for approval of Customer/ Customer consultant.

For detailed Electrical and C&I scope please refer Annexure-11



1 X 660 MW WBPDC Sagardighi Thermal Power Station for Unit # 5

Technical Enquiry Specification of
Ash Handling System Package

SPECIFICATION NO.
IS-1-ES- 724-300-M001

Section – M4

Technical Specification (Civil & Structural)

Civil and Structural Scope of AHP Mechanical Bidder:

Additional Notes:

1. Structural design and detail engineering of all facilities of AHP package in the scope of the bidder is to be done in-house. If the design is to be outsourced; bidder has to take prior approval for design outsourcing from BHEL.
2. During detail engineering, General arrangement drawings to be submitted for first review / approval along with approved Mechanical GA drawings.
3. Wherever required in the absence of inserts plates etc. HILTI make or any other approved anchor fasteners supply & fixing to be included in the scope of bidder.
4. At least one qualified Graduate/ Diploma civil engineer with min. 5 yrs. of site experience shall be deputed at site for Engineering Coordination and expert supervision during execution of civil & structural work of the AHP package for a period of 12 months from the date of intimation by BHEL. If the above requirements are not complied BHEL will engage directly and recover monthly charges.
5. Foundations for BAH, BA overflow tank shall be kept 1300 mm below FGL and FAE tower shall be kept 800 mm below FGL to facilitate for movement of machineries after the foundation work.

For detailed Civil & Structural scope please refer Annexure-10

BHEL ISG, Bengaluru
Pre-Qualification Requirements for Ash Handling Systems Package
Enq Ref: 77/18/6287/SK

1 x 660 MW WBPDCS Sagardighi TPS

Doc. No: IS-4-PQR-724-300-M001

Rev 00

Date: 16-04-2019

1. Ash Handling System (Technical)

Bidders are invited to participate who satisfy the following Technical requirements: -

- a) The Bidder should have executed Ash Handling Package involving design, engineering, Manufactured/got manufactured, supply, erection/supervision of erection and commissioning/supervision of commissioning of Dry/wet bottom ash system and/or pneumatic fly ash system in at least two (2) nos. thermal power projects separately of unit not less than 500 MW within the last seven years as on 31.07.18.
 - b) The Bidder should have designed, engineered, Manufactured, supplied, erection and commissioning of Ash Handling Package involving **Bottom Ash Handling system** comprising jet pumping system in conjunction with water impounded Bottom Ash Hopper system and **Fly ash vacuum conveying system** for conveying fly ash from ESPs to Intermediate surge hopper and **Fly Ash Transportation System** for transporting fly ash from Intermediate surge hopper to fly ash silo. These should be in successful operation in at least one thermal power plant of capacity 600 MW or above for a minimum period of one year as on 31.07.18.
2. Bidder who meet the requirements mentioned at Clause 1(a) but does not meet the requirement mentioned at Clause 1(b), can participate provided the bidder (who is ash handling manufacturer of Indian origin) meets the following requirements:
- a) The Bidder should have designed, engineered, Manufactured, supplied, erection/supervision of erection and commissioning/supervision of commissioning of Ash Handling Package involving **Bottom Ash Handling system** comprising jet pumping system in conjunction with water impounded Bottom Ash Hopper system and **Fly ash vacuum conveying system** for conveying fly ash from ESPs to Intermediate surge hopper and **Fly Ash Transportation System** for transporting fly ash from Intermediate surge hopper to fly ash silo and in at least two nos. thermal power units of capacity 500 MW or above and working satisfactorily for a minimum period of two years within last 7 years as on date as on 31.07.18.
OR
 - b) The Bidder should have designed, engineered, Manufactured, supplied, erection/supervision of erection and commissioning/supervision of commissioning of Ash Handling Package involving **Bottom Ash Handling system** comprising jet pumping system in conjunction with water impounded Bottom Ash Hopper system and **Fly ash vacuum conveying system** for conveying fly ash from ESPs to Intermediate surge hopper and **Fly Ash Transportation System** for transporting fly ash from Intermediate surge hopper to fly ash silo and in at least five nos. thermal power units of capacity 250 MW or above and working satisfactorily for a minimum period of two years within last 7 years as on date as on 31.07.18.
AND
collaborates/associates with parties /agencies who meet the requirement mentioned at Clause 1(b). However, the bidder should have a technology sharing arrangement for the following subsystems mentioned at Clause 2(c), (d) & (e) with either its Holding or subsidiary company/ JV company/ Collaborator.
 - c) Design, Engineering, Manufacturing of **Bottom Ash handling system** comprising jet pumping system of minimum 90 TPH (on dry ash basis) capacity in conjunction with water impounded Bottom Ash Hopper system.
 - d) Design, Engineering, Manufacturing of **Fly ash vacuum conveying system** for conveying fly ash from ESPs to Intermediate surge hopper having each stream capacity of minimum 56 TPH conveying capacity.

BHEL ISG, Bengaluru
Pre-Qualification Requirements for Ash Handling Systems Package
Enq Ref: 77/18/6287/SK

- e) Design, Engineering, Manufacturing of **Fly Ash Transportation System** for transporting fly ash from Intermediate surge hopper to fly ash silo having each stream capacity of minimum **112 TPH** for a transportation distance of not less than 500 meter.

In such a case, the Bidder shall be required to furnish a Deed of Joint Undertaking (DJU) jointly executed by the Bidder and the Collaborator(s)/ Associate(s) and each executant of DJU shall be jointly and severally liable to the Employer for successful performance of the relevant system, as per the format enclosed with the bidding documents. Bidder shall declare the name of the Collaborator(s)/ Associate(s) in their bid for relevant system(s) for which Bidder is collaborating. DJU should be submitted at the time of placement of order on approved sub-vendor. In such a case, each Collaborator/ Associate shall be required to furnish an on demand bank guarantee as follows:

(i) INR 1 Million (Indian Rupees One Million Only) for Collaborator/ Associate for Bottom Ash Handling System
(ii) INR 1 Million (Indian Rupees One Million only) for Collaborator/ Associate for Vacuum Conveying System
(iii) INR 2 Million (Indian Rupees Two Million only) for Collaborator/ Associate for Pressure Conveying System
In case bidder collaborates/associates for more than one system with a party, then the Collaborator/ Associate shall be required to furnish an on demand bank guarantee for an amount arrived at by adding up the amounts for the relevant systems as above.

3. Bidder shall submit the following documents along with bid for meeting pre-qualification requirement. Bid shall be liable for rejection in case it is found that requisite experience documents as specified in NIT is not submitted in the bid. Bidder shall adhere to the following: -

- a. Reference list of experience for the system described above.
- b. Manufacturing facilities, equipment, manpower details duly signed by bidder shall be furnished.
- c. Bidder shall provide documentary evidence in support of his claim for having experience in design, manufacture, testing and supply, E&C, performance of AHP meeting the requirements mentioned in sl. Nos. 1 (a), (b) and sl. Nos. 2 (a) or (b) & (c), (d), (e) for Ash Handling Plants.
 - i. Letter of Award (Purchase order copies).
 - ii. End customer's address and contact details (ph.no, emails) to be furnished.
 - iii. Performance Certificate from end Customer.
 - iv. Approved flow schemes, P&ID, Design memorandum/Design basis reports, Sizing Calculations of Compressors/BA HP water pumps for jet pumps.

c. FORMAT to be filled by Bidder:

Sl. No.	Name of the Project	Brief Scope of the work	Order Ref. No & Date	Date of Completion As per P.O.	Remarks

4. Pre-Qualification Requirement: (Financial)

1. Average annual financial turnover during the last 3 years, ending 31st March 2018, should not be less than Rs. 20 crores (Rupees Twenty Crores Only). Net worth of the successful bidder for Ash Handling Plant works if any, as on the last day of the preceding financial year as on date of placement of Order from the bidder should be positive. If audited balance sheets are not available than a certificate from statutory auditor to this effect shall be furnished by the bidder.
2. Bidders should submit financial accounts (audited, if applicable comprising of Audit report, Balance Sheet, Profit & Loss A/c Statement for FY 2017-18, 2016-17 & 2015-16.
3. Other Income shall not be considered for arriving at Annual Turnover/Sales
4. Financial pre-qualification of the foreign bidder (other than Indian bidders) may also be evaluated on the basis of the report from a reputed third party business rating agency like Dun & Bradstreet, Credit reform

BHEL ISG, Bengaluru
Pre-Qualification Requirements for Ash Handling Systems Package
Enq Ref: 77/18/6287/SK

etc. The foreign bidder is to submit the report from reputed third party. All Foreign language documents shall be translated to English language either by a certified agency or translated verification by an authorized agency. Translated documents shall be vetted and sealed by Indian embassy in that country or their embassy in India. Credit rating certificate also shall be furnished for financial credibility of the organization.

5. For PQ evaluation of foreign bidder, exchange rate (TT selling rate of SBI) as on scheduled date of the tender opening (Part-1 bid in case of two part bid) shall be considered.

5. Important Notes:

1. The word “executed” means bidder should have achieved the criteria specified in the above QR even if the total contract is not completed/closed.
2. BHEL will provide format for Bank guarantee to the successful bidder.
3. Bidder has to submit all credentials/ details, required by the customer for seeking approval of customer. In case customer does not approve the credentials of the bidder, the bidder’s offer will be rejected. Bidder shall submit requisite documentary evidence such as attested copy of award of letter/contract and also completion certificate/performance certificates issued by end user to comply with the above criteria, properly in indexed manner along with the offer. These documents are to be necessarily submitted along with the bid for evaluation.
4. Bid document are to be only in English language. The bid supporting documents other than English language are to be supported with translated documents in English certified/attested by embassy of respective country or Indian embassy as applicable. Bilingual certificates if any shall also be vetted by embassy.
5. **Bidder shall submit the point wise confirmation to the PQR clauses, properly indexed along with the offer.**
6. For foreign bidder(s), there shall be an authorized representative in India on behalf of the System supplier for single point communication with BHEL for submission of bid/attending bid queries/ bid clarifications, follow up, submission of engineering information in time, dispatches for smooth execution of contract.
7. BHEL reserves the right to request for any additional information and also reserves the right to reject the proposal of any bidder, if in the opinion of BHEL, qualification data is incomplete or the bidder is found not qualified to satisfactorily perform the works.
8. BHEL reserves the right to assess the capabilities and capacity of the Bidder to perform the contract, should the circumstances warrant such assessment in the overall interest of the Employer. Canvassing i.e. soliciting favor, seeking advantage etc. in any form is strictly prohibited and any bidder found to have engaged in canvassing shall be liable to have his bid rejected summarily.
9. BHEL reserves the right for the following:
 - i. Accept or reject any bid received at its discretion without assigning any reasons whatsoever.
 - ii. Postpone the scheduled date without assigning any reason whatsoever.
 - iii. May ask for further clarification with respect to pre-qualification requirement during techno commercial scrutiny of bids received and bidder will comply.
 - iv. Evaluation of bidder at their works.
10. After technical evaluation of the bidder’s offer. Name of the bidders shall be proposed for getting the approval from Customer/ Customer’s consultant. The bidder who is not approved by customer/ customer’s consultant will not be considered and their sealed bid (price) shall not be opened.

	INDUSTRIAL SYSTEMS GROUP	SPECIAL CONDITIONS OF CONTRACT (SCC) Revision No. 00	WBPDC/ 1X660 MW Sagardighi TPP, Unit-5 Project. Enq Ref: 77/18/6287/SK
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These Conditions shall be read in conjunction with General Condition of Contract (GCC Rev.01) enclosed along with the tender enquiry. **In case of any conflict or inconsistency, the requirement of SCC shall prevail over the GCC rev.01.**

1.	Item/ work description	Design, Engineering, Manufacturing, Supply, E&C & PG Test etc of Ash Handling System as per Technical Specifications and Terms & Conditions.
2.	Project name	WBPDC/ 1X660 MW Sagardighi TPP, Unit-5 Project.
3.	Site location	Location: Sagardighi, Murshidabad District, West Bengal, India.
4.	Consignee details/ Ship to	To be intimated later.
5.	Buyer/ Bill to for supply of goods	BHEL-Industrial Systems Group Post Box No.:1249, Prof. CNR Rao Circle, IISc Post, Malleswaram, BANGALORE – 560012 GSTIN No. of BHEL / Karnataka state: 29AAACB4146P1ZB
6.	Buyer/ Bill to for supply of services	Shall be provided at the time of Purchase Order/ Dispatch Clearance.
7.	Mode of dispatch	Equipment to be despatched by road/ rail/ air/ Sea on freight prepaid and on door delivery basis. Consignee copy of LR to be sent with consignment.
8.	Insurance	To be intimated later.
9.	Provision Of Facilities At Site	a) Electricity: - Electricity for construction purpose LT power (415 V (3 phase) level) will be provided by BHEL at one single point on chargeable basis as per prevailing rate of the state. Further distribution of electricity shall be arranged by the contractor at his cost. Any duty, deposit involved in getting the Electricity shall be borne by the bidder. As regards contractor's office shed also all such expenditure shall be borne by the contractor. Provision of distribution of electrical power from the given single central common point to the required places with proper distribution boards, approved cables and cable laying including supply of all materials like cables, switch boards, pipes etc., observing the safety rules laid down by electrical authority of the State / BHEL / their customer with appropriate statutory requirements shall be the responsibility of the Bidder / contractor. BHEL is not responsible for any loss or damage to the contractor's equipment as a result of variations in voltage / frequency or interruptions in power supply. As there are bound to be interruptions in regular power supply, power cut / load shedding in any construction sites, suitable extension of time, if found necessary only be given and contractor is not entitled for any compensation. Contractor shall make his own arrangement for alternative source of power supply through

 	INDUSTRIAL SYSTEMS GROUP	SPECIAL CONDITIONS OF CONTRACT (SCC) Revision No. 00	WBDCL/ 1X660 MW Sagardighi TPP, Unit-5 Project. Enq Ref: 77/18/6287/SK
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		deployment of adequate number of DG sets with consumables at their cost during the power breakdown / failure to get urgent and important work to go on without interruptions. No separate payment shall be made for this contingency. Necessary "Capacitor Banks" to improve the Power factor to a minimum of 0.8 shall be provided by the contractor at his cost. Penalty if any levied by customer on this account will be recovered from contractor's bills. Vendor share of electricity charges based on actual consumption determined and decided by M/s-BHEL. b) Water: - Water for construction purposes shall be provided free at a single point. The Contractor shall make his own arrangement for water for erection & drinking purposes.
10.	Guarantee period	To be intimated later.
11.	Defect liability period	For a period Eighteen (18) months from the date of completion of the facilities or twelve (12) months from the date of operation acceptance (or any part thereof), whichever occurs first and any suitable extension of time for completion of rectified job granted by employer.
12.	Performance bank guarantee	PBG, in line with clause no 11 of general commercial terms & conditions of GCC, rev-01, is to be submitted within 10 days from the date of Letter of Intent (LOI). Vendor shall submit Contract Performance Bank Guarantee for 10% of Order/ Contract value for the total package (excluding GST). Clause no- 11.4 of general commercial terms and conditions of GCC, REV 01 shall be read as: Validity of the Bank Guarantee shall be for the entire Guarantee period + 3 months claim period. Initially, it should be at least 36 months (from the date of LOI) + 03 months claim period, later extended to cover the guarantee period, two months before its expiry. The BG has to be furnished in hard copy of stamp paper with appropriate value. Our bank details for information are: Name of Bank- ICICI BANK LIMITED Branch Address- ICICI BANK TOWER, # 1, COMMISSARIAT ROAD, BANGALORE – 560025 Branch IFSC Code- ICIC0000002 Account No.- 000205003783 Nature of account- COLL A/C The Bank Guarantee shall be sent to the tender inviting officer under registered post (A/D). Note: In Case of Bank Guarantees submitted by Foreign Vendors- a. From Nationalized/ Public Sector/ Private Sector/ Foreign Banks (BG issued by Branches in India) can be accepted subject to the condition that the Bank Guarantee should be enforceable in Bangalore i.e. Demand can be presented at the Branch located in Bangalore.

	INDUSTRIAL SYSTEMS GROUP	SPECIAL CONDITIONS OF CONTRACT (SCC) Revision No. 00	WBPDC/ 1X660 MW Sagardighi TPP, Unit-5 Project. Enq Ref: 77/18/6287/SK
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		b. From Foreign Banks (wherein Foreign Vendors intend to provide BG from local branch of the Vendor country's Bank) b.1 In such cases, the Bank Guarantee issued by any of the Consortium Banks only will be accepted by BHEL. As such, Foreign Vendor needs to make necessary arrangements for issuance of Counter- Guarantee by Foreign Bank in favour of the Indian Bank (BHEL's Consortium Bank). All charges for issuance of Bank Guarantee/ counter- Guarantee should be borne by the Vendor. b.2 In case, Foreign Vendors intend to provide BG from Overseas Branch of our Consortium Bank (e.g. if a BG is to be issued by SBI Frankfurt), the same is acceptable. However, the procedure at sl. no. b.1 will required to be followed. b.3 The BG issued may preferably be subject to Uniform Rules for Demand Guarantees (URDG) 758 (as amended from time to time). b.4 The BG should clearly specify that the demand or other document can be presented in electronic form.
13.	Delivery schedule	36 Months from the date of LOI. Note: Vendor shall submit the detailed L2 schedule for completion of entire scope of work, in line with the L1 schedule enclosed. The detailed L2 schedule shall cover details like basic engineering, detailed engineering, manufacturing, inspection & supply, erection, testing & commissioning etc. and shall be submitted by vendor within one month from the date of Letter of Intent (LOI). The L2 schedule shall be reviewed by BHEL and shall be mutually agreed. Vendor to strictly adhere to the mutually agreed L2 schedule. In case of non-compliance to the agreed schedules/ milestones, then it would be presumed that vendor/ contractor is not fulfilling contractual obligations. In such cases, BHEL reserves the right to take suitable actions like operating "Risk & Cost" clause.
14.	Extension of time for completion	a) If the completion of work as detailed in the scope of work gets delayed beyond the contract/ completion period, the successful bidder shall request for extension of the contract, along with reasons for delay & plan/ schedule for balance supplies/works, and BHEL at its discretion may extend the contract. b) Based on the reviews, the scope balance at the end of original contract period less the backlog attributable to the successful bidder shall be quantified, and the number of months of 'Time extension' required for completion of the same shall be jointly worked out. Within this period of 'Time extension', the successful bidder is bound to complete the portion of backlog attributable to the successful bidder. Any further 'Time extension' or 'Time extensions' at the end of the previous extension shall be worked out similarly. c) However, if any 'Time extension' is granted to the successful bidder to facilitate continuation of work and completion of contract, due to backlog attributable to the successful bidder alone, then it shall be without prejudice to the rights of BHEL to impose penalty/ LD for the delays attributable to The successful bidder, in addition to any other actions BHEL may wish to take at the risk and cost of Successful bidder. d) A joint program shall be drawn for the balance amount of work to be completed during the period of 'Time Extension'. Review of the program and record of shortfall shall be done. e) At the end of total work completion as certified by BHEL engineer, and upon analysis of

	INDUSTRIAL SYSTEMS GROUP	SPECIAL CONDITIONS OF CONTRACT (SCC) Revision No. 00	WBPDC/ 1X660 MW Sagardighi TPP, Unit-5 Project. Enq Ref: 77/18/6287/SK
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		the total delay, the portion of time extensions attributable to (i) Successful bidder, (ii) Force majeure conditions, and (iii) BHEL, shall be worked out and shall be considered to be exhausted in the same order. The total period of time extensions shall be the sum of (i), (ii) and (iii) above and shall be equal to period between the scheduled date of completion and the actual date of completion of contract. LD shall be imposed/ levied for the portion of time extensions attributable to successful bidder and recoverable from the dues payable to the successful bidder.
15.	Inspection agency	Inspection shall be carried out by end customer/ end customer's consultant/ BHEL/ Third Party Inspection Agency. Details as per Technical Specifications.
16.	Inspection	As per clause 14.0 of General Commercial Terms & Conditions of GCC (Rev.01). In Addition to the above clause "The cost towards inspection of indigenous/ offshore equipments by WBPDC/ WBPDC nominated agency will be to bidders account, which includes to & fro Airfare/Railway/Road fare charges, travel insurance, Boarding and Lodging, Local transportation and other related expenses. The cost shall be included in the price"
17.	Price basis	Price Basis for Supply of goods: a) For indigenous Suppliers: Firm till completion of contract, Ex-works inclusive of packing & forwarding charges, freight charges, all taxes & duties except Goods & Service Tax (GST). b) For Foreign Suppliers: Firm till the completion of project. CFR Indian port basis, inclusive of sea worthy packing & forwarding charges, applicable Basic Customs Duty, Education cess, anti-dumping duty, safeguard duty after availing all the benefits etc. Bidder to indicate transportation up to Project site from Indian port, port clearance charges (at Indian Port of Import) and any other taxes & duties, loading and unloading charges at various location in INDIA (which is inclusive of all other activities performed in India) except Goods & Service Tax (GST) of India in the price bid separately. Price basis for ordering for supply: Ex-works for Indian Bidder. CFR Indian port for Foreign bidder. Price basis for ordering for E&C and other Services (if any) (for both Indigenous & Foreign Bidder): Basic cost of service for both. Type of Contract: Lump sum and Unit Rate/ Turnkey Package Freight and other Charges (for activities performed in India): - For Indian Bidders: Freight and charges shall be included in the basic price of equipments. For Foreign Bidders: Bidder to indicate transportation up to Project site from Indian port, port clearance charges

 	INDUSTRIAL SYSTEMS GROUP	SPECIAL CONDITIONS OF CONTRACT (SCC) Revision No. 00	WBDCL/ 1X660 MW Sagardighi TPP, Unit-5 Project. Enq Ref: 77/18/6287/SK
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		(at Indian Port of Import) and any other taxes & duties, loading and unloading charges at various location in INDIA (which is inclusive of all other activities performed in India) except Goods & Service Tax (GST) of India in the price bid separately. GST (as applicable) charges shall be payable extra at actual as per prevailing rate at the time of dispatch. GST for imports at customs shall be paid by the bidder; same will be reimbursed at actual rates. Clause 8.1 of General Commercial Terms & Condition of GCC (Rev.01) is not applicable to this tender/ contract. Foreign bidder shall have an Indian counter-part with GST registration and IEC who shall be the importer of the equipment. The counter-part shall ensure the statutory payments, port clearance, payment of GST on imports, arrangement of inland freight etc. on timely manner as per the statutory requirements, to facilitate smooth supply of equipments to the project site. Even if the price basis for ordering is Ex-Works/ CFR Indian Port, the scope of the vendor/ contractor shall include delivery of goods/ services at the destination (project site). Note: 1. Total erection & commissioning charges excluding GST should be minimum 15% of the total quoted package price (excluding GST), break-up of prices shall be adjusted accordingly while ordering in case of any deviation. 2. No deviation is allowed for this tender for commercial terms and conditions. Anex-2 "cost of withdrawal" is not applicable for this tender for commercial terms and conditions portion.
18.	Custom Clearance	Custom clearance for all the items imported for the project shall be in bidder's scope. Also all type of duties, levies, fees, charges (if any) imposed by relevant agencies for Custom/ any other clearance shall be to bidder's account. Both for indigenous and foreign bidders: It's the responsibility of the bidder to supply the material up to site which includes all other internal activities like loading -unloading at various location/custom clearance/port clearances, obtaining all other clearance form competent authority etc. (As applicable).
19.	Ordering Methodology	The order for the total scope shall be placed as below: a) Purchase Order shall be issued for supply of goods including spares b) Work Order shall be issued for supply of services like E&C, PG Test, Handing Over etc.

	INDUSTRIAL SYSTEMS GROUP	SPECIAL CONDITIONS OF CONTRACT (SCC) Revision No. 00	WBPDC/ 1X660 MW Sagardighi TPP, Unit-5 Project. Enq Ref: 77/18/6287/SK
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20.	Payment Terms	As per cl. no. 9.0 of General Commercial Terms & Conditions of GCC (Rev.01). The Terms of payment shall be as under: A. For Supply of Goods (Main Supply): i. Total Five Percent (5%) of the basic price for supply of plant & equipment against submission of basic/ detail engineering drawings (2D and 3D)/ documents progressively on pro rata basis against submission of equivalent amount of Bank Guarantee as per BHEL format. The pro rata payment shall be as per the list of drawings in Technical Specification. Internal break-up of 5% is as mentioned below: 2.5% against submission. 2.5% against approval from end customer. (If approval is not applicable, same shall be certified by BHEL/Engg). Note: The Bank Guarantee's for advance mentioned above can be submitted in three lots i.e 1st Lot- 40% of 5% of basic contract value for supply Excluding GST, 2nd Lot- 40% of 5% of basic contract value for supply Excluding GST and 3rd Lot- 20% of 5% of basic contract value for supply Excluding GST, value wise. (Hence total of value of Bank Guarantee's for advance shall be 5% of basic contract value for supply excluding GST). The 1st Lot BG (for 40%) shall be submitted within two weeks from the date of LOI or along with the 1st bill against the above payment term, whichever occurs first. The 2nd BG (40%) to be submitted while claiming 2nd Lot- 40% payment or after receipt of minimum 40% payment against the above payment term whichever occurs first. And the 3rd BG (20%) to be submitted upon claiming 3rd Lot- 20% payment or after receipt of minimum 80% payment against the above payment term whichever occurs first. The initial validity of each of these ABGs shall be at least 12 months from the date of issue plus additional three months claim period and further extended till Supply Completion and complete recovery/adjustment of equivalent advance plus additional three months claim period for drawings covered under the BG. Each time new BG has to be issued.
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	INDUSTRIAL SYSTEMS GROUP	SPECIAL CONDITIONS OF CONTRACT (SCC) Revision No. 00	WBDCL/ 1X660 MW Sagardighi TPP, Unit-5 Project. Enq Ref: 77/18/6287/SK
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		The BGs submitted for 5% of payment (value wise 5% of basic contract value for supply Excluding GST) as mentioned above shall be released upon Supply Completion and complete recovery/adjustment of equivalent advance. The seller/ contractor can also choose to submit a single BG for the entire 5% value (5% of basic contract value for supply Excluding GST) as mentioned above. In such a case, the initial validity of the BG shall be at least 12 months from the date of issue plus additional three months claim period and further extended till Supply Completion and complete recovery/adjustment of equivalent advance plus additional three months claim period for drawings covered under the BG. The amount of this BG can be reduced in three lots, i.e. 40%, 40% and 20% chronologically (by value) upon final drawing/document approval from end customer and Supply Completion and recovery/adjustment of equivalent advance. (If approval is not applicable, same shall be certified by BHEL/Engg) of equivalent billing value as per the approved BBU. Bank Guarantee's for Advance (BG-A) are to be Submitted for Payment purpose only. Contract Performance Bank Guarantee (CPBG) to be submitted separately for clause 11.0 of SCC. ii. Seventy percent (70%) of basic price of materials supplied, as per approved billing schedule, along with 100% taxes and duties (as applicable) 100% loading and unloading charges and 100% freight charges (as applicable), shall be payable against clean receipted LR/ proof of receipt at site on pro-rata basis. iii. Five percent (5%) of basic price of materials supplied will be released progressively on pro-rata basis after receipt of Material Receipt Certificate (MRC) from BHEL project site engineer/RM. iv. Ten percent (10%) of basic price of materials supplied will be released progressively on pro-rata basis after receipt of Material Receipt Certificate (MRC) from Customer, Certified by BHEL Engineer. v. Five (05%) of total basic price of materials will be released against Trial Operation (full load) subject to completion of all supplies (Main Supply) as per the approved Billing Schedule. (If full trial run operation is not within 5 months from the date of no load trial run, then full amount will be released against equivalent bank guarantee with certification from BHEL-RM for such event). vi. Five percent (5%) of the total basic price of materials (main supply) shall be released after submission of all final documents as per Technical Specifications and successful
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 	INDUSTRIAL SYSTEMS GROUP	SPECIAL CONDITIONS OF CONTRACT (SCC) Revision No. 00	WBPDC/ 1X660 MW Sagardighi TPP, Unit-5 Project. Enq Ref: 77/18/6287/SK
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		completion of the Performance Guarantee (PG)/Demonstration Test at site/ handing over of the complete awarded Package (i.e. completion of entire scope of work- Supply + E&C). Certification of Performance Guarantee (PG)/ Demonstration Test at site/ handing over of all machines (i.e. completion of entire scope of work) Shall be by BHEL SITE-RM. Collection of Material Receipt Certificate from Site/ Owner and its submission for claiming the payment shall be the responsibility of the Seller/ Contractor. If the PG test is not conducted within 12 months from the date of no load trial operation of respective machines and completion of all supplies for the entire scope, the last 5% payment will be released against Bank Guarantee of an equivalent amount, valid initially for 12 months and extendable till completion of Performance Guarantee (PG)/ Demonstration Test at site/ handing over of all machines (i.e. completion of entire scope of work- Supply + E&C). No interest, whatsoever, shall be payable by the purchase on the any Bank Guarantee/ security submitted or any amount due to the seller/ contractor. B. For Supply of Goods (Mandatory Spares & Commissioning Spares): - Seventy percent (70%) of basic price of materials supplied, as per approved billing schedule, along with 100% taxes and duties (as applicable) and 100% freight charges (as applicable), shall be payable against clean receipted LR on pro-rata basis. - Five percent (5%) of basic price of materials supplied will be released progressively on pro-rata basis after receipt of Material Receipt Certificate (MRC) from BHEL project site engineer/RM. - Twenty Five percent (25%) of basic price of materials supplied will be released on pro-rata basis after receipt of Material Receipt Certificate (MRC) from project site engineer of Owner/ Purchaser. C. For supply of Services (E&C, Trial Run, PG Test, Handing over etc.) - Ninety percent (90%) payment on pro-rata basis for the work completed, as per approved billing schedule, shall be payable progressively upon completion of Erection and commissioning work against submission of MB(Measurement Book), RAB (Running Account Book) and other related documents duly certified by BHEL Engineer/RM.
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 	INDUSTRIAL SYSTEMS GROUP	SPECIAL CONDITIONS OF CONTRACT (SCC) Revision No. 00	WBDCL/ 1X660 MW Sagardighi TPP, Unit-5 Project. Enq Ref: 77/18/6287/SK
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		ii. Five percent (5%) of the total value shall be payable on successful trial operation of the complete system/package for the entire scope of work. iii. Five percent (5%) of the total value shall be released by BHEL-ISG, HQ on successful completion of PG/ Demonstration test(s) and handing over of system/ package to the Owner, as applicable. D. O & M: i. 100% on certification by BHEL/Site Engineer. Clause no. 9.1, 9.2, 9.3, 9.4, 9.5, note 5 & 7 of clause no. 9.6, 9.12 of General Commercial Terms & Conditions of GCC (Rev.01) are not applicable for this tender/ contract. Payment through LC is applicable only for foreign bidders and for the foreign (currency) portion only. Charges of LC opening, operation, maintenance, amendments (if any) shall be to the bidder's account. Purchaser shall arrange LC on usance 60 days which is equivalent to normal credit period for all bidders in line with the GCC (Rev.01). LC documents required for payment purpose shall be agreed mutually after placement of P.O. TDS shall be as per Indian IT act, GST act and as per statutory requirement. For Foreign bidders, the payment shall be limited to the INR value arrived at from the price quoted in foreign currency, based on the exchange rate (TT selling rate of State Bank of India) as on scheduled date of tender opening (Part-I bid in case of two part bid). For Foreign bidders, the payment for E&C services and inland freight, loading unloading shall be in INR. In case foreign bidders opts to source form India for any item (full or part of the quantity), payment for the same shall be in INR only. No interest, whatsoever, shall be payable by the purchase on the any Bank Guarantee/ security submitted or any amount due to the seller/ contractor.
21.	Mobilization advance/ interest bearing recoverable advance	Not applicable for this tender/ contract.

 	INDUSTRIAL SYSTEMS GROUP	SPECIAL CONDITIONS OF CONTRACT (SCC) Revision No. 00	WBDCL/ 1X660 MW Sagardighi TPP, Unit-5 Project. Enq Ref: 77/18/6287/SK
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22.	Price Variation Clause (PVC)/ Over run compensation/ rate revision	PVC is not applicable for this Tender. Over run compensation is not applicable for this Tender.
23.	Quantity Variation	Not Applicable. Clause 6.0 of General Commercial Terms & Conditions of GCC (Rev.01) is not applicable to this tender/ contract. Only the item “operation and Maintenance” as mentioned in the price format can be varied at quoted rate in case of extra requirement limited to 01% of Total contract value without taxes and duties.
24.	Liquidated Damages For Delay In Completion (Revised)	As per clause 16.0 of General Commercial Terms & Conditions of GCC (Rev.01). Type of contract for LD Purpose: Turnkey Package Date of Completion Certificate issued by End Customer/ Customer’s Consultant (as applicable) shall be considered as delivery date for LD purpose (on account of delay in delivery/ completion). Para 2 of Cl. No. 16.2.1 of General Commercial Terms & Conditions of GCC (Rev.01)- “For Turnkey packages will not be withheld from supply payment.” Shall be read as: “For Turnkey packages (Supply and E&C in vendor’s scope), Liquidated Damages shall be levied on the total contract value of both Supply and E&C orders (excluding GST) if completion of the entire package is delayed beyond the contractual completion date or extension thereof (provided delay in completion is not attributable to the vendor/ contractor).” Note Sl. No. 1, 3 of clause no. 16.2.1 of General Commercial Terms & Conditions of GCC (Rev.01) is not applicable for this tender/ contract. The maximum limiting value of LD (for this purpose only) shall be 15 % of total order/ contract value plus applicable GST.
25.	Liquidated Damages For Auxiliary Power Consumption And Guaranteed Performance Parameters	a) Should the results of the performance Guarantee tests as stipulated in the specifications show that the equipment have failed to meet the guaranteed capacity performance requirements, the vendor/ contractor shall carry out the modification if necessary within 90 days of such tests. If the equipment fails to meet the guaranteed parameters at the end of above specified period of 90 days purchaser may at his discretion reject the equipment or accept after assessing the liquidated damages to be payable by the vendor/ contractor. In case the vendor/ contractor does not fulfil the guaranteed parameters, Purchaser may undertake to rectify the system/ equipment and expenditure incurred along with any other incidentals shall be recovered from the vendor/ contractor. For auxiliary power consumption the guaranteed values shall be as per Technical Specification.

		b) In case of un-remedied shortfall in overall auxiliary power consumption as mentioned by the vendor in Annexure V to SCC the vendor shall be liable to pay BHEL by way of LD for performance shortfall for each path of Annexure V to SCC as stipulated below: LD: Rs 4,62,000/- for every 1 KW increase in auxiliary power consumption path wise. For Foreign Bidders equivalent of INR as stated above shall be recovered at TTSR as applicable on date of payment from which recoveries are made There is no limit on Maximum LD on account of Guaranteed performance parameters. Beyond 01 % shortfall in guaranteed parameters the vendor has to carry out all the rectification work of the equipments to achieve the desired auxiliary power parameters at his own cost and within time. In case vendor fails to rectify the equipments, purchaser shall carry out all the rectification work at the risk and cost of the vendor.												
26.	Integrity Pact	Annexure-IX of GCC (Rev.01) is not applicable. Please refer Annexure V to this SCC for IP Latest Format. Integrity pact should be as per enclosed Format. (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. <table><tr><th>Sl</th><th>IEM</th><th>Address</th><th>Phone & Email</th></tr><tr><td>1</td><td>Shri D.R.S Chaudhary, IAS (Retd.)</td><td>E-1/164, Arera Colony Bhopal 462016 (M.P.)</td><td>dilip.chaudhary@icloud.com</td></tr><tr><td>2</td><td>Mrs. Pravin Tripathi, IA & AS (Retd)</td><td>D -243, Anupam Gardens, Lane IB, Neb Sarai, Sainik Farms, New Delhi – 110068</td><td>Pravin.tripathi@gmail.com</td></tr></table> (b) The IP as enclosed with the tender is to be submitted (duly signed by authorized signatory) along with the 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	Sl	IEM	Address	Phone & Email	1	Shri D.R.S Chaudhary, IAS (Retd.)	E-1/164, Arera Colony Bhopal 462016 (M.P.)	dilip.chaudhary@icloud.com	2	Mrs. Pravin Tripathi, IA & AS (Retd)	D -243, Anupam Gardens, Lane IB, Neb Sarai, Sainik Farms, New Delhi – 110068	Pravin.tripathi@gmail.com
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 	INDUSTRIAL SYSTEMS GROUP	SPECIAL CONDITIONS OF CONTRACT (SCC) Revision No. 00	WBDCL/ 1X660 MW Sagardighi TPP, Unit-5 Project. Enq Ref: 77/18/6287/SK
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		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 below: <table><tr><td>(1)</td><td>(2)</td></tr><tr><td>Name: Sushil Kumar</td><td>Name: K Balsamy</td></tr><tr><td>Deptt: MM</td><td>Dept: MM</td></tr><tr><td>Address: BHEL ISG, Prof CNR Rao Circle IISC Post, Malleswaram Bangalore -560012</td><td>Address: BHEL ISG, Prof CNR Rao Circle IISC Post, Malleswaram Bangalore -560012</td></tr><tr><td>Phone: 080-22184567</td><td>Phone: 080-22184089</td></tr><tr><td>Mob: 9410395992</td><td>Mob: 9449831542</td></tr><tr><td>Email: kumarsushil@bhel.in</td><td>Email: kbs@bhel.in</td></tr></table>	(1)	(2)	Name: Sushil Kumar	Name: K Balsamy	Deptt: MM	Dept: MM	Address: BHEL ISG, Prof CNR Rao Circle IISC Post, Malleswaram Bangalore -560012	Address: BHEL ISG, Prof CNR Rao Circle IISC Post, Malleswaram Bangalore -560012	Phone: 080-22184567	Phone: 080-22184089	Mob: 9410395992	Mob: 9449831542	Email: kumarsushil@bhel.in	Email: kbs@bhel.in
(1)	(2)															
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Phone: 080-22184567	Phone: 080-22184089															
Mob: 9410395992	Mob: 9449831542															
Email: kumarsushil@bhel.in	Email: kbs@bhel.in															
27.	Documents to be submitted by vendor for Indigenous bidders/ supplies	As per clause 9.7 of General Commercial Terms & Conditions of GCC (Rev.01). A) For Supply of goods (Main Supply)- 1st 5% (with internal break-up of 2.5%+2.5%)payment: i) GST Invoice/ advance receipt voucher- for Indigenous bidder- in Original ii) Invoice- for foreign bidder- In Original iii) Certification from Engineering Dept. of BHEL-ISG regarding approval/submission of drawings. iv) Bank Guarantee as per Terms of Payment. B) For Supply of goods (Main Supply)- 2nd 70% payment and Mandatory spares- 1st 70% payment: i) Original GST Invoice- Original for Buyer- for Indigenous bidder														

	INDUSTRIAL SYSTEMS GROUP	SPECIAL CONDITIONS OF CONTRACT (SCC) Revision No. 00	WBDCL/ 1X660 MW Sagardighi TPP, Unit-5 Project. Enq Ref: 77/18/6287/SK
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		ii) Original Bill of Lading and original Invoice - for Foreign Bidder or SL. No.(i) is applicable in case of supply sourced from INDIA iii) Copy of clean receipted LR/ Courier Receipt LR/ GR/ RR etc. (as applicable) iv) Copy of Packing List/ Delivery Challan- clearly showing number of packages, gross weight and net weight etc. v) Copy of E-Way Bill (if applicable) vi) Copy of MDCC/ Dispatch Clearance issued by BHEL vii) Copy of Material Test Certificates (MTCs)/ Inspection Certificate (IC)/ Inspection Waiver Certificate (IWC)/ Joint Inspection Report (JIR) etc., as applicable. viii) Duty drawback documents (if applicable). C) For Supply of goods (Main Supply-3rd -5% PAYMENT & Mandatory Spares-2nd- 5% payment i) Supplementary/ Commercial Invoice ii) Material Receipt Certificate (copy) By BHEL. D) For Supply of goods (Main Supply)-4th for 10% payment & Mandatory Spares-3rd- 25% payment i) Supplementary/ Commercial Invoice ii) MRC (Material Receipt certificate) issued by WBDCL Certified by BHEL Engineer. E) For Supply of goods (Main Supply)-5th for 5% payment i) Supplementary/ Commercial Invoice ii) Certification for Trial Operation (full load) by BHEL SITE-RM. iii) Certification for Trial Operation (no load) by BHEL SITE-RM. iv) Bank guarantee (if applicable) F) For Supply of goods (Main Supply-6th) payment-for 5% payment (i)Supplementary/ Commercial Invoice (ii)Certification of Performance Guarantee (PG)/ Demonstration Test at site/ handing
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 	INDUSTRIAL SYSTEMS GROUP	SPECIAL CONDITIONS OF CONTRACT (SCC) Revision No. 00	WBDCL/ 1X660 MW Sagardighi TPP, Unit-5 Project. Enq Ref: 77/18/6287/SK
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		over of all machines (i.e. completion of entire scope of work) BHEL SITE-RM. (iii) Bank guarantee (if applicable). For claiming payments for E&C services, along with Original GST invoice, Running Account Bill (RAB) & Measurement Book (MB), in BHEL format, following additional documents need to be submitted: a) Proof of wages paid. b) Monthly EPF remittance challan (if applicable). c) Monthly ESI remittance challan/ W.C. Insurance Policy whichever is applicable. d) Valid Labour License (if applicable). e) Any other document as required by BHEL Engineer In-charge. Additional two sets of photocopy of all the documents (of respective bills) shall be submitted along with each bill. The above list is indicative only and BHEL reserves the right to ask for any other document required for processing of bills, the vendor/ contractor shall comply with the same. Clause 9.7.5 (b) of General Commercial Terms & Conditions of GCC (Rev.01) shall be read as "Copy of registration/ provisional registration certificate for GST". Clause 9.7.5 (c) of General Commercial Terms & Conditions of GCC (Rev.01) is not applicable. Documents for GST payment shall be as per Annexure-IV.
28.	Dispatch markings	Each package/ Drum delivered under the Contract shall be marked by Supplier as per details listed below and such marking must be distinct and in English language. 1) Name and address of the consignee (to be intimated at the time of dispatch clearance) 2) Dispatched by: (Vendor name) : A/c BHEL ISG, Bangalore 3) LR No 4) Package No./ Total Package No eg: 1 of N, 2 of N; where N=Total no of packages in a particular consignment. 5) Type of Supply: "Main equipment supply"/ "Mandatory Spares"/ "Commissioning Spares" as the case may be. Besides above necessary, packing shall bear a special marking "TOP", "BOTTOM", "DO NOT TURN OVER", "KEEP DRY", "HANDLE WITH CARE", etc.
29.	Taxes & duties	All taxes, excluding GST, but including charges, royalties, any state or central levies and other taxes for supply of materials and execution of the contract shall be borne by the bidder and the same shall be included in the basic price quoted by the bidder. Variation in all such taxes & duties, which are included in the basic price, at any stage during execution of the contract, including extension of the contract, shall have to be borne by the bidder. GST as applicable shall be payable extra at actual against submission of original GST invoice

	INDUSTRIAL SYSTEMS GROUP	SPECIAL CONDITIONS OF CONTRACT (SCC) Revision No. 00	WBPDC/ 1X660 MW Sagardighi TPP, Unit-5 Project. Enq Ref: 77/18/6287/SK
---	---	---	---

		along with all supporting documents. Terms & Conditions of GST shall be as per Annexure-IV enclosed. Bidder/ vendor/ contractor to intimate BHEL (by email, in case of supply of goods), within two working days from the date of removal, along with legible scanned copy of all relevant details & documents like tax invoice, packing list, delivery challan, Lorry/ Courier Receipt etc. All bidders/ vendors to note that this project is a NON Mega Power Project. However, Essentiality certificate shall be issued by WBPDC (Customer/ Owner) for availing concessional custom duty under project Import Regulations. Essentiality certificate shall be issued by WBPDC through BHEL for the items to be imported by the vendor for availing concessional duty. BHEL shall arrange only essentiality certificate as furnished by customer, all other steps/activities are to be taken care of by bidder for the same. The bidder has to indicate in their offer, the import contents (if any) for the package i.e. list of items along with qty., currency of import, country of import & CIF value. This shall be indicated in the Price Bid of the bidder. In case CIF content is not indicated in the Price Bid, essentiality certificate shall not be issued by BHEL. The maximum available CIF allocation for essentiality certificate purpose shall be intimated later in the subsequent corrigendums. For imports beyond the above mentioned maximum CIF content, all import implications like applicable Basic Customs Duty, Education cess, anti-dumping duty, safeguard duty etc. shall be included in the basic price. The above mentioned CIF content is the maximum available value for the subject project. This value may decrease due to consumption during placement of order for other packages/ systems/ items of the subject project. The final available CIF content for this tender/ contract shall be informed to the techno-commercially qualified bidders before price bid opening/ Reverse Auction (as applicable). However, vendors are requested to consider the above mentioned maximum limit of CIF content while submitting their offer. It is the sole responsibility of the bidder to clearly examine/ understand the benefits available for the Project under Deemed Export Project. Hence the bidders must examine the same before submission of their offer. Invoices/ returns of vendors/ contractors are to be submitted within the time limit stipulated Under the GST law. Whenever Input Tax Credit could not be availed by BHEL within the time limit, due to delay in submission of invoices or for any other reason attributable to vendors/ contractors, liability towards loss of such credit shall be passed on to such vendors/ contractors.
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	INDUSTRIAL SYSTEMS GROUP	SPECIAL CONDITIONS OF CONTRACT (SCC) Revision No. 00	WBPDC/ 1X660 MW Sagardighi TPP, Unit-5 Project. Enq Ref: 77/18/6287/SK
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		Any new taxes & duties, if imposed subsequent to date of tender opening (Part-1 bid), by statutory authority during contract period (including extensions, if delay is not attributable to the vendor/ contractor), shall be reimbursed by BHEL on production of relevant supporting documents and original payment receipts (if applicable) to the satisfaction of BHEL. However, vendor/ contractor shall obtain prior approval from BHEL before depositing new taxes & duties. Benefits and/ or abolition of all existing taxes must be passed on to BHEL, by the vendor/ contractor, against new taxes & duties, if any, introduced at a later date. The benefits shall be passed on in terms of commensurate reduction in the basic price. Clause No. 4.1, 4.2, 4.3 of General Commercial Terms & Conditions of GCC (Rev.01) are not applicable to this tender/ contract.
30.	E-way bill	If E-Way bill is to be generated by the bidder for transport of materials to the Project site, same shall be arranged by the bidder.
31.	Ecs payment	Payment will be made by ECS only and for which the vendors are to provide the following information along with their offers in their letter head duly signed. Information to be provided: BANK NAME, BANK ADDRESS, BANK PHONE, IFSC CODE (NEFT), BANK ACCOUNT NO., PAN NO., SERVICE TAX NO., TIN NO., E-MAIL ID. Vendor shall also submit a cancelled cheque along with the first bill.
32.	Bills submission	As per clause 9.7.6 of General Commercial Terms & Conditions of GCC (Rev.01).
33.	Drawing submission and approval	As per technical specification.
34.	Final drawings/ documents submission	As per technical specification.
35.	Approval of sub-vendors	As per technical specification.
36.	Training	Training of customer personnel at equipment manufacturer's factory premises and O&M training at site, as per equipment manufacturer's standard training modules, is also in the scope of bidder and shall be as per the scope of Technical Specifications. "The cost towards training of indigenous/ offshore equipments to WBPDC/ will be to bidders account, which includes to & fro Airfare/Railway/Road fare charges, travel insurance, Boarding and Lodging, Local transportation and other related expenses. The cost shall be included in the price"
37.	Risk purchase	As per clause 26.0 of General Commercial Terms & Conditions of GCC (Rev.01). Clause no. 26.2 of General Commercial Terms & Conditions of GCC (Rev.01) shall be read as:

 	INDUSTRIAL SYSTEMS GROUP	SPECIAL CONDITIONS OF CONTRACT (SCC) Revision No. 00	WBDCL/ 1X660 MW Sagardighi TPP, Unit-5 Project. Enq Ref: 77/18/6287/SK
---	---	---	---

		Recovery on account of Purchases made by Purchaser at the Risk & Cost of Seller/ Contractor shall be worked out as follows: Risk and Cost against Balance Work: Risk & Cost Amount= [(A-B) + (A x H/100)] Where, A= Value of Balance scope of Work/ Supply (*) as per rates of new contract. B= Value of Balance scope of Work/ Supply (*) as per rates of old contract being paid to the contractor/ supplier at the time of termination of contract i.e. inclusive of PVC & ORC, if any. H = Overhead Factor to be taken as 5 In case (A-B) is less than 0 (zero), value of (A-B) shall be taken as 0 (zero). *(Balance scope of work/ supply) Difference of Contract Quantities and Executed Quantities as on the date of issue of Letter for 'Termination of Contract', shall be taken as balance scope of Work/ Supply for calculating risk & cost amount. Contract quantities are the quantities as per original contract. If, Contract has been amended, quantities as per amended Contract shall be considered as Contract Quantities. Items for which total quantities to be executed have exceeded the Contract Quantities based on drawings issued to contractor from time to time till issue of Termination letter, then for these items total Quantities as per issued drawings would be deemed to be contract quantities. Substitute/ extra items whose rates have already been approved would form part of contract quantities for this purpose. Substitute/ extra items which have been executed but rates have not been approved, would also form part of contract quantities for this purpose and rates of such items shall be determined in line with contractual provisions. However, increase in quantities on account of additional scope in new tender shall not be considered for this purpose. NOTE: In case portion of work is being withdrawn, contract quantities pertaining to portion of work withdrawn shall be considered as 'Balance scope of work/supply' for calculating Risk & Cost amount.
38.	Model conciliation clause	As per annexure: Model Conciliation Clause for Conducting Conciliation Proceedings under the BHEL Conciliation Scheme, 2018.
39.	Arbitration	Clause no. 32.0 of General Commercial Terms & Conditions of GCC (Rev.01) shall be read as: All questions and disputes/ difference relating to the meaning of the specifications, design, drawings and instructions and or interpretation of the contract or its clauses and as to the quality of workmanship or materials used on the work or as to any other question, claim, right, matter or thing whatsoever in any way arising out of or relating to the contract, designs, drawing, specifications, estimates, instructions, orders or these conditions or otherwise concerning the works or the execution or failure to execute the same whether

 	INDUSTRIAL SYSTEMS GROUP	SPECIAL CONDITIONS OF CONTRACT (SCC) Revision No. 00	WBPDC/ 1X660 MW Sagardighi TPP, Unit-5 Project. Enq Ref: 77/18/6287/SK
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		arising during the progress of the work or after the completion or abandonment thereof shall be referred to the sole arbitration appointed by the Chairman & Managing Director/Executive Director (Incharge of the Unit) / General Manager (Incharge of the Unit) / concerned Additional General Manager of the Unit of BHEL. The cases referred to arbitration shall be other than those for which the decision of the Dy. General Manager / Sr. Manager /Project Manager/Manager/Sr. Engineer/Engineer, is expressed in the contract to be final and conclusive. The arbitrator to whom the matter is originally referred being unable to act for any reason, Chairman & Managing Director/Executive Director (Incharge of the Unit) / General Manager (Incharge of the Unit) / concerned Additional General Manager of the Unit of BHEL, shall appoint another person to act as sole arbitrator and such person shall be entitled to proceed with the reference from the stage at which it was left by his predecessor. Subject as aforesaid the provisions of the Arbitration and Conciliation Act, 1996 or any statutory modification or re-enactment thereof and the rules made there under and for the time being in force shall apply to the arbitration proceedings. It is a term of the contract that the party invoking arbitration shall specify the dispute or disputes including specifying the quantum of financial claim, if any, to be referred to arbitration under this clause together with the amount or amounts claimed in respect of each such dispute. The arbitrator (s) shall complete the entire arbitration and publish an award within a period of twelve months from the date the Tribunal enters upon the reference. The parties to this arbitration agreement may before or at the time of invoking the Arbitration clause, may indicate in writing for FAST TRACK PROCEDURE wherein the Arbitrator shall pass an award within six months from the date the Tribunal enters upon the reference and to that effect, the Tribunal may dispense with any technical formalities and conduct the proceedings without oral hearing, subject to acceptance of such Fast Track procedure by other party. The work under the Contract shall continue during the arbitration proceeding and no payment due to the Contractor shall be withheld on account of such proceedings. The Arbitrator shall be deemed to have entered on the reference on the date one party issues notice to other party invoking arbitration clause under this. The Venue of arbitration shall be Bangalore and the language will be English only. The award of the arbitrator shall be final, conclusive and binding all parties to this contract“. Clause no. 32.1, 32.2 & 32.3 of General Commercial Terms & Conditions of GCC (Rev.01) are not applicable to this tender/ contract.
40.	Fraud Prevention	"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

	INDUSTRIAL SYSTEMS GROUP	SPECIAL CONDITIONS OF CONTRACT (SCC) Revision No. 00	WBPDC/ 1X660 MW Sagardighi TPP, Unit-5 Project. Enq Ref: 77/18/6287/SK
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		of BHEL Management about any fraud or suspected fraud as soon as it comes to their notice."
41.	MSE Suppliers	Any Bidder falling under MSME/ SC/ST category/ SSI unit shall furnish the details & submit documentary evidence/ Govt. Certificate etc. in support of the same along with their techno-commercial offer. If the bidder does not furnish the above, offer shall be processed construing that the bidder is not falling under MSME/SC/ST Owned category/ SSI unit. MSE suppliers can avail the intended benefits only if they submit along with the offer, attested copies of either EM II certificate having deemed validity (five years from the date of issue of acknowledgement in EM II) or valid NSIC certificate or EM II certificate along with attested copy of a CA certificate (format enclosed vide Annexure-III where deemed validity of EM II certificate of five years has expired) applicable for the relevant financial year (latest audited). Date to be reckoned for determining the deemed validity will be the date of bid opening (Part-1 in case of two or three part bid). Non-submission of such documents will lead to consideration of their bid at par with other bidders. No benefit shall be applicable for this enquiry if any deficiency in the above required documents are not submitted before price bid opening. If the tender is to be submitted through e-procurement portal, then the above required documents are to be uploaded on the portal. In addition to the above, vendors can submit "Udyog Aadhaar". Documents should be notarized or attested by a Gazetted officer.
42.	Order of Precedence of Documents	- Amendments/ Clarifications/ Corrigenda/ Errata etc issued in respect of the tender documents by BHEL. - Notice Inviting Tender - Price Bid Format - Special Conditions of Contract (SCC) - Technical specifications & Documents - General Conditions of Contract (GCC) For example in case of In case of any conflict or inconsistency, the requirement of (a) shall prevail over the (b). Order of precedence shall be a>b>c>d>e>f (where ">" indicates the general greater than sign)
43.	Make in India	As per the directives of Government of India, Ministry of Commerce & Industry, Department of Industrial Policy & Promotion, purchase preference shall be given to the local suppliers. The purchase preference shall be given as per the Order no. P-45021/2/2017-B.E.-II dated 15-06-2017 and revised Public Procurement (Preference to Make in India) order dated 28-05-2018 from Department of Industrial Policy and Promotion, Ministry of Commerce and Industry, Government of India and extended guideline and circulars in this regard. The subject tender/ contract shall be considered as "NOT DIVISIBLE".

	INDUSTRIAL SYSTEMS GROUP	SPECIAL CONDITIONS OF CONTRACT (SCC) Revision No. 00	WBDCL/ 1X660 MW Sagardighi TPP, Unit-5 Project. Enq Ref: 77/18/6287/SK
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		Margin of purchase preference for the subject tender/ contract shall be 20% [based on price evaluation criteria of the tender] Minimum local content for the subject tender/ contract shall be 50% as per relevant circulars and guidelines issued by Government of India/Ministry.(as applicable). The local bidder/ supplier shall provide the following documents along with the Part-1 bid: i. For procurement value up to INR 10 Crores, self-certification that the item offered meets the minimum local content and shall give details of the location (s) at which the local value addition is made. ii. For procurement value in excess of INR 10 crores, the local supplier shall be required to submit a certificate from the statutory auditor or cost auditor of the company (in the case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content. BHEL reserves the right to negotiate with the L1 bidder and in case of successful price negotiation with the L1 bidder BHEL shall arrive at a final L1 price. In such a case, if the L1 bid is not from a local supplier, the local bidders/ suppliers will be invited to match the final L1 price arrived at after negotiation, in the manner specified in the above mentioned order and the order/ contract shall be awarded to such local supplier subject to matching the final L1 price. For the purpose of inviting the local bidders/ suppliers, the margin for purchase preference shall be considered/ calculated with respect to the original price & ranking obtained in the tender, i.e. before price negotiation with the L1 bidder.
44.	Splitting of tender	Not applicable for this tender.
45.	Other terms & Conditions	As per General Conditions of Contract (GCC), Rev.01.
46.	Others	Annexure-X of GCC (Rev.01) is not applicable. Please refer Annexure-II to this SCC for list of consortium Banks.

	INDUSTRIAL SYSTEMS GROUP	SPECIAL CONDITIONS OF CONTRACT (SCC) Revision No. 00	WBPDC/ 1X660 MW Sagardighi TPP, Unit-5 Project. Enq Ref: 77/18/6287/SK
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Annexure-I

CONTRACT PERFORMANCE BANK GUARANTEE/BANK GUARANTEE FOR PERFORMANCE SECURITY

Bank Guarantee No:

Date:

To

NAME

& ADDRESSES OF THE BENEFICIARY

Dear Sirs,

In consideration of the Bharat Heavy Electricals Limited 1 (hereinafter referred to as the 'Employer' which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns) incorporated under the Companies Act, 1956 and having its registered office at BHEL House at Siri Fort, New Delhi- 100049 through its Unit at BHEL- Industrial Systems Group, Bangalore having awarded to (Name of the Vendor/ Contractor/ Supplier) having its registered office at _____2 hereinafter referred to as the '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 Contractor having agreed to provide a Contract Performance 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 a maximum amount Rs ----- (Rupees -----) without any demur, immediately on a demand from the Employer, .

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 Contractor/ Supplier in any suit or proceeding pending before any Court or Tribunal relating thereto 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 contractors/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 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.

We BANK further agree with the Employer that the Employer shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Contract or to extend time of performance by the said Contractor/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 Contractor/Supplier and to forbear or enforce any of the terms and conditions relating to the said Agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Contractor/Supplier or for any forbearance, act or omission on the part of the Employer or any indulgence by the Employer to the said 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.

	INDUSTRIAL SYSTEMS GROUP	SPECIAL CONDITIONS OF CONTRACT (SCC) Revision No. 00	WBDCL/ 1X660 MW Sagardighi TPP, Unit-5 Project. Enq Ref: 77/18/6287/SK
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The Bank also agrees that the Employer at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance without proceeding against the Contractor and notwithstanding any security or other guarantee that the Employer may have in relation to the Contractor's liabilities.

This Guarantee shall remain in force upto and including..... 6 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 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 the7we 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..... 8
- b) This Guarantee shall be valid up to9
- c) Unless the Bank is served a written claim or demand on or before10 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 PROJECT/ SUPPLY DETAILS

5 BG AMOUNT IN FIGURES AND WORDS

6 VALIDITY DATE

7 DATE OF EXPIRY OF CLAIM PERIOD

8 BG AMOUNT IN FIGURES AND WORDS.

9 VALIDITY DATE

10 DATE OF EXPIRY OF CLAIM PERIOD

 	INDUSTRIAL SYSTEMS GROUP	SPECIAL CONDITIONS OF CONTRACT (SCC) Revision No. 00	WBDCL/ 1X660 MW Sagardighi TPP, Unit-5 Project. Enq Ref: 77/18/6287/SK
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Annexure-II

List of Consortium Banks			
Sl.No	Nationalized Banks	Sl.No	Public Sector Banks
1	State Bank of India	18	IDBI
2	Allahabad bank		
3	Andhra bank	Sl. No	Private banks
4	Bank of Baroda	19	Axis Bank
5	Canara Bank	20	HDFC
6	Corporation bank	21	ICICI
7	Central bank	22	The Federal Bank Limited
8	Indian Bank	23	Kotak Mahindra Bank
9	Indian Oversea Bank	24	Indusind Bank
10	Oriental bank of Commerce	25	Yes Bank
11	Punjab National Bank		
12	Punjab & Sindh Bank	Sl.No	Foreign Banks
13	Syndicate Bank	26	CITI Bank N.A
14	UCO Bank	27	Deutsche Bank AG
15	Union Bank of India	28	HSBC
16	United Bank of India	29	Standard Chartered Bank
17	Vijaya Bank	30	J P Morgan

 	INDUSTRIAL SYSTEMS GROUP	SPECIAL CONDITIONS OF CONTRACT (SCC) Revision No. 00	WBPDC/ 1X660 MW Sagardighi TPP, Unit-5 Project. Enq Ref: 77/18/6287/SK
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Annexure-III

Certificate by Chartered Accountant on Letter Head

This is to certify that M/s
 (hereinafter referred to as 'Company') having its registered office at
 is registered under MSMED Act 2006, (Entrepreneur
 Memorandum No. (Part-II)dtd
 Category:(Micro/ Small). Copy enclosed.

Further verified from the Books of Accounts that the investment of the company as per the latest audited financial year..... as per MSMED Act 2006 is as follows:

- For Manufacturing Enterprises:** Investment in plant and machinery (i.e. original cost excluding land and building and the items specified by the Ministry of Small Scale Industries vide its notification No. S.O.1722 (E) dated October 5, 2006):
Rs.....Lacs.
- For Service Enterprises:** Investment in equipment (original cost excluding land and building and furniture, fittings and other items not directly related to the service rendered or as may be notified under the MSMED Act. 2006):
Rs.....Lacs.

(Strike off whichever is not applicable)

The above investment of Rs.....Lacs is within permissible limit of Rs.....Lacs forMicro/ Small (Strike off which is not applicable) Category under MSMED Act 2006.

OR

The company has been graduated from its original category (Micro/ Small) (Strike off which is not applicable) and the date of graduation of such enterprise from its original category is (dd/mm/yyyy) which is within the period of 3 years from the date of graduation of such enterprise from its original category as notified vide S.O. No. 3322 (E) dated 01.11.2013 published in the gazette notification dated 04-11-2013 by Ministry of MSME.

Date: (dd/mm/yyyy)

(Signature)

Name-

Membership Number-

Seal of Chartered Accountant

	INDUSTRIAL SYSTEMS GROUP	SPECIAL CONDITIONS OF CONTRACT (SCC) Revision No. 00	WBPDC/ 1X660 MW Sagardighi TPP, Unit-5 Project. Enq Ref: 77/18/6287/SK
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Annexure-IV

Terms & Conditions of GST

- 1) Supplier shall mention their GSTIN in all their invoices and invoices shall be in the format as specified/ prescribed under GST laws. Invoices shall necessarily contain Invoice number (in case of multiple numbering system is being followed for billing like SAP invoice no, commercial invoice no etc., then the Invoice No which is linked/ uploaded in GSTN network shall be clearly indicated), item description as per PO, Quantity, Rate, Value, applicable taxes with nomenclature (like IGST, SGST, CGST & UTGST) separately, HSN/ SAC Code, etc.
- 2) All invoices shall bear the HSN Code for each item separately (Harmonized System of Nomenclature)/ SAC code (Services Accounting Code).
- 3) A declaration to the effect that all invoice particulars are/ have been uploaded in the GSTN network/ portal & all tax liability as per GST rules and regulations have been and will be discharged, shall be mentioned in the invoice. If not mentioned in the invoice, a separate declaration shall be submitted as per the requirement of BHEL.
- 4) All documents like Mill Test Certificate, LR copy, Guarantee/ Warrantee certificate, work completion certificate, any other document mentioned in PO, shall be sent along with the vehicle/ consignment. For all consignments received within the calendar month, input credit will be availed within that month in line with monthly returns filing cycle. In case of any discrepancy in the document or non-submission of documents mentioned in the PO, then BHEL will not be able to accept or account the material, in such case availing of tax credit will be deferred to next month or so.
- 5) 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 suppliers, within the calendar month notified by BHEL.
- 6) For any such delay in availing of tax credit for reasons attributable to supplier (as mentioned above), interest (calculated @ SBI Base Rate + 6%) along with penalty if any will be deducted for the delayed period i.e. from the month of receipt till the month tax credit is availed, from the running bills.
- 7) This is to inform that GST portion of invoice shall be released only upon vendor declaring such invoice in his GSTR-1 and receipt of goods and Tax invoice by BHEL and confirmation of payment of GST thereon by

	INDUSTRIAL SYSTEMS GROUP	SPECIAL CONDITIONS OF CONTRACT (SCC) Revision No. 00	WBDCL/ 1X660 MW Sagardighi TPP, Unit-5 Project. Enq Ref: 77/18/6287/SK
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vendor on GSTN portal. Alternatively, BG of appropriate value may be submitted by vendor which shall be valid at least one month after the confirmation of date of payment of GST by vendor on GSTN portal and receipt of Tax invoice and receipt of goods, whichever is later. Above is subject to receipt of goods/service and tax invoice thereof along with vendor declaring invoice in his return and paying GST within timeline prescribed for availing ITC by 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 shall be recoverable from vendor/ contractor along with interest levied/ leviable on BHEL.

9) Anti-profiteering clause:

GST law has a provision that any reduction of rates in GST or the benefits of ITC shall be passed on to the recipient by way of commensurate reduction in price of goods/ services. Hence, Bidder to ensure that benefit of reduction of rates in GST and benefit of ITC are being passed on by way of commensurate reduction in price of goods/services including capital goods.

Such benefit would accrue to vendors/ contractors due to availability of ITC for inter-state Supplies under GST which was not available in existing law due to CST credit not being available or ITC reversals under existing law for stock transfers, ITC reversals under Existing law on account of common credit etc. Further any element of taxes like Excise, VAT, CST, Service Tax, WCT, Entry Tax etc which are embedded into price of goods/ services shall also be taken into account for working out the benefits and for price reduction.

All benefits, as per the “Anti Profiteering Law” of GST shall be passed on to BHEL by the vendors, by way of commensurate reduction in price of goods/ services.

	INDUSTRIAL SYSTEMS GROUP	SPECIAL CONDITIONS OF CONTRACT (SCC) Revision No. 00	WBDCL/ 1X660 MW Sagardighi TPP, Unit-5 Project. Enq Ref: 77/18/6287/SK
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Annexure V

Auxiliary Power Consumption Details

Bidder's Name and Address

Subject: Guaranteed Power Consumption

Tender ref: [77/18/6287/SK](#)

Dear Sir,

We hereby declare that we have read and understood the requirement for the same as mention in technical specification.

We also declare that the ratings and Power consumption figures of the equipments furnished by us under the Package are guaranteed. We further declare that in the event of any deficiencies in meeting the guaranteed figures, you may at your discretion accept the equipment/ system after assessing the Liquidated Damages/Loading as applicable as specified at **in clause no. 25 of** the Special Conditions of Contract (of this tender/ contract) or reject the equipment/system and also can recover from the payments already made/due.

GUARANTEED POWER CONSUMPTION:

Total guaranteed power consumption as measured at the input terminals of all the drive motors when the equipment is operating at rated capacity is as under:

- 1) Total power consumption for Bottom Ash System : _____(KW)
- 2) Total power consumption for Fly Ash System : _____(KW)
- 3) Total power consumption for Bottom Ash Disposal System: _____(KW)
- 4) Total power consumption for Fly Ash Disposal System : _____(KW)
- 5) Total Power Consumption for Recovery Water System : _____(KW)

Grand Total Power Consumption : _____(KW)

The above value is in line with the annex-12 of technical specification submitted.

Note: The equipment/ machine details shall be as per Technical specifications of the tender.

Signature of authorized signatory
with Company Seal

 	INDUSTRIAL SYSTEMS GROUP	SPECIAL CONDITIONS OF CONTRACT (SCC) Revision No. 00	WBPDC/ 1X660 MW Sagardighi TPP, Unit-5 Project. Enq Ref: 77/18/6287/SK
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Annexure-VI

BANK GUARANTEE FOR ADVANCE

Bank Guarantee No:

Date:

To

NAME

& ADDRESSES OF THE BENEFICIARY

Dear Sirs,

In consideration of the Bharat Heavy Electricals Limited ¹ (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 _____ through its Unit at.....(name of the Unit) having awarded to (Name of the Vendor / Contractor / Supplier).having its registered office at_____ ² (hereinafter called "the Contractor" which expression shall include its successors and permitted assigns) a contract Ref No.....dated³valued at Rs.....(Rupees -----)/FC.....(in words.....) for⁴(hereinafter called the 'Contract')

AND WHEREAS the Employer has agreed to advance to the Contractor, a sum of Rs.....

(Rupees..... only), equivalent to _____% of the said value of the Contract (hereinafter called "the said Advance"), upon the condition, that the said Advance shall be secured by undertaking guarantee for Rs ----- (Rupees -----)⁵ from a Bank as hereinafter appearing.

We,, (hereinafter referred to as the Bank), having registered/Head office at and a branch at being the Guarantor under this Guarantee, hereby irrevocably and unconditionally undertake to forthwith and immediately pay to the Employer without any demur, merely on your first demand any sum or sums upto a maximum amount but not exceeding Rs ----- (Rupees -----).

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. _____.

	INDUSTRIAL SYSTEMS GROUP	SPECIAL CONDITIONS OF CONTRACT (SCC) Revision No. 00	WBDCL/ 1X660 MW Sagardighi TPP, Unit-5 Project. Enq Ref: 77/18/6287/SK
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We undertake to pay to the Employer any money so demanded notwithstanding any dispute or disputes raised by the Contractor/ Supplier in any suit or proceeding pending before any Court or Tribunal relating thereto our liability under this present being absolute and unequivocal.

The payment so made by us under this Guarantee shall be a valid discharge of our liability for payment hereunder and the Contractors/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 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.

We Bank further agree that the Employer shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Contract or to extend time of performance by the said 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 Contractor/Supplier and to forbear or enforce any of the terms and conditions relating to the said Agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Contractor/Supplier or for any forbearance, act or omission on the part of the Employer or any indulgence by the Employer to the said 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 Contractor and notwithstanding any security or other guarantee that the Employer may have in relation to the Contractor's liabilities.

This Guarantee shall remain in force upto and including.....⁶ and shall be extended from time to time on the request of the Employer for such period as may be desired by the Employer.

This Guarantee shall not be determined or affected by liquidation or winding up, dissolution or change of constitution or insolvency of the Contractor/Supplier but shall in all respects and for all purposes be

	INDUSTRIAL SYSTEMS GROUP	SPECIAL CONDITIONS OF CONTRACT (SCC) Revision No. 00	WBDCL/ 1X660 MW Sagardighi TPP, Unit-5 Project. Enq Ref: 77/18/6287/SK
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binding and operative until payment of all money payable to the Employer in terms hereof. However, unless a demand or claim under this Guarantee is made on us in writing on or before the⁷ we shall be discharged from all liabilities under this Guarantee.

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

Notwithstanding anything to the contrary contained hereinabove:

- a) The liability of the Bank under this Guarantee shall not exceed.....⁸
- b) This Guarantee shall be valid up to⁹
- c) Unless the Bank is served a written claim or demand on or before¹⁰ 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)

Date.....

Place of Issue.....

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

² NAME OF VENDOR /CONTRACTOR / SUPPLIER

³ DETAILS ABOUT THE NOTICE OF AWARD/CONTRACT REFERENCE

⁴ PROJECT/SUPPLY DETAILS

⁵ BG AMOUNT IN FIGURES AND WORDS

⁶ VALIDITY DATE

⁷ DATE OF EXPIRY OF CLAIM PERIOD

⁸ BG AMOUNT IN FIGURES AND WORDS

⁹ VALIDITY DATE

¹⁰ DATE OF EXPIRY OF CLAIM PERIOD

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and turnkey projects)
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GENERAL CONDITIONS OF CONTRACTS (GCC)

DEFINITIONS OF TERMS

ABBREVIATIONS

INSTRUCTIONS TO BIDDERS

GENERAL COMMERCIAL TERMS & CONDITIONS

ANNEXURES

**INDUSTRIAL SYSTEMS GROUP
BHARAT HEAVY ELECTRICALS LIMITED**
(A Govt. of India Undertaking)
PROF. CNR RAO CIRCLE, IISc POST
MALLESHWARAM
BANGALORE - 560012

Not for Publication

For Official Use

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and turnkey projects)	DEFINITION OF TERMS Issued on 28-08-2014
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DEFINITION OF TERMS

Throughout the Tender Documents including the Enquiry Letter, the following words shall have the meanings assigned to them herein, unless the subject matter or the context requires otherwise.

- 1 Purchaser** shall mean **M/s Bharat Heavy Electricals Limited** (A Govt. of India Undertaking) incorporated under the Companies Act 1956 acting through its **Industrial Systems Group Division (ISG)**, IISc Post, Prof. CNR Rao Circle, Malleshwaram, Bangalore - 560012 (Karnataka) which expression shall include its successors and assigns. It may also be referred to as **BHEL**.
- 2 Owner** shall mean the **Customer or Client** for whose project the enquiry is issued by Purchaser and shall include its successors and assigns as well as authorized officer(s)/ representative(s).
- 3 Consultant** shall mean the agency appointed by Owner or Purchaser to provide consultancy services for the project and shall include its successors and assigns as well as authorized officer(s)/ representative(s).
- 4 Tenderer** shall mean the Firm/ Company/ Organization which quotes against the Tender Enquiry issued by Purchaser. It may also be referred as **Bidder or Vendor**.
- 5 Order/ Contract** shall mean and include the general conditions, bidding conditions, specific conditions, specifications, schedules, drawings, form of tender, covering letters, schedule of prices and quantities, letter of intent/ award of the Purchaser, Integrity Pact (if applicable), special conditions applicable to the project and subsequent amendments mutually agreed upon. It may also be referred as **Purchase Order**.
- 6 Seller/Contractor** shall mean the Firm/ Company/ Organization with whom the Order/Contract is made and shall be deemed to include its successors, representatives, heirs, executors, administrators and permitted assigns, as the case may be. It may also be referred as **Supplier**.

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and turnkey projects)	DEFINITION OF TERMS Issued on 28-08-2014
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- 7 **Sub-Contractor** shall mean the person/ firm/ company/ organization to whom any part of the work has been sub-contracted by Seller/ Contractor, with the written consent of Purchaser, and shall include sub-contractor's heirs, executors, administrators, representatives and assigns.
- 8 **Engineer** shall mean the authorized officer of Purchaser to act as the engineer on its behalf for the purpose of the Order/ Contract.
- 9 **Site** shall mean and include the land and place on which the power station and related facilities are to be constructed and any adjacent land which may be allocated or used by Owner or Seller/ Contractor in performance of the Order/ Contract.
- 10 **Tests on completion** shall mean such tests as prescribed in specifications and/ or tests mutually agreed upon by Purchaser and Seller/ Contractor, to be performed by Seller/ Contractor after erection of equipment to establish its satisfactory operation as per specifications.
- 11 **Commissioning** shall mean successful completion of Trial Operation and readiness of the contracted/ ordered plant and materials for commercial use. This will include all consumables and inputs required for pre-commissioning.
- 12 **Initial Operation or Trial Operation or Reliability Run** shall mean continuous integrated operation of the contracted/ ordered plant and materials under varying loads as proof of satisfactory operation for a specified period.
- 13 **Inspection Agency (IA)** shall mean person(s) authorized by Purchaser / Owner to inspect the stores as per Order/ Contract at Contractor's/ Sub-Contractor's works. Vendors to raise inspection call on BHEL ISG.
- 14 Month shall mean calendar month and week shall mean 7 days.
- 15 **Consignee** shall mean the official(s)/ person(s) to whom the stores are required to be delivered in the manner indicated in the Order/ Contract.
- 16 **Plant/ Equipment/ Stores** shall mean the goods, machinery, components, parts, spares etc. required to be supplied by Seller/ Contractor as per Order/ Contract.

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and turnkey projects)	DEFINITION OF TERMS Issued on 28-08-2014
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- 17 Contract Engineer (CE)** shall mean the official who signs the Order/ Contract on behalf of Purchaser.
- 18 Site Engineer** shall mean officer of Purchaser/ Owner authorized to receive and verify the in-coming stores, and issue Material Receipt Certificate (MRC)/ Stores Receipt Voucher (SRV).
- 19 Site Inspection Agency (Site IA)** shall mean person(s) authorized by Purchaser/ Owner to inspect the stores/ works included in Order/ Contract at the Project Site.
- 20 GENERAL**

The words incorporating singular shall include plural and vice-versa, the words incorporating masculine gender shall include feminine gender and vice-versa, and the words incorporating persons shall include bodies, corporate, limited liability companies, partnership and other legal entities.

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and turnkey projects)	ABBREVIATIONS Issued on 28-08-2014
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ABBREVIATIONS

AWB	Airway Bill
BL	Bill of Lading
BOQ	Bill of Quantity
GIF	Cost, Insurance and Freight
CQ	Corporate Quality
CVD	Countervailing Duty
DMS	Document Management System
EMD	Earnest Money Deposit
E&C	Erection and Commissioning
FOB	Free on Board
GR	Goods Receipt
H bidder	Bidder quoting highest landed cost to BHEL
IP	Integrity Pact
IEM	Independent External Monitor
L1 Bidder	Bidder quoting lowest landed cost to BHEL
LC	Letter of Credit
LOI	Letter of Intent
LOA	Letter of Award
LR	Lorry Receipt
MDCC	Material Despatch Clearance Certificate
MRC	Material Receipt Certificate
MSMED	Micro Small and Medium Enterprises Development
NIT	Notice Inviting Tender
O&M	Operation & Maintenance
PBG	Performance Bank Guarantee
P&ID	Process & Instrumentation Diagram
PO	Purchase order
PQR	Pre-Qualification Requirement

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and turnkey projects)	ABBREVIATIONS Issued on 28-08-2014
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PVC	Price Variation Clause
QS	Quality Surveillance
RA	Reverse Auction
RBI	Reserve Bank of India
RFQ	Request for Quotation
RR	Railway Receipt
SAD	Special Additional Duty
SCC	Special Conditions of Contract

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and turnkey projects)	INSTRUCTIONS TO BIDDERS Issued on 28-08-2014
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INSTRUCTIONS TO BIDDERS

TABLE OF CONTENTS

Sl. No.	DESCRIPTION
1.0	GENERAL INSTRUCTIONS
2.0	PROCEDURE FOR SUBMISSION & OPENING OF TENDERS
3.0	MINIMUM E&C CHARGES
4.0	AUTHORITY FOR TENDER SIGNING
5.0	CLARIFICATIONS REQUIRED BY BIDDERS
6.0	DEVIATIONS - LISTING
7.0	VALIDITY OF OFFER
8.0	LANGUAGE & CORRECTIONS
9.0	PRICE DISCREPANCY
10.0	TENDERER TO INFORM HIMSELF FULLY
11.0	ETHICS IN BUSINESS DEALINGS
12.0	INTEGRITY PACT
13.0	REVERSE AUCTION
14.0	REJECTION OF TENDER AND OTHER CONDITIONS
15.0	DEVIATIONS FROM NIT
16.0	LOADING FOR COMMERCIAL DEVIATION (WHERE COST OF WITHDRAWAL NOT GIVEN)
17.0	INTEREST RATE FOR LOADING
18.0	DISCOUNT
19.0	EVALUATION CRITERIA
20.0	FOREIGN SUPPLIERS & INDIAN AGENTS OF FOREIGN SUPPLIERS
21.0	MICRO, SMALL & MEDIUM ENTERPRISES

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and turnkey projects)	INSTRUCTIONS TO BIDDERS Issued on 28-08-2014
---	---	---	--

1.0 GENERAL INSTRUCTIONS

- 1.1 Tenderers are advised to study all the tender documents carefully. Any submission of tender by the tenderer shall be deemed to have been done after careful study and examination of the tender documents and with full understanding of the implications thereof. The specifications and terms & conditions shall be deemed to have been accepted unless otherwise specifically commented upon in 'Deviation sheets by the tenderer in his offer. Non-compliance with any of the requirements and instructions in the Tender Enquiry may result in rejection of the tender.

Integrity Pact (IP) will be applicable for all tenders/ contracts valuing more than a specific value or if specified in NIT/ RFQ. Integrity Pact document shall be issued as part of tender and shall be returned by bidders along with their techno-commercial bids, duly signed by authorized signatories. Only those vendors/ bidders who enter into Integrity Pact with BHEL would be qualified to participate in the bidding process.

- 1.2 All commercial terms and conditions, except prices, should be submitted as part of techno-commercial offer (Part-I) along with unpriced copy of Annexure-II, which may be opened first. The price part (Part-II) along with price copy of Annexure-II is to be submitted in a separate sealed cover along with techno-commercial offer. Purchaser reserves the right to open both the Parts at the same time.
- 1.3 A declaration as per Annexure-III must be sent before opening of Price Bids.

2.0 PROCEDURE FOR SUBMISSION & OPENING OF TENDERS

- 2.1 Tenders shall be submitted in **Two parts** on or before the Due Date and time indicated in the NIT/ RFQ.

PART - I : Techno-Commercial Bid

comprising of Technical Offer, Annexure-I, Commercial Terms & Conditions, Unpriced copy of Price Bid& Annexure II, PQR documents (if applicable) in five (5) sets.

PART - II : Price Bid

Containing Prices, cost of withdrawal of deviation as per Annexure-II, to be submitted in original, strictly, as per Price Schedule of BHEL for complete scope of Tender Enquiry.

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and turnkey projects)	INSTRUCTIONS TO BIDDERS Issued on 28-08-2014
---	---	---	--

NOTE: Offers are liable to be rejected for changes made by vendors in the Price Schedule, except those specified in the unpriced bid and accepted by Purchaser.

- 2.1.1 PART-I (Techno-Commercial bid) may be opened on Due Date and time specified in the NIT/ RFQ, or extension thereof, in presence of tenderers who may like to attend. Incomplete offers are liable to be rejected. Purchaser reserves the right to open both Part-I and Part-II together.
- 2.1.2 PART-II containing prices shall be submitted along with Part-I but in a separate sealed cover. Corrections/amendments shall be properly authenticated, else the offer is liable to be rejected.
- 2.1.3 Any discount/revised offer submitted by a bidder on its own shall be accepted provided it is received on or before the due date and time of offer submission. The discount shall be applied on pro-rata basis to all items unless specified otherwise by the bidder.

Unsolicited discounts/revised offers given after due date and time of offer submission shall not be accepted.

In case there is no change in the technical scope and/or specifications and/or commercial terms & conditions, the bidder/s shall not be allowed to change his/their price bids after the due date, within the validity period.

In case of changes in scope and/or technical specification and/or commercial terms & conditions, having price implications, 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. A cut-off date and time shall be given to all the techno-commercially acceptable bidders to submit the impact on their price bids.

In the event of any bidder, after finalizing the technical specification & scope of supply, opting to revise and submit their latest price bid instead of submitting impact on their price bid asked by BHEL, then their original price (i.e. the previous bid) shall also be opened.

Price Impact/ Discount/ Revised Price Bid shall be duly superscribed as:

“Price Impact / Discount/ Revised Price Bid (Part-II) (delete whichever is not applicable), Revision No. ____ against Tender Enquiry No. _____ dated ____”

- 2.2 After technical & commercial examination of the offers received and clarifications obtained (if required), Part-II (Revised Price Bid/ Original Price Bid along with

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and turnkey projects)	INSTRUCTIONS TO BIDDERS Issued on 28-08-2014
---	---	---	--

Price Impact and Discount, if any) shall be opened, for which the date and time shall be intimated to technically and commercially acceptable bidders in case of public opening. BHEL may opt to finalise the prices through Reverse Auction amongst technically and commercially acceptable bidders. BHEL reserves the right to open the earlier price bids, if any, submitted by the bidder(s), if required.

2.3 No correspondence shall be entertained from the tenderers after opening of Part-II (Price bid), except clarifications (if any) asked by BHEL in writing.

2.4 Only one representative of the bidder will be permitted to be present for tender opening. The representative to be present for tender opening should have proper authentication/ Photo Identity Proof which needs to be produced on demand by BHEL.

2.5 Purchaser may negotiate the tender with L1 bidder after RA/ price bid opening.

2.6 MARKING ON ENVELOPES

2.6.1 Following shall be superscribed on the envelopes which shall be addressed by name and designation to the official inviting tender:

PART-I : 1. TENDER ENQUIRY No. AND ITEM DESCRIPTION
 2. DUE DATE FOR OPENING
 3. "TECHNO-COMMERCIAL BID".

PART-II : 1. TENDER ENQUIRY NO AND ITEM DESCRIPTION
 2. DUE DATE FOR OPENING
 3. "PRICE BID".

2.6.2 Both Parts - I & II shall be submitted in separate sealed covers duly superscribed as indicated above and shall be enclosed further in a main cover duly sealed and superscribed as:

"TENDER FOR _____ AGAINST TENDER ENQUIRY NO. _____ DUE ON _____ CONTAINING PART-I & PART-II BIDS"

2.6.3 Envelope not marked with tender enquiry number is liable to be ignored and may not be opened.

2.7 BID SUBMISSION

2.7.1 Tenders shall be addressed to BHEL officials by name & designation and sent to the following address:

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and turnkey projects)	INSTRUCTIONS TO BIDDERS Issued on 28-08-2014
---	---	---	--

Tender Box at the reception of EPD & ISG,
 Bharat Heavy Electricals Ltd.
 Industrial Systems group
 Opp. IISc, PROF. C N R RAO CIRCLE ,
 MALLESWARAM , BANGALORE - 560 012
 Attention: 1) Mr.
 2) Mr.

- 2.7.2 Tenders can either be deposited in tender room in person or sent by Courier/Registered or Speed Post to the above mentioned address. It shall be bidders' responsibility to ensure that tenders are delivered in time.
- 2.7.3 Name of vendor's dealing person with Contact No(s), Email ID and Address of correspondence shall be provided in the bid.
- 2.8 Tenders received after the Due Date and Time of submission shall be rejected.
- 2.9 Unsolicited tenders will not be entertained.
- 3.0 Total **erection & commissioning charges** including service tax should be minimum 20% (or as specified in NIT) of the total quoted package price (excluding mandatory spares but including all taxes and freight), failing which the break-up of prices shall be adjusted accordingly for ordering.
- 4.0 **Authority of the person signing the tender on behalf of the tenderer:**

A person signing the tender or any other document in respect of Order/Contract on behalf of the tenderer, without disclosing his authority to do so shall be deemed to warrant that he has the authority to bind the tenderer. If it is discovered at any time that the person so signing had no authority to do so, the Purchaser may, without prejudice to any other right or remedy, cancel the Order/Contract and make or authorise the purchase of the stores at the risk and cost of such tenderer and hold such tenderer liable to Purchaser for all costs and damages arising from cancellation of the Order/Contract including any loss which Purchaser may sustain on account of such purchase.

Notes:

- a) Bids of Indian supplier shall be in Indian Rupee only.
- b) Bids of foreign suppliers shall preferably be in currency of the country of origin and on FOB basis.

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and turnkey projects)	INSTRUCTIONS TO BIDDERS Issued on 28-08-2014
---	---	---	--

c) An authorized representative/ agent can represent only one bidder for the given package.

5.0 CLARIFICATIONS REQUIRED BY BIDDERS

Technical and commercial clarifications required before submission of the tender should be addressed to the official(s) inviting the tender. The bidders are requested to submit all their queries/clarifications by the date specified in the NIT after which it will be presumed that there are no queries/clarifications and BHEL will be under no obligation to reply queries/clarifications raised after the date.

6.0 DEVIATIONS - LISTING

6.1 Tenders shall be submitted strictly in accordance with the requirements of tender documents. In case of deviations from NIT, the tenderer shall give cost of withdrawal of such deviation in Sealed Cover as per Annexure-II.

6.2 If bidder insists for price variation clause (PVC) where NIT specifies Firm price, the offer should contain:-

- a) PVC Formula
- b) Ceiling for PVC
- c) Base date and applicable indices for the base date.

Open ended PVC formula is not acceptable. Indices shall be based on Government of India/ RBI publications/ IEEMA/ LME etc. However, BHEL reserves the right to accept/ reject the offer with PVC.

7.0 VALIDITY OF OFFER

Vendors' offers shall be submitted with the following validity periods:

- i) Original offer shall be valid for **four** months from Part-I opening.
- ii) If revised price bid/ price impact is asked by BHEL, the validity of the same shall be two months from the date of revised price bid/ price impact or four months from Part-I opening, whichever is later.
- iii) Prices of Recommended Spares, O&M Spares and Mandatory Spares (wherever these are Optional items) shall be valid till two years from the date of PO.
- iv) Unit prices for scope addition/deletion shall be valid till two years from the date of PO.

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and turnkey projects)	INSTRUCTIONS TO BIDDERS Issued on 28-08-2014
---	---	---	--

v) Prices of optional items shall be valid till the contract period for placement of order.

vi) Offers with shorter validity are liable to be rejected.

8.0 **LANGUAGE & CORRECTIONS**

a) Tenderer shall quote the rates in Hindi/English language and international numerals only. Total Price shall be entered in figures as well as in words. For the purpose of tender, metric system of units shall be used.

b) All entries in the tender shall either be typed or written legibly in ink. Cancellations, corrections, insertions, erasements, over-writing (if unavoidable) shall be authenticated with signature and seal by the bidder.

9.0 **PRICE DISCREPANCY**

Following shall be considered for evaluation and ordering for non-conformities/ errors/ discrepancies 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.

(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 of (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.

(e) Taxes and duties if not specified clearly as extra shall be considered as included in the basic price and, therefore, shall not be reimbursed.

10.0 **TENDERER TO INFORM HIMSELF FULLY**

10.1 Tenderer shall closely peruse all clauses, specifications & drawings etc. indicated in tender documents before quoting. In case of any doubt about meaning of any

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and turnkey projects)	INSTRUCTIONS TO BIDDERS Issued on 28-08-2014
---	---	---	--

portion of tender specifications or discrepancies or omissions in drawings/tender document or clarifications regarding scope of work etc., tenderer shall contact the official(s) inviting the tender for clarifications, before submitting the offer.

- 10.2 Tenderer shall make independent enquiries as to conditions and circumstances affecting cost estimates, and possibility of executing supplies/works as described. Tenderer shall be deemed to have inspected and examined the site and its surroundings and to have satisfied himself as to the form and nature of the site, the quantities and materials necessary for completion of the work and means of transport and access to the site, the accommodation required, general labour position at site and to have quoted prices taking into consideration the risks, contingencies and other circumstances which may influence or affect execution of the Order/Contract.
- 10.3 It is the responsibility of tenderer to keep himself informed about all taxes & duties applicable on materials/services as prevailing at the time of tendering. If the rates assumed by tenderer are less than the tariff rates prevailing at the time of tendering, the tenderer will be himself responsible for such under quotations.

11.0 ETHICS IN BUSINESS DEALINGS

- 11.1 In order to protect its commercial interests, BHEL may take action against suppliers/ contractors by way of suspension of business dealings with them, who either fail to perform or are in default without any reasonable cause, cause loss of business/ money/ reputation, indulge in malpractices, cheating, bribery, fraud or any other misconduct or formation of cartels so as to influence the bidding process or influence the price as per extant policy of the company.

12.0 INTEGRITY PACT

Vendors shall have to enter into Integrity Pact with BHEL if specified in NIT/ RFQ, failing which vendor's offer will be rejected (Refer Annexure-IX).

13.0 REVERSE AUCTION

BHEL reserves the right to go for Reverse Auction (RA) instead of opening the sealed envelope price bid, submitted by the bidder. This will be decided after techno-commercial evaluation. All bidders to give their acceptance for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case BHEL decides to go for RA.

In case BHEL decides to go for Reverse Auction, only those bidders who have given their unconditional acceptance to participate in RA will be allowed to

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and turnkey projects)	INSTRUCTIONS TO BIDDERS Issued on 28-08-2014
---	---	---	--

participate in the Reverse Auction. Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit „online sealed bid“ in the Reverse Auction. Non-submission of “online sealed bid” by the bidder will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue.

Information and General Terms and Conditions governing RA shall form part of the RFQ/ Enquiry (Annexure-XI). Business Rules for RA shall be sent to the bidders before conducting RA.

14.0 REJECTION OF TENDER AND OTHER CONDITIONS

14.1 Acceptance of tender will rest with Purchaser and does not bind him to accept the lowest or any tender and reserves to itself full rights for the following without assigning any reasons whatsoever:

- a) To reject any or all the tenders.
- b) To split the work amongst two or more tenderers (where E&C is not in tenderer’s scope).
- c) To award the work in part. (where E&C is not in tenderer’s scope).
- d) To increase or decrease the quantities.
- e) To reject any commercial or technical deviation given in offer.

14.2 Standard pre-printed conditions of tenderer attached to offer will not be accepted and only those mentioned in the body of offer will be considered.

14.3 Purchaser will not be bound by any power of attorney granted by tenderer or by changes in composition of the firm made subsequent to award of Order/Contract. Purchaser may, however, recognize such power of attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the Seller/Contractor concerned.

14.4 If tenderer deliberately gives wrong information, Purchaser reserves the right to reject such an offer at any stage or cancel the Order/Contract, if awarded, and forfeit the security deposit and bank guarantee.

15.0 DEVIATIONS FROM NIT

15.1 Deviations (Commercial as well as Technical) from NIT are generally not acceptable. In case of deviations from NIT, the tenderer shall give cost of withdrawal of such deviation in Sealed Cover as per Annexure-II.

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and turnkey projects)	INSTRUCTIONS TO BIDDERS Issued on 28-08-2014
---	---	---	--

16.0 Loading For Commercial Deviations (where cost of withdrawal not given)

- 16.1 For deviations w.r.t. Payment terms, Liquidated damages, Firm prices and submission of E1/ E2 forms before claiming 10% payment, if a bidder chooses not to give any cost of withdrawal of deviation loading as per Annexure-VIII will apply.
- 17.0 Interest Rate for loading will be taken as Base rate of SBI (as applicable on the date of bid opening, Techno-commercial bid, in case of 2 part bids) + 6% for the period of relaxation sought by the bidders.

18.0 DISCOUNT

Discount offered by any bidder in the original price bid, against the present Tender Enquiry, which is also indicated to be applicable to any other Enquiry, shall be considered against the present Tender Enquiry only. In case only percentage discount is indicated, the same shall be applicable to optional prices also.

Discount offered shall be valid for full duration of offer validity.

Any conditional discount shall not be considered for evaluation.

19.0 EVALUATION CRITERIA

- 19.1 Though foreign bidders are required to quote FOB prices, Price evaluation and comparison will be made on the basis of Free Delivery at the Project site.
- 19.2 Tenders will be evaluated on the basis of delivered cost, i.e. total cost to the Purchaser, taking into consideration loadings, if any, and all available financial advantages, including those available from Owner, taxation authorities etc.
- 19.3 For evaluation, exchange rate (TT selling rate of State Bank of India) as on scheduled date of tender opening (Part-I bid in case of two part bid) shall be considered.
- 19.4 In case of foreign bidders, the quoted FOB price shall be loaded by following factors to arrive at total FOR Site price:
- a) Marine freight and insurance – @ 3% of FOB value for despatches from Europe/ Asia/ Australia/ African continent and 5% of FOB value for despatches from USA/ American continent.

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and turnkey projects)	INSTRUCTIONS TO BIDDERS Issued on 28-08-2014
---	---	---	--

b) Custom Duty (including CVD & SAD) as per Special Conditions of Contract – as prevailing on date of price bid opening.

c) Port handling/clearing charges – @ 1% of CIF value.

d) Inland freight – @ 1% of CIF value.

20.0 FOREIGN SUPPLIERS & INDIAN AGENTS OF FOREIGN SUPPLIERS

Please refer 'Annexure-V' for guidelines.

21.0 MICRO, SMALL & MEDIUM ENTERPRISES

Extant regulations of Govt. of India will be applicable.

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and Turnkey projects)	GENERAL COMMERCIAL TERMS & CONDITIONS Issued on 28-08-2014
--	---	---	--

GENERAL COMMERCIAL TERMS & CONDITIONS

TABLE OF CONTENTS

Sl. No.	DESCRIPTION
1.0	ACCEPTANCE OF ORDER
2.0	CONTRACT
3.0	PRICES
4.0	TAXES AND DUTIES
5.0	STATUTORY VARIATION
6.0	VARIATION OF CONTRACT VALUE
7.0	DRAWING SUBMISSION & APPROVAL
8.0	TRANSPORTATION & FREIGHT CHARGES
9.0	TERMS OF PAYMENT
10.0	RECOVERY OF OUTSTANDING AMOUNT
11.0	CONTRACT PERFORMANCE BANK GUARANTEE
12.0	GUARANTEE FOR PLANT/EQUIPMENT/STORES
13.0	DELIVERY/COMPLETION SCHEDULE
14.0	INSPECTION AND TESTING AT CONTRACTOR'S PREMISES
15.0	MATERIAL DESPATCH CLEARANCE CERTIFICATE (MDCC)
16.0	DELIVERY FAILURE AND TERMINATION / LIQUIDATED DAMAGES
17.0	INSURANCE
18.0	INTER CHANGEABILITY AND CHANGES
19.0	PACKING
20.0	STORAGE INSTRUCTIONS
21.0	MATERIAL RECEIPT CERTIFICATE

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and Turnkey projects)	GENERAL COMMERCIAL TERMS & CONDITIONS Issued on 28-08-2014
--	---	---	--

22.0	CONSIGNEE'S RIGHT OF REJECTION
23.0	RISK IN STORES (FOR E&C CONTRACTS)
24.0	SHORTAGES/DAMAGES
25.0	CONFIDENTIALITY
26.0	DEFAULT/ BREACH OF CONTRACT, INSOLVENCY & RISK PURCHASE
27.0	TERMINATION OF THE CONTRACT
28.0	TRANSFER, SUB-LETTING/ ASSIGNMENT/ SUB-CONTRACTING
29.0	FORCE MAJEURE
30.0	INDEMNIFICATION
31.0	SETTLEMENT OF DISPUTES
32.0	ARBITRATION
33.0	LAWS GOVERNING THE CONTRACT
34.0	JURISDICTION OF COURT
35.0	ORDER OF PRECEDENCE
36.0	SUPPLIER PERFORMANCE MONITORING AND RATING SYSTEM
37.0	DEALING WITH BANNED SUPPLIERS/ CONTRACTORS IN BHEL
38.0	CLAUSES APPLICABLE FOR E&C PACKAGES

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and Turnkey projects)	GENERAL COMMERCIAL TERMS & CONDITIONS Issued on 28-08-2014
--	---	---	--

1.0 ACCEPTANCE OF ORDER

Seller/Contractor should acknowledge and accept the LOI/ Purchase Order issued by BHEL within 7 days of its receipt. Seller/Contractor should examine the LOI/ Purchase Order immediately upon receipt and bring to the notice of BHEL, within 7 days of receipt, any discrepancy with regard to scope of work, rates, taxes & duties, agreed terms & conditions etc. for due rectification. If the Seller/Contractor fails to give such intimation / acceptance within seven days, the Seller/Contractor shall be deemed to have agreed to supply the stores as per LOI/ Purchase Order.

2.0 CONTRACT

Contract between Purchaser and Seller/Contractor is merely a contract and shall not be treated as partnership between the parties to the contract.

3.0 PRICES

Prices shall be for the entire scope of work in line with the tender documents and subsequent clarifications/confirmations.

4.0 TAXES AND DUTIES

4.1 EXCISE DUTY

4.1.1 Seller/Contractor is required to ensure that excise duty including education cess, if any, is quoted as per the existing tariff on the date of the offer and all benefits as per existing rules have been considered.

4.1.2 Excise duty actually incurred by Seller/Contractor on self-manufactured items alone shall be reimbursed against documentary evidence.

Excise duty paid by bidder on inputs, bought out items, raw materials and components consigned directly to site from sources other than Seller/Contractor's factory/works shall be included by the bidder in the quoted ceiling amount of excise duty and the same shall be payable extra at actuals limited to the ceiling amount.

4.1.3 If excise duty is paid under protest or dispute, it shall not be reimbursed till the dispute is settled. If the Seller/Contractor claims/obtains any refund of the excise duty paid, the same shall be refunded to the Purchaser immediately

4.1.4 Invoice cum Excise duty gate pass (Excise Invoice) should contain the name of the ultimate consignee as per Order/Contract/ Special Conditions of Contract.

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and Turnkey projects)	GENERAL COMMERCIAL TERMS & CONDITIONS Issued on 28-08-2014
--	---	---	--

4.1.5 If required by Purchaser, the Seller / Contractor will provide a certificate stating that CENVAT benefit has been availed of on the inputs and the same has been passed on to the Purchaser.

4.1.6 Excise duty shall be paid at actuals against documentary evidence but restricted to the amount and percentage indicated in the Order/Contract.

4.2 SALES TAX/VALUE ADDED TAX(VAT)

4.2.1 Central Sales Tax / Value Added Tax shall be reimbursed only if the same is paid by the Seller / Contractor to the respective Govt. authorities on direct sales by the Seller/ Contractor to the Purchaser, meeting all statutory requirements and availing all exemptions/concessions under the respective Central Sales Tax / Value Added Tax Acts. The offer should clearly indicate CST/VAT percentage and the total amount along with concessional form(s), if any.

4.2.2 Purchaser is registered in Bangalore, Karnataka vide following Registration Numbers:

Central Sales Tax Registration No. : 70160429 w.e.f. 19-09-2002.

Karnataka Sales Tax Registration No. : 70110426 w.e.f. 19-09-2002.

Karnataka TIN. : 29630078284

4.2.3 Central Sales Tax/Value Added Tax shall be reimbursed, as per tariff applicable, but restricted to the percentage and amount shown in the Order/Contract. If it is shown as included in the quoted price/ not applicable, it will not be reimbursed by the Purchaser.

4.2.4 Purchaser proposes to make sale-in-transit under section 6 (2) (b) of Central Sales Tax Act where goods movement is inter-state. Form-C shall be issued and exchanged against Form-E1/E2 based on quarterly transactions. Seller/Contractor is required to submit his request in the format enclosed at Annexure-VI within 30 days from end of the Quarter, giving State-wise invoice details.

4.2.5 In compliance with the notification No. CCW/CR-44-2013-14 dt. 29/04/2014 issued by Commercial Tax Dept., Govt. of Karnataka, vendors shall submit all the requisite documents within 10 days of dispatch for the purpose of issuance of 'C' forms. Timely issuance of 'C' form will depend on the compliance of this condition.

Note: In case of non-receipt of E1/E2 forms amount of differential tax payable by BHEL shall be to vendors' account

4.2.6 VAT invoices, in format prescribed by the respective State Sales Tax Act, have to be submitted in the name of Nodal Agency specified in Special Conditions of Contract.

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and Turnkey projects)	GENERAL COMMERCIAL TERMS & CONDITIONS Issued on 28-08-2014
--	---	---	--

4.3 SERVICE TAX

- 4.3.1 Service Tax paid by the Service Provider /contractor to the Government authorities directly shall only be paid at actuals against documentary evidence of Service tax payment (Service Tax remittance challan) made to concerned Service tax authorities corresponding to the tax claimed in the previous invoice / RAB, but restricted to the rate and amount mentioned in the order/contract. The offer should clearly indicate the percentage and the total amount of service tax.
- 4.3.2 Service provider/Contractor to ensure their registration for “Intended Service” to be provided, before claiming Service tax under the “intended category”. Decision of BHEL shall be final w.r.t. the “Intended category” in which the service will be falling.
- 4.3.3 If required by the Purchaser, the Service Provider/Contractor will provide a certificate stating that “CENVAT Benefit has been availed of on the input and the same has been passed on to the purchaser” or “CENVAT Benefit has not been availed of on the inputs”.
- 4.3.4 Vendor shall comply with the Point of Taxation Rules, as contemplated under the Service Tax Rules. In case, the CENVAT credit could not be availed by BHEL within the time limit (statutory), due to delay in submission of invoice(s) or for any other reason(s) attributable to vendor(s)/contractor(s), liability towards the loss of such CENVAT credit shall be to the vendor(s)/contractor(s) account. TDS shall be made for IT as per Income Tax act.

4.4 OTHER TAXES & LEVIES

All taxes and duties other than Excise Duty, Sales Tax/ VAT, Service Tax shall be deemed to be included in the Ex-Works prices unless specified otherwise by the bidder in the price bid. No variation in other taxes and duties shall be payable by Purchaser. However, statutory variation in Octroi will be payable extra against documentary evidence.

4.5 CUSTOMS DUTY

- 4.5.1 Customs Duty element for imported items as per Special Conditions of Contract shall be included in the Ex-Works prices. No variation in customs duty and exchange rate for imported items shall be payable by Purchaser.
- 4.5.2 Seller/Contractor shall arrange for his own import license, if required, since Purchaser will not provide any import license. Therefore, Seller/Contractor alone shall be responsible for any delay in getting import license or non-availability of the

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and Turnkey projects)	GENERAL COMMERCIAL TERMS & CONDITIONS Issued on 28-08-2014
--	---	---	--

same or completion of other related formalities. Purchaser shall not be responsible for any financial liability, whatsoever, on this account.

- 4.5.3 Essentiality Certificate or Project Authority Certificate (PAC) as per Import Policy, if required to avail concessional customs duty, shall be clearly specified in the offer. Import content (CIF value in rupees) with list of items, quantity, foreign currency, country of origin etc., shall be submitted by the bidder as part of Price bid.

4.6 **DIRECT TAX**

- 4.6.1 Purchaser shall not be liable towards income tax of whatever nature including variations thereof, arising out of this Order/Contract, as well as tax liability of the Seller/Contractor and his personnel.
- 4.6.2 Deductions of Tax at source at the prevailing rates shall be effected by the Purchaser before release of payment, as a statutory obligation, if applicable. TDS certificate will be issued by the Purchaser as per statutory provisions.

5.0 **STATUTORY VARIATION**

- 5.1 If the rates for taxes and duties in respect of the quoted materials and/or services assumed by the Seller/Contractor are less than the tariff prevailing at the time of tendering, Seller/Contractor will be responsible for such under quotations. However, if the rates assumed are higher than the correct rates prevailing at the time of tendering, the difference will be to the credit of the Purchaser.
- 5.2 Statutory Variations in Excise Duty, Service Tax and Central Sales Tax/Value Added Tax only on self manufactured items/services rendered by vendor himself on the rates prevailing at the time of delivery/ completion in comparison to the date of offer, will be to the account of the Purchaser. No other variations such as on customs duty, exchange rate, minimum wages, prices of controlled commodities, any other input etc. shall be payable by the Purchaser.
- 5.3 Notwithstanding the above, where the actual completion of the supply occurs beyond the period stipulated in the Order/Contract or any extension thereof, variations referred to above, will be limited to the rates prevailing on the dates of such agreed completion periods only. For variations after the agreed completion periods, the Seller/Contractor alone shall bear the impact for the upward revisions and for downward revisions, purchaser shall be given the benefit of reduction in taxes/duties. This will be without prejudice to the levy of penalty for delay in delivery/completion schedule.

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and Turnkey projects)	GENERAL COMMERCIAL TERMS & CONDITIONS Issued on 28-08-2014
--	---	---	--

- 5.4 Any new tax structure (like Goods & Services Tax) as and when implemented by the Government shall become applicable in addition to or in lieu of existing tax structure.

6.0 **VARIATION OF CONTRACT VALUE:**

Prices shall remain Firm (or with PVC as specified in NIT) for any increase or decrease in the Order/Contract value (Ex-works) upto plus or minus 30% within 2 years from the date of original PO unless specified otherwise in NIT. The Purchaser shall have the right to increase or decrease quantities and scope upto the above extent of value and Seller/Contractor shall be bound to accept the same at the contracted prices without any escalation.

7.0 **DRAWING SUBMISSION & APPROVAL :**

Drawing submission as per L2 network (to be furnished by the Vendor and approved by BHEL). Obtaining drawing approval from customer is the responsibility of the vendor. However, BHEL shall assist the vendor in getting the approvals.

8.0 **TRANSPORTATION & FREIGHT CHARGES**

- 8.1 All dispatches shall be through road carriers approved by Purchaser/Bank, on freight pre-paid basis.
- 8.2 Road permit/entry permit, if required as per law of the State, shall be arranged by Purchaser.
- 8.3 Freight charges (including Service Tax) shall be payable after delivery of the goods at the project site, on receipt of MRC or receipted LR on pro-rata basis.

9.0 **TERMS OF PAYMENT**

9.1 **SUPPLY PACKAGES (Main Supply and Mandatory Spares)**

- 9.1.1 Ninety percent (90%) of basic price of materials supplied, as per PO, along with 100% taxes and duties (as applicable), shall be paid against clean receipted LR on pro-rata basis.
- 9.1.2 Ten percent (10%) of basic price of materials supplied will be released on pro-rata basis after receipt of Material Receipt Certificate (MRC) from project site engineer of Owner/ Purchaser, on submission of all final documents for the packages as detailed below, duly certified by Engg. Deptt. of purchaser, and submission of Form E1/ E2 against Form-C, if applicable.

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and Turnkey projects)	GENERAL COMMERCIAL TERMS & CONDITIONS Issued on 28-08-2014
--	---	---	--

List of packages which requires final documents shall be as per technical specification

9.2 SUPPLY PACKAGES WITH PERFORMANCE GUARANTEE / DEMONSTRATION TEST AT SITE IN VENDOR'S SCOPE (Main Supply)

- 9.2.1 Eighty Five percent (85%) of basic price of materials supplied, as per PO /approved billing schedule, along with 100% taxes and duties (as applicable), shall be paid against clean receipted LR on pro-rata basis.
- 9.2.2 Ten percent (10%) of basic price of materials supplied will be released on pro-rata basis after receipt of Material Receipt Certificate (MRC) from project site engineer of Owner/ Purchaser and submission of Form E1/ E2 against Form-C, if applicable.
- 9.2.3 Five percent (5%) of the total basic price of materials and PG/ Demonstration test charges shall be released after submission of all final documents as per Technical Specifications and successful completion of the Performance Guarantee (PG)/Demonstration Test at site.

Note: If the Performance Guarantee/ Demonstration Test is not conducted up to 24 months from supply completion for reasons not attributable to the vendor, then last 5% payment will be released against Bank Guarantee of an equivalent amount, valid for 12 months. This bank guarantee will be in addition to Contract Performance Bank Guarantee for 10% of the contract value (excluding taxes, duties and freight).

9.3 SUPPLY PAYMENT FOR TURNKEY PACKAGES (E&C IN VENDOR'S SCOPE -

- 9.3.1 Eighty Five percent (85%) of basic price of materials supplied, as per approved billing schedule, along with 100% taxes and duties (as applicable),shall be paid against clean receipted LR on pro-rata basis.

OR

- i) Five percent (5%) lump sum payment of total basic price (excluding taxes, duties & freight) against approval of design documents and quality plans certified by Engineering. Design documents and quality plan shall be as defined in the Technical Specifications.
 - ii) Eighty percent (80%) of basic price of materials supplied, as per approved billing schedule, along with 100% taxes and duties (as applicable),shall be paid against clean receipted LR on pro-rata basis.
- 9.3.2 Five percent (5%) of basic price of materials supplied along with freight, if applicable, will be released on pro-rata basis after submission of Material Receipt

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and Turnkey projects)	GENERAL COMMERCIAL TERMS & CONDITIONS Issued on 28-08-2014
--	---	---	--

Certificate (MRC) from project site engineer of Owner/ Purchaser and submission of Form E1/ E2 against Form-C, if applicable.

Collection of Material Receipt Certificate from Site/ Owner and its submission for claiming the payment shall be the responsibility of the Seller/Contractor. 9.3.3

9.3.3 Ten percent (**10%**) of the total basic price shall be released after i) submission of all final documents as per Technical Specification and ii) successful completion of Performance Guarantee (PG)/Demonstration Test and handing over of the system/package, if applicable, as per Order/Contract.

9.4 **ERECTION & COMMISSIONING PAYMENT FOR TURNKEY PACKAGES**

9.4.1 Eighty percent (**80%**) payment on pro-rata basis for the work completed, as per approved billing schedule, shall be released by BHEL-ISG, HQ on submission of protocols, duly signed by BHEL Site/Owner.

9.4.2 Ten percent (**10%**) of the total value shall be released by BHEL-ISG, HQ on successful commissioning of the complete system/package.

9.4.3 Ten percent (**10%**) of the total value shall be released by BHEL-ISG, HQ on successful completion of PG/ Demonstration test(s) and handing over system/package to the Owner, as applicable.

9.5 **PG TEST, INSTALLATION CHECK, SUPERVISION OF ERECTION / COMMISSIONING CHARGES**

100% payment shall be released after successful completion of the activity, on Site certification.

9.6 **Vendors shall submit documents for payment directly to BHEL. Payment will be released within 45 days after receipt of complete documents as per order/ contract.**

Note:

- 1) For indigenous suppliers, if the documents are routed through Bank, then all bank charges will be to vendor's account.
- 2) Foreign bidders can opt for payment (less agency commission, if applicable) through irrevocable and unconfirmed letter of credit. In that case for evaluation purpose, prices of foreign bidders will be loaded on account of payment through LC, equal to loading specified against 'Payment through Bank' in Annexure-VIII. No loading will be done if foreign vendors agree for 90 days issuance LC or

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and Turnkey projects)	GENERAL COMMERCIAL TERMS & CONDITIONS Issued on 28-08-2014
--	---	---	--

submit the documents on collection basis for payment within 90days of submission of complete documents.

- 3) LC opening/ negotiation/ confirmation charges will be to vendor's account.
- 4) Form C/ E1/E2 are not applicable for foreign bidders.
- 5) In extreme case of vendors not agreeing to link 10% payment with submission of Form E1/ E2 against Form-C as above, their prices will be loaded as per Annexure-VIII.
- 6) Any negative PVC, if not adjusted in earlier payments, will be adjusted at the time of MRC payment.
- 7) Payment terms for mandatory spares shall be as per clause 9.1.

9.7 **DOCUMENTS TO BE SUBMITTED BY VENDOR**

9.7.1 **For Recognition of Dispatch**

Copy of the following documents by e-mail/ fax immediately on despatch:

- a. Invoice
- b. LR along with Delivery Order
- c. Packing List
- d. Insurance Intimation
- e. Dispatch Clearance

9.7.2 **For Claiming Payments (under clause 9.1.1, 9.2.1, 9.3.1):**

- a. Invoice – original+3 copies
- b. Receipted LR (signed & stamped)- original+3 copies (applicable only for clause 9.1.1, 9.2.1) or LR – original+3 copies (applicable only for clause 9.3.1)
- c. Packing List - clearly showing number of packages, gross weight and net weight. - original+3 copies
- d. MDCC from BHEL/ Customer – as per SCC – 4 copies
- e. Guarantee Certificate – Original + 3 copies
- f. Insurance Intimation - 4 copies
- g. PVC Calculation and copy of all applicable indices, if PVC applicable. – 4 copies
- h. Duty drawback documents (original excise invoice, original disclaimer certificate, original certificate from excise authority for payment of excise duty), if applicable. – original + 3 copies

9.7.3 **For Claiming Freight Payment**

- a. Invoice – Original + 3 copies

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and Turnkey projects)	GENERAL COMMERCIAL TERMS & CONDITIONS Issued on 28-08-2014
--	---	---	--

- b. Receipted LR (signed & stamped)/ confirmation from site regarding receipt of packages/Boxes – original / copy.
- c. Transporter's document indicating the freight amount. Original money receipt to be submitted if required as per SCC.

9.7.4 For Claiming MRC Payment

- a. Invoice – Original + 3 copies
- b. Copy of MRC

9.7.5 For Claiming Payment for Services involving Service Tax

- a. Invoice as per rule 4A of Service Tax Act – Original + 1 copy
- b. Copy of Service Tax registration certificate
- c. Copy of challan for Service Tax payment corresponding to service tax claimed in the previous invoice / RAB

9.7.6 All your invoices against our order shall reach BHEL -ISG within one month from the date of LR/RR ,addressed to:

BHEL - ISG VENDOR BILLS BOX ,
 BHEL - Industrial Systems Group ,
 Opp. IISc, PROF. C N R RAO CIRCLE ,
 MALLESWARAM , BANGALORE - 560 012

- a. The envelope shall be super-scribed with Project Name / P.O No. / W.O No., and the Bill / Invoice numbers & Contact person.
- b. Bills / invoices which are brought personally by vendors to ISG are to be dropped in the "BHEL-ISG vendor bills Box" kept near Tender Box at the Reception Office.
- c. Any additional tax implication to BHEL due to delay in submission of bills by Vendor beyond one month shall be to vendor's account.

9.8 LOADING DETAILS IN CASE OF DEVIATIONS:-

Loading details in respect to deviations in Payment Terms, LD, PVC and Form-E1/E2 indicated in Annexure – VIII.

9.9 BHEL'S BANKERS

List of the consortium bankers of BHEL-ISG is as per Annexure-X.

9.10 MODE OF PAYMENT

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and Turnkey projects)	GENERAL COMMERCIAL TERMS & CONDITIONS Issued on 28-08-2014
--	---	---	--

Payments shall be made directly to the Seller/Contractor by E-transfer. Seller/Contractor to provide necessary information for the same as per Annexure-VII.

- 9.11 No interest shall be payable by the Purchaser on the security amount, bank guarantee amount or balance payment or any money which may become due owing to difference or misunderstanding or any dispute between the Purchaser and the Contractor, or any delay on the part of Purchaser in making periodical or final payment or any other aspects incidental thereto.
- 9.12 In case of Turnkey packages (refer clause 9.3.3 & 9.4.3) , if the PG test is not conducted up to 24 months from the date of last dispatch for reasons not attributable to vendor, the last 5% payment will be released against Bank Guarantee of an equivalent amount, valid initially for 12 months and extendable till completion of PG test. This BG will be in addition to contract Performance Bank Guarantee for 10% of the contract value (Ex-Works / F.O.B.).

10.0 RECOVERY OF OUTSTANDING AMOUNT

In event of any amount of money being outstanding at any point of time against the Seller/Contractor due to excess payment or any other reason whatsoever, in the present order/contract or any other order/contract from any BHEL Unit, the outstanding amount shall be recovered from the payments due to the Seller/Contractor or at any other appropriate time and manner/mode as deemed fit by the Purchaser at its sole discretion.

11.0 CONTRACT PERFORMANCE BANK GUARANTEE

- 11.1 No Bank Guarantee is required where original Order/ Contract value is up to Rs. 25 Lakhs (excluding taxes, duties and freight).
- 11.2 For original order / contract values above Rs. 25 Lakhs (excluding taxes, duties and freight), the vendor shall submit Contract Performance Bank Guarantee (as per Annexure-IV) for 10% of Order/ Contract value (excluding taxes, duties & freight) before first submission of documents for payment to cover the due performance of Order/ Contract and to fulfill the guarantee conditions stipulated in the Order/ Contract. However, BG value can be proportionality reduced after completion of Guarantee period Unit-wise/ Lot-wise/ Set-wise, as applicable.

Foreign vendors seeking payment through Letter of Credit (LC) should submit the Bank Guarantee before LC opening.

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and Turnkey projects)	GENERAL COMMERCIAL TERMS & CONDITIONS Issued on 28-08-2014
--	---	---	--

- 11.3 Value of the Bank Guarantee (at the time of submission) shall remain unchanged for any subsequent variations in order/ contract value up to 20%. Beyond this, the Seller/ Contractor shall arrange to enhance or reduce the value of the Bank Guarantee accordingly.
- 11.4 Validity of the Bank Guarantee shall be for the entire Guarantee period + 3 months claim period. Initially, it should be at least 18 months + 3 months claim period, later extended to cover the entire guarantee period, two months before its expiry.
- 11.5 Purchaser reserves the right to encash the bank guarantee and forfeit the amount in the event of any default, failure or neglect on part of the Seller/ Contractor in fulfillment of performance of the Order/ Contract.
- 11.6 Equivalent amount shall be recovered from payment due to the Seller/ Contractor, before releasing any payment, in absence of a valid bank guarantee.
- 11.7 Bank Guarantees shall be from Consortium Bank as per Annexure-X. Bank guarantees from cooperative banks/ non-scheduled banks are not acceptable.
- 11.8 In case of private sector banks, a clause to be incorporated in the text of bank guarantee that it can be enforced by being presented at any branch of the bank located in Bangalore.
- 11.9 Two witness signatures from bank officials, other than the bank official who has already signed is a must. BG is to be submitted directly by the issuing bank to Sr. DGM/MM/BG-1A, under registered post (A/D).

12.0 GUARANTEE FOR PLANT/ EQUIPMENT/ STORES

- 12.1 Seller/ Contractor shall warrant that the stores supplied shall be free from all defects and faults in design & engineering, material, workmanship & manufacture and shall be of the highest grade and consistent with the established and generally accepted standards and in full conformity with the Order/ Contract specifications, drawing or samples, if any.
- 12.2 a) Guarantee period for **Supply** packages shall be eighteen (18) months from the date of last dispatch or as per SCC whichever is later.
- b) Guarantee period for **Turnkey** packages shall be as stipulated in Special Conditions of Contract or otherwise, 18 calendar months from the date of completion of supplies or 12 calendar months from the date of satisfactory commissioning of the package, whichever is later. Seller/ Contractor's liability in respect of any complaints, defects and claims shall not be limited to supply and

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and Turnkey projects)	GENERAL COMMERCIAL TERMS & CONDITIONS Issued on 28-08-2014
--	---	---	--

installation of replaced parts free of charge, or repair of defective parts to the extent that such replacements are attributable to or arise from faulty workmanship, material or design, in the manufacture, of the stores but at the option of the Purchaser, to the payment of the value, expenditure and damages as mentioned hereafter, provided defects on being discovered are brought to the notice of the Seller/ Contractor within a period of three (3) months from the date of expiry of the guarantee period.

12.3 All replacements and repairs during the guarantee period shall be delivered and completed promptly and satisfactorily within a period of three months from the time of reporting the defect/ loss/ rejection etc. If the Seller/ Contractor so desires and the Purchaser agrees, subject to import control regulations, the replaced parts can be taken over by Seller/ Contractor or his representative or can be dispatched at Seller/ Contractor's cost. No claim, whatsoever shall be entertained by Purchaser on account of such replaced parts.

12.4 All the replaced and replenished stores shall also be guaranteed as per above clauses.

12.5 Decision of Purchaser with regard to Seller/ Contractor's liability and the amount involved, if any, payable by Seller/ Contractor under the guarantee shall be final, conclusive and binding. However, vendor's maximum liability will be limited to the total contract value including taxes, duties and freight.

13.0 DELIVERY / COMPLETION SCHEDULE

13.1 Supply of plant/equipment/stores shall not be considered complete until they have been inspected and accepted at the place and destination specified for delivery by the time stipulated under the terms & conditions of the Order/Contract. Mere payment by itself shall not constitute acceptance of the goods or materials in any manner, whatsoever.

13.2 Terms of delivery shall be FOR dispatch station for indigenous supplies.

13.3 Vendor shall strictly adhere to 'L2' schedule. In case of non compliance to agreed schedules / milestones, then it would be presumed that vendor / contractor is not fulfilling contractual obligations. BHEL reserves the right to take suitable action like operating "Risk & cost clause".

14.0 INSPECTION AND TESTING AT CONTRACTOR'S PREMISES

14.1 Purchaser's nominated Inspection Agency shall have at all reasonable times access to Seller/ Contractor's premises or works and shall have the power at all reasonable

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and Turnkey projects)	GENERAL COMMERCIAL TERMS & CONDITIONS Issued on 28-08-2014
--	---	---	--

times to inspect drawings of any portion of the work or examine the materials and workmanship of the stores during their manufacture, and if part of the stores is manufactured at other premises, the Seller/Contractor shall arrange for inspection, examination and testing by the Inspection Agency as if the store is manufactured on the Seller/Contractor's premises.

Inspection calls should be given 15 working days in advance by indigenous supplier and 30 working days in advance by foreign supplier.

Such inspection, examination and testing by itself shall not relieve the Seller/Contractor from any obligation under the Order/Contract.

14.2 Seller/Contractor shall give Inspection Agency reasonable notice of any material being ready for testing and the Inspection Agency shall (unless the inspection of tests is voluntarily waived) attend at the Seller/Contractor's premises within fifteen (15) days of the date on which the material is notified as being ready. All standard shop tests, physical and chemical tests required by the standards or as may be prescribed or approved as per Order/ Contract shall be conducted by the Seller/Contractor. Purchaser/Inspection Agency reserves the right to waive any of the above tests requirements and to prescribe new tests, if found necessary, to complete the work so as to conform to the best practices. Seller/Contractor shall forthwith forward to the Inspection Agency, duly certified copies of the test certificates in quadruplicate, for approval. Further copies of the shop test certificates shall be bound with the instruction manuals referred to in "Seller/Contractor's documents, drawings and instruction manuals".

14.3 Where the Order/Contract provides for tests/inspections at the premises or works of the Seller/Contractor or any sub-contractor, the Seller/Contractor, except specified otherwise, shall provide free of charge such assistance, labour, materials, electricity, fuel, water, stores, apparatus, measuring instruments and test equipment including any other facilities as may be reasonably required to carry out such tests efficiently.

14.4 INSPECTION MEASURING AND TEST EQUIPMENTS

14.4.1 Inspection Measuring and Test Equipments (IMTE) whether used by the Seller/Contractor or sub-contractor shall be calibrated, maintained and controlled. Calibration shall be valid and IMTE maintained in sound condition during usage.

14.4.2 In addition to above, Seller/ Contractor shall ensure the following :

- a) Measurement uncertainty is known and consistent with required measurement capability of the IMTE.

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and Turnkey projects)	GENERAL COMMERCIAL TERMS & CONDITIONS Issued on 28-08-2014
--	---	---	--

- b) Selection of IMTEs is compatible with the necessary accuracy and precision of required measurement.
- c) IMTEs are calibrated at the required intervals against certified equipments having known valid relationship to nationally recognized standards, at recognized calibration labs.
- d) Calibration records are available and traceable to the particular IMTE.
- e) In case, during recalibration, the IMTE is found out of calibration, report on action taken to validate the previous results along with both calibration records of the IMTE to be furnished to Inspection Agency.
- f) IMTEs are stored, handled and preserved such that accuracy and fitness are maintained and safeguarded from adjustments.

NOTE: Purchaser's decision on acceptability of the product in such cases shall be binding.

14.4.3 Responsibility of usage of valid and calibrated IMTEs by his sub-contractor(s) shall be of the Seller/ Contractor.

14.4.4 In case, calibration records are required by purchaser, copies of the same shall be furnished.

14.5 Seller/Contractor shall be fully responsible for the Quality of products supplied by sub-contractors.

15.0 MATERIAL DESPATCH CLEARANCE CERTIFICATE (MDCC)

15.1 When the tests have been satisfactorily completed at Seller/Contractor's works, the Inspection Agency shall issue a certificate to that effect within fifteen (15) days after completion of the tests, but if the tests were not witnessed by the Inspection Agency or his representative, the certificate would be issued within fifteen (15) days after receipt of the test certificates by the Purchaser.

15.2 Purchaser/Owner will issue MDCC to the Seller/Contractor based on inspection report/ test certificates.

15.3 **Seller/ Contractor shall not dispatch any material before issue of MDCC by Purchaser/Owner.**

15.4 Satisfactory completion of tests or issue of MDCC shall not bind the Purchaser/Owner to accept the supply/ equipment should it, on further tests after erection, be found not to comply with the contract provisions.

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and Turnkey projects)	GENERAL COMMERCIAL TERMS & CONDITIONS Issued on 28-08-2014
--	---	---	--

16.0 DELIVERY FAILURE AND TERMINATION/LIQUIDATED DAMAGES

16.1 Timely dispatch/delivery and completion of other schedules as stipulated in Order/Contract shall be the essence of Order/Contract. If the Seller/Contractor fails to complete the dispatch/delivery and other schedules within the time period stipulated in Order/Contract, or within any extension of time granted by Purchaser, it shall be lawful for Purchaser to recover damages for breach of Order/Contract without prejudice to any other rights and/or remedies provided for, in the Order/Contract and hereunder. For any delay not attributable to the Seller/Contractor, the Seller/Contractor must report the same to Purchaser immediately.

16.2 DELAYED DELIVERY

16.2.1 Purchaser reserves the right to recover from the Seller/Contractor, as agreed liquidated damages and not by way of penalty, a sum equivalent to half (½) percent of the total contract price per week or part thereof, subject to a maximum of ten (10) percent of the total contract price **excluding** elements of taxes, duties and freight, if the Seller/ Contractor fails to deliver any part of the ordered stores within the period stipulated in the Order/Contract.

For Turnkey packages (Supply and E&C in vendor's scope), Liquidated Damages shall be levied on the total contract value of both Supply and E&C orders (excluding taxes, duties and freight) if E&C completion of the package is delayed beyond the contractual completion date or extension thereof. Liquidated Damages will not be withheld from supply payment.

NOTE:

1. LR/ GR/ RR date for indigenous supplies and AWB/ BL date for FOB contracts shall be treated as the date of dispatch for levying LD as per Clause 16. However, for indigenous supply if receipted LR date is beyond three months from the date of LR, such excess period shall also be considered for LD purpose.
2. In case of any amendment/revision, LD shall be linked to the amended/revised contract value and delivery date(s).
3. If Order/ Contract involves two or more Units/ Sets/ Lots, then Liquidated Damages shall be for order/ contract value of the delayed Unit/ Set/ Lot, provided delivery stipulated in the Order/ Contract is Unit/ Set/ Lot wise, however total LD amount shall be limited to 10% of total order value. (excluding taxes, duties and freight)

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and Turnkey projects)	GENERAL COMMERCIAL TERMS & CONDITIONS Issued on 28-08-2014
--	---	---	--

16.2.2 Purchaser reserves the right to purchase from elsewhere on account of and at the risk and cost of Seller/Contractor, with notice to Seller/Contractor, the stores due for delivery but not so delivered, or their equivalent without cancelling the Order/Contract in respect of stores not yet due for delivery. The manner and method of such purchase shall be at the discretion of the Purchaser. The actual cost incurred for such purchases along with the departmental charges @ 15% will be recovered from the bidder.

16.2.3 Purchaser reserves the right to cancel the Order/Contract or a portion thereof for the stores not so delivered at the risk and cost of the Seller/Contractor and the Seller/Contractor shall be liable to the Purchaser for any excess cost thereof. The actual cost incurred for such purchases along with the departmental charges @ 15% will be recovered from the bidder.

16.2.4 Seller/Contractor shall continue performance of the Order/Contract, under all circumstances, to the extent not cancelled.

17.0 INSURANCE

17.1 Insurance shall be arranged by BHEL.

17.2 Vendors shall inform the Underwriters, appointed/ nominated by BHEL/ Purchaser, the details of dispatches under intimation to BHEL such as LR No. and date, Truck No., P.O. No., project and value.

17.3 Insurance as applicable for field work such as third party liability, workmen compensation, Seller/Contractor's own Tools & Plants and automobile shall be arranged by the Seller/ Contractor.

18.0 INTER-CHANGEABILITY AND CHANGES

18.1 All similar components or parts of similar equipment supplied by Seller/Contractor shall be interchangeable with one another.

18.2 Even though all the work and materials necessary for satisfactory completion of the works may not be detailed in the specifications and schedules, the cost will be considered to be within the contract price and no extra charges shall be payable. However, if there are substantial changes in the specifications of the stores/plant, consequential changes in prices shall be mutually agreed between Purchaser and Seller/Contractor.

19.0 PACKING

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and Turnkey projects)	GENERAL COMMERCIAL TERMS & CONDITIONS Issued on 28-08-2014
--	---	---	--

- 19.1 Packing shall be in conformity with specifications and shall be such as to ensure prevention of damages, corrosion, deterioration, shortages, pilferage and loss in transit or storage.
- 19.2 In case of shipment by sea, the packing shall be sea-worthy and of international standards.
- 19.3 Packing List shall be submitted as per standard format along with advance set of documents for claiming payment which shall also indicate:-
- Packing size.
 - Gross weight and net weight of each package.
 - Contents of the package with quantity of each item separately.

19.4 **PACKING FOR SPARES**

Different types of spares i.e. start-up/commissioning spares and initial spares (Mandatory spares and recommended O&M spares) are to be packed separately. Mandatory and Recommended Spares shall not be packed with main equipment but shall be packed separately.

Packing of Mandatory Spares should have a Red colour band all around the box/package and words "MANDATORY SPARES" written in red colour, Project, Package description, BHEL's PO No. and date should also be clearly mentioned on the box.

19.5 **COLOUR CODING OF TAGS/MARKING/STICKERS**

- 19.5.1 Aluminium stickers are required to be attached to large components but plastic sheet tags should be tied with small components, giving details like purchase order, description of the component, quantity etc.
- 19.5.2 Tags should be of the colour as mentioned below:
- | | |
|-------------------------------|-----------------------|
| Main equipment | : Yellow or White tag |
| Mandatory spares | : Pink or Red tag |
| Start-up/Commissioning spares | : Blue tag |
| O&M spares | : Green tag |

- 19.5.3 Similar colour scheme to be followed wherever stickers are pasted on components.

20.0 **STORAGE INSTRUCTIONS**

Successful tenderer shall be required to submit detailed instructions for storage of supplies within three months of date of issue of LOA/ Order/ Contract.

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and Turnkey projects)	GENERAL COMMERCIAL TERMS & CONDITIONS Issued on 28-08-2014
--	---	---	--

21.0 MATERIAL RECEIPT CERTIFICATE

Seller/Contractor shall arrange Material Receipt Certificate from the project site, duly signed by Purchaser/Owner Site Engineer after receipt & physical verification of the material at site, wherever E&C is in the scope of Seller/ Contractor.

For Supply packages, Material Receipt Certificate shall be arranged by BHEL. Vendor to provide copy of receipted LR's to enable BHEL to obtain MRC from site.

22.0 CONSIGNEE'S RIGHT OF REJECTION

- 22.1 Notwithstanding any approval of Purchaser or Engineer in respect of stores or materials or other particulars or work or workmanship involved in performance of order/contract (with or without any test carried out by Seller/Contractor or Inspection Agency or under direction of Contract Engineer), and notwithstanding delivery of the stores where so provided to the consignee, it shall be lawful for the consignee, on behalf of the Purchaser, to reject the stores or any part/ portion of consignment thereof, within 30 days after actual delivery at the stipulated place or destination, if such stores or part/ portion of consignment thereof is not in conformity with terms and conditions of order/contract whether on account of any loss, storage, deterioration or damage before despatch or otherwise, whatsoever.
- 22.2 Rejected goods or materials shall be removed by Seller/Contractor within a period of 15 days from the date of receipt of notice of such rejection. The expenses to be incurred in respect thereof shall be borne entirely by the Seller/Contractor.

23.0 RISK IN STORES (FOR E&C CONTRACTS)

Seller/ Contractor shall perform the order/ contract in all respects in accordance with terms and conditions thereof. Stores and every constituent part thereof, whether in possession or control of the Seller/Contractor, his agents or servants, or a carrier, or in joint possession of Seller/ Contractor, his agent or servants and Purchaser, his agents or servants, shall remain in every respect at the risk of Seller/Contractor until their actual delivery to consignee at the stipulated place or destination or where so provided in acceptance of offer, until their delivery to a person specified by Purchaser as interim consignee for the purpose of despatch to the consignee. Seller/Contractor shall be solely responsible for all losses, destructions, damages or deterioration to the stores from any cause whatsoever, while the stores await dispatch after approval by the Inspection Agency.

24.0 SHORTAGES/DAMAGES

24.1 FOR SUPPLY PACKAGES

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and Turnkey projects)	GENERAL COMMERCIAL TERMS & CONDITIONS Issued on 28-08-2014
--	---	---	--

- a) Shortages in sound cases shall be replenished free of cost by the vendor, as early as possible.
- b) For shortages/damages during transit/ handling at site, vendor shall supply replacements, as early as possible, at the old contractual rates upon intimation to vendor within 3 months of receipted LR.

24.2 FOR E&C PACKAGES

Any shortages or damages during unloading and handling at site, including at the time of erection and commissioning, shall be made good by the Seller/ Contractor at his risk and cost, to meet the project schedule. In case of faults/discrepancies in any material, component, sub-assembly, assembly, etc., the same shall be supplied/replenished free of cost to enable the equipment to be put to service.

25.0 CONFIDENTIALITY

Seller/Contractor shall, at all times, undertake to maintain complete confidentiality of all data, information, software, drawings & documents, etc. belonging to the Purchaser and also of systems, procedures, reports, input documents, manuals, results and any other company documents discussed and/or finalised during the course of execution of order/contract.

26.0 DEFAULT/BREACH OF CONTRACT, INSOLVENCY AND RISK PURCHASE

- 26.1 If Seller/Contractor fails to deliver goods or materials or any installment thereof within the period(s) fixed for such delivery or delivers goods or materials not of the contracted quality and failing to adhere to the contract specifications or at any time repudiates or otherwise abandons the contract before expiry of such period or refuses or is unable to supply goods or materials covered by the Order/Contract either in whole or in part or otherwise fails to perform the Order/Contract or commits any breach of Order/Contract not herein specifically provided for or in the event of the death or insanity or if the Seller/Contractor being an individual or if a firm on a partnership thereof, shall at any time, be adjudged insolvent or shall have a receiving order for administration of his estate made against him or shall take any proceeding for composition under any Insolvency Act for the time being in force or make any assignment of the Order/Contract or enter into any arrangement or composition with his creditors or suspend payment or if the firm is dissolved under the Partnership Act or if the Seller/Contractor being a company is wound up voluntarily or by order of a Court or a Receiver, Liquidator or Manager on behalf of the debenture holders and creditors is appointed or circumstances shall have arisen which entitles the Court of debenture holder and creditors to appoint a receiver, liquidator or manager, the purchaser without prejudice to his right to recover any

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and Turnkey projects)	GENERAL COMMERCIAL TERMS & CONDITIONS Issued on 28-08-2014
--	---	---	--

expenses, losses or damages to which the Purchaser may be put to incur or sustain by reason of Seller/Contractor's default or breach of Order/Contract, Purchaser shall be entitled to cancel the Order/Contract either in whole or portion thereof without compensation to Seller/Contractor and if the Purchaser so desires, may procure upon such terms and in such manner as deemed appropriate, stores not so delivered or others of similar description where stores exactly complying with particulars are not, in the opinion of the Purchaser, which shall be final, readily procurable, at the risk and cost of the Seller/Contractor and the Seller/Contractor shall be liable to the Purchaser for any excess costs provided that the Seller/Contractor shall continue the performance of the Order/Contract to the extent not cancelled under the provisions of this clause. The Seller/Contractor shall on no account be entitled to any gain on such repurchases.

Except for Clause 26.2, vendor's maximum liability will be limited to the total contract value including taxes, duties and freight.

26.2 Recovery on account of purchases made by Purchaser at the risk and cost of Seller/Contractor shall be worked out as follows:

a. Excess of new purchase cost over old purchase cost, where the total value of new PO is more than total value of old PO.

And

b. Additional 15% overheads as departmental charges on the ex-works value of new PO" as per clause 16.2.2 and 16.2.3 above.

27.0 TERMINATION OF CONTRACT

27.1 Purchaser shall have the right to cancel Order/Contract, wholly or in part, in case they are obliged to do soon account of any decline, diminution, curtailment or stoppage of their business and in that event, the Seller/Contractor compensation claim shall be settled mutually.

27.2 Purchaser shall have the right to cancel order/contract at the risk and cost of Seller/Contractor in case either the Seller/Contractor himself or any of his representative or agent is found to have been a previous employee of the Purchaser immediately before retirement and has within a period of two years of such retirement accepted the employment of the Seller/Contractor either as a Seller/Contractor or as an employee without having obtained prior permission of Purchaser.

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and Turnkey projects)	GENERAL COMMERCIAL TERMS & CONDITIONS Issued on 28-08-2014
--	---	---	--

27.3 In case of cancellation of main supply order/ contract, all other associated orders/ contracts like mandatory spares/ recommended spares/ E&C/ supervision of E&C would also get cancelled.

28.0 TRANSFER, SUB-LETTING/ASSIGNMENT/SUB-CONTRACTING

28.1 Seller/Contractor shall not sublet, transfer or assign order/contract or any part thereof or interest therein or benefit or advantage thereof save with the prior consent in writing of Purchaser. In the event of Seller/Contractor sub-letting, transferring or assigning order/contract or any part thereof or interest therein or benefit or advantage thereof without such permission, the Purchaser shall be entitled to cancel the Order/Contract and to purchase the stores from elsewhere at risk and costs of Seller/Contractor and the Seller/Contractor shall be liable for any loss or damage which Purchaser may sustain in consequence of or arising out of such risk purchase.

28.2 If Seller/Contractor is an individual or proprietary concern and the individual or the proprietor dies or the partnership is dissolved or substantially affected, then unless the Purchaser is satisfied that legal representative of individual seller/contractor or proprietor of proprietary concern and surviving partners of partnership firm are capable of carrying out and completing the order/contract, the Purchaser shall be entitled to cancel the order/ contract as to its incomplete portion and without being in any way liable to payment of any compensation to estate of seller/contractor and/or to surviving partners of seller's/contractor's firm on account of cancellation of the order/contract.

28.3 Decision of Purchaser that legal representatives of deceased seller/contractor or surviving partners of the seller's/contractor's firm can not carry out and complete the order/contract shall be final and binding on the parties hereto.

28.4 Terms and Conditions shall not get affected in case of merger/amalgamation/takeover/re-arrangement etc.

29.0 FORCE MAJEURE

29.1 Notwithstanding anything contained in Clause 13.0, if at any time during the continuance of the Order/Contract, the performance in whole or in part by either party of any obligations under the Order/Contract shall be prevented or delayed by reason of any war hostilities, acts of the public enemy, restrictions by Govt. of India, civil commotion, sabotage, fires, floods, explosion, epidemics, quarantine restrictions, strike, lock-outs, or acts of God (hereinafter referred to as 'event'), then, provided notice of the happening of such event is given by either party to the other within fifteen (15) days from the date of occurrence thereof, neither party shall by

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and Turnkey projects)	GENERAL COMMERCIAL TERMS & CONDITIONS Issued on 28-08-2014
--	---	---	--

reason of such event be entitled to terminate the Order/Contract nor shall have any claim for damages against each other in respect of such non-performance and delay in performance. Performance under the Order/Contract shall be resumed immediately after such event has come to an end or ceased to exist and decision of Purchaser as to whether the deliveries have to be resumed or not shall be final, conclusive and binding on the parties hereto.

- 29.2 In the event of the parties hereto not able to agree that a force majeure event has occurred, the parties shall submit the disputes for resolution pursuant to the provisions hereunder, provided that the burden of proof as to whether a force majeure event has occurred shall be upon the party claiming such an event.
- 29.3 Notwithstanding the above provisions, Purchaser shall reserve 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 delivery and other schedules.

30.0 INDEMNIFICATION

Seller/Contractor shall fully indemnify and keep indemnified the Purchaser against all claims of whatsoever nature arising during the course and out of the execution of this Order/Contract.

31.0 SETTLEMENT OF DISPUTES

- 31.1 Except as otherwise specifically provided in the Order/Contract, all disputes concerning questions of the facts arising under the Order/Contract, shall be decided by Purchaser, subject to written appeal by the Seller/Contractor to the Purchaser, whose decision shall be final.
- 31.2 Any dispute or difference shall be, to the extent possible, settled amicably between the parties hereto, failing which the disputed issues shall be settled through arbitration.
- 31.3 Seller/Contractor shall continue to perform the order/contract, pending settlement of dispute(s).

32.0 ARBITRATION

- 32.1 In the event of any dispute or difference arising out of execution of order/ contract or the respective rights and liabilities of the parties or in relation to interpretation of any provision by Seller/Contractor in any manner touching upon order/ contract, such dispute or difference shall (except as to any matters, the decision of which is

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and Turnkey projects)	GENERAL COMMERCIAL TERMS & CONDITIONS Issued on 28-08-2014
--	---	---	--

specifically provided for therein) be referred to the arbitration of the person appointed by the competent authority of Purchaser.

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

32.2 In case of Order/Contract on Public Sector Enterprises (PSE) or a Govt. Deptt., the extant guidelines of Govt. of India shall be followed.

32.3 The cost of arbitration shall be borne equally by the parties.

33.0 LAWS GOVERNING THE CONTRACT

Contract, including all matters connected with contract, shall be governed by the Indian Law, both substantive and procedural, for the time being in force including modification thereto, and shall be subject to the exclusive jurisdiction of the Indian courts at Bangalore.

34.0 JURISDICTION OF COURT

Courts at Bangalore shall have exclusive jurisdiction to decide the dispute, if any, arising out of or in respect of the contract(s) to which these conditions are applicable.

35.0 ORDER OF PRECEDENCE

The order of precedence shall be NIT/ RFQ, Price format, Special Conditions of Contract (SCC), General Conditions of Contract (GCC) (if applicable).

36.0 SUPPLIER PERFORMANCE MONITORING AND RATING SYSTEM

Seller/Contractor's performance will be evaluated as per Supplier Performance Monitoring and Rating System of BHEL. Please refer BHEL website www.bhel.com for details.

37.0 DEALING WITH BANNED SUPPLIERS/ CONTRACTORS IN BHEL

Offers of the bidders who are on the banned list, as also the offers of the bidders who engage the services of the banned firms, shall be rejected. The list of banned firms is available on BHEL website www.bhel.com.

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and Turnkey projects)	GENERAL COMMERCIAL TERMS & CONDITIONS Issued on 28-08-2014
--	---	---	--

38.0 E&C CLAUSES APPLICABLE FOR TURNKEY PACKAGES :

- 38.1 Receipt, unloading, storage of materials at site, security of the same round-the-clock & loading / unloading / transportation of materials to different erection locations is included in the scope of the bidder. Necessary manpower for all these activities will be made available at site from the date of opening of site office until closure of the project.
- 38.2 All consumables required for the erection are included in the scope of the bidder.
- 38.3 All material handling equipments like crane, fork lifter, tripods etc. are included in the scope of the bidder.
- 38.4 Providing tarpaulins & covering materials as required for protection of materials at temporary storage place is included in the scope of the bidder.
- 38.5 Bidder should have valid license to work in the state of project, if not, the same should be produced within one month of award of the contract.
- 38.6 Insurance by the bidder for his workers and tools & tackles workmen compensation insurance. Bidder shall also take third party insurance liability @ Rs. 2 lakhs per occurrence and maximum of Rs.10 lakhs.
- 38.7 Bidder should follow all the labour laws as applicable at the state/place of work including payment of minimum wages fixed by state government.
- 38.8 Round-the-clock security for the temporary stores, at temporary storage place & for the erected equipments till handing over to customer (by a reputed agency) is in the scope of the bidder.
- 38.9 Against any theft or loss of materials from the stores or from the erected equipments, coordination with local police authorities lodging the fir & obtaining the receipt for the same. Coordination with the insurance agencies also is in the scope of the bidder.
- 38.10 Any material or Service to be issued / rendered by BHEL (unless specially stipulated to be free of cost / cost recoverable basis) to the bidder on their demands, the same shall be made available along with 15% departmental charges over and above the cost. BHEL shall not be responsible for any delay due to this reason and delay shall be to the bidder's account.

38.11 RISK & COST

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and Turnkey projects)	GENERAL COMMERCIAL TERMS & CONDITIONS Issued on 28-08-2014
--	---	---	--

BHEL reserves the following rights in respect of this contract during the original contract period or its extensions if any, as per the provisions of the contract, without entitling the contractor for any compensation :-

- a) To withdraw any portion of work and/or to restrict/alter quantum of work as indicated in the contract during the progress of work and get it done through other agencies to suit BHEL's commitment to its customer or in case BHEL decides to advance the date of completion due to other emergent reasons/ BHEL's obligation to its customer.
- b) To terminate the contract or get any part of the work done through other agency or deploy BHEL's own/hired/otherwise arranged resources , at the risk and cost of the contractor after due notice of a period of two weeks by BHEL, in the event of:-
 - i) Contractor's continued poor progress
 - ii) Withdrawal from or abandonment of the work before completion of the work
 - iii) Contractor's inability to progress the work for completion as stipulated in the contract
 - iv) Poor quality of work
 - v) Corrupt act of Contractor
 - vi) Insolvency of the Contractor
 - vii) Persistent disregard to the instructions of BHEL
 - viii) Assignment, transfer, sub-letting of contract without BHEL's written permission
 - ix) Non fulfillment of any contractual obligations.
- x) In the opinion of BHEL, the contractor is overloaded and is not in a position to execute the job as per required schedule .
- c) To meet the expenses including BHEL overheads on the differential cost at 15%, over and above the Liquidated damages/penalties arising out of "Risk & Cost" as explained above under SI. No. b BHEL shall recover the amount from any money due from Contractor, or from any money due to the Contractor including Security Deposit/ BG, or by forfeiting any T&P or material of the contractor under this contract or any other contract of BHEL or by any other means or any combination thereof

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and Turnkey projects)	GENERAL COMMERCIAL TERMS & CONDITIONS Issued on 28-08-2014
--	---	---	--

- d) To terminate the contract or to restrict the quantum of work and pay for the portion of work executed in case BHEL's contract with their customer are terminated for any reason, as per mutual agreement:
- e) To effect recovery from any amounts due to the contractor under this or any other contract or in any other form, the moneys BHEL is statutorily forced to pay to anybody, due to contractor's failure to fulfill any of his obligations. BHEL shall levy overheads of 15% on all such payments along with interest.
- f) While every endeavour will be made by BHEL to this end, they cannot guarantee uninterrupted work due to conditions beyond their control. The Contractor will not be entitled for any compensation /extra payment on this account unless otherwise specified elsewhere in the contract.

38.12 , **Safety and Environment (HSE) requirements** :

All safety rules and codes applied by the Client/BHEL at site shall be observed by the contractor without exception. The contractor shall be responsible for the safety of the equipment/material and works to be performed by him and shall maintain all light, fencing guards, slings etc. or other protection necessary for the purpose. Contractor shall also take such additional precautions as may be indicated from time to time by the Engineer with a view to prevent pilferage, accidents, fire hazards. Due precautions shall be taken against fire hazards and atmospheric conditions. Suitable number of Clerical staff, watch and ward, store keepers to take care of equipment/materials and construction tools and tackles shall be posted at site by the contractor till the completion of work under this contract.

The contractor shall arrange for such safety devices as are necessary for such type of work and carry out the requisite site tests of handling equipment, lifting tools, tackles etc. as per prescribed standards and practices.

Contractor has to ensure the implementation of Health, Safety and Environment (HSE) requirements as per HSE management system manual (Document no-IS/HSE/CSSP/01) enclosed with technical documents. The contractor has to assist in HSE audit by BHEL/Customer and submit compliance Report. The contractor has to generate and submit record/reports as per HSE plan/activities as per instruction of BHEL/Customer.

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and turnkey projects)	ANNEXURES Issued on 28-08-2014
---	---	---	--

ANNEXURE No.	DESCRIPTION
I	OFFER SUBMISSION AS PER NIT
II	DEVIATION SHEET COST OF WITHDRAWAL)
III	DECLARATION
IV	CONTRACT PERFORMANCE BANK GUARANTEE
V	GUIDELINES FOR FOREIGN SUPPLIERS AND INDIAN AGENTS OF FOREIGN SUPPLIERS
VI	REQUEST FOR ISSUE OF FORM-C
VII	NEFT DETAILS
VIII	LOADING CRITERA
IX	INTEGRITY PACT
X	LIST OF CONSORTIUM BANKS
XI	REVERSE AUCTION GUIDLINES
XII	NO DEVIATION FORMAT
XIII	AUTHORISED SIGNATORY

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and turnkey projects)	ANNEXURES Issued on 28-08-2014
---	---	---	--

ANNEXURE-I

(To be filled up by the Bidder)

Ref. No.:

Date :

M/s Bharat Heavy Electricals Ltd.,
Industrial Systems Group
Prof. CNR Rao Circle
Malleshwaram
Bangalore - 560012

Attention : Shri

Dear Sir,

- 1 Having examined the tender documents against your tender Enquiry No _____ dated _____ and having understood the provisions of the said tender documents and having thoroughly studied the requirements of BHEL related to the work tendered for, in connection with _____ (name of work & project site), we hereby submit our offer for the proposed work in accordance with terms and conditions mentioned in the tender documents, at the prices quoted by us in your price schedule format and as per the indicated delivery schedule.
2. If the work or any part thereof is awarded to us, we undertake to submit security-cum-contract performance bank guarantee as per your requirement.
3. We have annexed to this tender the following documents:-
Part-I (Techno Commercial Bid) - in a properly sealed cover.
 - a) Complete Techno-Commercial Offer (in five sets).
 - b) Unpriced copy of deviation sheet (cost of withdrawal) – Annexure-II
 - c) Un-priced copy of Price Schedule using format given by BHEL.
 - d) Any other documents (please specify).

Part-II (Price Bid along with Priced Annexure-II) - in a separate, properly sealed cover, in the format given by BHEL.

Thanking you,

Yours faithfully,

(Signature of the bidder with Name, Designation and Company's Seal)

PROJECT:-
PACKAGE:-
NAME OF VENDOR:-

SL NO	VOULME/ SECTION	PAGE NO.	CLAUSE NO.	TECHNICAL SPECIFICATION/ TENDER DOCUMENT	COMPLETE DESCRIPTION OF DEVIATION	COST OF WITHDRAWAL OF DEVIATION	PORTION OF PRICE SCHEDULE ON WHICH COST OF WITHDRAWAL OF DEVIATION IS APPLICABLE	NATURE OF COST OF WITHDRAWAL OF DEVIATION (POSITIVE/ NEGATIVE)	REASON FOR QUOTING DEVIATION	REMARKS
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TECHNICAL DEVIATIONS

COMMERCIAL DEVIATIONS

PARTICULARS OF BIDDERS/ AUTHORISED REPRESENTATIVE

NAME	DESIGNATIONS	SIGN & DATE	

NOTES:

- For self manufactured items of bidder, cost of withdrawal of deviation will be applicable on the basic price (i.e. excluding taxes, duties & freight) only.
- For directly dispatchable items, cost of withdrawal of deviation will be applicable on the basic price including taxes, duties & freight.
- All the bidders have to list out all their Technical & Commercial Deviations in detail in the above format on cost basis (if any).
- Any deviation not mentioned above and shown separately will not be taken cognizance of.
- Bidder shall submit duly filled unpriced copy of above format indicating "quoted" in "cost of withdrawal of deviation" column of the schedule above along with their Techno-commercial offer, wherever applicable.
- Bidder shall furnish price copy of above format along with price bid.
- The final decision of acceptance/ rejection of the deviations quoted by the bidder shall be at discretion of the Purchaser.
- Bidders to note that any deviation (technical/commercial) not listed in above and asked after Part-I opening shall not be considered.
- For deviations w.r.t. Payment terms, Liquidated damages, Firm prices and submission of E1/ E2 forms before claiming 10% payment, if a bidder chooses not to give any cost of withdrawal of deviation loading as per Annexure-VIII of GCC, Rev-06 will apply. For any other deviation mentioned in un-priced copy of this format submitted with Part-I bid but not mentioned in priced copy of this format submitted with Priced bid, the cost of withdrawal of deviation shall be taken as NIL.
- Any deviation mentioned in priced copy of this format, but not mentioned in the un-priced copy, shall not at all be accepted.
- All techno-commercial terms and conditions of NIT shall be deemed to have been accepted by the bidder, other than those listed in unpriced copy of this format.
- Cost of withdrawal is to be given separately for each deviation. In no event, bidder should club cost of withdrawal of more than one deviation else cost of withdrawal of each deviation which have been clubbed together shall be considered as NIL.
- In case nature of cost of withdrawal (positive/negative) is not specified, it shall be assumed as positive.
- In case of discrepancy in the nature of impact (positive/negative), positive will be considered for evaluation and negative for ordering.

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and turnkey projects)	ANNEXURES Issued on 28-08-2014
---	---	---	--

ANNEXURE - III

DECLARATION

It is hereby declared that the original/ revised* price bids for _____

_____ (Name of Package) for
_____ project

is complete in all respects and contains prices for complete scope of supply, including tests etc., as per BHEL's requirement. If in the original/ revised* price bids where itemized price is not available for any part of scope of supply, including tests etc. for completion of the package, the same should be treated to have been included in our original/ revised* price bid.

It is also agreed that no further chance for seeking clarification/ confirmation to any missing point will be necessary.

Absence of itemized prices against some items does not mean that they are not included. Even though itemized prices are given for major items, those items which are not specially shown, are also included to meet the entire system as per BHEL requirements.

Signature of authorised Representative

Name and Designation :

Name & Address of the Bidder

Date

Forwarded to:

BHARAT HEAVY ELECTRICALS LTD

Industrial Systems Group

Prof. CNR Rao Circle

Malleswaram

Bangalore - 560012

* (Please delete whichever is not applicable)

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and turnkey projects)	ANNEXURES Issued on 28-08-2014
---	---	---	--

ANNEXURE - IV

PROFORMA OF PERFORMANCE BANK GUARANTEE (FOR INDIEGNOUS PURCHASE ORDERS)

- Note: 1) To be executed in Rs 100/- Non-Judicial stamp paper.
2) To be submitted to MM Dept. directly by the Banker

PERFORMANCE GUARANTEE (PROFORMA OF BANK GUARANTEE)

THIS DEED OF GUARANTEE made and executed on the _____ day of _____(month) _____(year), by the _____ (Bank), registered under the Companies Act 1956/Nationalised Bank constituted under the Banking Companies (acquisition and transfer of undertakings) Act/ constituted under the State Bank of India Act / Subsidiary Banks Act, having its registered / head office at _____ (Hereinafter called 'guarantor ' which term shall mean and include its successors and assigns)

IN FAVOUR OF BHARAT HEAVY ELECTRICALS LIMITED

a company registered under the companies Act, 1956 having its registered office at BHEL House at Siri Fort , New Delhi-100 049 and its Industrial Systems Group Division at Malleswaram, Bangalore-12 (hereinafter referred to as the 'Company' Which term shall include its successors and assigns):

Whereas the company has placed an order on _____ (State the name of the Seller- company / firm and its address) (hereinafter referred to as the 'Supplier' which term shall mean and include its liquidators, successors and assign) for the supply of system under Purchase Order No _____Dt _____.

AND WHEREAS the supplier has agreed to supply the materials and carryout the works as detailed and in accordance with the terms set out in the said order.

AND WHEREAS the Contract inter-alia provides that the SUPPLIER shall furnish to the Company a sum of Rs..... (Rupees.....)

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and turnkey projects)	ANNEXURES Issued on 28-08-2014
---	---	---	--

towards security deposit for due and faithful performance of the CONTRACT in the form and manner specified therein.

AND WHEREAS the SUPPLIER has approached the GUARANTOR and in consideration of the arrangement arrived at between the SUPPLIER and the GUARANTOR, the GUARANTOR has agreed to give the Guarantee as hereinafter mentioned in favour of the COMPANY.

NOW THIS DEED WITNESSES THAT in pursuance of the above said agreement, the guarantor hereby agrees and covenants with company is as follows :-

- 1) That during the period this contract of Guarantee remains effectual, the guarantor shall be liable in respect of the amount due and owing to the company in respect of the payments to the extent of Rs _____ (in words) _____ against any loss or damage caused to or suffered by the company by reasons of any breach of the terms of the said Purchase order by the supplier.
- 2) The Guarantor hereby undertakes to pay the amounts due and payable under this guarantee without any demur, merely on demand from the company intimating that the amount claimed is due by way of loss or damage caused to or suffered or would be caused or suffered by the supplier of any terms contained in the said Purchase order. Any such demand made on the guarantor shall be conclusive as regards the amount due and payable by the Guarantor irrespective of the fact whether the Supplier admits or denies.
- 3) The Guarantor further agrees that the agreement herein contained shall remain in force and effect till all the supplies to be made / Works to be performed / Services to be rendered under the said Purchase order are completed to the entire satisfaction of the company or till company certifies that the terms and conditions of the said order have been fully and properly carried out by the said supplier and accordingly discharges the Guarantee. Unless a demand or claim under this guarantee is made on the guarantor in writing on or before the expiry of claim period indicated in clause 6 below , the guarantor shall be discharged from all the liability under this guarantee thereafter.
- 4) The guarantor further agrees with the company that the company shall have the fullest liberty without the consent of the guarantor and without effecting in any manner the obligations of the guarantor hereunder to vary any of the terms of the

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and turnkey projects)	ANNEXURES Issued on 28-08-2014
---	---	---	--

said order or extend the time of performance by the said supplier from time to time or refrain from exercising the power exercisable by the company against the said supplier or to forebear or omit to enforce any of the terms and conditions relating to the said order, and the guarantor shall not be relieved of its liability in whole or in part, by reason of any act, commission or forbearance on the part of the company or by reason of any such variation, or extension being granted to the said supplier or by reason of any such matter or thing whatsoever which under the law relating to sureties would but for this provision have effect of so relieving the guarantor.

- 5) The guarantor undertakes not to revoke this guarantee during the period it is in force except with the previous consent of the COMPANY in writing, and agree that any liquidation or winding up or dissolution or any change in the constitution of the SUPPLIER or the GUARANTOR shall not discharge the GUARANTOR's liability hereunder.
- 6) Notwithstanding anything herein above contained, the liability of the guarantor under these presents is restricted to Rs_____. The guarantee shall be in force till its expiry on _____. Unless a demand is made on the guarantor within THREE months from the date of expiry, all the liability of the guarantor under this guarantee shall stand fully discharged. The decision of the claimant in regard to breach of contract is final and binding on the Bank.

(Seal of the Bank to be affixed)

NOTES: (NOT TO BE TYPED)

1. A minimum of TWO Bank Official Signatories
2. Signatories to sign on all pages of the Bank Guarantee
3. Any correction to be validated by the Banker Signatories
4. One common e-mail ID of issuing branch and e-mail & contact no of at least one issuing official should be provided on PBG forwarding letter.

FOREIGN SUPPLIERS & INDIAN AGENTS OF FOREIGN SUPPLIERS

1. BHEL shall deal directly with foreign vendors, wherever required, for procurement of goods/ services. However, if the foreign Principal desires to avail the services of an Indian Agent, then the foreign Principal should ensure compliance to regulatory guidelines – which require mandatory submission of an Agency Agreement.
2. 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.
3. An Indian Agent of foreign Origin Equipment Manufacturer (OEM)/ 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.
4. The Agency Agreement should specify the precise relationship between the foreign OEM/ Principal and their Indian Agent, and their mutual interest in the business. All services to be rendered by the 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/ Principal, whether as commission or as 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.
5. Any agency commission to be paid by BHEL to the Indian Agent shall be in Indian currency only.
6. Tax deduction at source is applicable to the agency commission paid to the Indian Agent as per the prevailing rules.
7. In absence of any Agency Agreement, BHEL shall not deal with any Indian Agent (authorized representative/ associate/ consultant, or by whatever name called) and shall deal directly with the foreign OEM/ Principal only for all correspondence and business purposes.
8. In a tender, either the Indian Agent on behalf of the foreign OEM/ Principal or foreign OEM/ Principal itself can bid but both cannot bid simultaneously for the same item/ product in the same tender.
9. If an Agent submits bid on behalf of one OEM/ Principal, the same Agent shall not submit a bid on behalf of another OEM/ Principal in the same tender for the same item/ product.
10. The "Guidelines for Indian Agents of Foreign Suppliers" at Annexure–A shall apply in all such cases.
11. The supply and execution of Purchase Order/ Contract (including indigenous supplies/ services) shall be in the scope of foreign OEM/ Principal. The foreign OEM/ Principal should submit their offer inclusive of all indigenous supplies/ services and evaluation will be based on the 'Total Cost to BHEL'. In case foreign OEM/ 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 its 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. It will be responsibility of the foreign

OEM/ 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 foreign OEM/ Principal. All bank guarantees to this effect shall be in the scope of the foreign OEM/ Principal.

Guidelines for Indian Agents of Foreign Suppliers

- 1.0 There shall be compulsory registration of agents for all Global (Open) Tenders and Limited Tenders. 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 photocopy 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 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–B

This format is applicable only to Indian Suppliers/ Agents supplying indigenous portion of Foreign Purchases.

In all other cases, extant guidelines of SEARP, 2010 are to be followed.

SEARP (SRF) Clause No.	Detail
	Name & address of the firm
1.0	Products/ Systems / Services being considered for
2.0	General Information
2.2	Name of Chief Executive
2.3	Details of authorized signatory
3.0	Ownership Information
3.1	Type of Firm
3.2	Nature of Business <i>Attach authorization letter and agency agreement from Principal (from whom capital equipment is procured)</i> <i>Attach copy of declaration from Foreign Principal for total guarantee/ warranty of indigenous supplies</i>
3.3	Year of establishment
3.4	Year of commencement of business
4.0	Registration particulars
4.1	Permanent Account No.
4.2 / 4.3	Sales Tax / TIN No.
4.6	Service Tax No. (in case of Erection & Commissioning)
5.0	Organisational strength
6.0	Other particulars
6.1	If the company is already registered with other BHEL Units
6.2	Directors/ Partners, if related to any BHEL employee
6.9	If any Ex-BHEL personnel employed by the Company
6.12	Details of pending legal issues with BHEL
6.13	Bank Account information
9.0	Financial information
9.6	Sales/ Turnover details of last 3 years (or from the date of incorporation, whichever is less)

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and turnkey projects)	ANNEXURES Issued on 28-08-2014
---	---	---	--

ANNEXURE- VI

Request for Issue of Form-C

FINANCIAL YEAR -----

Supplier Name & Address	
Quarter-wise details of invoices for issuance of 'C' forms for a Financial Year	

Quarter	Seller Tin	Invoice No	Invoice Date	Net Value	Tax amount	Commodity Description	Purchase Order No	Purchase Order Dt
Q-1								

Quarter	Seller Tin	Invoice No	Invoice Date	Net Value	Tax amount	Commodity Description	Purchase Order No	Purchase Order Dt
Q-2								

Quarter	Seller Tin	Invoice No	Invoice Date	Net Value	Tax amount	Commodity Description	Purchase Order No	Purchase Order Dt
Q-3								

Quarter	Seller Tin	Invoice No	Invoice Date	Net Value	Tax amount	Commodity Description	Purchase Order No	Purchase Order Dt
Q-4								

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and turnkey projects)	ANNEXURES Issued on 28-08-2014
---	---	---	--

ANNEXURE-VII

NEFT Application Form

Vendors Name	
Vendor Address	
BANK NAME	
BANK BRANCH	
BANK ADDRESS	
BANK BRANCH CODE	
BANK 9 DIGIT MICR CODE	
BANK NEFT CODE(IFC)	
BANK SWIFT CODE	
BANK PHONE	
ACCOUNT NAME	
ACCOUNT TYPE	
ACCOUNT NO.	
PAN NO.	
SERVICE TAX NO.	
TIN NO.	
E-MAIL ID	

Authorised Signatory Seal

Above details are to be submitted on company's letterhead. The details may either be attested by vendor's bankers or accompanied by a cancelled cheque leaf with IFSC code & A/c no. Printed on it.

Undertaking to report immediately any changes in the above to be submitted in company's letterhead.

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and turnkey projects)	ANNEXURES Issued on 28-08-2014
---	---	---	--

ANNEXURE-VIII

LOADING CRITERIA

No deviations in GCC terms and conditions are generally acceptable, and bids with deviations are liable to be rejected. However, in exceptional circumstances, BHEL may accept deviations with Loading as given below:

A) PAYMENT TERMS

Payment will be released within 45 days after receipt of complete documents as per order/ contract.

Loading will be done for vendors seeking earlier payment w.r.t. above, for the value and the period of deviation, as per Clause 17.0 of 'Instructions to Bidders'.

Time periods assumed by BHEL/ ISG for a few activities are as follows:

Payment through Bank	- 30 days from receipt of invoice + documents.
Received LR	- 30 days from despatch.
Material Receipt Certificate (MRC)	- 120 days from despatch.

B) BANK GUARANTEE `

Non submission of Bank Guarantee – No deviation is permitted.

C) LIQUIDATED DAMAGES

If maximum limit asked for is 10% or 5% of Undelivered Portion – 10% value of the total quoted price including taxes, duties & freight.

If maximum limit asked is less than 10 % of contract value loading shall be to the extent to which not agreed by bidder (at offered value) .

D) PRICE VARIATION CLAUSE (PVC)

PVC Instead of Firm Price – Maximum ceiling of PVC as demanded by vendor.

E) DEVIATION TO SUBMISSION OF FORM-E1/ E2 BEFORE CLAIMING 10% PAYMENT

10% of Ex-Works supply value.

F) NO DEVIATION IS ALLOWED IN RISK PURCHASE/RISK & COST CLAUSE.

INTEGRITY PACT

Between

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

and

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

Preamble

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

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

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

Section 1 – Commitments of the Principal

- 1.1 The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:-
 - 1.1.1 No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
 - 1.1.2 The Principal will, during the tender process treat all Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential / additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.
 - 1.1.3 The Principal will exclude from the process all known prejudiced persons.
- 1.2 If the Principal obtains information on the conduct of any of its employees which is a penal offence under the Indian Penal Code 1860 and Prevention of Corruption Act 1988 or any other statutory penal enactment, or if there be a substantive suspicion in this regard, the Principal will inform its Vigilance Office and in addition can initiate disciplinary actions.

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

- 2.1 The Bidder(s)/ Contractor(s) commit himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.
 - 2.1.1 The Bidder(s)/ Contractor(s) will not, directly or through any other person or firm, offer, promise or give to the Principal or to any of the Principal's employees involved

in the tender process or the execution of the contract or to any third person any material, immaterial or any other benefit which he / she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.

- 2.1.2 The Bidder(s)/ Contractor(s) will not enter with other Bidder(s) into any illegal or undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.
- 2.1.3 The Bidder(s)/ Contractor(s) will not commit any penal offence under the relevant IPC/ PC Act; further the Bidder(s)/ Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
- 2.1.4 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.
- 2.2 The Bidder(s)/ Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

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

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

Section 4 – Compensation for Damages

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

Section 5 – Previous Transgression

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

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

- 6.1 The Bidder(s)/ Contractor(s) undertake(s) to obtain from all subcontractors a commitment consistent with this Integrity Pact and report Compliance to the Principal. This commitment shall be taken only from those sub-contractors whose contract value is more than 20 % of Bidder's/ Contractor's contract value with the Principal. The Bidder(s)/ Contractor(s) shall continue to remain responsible for any default by his Sub-contractor(s).
- 6.2 The Principal will enter into agreements with identical conditions as this one with all Bidders and Contractors.
- 6.3 The Principal will disqualify from the tender process all bidders who do not sign this pact or violate its provisions.

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

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

Section 8 –Independent External Monitor(s)

- 8.1 The Principal appoints competent and credible Independent External Monitor for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.

- 8.2 The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the CMD, BHEL.
- 8.3 The Bidder(s)/ Contractor(s) accepts that the Monitor has the right to access without restriction to all contract documentation of the Principal including that provided by the Bidder(s)/ Contractor(s). The Bidder(s)/ Contractor(s) will grant the monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his contract documentation. The same is applicable to Sub-contractor(s). The Monitor is under contractual obligation to treat the information and documents of the Bidder(s)/ Contractor(s) / Sub-contractor(s) with confidentiality.
- 8.4 The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the contract provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.
- 8.5 As soon as the Monitor notices, or believes to notice, a violation of this agreement, he will so inform the Management of the Principal and request the Management to discontinue or take corrective action, or heal the situation, or to take other relevant action. The Monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.
- 8.6 The Monitor will submit a written report to the CMD, BHEL within 8 to 10 weeks from the date of reference or intimation to him by the Principal and, should the occasion arise, submit proposals for correcting problematic situations.
- 8.7 The CMD, BHEL shall decide the compensation to be paid to the Monitor and its terms and conditions.
- 8.8 If the Monitor has reported to the CMD, BHEL, a substantiated suspicion of an offence under relevant IPC / PC Act, and the CMD, BHEL has not, within reasonable time, taken visible action to proceed against such offence or reported it to the Vigilance Office, the

Monitor may also transmit this information directly to the Central Vigilance Commissioner, Government of India.

8.9 The number of Independent External Monitor(s) shall be decided by the CMD, BHEL.

8.10 The word 'Monitor' would include both singular and plural.

Section 9 – Pact Duration

9.1 This Pact begins and shall be binding on and from the submission of bid(s) by bidder(s). It expires for the Contractor 12 months after the last payment under the respective contract and for all other Bidders 6 months after the contract has been awarded.

9.2 If any claim is made / lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified as above, unless it is discharged/ determined by the CMD, BHEL.

Section 10 – Other Provisions

10.1 This agreement is subject to Indian Laws and jurisdiction shall be registered office of the Principal, i.e. New Delhi.

10.2 Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.

10.3 If the Contractor is a partnership or a consortium, this agreement must be signed by all partners or consortium members.

10.4 Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

10.5 Only those bidders/ contractors who have entered into this agreement with the Principal would be competent to participate in the bidding. In other words, entering into this agreement would be a preliminary qualification.

For & On behalf of the Principal

(Office Seal)

For & On behalf of the Bidder/ Contractor

(Office Seal)

Place-----

Date-----

Witness: _____

(Name & Address) _____

Witness: _____

(Name & Address) _____

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and turnkey projects)	ANNEXURES Issued on 28-08-2014
---	---	---	--

ANNEXURE-X

List of Consortium Banks			
Nationalised Banks		Public Sector Bank	
1	Allahabad bank	20	IDBI
2	Andhra bank		
3	Bank of Baroda	Foreign banks	
4	Canara Bank	21	CITI Bank N.A
5	Corporation bank	22	Deutsche Bank AG
6	Central bank	23	HSBC
7	Indian Bank	24	Standard Chartered Bank
8	Indian Oversea Bank	25	The Royal Bank of Scotland N.V.
9	Oriental bank of Commerce	26	J P Morgan
10	Punjab National Bank		
11	Punjab & Sindh Bank	Private banks	
12	State Bank of India	27	Axis Bank
13	State Bank of Hyderabad	28	The Federal Bank Limited
14	Syndicate Bank	29	HDFC
15	State Bank of Travancore	30	Kotak Mahindra Bank
16	UCO Bank	31	ICICI
17	Union Bank of India	32	Indusind Bank
18	United Bank of India	33	Yes Bank
19	Vijaya Bank		

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and turnkey projects)	ANNEXURES Issued on 28-08-2014
---	---	---	--

ANNEXURE-XI

Terms & Conditions of Reverse Auction

Against this enquiry for the subject item/ system with detailed scope of supply as per enquiry specifications, BHEL may resort to “REVERSE AUCTION PROCEDURE” i.e., ON LINE BIDDING (THROUGH A SERVICE PROVIDER). The philosophy followed for reverse auction shall be English Reverse (No ties).

- 1 For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
- 2 Those bidders who have given their acceptance for Reverse Auction (quoted against this tender enquiry) will have to necessarily submit „online sealed bid” in the Reverse Auction. Non-submission of „online sealed bid” by the bidder for any of the eligible items for which techno-commercially qualified, will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue.
- 3 BHEL will engage the services of a service provider who will provide all necessary training and assistance before commencement of on line bidding on internet.
- 4 In case of reverse auction, BHEL will inform the bidders the details of Service Provider to enable them to contact & get trained.
- 5 Business rules like event date, time, bid decrement, extension etc. also will be communicated through service provider for compliance.
- 6 Bidders have to fax the Compliance form (annexure IV) before start of Reverse auction. Without this, the bidder will not be eligible to participate in the event.
- 7 In line with the NIT terms, BHEL will provide the calculation sheet (e.g., EXCEL sheet) which will help to arrive at “Total Cost to BHEL” like Packing & forwarding charges, Taxes and Duties, Freight charges, Insurance, Service Tax for Services and loading factors (for non-compliance to BHEL standard Commercial terms & conditions) for each of the bidder to enable them to fill-in the price and keep it ready for keying in during the Auction.
- 8 Reverse auction will be conducted on scheduled date & time.
- 9 At the end of Reverse Auction event, the lowest bidder value will be known on

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and turnkey projects)	ANNEXURES Issued on 28-08-2014
---	---	---	--

auction portal.

- 10 The lowest bidder has to fax/e-mail the duly signed and filled-in prescribed format for price breakup including that of line items, if required, (Annexure VII) as provided on case-to-case basis to Service provider within two working days of Auction without fail.
11. In case BHEL decides not to go for Reverse Auction procedure for this tender enquiry, the Price bids and price impacts, if any, already submitted and available with BHEL shall be opened as per BHEL"s standard practice.
12. Bidders shall be required to read the "Terms and Conditions" section of the auctions site of Service provider, using the Login IDs and passwords given to them by the service provider before reverse auction event. Bidders should acquaint themselves of the „Business Rules of Reverse Auction", which will be communicated before the Reverse Auction.
13. If the Bidder or any of his representatives are found to be involved in Price manipulation/ cartel formation of any kind, directly or indirectly by communicating with other bidders, action *as per extant BHEL guidelines*, shall be initiated by BHEL and the results of the RA scrapped/ aborted.
14. The Bidder shall not divulge either his Bids or any other exclusive details of BHEL to any other party.
15. In case BHEL decides to go for reverse auction, the H1 bidder(s) (whose quote is highest in online sealed bid) may not be allowed to participate in further RA process.

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and turnkey projects)	ANNEXURES Issued on 28-08-2014
---	---	---	--

ANNEXURE-XII

FORMAT FOR NO DEVIATION CERTIFICATE

(To be submitted in the bidder's letter head)

TO
 BHARAT HEAVY ELECTRICALS LIMITED,
 Industrial Systems Group, Prof. CNR Rao Circle,
 Malleshwaram Bangalore – 560012

Sub :	No deviation certificate
Job :	----
Ref :	Your enquiry No -
	All the pertinent issues till date.

Dear Sirs,

With reference to above, this is to confirm that as per tender conditions, we have visited site before submission of our offer and noted the job content & site conditions etc. We also confirm that we have not changed/ modified the tender documents as appeared in the website/ issued by you and in case of such observance at any stage, it shall be treated as null and void.

We hereby confirm that we have not taken any deviation from tender clauses together with other references as enumerated in the above referred NIT. We hereby confirm our unqualified acceptance to all terms & conditions, unqualified compliance to technical specification, integrity pact (if applicable) and acceptance to reverse auctioning process.

In the event of observance of any deviation in any part of our offer at a later date whether implicit or explicit, the deviations shall stand null & void.

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

Thanking you,

Yours faithfully,

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

	INDUSTRIAL SYSTEMS GROUP (BG-1A)	GENERAL CONDITIONS OF CONTRACT (GCC) Revision No. 01 (For supply and turnkey projects)	ANNEXURES Issued on 28-08-2014
---	---	---	--

ANNEXURE-XIII

DECLARATION BY AUTHORISED SIGNATORY OF BIDDER

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

To,

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

Dear Sir,

Sub : Declaration by Authorised Signatory

Ref : 1) NIT/Tender Specification No:

2) All other pertinent issues till date

I /We, hereby certify that all the information and data furnished by me with regard to the above Tender Specification are true and complete to the best of my knowledge. I have gone through the specifications, conditions, stipulations and all other pertinent issues till date, and agree to comply with the requirements and Intent of the specification.

I further certify that I am authorised to represent on behalf of my Company/Firm for the above mentioned tender and a valid Power of Attorney to this effect is also enclosed.

Yours faithfully,

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

Date:

Enclosed : Power of Attorney



Consolidated Site Safety Plan (Includes all Safety Plan documents of ISG)



Bharat Heavy Electricals Limited
Industrial Systems Group
Prof. C.N.R.Rao Circle, Malleswaram,
BANGALORE 560 012
Phone: 080 - 23365096, Fax: 080 - 23562713

Regd. Office: "BHEL House" Siri Fort, New Delhi - 110 049.

Note: All documents issued from 2003 to 2006 are consolidated in this volume.



HSE Management System Manual

IS/HSE/CSSP/01

CONSOLIDATED SITE SAFETY PLAN

DOCUMENT NO.	DESCRIPTION
IS/HSE/SSP/01	1. Details of Project
	2. Health, Safety and Environment Policy
	3. Roles of Site Personnel
	4. Safety Awareness & Training:
	5. Site Safety Inspection:
	6. Emergency Preparedness and Response Plan:
	7. Electrical Safety Inspection:
	8. Transportation and Material Handling Equipment:
	9. Erection of equipment:
	10. Commissioning of equipment:
	11. Use of Personal Protective Equipment (PPE):
	12. Housekeeping:
	13. Accident Investigation and Reporting:
	14. Protection against Fire
	15. Protection against Noise
	16. Welding Sets
	17. Civil / Structural Work
	18. FIRE FIGHTING PLAN
	19. NOISE STANDARDS
	20. List of Applicable Statutory / Regulatory requirements
Checklist / Formats / Guidelines	
IS-QII-4-409/010	SAFETY DECLARATION BY SUB-CONTRACTOR
IS:HSE:CL01	CHECK LIST FOR WORKING AT HEIGHT
IS:HSE:CL02	CHECK LIST FOR HOUSE KEEPING
IS:HSE:CL03	CHECK LIST FOR SCAFFOLDING
IS:HSE:CL04	CHECK LIST FOR GENERAL SAFETY INSPECTION
IS:HSE:CL05	CHECK LIST FOR HEAVY MATERIAL HANDLING EQUIPMENT INSPECTION.
IS:HSE:CL06	CHECK LIST FOR ARC WELDING TRANSFORMER
IS:HSE:CL07	CHECK LIST FOR DC ARC WELDING GENERATOR
IS:HSE:CL08	CHECKLIST FOR STAGING
IS/HSE/SSP/02	Hazards Risk & Preventive Measures at Construction Sites.
Dtd. 30.06.06	Guide lines for Resident Managers on Contract Labour, Safety & Accident Reporting System
Dtd. 30.06.06	List of Relevant Legislations applicable to Various Sites
IS:HSE:AIR:001	Accident (Personal injury / property damage) Report



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

Annexures

IS-CW-01, Rev.01	Work instructions for Civil Work at Site
IS 3043-1987	Extracts from IS for Code of Practice for earthing
Copy No 18 07.12.06	Safety Manual – Health and Safety Plan for BHEL Power Sector
PSER : HSEOM: 004:02 Datd 25.11.02	Emergency Preparedness and Response Plan of PS ER
HSE / PPE Dtd 25.08.2006	Corporate Personal Protective Equipment (PPE) Safety Manual

Note:

1. This Site Safety Plan is to be used at all Sites. Project Specific Details and Site Organization Chart are to be added in Section –1.
2. The Checklists provided are to be used and maintained as records.
3. These documents and records are verifiable for compliance under Quality & HSE systems.



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

1. Details of Project

1.	Name of the Project & Site	
2.	Job Number	
3.	Customer	
4.	Overall Scope of work: Design / Supply / Installation	Civil Structural Mechanical Electrical & Instrumentation Others
5.	Project Schedule	Starting Date: Completion Date:
6.	Erection & Commissioning Machinery / Tools / Instruments Required:	
7.	Sub-Contractor Details	Name of the Sub-contractor Job order No.: Duration of Completion:
8.	Name of BHEL Residence Manager	Attach Site Organization Chart of BHEL
9.	Designated Safety Officer of BHEL	
10.	Name of Sub-contractor person in-charge	Attach Site Organization Chart of Sub-contractor
10.	Designated Safety Officer of Sub-contractor	



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

2. HEALTH, SAFETY & ENVIRONMENTAL POLICY

The Management is committed to be an environmentally sound company in its activities, products, services and to provide safe and healthy working environment to all employees as an integral part of business performance and strive towards zero accident through:

- Compliance with applicable Legislation and Regulations.
- Promoting the objective to minimize waste generation and to conserve/reduce/reuse resources such as raw materials, water and power.
- Enhancement of Environmental, Safety and Occupational Health awareness amongst employees, customers and suppliers by proactive communication and training.
- Continual improvement through periodical review of EMS and OHSAS to ensure its suitability, adequacy and effectiveness.
- Regular evaluation and proactive measures for prevention of accidents/ occupational diseases.
- Communication of HSE Policy to all employees and interested parties.
- Coordination with concerned agencies/regulatory bodies engaged in Occupational Health, Safety & Environmental activities.

3. Roles of Site Personnel:

Resident Manager:

- Ensuring that HSEMS requirements are implemented and maintained at sites. He shall have commensurate authority and organisational freedom in that regard.
- He shall report on the performance of the HSEMS to the MR for review.
- Identification and evaluation of Environmental Aspects & Impacts, Occupational Health & Safety Hazards and assess Risks at Site.

Duties & Responsibilities of the Designated Safety Officer at Site:

- To advise on safety aspects to all personnel at site including sub-contractors.
- To carry out Site safety inspection in order to observe the physical conditions of work and the work practices and procedures followed by Sub-contractors and to render advise on measures to be adopted for removing the unsafe physical conditions and preventing unsafe actions by sub-contractor's personnel.
- To organize / verify the availability of personal protective equipment
- To investigate select accidents
- Co-ordinate hazard and risk management
- Obtain Safety Declaration from Sub-Contractor.
- Impart Safety Training to sub-contractors and BHEL Personnel working at Site.

4. Safety Awareness & Training:

Safety Awareness and consciousness among workers, supervisors and executives is imparted by the Designated Safety Officer of BHEL / Sub-contractor. This is done by way of following.

- Talk on Safety issues as per Site Safety Plan



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

- Posters and Notices at prominent places
- Display of warning boards
- Creating awareness and response for emergencies like Fire, Shock, accidents, dangerous occurrences and on First-aid, Emergency assistance agencies and their contact telephone numbers etc.
- Use of Personnel Protective Equipment

5. Site Safety Inspection:

Designated Safety Officer will inspect the site on Daily basis

- To identify unsafe conditions and unsafe actions by the labourers and bring to the notice of sub-contractor. The main objective of the Daily Inspection is to rectify the potentially dangerous situations and avoid occurrence of any incident.
- To suggest suitable remedial action to correct the unsafe conditions / acts.
- To use appropriate checklists IS:HSE:CL01 to CL08 to verify and record the safety observations.
- To follow the *Copy of Safety Manual – Health and Safety Plan for BHEL Power Sector (07.12.06 copy no. 18) issued on 26.12.06* and available at site.

6. Emergency Preparedness and Response Plan:

- Use the **Emergency Preparedness and Response Plan IS/HSE/EPR/01** available at site **together with PS & Customer.**
- First aid kits are to be kept in the site office or the locations in the vicinity of work place. The kit is to be maintained. Records of FIRST AID treatment given to be maintained in a register.
- Whoever first notices the accident occurrence shall immediately notify the same to Designated Safety Officer / Other BHEL executives.
- Determine the area of accident and organize for evacuation of the personnel.
- Organize for sending the injured person to nearby First-aid / Health Center / Hospitals depending on the emergency.
- In the event of fire organize for extinguishing the fire using the apparatus available and for major fire notifies the local / nearby Fire Station.

7. Electrical Safety Inspection:

- All the electrical distribution system, sub system, relevant protection unit at electrically powered machines and tools are inspected periodically including earthing at two points, to avoid electrical shocks.
- Checklist for House keeping -IS:HSE:CL02 and General safety inspection -IS:HSE:CL04, is used for periodical inspection.
- For safe operation all the Electrical portable tools and devices are connected with Earth Leakage Circuit Breaker (ELCB) protection at Distribution Board and continuity of earth connection is to be ensured.
- The ELCBs are tested periodically and records of such tests are maintained.



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

- After each inspection the filled up check list date wise is to be retained by Resident Manager.

8. Transportation and Material Handling Equipment:

- Checklist of Inspection of Material Handling Equipment - IS:HSE:CL05 shall be used and records are to be maintained.

9. Erection of equipment:

- The instructions given in Erection Manual IS: EM-1 to IS:EM-5 in FIVE Volumes are to be followed during erection of equipment. SAFETY MANAGEMENT AT ERECTION SITES is elaborated in Document No. IS; EM-4/1 (Erection Manual Issued on 24.01.1995).
- Wherever Checklists are provided, the same shall be used and records are to be maintained.

10. Commissioning of equipment:

- The instructions given in Commissioning Manual IS-QCM in SIX Volumes are to be followed during Commissioning of Standard equipment.
- Wherever Checklists are provided, the same shall be used and records are to be maintained.

11. Use of Personal Protective Equipment (PPE):

- The PPE in use shall conform to IS or other relevant standard and the same shall be discarded in case it is damaged or worn out.
- Wherever Checklists are provided, the same shall be used and records are to be maintained.
- *Soft copy of Corporate Personal Protective Equipment (PPE) Safety Manual Document No. HSE / PPE Dtd 25.08.2006 available at site to be followed.*

12. Housekeeping:

- The Housekeeping Checklist IS:HSE:CL02 available in this document shall be followed and records are to be maintained.

13. Accident Investigation and Reporting:

- *Guide lines for Resident Managers on Contract Labour, Safety & Accident Reporting System issued on 30.06.06 needs to be referred.*
- The Investigation findings shall be reported to Designated Safety Officer, Concerned Project Manager and MR at Head quarters for taking proper preventive action to avoid such accidents in future.
- The Accident / Incident Reporting format IS:HSE:AIR:001 to be followed



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

14. Protection against Fire

- This is elaborated in Document No. IS; EM-4/1 (Erection Manual Issued on 24.01.1995) SAFETY MANAGEMENT AT ERECTION SITES.
- The GENERAL SAFETY INSPECTION Checklist - IS:HSE:CL04 available in this document shall be followed and records are to be maintained.
- **FIRE FIGHTING PLAN** Extract from: Chapter 4 – Internal Appliances of Fire Protection Manual Issued by Tariff Advisory Committee Bombay as elaborated below is to be followed for finalizing the requirement of fire extinguishers at site.

15. Protection against Noise

- The Equipment used at Construction site must follow the acceptable ambient noise level as detailed below in **NOISE STANDARDS**.

16. Welding Sets

- Whenever Welding sets are brought by the contractor to site, the healthiness of the equipment is to be checked and inspected and the record is to be maintained as per the checklist IS:HSE:CL06 and CL07.

17. Civil / Structural Work

Wherever Civil work is involved the following work instructions / checklist are to be referred and followed.

- **Work Instructions for Civil Work at Site** – IS:CW:01, Rev:01, Dated 04.09.1996.
- Checklist for Scaffolding IS:HSE:CL03
- Checklist for Working at Height IS:HSE:CL01
- *Checklist for Staging IS: HSE: CL 08*
- Formats for Field Quality Plan IS:CW:01, Rev.02, Dated 15.05.1997.

18. FIRE FIGHTING PLAN

Extract from: Chapter 4 – Internal Appliances of Fire Protection Manual Issued by Tariff Advisory Committee Bombay.

Class of Fire	Suitable type of appliances
A. Fire in ordinary combustible (wood, vegetable, fiber, paper etc.)	Chemical extinguishers of soda acid, gas / expelled water and anti-freeze types and water buckets.
B. Fires in flammable liquids, paints, grease, solvents etc.	Chemical extinguishers of Foam, Carbon Dioxide and Dry powder type and sand buckets.



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

C. Fire in gaseous substances under pressure	Chemical Extinguishers of Carbon Dioxide and Dry Powder Type.
D. Fire in reactive Chemicals, active metals	Special type of Dry Powder extinguishers and sand buckets.
E. Fire in electrical equipments.	Chemical Extinguishers of Carbon Dioxide and Dry Powder Type and sand buckets.
Clause 4.1.3.2	One 9 litre Water / Sand Bucket for every 100 sq.metre area
Clause 4.1.3.5.1	One no. of Not less than 2 kg, Dry Powder CO ₂ extinguisher within 15 metres of apparatus for rooms containing electrical transformers & switchgear.
Clause 4.1.3.5.2	One no. 5 kg, Dry Powder CO ₂ extinguisher within 15 metres of Motors / other Electrical equipment.

The following example will illustrate the method of determining the number of fire extinguishers required to give adequate protection for a given property:

Light engineering workshop (light hazards).

Area: 315m X 112m = 35300 sq.m

Type of fire:

1. Class A Fire due to normal combustibles
2. Class B Fire due to existence of spray painting process and storage of flammable liquids
3. Class E Fire due to two electrical DB and motors

Number of appliances

Basic protection

353 buckets and

59 water type extinguishers

OR

90 Water type extinguishers if buckets are dispensed with.

For Class B fires 2 Water type extinguishers are replaced by 2 Foam Extinguishers.

For Class E fires 6 Dry Powder Extinguishers are provided. Thus the total no. of fire extinguishers are

Water type: 88

Foam type: 2

Dry powder type: 6

TOTAL 96

Reference Standards for Fire Extinguishers:

Sl.No.	Standard / Year	Description
1.	IS940 : 1989	Specifications of Portable fire extinguisher, water type (gas cartridge)
2.	IS2171 : 1999	Specifications of Portable fire extinguisher, Dry powder (Cartridge type)



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

3.	IS2878 : 1986	Specifications for Fire extinguisher, Carbon Di-oxide Type (Portable & trolley mounted)
4.	IS10204 : 2001	Specifications of Portable fire extinguisher, mechanical foam type
5.	IS10658 : 1999	Specifications for Higher capacity Dry powder Fire extinguisher (Trolley mounted)
6.	IS13385 : 1992	Specifications for Fire extinguisher, 50 capacity wheel mounted water type (Gas Cartridge)
7.	IS13386 : 1992	Specifications for Fire extinguisher, 50 l capacity, mechanical foam type
8.	FPM / June 1995	Fire Protection Manual (Part-I) By Tariff Advisory Committee

19. NOISE STANDARDS

NOISE : (Ambient standard)

Area Code	Category of Area	Limit in dB (A) Leq	
		Day time (6 AM to 9 PM)	Night time (9 PM to 6 AM)
A	Industrial area	75	70
B	Commercial area	65	55
C	Residential area	55	45
D	Silence Zone	50	40

Silence Zone is defined as area upto 100 metres around such premises as hospitals, educational institutions and courts.

Source: EPA Notification [G.S.R. 1063(E), DT. 26th Dec.1989]

Domestic appliances & Construction equipment acceptable noise level:

Sl.No.	Type of Appliances	Standard dB(A)
1.	Window Air-conditioner to 1 Ton to 1.5 Tons	68
2.	Air Coolers	60
3.	Refrigerators	46
4.	Diesel Generators for Domestic Purpose	85-90
5.	Compactors (Rollers) Front Loaders, Mixers, Crane movable, Vibrators and Saws	75

Source: EPA Notification [G.S.R. 742(E), DT. 30th Aug.1990]



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

20. List of Applicable Statutory / Regulatory Requirements:

Sl.No.	Standard	Applicable or Not
1.	Indian Electricity Rules, 1956	Yes/ No
2.	The Motor Vehicle Act, 1988	Yes/ No
3.	The Central Motor Vehicle Rules, 1989	Yes/ No
4.	The Gas Cylinder Rules, 1981	Yes/ No
5.	The Environment (Protection) Act, 1986	Yes/ No
6.	The Noise Pollution (Regulation & Control) Rules, 2000	Yes/ No
7.	Battery (Management and Handling) Rules, 2000	Yes/ No
8.	Ozone Depleting Substances (Regulation and Control) Rules, 2000	Yes/ No
9.	The National Environment Tribunal Act, 1995	Yes/ No
10.	Pollution Control Act, Rules and Notifications, September 2001	Yes/ No
11.	Pollution Control Law – Environmental Standard for Ambient Air, Automobiles, Fuels, Industries and Noise – July 2000	Yes/ No
12.	CBIP Guidelines	Yes/ No
13.	Indian Standards as applicable	
14.	<i>List of Relevant Legislations Applicable to Various Sites ISG document issued on 30.06.06</i>	Yes / No
15.	International Standards as applicable	
16.	Project Specific Standards as applicable	

Note: Refer to register of regulations in the HSE system document IS/HSE/ROR/E1.1 to E1.6, IS/HSE/WZS/W1, W2, W3 & IS/HSE/SCH/S1



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

SAFETY DECLARATION BY SUB-CONTRACTOR

1. Name of Sub-contractor
 2. Work Order No.
 3. Nature of work
 4. Project
 5. Number of workers deployed
- | | | |
|-----------|---|------|
| Category: | | |
| 1. | - | Nos. |
| 2. | - | Nos. |
| 3. | - | Nos. |
| 4. | - | Nos. |
6. Number of workers attended safety induction training.
 7. Safety appliances issued to workmen
- | | |
|-------------------------|--|
| Name of the appliances: | |
| 2. Safety Helmet | |
| 3. Safety Boots | |
| 4. Hand gloves | |
| 5. Safety belts | |
| 6. Safety goggles | |
| 7. Dust masks | |
8. First Aid box provided at site
 9. Safety clearance taken from concerned authority for starting the job.
 10. Sand and water provided at the welding station
 11. Fire extinguishers provided at site

Signature of sub-contractor with seal

Date:



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

CHECK LIST FOR WORKING AT HEIGHT

Name of Sub-contractor

Work Order No.

Nature of work

Name of the Project site

Job. No.

Date

Sl. No.	Check Points	Observation	Measures
1.	Safety Plan is available from Sub-contractor	Yes / No	Document No. Dtd.
2.	All the workers have been explained safe work procedure	Yes / No	Verify with few
3.	Effective communication system have been established and explained to the workers.	Yes / No	Type of communication
4.	Adequate illumination is ensured	Yes / No	Good / fair / poor
5.	Work area inspected prior to starting of the job. Joint protocol signed for site clearance.	Yes / No	Verify document
6.	Area below the work place is cordoned.	Yes / No	Verify compliance
7.	Arrangement made for fastening hand tools.	Yes / No	Check
8.	Workmen provided with bag / box to carry nut, bolts and hand tools.	Yes / No	Check
9.	All work plate forms are of adequate strength and ergonomically suitable	Yes / No	Verify
10.	Work at more than one elevation at the same segment is restricted.	Yes / No	Check
11.	Availability of supervision staff at work place.	Yes / No	Check
12.	Availability of controlled copy of drawing and document at work place.	Yes / No	Verify

ACCESS / EGRESS

1.	Walkways provided with handrails, mid rail & toe guard.	Yes / No	
2.	All chequered plates, gratings properly welded and bolted.	Yes / No	Verify
3.	Are ladders inspected and maintained in good condition.	Yes / No	Verify
4.	Are ladders spliced	Yes / No	Verify
5.	Are ladders properly secured to prevent slipping, sliding or falling	Yes / No	Verify
6.	Do side rails extended 36" above top of landing	Yes / No	Verify
7.	Are buildup ladders constructed of sound materials.	Yes / No	Verify
8.	Rungs and cleats not over 12" on center.	Yes / No	Verify



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

Sl. No.	Check Points	Observation	Measures
9.	Metal ladders not used around electrical hazards.	Yes / No	Check
10.	Proper maintenance, storage.	Yes / No	Check
11.	Ladder placed at right slope	Yes / No	Check
12.	Ladders, stair cases are welded / bolted properly	Yes / No	Check
13.	Any obstruction in the stairs	Yes / No	Check
14.	Are landings provided with handrails, knee rails, toe boards etc.	Yes / No	Check
15.	Whether ramp is provided with proper slope	Yes / No	Check
16.	Proper hand rails / guards provided in ramps.	Yes / No	Check
HOUSEKEEPING			
1.	Walkways, aisles & all overhead work places cleared of loose materials.	Yes / No	Check
2.	Flammable material, if any, is cleared.	Yes / No	Check
3.	All shuttering materials are removed after de-shuttering is done.	Yes / No	Check
4.	Platforms and walkways free of oil / grease or other slippery spillage.	Yes / No	Check
5.	Collected scraps are brought down or lowered and not dropped from height.	Yes / No	Ensure
Personnel Protection Equipment & Safety Devices			
1.	Use of Safety Belts and Safety Helmets are ensured for all workers as per IS / applicable standard.	Yes / No	Verify
2.	Anchoring point provided at all places of work	Yes / No	Verify
3.	Common life-line provided wherever linear movement at height is required.	Yes / No	Verify
4.	Safety nets are in use wherever required.	Yes / No	Verify
5.	Proper fall arrest system is deployed at critical work place.	Yes / No	Verify
6.	Crawler boards / safety system for work on fragile roof are used.	Yes / No	Verify

Signature of Sub-contractor Supervisor.

Signature of BHEL Supervisor

Format IS-HSE-CL01

Page 2 of 2

Rev.0

Date of Issue: 14.02.2003



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

CHECK LIST FOR HOUSE KEEPING

Name of Sub-contractor

Work Order No.

Nature of work

Name of the Project site

Job. No.

Date

Sl. No.	Check Points	Observation	Measures
1.	Walkways, passages kept clear of material	Yes / No	Verify
2.	Area and roads kept clear for maneuvering of cranes and material handling equipment.	Yes / No	Verify
3.	Scrap, cut-pieces, welding electrodes stubs, hand tools kept tidy in workarea and disposed suitably.	Yes / No	Verify
4.	Scrap bin available at site.	Yes / No	Verify
5.	Welding cables, power cables routed properly to avoid run over by vehicle or tripping hazards and obstruction to personnel movement.	Yes / No	Verify
6.	Compressed gas hoses routed properly in the site.	Yes / No	Verify
7.	Compressed gas cylinders and hoses kept away from hot work and grinding work.	Yes / No	Verify
8.	Floor is kept clear of water, oil spillage / accumulation	Yes / No	Verify

CIVIL WORK AREA

1.	All approach, aisle, ingress / egress to / from site, excavated pits, ramps, walkways kept clear of material debris tools etc.	Yes / No	Verify
2.	Scaffolding material (H-beam, H-D tower frames, bracings, clamps), shuttering boards, across pans etc. are stacked properly at site.	Yes / No	Verify
3.	Stacking of bricks, hollow blocks are done in safe manner.	Yes / No	Verify
4.	Nails removed from wooden planks / timbers and not protruding out.	Yes / No	Verify
5.	Saw dust, wood chips and scraps wood cleared from carpentry shop and disposed suitably.	Yes / No	Verify
6.	Debris from demolition and excavated earth cleared from site and accesses.	Yes / No	Verify

ELECTRICAL INSTALLATION & BOOTHS

1.	Approach to DB, panels, Switches kept clear	Yes / No	Verify
2.	Fire extinguishers installed at an easy accessible location.	Yes / No	Verify
3.	Shock treatment chart is placed nearby place.	Yes / No	Verify



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

Sl. No.	Check Points	Observation	Measures
4.	Welding cable and power cables are routed separately to avoid obstruction and tripping hazards.	Yes / No	Verify
5.	Welding cable and power cables are not damaged one.	Yes / No	Verify
6.	Floor of electrical booths kept dry.	Yes / No	Verify
7.	Proper grade Rubber mats are placed in front of Electrical panels	Yes / No	Verify
STORES			
1.	Walkways, entry and exits are kept clear	Yes / No	Verify
2.	Materials placed on racks are safely accessible.	Yes / No	Verify
3.	Compressed gas cylinders are segregated as full or empty and types of gas.	Yes / No	Verify
4.	Vertically stored cylinders are secured chained to avoid toppling and horizontal once guarded against rolling down.	Yes / No	Verify
5.	Flammable storage areas are isolated from store, office and work areas.	Yes / No	Verify
6.	Cement bags are stacked in proper gradient safely.	Yes / No	Verify
7.	Corrosive material (eg. Acids, alkalies) are stored away from other material and kept on collection trays to safe guard against accidental leakage.	Yes / No	Verify
8.	Storing area for lifting tools & tackles, ropes, wire ropes & Personnel Protection Equipment is dry, clean & free of corrosive material.	Yes / No	Verify
9.	Easy accessibility to installed fire extinguishers ensured in store.	Yes / No	Verify
GENERAL			
1.	Separate scrap yard is allocated for the site.	Yes / No	Verify
2.	Approaches to workstations, offices, stores are well laid and demarcated.	Yes / No	Verify
3.	Site roads are kept clear of stacked material for free & safe vehicular movement.	Yes / No	Verify
4.	Heavy materials stacking are taken care of to prevent slips, collapse and rolling.	Yes / No	Verify
5.	For house keeping at elevated work places refer to Checklist for Working at height - IS:HSE:CL01	Yes / No	Verify

Signature of Sub-contractor Supervisor.

Signature of BHEL Supervisor



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

CHECK LIST FOR SCAFFOLDING

Name of Sub-contractor

Work Order No.

Nature of work

Name of the Project site

Job. No.

Date

Sl. No.	Check Points	Observation	Measures
1.	Is site having a practice of providing suitable and sufficient scaffolds so that the work could safely be done at a height. Refer Scaffolding Standard IS-3696.	Yes / No	Check
2.	Is site engaging suitable / properly trained / experienced workmen for constructing / dismantling / shifting scaffolding works.	Yes / No	
3.	Are scaffold platforms designed / constructed with a safety factor of minimum FOUR.	Yes / No	
4.	Is there a safe means of access to the working platform?	Yes / No	
5.	Are scaffolding structure having a solid base avoiding pavements & manhole covers.	Yes / No	
6.	Is the scaffolding structure free from excavation pit / proper distance is maintained.	Yes / No	
7.	Is verticality of the structure properly maintained?	Yes / No	
8.	Are ties for scaffolding structure properly maintained (vertical as well as horizontal position)	Yes / No	
9.	Is there a provision of toe board / guardrails and are they secured.	Yes / No	
10.	Plank used for working platforms are wooden or metallic.	Yes / No	
11.	If wooden plank, whether thickness is maintained as per standard or not, viz.; • For 1.5 M span - 1.5" thick. • For 2.6 M span - 2" thick.	Yes / No	
12.	Is there a system of inspecting the scaffolds by a competent person atleast once a week and also after every prolonged interruption in the work / bad weather / heavy wind condition?	Yes / No	
13.	Is there a system of inspecting materials of scaffolds on each occasion before erection.	Yes / No	
14.	Is overhanging of the working platform restricted to less than 50mm / four times the thickness of the	Yes / No	



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

Sl. No.	Check Points	Observation	Measures
	board.		
15.	Is awareness of workmen on the importance of load distribution on a given working platform palpable?	Yes / No	
16.	Is there a check for the condition and correct usage of fittings for scaffolds?	Yes / No	
17.	Is the width of a working platform properly maintained according to usage, viz. • Minimum 600mm for footing only and not for deposit of material. • Minimum 800mm for footing and deposit of material. • Minimum 1050mm when used for heavier loads or to support higher platforms.	Yes / No	
18.	Are all the materials stored on the platforms properly secured or not.	Yes / No	
19.	Are openings in working platform kept safely covered / fenced	Yes / No	
20.	Whether planks are tied using proper binding wires.	Yes / No	
21.	Are mobile scaffolds used on a firm and level surface?	Yes / No	
22.	Does the height of mobile scaffold exceed four times the smaller base dimension?	Yes / No	
23.	Are all materials stacked on the platform properly secured while in motion?	Yes / No	
24.	Is the safety rule “ not to ride on a scaffold while in motion violated”	Yes / No	
25.	Is there a system of checking for obstructions before the tower is moved?	Yes / No	
26.	Are suitable / correct lifting tackle (wire ropes, chains, shackles) selected for suspension & use.	Yes / No	
27.	Is there a system for using manila rope / coir rope for suspension at any place where such rope would be liable to damage by heat / flames/ sharp edges etc.	Yes / No	
28.	Are all precautionary measures taken to prevent contact between arc welding apparatus and suspension ropes.	Yes / No	
29.	Is hanging platform secured?	Yes / No	
30.	Is there a provision of anchoring safety belts- lanyards to be tied to guy ropes?	Yes / No	

Signature of Sub-contractor Supervisor.

Signature of BHEL Supervisor

Format IS-HSE-CL03

Page 2 of 2

Rev.0

Date of Issue: 14.02.2003



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

CHECK LIST FOR GENERAL SAFETY INSPECTION

Name of Sub-contractor

Work Order No.

Nature of work

Name of the Project site

Job. No.

Date

Sl. No.	Check Points	Observation	Measures
PILING WORK			
1.	Condition of tripod and its stability	OK / Not OK	
2.	Condition of wire ropes, D shackles, bulldog grips etc.	OK / Not OK	
3.	Removal of loose earth, slush etc.	OK / Not OK	
4.	Entry in register, details of periodical checking & maintenance.	OK / Not OK	
5.	Guards for rotating parts of machines.	OK / Not OK	
EXCAVATION			
1.	Verification of underground electrical cable	Yes / No	
2.	Condition of storing material	OK / Not OK	
3.	Cutting earth from top & ensuring no undercutting.	OK / Not OK	
4.	Storing of material from the edge of excavated pit 5' or half of the depth whichever is more.	OK / Not OK	
5.	Barricade / fencing / Displaying of danger sign, warning sign by way of red flag / tape/ light etc.	OK / Not OK	
6.	Provision of dewatering facilities.	OK / Not OK	
7.	Provision of ladders for deep trench	OK / Not OK	
8.	Stability of nearby structure	OK / Not OK	
9.	Avoid traffic movement, piling work in the vicinity.	OK / Not OK	
DEMOLITION			
1.	Cordoning of surrounding area	OK / Not OK	
2.	Displaying of warning sign Red Flag / Tape / Light	OK /	



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

Sl. No.	Check Points	Observation	Measures
	etc.	Not OK	
3.	Demolition from top in a planned manner	OK / Not OK	
4.	Disconnection of electrical cable connection / water / steam / gas line etc.	OK / Not OK	
5.	Removal of debris immediately at a safe place	OK / Not OK	
6.	Emergency Transport	OK / Not OK	
7.	Fire extinguishers kept nearby for emergency.	OK / Not OK	
BLASTING			
1.	Blasting record incorporating number of holes made / type of explosive used / firing pattern & sequence with date and time of blast.	OK / Not OK	
2.	Handling of explosives by licensed blaster.	OK / Not OK	
3.	Intensity of the charge calculated before use.	OK / Not OK	
4.	Before drilling presence of unfired explosives checked.	Yes / No	
5.	Blasting is carried out only during lean period (lunch / night hours)	Yes / No	
6.	Standard warning signal / all clear signal is ensured before and after firing.	Yes / No	
7.	Competent persons equipped with red flags are posted at possible approaches to stop traffic and by passers.	Yes / No	
GROUND SURFACES			
1.	Ground level, no soft spot	OK / Not OK	
2.	Footing timber level adequately supported	Yes / No	
3.	No unauthorized entry.	Yes / No	
SCAFFOLDS			
1.	Base plate level	OK / Not OK	
2.	Spindle jack vertical	OK / Not OK	
3.	Standard plumb (vertical tubes), no damage.	OK / Not OK	
4.	Ledgers level (horizontal tubes) no damage	OK / Not OK	



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

Sl. No.	Check Points	Observation	Measures
5.	Diagonal bracing, check secure and non-missing.	OK / Not OK	
6.	Lock pin in place and secure.	OK / Not OK	
7.	Support from permanent structure.	OK / Not OK	
LADDERS			
1.	Check ladder is placed on level ground	OK / Not OK	
2.	Position at an angle of 1:4	OK / Not OK	
3.	Adequately secured	Yes / No	
4.	No damage, check welds	OK / Not OK	
5.	Extent 4 rungs above stepping off point	OK / Not OK	
6.	Uniform and proper spacing of rung and no missing rung.	OK / Not OK	
WORKING PLATFORM			
1.	Should not be less than 600mm wide	OK / Not OK	
2.	Guard rails adequate check - Top rails at least 910mm height - No gap greater than 470mm	OK / Not OK	
3.	Boards free of defects - No gaps - Adequate support - No risk of trips - Properly secured / tied.	OK / Not OK	
PERSONNEL PROTECTIVE EQUIPMENT			
1.	Helmet & Footwear worn	Yes / No	
2.	Safety harnesses as required and secured above shoulder level	Yes / No	
3.	USE of safety belt while working at height.	Yes / No	
4.	Safety goggles during welding / gas cutting / grinding etc.	Yes / No	
5.	Condition / Maintenance of safety appliances	Yes / No	
6.	Use of body guards, gloves etc.		



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

Sl. No.	Check Points	Observation	Measures
STRUCTURAL FABRICATION & ERECTION			
1.	All electrically operated equipment has proper earthing and connected through ELCB.	Yes / No	
2.	Safety guards for drilling & grinding machine are in position.	Yes / No	
3.	Use of Scotch block / wedge on wheels of trailers during unloading of material.	Yes / No	
4.	End stoppers fixed and maintained for rail mounted gantry cranes and limit switches are in operating condition.	Yes / No	
5.	Checking lifting tool & tackles before use.	OK / Not OK	
6.	Precaution during slinging on sharp edges.	Yes / No	
7.	Signaling to crane operators by one person at a time.	Yes / No	
8.	Withdrawal of persons beneath suspended loads.	Yes / No	
9.	Cordoning on all sides displaying Red flags, tapes / light and warning signs.	Yes / No	
10.	Ascertain center of gravity for the load to be lifted.	Yes / No	
11.	Easy access for cranes to move with suspended loads.	OK / Not OK	
12.	Proper tag line is used for guiding lifting loads.	Yes / No	
13.	Proper sequence of erection is followed.	Yes / No	
14.	Guy ropes are used and secured during and after erection if heavy lift.	Yes / No	
15.	Wire ropes are maintained and its safe working load inscribed.	Yes / No	
16.	Adequate illumination provided.	Yes / No	
GAS CUTTING AND WELDING			
1.	Storing of gas cylinders in proper manner	OK / Not OK	
2.	Proper handling of gas cylinder	OK / Not OK	
3.	Condition of regulator, hose, torch etc.	OK / Not OK	
4.	Welding generators / transformers condition and its proper earthing.	OK / Not OK	



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

Sl. No.	Check Points	Observation	Measures
5.	Condition of welding cables and joints	OK / Not OK	
6.	Electrode holder	OK / Not OK	
7.	Area free from combustible material	Yes / No	
8.	Cordoning when welding / gas cutting is in progress at height.	Yes / No	
9.	Provision of fire extinguisher.	Yes / No	
10.	Stacking of cylinders not near live wires, battery charging rooms / oil rooms.	OK / Not OK	
MEANS OF ACCESS			
1.	Platform, toe board and railing	OK / Not OK	
2.	Scaffolding and its condition and maintenance	OK / Not OK	
3.	Stair case and railing	OK / Not OK	
4.	Ladder & fixing	OK / Not OK	
5.	Safe access to and from	OK / Not OK	
ELECTRICAL WORKS			
1.	Earthing of electrically operated equipment.	OK / Not OK	
2.	Provision of Shed / Canopy / Cover of Distribution Board and sub-distribution board.	Yes / No	
3.	Insulation of Cables and Joints	OK / Not OK	
4.	Cable laying above 7 feet from ground level	Yes / No	
5.	Fire extinguishers and Main Distribution Board Room.	OK / Not OK	
6.	Periodical checking of portable tools.	Yes / No	
7.	Use of ELCBs	Yes / No	
8.	“MEN WORKING DON'T SWITCH ON” board and other related Warning boards and Tags.	OK / Not OK	
9.	Insertion of loose wires and sockets	OK / Not OK	
10.	Use of proper plug and sockets.	Yes / No	



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

Sl. No.	Check Points	Observation	Measures
11.	Job safety analysis for shut-down jobs and its proper action.	OK / Not OK	
12.	Permit to work.	Yes / No	
HOUSEKEEPING			
1.	Material stacking and storing	OK / Not OK	
2.	Working / Moving area clean	OK / Not OK	
3.	Access / Main Approach / Passages free from obstacles.	OK / Not OK	
4.	Cordoning / covering of pit, vat, machine foundation etc.	OK / Not OK	
5.	Displaying of Red Flags / Tape / Light.	Yes / No	
6.	Removal of unwanted materials like excavated earth debris etc.	Yes / No	
FIRE PREVENTION / PROTECTION			
1.	Combustible material away from source of heat / fire.	OK / Not OK	
2.	Provision of fire extinguishers and its maintenance.	OK / Not OK	
3.	“No Smoking” Board / “Caution” Board displayed.	OK / Not OK	
4.	Stacking / Storing of different type of combustible materials.	OK / Not OK	
ROAD SAFETY			
1.	Driving by unauthorized person.	Yes / No	
2.	Loading of material on truck, dumper securely.	Yes / No	
3.	Material falling from vehicle while transporting.	Yes / No	
4.	Speed Limit.	Yes / No	
5.	Transportation of persons by dumper.	Yes / No	
6.	Going up and coming down from moving vehicle.	Yes / No	
7.	Indulging in Horse Play on job.	Yes / No	
8.	Reverse Horn.	Yes / No	



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

Sl. No.	Check Points	Observation	Measures
9.	Location of Overhead Lines identified and pre-cautions taken.	Yes / No	
MISCELLANEOUS			
1.	First Aid Box with proper medicine and its maintenance.	OK / Not OK	
2.	Validity Date of medicine.	OK / Not OK	
3.	Illumination.	OK / Not OK	
4.	Safety board and safety promotional materials i) Posters. ii) Stickers.	Yes / No	
5.	Accident Report form.	Yes / No	
6.	Reporting System with Head Quarters.	Yes / No	
7.	Arrangement of drinking water and sanitation.	OK / Not OK	
8.	Provision of emergency vehicle.	Yes / No	
9.	Telephone Nos. of nearby hospitals displayed at prominent place • For Burns • For Fractures • For Head Injuries • General	Yes / No	
10.	Telephone Nos. of nearby Fire Stations / Police Stations / Other establishments nearby for emergency help, displayed at prominent place	Yes / No	

Signature of Sub-contractor Supervisor.

Signature of BHEL Supervisor



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

CHECK LIST FOR HEAVY MATERIAL HANDLING EQUIPMENT INSPECTION

Name of Sub-contractor

Work Order No.

Nature of work

Name of the Project site

Job. No.

Material Handling Equipment Type

Identification Number

Date

Sl. No.	Check Points	Observation	Measures
1.	Marking of Maximum Safe Working Load	OK / Not OK	
2.	Crane Hook and Latch for the Hook	OK / Not OK	
3.	Availability of Trained operator with Licence	Yes / No	
4.	Training of persons involved in proper signaling	Yes / No	
5.	Checking of various safety limit switches	OK / Not OK	
6.	Condition of Boom	OK / Not OK	
7.	Condition of Rope	OK / Not OK	
8.	Condition of Battery and Lamps	OK / Not OK	
9.	Safety Guards for operator and other personnel	OK / Not OK	
10.	Fire Extinguisher availability	Yes / No	
11.	Warning and Danger boards where required	Yes / No	
12.	Use of Pilot vehicle / warning by personnel during transport of heavy / oversized material	Yes / No	
13.	Vehicle condition of tyres, brake, clutch, lamps and horn.	OK / Not OK	

Signature of Sub-contractor Supervisor.

Signature of BHEL Supervisor



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

CHECK LIST FOR ARC WELDING TRANSFORMER

(Reference Standard IS-1851 – 1975 Specification for Single operated type Arc Welding Transformer)

Test to be done before first use at site and repeated periodically once in 6 months

Name of Sub-contractor

Work Order No.

Nature of work

Name of the Project site

Job. No.

Welding Set make, model and

Capacity

Serial Number

Date of Testing

Date of Testing					
Sl. No.	Check Points			Measured Value / Observations	Observation
1.	General Condition of the Set				OK / Not OK
2.	Earthing of Welding Set at Two Places				Yes / No
3.	Open Circuit Voltage in Volts (Measure Output voltage with rated input voltage without loading the set)				OK / Not OK
4.	Physical Inspection, Check Cable, termination, Insulation , cleanliness, Guard against live parts, fuse rating and healthiness				OK / Not OK
5.	Insulation Test (IR value in Megohms) • Primary Terminal • Secondary Terminal • Continuity of Coil - Primary • Continuity of Coil - Secondary • Use appropriate Meggar				OK / Not OK
6.	Load Test U= 20 + 0.04 I Where U is the Load Voltage in Volts I is the Load Current in Amps. Check the results as per the above formula.				<u>Results</u> Accepted / Rejected
Sl.No.	Welding Current	Voltage	Electrode Size	Remarks	

Signature of Sub-contractor Supervisor.

Signature of BHEL Supervisor

Format IS-HSE-CL06

Page 1 of 1

Rev.0

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HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

CHECK LIST FOR DC ARC WELDING GENERATOR

(Reference Standard IS-2635 – 1975 Specification for DC Electric Welding Generator)

Test to be done before first use at site and repeated periodically once in 6 months

Name of Sub-contractor

Work Order No.

Nature of work

Name of the Project site

Job. No.

Welding Set make, model and

Capacity

Serial Number

Date of Testing

Date of Testing

Sl. No.	Check Points			Measured Value / Observations	Observation
1.	General Condition of the Set				OK / Not OK
2.	Earthing of Welding Set at Two Places				Yes / No
3.	Open Circuit Voltage in Volts Speed of Machine in RPM (Measure Output voltage with DC Voltmeter without loading the set) Check value measured with Nameplate rating.				OK / Not OK
4.	Physical Inspection, Check Cable, termination, Insulation , cleanliness, Guard against live parts, fuse rating and healthiness				OK / Not OK
5.	Insulation Test (IR value in Megohms) • Earth to Coil A • Earth to Coil B • Earth to Coil C • Continuity of Coil A • Continuity of Coil B • Continuity of Coil C (Use appropriate Meggar)				OK / Not OK
6.	Load Test (Check the results as per the formula) U= 20 + 0.04 I - Where U is the Load Voltage in Volts I is the Load Current in Amps.				Accepted / Rejected
Sl.No.	Welding Current	Voltage	Electrode Size	Remarks	

Signature of Sub-contractor Supervisor.

Signature of BHEL Supervisor

Format IS-HSE-CL07

Page 1 of 1

Rev.0

Date of Issue: 14.02.2003



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

CHECK LIST FOR STAGING

Name of Sub-contractor

Work Order No.

Nature of work

Name of the Project site

Job. No.

Date

Sl. No.	Check Point	Details action	Observation OK / Not OK
1	Staging material	All load bearing vertical pipe/tubes shall be minimum medium thickness as per BIS 1161(Light gauge thickness pipe shall not be used without approval of engineer in charge).	
		No warped, cracked, bend and damaged material shall be used. Staging pipe shall be checked for adequacy of thickness due to rusting.	
2	Vertical supports	Size and intervals shall be as shown in staging drg.	
		Shall be erected to true vertical and shall not be placed in slope.	
		Verticals shall not be placed over the earth / ground directly.	
		Either wooden planks of good quality or steel plate shall be placed between vertical supports and earth base.	
3	Ties & Bracings	Size and intervals shall be as shown in staging drg.	
		Shall be erected to true line and shall not be placed in slope.	
4	Clamps	Clamps shall be properly cleaned in suitable oil before put into use so that to ensure the tightness of bolt and nut to the required level.	
		Damaged clamps shall not be used. All clamps & wedges shall be periodically checked for tightness till clearance issued by engineer in charge for de-centering.	
5	Base	Base shall be strong enough to receive the load. In case of earth base it shall be well compacted to desired level and no loose pockets shall be found.	
6	Wedges	Wedges if any to be provided between staging and form work shall be of good quality of wood and shall be fixed with the form work properly by nailing etc.	
7	Joints	All joints between vertical supports and Ties / bracings shall be properly clamped to the required tightness.	
		Care shall be taken to ensure that no joints are left unclamped.	



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

8	Rigidity	Rigidity of staging as whole shall be verified thoroughly before allowing for concrete by a team of engineers concerned and a joint protocol shall be made.	
9	Removal of form work / staging	No form work or staging shall be removed before completion of allowed curing and setting time for concrete and without prior permission from the Engineer in writing.	
10	Construction Loads	Construction loads over temporary staging shall be well with in DEAD LOAD + LIVE LOAD as per approved staging design assumptions.	
11	Impact Loads	Impact load over staging shall not be allowed due to movement of construction vehicles, concrete conveying equipment etc. Ready made concrete delivered from batching plant through chocked pipes shall not be tied to staging without approval of engineer in charge. Engineer in charge to verify of condition free flow of pumped concrete through the pipe without excessive pumping pressure to avoid any accidental loads over staging pipes etc.	
12	Illumination	Sufficient illumination below the centering shall ensured for verification of above check points during night hours & wherever clear visibility is absent for checking.	
13	Curing	Excessive ponding of water beyond 25 mm over cast RCC slab during rains or curing shall not be allowed to avoid overloading of staging pipes.	
14	Workforce/skilled labours	Separate required skilled work force with fitters & carpenters etc. shall be kept to attend to above points during concreting.	
15	Approach to workplace	Proper safety ladder or approach stool shall be provided for access to inspection of staging.	
16	Fire hazards	Ensure prevention of fire hazards due to welding & electrical short circuit etc. in the total staging area.	
17	Flooding of water at base of staging	Ensure required dry conditions are maintained at the base level of the staging to avoid slippages of wedges with required pumps & other facilities.	
18	Camber	Ensure that for beams above 6 m span required camber as per approved drawings are maintained by adjustment of the staging props.	

Signature of Sub-contractor Supervisor	Signature of BHEL Supervisor
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HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

Hazards Risk & Preventive Measures at Construction Sites.

(SITE SAFETY PLAN – 2)

INDEX

Sl. NO.	TITLE OF ACTIVITY	Page no.
1.	SURVEY / RECEIPT OF MATERIAL AT STORES & STORAGE	2 / 26
2.	MARCHING & PILING	3,4,5 / 26
3.	EXCAVATION	6,7 / 26
4.	BACK FILLING & SAND COMPACTION	7 / 26
5.	CONCRETING / SHUTTERING.	8,9,10 / 26
6.	HANDLING OF REINFORCEMENT	11 / 26
7.	PRECASTING	12 / 26
8.	FABRICATION	13 / 26
9.	ERECTION	14,15,16 / 26
10.	ROAD MAKING	17 / 26
11.	ROOFWORK	18 / 26
12.	WORKING WITH PORTABLE TOOLS	19 / 26
13.	HANDLING OF DIESEL	20, 21 / 26
14.	SITE TRANSPORTATION	22 / 26
15.	WORKING AT HEIGHT	23 / 26
16.	WELDING & GAS CUTTING	24, 25 / 26
17.	GRINDING	25 / 26
18.	FIRE PREVENTION	26 / 26



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

1. SURVEY / RECEIPT OF MATERIAL AT STORES & STORAGE

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
1	Snakes / Insects bite, inclement weather, water borne diseases etc.	Provide gumboots, water bag, train personnel in first Aid treatment, provide First Aid Box
2	Injuries due to fall of material on workmen during striping of packing & unloading	- Proper instruction to workmen about work at work and Carry out work under effective supervision by skilled personnel. - Manufacturers instructions if any, to be followed during these activities. - Use of proper ramps and stoppers while unloading the material and also to ensure that the ramp used will have sufficient load bearing capacity. - Ensure that the equipment is stored on leveled firm floor / ground to prevent tilting / toppling.
3	Injuries due to fall of material on workmen due to improper stacking and tying	- Proper tying, stacking of material and necessary support to the equipment in storage area. - Regular check up of storage area / work shop for removal of material / unwanted scrap. - Display of necessary safety precaution boards and Do's & Don't's charts at workplaces and storage areas. - Oxygen and Acetylene cylinders are to be stacked separately and label mentioning full or empty to be displayed for easy identification. - Chains, slings, cables etc. are to be stacked under the tarpaulin or asbestos / GI shed with tarpaulin covered over shed to avoid seepage of water during raining season. - Proper sequence / labeling of material stacking be followed for quick retrieval.
4	Fire	- Ensuring that the materials stacked are classified as combustible, inflammable, explosive and stored separately. - Ensure right type & quantity of extinguishers are available and personnel trained for using the extinguishers.
5	Handling chemicals, paints etc	- Ensure availability of Material Safety Data Sheets (MSDS). - Ensure strict adherence to the requirement of MSDS.



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

2. MARCHING & PILING

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
1	Fall of material / slings cut off / fall of person from same level	• Use of proper slings and checking adequacy before use. • Selection of proper hitch while shifting sleepers. • Path should be free from interruption. • Carrying out work by Skilled operator / Signal man under supervision of knowledgeable supervisor. • Use of PPE's like Safety shoe, helmet, hand gloves.
2	Hand injury, head injury, fall from same level, struck by, struck against etc.	• Distance must be maintained while inserting the wooden plank. • No one shall be entertained under the rig to insert plank, pouring water, grease etc. while marching. • Marching must be done in the presence of skilled supervisor. • While shifting the sleepers by the winch following needs to be ensured: ➤ The correct hitch must be selected ➤ Path should be cleared from barriers ➤ No one should have direct touch with sleepers ➤ Guy rope should be tied to control the swings of sleepers ➤ Safety helmet, shoe, gloves and belt will be tied by the lifeline on workers shoulder level ➤ Operator should not use loose shirt
3	Toppling of rig	• Sleepers should be provided equally on both the sides and under the eye • Exact counter weight should be placed at rear end • Dumps would be compensated by placing the wooden pieces over the sleepers / filling with sand to make the surface level • Care must be taken while rolling the wire rope on Ballard for marching straight and returning to a required angle.
4	Fall of person from height	• Safety belt must be used and lifeline be tied at shoulder level while putting the channel under the helmet for resting the hammer.



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

2 MARCHING & PILING --Contd

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
5	Greasing and maintenance of rigs	• Greasing should be done while the machine is in rest • Gloves should not be used for doing any repair in case of running machine • Greasing gun must be used • Structural frame should be cleaned from grease to avoid slippery surface. • All nuts & bolts should be tightened before it get broken off by shear. • Wire rope should be checked visually and be changed if needs.
6	Injuries while operating / piling	• Wearing gloves is necessary before handling the wire ropes / handling bitumen • Wearing shoes • Operation must takes place under the supervision of piling in charge / front line supervisor • All workers are clearly told about their responsibility & they must understand clearly. • Do not allow any body to sit near by the rig while in operation. • Wearing of helmet with chin strap • Fly wheel and gear pulleys are properly guarded • While pouring the concrete, worker will ensure that the belts are used properly.
7	Fire	• Fire extinguisher of Halon type be placed with each rig. • All workers are to be trained to operate the extinguishers • Water buckets be placed near by piling area to control the class A fires.
8	Slipping of tripod legs for piling / Injury	• Tripod legs should be properly spiked in the ground. This will prevent the accident due to slip of the tripod legs when rested on a paved ground or sleepers. The shear legs and bases become fatigued with usage. Those should be replaced frequently.
9	Failure of pulley	• The failure of a pulley due to shearing of pin is quite common. Therefore frequent check up of pulley is essential.



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

2 MARCHING & PILING --Contd

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
10	Failure of wire rope	The wire rope linked between main piling tools should be checked frequently.
11	General	- All workers must wear tight fitting clothes. Use helmets, hand gloves, protective foot-gears, earmuff and eye goggles. - Electrical connections must be handled with a great deal of care. Direct tapping of power should be prohibited. Each unit should have its own switchboard. All cables should be properly insulated. Earthing is to be ensured. - All movable part of the winch should be suitably guarded. - Engine must be stopped before replacing belts.
12	Damage of near by structure	Piling work causes vibration, that may damage near by structure, particularly old ones. It is thus essential to keep watch on the old structure while piling is in process. Condition of the structure around the piling area should be examined before starting of work.
13	Pile breaking	For pile breaking operation piles projected more than 2 m may be considered for groove chipping and gas cutting at a level of 5 m height above the cutoff level avoiding tilting or collapsing of the upper part.



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

3. EXCAVATION

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
1	Under ground cables / HT lines / Electrocutation	Site clearance and information on location of specific area be obtained from concerned customer's department.
2	Improper shoring / collapse of trench	- Excavate as per the angle of repose of the particular soil. - Provide shoring wherever required - The excavated soil shall be kept at a distance of more than 5 feet or half of the depth of the trench, whichever is more from edge. Proper slope must be given. - Vehicle movement should not be allowed near by the edge of the trench. Necessary protection should be taken care. - Cutting should be done from top to bottom. Under cutting should not be allowed. - While providing steps for access / egress, slippery surface must be avoided. Proper ramp must be provided. - Work must be done under the control of skilled supervisor.
3	Ground water seepage & accumulation	- Dewatering to be done before allowing workmen in or around the pit - Suitable pump must be used if heavy seepage exists.
4	Personnel falling into excavated pit	- Provide proper sign / warning board - Use proper means of access. Ladders to be provided which should be projected (extended) more than 3 feet from the ground level. 3 feet height Barricade be provided near the excavated area. - Proper illumination be provided. - In deep excavation (more than 4 feet), persons working at slope or bench of the pit should wear safety belt. - One ladder should be placed at the pit site all the times. One ladder for each 100 m length.
5.	Material falling into excavated pit	- Store material away from the edge of the pit (away from the barricade) - Edge preparation be ensured - Vehicle movement permitted away from the pit barricade.



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

3. EXCAVATION Contd.

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
6	Occupation health hazards	• Water spraying be ensured over the fly ash or fines for suppression of dust • Nose / dust mask must be used • Safety shoe with ankle must be used • Ensure eye protection using goggles.

4. BACK FILLING & SAND COMPACTION

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
1	Reversing of vehicle / personnel injury / toppling of vehicle	• Reversing horn (back gear horn) of each vehicle should be working • Driving near to the edge of the excavation be avoided. • Back view mirror must be fitted and intact in proper position on each vehicle • Proper approach to be made to pit, which required to be backfilled as well as to the source of backfilling material. • Proper signaling be ensured while reversing the vehicle. • Activities are to be performed under the control of skilled supervisor.
2	Compactors	• All the drivers should possess a valid license. • For mini hand operated compactors, all rotating parts should be guarded. • Near by persons should be alerted while reversing the compactors • Hand gloves should be used in case of mini hand operated compactors • Care must be taken while starting the hand operated compactors.
3	Excavation area / toppling of rollers & compactors	• Area under excavation should be barricaded. • Warning sign should be displayed. • Drivers / operators should be advised suitably • Constant supervision must be provided. • Repair and maintenance of compactors or rollers should be done out of compactor area • Proper illumination be provided. • JCBs need not go nearer to edge of excavated area. • JCB operators must use helmet.



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

5. CONCRETING / SHUTTERING.

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
1	Person working at height / fall from height	• Make proper platform with handrail • Use safety belt at height • Use safety net if necessary • Use personal protective gears as required
2	Placing of loose material at top / fall of material	• Provide toe boards throughout periphery of the platform • Avoid gap between platform planks • Do not place loose materials over or near by the edge of the platform • Keep the hand tools in a particular box and the box should be tied / fixed with the platform. • Use hand tools by tying with rope to a fixed structure, so that it does not fall off due to inadvertent slippage etc. • Use safety net having smaller mesh size. • Avoid standing just below the working area.
3	Improper approach way / fall of person from height	• Use proper ladder with handrail placed on firm ground and lashed / fixed both ends of the ladder • Make proper landing place
4	Lifting of materials like shutters, concrete etc.	• Check wire ropes & brakes of the machines daily • Check lifting tools and tackles daily • Proper slinging • Check the locking system of concrete bucket regularly
5	Noise pollution while operating vibrator, compressors, improper handling of material, electrocution, electrical fire etc.	• Use of ear plug or ear muff • Use of hand gloves • Electrical connection to be taken through ELCB • Checking of electrical grounding system periodically • Overhead work to be coordinated properly to avoid injury to people working underneath. • Proper instruction to be given to the workmen by supervisor while working • Constant supervision must be provided • Greasing need not be done on running mixer machine • Carbon dioxide type extinguisher should be placed nearby DB / SDB



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

5. CONCRETING / SHUTTERING. Contd.

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
6	Protruding of nails / injuries, scratch	- Protruding nails from the shuttering planks should be removed before put into the use. - Nails should not be thrown or spread at site. - Nails must be kept in proper box.
7	Pouring of concrete using transit mixer	- Reversing horn (back gear horn) of each vehicle should be working - Helper should be provided to operate the lever to unload the concrete and guide the vehicle while reversing. - Concrete should not be collected by bond carrying on hand for making cubes - Before making move, the helper should check that nothing is lying / nobody is sleeping under the tyres - On daily basis maintenance work shall be carried out. Maintenance work shall be taken place after shutdown of engine fully and informing driver. - No one should be permitted to sit over the tyre shield. - Speed limit permitted at work site must be followed. - Hand break and wedge should be placed under the tyre while parking at site for unloading the concrete. - Each and every rotating part of transit mixer should be guarded properly - Tyre pressure needs to be checked at regular interval. - Mixer fitness test validity to be ensured - Break efficiency, head lights, reverse horn coordination should be checked periodically. - Concreting activity must be done under the control of skilled supervisor.
8	Defects in wire rope and its clamping in mixer chain	Proper examination by a competent person before taking in use. Lubricant should be applied as per norms.
9	Inhaling of exhaust gases / health injury	Inhaling of exhaust gases coming out of Diesel mixer may cause diseases so it should be directed away from the operator.



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

5. CONCRETING / SHUTTERING. Contd.

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
10	Cleaning of mixer drum / health injury	• Accident normally occurs during cleaning mixer drum , so care should be taken to display the notice “ UNDER REPAIR” while cleaning the Drum.
11	Contact of body parts with power transmission belt / health injury	• Each and every rotating part of transit mixer should be guarded properly using protective guard.
12	Electric Shock	• All part of electrical installations should be so equipped so as to prevent danger of electrical shock. • Personal protective equipment such as rubber boots should be considered as providing adequate protection against risk of electric shock.



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

6. HANDLING OF REINFORCEMENT

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
1	Sharp edge / scratch / injury	- Persons handling reinforcement rod should wear hand gloves and safety shoes. - While shifting the lengthy rods, the group of persons involved in shifting should be of nominal heights. - While shifting the rods, the passage clearance must be ensured.
2	Rod cutting machine / cutting injury / caught in rotating parts	- While bending the rod the nearby persons should be alerted. - The rotating part of the machine should be guarded - Avoid using loose shirts. - Ensure proper earthing of machine and connection taken through ELCB.
3	Persons falling from height / Injury.	- Safety belts must be used while handling the reinforcement at a height of more than 2 meters. - Safety net to be tied. - People working underneath area should be alerted.
4	Tying of reinforcement bars / hand puncturing	- Hand gloves should be used. - Only one person should do this job in one place.
5	Fall of reinforcement rod	- Proper stacking of rods to be done if required to store at some elevated level - Required quantity of rod should be shifted to elevated work spot.
6	Projected edge / Eye injury	The projected edge of the stacked rods should be covered.
7	Bending / breaking of rod	Carbon content in reinforcement to be checked.



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

7. PRECASTING

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
1	Reinforcement bar / personnel injury, scratches	• Gloves should be used • Reinforcement bars should be stacked properly • Care should be taken while tying bars with steel wire • Good house keeping should be maintained.
2	Mixer machine	• Rotating parts should be guarded • Greasing of gears / other maintenance should be done in switch off mode. • Ear plug should be provided if necessary • Person should carry only 50 Kg • Connection should be given through ELCB.
3	Pouring of concrete / fall of person / injury	• Neat and strong walk way should be provided over the network of reinforcement bar • Safety shoe should be used • Load carrying helmet should be used • Hand gloves should be used.
4	Vibrator / noise, electrocution,	• Gloves should be used • Use of ear plugs • Proper earthing of equipment and supply provision through ELCB • Keeping the vibrator unit at one side to avoid hindrance to movement



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

8. FABRICATION

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
1	General	• Space should be earmarked for fabrication yard at least 40 – 50 feet away from a rail track, road and overhead transmission lines. • All equipment electrically operated must have proper earthing and guards in position. • Electrical supply should be taken through ELCB. • The use of rubber gloves or leather gloves in dry condition is an absolute must, while operating hand held electric tools. • Drilling machine , grinding machine should have safety guard in position. • While unloading structural steel from trailers or wagons by cranes adequate protection should be taken to make the trailers or wagons stationary by putting scotch blocks or wedge on the wheels. • No persons should stand under hanging or swinging load area. • While fabricating heavy structures, adequate props to be given to avoid toppling of the component under fabrication. • Material should not be dumped haphazardly. It should be stacked properly in order. • All the confined space such as tanks, control equipments etc should be ventilated properly.



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

9. ERECTION

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
1	Location of cranes / unlevelled surface of earth / toppling of crane / Overloading of cranes / Setting of cranes / Collapse of boom Physical injury of men and damage of equipment material etc.	- Ground surface should be leveled. - Stability of earth should be checked. Mobile crane should be parked on hard soil. - Crane should not be placed near the edges of pit or excavations. 1'' thick metallic plate or wooden sleeper to be placed on the ground to increase the stability of the crane to be positioned and distribute the load equally. - Suitable approach shall be made for crane marching. Wooden sleepers shall be used wherever necessary. - Proper boom angle and radius shall be ascertained before going to lift a load. - Boom over hoisting limit/ cut off switch should be checked before use. - Check tires condition / pressure. - Overloading shall never be allowed at site. - Tag line should be used while hoisting heavy and bulky materials. - Limit switches of cranes should be tested frequently for ensuring its proper functioning. - Operator should be able to see the hook and load throughout the hoisting period.
2	Poor signaling / operation	- Employ experienced signalman only - Crane operator should be familiar with those signal - Operator should possessed with valid license - Hindrance to operators cabin should be avoided.
3	Overconfidence / negligence / inexperience on the part of workmen	- Check for people movement underneath the lifted load. - Continuous PEP talk to create awareness - Provide constant supervision
4	Reversing the crane	- Healthy ness of reverse horn to be ensured. - Use of reverse horn before movement - Instruct the helper to guide crane operator while reversing - Stop people movement behind the crane area
5	Failure of lifting tackle, sling, chain pulley / fall of material	Before lifting any load its actual weight should be ascertained. Center of gravity should be identified and mode of load transfer at sling point to be considered.



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

9. ERECTION Contd.

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
		- Exact determination of sling capacity, sling angle, factor of safety - Factor of Safety should be at least 2.5 - Radius of swing should be identified - A visual check must be done regarding fitness of all lifting tackles, ropes, slings etc. before every use. - The common tendency of checking gear meshing, lubrication, coupling, hole matching etc. by feeling with a finger must be strictly curbed. - Selection of bars, rollers, skid etc. should be made depending the type of equipment to be handled. - No slings should be overloaded. - Proper quality of pulley block should be used. In no case pulley block suitable for fiber rope should be used for steel wire ropes. - No person shall walk, stand or work beneath suspended load. - During erection only one signaler shall give signals. However STOP signal should be obeyed whoever gives.
6	Lifting of structure / improper hitch / fall of material	- Correct hitch to be selected respective to the structure to be lifted - Sudden jerk should be avoided. - The structural members should be kept in orderly manner on the ground so that those items do not roll down while being handled. - Clear passages should be left for easy handling and transportation of structures. - All persons shall stand clear when a crane is sorting or shifting steel girders or other structural materials. - While using spanners, reverting hammer etc. at height should be tied with rope fixed to nearby structure so that it will not drop in case of slip. - Care should be taken while lifting loads. Proper tag line must be used for guiding while lifting loads. - While positioning a beam of fabricated structure etc. it shall be so held that the workers hand does not get jammed against other objects.



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

9. ERECTION - Contd

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
		• Loose bolt, nuts, and tools must be kept in a box and not on structures. Box must have proper anchorage. • Care should be taken to fasten the erected members properly and secure by guys etc. wherever necessary. • Providing packing over sharp edges should protect ropes and slings. • Slinging should be carefully done so as to prevent the load from slipping. • Proper sequence of erection should be followed. • All electrically operated equipments like grinding machine, drilling machine, welding machines etc. must be properly earthed. • The structural member should be able to taken out as per sequence of erection without disturbing the stack. At the same time light structure should not be stacked below heavy structural member to avoid damage. • Safety appliances like safety Helmets, gloves, belts must be used suitably at erection sites.
7	Barricade of working area / Fatal hit	• Area should be barricaded • Appoint experienced signalman.



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

10. ROAD MAKING

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
1	Hot mix plant / Burns	• Ascertain the direction of wind and then locate. • Provide fire fighting equipment • Avoid open fire near fuel tank • Helmets, Gumboots, Goggles and Hand gloves should be provided for operators, mechanics and helpers • Avoid using loose clothes • Ensure that the guards on moving parts are firmly fixed and properly • The platform for operation should be strong and spacious and provided with side railing. Ladder should be provided for access. • Avoid direct contact with dryer drum / its aggregate. • Avoid leaning over the chamber mixer. • Avoid back fire
2	Heating Bitumen / Handling	• Container should be leak proof & kept closed. • Temperature should be maintained • Avoid back fire • Ensure the buckets for carrying bitumen are intact • Hand gloves shall be used
3	Stones, crushed stones / Injuries	• Stones should be kept at side. • Reverse horn of the truck must be healthy
4	Road rollers / injury	• Operator should have valid license • Repair / Maintenance work should not be done while in motion / engine "ON" condition. • Roller operating area should be indicated by planting red flag on both sides.



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

11. ROOF WORK

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
1	Standing on and moving above roof under construction / Falling and injury	• Fabricate temporary structure / surface of adequate strength and supported at a number of points to distribute load. • If site is dusty, then dust control measure must be provided to avoid dust deposition on the roof. • Suitable platform should be furnished with width of more than 600 mm for moving along horizontally. • Cat boards, flat ladder, crawling boards should be used for moving along vertically. • A safety net or catch platform should be installed under the roof if it is necessary. • Evacuate all workers under the roof where work is in progress. • Suitable precaution board should be displayed on working spot. • Guard rails be installed around the roof edge and roof openings along with toe guard and middle rail. • Proper egress and access to be provided to reach the work spot. • All roof materials should be stored at ground level and shifted as per requirements and do not be stored at elevated work spot. At most care must be taken while transporting the fragile material from store to work spot. • Proper PPEs like suitable clothing, footwear, with non-slip soles safety belts, fall arresting system (made preferably from rope).
2	Electrocution / Injury	• The electricity supply to adjacent overhead wires should be interrupted or the wire should be rendered harmless by some other means. • Proper illumination arrangement must be made.
3	Health	• Medical examination would be done to detect any defects of equilibrium before being engaged at work. • Emergency vehicle should be parked at site for round the clock. • First aid hospital shall be identified and phone number would be displayed at all visible locality.



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

12. WORKING WITH PORTABLE TOOLS

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
1	Electric shock, Burns, Electrocutation / Injury	• Earthing of all electrical equipment must be ensured. • Supply through ELCB should be provided. • Regular checking of ELCB operation is to be done. Register should be maintained . • Double earthing should be followed. • Electrical cable should be neatly traced along the platform and handrail. Avoid placing them on the platform or routing in haphazard way. • 3 pin plug should be used for power tapping. • Proper shed should be provided to DBs to protect the same from extreme weather condition. • Avoid number of intermediate cable joints. One joint per 25 meter is allowed with necessary insulated taping. • Appropriate PPE should be used. • “DANGER BOARD”, “ MEN ON THE JOB” “DO NOT SWITCH ON” boards shall be put up as required. • Insertion of loose wires in the socket shall not be allowed. • Dry chemical type fire extinguisher shall be kept in the DB / FDB location. Use of these must be known to workers & supervisors.
2	Caught in rotating parts, slip from hand / injury	• Ensure that the guards are firmly and correctly fixed. • Avoid doing repair / maintenance work during in motion. • Avoid stagnation of water in and around. • Avoid wearing loose shirts • Retain hold of hand tools until moving parts have stopped. • Avoid leaving the equipment as it is without “ switch off”. • Use hand gloves free from oil & grease. • Never carry the machine by its power cord.
3	Occupational health hazards / Noise	• Use ear plug if necessary. • Change portable tools if noise level is not controllable.



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

13. HANDLING OF DIESEL

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
1	Flammable and toxic vapors on exposure to atmosphere. Being heavier than air become difficult for it to disperse.	- Care should be taken to prevent accidental ignition and explosion of the vapors. - Electrical cables should be properly insulated to prevent spark and fire. - Incandescent lamps (if used) , shall have glass cover and protective cage. - To take out flammable liquids from 200 L drum to small containers, manually operated hand pump with funnel shall be used. Lid of containers shall be immediately replaced. - Match box or gas ignited lighters use must be avoided. NO SMOKING / NO NAKED LIGHTS board must be displayed. - Container should be stored in upright position in an open air compound and securely fenced and surrounded by a bund sufficient to hold the content of the largest drum stored plus 10%. - In case drums are stored horizontally wedges must be used. “ Highly Inflammable Liquid” caution board should be displayed at the entrance of the storage area. - Care must be taken to avoid spillage & leaks by maintaining screw caps and the use of funnels, spouts or a symphonic device. - Spillage can be soaked with dry sand, which could then be placed at least 4 M away from any possible vapour source or combustible stock of materials.
2	Cleanliness and disposal of rubbish / Fire	- It is vital that all waste of highly flammable liquids or materials contaminated by them is disposed off immediately and workplace kept clean all times to remove hazards. - Within workplace, metal bins with lids are required to receive rags and waste. - All bins should be removed to store overnight. Rubbish is to be incinerated in small quantities in the open at least 8 m from any building. Cleaning should be done with nonflammable solvent in well-ventilated places. Detergent, degreaser, cleanser are often satisfactory.



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

13. HANDLING OF DIESEL - Contd.

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
		• Wooden, plastic or non-sparking alloy implements should be used to clean residues from floor or other surfaces. • Heat should never be applied to normally empty vessels as they still contain explosive mixture. • Empty containers with cap removed should be crushed and disposed off as rubbish, but not incinerated. • The cleaning or repairing of drums on site is not recommended. They should be returned to the supplier if they are not to be removed.



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

14. SITE TRANSPORTATION

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
1	Site access or routing at site / accidents	- Site entrance should be located in such a way so as to cause minimum inconveniences to the public or other road users. - Suitable warning notice should be displayed at the convenient locations (adjacent to overhead lines or near storage areas or excavated pits etc.) - Provision of one way system and the avoidance of vehicle reversal recommended upto a satisfactory level. - Protective embankment should be provided at the all excavated sites particularly at the areas where lorries or dumpers trip into excavations.
2	Vehicles & drivers / Accidents	- Fitness of vehicle needs to be checked. - Driver must possess valid license. - Tiers condition / Battery condition be checked.
3	Violation of driving rules / accidents	- Drivers must follow the traffic rules and signals. - Speed limit and sharp bends must be avoided. - Stop and proceed carefully at unmanned junction points.
4	Over loading / Accidents	- Over loading causes more wear & tear of tires, road surfaces and decreasing efficiency of the moving components of the vehicle. - It also causes less control on steering, inadequacy of break power, overturning while negotiating sharp bends.
5	Stacked material / Accidents	- Transport vehicle usually should go to the stacked material site for loading either manually or by machine. - In case of loading by a ladder strong canopy or cap should be provided for the safety of the driver. - The engine of the vehicle should not be kept running during the period of stacking. - In case of loading or transporting of material such as built up columns or MS rods which are projected beyond the vehicle should be provided with precautionary signs suitable (Flag or Signal man), to avoid injuries to the people. - Human being should not be transported in Truck / Dumpers / Cranes etc. - Filled Oxygen and Acetylene cylinders should not be thrown from vehicle. It must be shifted through bottom rim.



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

15. WORKING AT HEIGHT

ACTION BY : Concerned Site Engineer / Supervisor / Site Safety Engineer

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
1	Fall of a person / injury	- Fabricate temporary structure / surface of adequate strength and supported at a number of points to distribute load. - Suitable stable platform should be furnished with width of more than 600 mm for moving along horizontally. - Proper access / egress should be provided. - Good house keeping should be maintained at elevated work place. - PPE like safety belts, fall arresting system should be incorporated / anchored of lifeline with permanent structure at a height of person shoulder level. - Guy ropes shall be used for anchoring lifeline of safety belt to facilitate safe horizontal movement at height. - In special circumstances fall arrestor should be used where usage of safety belt is non-practical.
2	Fall of material / Injury	- Platform should be spacious to allow placement of material and space for working person. - Barrication / handrails, toe boards should be provided if necessary. - Guard / Safety net is provided suitably for preventing falling of material from height.. - Overloading on temporary platform is avoided. - Protect structures against external impact. - Build and dismantle the structures in accordance with design.
3	Improper scaffolding	- Erected on firm and level ground - Proper approach should be provided by ladders, Ramps etc. - Gangway jalties, which are used to form platform at top, should be tied firmly. - Slippery / wet condition over the working platform should be avoided. - Safety belt & safety helmet are must for the people who are working on scaffolding platform.



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

16. WELDING & GAS CUTTING

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
1	Fire, explosion, backfire / Injury	• DA and Oxygen cylinders should be kept in upward position and tied firmly. • Cylinders should be shifted by wheel trolley. • DA cylinders should be covered by wet cloths or gunny bags. • Flash back arrester should be fitted in all DA cylinders. • Nozzle of cutting torch should be properly tightened and kept clean from dirt, dust, metal depositions etc. • No joints and extension of hoses are allowed for DA. • If any crack is found on the hose pipe it shall be thoroughly checked and replaced. • Provide right type of fire extinguishers near by the work spot. • Gas cylinder should be stored properly in a shed. Empty and full cylinders should be kept separately and labeled. • Oil or Paint drums (empty or with content) shall not be allowed to be kept near the vicinity of weld area.
2	Bare wire or improper insulation / Electrocutation	• Earthing of all electrical equipment must be ensured. • Supply through ELCB should be provided. • Double earthing should be followed. • Electrical cable should be neatly traced along the platform and handrail. Avoid placing them on the platform or routing in haphazard way. • 3 pin plug should be used for power tapping. • DBs must be protected from rains. • Avoid number of intermediate cable joints. One joint per 25 meter is allowed with necessary insulated taping. • Appropriate PPE should be used. • Electrode holder shall be of good quality with proper insulation. The welder should never be allowed to weld when he is wet. • Install power generators of suitable capacity. • Provide emergency light / torches in the job site. • Provide emergency ladder for elevated work spot.



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

16. WELDING & GAS CUTTING - Contd.

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
		Incase of confined area, forced ventilation shall be provided.
3	Exposure to spark hot metal and fumes	- The welder shall use apron and Helmet with weld screen. - Provide adequate ventilation in the working area.
4	Continuous working / Heat Stress	- Provide adequate ventilation. - Continuous working should be avoided. Adequate interval should be provided. - Incase of confined area, forced ventilation shall be provided.
5		

17. Grinding

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
1	Contact with grinding wheel / electric shock	- Wheel guard should be placed in proper position. - Machine should be earthed properly. - Frequent checking of power cord and use of plugs & sockets. - Proper use of PPEs such as grinders goggles, face shields, safety shoes, hand gloves etc. - Wheel should be mounted properly on the suitable grinding machine. - Grinding machine RPM and wheel RPM should match. - Use of safety belt during grinding at height more than 2 m.
2	Damage of wheel	Check the expiry date.
3	Cable / cord	- Double insulated power cable should be used in grinding machine. - Joints in cable should be avoided or protected properly.



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

18. FIRE PREVENTION

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	Causes of fire	PREVENTIVE MEASURE
1	Malicious ignition, careless gas cutting, welding, smoking, throwing of lighting match sticks, uncontrolled rubbish burning Incorrect storage and careless use of flammable liquids and compressed gases.	• Portable extinguishers containing Foam, DCP or BCF should be used on fire involving flammable liquids. Such fire extinguishers shall be conspicuously located. • Nobody shall be allowed to misuse or horseplay with this emergency equipment. • Demonstration on the usage of fire extinguishers shall be arranged. • Employees shall be instructed to report all fires immediately and notify their supervisor about the discharge of the fire extinguisher and its need of servicing. • The extinguisher should be readily available for use and not more than 15 m away from the area of use. • Employees, especially those involved in actually using these liquid must be adequately trained in the proper use of fire extinguishers. These employees in case of emergency and for other measures can use extinguisher in the event of fire. • Fencing of loading area like flammable liquid stores, paint oil storage and material stores (especially timber stacks) should have prominent displaying of “ NO SMOKING”.

	HSE Management System Manual
IS/HSE/CSSP/O1	CONSOLIDATED SITE SAFETY PLAN

GUIDELINES FOR RESIDENT MANAGERS ON CONTRACT LABOUR, SAFETY & ACCIDENT REPORTING SYSTEM

CONTRACT LABOUR

- 1) Form V under Contract Labour (Regulation and Abolition Act) may be arranged from the customer, who is the principal employer, in the name of sub-contractor directly and ensure that the sub-contractor shall obtain licence under Contract Labour (Regulation and Abolition Act) 1970.
- 2) Ensure PF coverage in respect of all the contract labour deployed by our sub-contractors.
- 3) Ensure ESI coverage, wherever applicable, in respect of all the contract labour deployed by our sub-contractors.
- 4) Ensure gate pass issued by the customer to all the contract labour deployed by our sub-contractors.
- 5) Ensure Insurance coverage in lieu of Workmen's Compensation in respect of all the contract labour deployed by our sub-contractors.
- 6) Ensure payment of minimum wages, bonus, gratuity and other statutory payments to the contract labour
- 7) Please keep the labour law books containing the labour legislations applicable to each site. For example Factories Act Rules of the state where in the site situated, etc.

SAFETY

- 8) Ensure compliance of all safety measures/aspects by sub-contractors.
- 9) Ensure usage of PPEs as per the safety norms for each work / site by BHEL employees and persons engaged by the sub-contractors.
- 10) Ensure compliance of safety aspects envisaged in HSE Management System Manual.

ACCIDENT REPORTING SYSTEM

- 11) In case of major accidents resulting in serious bodily injury or death, report the same to Business Manager, Head(HR), etc. at HQ immediately.



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

- 12) If the accident happened to any contract labour, please obtain a letter from the contractor regarding the accident and forward the same to the customer after obtaining concurrence from HQ.
- 13) In case of Fatal Accident to contract labour, local Police shall be informed by the contractor under intimation to you. A copy of the FIR may be forwarded to HQ.
- 14) In case of Fatal Accident to BHEL employee, local Police shall be informed by the Resident Manager under intimation to HQ.
- 15) Obtain the concurrence and approval of Business Manager & Head(HR) before signing any Accident Notice Forms under the Factories Act or Form EE under Workmen's Compensation Act, etc. or any other documents related to the accident.
- 16) In case of Fatal Accident to contract labour, ensure contractor shall arrange for postmortem and other formalities and hand over the body to the relatives.
- 17) In case of major accidents resulting in serious bodily injury or death to contract labour, Resident Manager shall forward the prescribed Form (Notice of Accidents or Dangerous Occurrences Resulting in Death or Bodily Injury under the Factories Act Rules of the state in which site is situated) filled and submitted by the sub-contractor to the Customer for onward transmission to the Assistant Labour Commissioner and other concerned Authorities within the prescribed time limit. For example Form 22 under Chatisgarh Factories Act Rules is applicable to Korba East site and Form 18 under Punjab Factories Act Rules is applicable to Lehramohabat site.
- 18) In case of major accidents resulting in serious bodily injury or death to BHEL employee, Resident Manager shall fill and submit the prescribed Form (Notice of Accidents or Dangerous Occurrences Resulting in Death or Bodily Injury under the Factories Act Rules of the state in which site is situated) to the Customer for onward transmission to the Assistant Labour Commissioner and other concerned Authorities within the prescribed time limit. For example Form 22 under Chatisgarh Factories Act Rules is applicable to Korba East site and Form 18 under Punjab Factories Act Rules is applicable to Lehramohabat site.
- 19) Contact Resident Manager / HR executive of Power Sector Site at the same location, if available, and take their assistance, in case if they had already handled a similar accident case at the same location.
- 20) Ensure providing of details like age (date of birth), wages of the person met with an accident and injured or expired to the concerned authorities.

	HSE Management System Manual
IS/HSE/CSSP/O1	CONSOLIDATED SITE SAFETY PLAN

- 21) Ensure depositing of Workmen's Compensation amount decided by the authority under the Workmen's Compensation Act with the Commissioner of Workmen's Compensation by the contractor or their Insurance Company.
- 22) Inform HQ regarding the payment of Workmen's Compensation through the authorities to the dependents of the person expired.
- 23) Ensure payment of other statutory payments also, if any.

HSE ACCIDENT / INCIDENT REPORTING

- 24) Strictly comply with section 17.0 of HSE Management System Manual in respect of Accident / Incident reporting system
- 25) Submit the Accident / Incident Report format to HQ immediately after occurrence of accident.
- 26) Submit the Accident / Incident Investigation Report format to HQ after completion of the investigation



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

LIST OF RELEVANT LEGISLATIONS APPLICABLE TO VARIOUS SITES

1. Contract Labour (Regulation and Abolition) Act, 1970
2. Factories Act, 1948 with relevant state rules
3. The Buildings And Other Construction Workers (Regulation Of Employment And Conditions Of Service) Act, 1996
4. The Inter-state Migrant Workmen (Regulation Of Employment And Conditions of Service) Act, 1979
5. The Child Labour (Prohibition and Regulation) Act, 1986
6. Minimum Wages Act, 1948 with relevant state amendments
7. Payments of Wages Act, 1936
8. Payment of Bonus Act, 1965
9. Payment of Gratuity Act, 1972
10. Employees' State Insurance Act, 1948
11. The Employees' Provident Funds And Miscellaneous Provisions Act, 1952
12. Fatal Accidents Act, 1855
13. The Personal Injuries (Compensation Insurance) Act, 1963
14. Workmen's Compensation Act, 1923
15. The Industrial Disputes Act, 1947
16. The Electricity Act, 2003
17. The Indian Electricity Act, 1910
18. The Indian Electricity Rules 1956
19. Environmental Standards for TPP
20. The Indian Boilers Act, 1923
21. Tariff Advisory Committee - Insurance
22. Hazardous goods TAC
23. The Motor vehicle Act 1988
24. The national Environment Tribunal Act 1995
25. The Environment (Protection) Act, 1986
26. The Gas Cylinder Rules 2004

All the above legislations are made available in ISG web under HSE (<http://isgweb/hse.html>) Business Managers / Project Managers / Resident Managers are requested to go through the above legislations and ensure strict compliance of the relevant legislations and its specific clauses applicable to their respective sites. Resident Managers are also requested to enquire with the customer regarding applicability of any local legislation.



HSE Management System Manual

IS:HSE:AIR:001

ACCIDENT (PERSONAL INJURY / PROPERTY DAMAGE) REPORT

1.	NAME OF SITE:				
2.	SCOPE OF WORK:				
3.	ACTIVITY OF AREA:				
4.	NAME OF CONTRACTOR:				
5.	NAME & DESIGNATION OF BHEL ACTIVITY INCHARGE:				
6.	DATE & TIME OF ACCIDENT:				
7.	DATE RESUMED:				
8.	NO. OF WORKING DAYS LOST BY VICTIM (if duty not resumed give estimated figure):				
9.	NO. OF MAN HOURS LOST BY OTHERS:				
10.	PERSONAL DETAILS OF INJURED AND/OR DETAILS OF MATERIALS / EQUIPMENT / PROPERTY DAMAGED:				
NAME:			NAME OF MATERIAL/ EQUIPMENT/ PROPERTY:		
PERIOD OF EMPLOYMENT:					
AGE:	SEX:	MARRIED / SINGLE:	ESTIMATED COST	ACTUAL COST	
OCCUPATION:		PART OF BODY INJURED		NATURE OF DAMAGE	
NATURE OF INJURY					
11.	AGENCY (OBJECT / EQUIP / SUBSTANCE) MOST RESPONSIBLE FOR CAUSING ACCIDENT / INJURY / DAMAGE:				



HSE Management System Manual

IS:HSE:AIR:001

ACCIDENT (PERSONAL INJURY / PROPERTY DAMAGE) REPORT

12.	PERSON (NAME & DESIGNATION) WITH MOST CONTROL OVER AGENCY (OBJECT / EQUIP/ SUBSTANCE) CAUSING ACCIDENT / INJURY / DAMAGE:	
13.	DESCRIBE CLEARLY HOW THE ACCIDENT OCCURRED (IF SPACE INSUFFICIENT USE SEPARATE SHEET & ATTACH):	
ANALYSIS:		
14.	WHAT ACTS AND/OR CONDITIONS CONTRIBUTED MOST DIRECTLY TO THIS ACCIDENT?	
15.	WHAT ARE THE BASIC REASONS FOR THE EXISTENCE OF THESE ACTS AND / OR CONDITIONS?	
16.	WHAT CORRECTIVE ACTIONS HAVE BEEN TAKEN TO PREVENT ACCIDENT RECURRENCE?	
DATE :		SIGNATURE OF CONCERNED ENGINEER:
17.	COMMENTS OF SITE IN-CHARGE OF BHEL:	
DATE :		SIGNATURE OF SITE INCHARGE

Note:

- 1) The Report shall be prepared by the Concerned engineer and to be submitted to Head quarters through Resident Manager.

 ISG BANGALORE	Design, Engineering, Manufacturing, Supply, E&C & PG Test of Ash Handling System Package for 1X660 MW Sagardighi TPP-Unit-5 Project, West Bengal	Enquiry No: 77/18/6287/SK
		Date: 16-April-2019
NOTICE INVITING TENDER (NIT)		

DUE DATE & TIME	26-April-2019
	8:00 PM (IST)

Dear Sir/ Madam,

Subject: Tender Enquiry for "Design, Engineering, Manufacturing, Supply, E&C & PG Test of Ash Handling System Package" as per Technical Specifications and terms & conditions of the tender for 1X660 MW Sagardighi TPP-Unit-5 Project.

BHEL invites offers from reputed Vendors for **"Design, Engineering, Manufacturing, Supply, E&C & PG Test of Ash Handling System Package "** for **1x660 MW Sagardighi TPP-Unit-5 Project.**

1.0	Tender Inviting Officer	SHRI. K Balsamy, AGM/ MM BHARAT HEAVY ELECTRICALS LTD INDUSTRIAL SYSTEMS GROUP PB NO.1249, IISc POST MALLESWARAM BANGALORE – 560 012 EMAIL: kbs@bhel.in or kumarsushil@bhel.in Phone:- +91 80 2218 4059/ 4567
2.0	Item Description	Design, Engineering, Manufacturing, Supply, E&C & PG Test of Ash Handling System Package
3.0	Project	1X660 MW Sagardighi TPP-Unit-5 Project
4.0	BHEL's Customer	M/s WBPDC
5.0	Tender Document availability	Tender documents shall be downloaded from the website https://bhel.abcprocure.com All corrigenda, addenda, amendments, time extensions, clarifications etc. to the Tender will be hosted on the above website only. Bidders should regularly visit above website to keep themselves updated. Bidders are advised to visit our E-Procurement portal https://bhel.abcprocure.com for all latest updates.
6.0	Due Date, Time & Place for Submission of Offer	On or before 26-April-2019 by 08.00 PM This is an E-Tender floated online through our e-procurement platform https://bhel.abcprocure.com . The bidders shall respond by submitting their offer online only in our E-Procurement platform https://bhel.abcprocure.com . Bids are invited in Two Parts (Part-1 & Part-2). No hard copy bid or bids through Email/ FAX shall be accepted.
7.0	Pre Bid Meeting	Pre-bid meeting shall be held as per the following details: Date: 22- April-2019 Time: 10.00 AM Venue: BHEL-ISG, Prof CNR Rao Circle, IISc Post, Malleswaram, Bangalore- 560 012 Bidders who wish to attend the pre-bid meeting may attend as per the above timing to clarify any doubts or for discussion about any technical

 ISG BANGALORE	Design, Engineering, Manufacturing, Supply, E&C & PG Test of Ash Handling System Package for 1X660 MW Sagardighi TPP-Unit-5 Project, West Bengal	Enquiry No: 77/18/6287/SK Date: 16-April-2019
NOTICE INVITING TENDER (NIT)		
		or commercial point. Bidders are requested to send prior intimation (details of participants like name, designation, email ID, contact no. etc.) to kumarsushil@bhel.in and kbs@bhel.in regarding their participation in the pre-bid meeting. Bidders are requested to send their queries in advance to kumarsushil@bhel.in and kbs@bhel.in for review by BHEL.
8.0	Mode of Submission of Tender	The Tender shall be submitted in two Parts in our E-Procurement Platform https://bhel.abcpurchase.com on or before the due date & time, as follows: <u>PART-1: Pre-Qualification, Technical and Commercial Terms & Conditions Bid:</u> Comprising of following: (i) Compliance to addendum/ corrigendum to the tender (if any) (ii) Documents in support of Pre Qualification Requirements- Technical & Financial (Mandatory) (iii) Annexure-I to GCC (Mandatory) (iv) General conditions of contract, GCC (Mandatory) (v) Special conditions of contract, SCC (Mandatory) (vi) Technical offer, comprising of technical specification and other documents as asked in technical specifications e.g. drawings, test report etc. (Mandatory) (vii) Annexure-III to GCC (Declaration about completeness of price) - (Mandatory) (viii) Annexure-XII to GCC (Optional). NO DEVIATION CERTIFICATE” shall be submitted in case of no deviations. Deviations (if any) with cost of withdrawal shall be indicated under Annexure-II to GCC (Rev.01). (ix) Un-priced copy of Annexure-II, cost of withdrawal of deviation (Mandatory). “Quoted” to be indicated under the column “Cost of Withdrawal of Deviation” for each deviation mentioned in this format. In case “Quoted” is not indicated against any deviation, cost of withdrawal for that deviation shall be considered as NIL. (x) Un-Priced bid (Quoted to be mentioned for each line item against all applicable columns). (xi) Duly filled in signed & stamped Integrity Pact as per the “Integrity Pact” format enclosed. (xii) Un-Priced copy of list of items considered for CIF Content as per SCC (if applicable) <u>PART-2: Price Bid</u> (xiii) Price bid as per price bid format. (xiv) Cost of withdrawal of deviation as per Annexure-II. (xv) List of items with breakup of CIF Content as per SCC (if applicable)
10.0	Date and Time of Bid Opening.	First the Part-1 bid will be opened as at 09:00PM on 26-April-2019.

 ISG BANGALORE	Design, Engineering, Manufacturing, Supply, E&C & PG Test of Ash Handling System Package for 1X660 MW Sagardighi TPP-Unit-5 Project, West Bengal	Enquiry No: 77/18/6287/SK
		Date: 16-April-2019
NOTICE INVITING TENDER (NIT)		
		Price Bid (Part-2) will be opened after the Techno-Commercial (Part-1) bid evaluation and our acceptance of the same. Price Bids (Part-2) of the Techno-Commercially qualified bidders will be opened subsequently and the date will be intimated separately. BHEL may also decide to go for Reverse Auction against the tender which shall be communicated to the Techno-Commercially qualified vendors.
11.0	Scope of Work	As per Technical Specifications enclosed.
12.0	Site Visit	The bidder should visit site and acquire full knowledge & information about site conditions prevailing at site and in & around the plant premises together with all the statutory, obligatory, mandatory requirements of various authorities before submission of the offer. The offer from the bidder shall be considered to be in compliance to the above.
13.0	Pre-Qualification Requirement	As per Pre-Qualification Requirement enclosed.
14.0	Commercial Terms & Conditions	As per enclosed Special Conditions of Contract (SCC) and General Conditions of Contract (GCC) Rev.01.
15.0	EMD/ Tender Fee	Not applicable for this Tender.
16.0	Price Evaluation Criteria	Bidders to quote for the complete scope of work as per the tender specifications. The price bids shall be evaluated for the complete scope of work as per tender specifications based on total cost to BHEL. Price evaluation shall be on the total price excluding Goods & Service Tax (GST), i.e. Basic Price (supply of goods & services), as per price basis mentioned in SCC + Freight Charges (if applicable) + Loading (if any). Cl. no. 19.1 of Instructions to bidders of General Conditions of Contract (GCC, Rev.01) is not applicable to this tender contract. Foreign bidders are required to quote the price as per the prescribed price bid format of the tender in line with the terms & conditions indicated in the Special Conditions of Contract of this tender. Cl. no. 19.4 of Instructions to bidders of General Conditions of Contract (GCC, Rev.01) is not applicable to this tender contract.
17.0	Reverse Auction	Clause 13.0 of Instructions to Bidders of GCC (Rev.01) shall be read as: “BHEL reserves the right to go for Reverse Auction (RA) (Guidelines as available on www.bhel.com) instead of opening the sealed envelope price bid, submitted by the bidder. This will be decided after techno-commercial evaluation. Bidders to give their acceptance with the offer for participation in RA. Non-acceptance to participate in RA may result in non- consideration of their bids, in case BHEL decides to go for RA. Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit ‘Process compliance form’ (to the designated service provider) as well as ‘Online sealed bid’ in the Reverse Auction. Non-submission of ‘Process compliance form’ or ‘Online sealed bid’ by the agreed bidder(s) will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/

 ISG BANGALORE	Design, Engineering, Manufacturing, Supply, E&C & PG Test of Ash Handling System Package for 1X660 MW Sagardighi TPP-Unit-5 Project, West Bengal	Enquiry No: 77/18/6287/SK
		Date: 16-April-2019
NOTICE INVITING TENDER (NIT)		
		contractors (as available on www.bhel.com). The bidders have to necessarily submit online sealed bid less than or equal to their envelope sealed price bid already submitted to BHEL along with the offer. The envelope sealed price bid of successful L1 bidder in RA, if conducted, shall also be opened after RA and the order will be placed on lower of the two bids (RA closing price & envelope sealed price) thus obtained. The bidder having submitted this offer specifically agrees to this condition and undertakes to execute the contract on thus awarded rates. If it is found that L1 bidder has quoted higher in online sealed bid in comparison to envelope sealed bid for any item(s), the bidder will be issued a warning letter to this effect. However, if the same bidder again defaults on this count in any subsequent tender in the unit, it will be considered as fraud and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/contractors (as available on www.bhel.com)." As a reminder to the bidders, system will flash following message (in RED Color) during the course of 'online sealed bid': "Bidders to submit online sealed bid less than or equal to their envelope sealed bid already submitted to BHEL". Note: a) For the subject tender, the electronic price bid (e-bid) submitted under Part-2 bid, shall be treated as sealed envelope price bid. b) An abridged version of RA guidelines is available on BHEL tender page at www.bhel.com for reference by the bidders. Bidders shall note that annexure-XI of GCC (rev.01) is not applicable for this tender.
18.0	Special Instructions	i. Deviations (Technical & Commercial), if any, shall be clearly mentioned in the Annexure-II to GCC (Cost of withdrawal of deviation). The un-priced copy of the deviation sheet shall be submitted along with the Part-1 bid with "Quoted" written against each deviation under the "Cost of Withdrawal of deviation" column. Priced annexure-II shall be submitted under the Part-2 bid. Each deviation, having price implication, must be quoted with relevant cost of withdrawal. If "Quoted" is not written against any deviation, in the un-priced copy of annexure-II, cost of withdrawal for such deviations shall be considered as NIL. Any deviation not mentioned in un-priced copy of Annexure-II format, but mentioned in the priced copy, shall not be accepted. Bidder to note all the points mentioned in "Notes" of Annexure-II to GCC Rev.01. ii. For any clarification on the tender document, the bidder may seek the same in writing/ E-mail or through e-procurement portal, as per specified format, within the due date for seeking clarification, from the office of the undersigned. BHEL shall not be responsible for

 ISG BANGALORE	Design, Engineering, Manufacturing, Supply, E&C & PG Test of Ash Handling System Package for 1X660 MW Sagardighi TPP-Unit-5 Project, West Bengal	Enquiry No: 77/18/6287/SK Date: 16-April-2019
NOTICE INVITING TENDER (NIT)		
		receipt of queries after due date of seeking clarification due to postal delay or any other delays. Any clarification/ query received after last date for seeking clarification may not be normally entertained by BHEL and no time extension will be given. iii. In the event of any conflict between requirement of any clause of this specification/ documents/ drawings/ data sheets etc or requirements of different codes/ standards specified, the same to be brought to the knowledge of BHEL in writing for clarification before due date of seeking clarification, otherwise, interpretation by BHEL shall prevail. Any typing error/ missing pages/ other clerical errors in the tender documents, noticed must be pointed out before pre-bid meeting/ submission of offer else BHEL's interpretation shall prevail. iv. Un Priced Bid Format shall be submitted along with the Techno-Commercial (Part-1) bid with “QUOTED” written against each items & columns (wherever applicable) as an indication that the price for the same has been indicated/ quoted in the price bid in the same manner. v. Bidders are requested to carefully examine and understand the specifications, scope of work etc. and seek clarifications, if required, to ensure that they have understood the specifications, scope of work. Such clarifications should be sought latest before five days of the due date of submission of offers. However, bidders are requested to send their clarifications preferably before the pre-bid meeting date. Bidder's offer should not carry any sections like clarifications, interpretations and/ or assumptions. vi. Bidders to submit the filled in price bid under the part-2 bid only. Price shall be quoted for each items of the price bid format separately against the respective items and against all applicable columns. vii. All the Tender Documents shall automatically become a part of the Order/ Contract after its finalization. viii. In order to protect its commercial interests, BHEL may take action against suppliers/ contractors by way of suspension of business dealings with them, who either fail to perform or are in default without any reasonable cause, cause loss of business/ money/ reputation, indulge in malpractices, cheating, bribery, fraud or any other misconduct or formation of cartels so as to influence the bidding process or influence the price as per the guidelines for Suspension of Business Dealings with Suppliers/ Contractors available at www.bhel.com under “supplier registration page”. ix. The vendors shall be forced by the system to upload the documents which are marked mandatory in the tender. All documents submitted with the offer shall be signed and stamped in each page by authorized representative of the bidder/ digitally signed Digital Signature Certificate (DSC) of the authorized representative of the bidder. x. Unless specifically mentioned otherwise, bidder's quoted price shall deemed to be in compliance with tender including Pre Bid Discussion, if held.

 ISG BANGALORE		Design, Engineering, Manufacturing, Supply, E&C & PG Test of Ash Handling System Package for 1X660 MW Sagardighi TPP-Unit-5 Project, West Bengal	Enquiry No: 77/18/6287/SK Date: 16-April-2019
NOTICE INVITING TENDER (NIT)			
19.0	Basis for Rejection of Offers	i. Incomplete offers i.e., offers without documents as per instruction of the tender and offers not complying with NIT/ Enquiry conditions shall be liable for rejection. ii. Offers not qualifying for the Pre Qualification Requirement of the tender. iii. Offers not qualifying technically/ commercially shall be liable for rejection. iv. The decision on Acceptance/ Rejection of offers as decided by BHEL shall be final and binding on the vendors/ bidders.	
20.0	Minimum Price for E&C	Clause 3.0 of Instructions to Bidders of GCC (Rev.01) shall be read as: “Total erection & commissioning charges (excluding taxes & duties) should be minimum 15% of the total quoted package price (excluding GST), failing which the break-up of prices shall be adjusted accordingly for ordering”.	
21.0	Documents Enclosed	i. Pre Qualification Requirement (PQR) ii. Special Conditions of Contract (SCC) iii. General Conditions of Contract (GCC) iv. Technical Specifications & Documents v. Un-Priced bid formats vi. Price bid formats	
22.0	Validity of Offer	As per clause 7.0 of Instructions to Bidders of GCC (Rev.01). Price quoted for optional items shall be valid till the end of the contract period or extension thereof. Sub-clause 7.0 (iii), 7.0 (iv) and 7.0 (v) of Instructions to Bidders of GCC (Rev.01) are not applicable for this tender.	
23.0	Other Terms	a) BHEL shall not be liable for any expenses incurred by bidder in preparation of bid irrespective of whether it is accepted or not for any reason whatsoever. b) Clause 2.0 of Instructions to Bidders of GCC (Rev.01): Bids shall be submitted in soft copy (E-Procurement) and no hard copy sets/ bids in sealed cover are required to be submitted. c) Clause 2.6 and 2.7 of Instructions to Bidders of GCC (Rev.01) are not applicable for this tender. d) Clause 6.2 of Instructions to Bidders of GCC (Rev.01) is not applicable to this tender.	
24.0	Other instructions	As per General Conditions of Contract (GCC), Rev.01.	
25.0	Contact Person for Clarifications on Commercial Terms & Conditions	Sushil Kumar- Dy Manager/ MM E-MAIL: kumarsushil@bhel.in Ph. No. +91-080-2218 4256	
26.0	Contact Person for Clarifications on Technical Specifications	For Mechanical: Amit Gupta- Manager/ Engineering (Mech) E-MAIL: gupta.amit@bhel.in Ph. No. +91-080-2218 4282	

 ISG BANGALORE	Design, Engineering, Manufacturing, Supply, E&C & PG Test of Ash Handling System Package for 1X660 MW Sagardighi TPP-Unit-5 Project, West Bengal	Enquiry No: 77/18/6287/SK Date: 16-April-2019
NOTICE INVITING TENDER (NIT)		
		For Electrical: Raj Kishore Majhi- Manager/ Engineering (Elect.) E-MAIL: rkm@bhel.in Ph. No. +91-080-2218 4070 For Civil: Ravi Kumar Ponna- Manager/ Engineering (Civil.) E-MAIL: raviponna@bhel.in Ph. No. +91-080-2218 4551

For BHARAT HEAVY ELECTRICALS LTD

(Sushil Kumar)
Dy. Manager/ MM

BHEL ISG, Bengaluru
Pre-Qualification Requirements for Ash Handling Systems Package
Enq Ref: 77/18/6287/SK

1 x 660 MW WBPDCS Sagardighi TPS

Doc. No: IS-4-PQR-724-300-M001

Rev 00

Date: 16-04-2019

1. Ash Handling System (Technical)

Bidders are invited to participate who satisfy the following Technical requirements: -

- a) The Bidder should have executed Ash Handling Package involving design, engineering, Manufactured/got manufactured, supply, erection/supervision of erection and commissioning/supervision of commissioning of Dry/wet bottom ash system and/or pneumatic fly ash system in at least two (2) nos. thermal power projects separately of unit not less than 500 MW within the last seven years as on 31.07.18.
 - b) The Bidder should have designed, engineered, Manufactured, supplied, erection and commissioning of Ash Handling Package involving **Bottom Ash Handling system** comprising jet pumping system in conjunction with water impounded Bottom Ash Hopper system and **Fly ash vacuum conveying system** for conveying fly ash from ESPs to Intermediate surge hopper and **Fly Ash Transportation System** for transporting fly ash from Intermediate surge hopper to fly ash silo. These should be in successful operation in at least one thermal power plant of capacity 600 MW or above for a minimum period of one year as on 31.07.18.
2. Bidder who meet the requirements mentioned at Clause 1(a) but does not meet the requirement mentioned at Clause 1(b), can participate provided the bidder (who is ash handling manufacturer of Indian origin) meets the following requirements:
- a) The Bidder should have designed, engineered, Manufactured, supplied, erection/supervision of erection and commissioning/supervision of commissioning of Ash Handling Package involving **Bottom Ash Handling system** comprising jet pumping system in conjunction with water impounded Bottom Ash Hopper system and **Fly ash vacuum conveying system** for conveying fly ash from ESPs to Intermediate surge hopper and **Fly Ash Transportation System** for transporting fly ash from Intermediate surge hopper to fly ash silo and in at least two nos. thermal power units of capacity 500 MW or above and working satisfactorily for a minimum period of two years within last 7 years as on date as on 31.07.18.
OR
 - b) The Bidder should have designed, engineered, Manufactured, supplied, erection/supervision of erection and commissioning/supervision of commissioning of Ash Handling Package involving **Bottom Ash Handling system** comprising jet pumping system in conjunction with water impounded Bottom Ash Hopper system and **Fly ash vacuum conveying system** for conveying fly ash from ESPs to Intermediate surge hopper and **Fly Ash Transportation System** for transporting fly ash from Intermediate surge hopper to fly ash silo and in at least five nos. thermal power units of capacity 250 MW or above and working satisfactorily for a minimum period of two years within last 7 years as on date as on 31.07.18.
AND
collaborates/associates with parties /agencies who meet the requirement mentioned at Clause 1(b). However, the bidder should have a technology sharing arrangement for the following subsystems mentioned at Clause 2(c), (d) & (e) with either its Holding or subsidiary company/ JV company/ Collaborator.
 - c) Design, Engineering, Manufacturing of **Bottom Ash handling system** comprising jet pumping system of minimum 90 TPH (on dry ash basis) capacity in conjunction with water impounded Bottom Ash Hopper system.
 - d) Design, Engineering, Manufacturing of **Fly ash vacuum conveying system** for conveying fly ash from ESPs to Intermediate surge hopper having each stream capacity of minimum 56 TPH conveying capacity.

BHEL ISG, Bengaluru
Pre-Qualification Requirements for Ash Handling Systems Package
Enq Ref: 77/18/6287/SK

- e) Design, Engineering, Manufacturing of **Fly Ash Transportation System** for transporting fly ash from Intermediate surge hopper to fly ash silo having each stream capacity of minimum **112 TPH** for a transportation distance of not less than 500 meter.

In such a case, the Bidder shall be required to furnish a Deed of Joint Undertaking (DJU) jointly executed by the Bidder and the Collaborator(s)/ Associate(s) and each executant of DJU shall be jointly and severally liable to the Employer for successful performance of the relevant system, as per the format enclosed with the bidding documents. Bidder shall declare the name of the Collaborator(s)/ Associate(s) in their bid for relevant system(s) for which Bidder is collaborating. DJU should be submitted at the time of placement of order on approved sub-vendor. In such a case, each Collaborator/ Associate shall be required to furnish an on demand bank guarantee as follows:

(i) INR 1 Million (Indian Rupees One Million Only) for Collaborator/ Associate for Bottom Ash Handling System
(ii) INR 1 Million (Indian Rupees One Million only) for Collaborator/ Associate for Vacuum Conveying System
(iii) INR 2 Million (Indian Rupees Two Million only) for Collaborator/ Associate for Pressure Conveying System
In case bidder collaborates/associates for more than one system with a party, then the Collaborator/ Associate shall be required to furnish an on demand bank guarantee for an amount arrived at by adding up the amounts for the relevant systems as above.

3. Bidder shall submit the following documents along with bid for meeting pre-qualification requirement. Bid shall be liable for rejection in case it is found that requisite experience documents as specified in NIT is not submitted in the bid. Bidder shall adhere to the following: -

- a. Reference list of experience for the system described above.
- b. Manufacturing facilities, equipment, manpower details duly signed by bidder shall be furnished.
- c. Bidder shall provide documentary evidence in support of his claim for having experience in design, manufacture, testing and supply, E&C, performance of AHP meeting the requirements mentioned in sl. Nos. 1 (a), (b) and sl. Nos. 2 (a) or (b) & (c), (d), (e) for Ash Handling Plants.
 - i. Letter of Award (Purchase order copies).
 - ii. End customer's address and contact details (ph.no, emails) to be furnished.
 - iii. Performance Certificate from end Customer.
 - iv. Approved flow schemes, P&ID, Design memorandum/Design basis reports, Sizing Calculations of Compressors/BA HP water pumps for jet pumps.

c. FORMAT to be filled by Bidder:

Sl. No.	Name of the Project	Brief Scope of the work	Order Ref. No & Date	Date of Completion As per P.O.	Remarks

4. **Pre-Qualification Requirement: (Financial)**

1. Average annual financial turnover during the last 3 years, ending 31st March 2018, should not be less than Rs. 20 crores (Rupees Twenty Crores Only). Net worth of the successful bidder for Ash Handling Plant works if any, as on the last day of the preceding financial year as on date of placement of Order from the bidder should be positive. If audited balance sheets are not available than a certificate from statutory auditor to this effect shall be furnished by the bidder.
2. Bidders should submit financial accounts (audited, if applicable comprising of Audit report, Balance Sheet, Profit & Loss A/c Statement for FY 2017-18, 2016-17 & 2015-16.
3. Other Income shall not be considered for arriving at Annual Turnover/Sales
4. Financial pre-qualification of the foreign bidder (other than Indian bidders) may also be evaluated on the basis of the report from a reputed third party business rating agency like Dun & Bradstreet, Credit reform

BHEL ISG, Bengaluru
Pre-Qualification Requirements for Ash Handling Systems Package
Enq Ref: 77/18/6287/SK

etc. The foreign bidder is to submit the report from reputed third party. All Foreign language documents shall be translated to English language either by a certified agency or translated verification by an authorized agency. Translated documents shall be vetted and sealed by Indian embassy in that country or their embassy in India. Credit rating certificate also shall be furnished for financial credibility of the organization.

5. For PQ evaluation of foreign bidder, exchange rate (TT selling rate of SBI) as on scheduled date of the tender opening (Part-1 bid in case of two part bid) shall be considered.

5. Important Notes:

1. The word “executed” means bidder should have achieved the criteria specified in the above QR even if the total contract is not completed/closed.
2. BHEL will provide format for Bank guarantee to the successful bidder.
3. Bidder has to submit all credentials/ details, required by the customer for seeking approval of customer. In case customer does not approve the credentials of the bidder, the bidder’s offer will be rejected. Bidder shall submit requisite documentary evidence such as attested copy of award of letter/contract and also completion certificate/performance certificates issued by end user to comply with the above criteria, properly in indexed manner along with the offer. These documents are to be necessarily submitted along with the bid for evaluation.
4. Bid document are to be only in English language. The bid supporting documents other than English language are to be supported with translated documents in English certified/attested by embassy of respective country or Indian embassy as applicable. Bilingual certificates if any shall also be vetted by embassy.
5. **Bidder shall submit the point wise confirmation to the PQR clauses, properly indexed along with the offer.**
6. For foreign bidder(s), there shall be an authorized representative in India on behalf of the System supplier for single point communication with BHEL for submission of bid/attending bid queries/ bid clarifications, follow up, submission of engineering information in time, dispatches for smooth execution of contract.
7. BHEL reserves the right to request for any additional information and also reserves the right to reject the proposal of any bidder, if in the opinion of BHEL, qualification data is incomplete or the bidder is found not qualified to satisfactorily perform the works.
8. BHEL reserves the right to assess the capabilities and capacity of the Bidder to perform the contract, should the circumstances warrant such assessment in the overall interest of the Employer. Canvassing i.e. soliciting favor, seeking advantage etc. in any form is strictly prohibited and any bidder found to have engaged in canvassing shall be liable to have his bid rejected summarily.
9. BHEL reserves the right for the following:
 - i. Accept or reject any bid received at its discretion without assigning any reasons whatsoever.
 - ii. Postpone the scheduled date without assigning any reason whatsoever.
 - iii. May ask for further clarification with respect to pre-qualification requirement during techno commercial scrutiny of bids received and bidder will comply.
 - iv. Evaluation of bidder at their works.
10. After technical evaluation of the bidder’s offer. Name of the bidders shall be proposed for getting the approval from Customer/ Customer’s consultant. The bidder who is not approved by customer/ customer’s consultant will not be considered and their sealed bid (price) shall not be opened.