

TD-201 Rev No. 00 Form No.	 HYDERABAD	PRODUCT STANDARD PROJECT ENGINEERING & SYSTEMS DIVISION HYDERABAD		PY 56229
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Technical Specification for Fire Detection & Alarm System + PLC System

Project: 1X250 MW ROURKELA PP-II EXPANSION
Customer: NTPC-SAIL POWER COMPANY(P) LTD.
Consultant: MECON LIMITED

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DOCUMENT TO BE SUBMITTED ALONG WITH TECHNICAL OFFER (To be filled, signed, stamped and scanned copy to be submitted as a part of technical offer):

Sl. No.	Document Name	Page No's	Remarks
1.	Technical Specification(PY56229)	1-11	
2.	Unpriced price format	Annexure-H	"Quoted" to be written under price part
3.	Proposed system architecture for FDA & PLC systems.	Vendors Document	
4.	Major components along with their Make & Model	Vendors Document	

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COPYRIGHT AND CONFIDENTIAL The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED . It must not be used directly or indirectly in any way detrimental to the interest of the company.		1. Scope This technical specification covers the Design, Engineering, Manufacturing, System integration, Assembly, testing at vendor works, inspection by purchaser, packing and transportation to site with necessary documentation like data sheets, statutory approvals, O&M manuals, As-Built documentation & training etc., as required and supervision of Erection, Commissioning till final handover of FDA +PLC systems to End user.			
		2. Proven Track Record : Fire Detection & Alarm System + PLC System: The items being offered as per specification should be operating satisfactorily for <u>at least 4000 Hours and vendor should have executed minimum 3 jobs</u>. The above criteria shall be applicable to main equipment, sub- components as well as bought out items if any. Vendor shall submit necessary supporting documents / past users confirmation supporting to above PTR requirements along with technical offer. If offered instruments / equipments are supplied to BHEL PE&SD within last 5 years, above PTR clause is not applicable. FDA system offered by bidder should be in compliance with various standards such as FM/UL/VDS/ISI/NFPA or equivalent international standards.			
		3. Instructions To Bidders 3.1 Offers with incomplete information will not be considered for evaluation, and are likely to be rejected outright without any further interaction with the Bidder. 3.2 Any technical features [over & above BHEL enquiry specification requirements] proposed by Bidder will not be given preference for the purpose of evaluation. 3.3 Bidders are advised to contact BHEL for essential technical queries, if any, in writing <u>within one week of issue of Enquiry</u>. In the event of any conflict between these specifications, data sheets, related standards, codes etc. the vendor shall refer the matter to the purchaser for clarifications before bid submission. 3.4 Bidder shall submit the following documents compulsorily along with the offer. a) Duly signed copy of Technical Specification. b) Duly filled & Signed copy of Checklist. c) No Deviation Certificate in the BHEL format. d) Unpriced Price schedule.			
		4. Codes & Standards 4.1 Tariff Advisory Committee (TAC)/LPA India/NFPA USA 4.2 Underwriters Laboratories (UL)-USA, 4.3 VDS Standards, 4.4 Loss Prevention Certification Board (LPCB), 4.5 Factory Mutual (FM), 4.6 Indian Electricity (Supply) Act (IEA) 4.7 Rules for Fire Alarm System of India, and 4.8 IS 2189 (Selection, Installation and Maintenance of Automatic Fire Detection and Alarm System-Code of Practice). 4.9 Any other equivalent internationally recognized body acceptable to BHEL/End customer.			
Ref. Doc					

1. Scope

This technical specification covers the Design, Engineering, Manufacturing, System integration, Assembly, testing at vendor works, inspection by purchaser, packing and transportation to site with necessary documentation like data sheets, statutory approvals, O&M manuals, As-Built documentation & training etc., as required and supervision of Erection, Commissioning till final handover of FDA +PLC systems to End user.

2. Proven Track Record :

Fire Detection & Alarm System + PLC System:

The items being offered as per specification should be operating satisfactorily for at least 4000 Hours and vendor should have executed minimum 3 jobs. The above criteria shall be applicable to main equipment, sub- components as well as bought out items if any.

Vendor shall submit necessary supporting documents / past users confirmation supporting to above PTR requirements along with technical offer.

If offered instruments / equipments are supplied to BHEL PE&SD within last 5 years, above PTR clause is not applicable.

FDA system offered by bidder should be in compliance with various standards such as FM/UL/VDS/ISI/NFPA or equivalent international standards.

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		S. No.	System	No. of I/O's																																																																																																				
				Analog Input	Analog Output	Digital Input	Digital Output	RTD Input																																																																																																
		1	FPS PLC	32	0	88	54	28																																																																																																
		2	Interposing Relays	NA	NA	NA	Applicable for DO's	NA																																																																																																
		3	SOE Points	64																																																																																																				
		4	Hardwired Annunciation points	48																																																																																																				
5	Isolators & trip amplifiers	24																																																																																																						
4	System Loading	:	1) Loading for the controller shall not exceed 60% with installed spares 2) The system memory shall have sufficient capacity for 30% additional application programming & configuration in future.																																																																																																					
5	System Redundancy	:	1) Controller – 1:1 2) Communication Bus/cards – 1:1 3) Power supply – 1:1																																																																																																					
6	Installed Spares	:	1) For I/O cards : 10% of base quantity as above in SI 2) For system cards : 10% of total quantity to meet project requirement. 3) Marshalling: 10% [this includes isolators, terminals, cable glands, etc.] 4) Power supply: 20% for each variety [like feeders & other sub-components] All the installed spares shall be supplied with fully wired up.																																																																																																					
7	Other technical requirements	:	1) Refer Annexure-[E] & [F] of this specification 2) Software Licenses shall be valid for lifetime. 3) Factory Acceptance Test (BHEL + VENDOR + MECON+BHEL TPI + End user) at Vendor works 4) Site Acceptance Test (BHEL + VENDOR + MECON+BHEL TPI+ End user)																																																																																																					
7. Power supply: 7.1 Purchaser shall provide the power supplies as per FDA schematic diagram provided elsewhere in this specification. Further conditioning & distribution within Fire alarm Panels, LHS system & HMIs shall be in bidder scope. Bidder to consider Power supply unit with battery along with spike arrester cum distribution board for extending power supply to PC (CPU, Monitor), Printer, FAPs & LHS system. 7.2 Vendor shall provide standalone PDB for PLC system with necessary protections & metering for powering equipment's under their scope. Power distribution scheme shall be approved by purchaser. 7.3 Vendor shall supply accessories (like cable glands, plugs, ferrules,etc.) required for termination of purchaser's as well as vendor power & control cables at vendor supplied equipment's. 7.4 Vendor shall furnish above feeders capacity during order execution with calculations. 7.5 All internal distributions shall be designed such that a single power fault in any instrument branch system shall not cause a trip of the entire system. Each consumer shall be provided with separate switch & isolation fuse.																																																																																																								
8. Earthing 8.1 Each system earthing shall be carried in-line with industry standard practices. Scheme for recommended earthing system/earth pit shall be furnished by vendor during order execution for approval. 8.2 Earth points of all panels (located in a single building) shall be looped together and shall be terminated at BHEL's earth raisers at single point provided for each building. However separate earth wiring shall be provided for PLC package & all other systems. 8.3 All hardware with in package required for earthing & connectivity up to BHEL's earth points shall be in vendor scope.																																																																																																								

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9. Bidder's Scope Of Services

9.1 Scope includes Supervision of erection & commissioning, performance guarantee testing & trial run and final handing over to end customer for the supplied systems.

9.2 Number of man-days and number of visits as specified in the "Unpriced price bid format" shall be considered. However, either or both of the number of man days or no of visits may increase / decrease based on the actual site requirements for which unit rates shall be operated.

9.3 Bidder to mobilize concerned competent person for supervision of Erection & commissioning activities within a period of 7 days of receipt of intimation in this regard from BHEL.

9.4 Following shall be the scope of work for services:

- a) Vendor services includes supervision of erection & commissioning, performance guarantee testing & trial run and final handing over to end customer for the supplied systems. Further the scope involves lodging, boarding & local travel conveyances. Vendors shall arrange their own lodging, boarding & traveling.
- b) Vendor visit charges includes travel to & fro travel from vendors work to site,
- c) Vendors shall arrange their own Test equipment's, commissioning tools, manpower etc as required.

9.5 **Above services shall be ordered by BHEL Site at the time of commissioning.** However, vendor shall submit the price offer for services as per "Unpriced price bid format" and same shall be considered for L1 evaluation.

9.6 Broad scope marking of supervision of Erection & Commissioning between bidder & purchaser is as listed below:

Activity	Scope
Transportation up to Stores	Vendor
Unloading	Purchaser
Supply Verification as per packing list, Transit damage inspection	Purchaser
Storage	Purchaser
Custody of items in stores	Purchaser
Issue of Items from Stores	Purchaser
Shifting of panels/equipments to Intended Location	Purchaser
Provision of Crane for Shifting of the equipments	Purchaser
Unpacking of equipments	Vendor
Base frames stand below false floor supply and installation	Purchaser
Installation of equipments at intended locations	Purchaser
Supply of Accessories for installation of equipments	Vendor
Inter equipment Cable supply	Vendor
Inter equipment Cable laying, terminations & Cable glanding	Vendor
Inter equipment earthing connectivity, termination & connections to BHEL's earth points	Vendor
Cable glanding Lugging, Ferruling, Terminations, supply of cable glands at both cable ends of vendor supplied equipments	Vendor
Supply of cable from field to system	Purchaser
laying of field cables/cables from purchasers panels upto system, installation JB's in field	Purchaser
Termination all incoming & outgoing cables to/from system	Vendor
Supply & installation of cable glands, lugs, ferrules etc required for termination of purchaser cables in system	Vendor
Loop Checking at Control Room from System to marshalling Terminals	Vendor
Loop Checking from field to marshalling Terminals	Purchaser
Erection Supervision	Vendor
Commissioning	Vendor
Commissioning Supervision	Purchaser
Erection & Commissioning co-ordination	Purchaser
Provision of erection & commissioning tools & tackles	Vendor
Erection & commissioning spares, consumables	Vendor

10. Mandatory Spares - Spares requirement shall be as per enquiry & "Mandatory spares list" provided elsewhere in this specification. All mandatory items shall be packed separately in "RED" color boxes.

11. Erection & Commissioning Spares

11.1 All commissioning spares as required during erection and commissioning of all the systems are included in bidder's scope & shall be supplied along with the main supply/package.

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COPYRIGHT AND CONFIDENTIAL The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED . It must not be used directly or indirectly in any way detrimental to the interest of the company.	11.2 Bidder to ensure that all the spares are procured from the original equipment manufacturers (as per their recommendation) and shall make them available at site well before the start of commissioning activities. 12. Training 12.1 Bidder shall arrange training for Owner’s personnel. Different type of courses shall be offered for operation / process engineers and operators, instrument maintenance engineers and technician. 12.2 Travel and living expenses of the owner’s personnel shall be borne by the Owner. Apart from the hardware and software maintenance training and site training, bidder shall also offer operation training basically meant for operating personnel. 12.3 The various facilities available in the system for operation, actions required during emergencies and identifying the various diagnostic messages shall be the main contents of the operation training. 12.4 The duration & location of the training shall be as per “Unpriced price format”. However these prices will not be considered for L1 evaluation. 13. Documentation 13.1 a) After PO placement submission of documents shall be as per “Master document List”(MDL) enclosed as Annexure-G, within 2 weeks of placement of LOI (for approval by BHEL and / or BHEL’s customer in 4 sets) 13.2 b) All vendor documents of PLC and its sub-items shall be submitted to NSPCL for approval during order execution. Any comment furnished by NSPCL / BHEL shall be taken care by vendor during ordering execution. 13.3 c) Further BHEL will provide comments on vendor submitted document within 25 working days for revision & resubmission. Vendor shall follow up with BHEL for non-receipt of comments/approvals. 13.4 d) Revised drawings / Documents shall be submitted by Bidder in 07 days of receipt of comments / observations from BHEL. BHEL shall revert within 25 days on receipt of these revised documents / drawings from vendor for approvals. 13.5 e) All the approvals required for manufacturing shall be completed with 2months from P.O to meet the P.O delivery schedule. Accordingly vendor shall ensure the submission of approval category documents (which are required for manufacturing) and obtain their approvals. 13.6 f) Vendor shall obtain final approvals on all technical + quality aspect documents before inspection dates. 13.7 g) It is vendor’s responsibility to obtain approvals from BHEL as earliest as possible to meet PO delivery schedules. Accordingly vendor to plan and execute the supplies in time. 13.8 h) Documents to be submitted during final shop testing and before equipment dispatch. (Note: submission of these documents are commercially linked) - all in 16 sets (2 sets to be included with item dispatch and balance to BHEL purchase department). 13.9 • Complete O& M manual. 13.10 • Approved Engg documents 13.11 • As-Shipped documents 13.12 • As-Built documents 13.13 • Guarantee and all test certificates for review and acceptance by BHEL and / or BHEL’s Customer 13.14 3 sets of CD-ROM – containing O&M manual and Engineering documents (1 set to be included with item dispatch and balance to BHEL purchase department). 14. Marking, Packing And Dispatch 14.1 All items shall be marked (stamped/etched) in accordance with the applicable code/standard/specification. In addition, the item code, if available, shall also be marked. 14.2 For ease of identification, the color of painted strip (wherever required) shall be as per the applicable standard. 14.3 Part number/Dispatch link-up of all the equipments/items supplied and also their co-relation with system/drawing/approved BOQ. 14.4 Paint or ink for marking shall not contain any harmful metal or metal salts which can cause corrosive attack either ordinarily or in service. Special items/smaller items shall have attached corrosion resistant tag providing salient features.		
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14.5 The equipment shall be transported to site by the vendor in fully assembled condition. However, in case some components are liable to be damaged during transit, the same shall be dismantled and supplied separately, to be reassembled at site the vendor. Assembly of the item supplied loose at site and repairing of any item damaged during transport shall be in the vendor's scope. The vendor shall send each consignment to site with a detailed packing list.

14.6 All the equipment shall be divided into several sections for protection and ease of handling during transportation. The equipment shall be properly packed for transportation by ship/rail or trailer. The equipment shall be wrapped in polythene sheets before being placed in crates/cases to prevent damage to the finish. Crates/cases shall have skid bottom for handling.

14.7 Special notations such as 'Fragile', 'This side up', 'Center of gravity', 'Weight', 'Owner's particulars', 'PO Nos.' etc. shall be clearly marked on the package together with other details as per purchaser order.

14.8 The equipment/items may be stored outdoors for long periods before installation. The packing shall be completely suitable for outdoor storage in areas with heavy rains/high ambient temperature, unless otherwise agreed.

14.9 The following minimum packing procedures shall be followed:-

- All items shall be dry, clean and free from moisture, dirt and loose foreign material of all kinds.
- All items shall be protected from rust, corrosion, and mechanical damage during transportation and handling.
- Each variety and size of item shall be supplied in separate packaging marked with the purchase order no., item code (if available), and the salient specifications.
- All electrical, instrumentation etc, shall be properly packed to prevent damage during transport, storage, handling at site.
- All the items which the Bidders considered liable to be damaged during shipment or storage, shall be packaged for separate shipment. If instruments are removed from the panel, they and their connection shall be suitably tagged to ensure simple re installation at the job site. Each instrument shall be sealed in plastic bags containing moisture-absorbing desiccants.
- It shall be bidder's sole responsibility to protect all the material during period of dispatch, storage and erection against corrosion, incidental damage due to vermin, sunlight, rain, high temperature, humid atmosphere, rough handling in transit and including delays in transit.
- Mandatory Spare parts shall be packaged separately and clearly marked as 'Mandatory Spares '.
- Commissioning spares, Tools & tackles to be packed separately & suitably tagged.

15. Testing, Installation, Commissioning & Acceptance

- Following major items, Final Inspection including document verification as per approved QAP shall be carried out by CUSTOMER /CONSULTANT/ CUSTOMER's Third Inspection Agency & BHEL/BHEL's Third Party Inspection Agency at vendor works. Rest of the items shall be by BHEL/BHEL's Third Party Inspection Agency:

S.No.	Item	Inspection by
1	Fire Alarm panels & Detectors	CUSTOMER /CONSULTANT/ CUSTOMER's Third Inspection Agency & BHEL/BHEL's Third Party Inspection Agency
2	PLC panels	CUSTOMER /CONSULTANT/ CUSTOMER's Third Inspection Agency & BHEL/BHEL's Third Party Inspection Agency
3	All other items	CUSTOMER /CONSULTANT/ CUSTOMER's Third Inspection Agency & BHEL/BHEL's Third Party Inspection Agency.

QAP & test requirement are as per Annexure-I of this specification.

16. Warranty

The warranty shall be valid for 12 months commencing from date of commissioning or 18 months from the date of supply whichever is earlier.

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17. Sub Vendor List

17.1 The list of sub-vendors are given below for major items/equipment.

17.2 Supply items for which no definite "make/brand" is indicated, shall be procured only from reputed makes & models having proven track records and requires purchaser approval.

17.3 Further the supplied model of FAP, Repeater panel, Detectors, Devices, Modules etc. shall be under regular manufacturing range and have proven track record.

S NO.	Item Description	Suggested make	Remarks
1	LHS cable	AP Sensing / Patol / Protect wire	
2	PLC System	ABB/ROCKWELL Automation India Pvt Ltd / Siemens India Pvt Ltd / Schneider Electric India Pvt Ltd	
3	UPS	Emerson network power (Pune) Pvt. Ltd / Hitachi – Hirel Power electronics Pvt Ltd / Delta India Electronics Pvt Ltd	
4	Circuit Breakers	Crompton Greaves Ltd , Nasik, Maharashtra	
5	Distribution Board	Jakson Engineers Limited, Noida / Jasper Engineers Pvt Ltd, Noida / Larson & Turbo Ltd, Mumbai / Nitya Electro controls Pvt Ltd, Noida / Pyrotech Electronics Pvt Ltd, Udaipur / RSI Switchgear Private Ltd Bhiwadi / Siemens Ltd, Thane	
6	Earthing material (GI Flat & Pipe Electrode)	Rukmani Electrical & components Pvt Ltd, Hooghly / premier Power products pvt Ltd, Kolkata / Jamna metal Company	
7	Marshalling Kiosk / Junction box	Jakson Engineers Limited, Noida / Jasper Engineers Pvt Ltd, Noida/ Nitya Electrocontrols Pvt Ltd, Noida	
8	Internal Fan	Farmer Engineers, Bhopal / Kumaran Industries, Bhopal / New Bharat Engg works, Bhopal/Sigma heavy Engg industries, Bhopal / SEEMA Enterprises, Bhopal / United Engg Industries Pvt Ltd, Bhopal	
9	Cable Glands	Comet Brass products, Mumbai / Central hardware Industries, Baroda / Electromac Industries, Mumbai / Braco industries, Mumbai / Dowells / 3D / Sunil & Co / Hex	
10	Lamp / CFL / Lamp / Holder (Philips / Bajaj / Crompton / Havell / Wipro)	Automation and General Electric Co / Nahar Enterprises / Oshiv Engineers / Vikas Agencies	
11	Space Heater	APT Controls and appliances Pvt / Praveen Electronics / Rashee control equipments Pvt Ltd	
12	Door Switch	Automation and General Electric Co / Kaycee Industries Ltd / Siemens Ltd / Vikas Agencies	
13	Power cable lug & gland	Brass Copper & Alloy (India) Ltd / Braco Electricals (India) Pvt Ltd / Comet brass products / Chetna Engg co. / Electromac Industries, 1 st floor	
14	Terminal Blocks & accessories, side clamp , Din Rail channel & Stopper (Indoor)	Wago,Germany/ Phonix,Germany/Elmex / WELDMULLER,Germany	
15	MCB / MCCB / Timer	SIEMENS LTD.,	
16	MCB	Legrand, Mumbai / CGL Mumbai / Alstom Bangalore / L&T Mumbai / Siemens Mumbai / Schneider Electric / Siemens AG /Siemens (I) Ltd / GE Power / ABB / Havells	
17	Annunciators	Pradeep Mumbai / Minilec marketing Pvt Ltd, Pune / Proton Chennai / IIC Mumbai	
18	Cable lugs / sockets	Dowells, Mumbai	
19	AC distribution Board / DC Distribution Board	Emerson Metwork power, Thane / Hitachi-Hirel Power electronics, Gandhinagar / Amararaja Power systems Ltd, Tirupati / HBL Power systems, Hyderabad / Chhabhi Electricals, Jalgaon.	
20	Alarm Annunciation System	Instrumentation Ltd, Kota/ Procon Chennai	
21	Cable lugs	Braco Electricals (India) Pvt Ltd / Commet brass poroducts / Dowells / Baliga Lighting Eqpt.	
22	Operator Work Station	HP/IBM/DELL/SIEMENS/FUJITSU	
23	Panel meters	Automatic Electric Pvt Ltd / Meco Instruments / Rishab	
24	Indicating Lamps	ABB(I) Ltd / Essen & Deiniki / GE power controls / Siemens	
25	Auxiliary relay	Jyothi Ltd, Baroda	
26	HRC fuses with trip indicator, Fuse base	Fuse Gear / GE power controls Ltd / Siemens India	

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						isolator		
					27	Computer furniture	OTS Office Tech,India/ Godrej and Boyce manufacturing Co Ltd, Bangalore / Pyrotech Workspace Solutions Pvt Ltd, Udaipur/Fetherlite/PAN Office	
					28	Printer (Laser /inkjet)	EPSON / CANNON/IBM / HP/LEXMARK	
					29	Panel/Cabinet	Rittal/Hoffman/Pyrotech	
					30	Mini UPS for HMI	Hitachi-Hirel Power Electronics, Bangalore / Emerson Network India, Bangalore	
					31	Graphics Interface Unit	Rockwell Automation India Pvt Ltd/Digital Instruments & Control System/Schnider Electric/Renu Electronics,Pune	
					32	Station LAN equipment	IBM India Pvt Ltd / Texonic Instruments, Bangalore / Wipro Infotech, Bangalore	
					33	OFC (Optical Fibre cable)	HFCL-Goa / FINOLEX, Pune/Goa /R&M,Switzerland/Molex,UK/AKSH Fibre,Bhiwadi	
					34	Batteries(Ni-Cd)	HBL Power Hyderabad / AMCO SAFT Bangalore/SAFT,FRANCE /EXIDE	
					35	Cable glands, lugs, ferrules , Tying wires	Electromac Industries, Mumbai / Mahaveer Engg, Kolkata / Braco Electricals (india) Pvt Ltd / Lapp India (P) Ltd.	
					36	MCCB	L&T / CGL / GE-Power / Siemens / Schneider / ABB / Havells	
					37	Interposing Relays	Jyoti / Paramount / OEN/ ELSTA,Switzerland/ OMRON	
					38	Relays (Other than Interposing relays)	ABb / Alstom / Siemens / GE-power (multilin) / Mitsubishi	
					39	Fuse Base	GE-Power / L&T / Alstom ltd/ Siemens / C&S Electric / ABB / CGL	
					40	Fuses	GE-Power / L&T / Alstom ltd/Siemens / Schneider / ABB / Havells / CGL	
					41	Terminal block (fixed drawout)	Phoenix / Connect well / Elemex / Wago	
					42	Instrument Cable	Paramount/Polycab/Delton/KEI/CORDS/ELKEY TELELINKS/NICCO/Thermocales/LAPP cables,Germany/Universal Cable	
					43	Isolator	P&F/MTL/WEID MULLER	
					44	Network Components	HP/CISCO/ENTRON/JUNIPER/FOUNDARY/NETGEAR/ENTERASYS	
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18. Check List (To be filled by BIDDER and submitted along with Technical offer compulsorily)

Vendor shall submit the following documents mandatorily as part of COMPLTE technical offer.

Enquiry No. / Date : _____

Name of the Bidder : _____

Project Name : _____

Item Description : _____

S. No	Document	Bidder confirmation (Yes/No)	Remarks
1	Technical offer complies with the specifications and its associated annexures, pre-bid clarifications in Toto and there are no technical deviations. Signed and stamped copy of this specification along with annexures enclosed along with technical offer.		
2	In case of deviation, vendor to confirm that these are technically not feasible deviations and same are submitted in BHEL format . In case technically feasible deviations are proposed by the bidder and subsequently withdrawn, <u>no commercial implications can be claimed by the bidder</u>		
3	All items are manufactured conforming to latest version of material grade standard and manufacturing standard mentioned in this specifications		
4	Bidder to quote as per BHEL price format only. No other format is acceptable. Bidder to attach un-priced price bid format by indicating "QUOTED" against each item and submit with technical offer duly signed & stamped.		
5	For addition/reduction of quantity, unit rate quoted in the present offer shall be considered during ordering and shall be valid up to execution of the contract to the extent of $\pm 10\%$ of order Value.		
6	Bidder to agree that Bill of materials / list of equipment furnished in the offer is only for information; Vendor shall supply all the material to meet the performance, sizing & technical requirement as per specification & its Annexures, scope matrix etc.		
7	Confirm that the quote includes training, commissioning spares, special tool & tackles, mounting hardware/ accessories, terminations, networking components etc. as required for commissioning activities.		
8	Bidder to confirm that all networking components/ hardware software, licenses as required for complete functional operation of the all systems are included.		
9	All the equipments / items / sensors / detectors etc., supplied by bidder are having valid statutory approval certificates and same will be produced at any stage of contract execution to BHEL. The same were eligible to take local statutory regulatory body approval during commissioning of the system		

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(Bidder's Signature and stamp with date)

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				Rev. No.	Date	Revision Details	Revised By	Approved By	
				00	25.07.17	Original issue	-----	Kamal 	
				Ref. Doc.					