

Client: BHEL ,Hyderabad.
Project: MANUGURU-BHADRADARI THERMAL POWER STATION -4 x 270 MW
Customer: TSGENCO-HYDERABAD,
Consultant:M/s. Desein Pvt Ltd.
RFQ/NIT Ref: T7B1Q93856 & NIT_33451
BHEL REPLIES/CLARIFICATION PRE-BID QUERIES

1)	BIDDER QUERY We refer to Clause No. 2.1 of Annexure-I of Notice Inviting Tender, wish to inform you that we have designed, supplied and installed Fire Detection and Alarm System Package. However, we request you to please clarify / confirm whether the <i>FDA Vendor should have experience in Fire Detection & Alarm System + Optical LHS System + PLC System or experience in Fire Detection and Alarm System Package only.</i> OR BIDDER QUERY In case the Bidder doesn't have experience for the system and is participating with reference of OEM / its Channel Partner, we request you to please clarify / confirm whether Tie-Ups / Undertaking with OEM / Channel Partner is required for Fire Detection & Alarm System only or the same is required for each system BHEL Reply - OEM / Channel Partners PTR is acceptable.
2)	BIDDER QUERY We request you to please provide us the I/O List for the design of PLC Panel. Also, please provide us the Annexure-J as mentioned in the INDEX of Technical Specification. BHEL Reply - I/O count are provided in the specification PY56217 REV 00 for PLC panel design. I/O list to be provided during detail engineering after order placement.
3)	BIDDER QUERY We noted that the BOQ provided with the enquiry documents is tentative and the bidder has to quote based on the actual Qty. Hence, we request you to kindly provide us the room wise drawings including false ceiling, false flooring and clear room height details, to enable to work-out the actual qty. BHEL Reply - All requested information are provided in the Annexure A2 - Panel wise BOM. Further in detail information will be issued during detail engineering.

1) **BIDDER QUERY** Please provide the autocad drawings for enquiry T7B1Q93856 & NIT_33451 for estimation with details precisely.

BHEL Reply - Requested drawings like TG Hall are enclosed, however conveyor drawings can't be provided as these are in design stage.

SL.No.	Reference Clause No.		Description as per specification	Bidder Queries _ 10.07.2017	BHEL Reply
1	Annexure-1	6 of 12	11. Bidder's Scope Of Services 11.1 Scope includes Supervision of erection & commissioning, performance guarantee testing & trial run and final handing over to end customer for the supplied systems.	Final handover will not be in our Scope, since the bidder's scope is limited to supervision of erection & commissioning only. Kindly confirm.	Bidder to follow NIT specifications. Deviation is not acceptable.
2	Annexure-A2 & Annexure-A1	16 of 16 & 2 of 7	Panel wise BOM & FDA +LHS+PLC BOM	The Quantity of the detectors & devices is decide to arrive the loop configuration of panel.Here the quantity is mismatched.Kindly review & confirm us which one we should follow.	The quantities mismatch are minor in nature, consider whichever is higher in no. against each item after comparison.
3	Annexure-D & Annexure-1	2 of 2 & 4 of 12	FDA Schematic Diagram -In coal conveyors Optical LHS cable shall be laid in Zigzag fashion for both forward & return belt.For cable galleries LHS cable shall be laid in straight line in the centre of the tray. & Technical Specification -Installation of optical linear heat sensing cable in gallery and conveyor area shall be as per TAC guidelines	We propose our offer as per the TAC guidelines.Kindly confirm.	Bidder to follow FDA schematic diagram.
4	Annexure-1	8 of 12	Section19:List of makes	List of makes is not provided for Fire detection & alarm system.Kindly Provide the same.	List of makes and models shall be selected by vendor meeting the PTR requirement as per NIT specification, CL. No. 2, page 2 of 12.
5	Annexure-E	14 of 24 & 17 of 24	4.04.03-Hot Redundant Microprocessor based Fire Alarm cum MIMIC Panel & 5.04.03-floor mounted vertical Fire detection alarm cum mimic panel & Repeater panel(Redundancy)	Kindly confirm the level of Redundancy for fire alarm panel.	NIT specifications are very clear. i.e. bidder shall furnish redundancy wherever electronics applicable.
6	Annexure-A1	Note-10	All Erection Hardwares	Kindly furnish the quantity of cables,cable trays,conduits etc are applicable to arrive the exact BOQ.	Main supply BOM i.e no. of panels, detectors etc provided to bidder. Based on main equipments quantity bidder to arrive erection hardwares quantities as required to complete erection & commissioning of the sytem.
7	Annexure-E	Technical Specification -		Kindly confirm the Annexure -E document (1X800 MW Kothagudem) is applicable/consider for (4 X 270 MW) Bhadradi Project.	Confirmed,specification for 1X800 MW Kothagudem is applicable for 4 X 270 MW Bhadradi project.
8	Annexure-A1	Bill of Materials	-	The design drawings are not available (except OLHS),we propose our offer as per the ANNEXURE-A1 (BOM-Bill of material).Kindly confirm.	Bidder to consider Annexure-A1 & Annexure -A2 for proposal of offer .

Sr.No.		Bidder Query (FA-TQ-1)	Query	BHEL Reply
1	General			
1.1	Missing Details	Approved vendor list		Sub vendor list for major items are provided in the specification PY56207 CL. 19. All other items will be furnished along with credentials for purchased approval. Wherever make is not specified in the List of makes and models, items shall be selected by vendor meeting the PTR requirement as per NIT specification, CL. No. 2, page 2 of 12.
1.2	Refer Schematic diagram for fire detection & alarm system Note point no. 21	MFAP-6 will be supplied by BHEL - TBG , INTERCONNECTION OF THIS PANEL IN THE RING ALONG WITH CABLE SHALL BE IN THE SCOPE OF BHEL TBG	Need the make & model no. of this panel	Make & model no. of MFAP-6(supplied by BHEL-TBG) will be intimated during detail engineering. Bidder to consider necessary accessories required to interface with this panel in their offer.
1.3	Drawings of individual area		Not available in tender	Drawings of individual area shall be provided as per requirement during detail engineering. However, minimum dwgs are already provided for enquiry purpose.

S.NO.	Clause No. & Spec. No.	Description as per specification	Clarification/Deviation	BHEI Reply
1	BHEL Design Basis for FP&DS Doc. No. PEMC-05934, Clause No. 3.7 (b)	Air Sampling detectors are to be provided in Common control room & control equipment room in TG Building	Kindly inform whether Air sampling detectors is required for Panel cubicles of CER &CCR building or required only as ceiling detector for inert gas protected area. If required for panel cubicle also. Kindly furnish the GA of Panel cubicles.	Air sampling detectors are not required for Panel cubicles. Air Sampling detectors are to be provided in Common control room & control equipment room in TG Building (as a ceiling detectors)
2	BHEL Design Basis for FP&DS Doc. No. PEMC-05934, Clause No. 3.9	Operation of inert gas:- As per clause fire detectors used in inert gas protected area are cross zoned. Upon receipt of signal from any detector predischage will be operated. Upon receipt of signal from second detector discharge signal for gas release panel shall be sent.	As per DBR clause No. 3.7, Air sampling detectors is required in inert gas protected area. In this case Pl. explain how cross zoning operation will be done for zone where single Aspiration detector is used.	Cross zoning(Detection, engineering) is not part of vendor scope of supply. Each zone will have its own detection through monitor modules and corresponding command through control modules is envisaged. Required BOQ already incorporated in NIT specification.
3	BHEL Design Basis for FP&DS Doc. No. PEMC-05934, Clause No. 3.7 page 18 of 26	All fire alarm panels, R.P & PC shall be connected with dedicated LAN through redundant OFC as per Schematic diagram of fire detection system (1-38316-00177)	As per Schematic diagram of fire detection system (1-38316-00177), Networking among fire alarm panels, Repeater panel is through OFC not LAN. Also from redundant networking we understand that all the panels are connected in ring topology. Pl. confirm. Further PC are connected with FAP's through RS-232.	Bidder to follow as per schematic diagram (1-38316-00177).Wherein OFC shall be followed for networking, RS-232 network cable between panel to PC , and ring topology to be followed.
4	Technical specification for fire detection & Alarm system +Optical LHS + PLC system (PY-5612) clause 8.2	Optical LHS cable for coal conveyor -----. This shall be used in whole length of top belt & bottom belt (in a Zig-zag fashion)	With the clause we understand that LHS cable shall be run in straight run on both top & bottom belt. Pl. clarify.	Bidder to follow as per schematic diagram (1-38316-00177) Cl. 19 sht 2 of 2.
5	BHEL Design Basis for FP&DS Doc. No. PEMC-05934, Clause No. 3.7 (d) page 20 of 26	Interfacing of Fire alarm control panel with fire protection system.	We understand that pump operation signals are not required to be interfaced with fire alarm panel. Pl. confirm. If required. Kindly furnish the No. of contacts required to be considered.	Pump operation signals ,interfacing signals are part of I/O count. The contacts required for fire protection system are also included.

6	BHEL Design Basis for FP&DS Doc. No. PEMC-05934, Clause No. 3.7 (d) page 20 of 26	Interfacing of Fire alarm panel with inert gas panel located in control room by potential free contact.	As per the BOQ Annexure-A1 of PY 56217. Contacts required for interfacing fire alarm control panel with inert gas control panel is not mentioned. Kindly check & inform the No. of contacts to be considered.	Interfacing of fire alarm panel with inert gas system already covered in BOQ Annexure A1. Separate contacts are not required.
7	BHEL Design Basis for FP&DS Doc. No. PEMC-05934, Clause No. 3.7 (f) page 20 of 26	The standby power source has been provided with a battery bank to power fire detection & alarm system for 48hrs of continous load or 30minutes of maximum load.	As per BHEL/NTPC and other prestigious client we understand that battery back up of fire alarm system shall be 24hrs of continous load & 30 minutes in alarm condition. Pl. check.	Pl. follow NIT specification.
8	Technical specification for fire detection & Alarm system +Optical LHS + PLC system (PY-5612) clause 8.1	It is always necessary to install two LSHS cable below the lower most tray.	With the clause we understand that if LHS cable is installed in zig zag fashion then 02 runs of LHS are not required in lower most tray. Pl. confirm.	Pl. follow NIT specification.
9	Technical specification for fire detection & Alarm system +Optical LHS + PLC system (PY-5612)	Power supply	As per the BOQ Annexure-A1 of PY 56217.S.NO [d]. There is no Battery charger with the PLC & Remote I/O panel. We understand that 24VDC upto PLC & remote panel is in BHEL scope. Pl. confirm. Also mentioned UPS is for OWS only.	It is clerly indicated in schematic diagram(1-38316-00177) 240 V AC given to panels. Battery cum battery charger(BC-1 & BC-2) as required for operation and backup/battery charging is part of panel supply. Further independent UPS is meant for OWS as per schematic diagram.
10	Technical specification for fire detection & Alarm system +Optical LHS + PLC system (PY-5612)	Power supply	As per the BOQ Annexure-A1 of PY 56217.S.NO [d]. We understand that mentioned UPS is for OWS only & is of 01 No. of rating approx 1KVA. Kindly confirm/clarify.	Confirmed, inline with schematic diagram 1-38316-00177.
11	Technical specification for fire detection & Alarm system +Optical LHS + PLC system (PY-5612) clause 11	Inter equipment cable supply-Bidder	As per BOQ Annexure-A1 of PY 56217 we understand that complete detection & instrumentation cabling is in BHEL scope. Pl. confirm.	Loop cables between detectors to MFAP panel, power cable from distribution board to each MFAP & repeater panels only considered by BHEL. All other cables are in bidder scope of supply.
12	Technical specification for fire detection & Alarm system +Optical LHS + PLC system (PY-5612) clause 7	Optical LHS Cable	Pl. clarify whether the optical LHS cable is connected single ended or double ended with the controller/detection unit of Optical LHS cable.	It is responsibility of vendor to follow single ended or double ended as per BHEL inputs as per NIT specification.
13	Technical specification for fire detection & Alarm system +Optical LHS + PLC system (PY-5612) clause 19	Sub Vendor List	Approved make of fire alarm panel, Repeater panel, detectors & its module is not specified. Kindly inform the same.	List of makes and models shall be selected by vendor meeting the PTR requirement as per NIT specification, CL. No. 2, page 2 of 12.

14		Input Cable tray Layout of TG Building	Pl. note that Cable Tray layout of TG building is provided for 2x250MW Sikka TPP & not for 4x270MW Bhadradi Project. Kindly provide the relevant cable tray layout of Sikka project so that we can calculate the exact quantity of OFC LHS cable and its detection/controller unit.	Cable tray layout will be provided during detail engineering, at present bidder to calculate as per the ref cable tray layout i.e. with 2x250MW Sikka TPP with margins.
15	Technical specification for fire detection & Alarm system +Optical LHS + PLC system (PY-5612)	Fire detection & Alarm system-BOM	Kindly furnish specification of Exit sign (Back lit) type. Pl. inform whether exit sign is 230VAC or 24VDC operatable. Also confirm that control modules required for Exit sign required dry output or wet output.	It will be 24VDC operatable, contact type is as per OEM design.
16	Technical specification for fire detection & Alarm system +Optical LHS + PLC system (PY-5612)	Requirement of Air sampling detector & Flame detector	Kindly furnish the detail technical specification of Flame & Air sampling detector.	Technical details of requested detectors are available in page no. 65-66 /135 of Annexure E-Technical specification for FDA.

SL.No.	Description as per specification	Clarification/Deviation	BHEI Reply
1	Loop cable shall be Cu conductor armoured 3C x 2.5sq.mm. Power cable shall be Cu conductor armoured 3C x 2.5 sq.mm. Accordingly bidder to take care of all the terminations. Erection hardware like cable tags, saddles, saddle bars, conduits, etc for 75 kms of the above cable be considered.	We request whether we can use 3c x 1.5sq.mm cable for the loop cabling instead of 3c x 2.5sq.mmm. Kindly confirm.	Deviation not acceptable , bidder to consider cables as per NIT specification.

SI No.	Clause No:-	Description as per specification	Queries by bidders	Reply by Client/ Consultant
1	Clause 13.0, page 6 of 12 of Technical Specification (PY 56217)	Start up and commissioning spares	We request BHEL to finalize the List/ criteria for Start up and Commissioning Spares prior to Award of Contract.	Startup & commissioning spares are purely depends on the offered make & model. Accordingly OEM to offer as part of their scope of supply. BHEL will not have any role for selecting any such spares prior to award of contract except approvals during detail engineering stage.
2	Sub Vendor List- Clause 19.0, page 8 of 12 of Technical Specification (PY 56217)	We have noted that sub vendors for Fire Alarm Panels, Repeater Panels, Multisensor Detectors, Heat Detectors, Air Sampling Detectors, Probe Detectors, Infra Red Detectors, Modules, Manual Call Points, Hooters, Exit Sign, Response Indictors, Siren etc are not furnished in the Vendor List.	We request BHEL to provide Vendor List of these items.	List of makes(not specified in NIT) shall be selected by vendor meeting the PTR requirement as per NIT specification, CL. No. 2, page 2 of 12.
3	Technical Data Sheets	Technical Data Sheets for various items are not furnished with the specification.	We request BHEL to provide the Technical Data Sheets for various items.	Technical datasheets are available in Annexure-E "Technical Specification for FDA". If any item not available same shall be offered to meet the system requirement as per NIT specification. BHEL will review and approve during detail engineering.
4	Approvals		We request BHEL to confirm that in UL/ FM/ VDS/ EN 54 approved equipments will be acceptable.	Bidder to follow NIT specification(Cl. 2 & 4 , page 2 of 12) regarding approvals.
5	S.No. 11, BOM, Annex-A-1	Size of loop cable has been mentioned as 2.5 mm2	Loop cable core size shall be max. 1.5 Sq . mm. As mentioned in tech specifications that fire alarm panel shall be PLC based. If loop core size increase, it increase the cable capacitance which restrict the data flow. That's why, In PLC 0.5 sq. mm cable used. Please allow to use 1.5 Sq. m or 0.5 sq. mm (as recommended by OEM) core size for loop cable	Deviation not acceptable , bidder to consider cables as per NIT specification.

6	Cause-d, page 19 of 26, Doc No PEMC- 05934	Main Fire Alarm Panel comprises of redundant processor..... Features required.	We request BHEL to confirm if redundancy is required for Repeater Fire Alarm Panel also.	NIT specifications are very clear. i.e. bidder to follow Clause-e, page 20 of 26, Doc No PEMC-05934 for repeater panels.
7	Drawing No 1-383-16-00177	Schematic Diagram for Fire Detection and Alarm	We request BHEL to clarify the following;	
			a. For networking between panels, ring topology will be followed as per the drawing. Dual Ring is not envisaged.	Drawing is pictorial representaion of connectivity as well as major equipments in the site. The detail networking , interconnectivity shall be inline with enquiry specification.
			b. MFAP-6 located in switchyard Control Room is not covered in the present scope of supply and will be provided by BHEL TBEM. Networking in loop will be feasible in case manufacturer of MFAP-6 is different than manufacturers of FAPs under this tender. We request BHEL to review and revert back.	Make & model no. of MFAP-6(supplied by BHEL-TBG) will be intimated during detail engineering. Bidder to consider necessary accessories required to interface with this panel in their offer.