

TTTD-106-1 Rev No. 5	Form No.		PROJECT ENGINEERING & SYSTEM DIVISION BHEL, HYDERABAD –32.	PY51567
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TECHNICAL SPECIFICATION
FOR
COAL STOCK PILE FIRE DETECTION SYSTEM

PROJECT	: 2X660 MW MAITREE SUPER THERMAL POWER PROJECT,RAMPAL BANGLADESH
CUSTOMER	: BANGLADESH INDIA FRIENDSHIP POWER COMPANY (PVT.) LTD., BANGLADESH
CONSULTANT	: FICHTNER GmbH & Co KG, STUTTGART, GERMANY

		Revisions :	Prepared by:	Checked by:	Approved By:	Date
			-SD-	-SD-	-SD-	
		00	D V Prashant Kumar	P Chandrasekhar	MNSR	17/06/2019

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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. INTENT OF SPECIFICATION: The intent of this document is to establish the minimum requirement of design, engineering, supply, selection, selection, manufacture, assembly, inspection, shop testing, shop painting, transportation and delivery at Maitree, Bangladesh site in proper condition and supervision of Erection & Commissioning at site for the Coal Stock Pile Fire Detection System, which forms part of the project. The equipment and supply shall conform to high standard of engineering and applicable codes/standards and shall be capable of performing intended operation in a manner acceptable to the Purchaser and end customer 2. SPECIAL NOTES TO BIDDERS 2.1. This specification shall be read in conjunction with all its annexures listed later in this specification. In case of any discrepancy arising between this specification & its annexures, the most stringent of all (as determined by purchaser) shall be followed. Further, if a requirement in this specification or any of the annexures, calls for a decision from the Purchaser, it shall be bidder's sole responsibility to clearly bring out/highlight the same distinctively in his pre-bid queries, so as to enable purchaser to furnish their decision/clarification. If such issues/requirements are not duly addressed by bidder during the pre-bid stage and if such issues/requirements are observed later during order execution stage, it shall be binding on the bidder to comply with the final decision made by the purchaser subsequently, without any cost, delivery, or any other commercial implications. 2.2. All materials supplied under this contract shall be new and unused. 2.3. Any additional equipment, material, services etc., which are not specifically mentioned in this specification, but required to make the Coal Stock Pile Fire Detection System complete in all respects, in accordance with the intent of this technical specification, contractual agreement, statutory requirements, relevant/applicable codes/standards, good engineering practices, and for safe and trouble-free operation, shall be deemed to be covered under the scope of this specification. 2.4. All mounting hardware/ accessories/fittings etc. required for the erection of Coal Stock Pile Fire Detection System shall be included in the scope of bidder and the same shall be included in the base price even if such items are not explicitly mentioned in this specification. 2.5. The Bidder shall accept full responsibility for the completeness and for the faultless working of all the equipments and the Coal Stock Pile Fire Detection System as a whole.		
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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.		2.6. Bidder to note that the Purchase Order for the entire Coal Stock Pile Fire Detection System for the project shall be placed on lump sum fixed prices based as per tender specification requirements. 2.7. Bidder offer shall be strictly as per these specification requirements. Unsolicited or Alternate offers from the bidders will not be entertained. 2.8. Bidders are advised to contact BHEL for essential technical queries in writing within one week of issue of Enquiry. 2.9. Offers with incomplete information will not be considered for evaluation, and are likely to be rejected outright without any further interaction with the Bidder. 2.10. Any technical features over & above BHEL enquiry specification requirements proposed by Bidder will not be given preference for the purpose of evaluation. 2.11. Deviations/Clarifications/Assumptions are not allowed in the bid. Any such things shall be settled during pre-id stage stage only. If the offer contains any Deviations, then the offer is liable for Rejection. 2.12. Nature of Deviations shall only be of Design / Manufacturing constraints and non-availability of items / components / makes in market. 2.13. No price implications shall be entertained for deviations withdrawn during the technical scrutiny. If any deviations are accepted by BHEL during technical scrutiny then also there will be no price implication. Hence, in no case there will be consideration of Price implications. 2.14. Bidder shall submit the “Duly filled & Signed copy of Check list (Annexure-08)” compulsorily along with technical offer without which offer is liable for rejection without any further interaction with the Bidder 2.15. The design information, specifications and drawings indicate the "Minimum" requirements and are intended to enable Bidders to ascertain the extent of the work involved. Bidders are expected to supplement the information included in this specification as required and submit a comprehensive bid. 2.16. The warranty shall be valid for 24 calendar months commencing from date of supply (or) 12 calendar months commencing from the date of commissioning” whichever is earlier. 3. PROJECT DESCRIPTION The Joint Venture of Bangladesh-India Friendship power corporation Ltd. (BIFPCL) intends to construct a 2 X 660 MW coal fired power plant (MAITREE STPP Project) in the district of Khulna , Rampal , Bangladesh.		
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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.		For Site Conditions & Meteorological data, please refer Annexure-11. 4. GENERAL SYSTEM REQUIREMENT 4.1. Coal Stock Pile Fire Detection System shall be designed to operate as and when required in 24 hours per day and 365 days in a year. 4.2. The life span to be considered in the design, equipment and component selection shall be a minimum of 20 years. 4.3. For the design of the plant, it is necessary not only to consider the requirements of operation, but also, by suitably planning the layout, the convenience of inspection, cleaning, maintenance and repair. 4.4. In order to achieve the reliability, high efficiency and safe operation of the plant, it is also necessary to consider various precautions to safeguard the operating and maintenance personnel. 4.5. The design of the plant shall ensure that the plant can adapt itself to load, pressure (in the state of normal operation) with primary parameter variation within the allowable range of design. 4.6. Supplies shall be rendered in conformity with proven design principles. The purpose of this contract must be fulfilled in its entirety and the maximum of reliability and economy guaranteed. All the components shall be so designed that repairs and overhauling is minimum and can be carried out easily in the shortest possible time. 5. BIDDER'S SCOPE OF SUPPLY There are four nos. of coal stock piles in 2x660MW Maitree project. Each coal stock pile is covered individually with a dome like structure. Refer Annexure-13 for details. The coal stock piles mentioned shall be provided with Coal stock pile fire detection system which are included in bidder's scope of supply and supervision of erection & commissioning: 5.1. One (01) lot of Thermal Imaging Cameras with lens. 5.2. One (01) lot of Cables and termination accessories for connecting Cameras to Operator work station 5.3. One (01) set of Operator work station with software, printer and UPS along with furniture and chair.		
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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.		5.4. One (01) lot of Junction Boxes 5.5. Erection & Commissioning spares 5.6. One lot of erection hardware 5.7. Special tools & tackles 5.8. One (01) lot of network components including cables and termination accessories 5.9. Other items not specified but required to complete the system in all respects. 6. PRODUCT DESCRIPTION Coal Stock Pile Detection shall be based on Infrared Thermal Imaging Technology. The no. of cameras provided shall be sufficient to cover 90% of the coal stock piles in coal sheds (Refer Annexure-13 for details). These shall be mounted on the roof of the coal sheds. All the necessary material required for mounting of these cameras shall also be provided by the contractor. The location of these cameras shall be such that they offer no hindrance to movement of machine in stockyard. No. of cameras etc. shall be planned such that they cover 90% of the coal piles. The cameras offered shall be integrated with Pan and Tilt mechanism in order to rotate all around along with tilt down facility to cover maximum possible area. Pan & Tilt mechanism should be programmable to rotate automatically as per user defined presets to cover approx. 90% of the coal pile within Field of View. Pan & Tilt may be moved manually as well by user using directional buttons. Camera should be capable to detect hot spot patch of 0.35 x 0.35 mtr. effectively with correct temperature measurement. Camera to server interface shall be either armored Ethernet or armored fiber optic cable. Thermal Images of all the installed cameras should be seen live on server screen. Operator should be able to see temperature of any and every spot by moving mouse cursor on thermal image for manual image analysis purpose. Thermal images should be saved automatically with temperature details in event of alarm. The system shall have provision for pre-alarm and alarm conditions which shall be user configurable. Alarm shall be raised based on user defined temperature threshold setting. This alarm shall be immediately recorded with time stamping. Alarm shall be raised after a short delay (Settable from 1 sec. to 5 min.) instead of instantaneous to avoid high temperature alarms due to moving objects. Example – In case a dozer is moving in area of interest having high temperature at its exhaust. Software		
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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.		module consisting on an algorithm for the detection of false alarms by vehicles or moving machinery due to pixels movement. It also includes the detection of fires by the expansion of a hot spot on the surface. Alarm should be logged in for last 30 days with details like associated camera, Date and Time, Zone, Temperature Recorded, Thermal Image for analysis purpose. System shall be capable to filter out false alarms. Entire coal pile area to be divided into zones/sub-zones and alarm should be raised with location information to ensure pin pointed and fast action. The system shall have relay outputs, which the operator can configure each alarm zone with an output channel. The outputs are fully configurable. Lifetime license version of operating system, application software along with any other software required for proper operation of the system shall be provided. 6.1. Thermal Imaging Camera Specification: <table border="1"> <thead> <tr> <th>Sl. No.</th> <th>Description</th> <th colspan="2">Technical Specification</th> </tr> </thead> <tbody> <tr> <td rowspan="7">1.</td> <td rowspan="7">Camera Features</td> <td>Infrared Detectors resolution (Physical Detectors and not enhanced after software feature)</td> <td>320 x 240 Pixels or more</td> </tr> <tr> <td>Temperature measurement range</td> <td>0 to 350 deg. C or more</td> </tr> <tr> <td>Accuracy</td> <td>+/- 2% or +/- 2 deg C or better</td> </tr> <tr> <td>Focus</td> <td>Automatic or manual (Built in motor)</td> </tr> <tr> <td>Image Frequency</td> <td>30 Hz or more</td> </tr> <tr> <td>IFOV(Instantaneous field of view)</td> <td>4 mrad or less</td> </tr> <tr> <td>Measurement</td> <td>At least 10 areas for</td> </tr> </tbody> </table>				Sl. No.	Description	Technical Specification		1.	Camera Features	Infrared Detectors resolution (Physical Detectors and not enhanced after software feature)	320 x 240 Pixels or more	Temperature measurement range	0 to 350 deg. C or more	Accuracy	+/- 2% or +/- 2 deg C or better	Focus	Automatic or manual (Built in motor)	Image Frequency	30 Hz or more	IFOV(Instantaneous field of view)	4 mrad or less	Measurement	At least 10 areas for
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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.	<table border="1"> <tr> <td rowspan="7"> 2. </td> <td rowspan="7"> Pan & Tilt unit </td> <td>Mode</td> <td>every Pan & Tilt Position Average & Maximum Temp. data of individual area</td> </tr> <tr> <td>IP Ratings</td> <td>IP 65 or more</td> </tr> <tr> <td>Speed</td> <td>Variable from 0.02° - 36° per sec for Panning Variable from 0.02° - 18° per sec for Tilting</td> </tr> <tr> <td>Horizontal Rotation</td> <td>350 ° Minimum</td> </tr> <tr> <td>Vertical Rotation</td> <td>90° Down side and up to 90°up side</td> </tr> <tr> <td>Position Pre- set</td> <td>At least 250 presets to cover complete Coal Pile Area effectively</td> </tr> <tr> <td>Position Accuracy</td> <td>0.04°</td> </tr> </table>				2.	Pan & Tilt unit	Mode	every Pan & Tilt Position Average & Maximum Temp. data of individual area	IP Ratings	IP 65 or more	Speed	Variable from 0.02° - 36° per sec for Panning Variable from 0.02° - 18° per sec for Tilting	Horizontal Rotation	350 ° Minimum	Vertical Rotation	90° Down side and up to 90°up side	Position Pre- set	At least 250 presets to cover complete Coal Pile Area effectively	Position Accuracy	0.04°
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6.2. System Hardware Specification: 6.2.1. Servers with suitable networking components and ports for interfacing various systems located in CHP Control room. 6.2.2. The PCs / Servers shall have latest version of Windows, MS office, Antivirus. Further, managed network switches with adequate no. of ports for the system and for interfacing Employer's systems shall also be provided, suitably mounted in wall mounted enclosure with transparent cover. The exact configuration shall be as approved by employer during detailed engineering. The vendor shall provide provision for connecting to DCS system through Ethernet. 6.3. System Software Specification:																				
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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.		6.3.1. All software required to achieve the above functional requirements shall be included in the scope of this package and shall be provided with lifetime licenses in CD/DVD media or any other downloadable format. These shall be site license including the operating system, modelling and optimization software and any other software required for proper functionality of the complete system. 6.3.2. The software licenses shall not be hardware/machine-specific. That is, if any hardware/machine is upgraded or changed, the same license shall hold good and it shall not be necessary for Employer to seek a new license/renew license due to up gradation/change of hardware/machine for Thermal Imaging at site. Further, software shall be suitable for life time of the plant. 6.3.3. The offered software should utilize latest hardware and software versions. The operating system should also be latest available at the time of delivery like Windows 10. 6.3.4. Latest version of software as on date of delivery shall be provided by the bidder. Any change in hardware required for the same shall also be in the scope of bidder. 6.3.5. The software shall support advanced security methods to provide protection against unauthorized access, disclosure, modification, and use. The Contractor shall describe the security provided by the software for user login and roles. 6.3.6. The system shall be capable to interface with the Station LAN (provided by the Employer) and other third party systems. It shall be capable to exchange data via web services. It shall have adequate security features like Firewall, Anti-virus etc which shall be as per finalized during detailed engineering. 6.3.7. The system shall be able to provide Historical Data in form of reports, logs etc. in form decided by the Employer during detailed engineering for Hotspot detection. This shall primarily include daily, monthly or yearly reports of Hotspot Detected. 6.3.8. Further, contractor to include in his scope lifetime, unrestricted license, tools and tackles, additional accessories which are not specifically indicated in the specification but are required for completeness and comprehensive utilization of Hot spot detection System.		
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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.		6.4. Erection & Commissioning Spares i. All commissioning spares as required during erection and commissioning of the Coal Stock Pile Fire Detection System is included in bidder's scope. ii. 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. iii. All spares having a shelf life shall be dispatched to site only after completion of major erection activities. The dispatch schedule of these spares shall however be planned in a way that it doesn't delay any commission activity. iv. Bidder shall also ensure supply of all erection & commissioning spares along with main equipment as per his experience, for replacement of damaged or unserviceable ones during the execution of the project by bidder at site, to avoid delay in the project schedule. v. Price of all the above items shall be construed to be included in the main package price. No separate price for the same shall be offered. vi. Any equipment not specifically mentioned above but required for satisfactory operation of complete Coal Stock Pile Fire Detection System and to meet desired intent of specification shall be included in scope of supply of bidder. vii. Such requirements, if any, whenever noticed during any stage of order execution shall be deemed to be included in bidder's scope without any commercial implication to purchaser. 6.5. Special tools and tackles: i. All special tools and tackles which are necessary or convenient for erection and commissioning of the Coal Stock Pile Fire Detection System shall be supplied at site by bidder. Price of these items shall be construed to be included in the main package price. No separate price for the same shall be offered ii. All the special tools and tackles shall be shipped in separate heavily constructed wooden boxes. Notes: 1. All Tools and tackles required for dismantling, maintenance, adjustment, and calibration of the all the equipments that form part of Coal Stock Pile Fire Detection System shall be supplied. 2. Bidder to note that if at a later stage the requirement of any other special tool & tackles is required for the Package, same has to be supplied by bidder without any delivery or commercial implication. Decision of the Purchaser regarding the requirement of any additional tools and tackles will be final and binding on the Purchaser.		
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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. 7. BIDDER'S SCOPE OF SERVICES 7.1. Supervision of erection & commissioning a) Supervision of erection, commissioning & performance testing at site for the supplied system shall be included in bidder's scope of service. b) Bidder to note that the supervision charges for erection & commissioning shall consists of the following: • Per day supervision charges of an Engineer including all other expenses like boarding, lodging, local travel, insurance etc. • Travel expenses (inclusive of any clearance charges like Visa fee etc, insurance) from / to vendor works to site. c) Per diem charges shall be applicable from the day bidder's person reaches site, up to the day he leaves the site. d) For the purpose of tender total number of 20 man days to be covered in 3 visits have been considered. However, either or both of the number of man days or no of visits may change on either side based on the actual site requirement. e) All payments towards supervision of E&C shall be made only after BHEL-site supervision. f) Bidder to mobilize concerned competent person for supervision of Erection & commissioning activities within a period of 14 days of receipt of intimation in this regard by BHEL. g) Bidder to quote supervision of erection and commissioning activities strictly as per BHEL's price format (Annexure-1). h) Engineering of cables, cable routing and cable scheduling within Coal Stock Pile Fire Detection System. List of major services included in bidder's scope are as follows : 1) Design 2) Detailed Engineering 3) Engineering for interfacing all inputs and outputs 4) Submission and obtaining approval of all engineering documents 5) Engineering for procurement 6) Preparation of Documentation and obtaining owner/consultant approvals for the same 7) Procurement				
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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.		8) Dispatch and transportation of equipments, consumables and other material to site. 9) Bidder to further note that no separate payment shall be made by Purchaser for material reconciliation activity (material reconciliation at site will not be considered as a part of supervision of E&C activity) & any price of this service will be deemed to be included in the basic price of supply of the package quoted by the bidder. 10) Mechanical Completion 11) Preparation of startup and operating manuals 12) Pre-commissioning activities and rectification 13) Commissioning and reliability run. 14) Running of the Coal Stock Pile Fire Detection System as per Purchaser / End customer's requirements till final handing over. 15) Supply of all test reports /certificates 16) Providing as built drawings 17) Training of the Clients Engineering and Operating Personnel NOTE: Bidder to note that the above list is not exhaustive and any other service required as per the intent of this specification / project requirements /good engineering practice shall be deemed to be included in bidder's scope without any commercial implication to the purchaser 7.2. Training To End Customer: Prior to handing over of the system to Owner, the supplier shall provide operational training to Owner's operating personnel, which shall consist of control system operation, troubleshooting procedures, emergency procedures, safety requirements etc. The cost of all such training shall be deemed to be included in the price quoted by the bidder. Bidder shall not be eligible to raise any extra claim in this regard. 8. Inspection, Testing, Approval & Commissioning: 8.1. 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. 8.2. Inspection & Factory Acceptance Test at Vendor works – by BHEL + VENDOR + END USER as per approved FAT procedure 8.3. Site Acceptance Test at site - by BHEL + VENDOR + END USER as per approved procedure		
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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. 9.1. Scope Matrix for Supply, Engg, Installation & commissioning <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">S.No.</th> <th style="width: 35%;">Description</th> <th style="width: 15%;">Engineering by</th> <th style="width: 10%;">Supply by</th> <th style="width: 10%;">Erection by</th> <th style="width: 15%;">Supervision of Erection by</th> <th style="width: 15%;">Commissioning by</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">[A]</td> <td> FPS Coal Stock Pile Detection system including operator work station, printer, softwares, etc. </td> <td style="text-align: center;">Bidder (Note-3)</td> <td style="text-align: center;">Bidder</td> <td style="text-align: center;">BHEL</td> <td style="text-align: center;">Bidder (Note-1,2,4)</td> <td style="text-align: center;">Bidder + BHEL (Note-2)</td> </tr> </tbody> </table> Notes: 1) Termination accessories and termination of all types of cables at bidder supplied items/panels shall be in Bidder scope. 2) BHEL will provide the necessary man power required for commissioning. However system commissioning shall be done by bidder only. 3) Engineering of System, model selections, configuration of software, etc are part of Bidder scope. 4) Any special activities involved in erection like FO cable splicing, termination, etc. shall be by bidder including special tools & tackles. 9.2. POWER SUPPLY AND CABLING 9.2.1. The system will be based on 1-Phase,230V AC,50Hz UPS power supply. Only one no. of 230V AC UPS power supply shall be provided at one point. The power distribution/ required voltage conversion if any and cabling for further distribution to various consumers of Coal Stock Pile detection System shall be in the scope of the bidder. 9.2.2. Vendor shall supply accessories (like cable glands, plugs, etc.) required for termination of vendor power & control cables at vendor supplied equipments. 9.2.3. Vendor shall furnish above feeder capacity during order execution with calculations. 9.2.4. 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. 9.2.5. All the cables supplied by vendor shall be provided with conduits.								S.No.	Description	Engineering by	Supply by	Erection by	Supervision of Erection by	Commissioning by	[A]	FPS Coal Stock Pile Detection system including operator work station, printer, softwares, etc.	Bidder (Note-3)	Bidder	BHEL	Bidder (Note-1,2,4)	Bidder + BHEL (Note-2)
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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.		i. 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. ii. For ease of identification, the color of painted strip (wherever required) shall be as per the applicable standard. iii. 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. 11.2. Packing i. Bidder shall ensure proper packing of Coal Stock Pile Fire Detection System equipment before dispatching. All items shall be dry, clean and free from moisture, dirt and loose foreign material of all kinds. ii. Coal Stock Pile Fire Detection System system shall be supplied in packaging marked with the purchase order no., item code (if available), and the salient specifications. iii. Special notations such as 'Fragile', 'This side up', 'Center of gravity', 'Weight', 'Owner's particulars', 'PO Nos.' etc. if required shall be clearly marked on the package together with other details as per purchaser order. iv. The equipment 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. v. Prior to shipment components of the unit shall be completely cleaned. All the componenets of the system shall be properly packed to prevent damage during transit damage, loading, unloading and storage. vi. Spare parts if applicable shall be packaged separately and clearly marked as 'Spare Parts'. vii. Packing shall be as per requirements laid down in Annexure-12. 12. DOCUMENTATION 12.1. Information to be included with offer Vendor shall make the offer in detail, with respect to every item of the Purchaser's specifications. Any offer not conforming to this shall be summarily rejected.		
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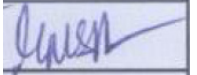
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COPYRIGHT AND CONFIDENTIAL The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED . It must not be used directly or indirectly in any way detrimental to the interest of the company.		a) Duly filled & Signed copy of Check list b) Unpriced price schedule (To be submitted compulsorily without fail) 12.2. Documentation after P.O. Placement a) Submission of documents as per “Master documents schedule” (which will be finalized in Kick-off meeting after award of the contract) within 2 weeks of placement of LOI (for approval by BHEL and / or BHEL’s customer in 4 sets) b) <i>All vendor documents of Coal Stock Pile Detection and its sub-items shall be submitted to End user for approval during order execution. Any comment furnished by End user / BHEL shall be taken care by vendor during ordering execution.</i> c) Further BHEL will provide comments on vendor submitted document within 15 working days for revision & resubmission. Vendor shall follow up with BHEL for non-receipt of comments/approvals. d) Revised drawings / Documents shall be submitted by Bidder in 07 days of receipt of comments / observations from BHEL. BHEL shall revert within 15 days on receipt of these revised documents / drawings from vendor for approvals. 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. f) Vendor shall obtain final approvals on all technical + quality aspect documents before inspection dates. 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. h) Calibration Certificate 12.3. 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). a) Complete O& M manual.		
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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.		b) Approved Engg documents, As-Shipped documents, As-Built documents c) Guarantee and all test certificates for review and acceptance by BHEL and / or BHEL's Customer 12.4. Bidder shall submit the list of documents as mentioned in Annexure-2 as per the schedule mentioned. 13. PRICE BID FORMAT 13.1. Price bid format is enclosed as Annexure-1, bidder to furnish the offer in line with the same. 13.2. Coal Stock Pile Fire Detection System as envisaged in this bid document shall be quoted by the bidder on Lump sum Turnkeybasis. 13.3. All the items included in the price bid format shall be quoted as per tender specification and pre-bid clarifications, if any. Responsibility of ensuring correctness & completeness of scope of supply as per specification requirement solely lies with bidder. 13.4. Prices quoted by the bidder shall remain firm till the successful handing over of the Fire Protection plant to end customer. Any request for upward revision of price during any intermediate stage before handing over the plant to end customer will be summarily rejected by BHEL. 13.5. Bidder to quote only base rates for all the items, Applicable taxes and duties shall be indicated separately. 13.6. The Priced Bid shall be submitted in Original (without any copy) duly signed and stamped on each page in a separate sealed envelope super scribing "Price Bid –Do not Open" This shall not contain any condition whatsoever failing which the Bids shall be liable to be rejected. In case of any correction, the bidder shall put its signature and its stamp. Eraser fluid will not be allowed for making any correction. 13.7. Bidder shall confirm to the unpriced bid as part of their offer. 14. DEVIATIONS TO SPECIFICATIONS: 16.1 Deviations/Clarifications/Assumptions are not allowed in the bid. Any such things shall be settled during pre-id stage stage only. If the offer contains any Deviations, then the offer is liable for Rejection.		
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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.		16.2 Nature of Deviations shall only be of Design / Manufacturing constraints and non-availability of items / components / makes in market. 16.3 No price implications shall be entertained for deviations withdrawn during the technical scrutiny. If any deviations are accepted by BHEL during technical scrutiny then also there will be no price implication. Hence, in no case there will be consideration of Price implications. 16.4 Information like Bill of materials (BOM), Instrument list, datasheets, and typical specifications enclosed by the bidder as a part of their bid, shall be retained for information only and shall not be referred by contractor as contractual agreement. No implication shall be admissible on the basis of these documents during any stage of contract execution. 17 SUB VENDOR LIST 17.1 All the equipment shall be sourced from recommended Bidders only as specified Annexure-09. 17.2 Further the supplied model shall be under regular manufacturing range and have Proven Track Record (PTR). (Bidder / sub-Bidder shall have supplied minimum 2 no. in last 7 years, out of which at least one shall be in satisfactory operation for minimum 8000 hours). 17.3 Supply items for which no definite “make/brand” is indicated, shall be procured only from makes & models having proven track records and requires purchaser approval. 17.4 Bidder to comply with sub-vendor list enclosed with the specification. The sub-vendors for any item that is not appearing in the sub-vendor list (annexure-09) may be proposed for BHEL’s approval. Non-acceptance of any sub-vendor by BHEL / customer shall not have any commercial & delivery implication. While submitting sub-vendors for approval of BHEL, bidder shall furnish following documents : i. ISO certificate of Sub-vendors ii. Proven track record & references for makes and models supplied earlier. Note: i. Bidder shall take prior approval of BHEL w.r.to vendors for procurement of items which are not envisaged in the vendor list. 18 DOCUMENTS ALONG WITH BID The following documents shall be submitted by bidder and the bidder’s offer shall be evaluated on the following:		
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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.		➤ Duly filled & Signed copy of Check list (Annexure-08) ➤ Unpriced bid format (Annexure-1) 19 DEFINITIONS 19.1 BIDDER: Bidder means the party supplying Coal Stock Pile Fire Detection System for this project. 19.2 SUB VENDOR : Sub vendor means any party on whom bidder suborders materials and items (like tubes, forgings etc). 19.3 Quality Assurance Plan (QAP) / Inspection and Test Plan (ITP) It is a document generated by the supplier with complete listing of various inspection stages, tests, material certification requirements and parties involved with their respective roles in inspection; indicating the requirements of Hold (H),Witness (W) Inspection, and Review (R) of Quality control documents / records for an item. QAP and ITP are considered synonymous. 19.4 THIRD PARTY INSPECTION AGENCY (TPIA) Third Party Inspection Agency means an inspection agency appointed by the EPCC/LSTK CONTRACTOR for carrying out Inspection and witness of tests of equipment and material being procured by the CONTRACTOR for the Project. 19.5 INSPECTION CATEGORY Inspection category determines the scope of Inspection for the Supplier, TPIA / OWNER for various equipment and material depending upon their use, serviceability, safety criteria and complexity. 19.6 MECHANICAL COMPLETION Mechanical Completion of systems shall mean that all installation works of the system have been completed and hydro tested in accordance with approved construction drawings, approved specification, applicable code as defined in the document, accepted international good engineering practices and all the activities have been completed in a comprehensive manner by the bidder. 19.7 PRE-COMMISSIONING ACTIVITIES		
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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.	Pre commissioning activities, which are required to be performed after completion/ installation, inspection, hydro testing etc. of an equipment/ system to make it ready for commissioning. 20 LIST OF ANNEXURES <table border="1"> <thead> <tr> <th colspan="3">LIST OF ANNEXURES</th> </tr> <tr> <th>Sl. No</th> <th>Drawings/Documents</th> <th>Drg/Doc no</th> </tr> </thead> <tbody> <tr><td>1.</td><td>Price Bid Format</td><td>Annexure – 1</td></tr> <tr><td>2.</td><td>Master Document List</td><td>Annexure – 2</td></tr> <tr><td>3.</td><td>Standard Manufacturing Quality Plan(for reference)</td><td>Annexure – 3</td></tr> <tr><td>4.</td><td>Guidelines for QA QC plan</td><td>Annexure – 4</td></tr> <tr><td>5.</td><td>Format for Despatch details</td><td>Annexure – 5</td></tr> <tr><td>6.</td><td>Input Document List</td><td>Annexure – 6</td></tr> <tr><td>7.</td><td>Pre Bid Query Format</td><td>Annexure – 7</td></tr> <tr><td>8.</td><td>Check List</td><td>Annexure – 8</td></tr> <tr><td>9.</td><td>Sub-Vendor List</td><td>Annexure – 9</td></tr> <tr><td>10.</td><td>Specification for Earthing Requirements</td><td>Annexure - 10</td></tr> <tr><td>11.</td><td>Site Conditions & Meteorological Details</td><td>Annexure-11</td></tr> <tr><td>12.</td><td>Packing & Shipping Guidelines</td><td>Annexure-12</td></tr> <tr><td>13.</td><td>Input Drawings</td><td>Annexure-13</td></tr> </tbody> </table> NOTE: Bidder to note that the above annexures are preliminary in nature .These annexures may get revised and /or new annexures will be furnished to bidder. Bidder to however note that they will not be eligible to raise any extra charges on account of this.			LIST OF ANNEXURES			Sl. No	Drawings/Documents	Drg/Doc no	1.	Price Bid Format	Annexure – 1	2.	Master Document List	Annexure – 2	3.	Standard Manufacturing Quality Plan(for reference)	Annexure – 3	4.	Guidelines for QA QC plan	Annexure – 4	5.	Format for Despatch details	Annexure – 5	6.	Input Document List	Annexure – 6	7.	Pre Bid Query Format	Annexure – 7	8.	Check List	Annexure – 8	9.	Sub-Vendor List	Annexure – 9	10.	Specification for Earthing Requirements	Annexure - 10	11.	Site Conditions & Meteorological Details	Annexure-11	12.	Packing & Shipping Guidelines	Annexure-12	13.	Input Drawings	Annexure-13
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	Rev. No.	Date	Revision Details	Prepared By	Checked By	Approved By
	00	17/06/2019	Original Issue	<i>Pras Lamb</i>	PCS	
	Ref.					