

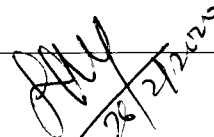
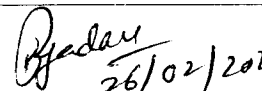
हस्ताक्षर एवं दिनांक		उत्पाद क्रय विनिर्देश PRODUCT PURCHASE SPECIFICATION		PR00559	
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SUPERSEDES INVENTORY NO.	<u>X-RAY FLUORESCENCE ANALYZER (TABLE TOP)</u>																									
	1.0 Name of the Equipment: X-Ray Fluorescence Analyzer- Table Top Energy Dispersive Type (EDXRF). 2.0 Description: Table Top Energy Dispersive X-Ray Fluorescence spectrometer (ED-XRF) complying ASTM D4294, ISO 13032 and equivalent test methods for rapid and accurate analysis of SULFUR CONTENT in fuel oil samples & other different oil samples (Crude oil, lubrication oil, furnace oil, HFO, LDO, Diesel etc.) along with other elemental analysis from "Na to U" for additives and contaminants in Petroleum Products at Thermal Power Plant. Solid and liquid samples would be analyzed through offered system. It must conform to various safety regulatory norms and certificates of compliance should be attached with the offer. 3.0 Technical Specifications: <table border="1"> <tr><td>3.1</td><td>Measurement Principle: Energy Dispersive X-ray Fluorescence (EDXRF).</td></tr> <tr><td>3.2</td><td>Concentration Range for Sulfur (S): 5 ppm - 5%.</td></tr> <tr><td>3.3</td><td>Analysis medium: Medium should be Helium/Vacuum/Air for oil samples and provision for He purging for liquid sample analysis should be available.</td></tr> <tr><td>3.4</td><td>Excitation Source: X-ray tube having window with suitable target & high HV (approx. 50 KV, 1-1000 µA) supply.</td></tr> <tr><td>3.5</td><td>Detector: Silicon Drift Detector (SDD) or equivalent for exceptional light element sensitivity with resolution better than or equal to 135eV at Mn k-alpha line.</td></tr> <tr><td>3.6</td><td>Equipment should provide direct display of concentration of individual elements.</td></tr> <tr><td>3.7</td><td>Power: The Equipment should be operated directly with 230 V, 50 Hz, 1Ø AC.</td></tr> <tr><td>3.8</td><td>Sample Analysis: Sample would be analyzed through offered machine. Samples analysis accessories such as He flushing and sample cups, necessary films (Mylar, polypropylene, polyester foils etc.) is to be provided.</td></tr> <tr><td>3.9</td><td>Sample Chambers: The ED-XRF should be equipped with sample chamber of suitable dimensions. Should have protection from any liquid samples leaks.</td></tr> <tr><td>3.10</td><td>Filters: System should have suitable built-in user programmable tube filters to remove effect of any spectral impurity.</td></tr> <tr><td>3.11</td><td>Calibration: The Equipment should have feature of auto calibration after power on. To check the performance of the equipment/ instrument, after installation and commissioning at site, the Tenderer is required to conduct analysis of Certified Reference Material (CRM) of S, Fe, Cu, Ni & V. In addition, laboratory samples will be also analyzed before acceptance.</td></tr> </table>					3.1	Measurement Principle: Energy Dispersive X-ray Fluorescence (EDXRF).	3.2	Concentration Range for Sulfur (S): 5 ppm - 5%.	3.3	Analysis medium: Medium should be Helium/Vacuum/Air for oil samples and provision for He purging for liquid sample analysis should be available.	3.4	Excitation Source: X-ray tube having window with suitable target & high HV (approx. 50 KV, 1-1000 µA) supply.	3.5	Detector: Silicon Drift Detector (SDD) or equivalent for exceptional light element sensitivity with resolution better than or equal to 135eV at Mn k-alpha line.	3.6	Equipment should provide direct display of concentration of individual elements.	3.7	Power: The Equipment should be operated directly with 230 V, 50 Hz, 1Ø AC.	3.8	Sample Analysis: Sample would be analyzed through offered machine. Samples analysis accessories such as He flushing and sample cups, necessary films (Mylar, polypropylene, polyester foils etc.) is to be provided.	3.9	Sample Chambers: The ED-XRF should be equipped with sample chamber of suitable dimensions. Should have protection from any liquid samples leaks.	3.10	Filters: System should have suitable built-in user programmable tube filters to remove effect of any spectral impurity.	3.11
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समगी सूची संख्या को अधिकृत करता है	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.																									

हस्ताक्षर एवं दिनांक	स्वीकार्यता एवं गोपनीय इस पत्र में दी गयी सूचना भारत हेवी इलेक्ट्रिकल्स की सम्पत्ति है। इसका प्रत्यक्ष एवं अप्रत्यक्ष रूप से किसी भी तरह प्रयोग, जो कि कम्पनी के हित में हानिकारक हो न किया जाये।				

समगी सूची संख्या INVENTORY NO.	हस्ताक्षर एवं दिनांक SIGN & DATE		नाम / NAME		सहमत विभाग AGREED DEPTT.	नाम NAME	दिनांक एवं हस्ताक्षर DATE & SIGNATURE
			निर्माणकर्ता: PREPARED BY		R.P. Meena		
			जांचकर्ता: CHECKED BY		R.S. Yadav		
			पर्यवेक्षणकर्ता: SUPERVISED BY		R.S. Yadav		
			स्वीकृति: APPROVED :		Manish Sachan		
	REV.NO.	01	निर्माण: PREPARED :		R. P. Meena		
	Dt.	26.02.2020	जारी: ISSUED :		R.S. Yadav		

26/02/2020		26/02/2020		26/02/2020	
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final and final SIGN & DATE		उत्पाद क्रय विनिर्देश PRODUCT PURCHASE SPECIFICATION		PR00559		
				पृष्ठ Page	3 2	का of
SUPERSEDES INVENTORY NO.	1 सामग्री सूची संख्या को अधिकृतित करती है	3.12 Software: Windows based software, should have the facility for routine operation & Calibration, re-standardization, qualitative & quantitative analysis, comprehensive X-ray correction models, ability to store results, simple data back-up routine. It should have in-built self-diagnostics provisions. Software should be original version and licensed for life time. It should be upgradable and also GLP compliance				
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.		3.13 Test Duration: 10-600 Sec.				
		3.14 Data Storage: Min. 10,000 readings				
		3.15 Display: Data Display on Machine/ External Desktop Computer.				
		3.16 Data Transfer: USB/Bluetooth/Wi-Fi/RS-232.				
		3.17 Safety: 1. Detector protection in case of sample leakage in sample cell when analyzing liquid samples. 2. Analyzer should confirm to international x-ray safety norms for radiological protection and must be provided with maximum operator safety. Vendors to provide a certificate on the x-ray radiation levels from the instrument. Safety features available on the instrument should be described. The X-Ray tube and detector should be inside radiation enclosure away from the sample loading port. The sample should be transported to X-ray source and detection system with automatic motorized turntable for safety. NOC from Regulatory Agencies/approval from Bangladesh Atomic Energy Regulatory Authority (if required) for the offered instrument should also be submitted.				
स्वत्वधिकार एवं गोपनीय इस दस्तावेज में दी गयी जानकारी को सुरक्षित रखें। इसका प्रयोग केवल उचित अधिकार वाले अधिकारी ही कर सकते हैं। इसकी प्रतिलिपि के बिना इसे प्रसारित नहीं किया जाये।		3.18 Standards: Following CRM in 100 ml quantity each are required: Sulfur(S): Blank (0ppm), 5ppm, 10 ppm & 100 ppm. Fe, Cu, Ni & V: 100 ppm each.				
		4.0 Standard Accessories: Branded PC with i7, windows software, 1TB HDD, 19 inch LED monitor, 4GB RAM and Laser printer, UPS of rating 3KVA or more (as per system requirement) with battery and back up time of 60 Min. High Purity Helium gas Cylinder with 2 stage gas regulator- 01 Set. Sample cups of required sizes -500 Nos. Holder for liquid analysis- 1 set, Necessary films (Mylar Foil – 3 Rolls, Polypropylene – 2 Rolls etc.) for liquid sample analysis. Assembly tools, User Manual and User Interface Guide and Printed Quick Start Guide. Check samples/standards. Any other accessories/software/Hardware for trouble free operation during guarantee/warranty period.				
हस्ताक्षर एवं दिना SIGN & DATE		Calibration & Test Certificate should be supplied along with equipment. Detailed Printed Catalogue must be provided with the offer submitted.				
सामग्री सूची संख्या INVENTORY NO.	REV. NO.	01 Dated: 26.02.2020	निर्माणकर्ता PREPARED BY	R.P. Meena		
			जारीकर्ता ISSUED BY	R.S. Yadav		

BHEL भेल एम डी एम	उत्पाद क्रय विनिर्देश		PR00559	
	PRODUCT PURCHASE SPECIFICATION		पृष्ठ Page	3 3
समग्री सूची संख्या INVENTORY NO.				
1. समग्री सूची संख्या को अधिकृतित करता है				
COPYRIGHT AND CONFIDENTIAL The information on this document is the property of Bharat Heavy Electrical Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company.				
स्वत्वधिकार एवं गोपनीय इस पत्र में दी गयी सूचना भारत भारती की सम्पत्ति है। इसका प्रयोग इस पत्र में उल्लेख के बिना नहीं किया जाये।				
हस्ताक्षर एवं दिना SIGN & DATE				
समग्री सूची संख्या INVENTORY NO.	REV. NO.	01 Dated: 26.02.2020	निर्माणकर्ता PREPARED BY	R.P. Meena
			जारीकर्ता ISSUED BY	R.S. Yadav

5.0 General Terms & Conditions

5.1 Document: One hard copy of O&M Manual in English language giving complete technical information for operation and maintenance of the equipment shall be supplied.

5.2 Installation and Commissioning: The supplier shall install & commission the equipment at 2x660MW Maitree Project Site, Bangladesh. Supplier should demonstrate the performance of the Equipment and all its accessories to ensure compliance with complete specifications & parameters quoted by them to the satisfaction of BHEL/end user. **Cost of I&C should be indicated separately.**

The equipment to be demonstrated as standalone system. Any additional items/consumables / chemicals/ accessories/ software/ Hardware not covered in above scope but required for demonstration, Installation & Commissioning of equipment would be supplied by vendor as part of package.

Failing to comply to the Installation and Commissioning clause, the offer will be rejected straightaway.

5.3 Guarantee: The equipment shall be guaranteed/warranted for satisfactory performance for a period of 24 months from the date of installation/commissioning or 36 months from date of dispatch, whichever is earlier.

Failing to comply to the Guarantee / Warranty clause, the offer will be rejected Straightaway.

5.4 Packing & Dispatch: The equipment / accessories shall be packed in a suitable water Proof/ vibration proof packing box capable of bearing air and road transit hazards. Packing box shall be properly identified and marked with BHEL's (India) Purchase Order Number. Also, "PCRI HWR" should be written in bold letters on all four sides of the packing box.

[Signature]
26/02/2020

[Signature]
26/02/2020