

PROCUREMENT PROCEDURE OF CPRI (NON WORKS)

Revision No. : 04
 Dt of Revision : 27.08.2020
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 Section : Formats
 Topic : Technical Specifications format

Issue No : 2
 Issue Dt : 30.06.2003
 Issued by : P A
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 FORMAT NO.:CPRI/PUR/CTBID/GTP

Section IV T -Technical Specification

CENTRAL POWER RESEARCH INSTITUTE, BENGALURU/BHOPAL Web: www.cpri.in, www.tenderwizard.com/CPRI

Tender Enquiry No: CPRI/BLR20CDD01M659

Description of the Equipment/Goods/Services : Fluorine Content Test Apparatus as per IS 17048 & IEC 60684-2

Note : 1) The technical bid submitted in other than this format is liable to be rejected.

2) All blue fields are mandatorily to be filled in.

Name and address of the bidder					
Quotation Number and Date					
Sl.No.	Technical Specifications/Parameters	Qty	To be completed by the Bidder		
			Details of guaranteed technical parameters offered by the bidder	Guaranteed Technical Particulars (GTP)	Deviations from GTP
1	Place where equipment to be supplied : Cables Laboratory, Cables and Diagnostics Division, Central Power Research Institute, Bangalore.				
2	Scope (supply / supply & Installation / supply, installation & training) : Supply, Installation and commissioning FLUORINE CONTENT TEST APPARATUS AS PER IS 17048 & IEC 60684-2 The system shall be commissioned at the laboratory of CPRI, Bangalore, by the Supplier. Necessary Logistics during commissioning and installation shall be arranged by the supplier.	1 No			
3	GENERAL : The Fluorine Content test apparatus as per IS 17048 & IEC 60684-2 is used to measure the quantity of fluorine present in the Halogen Free Fire Retardant Sheathing and Insulating materials of power cables. The apparatus should be based on Method A : Ion selective electrode method fluoride. The apparatus shall consists of Oxygen Flask combustion unit and Flourine Ion Meter.				
4	<p>TECHNICAL -- Oxygen flask Combustion Unit :</p> <p>All the apparatus used in the fluorine determination should be made of polycarbonate or polypropylene as the fluoride ions react with glasswares.</p> <p>Oxygen flask Combustion Unit : 1) The combustion procedure should be carried out in a sealed oxygen flask inside the combustion unit in order to minimise the potential combustion product leakage.</p> <p>2) The unit shall have two-tungsten halogen lamps mounted in the sides of aluminium chamber contained in a standard enclosure</p> <p>3) It should have reflectors that focus infra red heat from the lamps onto a small area of 10 cm above the center of the chamber.</p> <p>4) There should be a safety provision or interlock so that the lamps can operate only when the chamber door is fully locked.</p> <p>5) Provision of black acrylic window in the door to observe the reaction</p> <p>6) Safety : The combustion unit should be explosion proof. The pressure built up in the chamber should be vented out safely through the holes of the chamber in case of flask explosion and the glass fragments should be contained within the chamber.</p> <p>Oxygen flask : The sample should be burnt in the Oxygen flask and the resulting solution is used to measure the flourine content. The combustion should be carried out in a suitable conical flask into the stopper of which is fused one end of a piece of platinum wire. A flask of 500 mL should be used. Towards the other end of the wire, a piece of platinum Basket should be attached to provide a means of holding the substance clear of the absorbing liquid during combustion.</p>				

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5	<p>FLUORINE ION METER :</p> <p>1) The Ion Meter should be able to measure the fluorine ion concentration using up to 5 calibration points.The Fluorine ion meter should be of mains and battery operated.</p> <p>2)The ion meter shall come with a robust splash proof case. The meter shall be compatible with ISEs (Ion Selective Electrodes) and pH electrodes.</p> <p>3) Fluorine Content Specific Electrode : Ion selective electrode suitable for fluoride measurement with suitable millivolt meter</p> <p>Ion Meter Specification</p> <p>Ion Concentration Range 0.001 to 1990, Selectable Unit ppm, mg/L, mol/L</p> <p>Ion Concentration Accuracy ±0.5% Full Scale</p> <p>mV Range: 400 mV & 2000 mV - Auto Range selection</p> <p>mV Accuracy: ±0.2mV</p> <p>mV & 1 mV</p> <p>Accuracy pH : ± 0.01 pH</p> <p>Range : 0 - 100 deg C</p> <p>Display : LCD</p> <p>Calibration Points: 5 points for Ion Concentration & 3 points for pH Calibration solution and pH Buffer solutions are to be provided for this necessary calibration</p> <p>Temperature Compensation - Automatic</p> <p>compatible with ISE & pH electrodes</p> <p>Resolution : 0.1</p> <p>pH Range : 0-14</p> <p>Temperature Resolution : 0.1 deg C</p> <p>Standard ISAB</p> <p>Connector BNC</p>				
6	<p>Accessories, Chemicals & Standard Solutions :</p> <p>The necessary accessories like Oxygen Flask, Polycarbonate Flask, Polycarbonate beakers, Wire with Platinum Basket, Chemicals dodecanol, sodium hydroxide solution and standard calibration solutions for pH calibration and standard ion calibration solutions ISAB solutions should be supplied.</p>				
7	<p>Input Power Supply : Operating Input Power supply of 220V +/- 10% AC, Frequency 50 Hz +/- 3%.</p>				
8	<p>Environment :Operating conditions: Temperature, Humidity</p> <p>• TEMPERATURE---- Operation : Ambient to +40 °C</p> <p>---- Relative humidity: Typical prevailing ambient humidity 30 to 85 % (non-condensing)</p>				

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9	Spares : Necessary spares for the trouble free operation may be included separately				
10	Calibration : Certificate for the Fluorine Ion meter from NABL (ISO/IEC 17025) approved laboratory. The calibration should cover Fluorine ion concentration range and pH range.				
11	Manuals : Relevant manuals/documents for operation and maintenance Two sets in English to be supplied (Hard copy) • Operation and maintenance • Drawings • Electrical / instrumentation • Technical / Service manuals along with circuit diagrams				
12	Acceptance tests at CPRI laboratory : complete operation of the equipment and controls of the system as per CPRI specification.	Training of the			
13	WARRANTY : 2 years warranty from the date of installation & commissioning of the system				
14	After Sales Service Service : To be provided by local authorized agents for repair and maintenance in case of instrument breakdown or technical problems				

PN: 1) Mere statement of "Complied" do not suffice the requirement. The details of technical parameters in proof of CPRI requirements shall be furnished along with technical write-up, catalogues, brochures, literatures, phampates, or any other documents shall be submitted in hard copy along with technical bid.
 2) Calibration reports/certificates, factory test reports/certificates from an accredited agencies/facilites shall be submitted wherever applicable.
 3) CPRI reserves the right to conduct "predispatch inspection" prior to dispatch at the works of the supplier and the expenditure towards PDI shall be borne by CPRI. However information regarding the rediness of the equipment/machinery for the PDI shall be communicated in writing at least 70 days in advance.