

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
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 FORMAT NO.:CPRI/PUR/ETBID/GTP

Section IV T -Technical Specification

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

Tender Enquiry No: CPRI/BLR20CDD01M660

Description of the Equipment/Goods/Services : Ozone Resistance Test Apparatus as per IS 10810 (Part-13) and IEC 60811-403

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 / suply, installation & training) : Supply, Installation and commissioning OZONE RESISTANCE TEST APPARATUS AS PER IS 10810 (Part-13) & IEC 60811-403. 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 sunnlier.	1 No			
3	GENERAL : The Ozone Resistance test apparatus as per IS 10810 (Part-13) 7 IEC 60811-403 is used to estimate the resistance of elastomeric material and polymeric materials of electric cables to ozone attack . The test apparatus shall consist of Test Chamber, Ozone Generator with High Voltage source & controller, Air Driers/Purifier, Flowmeter Control, Temperature Controlled Chamber, Glass Apparatus to detect by chemical method and Ozone Detector Unit				
4	TECHNICAL -- TEST CHAMBER : 1) The test chamber shall be made of a material which has no reaction with ozone preferably stainless steel. 2) The test chamber volume shall be minimum 36 litres and it should be a refrigerated chamber having provision for both heating and cooling 3) The temperature of the chamber should be controlled by a electronic digital temperature indicating controller using a PT-100 sensor. 4) The range of the temperature required is from 10°C to 80 °C with control accuracy better than ± 1°C 5) The internal chamber shall be accessibl through a door having an adequate closing mechanism and seal to prevent loss of partial pressure or adversely affect the ozone concentration levels throughout the dutation of the test. 6) The door must have a provision or interlock mechanism to prevent the inadvertent opening during the intended duration of the test. 7) The access door shall be equiped with an observation window made up of tempered glass and shall be sealed to prevent loss of partial pressure or adversely affect the ozone concentration during the test. 8) The internal chamber may be equipped with a source of illumination and is intended for intermediate viewing of the specimens. 9) The internal chamber may be equipped with shelves or racks to place specimens and the material of the racks shall not react with ozone preferably stainless steel and the design of the racks shall be in such a way that it minimizes the effect on the introduction, circulation, exchage or exhaust of the air-ozone mixture. 10) Provision for generating, measuring and controlling air-ozone stream concentration and partial pressure is required and the stratification of ozone should be prevented when the air-ozone stream is introduced into the chamber.				

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5	<p>OZONE GENERATOR :</p> <p>The ozone generating source shall be located outside the test chamber and adequate filtration of foreign matter from the stream must be provided. 1) 2) The Ozone generator shall have concentric electrodes, separated by a thin glass dielectric, between which voltage is applied. 3) This generator may be supplied by a High Voltage transformer with maximum voltage in the range of 20-30 kV with a current output of 8 mA and with a control for varying the voltage. Accuracy of High Voltage transformer should be ± 1%. 4) The Ozone generator assembly shall be mounted in a wooden box to ensure complete safety to the operator. 5) The ozone concentration shall be measured directly with an ozone meter or ozone analyzer/Ozone Detector Unit and the ozone concentration of the test chamber shall be 25 to 500 pphm (parts per hunder million) or ppb (Parts Per Billion) and the ozone meter shall have a different selectable ranges from 25 to 500 pphm/ppb 6) Along with the Ozone Detector/Ozone Analyser, all the necessary accessories for chemical method shall also be supplied for</p>	1)			
6	<p>AIR SUPPLY :</p> <p>1) The source of air shall be from ambient or from a compressed air supply and adequate filtration or air driers for removal of moisture of air is required 2) Humidity Indicator which consists of reusable moisture indicating gel shall be provided. 3) The air with the required ozone concentration shall have a flowrate of between 280 l/h and 560 l/h and the air pressure shall be maintained slightly above atmospheric pressure. 4) Flowmeter with Control : It should provide a very fine regulation of air flow in the range of 2 to 20 liters /min</p>	4)			
7	<p>CIRCULATING FAN :</p> <p>To circulate the zir-ozone mixture, an electric fan capable of maintaining the constant velocity throughout the testing shall be provided. 1) 2) The velocity shall not be less than 0.6 m/s as measured at 50 mm from the forward edge of the fan blades on the internal side of the chamber. 3) The fan motor shall not be located within the chamber. The fan motor shall have an extension shaft or drive mechanism that isolates the motor from the internal chamber. 4) The fan</p>	1)			
8	<p>GLASS APPARATUS :</p> <p>1) To collect Ozone gas for determination of Ozone concentration by chemical analysis method.</p>				
9	<p>EXHAUST SYSTEM :</p> <p>1) The test chamber should be equipped with suitable exhaust system and ozone destruction device such as a catalytic unit. 2) The exhaust system must operate in such a way the air-ozone mixture from the test chamber must be exposed to a suitable ozone destruction device or catalytic unit so as not to introduce them to the ambient atmosphere.</p>				
10	<p>Input Power Supply :</p> <p>Operating Input Power supply of 220V +/- 10% AC, Frequency 50 Hz +/- 3%.</p>				

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11	Environment :Operating conditions: Temperature, Humidity • TEMPERATURE ---- Operation : Ambient to +40 °C ---- Relative humidity: Typical prevailing ambient humidity 30 to 85 % (non-condensing)				
12	Essential Spares : The essential spares for trouble free operation for 2 years shall be provided along with the apparatus				
13	Calibration : 1) The ozone meter/Ozone Analyser, flow meter & temperature controller along with test chamber should be calibrated from NABL (ISO/IEC 17025) accredited laboratories				
14	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				
15	Acceptance tests at CPRI laboratory: 1) Training of the complete operation of the equipment and controls of the system as per CPRI specification. 2) Demonstration & validation of the function of Ozone Dertector unit by chemical method at the time of Istallation & commissioning				
16	WARRANTY : 2 years warrantv from the date of installation & commissioning of the system				
17	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, phamplates, 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.