

PROCUREMENT PROCEDURE OF CPRI (NON WORKS)

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 Section : Formats
 Topic : Technical Specifications format

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Section IV T -Technical Specification

CENTRAL POWER RESEARCH INSTITUTE, BENGALURU

Tender Enquiry No : CPRI/BLR23MTD142S1191

Description of the Equipment/Goods/Services : **Supply of Nitrogen Generator with compressor and dryers**

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

2) All fields are mandatorily to be filled in.

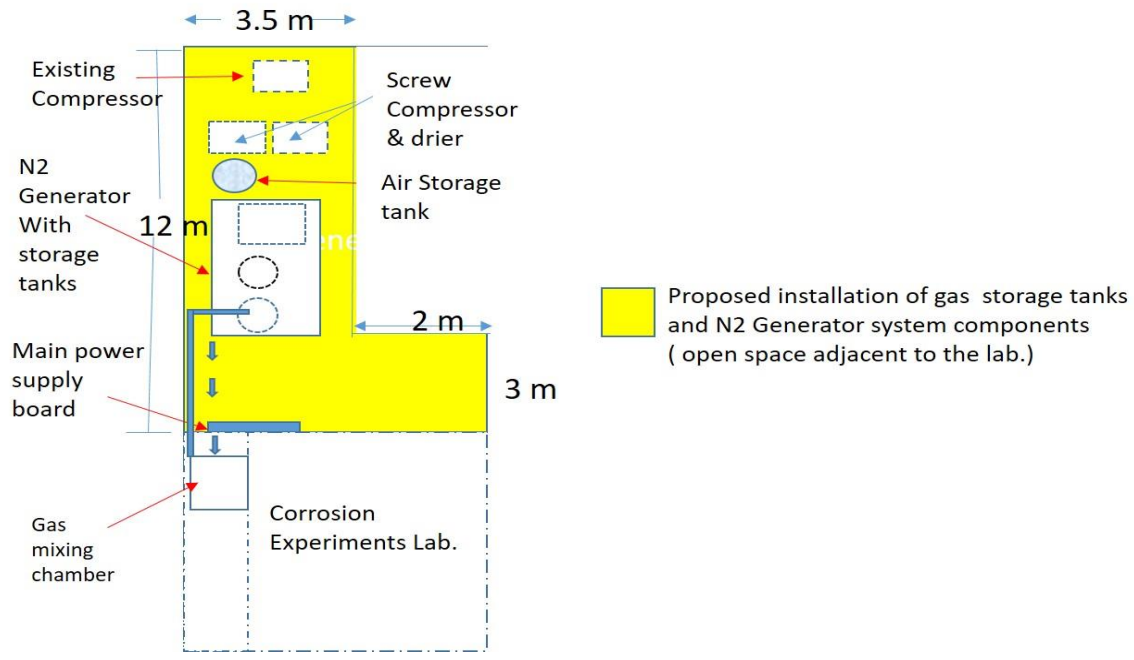
Name and address of the bidder

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	Deviations from GTP
	<p>Application : The Nitrogen generator should be based on Pressure swing adsorption (PSA) Technology and is required for very long duration experimental runs extending upto upto 2000 hrs without interruption.The system should be designed for achieveing the required purity on continuous basis through integration of sub components using corrosion resistant steel piping and Anodized aluminium PSA modular construction .</p> <p>The details of the different components associated with the N2 Generator system are.</p> <p>a) Nitrogen Generator with oxygen analyzer & Nitrogen storage tank b) Air Compressor & Dryer System with pre filters c) Control system for monitoring purity, O2 Content, pressure & safety alarms d) Automatic control system for maintenance of set purities throughout the test duration</p>				
1	Nitrogen Generator with residual oxygen analyzer	1Set			
a	Type - Pressure Swing Adsorption(PSA) type Technology	1 no			
	Molecular Seive Type - Carbon Molecular Seive (CMS)	1 no			
	Range of Nitrogen purity required : 97 to 99.99%	1 no			
	Generation Capacity - minimum 40 m ³ /hr @ 97% purity levels (3% residual oxygen)	1 no			
	Maximum Purity Required - 99.99% at generation capacity of 10 m ³ /hr				
	Construction - Modular type with feasibility of achieving higher nitrogen volume generation of upto 50 m3/hr using addition of CMS module attachment to the existing generator system.	1 no			
b	Oxygen analyzer for measurement of residual oxygen in the generator outlet Type -Zirconium Oxide type sensor with valid test certificate [Galvanic cell type analyzers are not acceptable]	1 no			
c	Inlet Air pre filters for reducing the water/ oil vapour content in the outlet air from the compressor	1 set			
d	Rotameter for measuring volume flowrate (0-100 Nm ³ /hr) with valid calibration certificate	1 no			
e	PSA module material of construction - Non corrosiove stainless steel or Anodized Aluminium				
f	Nitrogen storage tank of Capacity of 500 Litres with Safety valves and manual drain valve. Flow regulator with appropriate needle valves to avoid the back pressure in the storage tank should be provided	1 no			

g	Process tank (Surge tank) : 500 Liters Capacity with Safety and manual drain valve.	1 no			
h	PLC based HMI with Modbus TCP/IP connection for remote monitoring of real time values of parameters such as pressure, purity and failure alarm etc. for automatic control of adsorption and desorption cycle based on the utilization of the gas (Make- Seimens/Delta Electronic/Schneider Electric)	1 no			
i	The country of origin, in case of imported components/accessories, should be mentioned				
j	Offline UPS (1 KVA capacity) for Nitrogen generator should be provided.	1 no			
2	Air Compressor & Dryer System with pre filters				
a	Type- Oil lubricated rotary screw type compressor Motor Rating : Minimum 12 kW Free Air Delivery(FAD) : 110 m ³ /hr minimum Capacity : 500 Litres (vertical mounted with appropriate pressure gauge, drain and control valves) Discharge Pressure - 7 to 8 bar. Outlet air temperature : max. 35 deg (ELGI/Ingersoll Rand /Gardner Denver make)	1 no			
b	Dryer system- Refrigerant type Capacity - 200 m ³ /hr. The dryer system should include suitable pre-air micron filter unit of coalescing type for removal of oil, vapour & particulate.	1 no			
3	Electrical Panel & Interconnecting Piping				
a	Electrical Distribution Panel with electrical cables of length for supply of power to Air Compressor, Dryer & Nitrogen Generator should be provided.	1 no			
b	Pipeline material- Hydraulic Piping or Polypropylene Random Copolymer(PRP) piping from the air compressor side to nitrogen generator side should be provided.	1 no			
4	Warranty	1 no			
a	Warranty for the generator, oxygen sensor and compressor should be minimum of 2 years from date of successful installation and commissioning.				
5	Servicability - Supplier must have local resident service engineer in the region to ensure the direct service support within 24 hrs after the reporting of the issues faced.	1 no			
6	Installation/commissioning services Required				
a	Integration of all the systems components viz. N2 generator, Compressor, Dryer, Filtration system, storage tank, rotameter, Flow control valves and other auxiliaries required for the installation is the part of supplier scope. One no. of LAN port along with AC supply points shall be provided in the location. The performance of the system should be demonstrated after the installation, for the purity levels and the generation capacity. The end of the Nitrogen supply pipeline from the N2 storage tank to the gas mixing chamber located inside the experimental lab, with control valves and rotameter is the vendor scope				
b	Training should be given at the installed site for operation and maintenance schedule should be outlined including safety aspects. The training period shall be minimum of 1 day after the complete installation.				
c	Two hardcopies of manuals, operating instructions, maintenance procedures, safety instructions etc. should be provided along with a soft copy.				

d	Available Power Supply - 440V/50Hz/3Ph with a LAN port Proposed layout of the Generator and compressor system Installation.			
e	All the power cables required for compressor, N2 Generator, dryer etc. and the piping connections till the gas mixing chamber is the scope of the vendor . The installation site location is shown in Fig.1 , below			



- 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 "predispach inspection" prior to dispach at the works of the supplier and the expenditure towards PDI shall be borne by CPRI. However information regarding the readiness of the equipment/machinery for the PDI shall be communicated in writing at lease 7 days in advance.