



Transformer Plant,
BHARAT HEAVY ELECTRICAL LIMITED,
BHEL, JHANSI.

Machine No	SP/CA/9041/B
Quantity	1 No
Spec. No.	CA/9041/B

Note:-

1. The "Offered" Column and where applicable, the "Deviations" Column of this format shall be filled in by the Bidder/ Vendor and submitted along with the offer. An adequate / incomplete, ambiguous, or unsustainable information against any of the clauses of the specifications / requirements shall be treated as non-compliance.

2. The offer and all documents enclosed with offer should be in English language only.

3. Vendor must submit complete information against clause no. 18. The offer meeting this clause would only be processed.

SPECIFICATION CUM COMPLIANCE CERTIFICATE FOR SUPPLY, ERECTION AND COMMISSIONING OF 3000 LITRE

STATIONARY, AIR RESERVOIR

S No.	Description - BHEL's Requirement	Specified	Offered	Deviation(Y/N)	Remarks
1.0	SCOPE				
	The specification covers the requirements of design, manufacturing, supply, erection and commissioning of 3000 Litre capacity air reservoir complete in all respect.	Vendor to confirm			
2.0	GENERAL FEATURES				
2.1	Vendor to furnish details about general construction features alongwith literature , leaflets and sketches	Vendor to submit			
3.0	SPECIFICATION				
3.1	capacity - 3000 Ltr	Vendor to confirm			
3.3	Material of Construction -IS 2062	Vendor to confirm			
3.4	Code of Construction -IS 20825	Vendor to confirm			
3.5	Working Pressure -8.0-10.0 kg/cm ²	Vendor to confirm			
3.6	Design Pressure	Vendor to specify			
3.7	Hydraulic Test Pressure -16.0 kg/cm ² (Min)	Vendor to confirm			
3.9	Corrosion Allowance -1.5 mm of Plate Thickness or better	Vendor to specify			
3.10	Class - II or better	Vendor to specify			
3.11	Shell Thickness - 10 mm(Min)	Vendor to specify			
3.12	Dish Thickness - 12 mm (Min)	Vendor to specify			
3.13	Mounting	Vendor to specify			

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S No.	Description - BHEL's Requirement	Specified	Offered	Deviation(Y/N)	Remarks
18.1	Only those Vendors/Dealers should quote who have supplied and commissioned at least two similar reservoirs of 2KL or more capacity in the past ten years (on the date of opening of tender) and such reservoirs are presently working satisfactorily for more than one year after commissioning (on the date of opening of tender).	Vendor to accept and submit			

<p align="center"><i>[Signature]</i> Arjun Singh Mgr. (WE&S)</p>	<p align="center"><i>[Signature]</i> Y K Dhingra Sr. Engr (WEX)</p>
<p align="center"><i>[Signature]</i> S.J.Chakraborty Sr. DGM (WEX & TEX)</p>	<p align="center"><i>[Signature]</i> A K Shivpuri Sr. Mgr (WEX)</p>
	<p align="center"><i>[Signature]</i> S S Nigam Sr. Mgr (WEX)</p>

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S No.	Description - BHEL's Requirement	Specified	Offered	Deviation(Y/N)	Remarks
3.14	Reservoir should comply all statutory requirement as applicable to pressure vessel and if any certification required shall be arranged by supplier	Vendor to confirm			
4.0	Accessories- Vendor to furnish details related to following and any other accessory used				
4.1	Press Gauge 6" Dial 1/2 BSP Socket and Valves	Vendor to submit			
4.2	Manhole STD size	Vendor to submit			
4.3	Safety Relieve valve	Vendor to submit			
4.4	Auto Drain valve	Vendor to submit			
5.0	ELECTRICAL:				
5.1	Input Power Supply: 3 Phase, 415/ 1 Phase 220 V \pm 10% Volt, 50 \pm 3% Hz	Vendor to confirm			
5.2	Tropicalisation: All electrical / electronic equipment shall be tropicalized.	Vendor to confirm			
5.3	All electrical & electronic control cabinets & panels should be dust and rodent proof.	Vendor to confirm			
5.4	Motors shall conform to IEC or Indian Standards .	Vendor to confirm			
6.0	SAFETY ARRANGEMENTS:				
6.1	Suitable safety arrangements to be made	Vendor to confirm			
7.0	ENVIRONMENTAL PERFORMANCE				
7.1	The reservoir shall conform to following factors related to environment :	Vendor to confirm			
	(a) If any safety / environmental protection enclosure is required it should be built in the reservoir by the vendor.	Vendor to confirm			
	(b) Paint of the reservoir should be oil / coolant resistant	Vendor to confirm			
8.0	LEVELLING & ANCHORING SYSTEM				
8.1	Complete anchoring system including foundation bolts, anchoring materials, fixators, leveling shoes etc should be supplied.	Vendor to confirm			
9.0	SPARES:				

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14.1	Tests/Activities to be witnessed by BHEL representatives at supplier's works before dispatch :	Vendor to confirm			
14.1.1	Test certificates, Specification compliance and performance of the complete supplied system shall be checked and verified.				
14.1.2	Demonstration of all features of the reservoir, control system & accessories.	Vendor to confirm			
14.2	Tests/Activities to be carried out at BHEL works while commissioning the reservoir :	Vendor to confirm			
14.2.1	Demonstration of all features of the reservoir, control system & accessories to the satisfaction of BHEL for efficient and effective use of the reservoir	Vendor to confirm			
14.2.2	Training of BHEL operators/maintenance personnel in operation/maintenance of complete reservoir & accessories etc by the supplier's experts / engineers during their stay at BHEL works	Vendor to confirm			
14.2.3	Demonstration by actual use of all supplied attachments and accessories to their full capacity.	Vendor to confirm			
15.0	PACKING:				
15.1	Sea worthy & rigid packing for all items of complete reservoir , all Accessories and other supplied items to avoid any damage/loss in transit. When reservoir is despatched in containers, all small loose items shall be suitably packed in boxes	Vendor to confirm			
16.0	GUARANTEE :				
16.1	24 months from the date of acceptance of the reservoir.	Vendor to confirm			
17.0	GENERAL : The vendor should submit the following information:				
17.1	Equipment Model	Vendor to furnish			
17.2	Dimension of reservoir	Vendor to furnish			
17.2	Total weight of the system	Vendor to furnish			
18.2	Detailed catalogues, sketch/ photographs of the reservoir and accessories/ attachments should be submitted with the offer.	Vendor to furnish			
18.0	QUALIFYING CONDITION :				

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9.1	Supplier should quote spares & consumables for 2 years continuous operation (@ 24 hr / day basis) of the reservoir Unit. Complete list of spares & consumables is to be provided (along with the offer itself), giving individual item's part identification no., its application, life (in hrs of use), recommended quantity and unit cost.	Vendor to confirm and submit			
10.0	DOCUMENTATION : Three sets of following documents (Hard copies) in English language should be supplied along with the reservoir	Vendor to confirm			
10.1	Operating manuals	Vendor to confirm			
10.2	Detailed electrical circuit should also be supplied	Vendor to confirm			
10.3	Detailed Maintenance manual of reservoir	Vendor to confirm			
10.4	Detailed specification of all rubber items and hydraulic/lube fittings	Vendor to confirm			
10.5	Complete Master List of parts used in the reservoir shall be submitted by the vendor.	Vendor to confirm			
11.0	CIVIL WORK				
11.1	Vendor shall submit the foundation and layout drawing for getting BHEL's approval within one month from the date of Letter of Intent (LOI) / P.O.. The layout should consist of all requirements pertaining to complete reservoir including space requirement for any accessories. BHEL shall construct complete foundation for the reservoir under supervision of supplier and at supplier's responsibility. Vendor should arrange equipments required for the testing of foundation, if required by the vendor. The vendor shall also indicate detailed specifications of grouting compound and Grouting procedure etc. for foundation bolts of the reservoir.	Vendor to confirm			
12.0	ERECTION & COMMISSIONING				

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S No.	Description - BHEL's Requirement	Specified	Offered	Deviation(Y/N)	Remarks
12.1	Supplier to take full responsibility for carrying out the erection, start up, testing of reservoir, it's control & all types of other supplied equipment , etc. Service requirement like power, air & water shall be provided by BHEL at only one point to be indicated by supplier in their foundation/layout drawings. Other requirements like crane and helping personnel shall also be provided by BHEL. Details of these requirements should be informed by vendor in advance.	Vendor to confirm			
12.2	Commissioning spares, required for commissioning of the reservoir within stipulated time, shall be brought by the supplier on returnable basis.	Vendor to confirm			
12.3	Portion, if any, of the reservoir, accessories and other supplied items where paint has rubbed off or peeled during transit or erection should be repainted and merged with the original surrounding paint by the vendor. For this purpose, the vendor should supply sufficient quantity of touch-up paint of various colours of paint used.	Vendor to confirm			
12.4	Schedule of Erection and Commissioning shall be submitted with the offer.	Vendor to confirm and submit			
12.5	Charges, duration, terms & conditions for E&C should be furnished in detail separately by vendor along with offer.	Vendor to confirm and submit			
13.0 OPERATING CONDITIONS :					
13.1	reservoir should work trouble free and efficiently under following operating conditions and should give specified accuracies. Power Supply: Voltage: 3 Phase 415 V/ 1 Phase 220 V - 10%, +10% Frequency: 50 Hz +3%, - 3% No. of phases = 3 Ambient Conditions: Temperature = 5 to 45 degree celsius Relative Humidity = 95% max.	Vendor to confirm			
14.0	ACCEPTANCE: (Tests/Activities to be Performed by Vendor)	Vendor to confirm			