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Enquiry No. :

Date :

dd/ mm/ 2009

SPEC.NO

HVE:S&T: DOOR:09:21/00

SPECIFICATION CUM COMPLIANCE CERTIFICATION FOR SLIDING DOOR CUM MOBILE EM SHIELD FOR IVG

Important NOTES:

1. Vendor must submit complete information against clauses Nos 29.0 and 30.0. The offer meeting these clauses would only be processed.
2. The offer and all documents enclosed with offer should be in English language only.
3. BHEL reserves the right to verify the information submitted by the vendor. The offer with false/ incorrect/incomplete information may be rejected.
4. Vendor shall sign and stamp all sheets
5. Offers submitted shall be valid for a period of minimum 8(eight) months from date of commercial bid.
6. Revised technical bid may be necessary when the specification needs up gradation/ modification on technical scrutiny.
7. Vendor must respond to all points in the specification. No deviation is acceptable.

ADDRESS OF THE SUPPLIER :	ADDRESS OF THE INDIAN AGENT :
TELEPHONE NOS.:	TELEPHONE NOS.:
FAX NOS.:	FAX NOS.:
CONTACT PERSON:	CONTACT PERSON:
E-MAIL ADDRESS :	E-MAIL ADDRESS :

SCOPE: Design, fabrication, supply, erection & commissioning of sliding door cum mobile EM shield for IVG (Impulse Voltage Generator) as per flowing specifications.

Quantity required:	TWO SYSTEMS				
Serial No.	DESCRIPTION OF REQUIREMENT	DESIRED ACTION	OFFERED BY THE VENDOR	DEVIATIONS (IF ANY, ELSE PRINT NONE)	REMARKS(Only on deviations)
1.0	Application: The main purpose of sliding doors is to provide a mobile Electro Magnetic (EM) shield at the material entrance of the high voltage laboratory. The functions of EM Shield and the material door are integrated in this application.	Vendor to note			
2.0	Discription of the equipment: Basically, these are two panel industrial sliding doors with magnetic shielding one side (surface exposed to test area). The panels shall move horizontally to perform close and open functions on an opening measuring 8.0 metres (height) and 7.0 metres wide. The door shall be framed suitably and shall have thermally insulated panels (thickness 40 to 50 mm). The movement shall be motorised and suitably controlled using a floor mounted control panel.	Vendor to conform			
3.0	Appearance: Aesthetics of the offered system is most important. The workman ship should reflect world class standard. Equipment, construction, surface finishes and sub assemblies used shall be stat-of -art. The entire drive and linkage system shall be covered/ concealed.	Vendor to conform and give details including the photographs.			

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4.0	Panel material/ construction: Individual panels shall be framed and reinforced by steel rectangular hollow sections to retain geometrical shape and avoid buckling/deflection of the panels (supplier must guarantee retention of geometrical shape of the panels / assembly). The panel shall have a composite thickness of minimum 40 mm, consisting of metal claddings/ coverings and the thermal insulation. The panel cladding shall be made from prepainted galvanised steel sheet of thickness 0.8 mm or higher (this cladding acts as an electro magnetic shielding). The insulation shall be injected/placed in the cavity to cover 100% volume, without pockets. Industrial Ploy urethane foam (PUF) possessing density of 40 kg/ cubic metre or more can be used for this purpose. This panels shall be sealed for weather proofing and to minimise ingress of moisture/ water through the panels. The cladding exposed to atmosphere shall be suitably treated to withstand climate changes. The inside surface of the panel shall not have any sharp edges, projecting parts (like handles, bolts etc).	Vendor to understand the purpose and to conform the requirement.			
4.1	Sample approval for panel: The successful vendor must submit two panel samples (dimension 300 mm x 300 mm) made from intended material and insulation, for BHEL approval, prior to manufacture of panels.	Vendor to conform			
5.0	EMI Connection : Provision for galvanic connection between cladding, metallic frame, door tracks and common ground/ earth shall be designed and made available by the vendor to discharge all electro-magnetically coupled disturbances. The cladding and frame connections shall be terminated in the guide wheels/ rollers on top and bottom guides which in turn shall be solidly connected to the earth terminal of the door control system. The scheme shall be detailed in technical offer and described in detail by the vendor.	Vendor to conform			
6.0	Travel: Each panel shall travel a minimum distance of 3.65m (3.5m + 0.15 m offset). The over travel shall be controlled by non-contact magnetic limit switches.	Vendor to conform			
7.0	Guide way: Guide way/ track shall be sturdy and suitably reinforced to avoid sagging during life of the door. The track shall have metallic covers to permit trouble free passage of vehicles and to protect gaps in track from collecting dirt/sediments, after the doors are opened.	Vendor to conform			
8.0	Guide/ guide rail and track: Self lubricating / lubricated for life sealed moving components/ systems would be preferred over systems requiring frequent greasing. All steel parts shall be suitably surface treated against rusting.	Vendor to conform			
9.0	Type of service of the doors: Frequent operation (Duty 20%)	Vendor to conform			
10.0	Pass door and windows: NONE	Vendor to conform			
11.0	Lighting arrangement: Suitable illumination at top and in control panel shall be provided by the vendor so that the operation at nights are possible.	Vendor to conform			

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12.0	Maximum Service Temperature: 50 degree C,	Vendor to conform			
13.0	Weight of the doors: Total weight of the door and sub-assemblies shall be specified by the vendor in technical bid.	Vendor to indicate in his details of the system			
14.0	Drive Mechanism				
14.1	Location: The drive mechanism shall be placed at bottom of the door preferably, to support maintenance. The drive assembly shall be easily removable for maintenance.	Vendor to conform			
14.2	Drive: A direct wheel drive is preferred. The gear motor drive shall be a single assembly featuring directly termination of low speed output in drive wheel. The gear housing shall be monoblock to house motor directly without external coupling. The gear shall be concealed and lubricated for life using a standard make AC motor suitable for a variable frequency drive (VFD). The motor shall be directly coupled to the gearbox input, without any external coupling / moving part exposed. The motor shall have the ability to start overcoming inertial, traction and frictional restraints. The motor must be protected by internal thermal over load.	Vendor to conform			
14.3	Drive mechanism: Preferably both the door will have independent drives. The drives shall have a capacity to generated sufficient traction effort to move door panels horizontally. The average door closing time will be below 50 Sec. The doors shall move at a lower speed for about 10% distance during final closing / initial opening. The door closing must be smooth and should not close with impact, crushing on closing edge and sound. Speed variation must be automatic. Silent operation shall be ensured.	Vender to conform.			
15.0	Controls:				
15.1	Control panel: The control panel must be based on state-of-art design and shall meets relevant standards (IP-55). The vendor shall provide necessary provisions to meet all functional operating conditions including the safety aspects.	Vendor must give a detailed information with standard catalogues.			
15.2	Controls required: OPEN, CLOSE, STOP, AUTO/MANUAL, EMERGENCY STOP, Operating time, partial opening, O/L Reset, Power ON, Illumination ON/OFF, Hooter ON/OFF etc. In case remote control is offered the panel shall have LOCAL/REMOTE Mode.	Vendor to conform			
15.3	Control panel location: The control panel shall be located on floor on right side door. Hand held remote control with requisite functions shall be quoted as an optional item. The controller shall additionally have option for selecting/ operating either single or both panels.	Vendor to conform			

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16.0	SAFETY to operating personnel: There shall be interference sensor (like infrared safety sensors) for detecting moving objects/personnel during door closing to ensure personnel safety. Over travel limit switches and mechanical buffers shall be provided with necessary safety interlocks. Flashing warning light and hooter shall be provided to indicate door operation in progress.	Vendor to conform			
17.0	Provision for manual Operation: There must be a provision to operate the doors in case of power failure. The necessary implements / levers shall be included in the offer.	Vendor to conform			
18.0	Power supply for the unit: 415 Volts, 3-Phase, 50 Hz, 4-Wire system	Vendor to conform			
19.0	PRE-DESPATCH INSPECTION (PDI)				
19.1	All routine (relevant) tests shall be performed at supplier's works before dispatch in presence of BHEL representatives. List of tests proposed should be furnished along with the technical offer in Quality Assurance Plan (QAP) proposed by the supplier, so that BHEL verifies assured performance before the final acceptance.	Vendor to agree and submit QAP along with Tech. Bid			
20.0	DOCUMENTATION: Four sets of following documents (Hard Copies) in English should be supplied along with the machine.	Vendor to conform			
20.1	Operating manuals	Vendor to conform			
20.2	Detailed maintenance manuals for motor and drive controls	Vendor to conform			
20.3	List of all major parts	Vendor to conform			
20.4	Test and Guarantee certificates	Vendor to conform			
20.5	Soft Copy of all the above documentation on CD ROM, wherever applicable	Vendor to conform			
21.0	TRAINING				
21.1	BHEL staff to be trained for acquaintance on operation and maintenance of supplied equipment at BHEL, persons shall be trained for mutually agreed period in area of use the equipment, operating instructions, warnings and precautions, location and functions of control instrumentation, interlocks, preventive and periodic maintenance, operating limitations, any unique or potentially hazardous condition which could affect safe operation, etc.	Vendor to conform			
21.2	Vendor should depute an expert conversant in English during commissioning and provide satisfactory guidance/effective training to BHEL staff.	Vendor to conform			

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22.0	COMMISSIONING/ DEMONSTRATION				
22.1	Offer shall be inclusive of Installation, Commissioning and testing (if any) charges.	Vendor to conform			
22.2	The system shall be installed and commissioned by the vendor at the indenter's premises on a mutually agreed schedule after receipt of the equipment. Required tools and tackles/ implements for commissioning shall be arranged by vendor. BHEL shall supply power, water and pressurised air as required. The safety of the E&C team shall be the sole responsibility of the supplier.	Vendor to conform			
22.3	Vendor's responsibility: Basic structure/ civil works required for the installation shall be arranged by BHEL as per approve drawings. The vendor shall clearly indicate his civil/ structural requirements for the installation as soon as his design is finalised on receipt of purchase order. It is vendor's responsibility to ensure all his requirements are met, by interacting with BHEL prior to start of installation. Last minute corrections, if any, shall be to vendor's account.	Vendor to conform			
22.4	Electrical wiring : Electrical line up to control panel terminal block (TB) shall be provided by BHEL. Other connection shall be arranged by the supplier/vendor.	Vendor to note.			
23.0	Service support: Vendor shall support availability of spares and maintenance workforce for more than 5 years from date of commissioning.	Vendor to conform			
24.0	SAFETY ASPECTS: The supplier must take care of all safety aspects in design regarding the equipment and operating personnel. The equipment should have adequate and reliable interlocks to avoid any system damage and shall ensure personnel safety.	Vendor to conform			
25.0	PACKING: Rigid packing for all items of complete equipment, all accessories and other supplied items to avoid any loss / damage in transit. When equipment is dispatched in containers, all small loose items shall be suitably packed in boxes.	Vendor to conform			
26.0	PERFORMANCE GUARANTEE (PG): 12 months PG, from the date of commissioning and acceptance of equipment shall be offered.	Vendor to conform			
27.0	Equipment Weight : Weight of major components and sub-assemblies shall be furnished for planning packing, transport/ logistics.	Vendor to specify			
28.0	Delivery Schedule: The supplier shall quote minimum delivery schedule for design, manufacture and supply of the equipment.	Vendor to specify			
29.0	Annexures to technical offer: Detailed catalogues/ drawings / schematic of the offered equipment, control & accessories, attachments etc to shall be submitted along with the offer to substantiate claims.	Vendor must supply			
30.0	Qualification Requirements:				
30.1	The vendor shall have an experience of minimum three year in design and manufacture of motorised industrial doors.	Vendor to conform with complete details.			
30.2	The vendors should have supplied identical systems/ equipment. The vendor shall submit a reference list along with the technical offer.				
30.3	The vendor must have service outlets / service personnel posted in India to support the equipment as and when required by BHEL.				
30.4	Offered design should have been deployed and proven for a period of more than 12 months.				