

SCOPE: SUPPLY, ERECTION & COMMISSIONING OF IGRED ALONG WITH ITS ACCESSORIES FOR IR-192 RADIOACTIVE SOURCE AS PER SPECIFICATION BELOW

SL.NO.	DESCRIPTION FOR BHEL REQUIREMENT		ACTION BY VENDOR	OFFERED	DEVIATIONS	REMARKS
1.0	PURPOSE					
	Portable Industrial Gamma Ray Exposure Device(IGRED) for Iridium-192 source, with essential accessories, suitable for industrial radiography of casting, forging, fabricated / welded assemblies etc.		Vendor to confirm			
2.0	SCOPE OF SUPPLY : 1 SET of following items :					
	DESCRIPTION	QUANTITY				
	Main Equipments :					
2.1	INDUSTRIAL GAMMA RADIOGRAPHY EXPOSURE DEVICE/ SOURCE PROJECTOR WITH LOADED SOURCE OF MIN 50 CURIE :	02 Nos.	Vendor to confirm			
2.2	SOURCE MOVEMENT CONTROL UNIT / CRANCKING CABLE (Reel type having length of min. 50 feet):	01 No.	Vendor to confirm			
2.3	GUIDE TUBE (Approx 7 feet long) :	01 No.	Vendor to confirm			
2.4	EXTENSION TUBE (Approx 7 feet long) :	03 Nos.	Vendor to confirm			
2.5	TUNGSTEN COLLIMETER :	01 No.	Vendor to confirm			
	Essential Accessories :					
2.6	PIGTAIL/ SOURCE HOLDER (Suitable for above source projector) :	05 Nos.	Vendor to confirm			
3.0	TECHNICAL REQUIREMENT :					
3.1	SOURCE PROJECTOR :	[A] Projector/Housing cover shall be made of stainless steel and Shielding should be made of depleted Uranium with adequate thickness in order to minimise radiation leakage.	Vendor to confirm			
		[B] Shielding of the projector should be capable to accommodate min. 100 Curie Ir-192 radioisotope with Radiation leakage should not be more than specified limit prescribed by AERB.	Vendor to confirm			
		[C] Projector shall be equipped with connector for coupling of guide tube and control cable. Connector coupling should facilitate smooth movement of Ir-192 source mounted on pigtail during exposure and retraction of source from and into the source projector.	Vendor to confirm			
		[D] Proper locking system should also be provided for controlling unwanted movement of source when kept inside projector in ideal condition.	Vendor to confirm			
		[E] The source projector shall be provided with suitable handling device for easy movement and stable positioning.	Vendor to confirm			

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3.2	CONTROL UNIT/ CRANKING CABLE :	Suitable for quoted IGRED. Should be reel type, min. 50 feet length, facilitate free movement, shall have system to identify the source position and proper locking system	vendor to confirm			
3.3	GUIDE TUBE & EXTENSION TUBE :	suitable for quoted IGRED with fixed stop guide tube and extension tubes, approx. 2.1 meter / 7 feet each in length, well protected, shall not make any resistance to source movement, flexible with protection cover.	Vendor to confirm			
3.4	PIGTAIL :	suitable for the quoted radiography device model will be provided with traceability certificate.	Vendor to confirm			
		shall have flexible with provision to crimp / swage the sealed source or capsule on one end, while the opposite end of this pigtail should have a connector for connecting source drive cable (teleflex cable). shall not make any resistance to movement in guide / extension tube	Vendor to confirm			
3.5	TUNGSTON COLLIMETER :	Shall have 60 or 90 degree side opening, interface with extension tube, trouble free movement of Pigtail with source inside collimeter.	Vendor to confirm			
3.6	Locking System :	Source projector assembly shall be provided with damage proof & radiation leak proof locking mechanism.	Vendor to confirm			
		Shall have full proof system to ensure complete retraction of source inside source projector.	Vendor to confirm			
		shall have proper locking system to prevent any unintentional operation.	Vendor to confirm			
3.7	Lock cover & Guide tube connector cover :	shall be provided with protective cover to prevent damage to the control connecting system and guide tube connecting system.	Vendor to confirm			
3.8	Source Guide Tube Interface :	The device shall be provided with safe Interface to connect guide tube / exposure device to the source connector/pigtail.	Vendor to confirm			
3.9	Safety of Operation :	The connection system shall prevent the projection of source from the housing.	Vendor to confirm			
3.10	Safety of Radiation Source :	The connecting system shall ensure that the guide tube/exposure device shall not get disconnected while in operation.	Vendor to confirm			
3.11	Weight & Dimension of IGRED :	Weight of the quoted IGRED model should not be more than 25.0 kg. Actual weight & dimension of the same should be provided.	Vendor to confirm & specify			

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3.12	Design & safety parameter :	Shall meet the AERB & IAEA regulations.	vendor to confirm and provide relevant document			
		Shall be type approved by the AERB for operation in India. Copy of type approval certificate from AERB should be provided.	vendor to confirm and provide relevant document			
3.13	Transport Index :	Type B(U) as specified by IAEA.	vendor to confirm			
3.14	Label :	label of radiation danger with sign, serial no. of device etc. shall be well incrypted on the body of the device as per the requirement of IAEA/AERB.	vendor to confirm			
4.0	GENERAL REQUIREMENT :					
4.1	Literature :	[1] Vendor to provide detail about quoted Device Model & its accessories as mentioned in scope of supply of this specification along with its technical feature in details with catalogues.	Vendor to confirm & provide relevant document			
		[2] Vendor to provide 2 sets hard copy as well as soft copy of operational / instructional manual and maintenance manual in English language of IGRED and applicable accessories.	Vendor to confirm & provide relevant document			
4.2	Warranty :	Min. 12 months warranty period from the date of commissioning shall be given for IGRED and its accessories.	Vendor to confirm & Agree			
4.3	Training :	Training should be imparted free of cost to our operators & maintenance staff on operation, routine maintenance and trouble shooting for min. 2 days so that they should be in a position to run / maintain the system, independently at BHEL works.	Vendor to confirm & Agree			
4.4	Annual Maintenance Contract (AMC) :	The Vendor has to provide AMC for minimum 5 years from date of commissioning. The Vendor has to quote for AMC with detailed scope of work. (NOTE:AMC is to be quoted seperately and it will not be considered for evaluation of lowest bid)	Vendor to confirm & Agree.Vendor to Quote seperatly but along with offer.			

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5	QUALIFYING CONDITIONS :				
5.1	The Offered equipment shall have approval of AERB (Type/model approval) for installation & safe use in INDIA.	Vendor to confirm & furnish relevant document			
5.2	Vendor should be OEM or their technically competent authorized representative. Authorization letter from OEM (in the case of not directly quoted by OEM) for quoting their device and providing installation & commissioning at BHEL works and after sales service to be submitted along with offer.	Vendor to confirm & furnish relevant document			
5.3	Vendor must have service centre in India to support maintenance/ after sales service of the device as and when required by BHEL.Maintenance support /after-sales service to be available within 1 week of intimation to the vendor. Detail about which has to be provided along with offer.	Vendor to confirm and provide details			
5.4	OEM/Authorized agent will provide detail of atleast one customer in INDIA, where quoted device model has supplied in last five years and the performance certificate should be obtained from same customers indicating satisfactory performance of quoted device. Performance certificate should be issued after atleast one year of commission date of equipment, but within one year from tender opening. Details of customer shall be given as :	Vendor to confirm & furnish relevant document			
5.4.1	Name,designation, Phone No., Fax No. and E-mail address of the contact person/issuer of the Performance Certificate of the customer is to be informed.	Vendor to provide			
5.4.2	Complete postal address of the customer.	Vendor to provide			
5.4.3	Year of commissioning.	Vendor to provide			
5.5	Service after sales of the equipment & supply of spare parts shall be guaranteed for atleast 5 years from date of commissioning of quoted device. In this regard, guarantee certificate should be provided by Original equipment manufacturer on its letter head along with offer for : [A] Guaranteed supply of spare parts of quoted device & its accessories for atleast 5 years from date of commissioning. [B] Guarantee for providing smoothly after sales service for atleast 5 years from date of commissioning.	Vendor to confirm & agree. Also furnish required document along with offer			
6	DETAILS TO BE FURNISHED WITH THE OFFER :				
6.1	The Documents required as per the qualifying conditions laid down in cl. 5 of this specification	Vendor to confirm & furnish relevant document			
6.2	Detail about quoted Device Model & its accessories as mentioned in scope of supply of this specification along with its technical feature with catalogues.	Vendor to confirm & furnish relevant document			
6.3	Documents pertaining to Annual Maintenance Contract	Vendor to confirm & furnish relevant document			
6.4	Point wise reply to each & every point of our specification is a must. If not complied, then the offer will not be considered.	Vendor to confirm			

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7.0	INSTALLATION & COMMISSIONING :				
7.1	Vendor to arrange for installation & commissioning within one month from date of information from BHEL, Bhopal, after receipt of the equipment at BHEL, Bhopal. Visual inspection of supplied equipment & accessories for its identification & any damage will be done in presence of vendor's representative.	Vendor to agree			
7.2	Vendor will make installation & commissioning of quoted device in BHEL Bhopal free of cost and proved at BHEL Bhopal in all parameters of its performance.	Vendor to agree			
8.0	ACCEPTANCE CRITERIA AT BHEL BHOPAL :				
	At the time of installation & commissioning at BHEL Bhopal, Following points will be checked and has to be satisfied.	Vendor to agree			
8.1	Visual inspection of IGRED & its accessories for its identification & any damage.	Vendor to agree			
8.2	Checking of radiation shielding of IGRED filled with 50 Curie Ir-192 source, which should meet the prescribed value as per AERB guideline.	Vendor to agree			
8.3	Documentary evidence provided by source loading agency regarding source size & its strength in Curie at the time of loading of source.	Vendor to agree			
8.4	Smooth functioning of cranking unit & its counter reading for to and fro movement of drive cable				
8.5	Smooth fitment of pigtail with one end of drive cable which will move inside cranking unit.	Vendor to agree			
8.6	Smooth Locking & Un-Locking system of IGRED.	Vendor to agree			
8.7	Smooth fitment of guide tube & extension tube with IGRED.	Vendor to agree			
8.8	Smooth movement of pigtail inside guide tube, upto tip of guide tube & retract back inside IGRED	Vendor to agree			
8.9	Safe return of source inside IGRED and indicating mechanism for complete retrieval of source inside IGRED.	Vendor to agree			
8.10	Supply of hard & soft copy of operational / instructional manual and maintenance manual in English language of quoted device and applicable accessories.	Vendor to agree			