TECHNICAL SPECIFICATIONS for 100Ci Co-60 source projector(Exposure device /Camera)

S. No.	PARTICULARS	BHEL SPECIFICATIONS	Bidder's OFFER [With Complete Technical Details]
1.0	Area of Application	For Gamma Radiography of materials and welded structures made of Steel, with thickness ranging from 50mm to 200mm.	
2.0	Principle of Operation	Gamma Ray source projector (Exposure device) is a shielding container with the provision to take out the isotopic source for Radiographic exposure with the help of a Teleflex driving system, and to retrieve the isotope back to the shielding container at the termination of the exposure, for safe storage .The projector shall have the safe locking mechanism and connector selector assembly for safe handling of the isotope.	
3.0	Design Base	Projector should be designed, tested and manufactured to meet the requirements of ANSI N-432-1980, ISO 3999-1 2000E,IAEA TS-R-1 (1996), USNRC 10 CFR34, 10CFR71 and 49CFR173.Additionally the projectors should be designed, manufactured and serviced under a QA program that has been accredited to ISO 9001(2000) and approved in accordance with USNRC 10CFR71,Subpart H.	
4.0	Constructional Features	The exposure device body containing depleted Uranium shield, locking mechanism, outlet port, protective covers etc. The device body consists of a titanium "s" tube to house the flexible source pigtail. A control unit comprised of crank and gearbox, a pair of control housing, a Teleflex drive cable and a safety connector assembly. The source guide tube with flexible stainless steel tubes with protective poly vinyl covering and provision to fit with the projector.	
5.0	Specification of the equipment	The details as given below	
5.1	Capacity of the source projector	100 Ci Co-60 Radioisotope .The projectors shall be certified type B (M) package.	
5.1	Shielding Material	Depleted Uranium	
5.2	Source Conduit in exposure device	'S'type	
5.3	Material for conduit	Preferably Titanium	
5.4	Material for outer	Stainless Steel / Impact resistant plastic	

	casing		
5.5	Weight of camera	Shall be Less than 250 Kgs	
5.5.1	Trolley	The equipment shall be mounted on the trolely having suitable wheels	
5.5.2	Accessories	Equipment shall have compatible front guide tube,driving unit,collimeter,and other required accessories,safety devices etc	
5.6	Connector assembly and Lock	The control unit connector assembly and the connector safety lock shall be preferably mounted at the backside of the projector.	
5.7	Control unit	Reel type control unit system comprising the basic control unit, a control housing assembly, a Teleflex drive cable and a safety connector assembly. The control housing assembly consists of an outer sheath of flexible metal composite cable with a polyvinyl cover and a Teflon inner lining. The Teleflex driving cable consists of spiral wound flexible steel. The length of the control cable shall be 50 feet to facilitate the source travel of at least up to 35 feet.	
5.9	Source guide tube	Source guide tubes shall be flexible stainless tubes with a protective poly vinyl covering and can be used in 7 Feet lengths up to 35 feet. Intermediate and termination source guide tubes which are interconnectable to provide required length, and the termination tube shall have a permanent fixed source stop.	
5.10	Source assembly(Pig tail)	The source assembly shall consist of a hermetically sealed capsule attached to a leader cable. The opposite end of the leader cable shall have a connector for positive attachment to the source drive cable.	
6.0	Packaging	Projector should meet IAEA and USNRC requirements for type B packaging	
7.0	Type approval	The projector shall have the Type approval from Atomic Energy Regulatory Board, Mumbai	
8.0	Safety and Quality Standards	a. Supplier to ensure Safety and Quality of Cobalt 60 PROJECTOR and source System, which shall conform to International Standards. b. Conformance certificate to be given along with the equipment	
9.0	Consumables for Main Equipment & Accessories	BIDDER has to list down the CONSUMABLES to be used in the Operation of the Equipment and QUOTE with UNIT RATE for all the listed consumables, to be procured with the equipment.	

10.0	Inspection	The system and accessories (consisting of the items mentioned in the scope of supply) shall be offered for Inspection by BHEL and Performance Prove-Out.
11.0	Installation and commissioning	The system and accessories (consisting of the items mentioned in the scope of supply) is to be installed & commissioned at BHEL Works, FREE OF COST, by the Service Engineer of the SUPPLIER.
12.0	Documentation in ENGLISH Language	3 Copies (In English) of the Operation & Maintenance Manuals
13.0	Performance Guarantee	The system and accessories (consisting of the items mentioned in the scope of supply) are to be guaranteed for its performance for a minimum period of two years from the date of performance acceptance at BHEL Works.
14.0	Service and Spares Support Requirements	Vendor shall ensure after the guarantee period, through trained service personnel in India for next 5 years as and when need arise. Spares to be made available with in 1 week.
15.0	Training on Operation & Maintenance	Complete Training for 2 BHEL Engineers is to be given on Operation & Maintenance of the OFFERED Training has to be provided at BHEL Works, after the successful commissioning of the Equipment & Accessories.
16.0	Qualifying criteria	Bidder has to comply with the qualifying criteria as mentioned in Annexure-I of this specification.

Annexure – 1
To
100Ci **Co-60** source projector (Exposure device /Camera**)**

QUALIFYING CRITERIA FOR THE SUPPLY

SECTION – I

The BIDDER / VENDOR has to compulsorily meet the following requirements to get qualified for submitting an offer for the Optical Vacuum Spectrometer.

S. No.	REQUIREMENTS	VENDOR's COMMENTS
1.0	The BIDDER / VENDOR shall have a minimum of FIVE Years of Continuous Experience in the Design, Manufacture of 100Ci Co-60 source projectors. Indicate the actual experience.	
2.0	The BIDDER / VENDOR shall have supplied at least one number of 100Ci Co-60 source projectors within the last five years. Indicate the number of equipment (of QUOTED MODEL) sold in India & Other Countries.	
3.0	Reference List of Customers and Performance Certificate from CUSTOMERS (minimum 2 Customers) with full contact details of CONTACT PERSON.	

SECTION – II

The BIDDER / VENDOR has to comply with the following, for accepting the Technical Offer for scrutiny by the Purchaser:

S.No.	REQUIREMENTS	VENDOR's COMPLIANCE
1.0	The BIDDER / VENDOR shall submit the offer in TWO PARTS - Technical **[with PART A & PART B]** & Commercial and Price Bid. The Technical Offer shall be in line with the BHEL Technical Specifications and the Guidelines or Annexure mentioned, wherever applicable.	
2.0	The Offer shall contain a comparative statement of Technical Specifications given by BHEL and the Offer Details submitted by the Bidder, against each clause. A just 'CONFIRMED' or 'COMPLIES' or 'YES' or 'NO-DEVIATION' or similar words in the technical comparative statement may lead to disqualification of the Technical Offer.	
3.0	The BIDDER / VENDOR shall assure a continuous support for SPARES and SERVICE for four years, from the date of commissioning of the equipment at BHEL Works.	
4.0	The Technical Offer shall be supported by Product Catalogue and Data Sheets in ORIGINAL and complete technical details of 'Bought-Out-Items' with copies of Product Catalogue and Selection Criteria	

5.0	The Commercial Offer (given with the Technical Offer) shall contain the Scope of Supply and the Un-Priced Part of the Price-Bid, for confirmation of Scope of Supply.	
6.0	The reference List of Customers shall be accompanied with the details (Phone Number / E-Mail ID) of the CONTACT PERSON for cross reference by BHEL	

SECTION– III

Bidder has to give following information in detail along with the technical bid

S. No.	PARTICULARS	VENDOR's RESPONSE
1.0	Number of Years of Experience of the BIDDER/ VENDOR in the field of design, manufacture and supply of **'100Ci Co-60 source projector (Exposure device /Camera)'**	
2.0	YEAR of LAUNCH of the Model quoted against this ENQUIRY	
3.0	Is there any other model launched after the quoted Model? Otherwise, indicate the likely year in which the next model is likely to be launched	
4.0	Number of 100Ci Co-60 source projectors supplied, installed and commissioned till date, in the QUOTED MODEL	
5.0	Number of 100Ci Co-60 source projectors supplied, installed and commissioned till date for the following category of CUSTOMERS (within INDIA): a) Government Organisations b) Private Sector Companies [Large Scale Industries]	
6.0	Number of 100Ci Co-60 source projectors supplied, installed & commissioned till date in the following Category (around the GLOBE) : a) Universities b) R&D Labs c) Reputed Heavy Engineering Works / Manufacturing Firms	
7.0	Details of Design Set-Up and Technology Back-Up assured for the PRINCIPAL Equipment Maker	
8.0	Details on International Standards followed in Design of the System	
9.0	Comprehensive Details on Performance Testing - of the Equipment quoted, to be ensured in presence of BHEL Executives, prior to dispatch from Supplier's Works	

10.0	Details of Quality System followed (Kindly furnish the salient aspects of the QA system followed)	
11.0	Details on SERVICE-after-SALES Set-Up in India including the addresses of Agents/Service Centers in India and Asia	
12.0	Any Additional Data to supplement the manufacturing capability of the BIDDER	