

INDIAN INSTITUTE OF TECHNOLOGY-KANPUR
(DEPARTMENT OF MECHANICAL ENGINEERING & NUCLEAR ENGINEERING & TECHNOLOGY PROGRAM)

Subject: Request for Uploading the Tender Document on institute web site.

Enquiry NO: SP/NET-ME/2014-2015-03 closing date: 27th February 2015

Through: Head, Mechanical Engineering & Nuclear Engineering & Technology Program

Sealed quotations are invited in two bid system (separate envelops for technical & commercial) by the undersigned for Purchase of following items.

Name of Item: Neutron Shield and Howitzer for $^{238}\text{Pu-Be}$

Technical Specifications

1. Shield required to reduce the combined neutron and gamma dose from a 5-Ci (18MBq) marked $^{238}\text{Pu-Be}$ source to 1 $\mu\text{Sv/hr}$ on the outside surface of the Howitzer with the source chamber in the open position. Suggested material:
 - a. High density polyethylene for neutron shielding. Borated would be favored.
 - b. Lining to shield gamma-rays.
2. Must be portable and have wheels on the base.
3. Must contain a cylindrical tube to allow insertion of the source. The insertion tube must:
 - a. Be at least 9 cm in diameter
 - b. Contain a plug/cap to seal the howitzer
 - c. Contain a holder for the source or support for the source
4. Must come with a source handling tool for the above specified cylindrical source insertion tool.
5. Must contain a cadmium-lined activation chamber.
6. Must be able to withstand temperatures 0°C to 50°C. (at least)
7. Will need to demonstrate through design calculations the effectiveness of the Howitzer in reducing the combined neutron and gamma dose
8. Will need to provide instructions manual
9. Will need to provide composition of the material and geometry details in order for IIT-K to perform independent calculations

10. Will need to arrange delivery of the item to the IITK campus

Terms & Conditions

1. Payment: As IITK standard terms.
2. Taxes: as applicable
3. Delivery: earliest possible time
4. Validity of quotation: 60 days.
5. Inspection: to be carried out at our place.
6. Please attach proprietary certificate if it is applicable.
7. Warranty one year.



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