

AbstractID: 6844 Title: Brachytherapy source disposal: Survey of available services

Purpose: To review the required procedures involving the disposal of unneeded brachytherapy sealed sources and present selection criteria with a survey of available services.

Method and Materials: A total of 663 mCi of unneeded Cs-137 in 25 sealed tube sources ranging from 7-42 mCi were required by the state regulatory agency to be removed from hospital inventory. An analysis of all steps needed for removal, packaging, and transportation of the sources to a qualified disposal site was undertaken. Criteria for selecting a commercial service were developed, including previous experience, references, insurance coverage, cost, adequate licensing, shipment design, transportation details, leak testing, and safety procedures.

Results: Seven commercial brokers that were considered consisted of two general types: those with associated couriers, but unable to handle the individual sources, and those with a third-party express shipper, though able to handle the sources during packaging. Experience varied from 2-40 years and cost varied from \$5K - \$22K. While all would provide copies of licenses, insurance certificates, and references, experience with medical sources, details of handling, transport, and possession transfer differed. A review of the transport and labeling regulations governing radioactive materials was made, including DOT specifications for shipping containers. A legal distinction between title transfer and possession transfer is also discussed. Finally, a calculation is made to verify the lead thickness of tube-source containers proposed by the brokers.

Conclusion: A wide range of disposal services is available, with varying abilities of vendors to transfer the sources into the shipping cask and transport them. Surprisingly, those with accompanying courier services did not offer source handling assistance, while those using a third party express shipper would provide this. No correlation between price and transportation methods was observed. Though each company was insured, an apparent lack of concern regarding shipment security was noted.