

SOURCE LOADING/UNLOADING IN GAMMA RADIATION PROCESSING FACILITY (GRAPF)

1.0 Preparation

- 1.1 Loading, unloading and handling of radioactive sources shall be undertaken under close supervision of Radiological Safety Officer under a well-defined radiation protection program.
- 1.2 Source loading/unloading operations shall not be carried out if all the operating, control and safety systems are not functioning in the intended manner.
- 1.3 Motive power for source and product movement shall be disabled during source loading/unloading operations.
- 1.4 Mock runs shall be carried out with dummy sources prior to undertaking actual operations using proper tool for picking & lifting of source pencils.
- 1.5 The hoist to be used for lifting the source transport cask shall be tested periodically through the authorised testing agency and valid certificate of testing shall be submitted to regulatory body prior to source loading operations.
- 1.6 Radiation safety assessment of the whole operation shall be made by Radiological Safety officer and protection and safety shall be optimized.

2.0 Source Loading/Unloading Operation

- 2.1 Procedures described by the manufacturer/supplier and accepted by the Competent Authority shall be strictly adhered to.
- 2.2 Radiation survey of the transport cask including external radiation survey and external removable contamination shall be performed prior to opening it.
- 2.3 Proper under water lighting system in the water pool shall be provided to facilitate smooth source handling operation.
- 2.4 It shall be ensured that water inside the pool remain clear for proper visibility for the operation.
- 2.5 It shall be ensured that no inflammable or explosive material is present in the vicinity of area of sources loading/unloading operation.
- 2.6 All source loading/unloading operations shall be carried out by trained personnel of source supplier.
- 2.7 The personnel involved in source loading/unloading operation shall use appropriate safety gears such as safety belts and helmet.
- 2.8 The physical barrier shall be used during source loading/unloading operation to prevent accidental fall of any personnel inside the water pool.

2.9 All personnel involved in the operation shall be monitored with personnel monitoring badges and pocket dosimeters and individual dose records shall be maintained.

2.10 Good housekeeping practices shall be observed during and after source loading/unloading operations to prevent any abnormal situations/incidents.

3.0 Emergency

3.1 The source supplier shall provide assistance to handle any emergency situations involving radiation source and ensuring safe disposal, if necessary.

3.2 In case of any emergency or abnormal situation during the operation, the source shall be brought back to its fully shielded position either in the cask or shielded position in the radiation processing facility.

4.0 After Completion of Source Loading/Unloading

4.1 The record of the position of each source unit in the source rack and its activity as on date shall be maintained.

4.2 Following the source loading operations, source supplier shall carry out internal contamination survey of the empty transport cask by taking swipe samples from inside the cask cavity.

4.3 After completion of source loading/rearrangement/redistribution operation, report on the above operation, radiation protection survey and product dosimetry report shall be submitted to Regulatory Body. The routine operation of the radiation processing facility shall be subject to obtaining prior licence/ permission from the Competent Authority.