

LIFE CYCLE OF THE NUCLEONIC GAUGE - RESPONSIBILITIES ASSIGNED

	Responsibility assigned	Nature
Manufacturing of the Nucleonic gauge and supply	Manufacturer (Indigenous) and his authorised representatives as Supplier	<ul style="list-style-type: none"> - Obtain AERB Design approval of device - Obtain Authorisation for commercial manufacturing as per AE(RP)R, 2004
Import of the Nucleonic Gauge	Supplier (Imported)	<ul style="list-style-type: none"> - Obtain NOC/ Type Approval of device
Procurement of the NG	User (applicant)	<ul style="list-style-type: none"> - Obtain procurement permission
Installation of the NG	Supplier (Indigenous/imported)	<ul style="list-style-type: none"> - Generate installation report
Operation of the NG	User (Licencee)	<ul style="list-style-type: none"> - Obtain Registration for operation as per AE(RP)R, 2004
Movement/ Relocation of NG	Licencee Supplier	<ul style="list-style-type: none"> - Obtain movement permission - For relocation- installation permission - After relocation- Installation report
Preventive and breakdown maintenance	Supplier(Indigenous/ Imported) Licencee	<ul style="list-style-type: none"> - Maintenance report to User - Annual safety status report
Routine radiation monitoring and swipe test checks	Licencee/ Radiological Safety Officer	<ul style="list-style-type: none"> - Annual safety status report
Security of the Source	Employer / Licencee	<ul style="list-style-type: none"> - Declaration in Annual Safety Status report - Inventory status
Disposal of the Source	Employer/ Licencee Supplier(Import) Supplier(Indigenous)	<ul style="list-style-type: none"> - Obtain disposal permission - Export to country of origin - Transport to identified sites

MODEL EMERGENCY RESPONSE MANUAL

An emergency response manual (ERM) for a facility handling IRGD incorporating beta/gamma sources is likely to be brief and simple. However, the ERM for a facility handling well logging sources would need to be more detailed. This is only a sample ERM where a limited number of emergency scenarios have been addressed. The ERM developed by the facility should include all possible realistic emergency scenarios and devise the action plan for each such scenario.

The following action plans for the emergency scenarios should be implemented by the RSO/licensee. In all cases, intimate AERB regarding the emergency within than 24 hours of its occurrence.

IV.1 Emergency Scenario: Receipt of an IRGD/nucleonic device from the supplier in a damaged condition

- (a) Contact the carrier and check how the device was damaged
- (b) Inform AERB, and the supplier/manufacturer of the device that the IRGD was received in a damaged condition
- (c) Measure the radiation level around the device and record the observations
- (d) If the measured levels are in excess of the prescribed limits, report the matter to AERB. Provide adequate shielding and transfer the IRGD in an exclusive storage room.
- (e) Ensure that adequate security is provided to the IRGD until the emergency is terminated.
- (f) Act as advised by AERB, for safe disposal of the device if the device along with source is damaged.
- (g) If the device is examined by the supplier and thereupon declared safe for installation and operation, or after the device has been safely removed from the premises or safely installed terminate the emergency.
- (h) Inform AERB regarding the termination of the emergency.

IV.2 Emergency Scenario: Loss or theft of IRGD or Disposal of the nucleonic device as scrap

- (a) Inform the police and lodge a First Information Report.
- (b) Take steps to trace the device by appropriate means by searching premises of nearby scrap dealers.
- (c) Provide photograph of source housing to scrap dealers.
- (d) Brief the scrap dealers about the consequences of radiation hazard and safety philosophy, time, distance and shielding.
- (e) Intimate AERB regarding the emergency.
- (f) In case of suspected radiation exposure to any of the personnel of the institution, seek advice from AERB.

- (g) Upon ensuring that the device has been traced and regained or that it is safe for installation and use or disposal, terminate the emergency.
- (h) Intimate AERB regarding the termination of the emergency.

IV.3 Emergency Scenario: Damage to the IRGD/nucleonic device due to accidents
(E.g. Fall from a height, fire or explosion)

- (a) Rescue the injured, if any.
- (b) In case of fire or explosion contact the fire department for help.
- (c) Fight fire; if there is a fire accident; from upwind direction.
- (d) Segregate the IRGD/nucleonic device under the supervision of the RSO.
- (e) In case of damage to the device, measure the radiation level around the device and record the observations. If the measured levels are in excess of the prescribed limits, report the matter to AERB.
- (f) Intimate AERB regarding the occurrence of the emergency.
- (g) Upon ensuring that the arrangements have been made for the safe disposal of the device or confirming that it is safe for installation and use, terminate the emergency.
- (h) Intimate AERB regarding the termination of the emergency.

IV.4 Emergency Scenario: Failure of shutter during operation/servicing/maintenance

- (a) Arrange for temporary shielding in front of the shutter of the gauge immediately with suitable shielding material of adequate thickness. In case of damage to the device, measure the radiation level around the device and record the observations. If the measured levels are in excess of the prescribed limits, report the matter to AERB.
- (b) Inform the manufacturer/supplier of the device about the observed condition of the device (The IRGD should be repaired only by authorised Servicing Engineers).
- (c) Intimate AERB regarding the occurrence of the emergency.
- (d) Upon ensuring that the IRGD is safe for use, terminate the emergency.
- (e) Intimate AERB regarding the termination of the emergency.