

EMERGENCY RESPONSE PLANS AND PREPAREDNESS

Introduction

An emergency is a non-routine situation that necessitates prompt action, primarily to mitigate a hazard or adverse consequences for human health and environmental safety. Being the custodian of the radiation sources, handling of the radiation emergency situation, mitigating the consequences and making preventive measures to avoid any recurrence of such situation in future are the responsibilities of the employer.

Emergency Response Plans and Preparedness

The licensee should prepare emergency response plans, as per Rule 33 of Atomic Energy (Radiation Protection) Rules, 2004, in coordination with the RSO, which envisages various emergency scenarios/situations that may be encountered and action plans for responding to emergencies to mitigate their consequences.

Action plans corresponding to emergencies should be made available to mitigate any consequences of emergency scenarios/situations that may occur during transportation, installation, routine operation and decommissioning of GIC unit.

The emergency situation may fall in the following categories:

- (a) Receipt of a GIC from the supplier in a damaged condition
- (b) Loss or theft of GIC during transport
- (c) Damage to the GIC during transport
- (d) Mechanical damage to GIC unit during storage at the site prior to installation
- (e) Damage to the GIC, if any, during installation and commissioning
- (f) Radiation levels in excess of the baseline/normal values recorded during installation of the GIC by the manufacturer/supplier
- (g) Fire incident, explosion or natural disaster such as earthquake etc. at GIC installation location
- (h) Malevolent actions by the anti-social elements leading to damage of GIC.

The emergency response plan shall be specific to each situation and should include following aspects:

- (a) Identification of reasonably foreseeable accidents and other incidents or occurrences and their predicted consequences
- (b) Communication procedures, including an emergency call out list
- (c) Availability of emergency equipment, including a list of the equipment that should be available and its location
- (d) Availability of first aid equipment, including a list of the equipment that should be available, its location and the names of persons trained to use it (where applicable)
- (e) An outline of the post-emergency recovery procedures designed to restore normal operating conditions.

The model emergency response plans and procedures are as given in **Annexure I**.

Display of Emergency Procedures

Instructions should be provided specifying procedures to be followed in an emergency situation, which should be concise, unambiguous, easily followed, practicable and simple to restore the normal situation by keeping exposures to individuals at ALARA. The procedures laid down for this purpose should be displayed in the GIC room. This should include the name(s) and contact details of responsible personnel of GIC institution, to be contacted in case of emergency.

In addition, the contact details of important persons from outside agencies like, local Law Enforcement Authority (police), fire brigade, nearest hospital, source supplier, AERB and Crises Management Group (CMG), DAE should also be listed in the procedures.

Identification and Training of Emergency Handling Personnel

The licensee should ensure that all the personnel involved in handling of GIC are familiar with the emergency action and should be educated about emergency situations. They should be informed that the potential radiological consequences of an emergency situation involving GIC are limited because of the design and construction standards of GIC.

Reporting of Radiation Emergency

Employer/licensee should report every unusual incident/emergency to the Competent Authority immediately and certainly within 24 hours of its occurrence. The details should include:

- (a) Date and time of its occurrence
- (b) Brief description of the unusual incident
- (c) Source activity at the time of incident
- (d) Action taken
- (e) Probable cause of the incident
- (f) Personnel radiation exposure, if any
- (g) Lessons learned to prevent similar incidents and accidents in the future
- (h) Improvement in the emergency plans and preparedness, if any.