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Pakistan's Approach to Radiological Emergency Management in Transport Scenarios

The Pakistan Nuclear Regulatory Authority (PNRA) has issued regulations for the Safe Transport of Radioactive Material - PAK/916 (Rev.1), in line with IAEA SSR 6, that requires the licensee to ensure safety during transport activities by the use of the right packaging and placarding for radiation and criticality control in all modes of transport and having emergency plans in place. Furthermore, the PNRA Regulations on Management of a Nuclear or Radiological Emergency (PAK/914)(Rev.1), in line with IAEA GSR Part-7, requires the licensees to have arrangements for managing incidents and accidents during transport of radioactive material. Adopting a graded approach, these arrangements may include provision of radiation monitoring and handling equipment as well as trained radiation protection official(s) depending upon the hazard of the consignment. The concept of operations starting from the use of Operational Criteria to detection and evaluate the emergency, to mitigation and termination of emergency is planned and reflected by the licensee in its emergency plans.

Pursuant to PNRA Regulations on Security of Radioactive Sources (PAK/926), the licensee is required to inform PNRA before commencement of any transport activity and to seek route clearance from law enforcement agencies. PNRA has established the National Radiation Emergency Coordination Centre (NRECC), which serves as the focal point for the Early Notification and Assistance Conventions for communication with the IAEA. It remains active 24/7 to closely monitor any emergency for technical and situational awareness and interface with the public and law enforcement / rescue agencies. Toll-free helplines and designated technical resources, address queries and provides assistance and guidance. Field teams situated at various locations throughout the country can be mobilized to technically assist in the emergency response if required. About 2500 notifications of source movements are received by NRECC in a calendar year, majority of them being related to medical applications or industrial radiography. During transport, regulatory checks and unannounced inspections are performed by PNRA to verify compliance with regulatory requirements.

The Government of Pakistan has established National Radiation Emergency Plan (NREP), that is supported by a dedicated Nuclear Emergency Support Centre (NuRESC), to cope up with transport emergencies where the licensee is incapacitated or public can be affected at large, The NREP stipulates the roles and responsibilities of various response organisations along with their interface and communication channels for several hazards including emergencies at unforeseen locations. The first responder to any emergency, the Emergency Services Department have been equipped with radiation detection equipment and trained to look out for observables, indicators and radiation alarms to detect and identify a radiological emergency. Adequate response measures are then taken to mitigate consequences and are reported to the NRECC for technical reachback. Likewise, the relevant authorities that play a role in managing transport operations i.e. the National Highways and Motorway Police (NH&MP) and Civil Aviation Authority (CAA) have been involved in trainings, workshops and scenario specific drills, to understand the radiation risks and manage public during any emergency occurring during transport of radioactive material.

Lastly, for detection of any undeclared transport of radioactive material the Government of Pakistan has established a National Nuclear Detection Architecture under the Customs Authority that monitors the transport of passengers and cargo through land, air and seaports. Any detected material is assessed in accordance with PNRA regulations and communicated to the NRECC; noncompliance results in the shipment being placed in abeyance and its transport being denied. This regime comprising of different agencies with specified domains play a collective role in responding to any emergency during transport of radioactive material throughout the country and covers the intent of the applicable regulations and guidance as provided by IAEA SSG-65.

Country or International Organization

Instructions

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