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Sri Lankan Experience on Security of Radioactive Materials in Transport from a Regulator's Perspective

The Sri Lanka Atomic Energy Regulatory Council (SLAERC) [successor of Sri Lanka Atomic Energy Authority] was established on 01st of January 2015 by the Sri Lanka Atomic Energy Act No. 40 of 2014 (Act), with the mandate of establishing and implementing a regulatory regime for ensuring the protection of public, patients, radiation workers and the environment from potentially harmful effects of ionizing radiation and security of radioactive sources. The fulfillment of the mandate of the Act, SLAERC empowered for licensing & inspection of users of radiation applications, control of import & export of radioactive materials, management of radioactive waste, ensuring physical protection of radioactive materials, developing the capability to respond to nuclear or a radiological emergency, meeting the obligations of Sri Lanka under the safeguards agreement with the International Atomic Energy Agency (IAEA) and the establishment of the legislative and regulatory framework necessary for the above.

Sri Lanka uses high activity category 1 radioactive sources for medical, industrial & research applications such as radiotherapy machines, pool type & self-shielded irradiators in 11 locations across the country. The physical protection systems have been installed for all these locations against theft, sabotage or other malicious acts of these radioactive sources as national nuclear security requirement included in the Act under chapters of 'Safety and security of radioactive materials & Physical protection of radioactive materials'

Implementation of regulatory requirements and enhancing a nuclear security regime are important to protect radioactive material while in transport against theft, sabotage or other malicious acts that could, if successful, have unacceptable radiological consequences. Therefore, the SLAERC (Competent authority for regulating transport of radioactive material in Sri Lanka) has taken several steps for the regulatory implementation of security issues in the transport of category 1 sources to the above 11 locations.

Almost all the required radioactive sources are imported including category 1 sources as no radioactive source production facility is available in Sri Lanka. Therefore, the usual route of this category 1 source transportation is done from relevant sea port or airport to the consignee's destination (licensee's premises) and re-exportation of decayed sources from licensee's premises to the relevant port in the country.

The SLAERC coordinates provision of security for these category 1 sources during transport in collaboration with Police Special Task Force (STF) and Sri Lanka Police. The prior arrangements of customs & port clearance are arranged immediate delivery just after arrival of the ship / flight. SLAERC inspect the radioactive package at the relevant port in appropriate way in order to conform completeness & correctness and seal the container and supervise the entire transportation.

If the packages are needed to be stored in any location in transit, prior to transport the final destination, an approval should be obtained from SLAERC. This approval is given after verifying the adequacy of availability of security in such location. Proper security arrangement is provided during such transit and at the consignee' s destination until sources loaded to the relevant irradiator or radiotherapy machine.

A tracking device (T-Star or track lock) supplied by the Oak Ridge National Laboratory under the United State Department of Energy (USDOE), Global Material Security (GMS) program is used in these whole transportation activities. Information of exact location of the transport container can be obtained by this instrument while transporting the consignment.

Before issuing the licences for these transportations, the SLAERC obtained all information of personnel engaged in the transportations for prior assessment of their trustworthiness, information of vehicles to ensure their conditions for safe and secure transport of materials and security provided to the sources during transport.

SLAERC organized a transport security table top exercise also for transport of category 1 sources to train the persons involved in this field (response forces & transporters of radioactive sources) with the assistance of USDOE under GMS program. This simulation type table top exercise was most beneficial to all the participants to obtain the hands-on experience of the real scenarios.

At present one of the challenge in transport of radioactive materials is promulgation of national regulations on transport of radioactive materials including safety & security aspects. The preparation of this regulation is also a requirement of section 87 of the Act. Preparation of transport security plan and human resource development in SLAERC & other relevant personnel (training & awareness of the personnel involving in

transport activities) are other challenges for safe & secure transport of radioactive material program in Sri Lanka.

However, in the midst of such challenges SLAERC has successfully conducted all category 1 transport security events up to now. In the future SLAERC expects to carry out such transportation more effectively & efficiently in accordance with the international standards by implementing the identified future plans and overcoming the above challenges.

State

Sri Lanka

Gender

Male

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