Contribution ID: **119** Type: **ORAL**

Planning for Robust, Safe and Secure Transportation of Low Level Waste from Waste Generating Sites to Future Disposal Facilities in Pakistan

Pakistan has a comprehensive nuclear power program, covering all facets of nuclear technology. Currently, six nuclear power plants, two research reactors, 20 cancer hospitals and four nuclear agriculture centers are in operation under the umbrella of Pakistan Atomic Energy Commission. From operation of these facilities, radioactive waste including Disused Sealed Radioactive Sources (DSRS) are being generated. Safe and secure management of radioactive waste plays a pivotal role in sustainable operation of these facilities and for protection of people, society and environment from harmful effect of ionizing radiation. In this regard, dedicated and licensed waste processing facilities are in operation and the conditioned waste packages are stored onsite. For final disposal of Low Level Waste (LLW), two Near Surface Disposal Facilities (NSDFs) are being developed in the country. Subsequently, waste packages will be transported from storage facilities to the disposal facilities. The transportation of radioactive waste is a critical aspect of nuclear safety, environmental protection and public health. Keeping in view the hazards associated with transportation of radioactive waste, Pakistan Atomic Energy Commission (PAEC) has initiated concrete steps to safely and securely transport the radioactive waste to disposal facilities. Pakistan Nuclear Regulatory Authority (PNRA), an independent organization in the country is responsible to regulate all matters pertaining to ionizing radiations. PNRA International Atomic Energy Agency has issued "Regulations for the Safe Transport of Radioactive Material - (PAK/916) (Rev.1)"in January 2022. Moreover, to assist Member States, International Atomic Energy Agency (IAEA has also issued "Regulations for the Safe Transport of Radioactive Material SSR-6"2018 Edition. It is planned that the transportation of the LLW packages in the country will be carried out in accordance to the above mentioned regulations. To meet the regulatory requirements, the LLW packages have been categorized as Industrial Package Type 3 (Type IP-3). To gain confidence before gaining authorization from PNRA, tests for normal conditions of transport have been carried out on the dummy package, commensurate with the original waste package. Moreover, standard operating procedure for transportation of LLW packages have also been developed. The procedure defines roles and responsibilities to safely and securely transport the LLW packages. Moreover, different parameters like dose, surface contamination, waste package identification, transport index, etc., type of vehicle and adoption of appropriate security measures during transportation are elaborated in the procedure to ensure that the waste packages are transported safely and securely.

Country or International Organization

Instructions

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Track Classification: Track 2 Safety and Security by Design - Regulatory and Industry Perspective