

“Integrated IT Radiation Safety Management System in APR-1400”

Mr. Jeong-Keun KIM, KHNP, Rep. of Korea

This presentation was designed to introduce the IT Radiation Safety Management System in Shin-Kori Nuclear Power Plant #2, which is compatible with the design concept of APR-1400 (1400 MWe Advanced Power Reactor) that is exported to UAE.

The purpose of operating the IT Radiation Safety Management System is to provide more effective entrance and exit controls, as well as to upgrade the safety of the radiation work environment for workers.

This will result in reliable radiation safety management by reducing the exposure dose, minimizing the radioactive waste quantity and allowing the workers to safely perform their jobs in the radiation controlled area.

This system is composed of seven kinds of equipment and facilities. These are the remote radiation dose rate measuring and the videotelephony facility, the item-carrying in and out system, the automatic dispensing machines for toxic substances, the radioactive waste collection bags that RFID technology is used, and the lockers that fingerprint verification technology is used, and personal workwear dispensers that facial image recognition technology used.

By operating the digital and automated system as above-mentioned, the workload of radiation safety staff decreases.

The real-time monitor in the health physics room also helps to ensure the radiation exposure is under control.

The traceable item-carrying in and out system and the automatic dispensing machines for toxic substances are useful in effective inventory management. The automatic RFID waste collection bags reduce generated waste by a tracing and data base system.

Finally, the fingerprint lockers and the personal workwear dispensers are convenient and improve sanitary conditions.