

**International Conference on Occupational Radiation Protection:
Strengthening Radiation Protection of Workers –Twenty Years of Progress
and the Way Forward**

Contribution ID: 54

Type: **Poster**

The applications of occupational dose data management system in China and other countries

Since individual dose monitoring data are the basis for radiation protection evaluation, it's necessary to establish an information management system for dose records of workers who are monitored for occupational exposure to ionizing radiation. Many countries have established their own national dose management systems and provide extreme valuable information on occupational exposure protection for the authority. The applications of occupational dose data management system for in China are summarized, the applications in other countries are also discussed.

1.Applications in China

In China, some institutions or organizations have established independent dose management system.

National Health Commission established "individual monitoring registry system for radiation workers" in 2009, and then the system was promoted and used in national individual dose monitoring institutions. Since its operation 12 years ago, the system has covered 32 provinces all around China, collecting more than 8.27 million dose records. In December 2018, Ministry of Ecology and Environment of China established the "national radiation occupational exposure information system", it's used to collect individual dose information in nuclear facilities, uranium mining and metallurgy facilities, nuclear technology utilization, nuclear and radiation safety supervision etc.

In addition, the system of China Academy of Engineering Physics(CAEP) has kept the individual dose data since 1974. Almost each nuclear power plant in China has developed its own management system for individual dose information collection, storage, statistical analysis and evaluation.

2.Applications in other countries

Seven countries of Eu member states - the United Kingdom, France, Germany, Spain, Finland, Sweden and Greece, have established the national individual dose central database to effectively save and maintain individual monitoring records. The database consist the information of workers, employers, monitoring, and occupational classifications, and provide specific information to authorities, employers and radiation workers. The National Dose Registry(NDR) is the national repository for occupational dose records for Canadian workers. It is administered by Health Canada's Radiation Protection Bureau. It has been continuous operation since 1951 and now contains the records of more than half a million individuals.

Australian Radiation Protection and Nuclear Safety Agency (ARPNSA) has established ANRDR(Australian National Radiation Dose Register) since 2011. ANRDR is applied to all radiation industries in Australia to centrally register, store and maintain individual dose records. Radiation workers can track their lifetime individual dose records, including all records from institutions in multiple jurisdictions and during their employment with multiple owners.

Japan Association for Radiation Effects established "Radiation Dose Registration Centre" in 1977, and the Korean National Dose Registry management System was established in 1984, both systems are used to manage individual dose data of radiation workers nationwide.

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Session Classification: Session 4. Occupational exposure levels and dose registries

Track Classification: 16. Occupational exposure levels and dose registries