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Strengthening Radiation Protection of Workers –Twenty Years of Progress  
and the Way Forward**

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## **Occupational Radiation Protection at Nuclear Power Plant in Pakistan**

Occupational radiation protection is an area of vital importance during the lifecycle of Nuclear Power Plants (NPPs). Radiation workers are likely to receive exposure mainly during the routine maintenance activities as well as the refueling outages (RFOs). This exposure can be controlled by taking some tangible measures. These measures include regulatory control, licensee's mechanism to control radiation exposure and dose assessment. Pakistan Nuclear Regulatory Authority (PNRA), as the national regulator has established a robust regulatory framework for radiation protection and safety. Under this framework, PNRA Regulations on Radiation Protection-PAK/904 (Rev.1)[1] specifically describe the requirements for occupational radiation protection which are consistent with the IAEA safety standard (GSR-Part-3) and are followed by the licensee to control occupational exposure. PNRA reviews and approves different submissions of license including Final safety Analysis Report (FSAR) and Radiation Protection Program (RPP) in order to verify compliance of these requirements. PNRA also conduct regulatory inspections to verify the implementation of requirements of PAK/904 (Rev.1). Observations and findings of these inspections are communicated to licensee for corrective actions. Furthermore, licensee submits periodic reports on occupational exposure to PNRA for review and analysis of dose trends. Dose trends reveals that occupational exposures at NPPs are well within regulatory limits (20 mSv/y) and almost 80 % of workers receive doses of less than 1 mSv/y.

This paper describes the steps taken by PNRA for regulatory control of occupational exposure. Furthermore, it describes measures taken by licensee to control occupational exposure at NPPs. The paper also highlights the analysis of dose trends which demonstrate the adequacy of occupational radiation protection at NPPs in Pakistan.

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