

Issuance of Decommissioning License to Karachi Nuclear Power Plant (KANUPP) - PNRA Experience

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Abstract: Licensing and authorization of nuclear installations is one of the core functions of Pakistan Nuclear Regulatory Authority (PNRA). These are issued at various stages of life cycle of nuclear installations as prescribed in PNRA Regulations for Licensing of Nuclear Installation(s)-PAK/909. Karachi Nuclear Power Plant (KANUPP) was Pakistan's first CANDU type pressurized heavy water reactor (PHWR) with a total gross energy generation capacity of 137 MWe and achieved its first criticality on August 01, 1971. KANUPP was one of the oldest NPP that ceased its operation permanently on August 01 2021 after fifty (50) years of operation for decommissioning which is the final stage in the lifecycle of a NPP. Keeping in view the licensing process laid down in PAK/909, PAEC submitted a number of documents such as Final Decommissioning Plan (FDP), Technical Specifications during decommissioning, Quality Assurance Program for decommissioning, Emergency Preparedness Plan, Physical Protection Program, Radiation Protection Program, Radioactive Waste Management Program and Environmental Monitoring Program. Upon satisfactory completion of the regulatory review of licensing submissions against agreed codes and standards, PNRA terminated the operating license and issued license for decommissioning to KANUPP on June 27, 2022. As decommissioning licensing of a NPP was first of its kind experience for PNRA, therefore, PNRA learnt several lessons and faced some real challenges with regards to issues encountered during the process such as timely submission of documents, review of documents, decommissioning license duration, etc. This paper presents the PNRA experience and challenges faced during decommissioning licensing review of KANUPP.

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