

ABSTRACT

- PNRA grants license/authorization to nuclear installations at various stages of life cycle as prescribed in national regulation
- KANUPP was Pakistan's first PHWR-CANDU type NPP permanently shut down for decommissioning in 2021
- This paper presents the challenges faced by PNRA during review/issuance of its first ever decommissioning license

1. BACKGROUND / INTRODUCTION

- PNRA has a developed mechanism of licensing and authorization for nuclear installations in regulations PAK/909
- Licensing of decommissioning of KANUPP was first experience of PNRA for this phase
- KANUPP was operated by Pakistan Atomic Energy Commission (PAEC) for 50 years including 20 years beyond design life.
- PNRA issued decommissioning license to KANUPP in June 2022.

2. KANUPP DECOMMISSIONING LICENSE APPLICATION

- Final Decommissioning Plan (FDP),
- Technical Specifications (TS),
- Quality Assurance Program (QAP),
- Emergency Preparedness Plan (EPP),
- Physical Protection Program,
- Radiation Protection Program (RPP),
- Radioactive Waste Management Program (RWMP), and
- Environmental Monitoring Program (EMP)

Decommissioning Phases



Preparation for Safe Storage - SAFSTOR ~ 15 years

SAFSTOR Surveillance ~ 20 - 30 years

Decontamination and Dismantling ~ 5 years

ID - 141

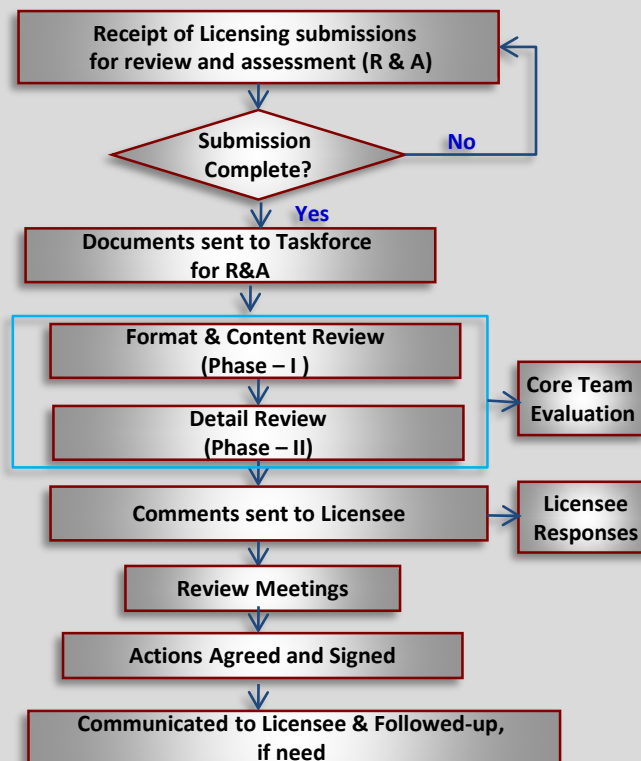
Issuance of Decommissioning License to Karachi Nuclear Power Plant (KANUPP) - PNRA Experience



Javed Iqbal

Pakistan Nuclear Regulatory Authority
javed.iqbal@pnra.org

3. REVIEW PROCESS FOR DECOMMISSIONING



PNRA review Process for Licensing of Decommissioning to KANUPP

- KANUPP opted *Deferred Dismantling Strategy*.
- The decommissioning waste will be disposed of in RRS, Karachi.
- The end state of KANUPP site will be *Brownfield*.

4. CHALLENGES

Implementation of established regulatory framework for decommissioning

Licensee delayed submission for decommissioning license

Assurance of sufficient motivated/qualified personnel for safe operation of plant up to final shutdown and for carrying out decommissioning activities

Limited information submitted regarding later decommissioning phases

5. CONCLUSION AND FUTURE ENDEAVOURS

PNRA formulated a taskforce to assure;

- the appropriation of all regulatory submissions
- timely completion of review process
- effective and graded implementation of regulatory requirements
- issuance of very first decommissioning license as per agreed schedule in June 2022
- Decommissioning license was issued with specific licensing condition of seeking PNRA permission before start of next phase
- Futuristically, availability of qualified and trained workforce will pose a safety challenge
- PNRA has to make decision to grant license to spent fuel dry storage facility as a separate entity which is currently covered under decommissioning license.