



सत्यमेव जयते

भारत सरकार
GOVERNMENT OF INDIA

परमाणु ऊर्जा नियामक परिषद

ATOMIC ENERGY REGULATORY BOARD



Safety Regulation
Since 1983

अध्यक्ष
CHAIRMAN



No. AERB/CH/KAPP-3&4/2023/01538

December 11, 2023

Sub: Permission for First Approach to Criticality and Low Power Physics Experiments of KAPP-4

References

- Application for Authorization of KAPP Unit-4 for 1. Bulk addition of heavy water to moderator system, 2. First Approach to Criticality (FAC) and 3. Low Power Reactor Physics Test and Experiments (LPPE), submitted vide no. KAPP-3&4/O&M/Plg./2023/S/499 dated November 7, 2023.*
- Revised Application for Authorization of KAPP Unit-4 for 1) Bulk addition of heavy water to moderator system (with minimum specified boron level in heavy water to prevent reactor criticality), 2) First approach to Criticality (FAC) & 3) Low power Reactor Physics tests and experiments; KAPP-3&4/O&M/Plg./2023/S/516 dated November 22, 2023.*

Consent No.	KAPP-4/CM/FACLPE/0/11122023
Stage of Consent	First Approach to Criticality (FAC) and Low Power Physics Experiments (LPPE) of KAPP-4
Applicant	Shri Yash Lala Station Director, KAPP-3&4
Brief description of Nuclear Power Project	Name: Kakrapar Atomic Power Project Unit-3&4 Type: 700 MWe Pressurized Heavy Water Reactor based Nuclear Power Plant Location: Anumala, Dist. Surat, Gujarat, Pin-394651 Present Status: KAPP-3, lead unit of PHWR-700 design, is currently under Phase-C commissioning and reached power level of up to 97.5%FP and operating under the ambit of Technical Specification for Operation. At KAPP-4, Hot-conditioning & Light Water Commissioning of Primary Heat Transport has been completed. Initial Fuel loading, addition of heavy water to Moderator System (in limited quantity), addition of heavy water to PHT System have been completed and Bulk addition of heavy water to moderator system is in progress.
Basis of issuing the Consent	Regulatory requirements as per the AERB Codes and Guides, mainly AERB/SC/G (Regulation of Nuclear & Radiation Facilities), AERB/NPP&RR/SG/G-1 (Consenting Process for NPPs and Research Reactors) and AERB/SG/O-4 (Commissioning of PHWR based NPPs) and Factories Act, 1948, applicable rules framed thereunder. Also satisfactory compliance to the Safety Review Plan for Commissioning phase of KAPP-3&4.



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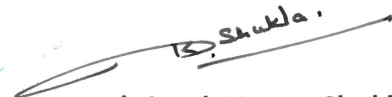


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Safety Review	<p>After review by NPSD Review Groups and Working/ Specialist Groups, Standing Committee on Reactor Physics (SCRPP), first-tier safety review by the Project Design Safety Committee (PDSC-PHWR) and second-tier review by the Advisory Committee Project Safety review (ACPSR-NPP) was carried out towards Bulk Addition of heavy water to moderator system, First Approach to Criticality (FAC) & Low Power Physics Experiments (LPPE) of Kakrapar Atomic Power Project Unit-4. After satisfactory reviews as above, final third-tier review was carried out by Board of AERB.</p> <p>The proposed activity of First Approach to Criticality (FAC) & Low Power Physics Experiments (LPPE) of Kakrapar Atomic Power Project Unit-4 can be carried out without undue risk to workers, public or the environment.</p>
Responsibility of Safety	<p>The Prime responsibility for safety of the facility or activity lies with the Consentee. It is the responsibility of the applicant to comply with safety requirements as specified in the Regulations.</p>
Other Statutory requirements	<p>Consentee shall ensure that all other necessary Statutory Clearances are obtained and are valid for present stage of permission i.e. First Approach to Criticality (FAC) & Low Power Physics Experiments (LPPE) of Kakrapar Atomic Power Project Unit-4</p>
AERB Stipulations and Conditions	<p>Refer Annexure-1</p>

Based on the satisfactory Safety and Security reviews as brought out above, Permission is hereby issued for First Approach to Criticality (FAC) and Low Power Physics Experiments (LPPE) of Kakrapar Atomic Power Project Unit-4, subject to satisfactory compliance to stipulation and conditions, as brought out in Annexure-1. The Permission will be subject to review for non-compliance to the Stipulations and Conditions.

This Permission is valid till April 30, 2024. The activity as per AERB/NPP&RR/SG/G-1 shall be completed within the validity period, else extension shall be sought with justification.


(Dinesh Kumar Shukla)

Encl.: Annexure-1

Chairman & Managing Director
Nuclear Power Corporation of India Limited
NUB, Anushakti Nagar
Mumbai, 400 094

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Chairman & Member Secretaries, PDSC-PHWR
Chairman & Member Secretary, CRSA
Chairman & Member Secretary, SCRP

KAPP-3&4 Site

Site Director
Station Director
Project Director
Chief Superintendent, KAPP-3&4



**Stipulations & Conditions for First Approach to Criticality and Low Power Physics Experiments
of Kakrapar Atomic Power Project (KAPP) Unit-4**

- S.1. All recommendations of AERB-SCRP, PDSC-PHWR, ACPSR-NPP and CRSA shall be strictly adhered to, including compliance to the respective timelines specified therein.
- S.2. First Approach to Criticality and Low Power Physics Tests and Experiments of KAPP-3 shall be carried out as per the approved commissioning procedures (CP) and applicable QA. Deviation from the CPs, if any, should be promptly informed to AERB.
- S.3. Continuous and reliable core neutron monitoring and monitoring of reactivity devices shall be ensured. Start-up instrumentation shall be ensured healthy at all times. Any abnormality observed in the start-up counter readings shall be promptly reported to AERB.
- S.4. In the event that during FAC, less than two counters are available, reactor shall be immediately shutdown manually by SDS-1 (if not tripped on auto). Approach to criticality shall be resumed after ensuring that at least two counters are made available.
- S.5. No changes shall be made to the programs, procedures or Technical Specifications, which have been approved by AERB, without prior approval of AERB.
- S.6. The consentee shall implement the Quality Assurance Program laid down as per the requirements of AERB code on Quality Assurance AERB/SC/QA and any other requirements stipulated by the Regulatory Board in this regard from time to time.
- S.7. All the required radiological protections shall be in place before taking up the activity and the Radiation Protection Procedures shall be strictly adhered to.
- S.8. Technical specifications for operation of KAPP-3&4 shall be strictly adhered to.
- S.9. Tests/activities identified for observation/witness by AERB as per SRP for commissioning of KAPP-3&4 and those communicated during course of reviews, shall be timely informed.
- S.10. All the Industrial & Fire Safety Requirements shall be strictly complied.
- S.11. Any abnormal occurrence, significant events, industrial accidents or fatalities during the activity shall be promptly reported to AERB.
- S.12. Compliance to the stipulations of Statutory Clearances shall be ensured.
- S.13. All pre-requisites should be completed before start of that particular commissioning stage (i.e. FAC & LPPE). Updated commissioning status table should be submitted before proceeding to next stage.
- S.14. The Consentee may take reasonable action that departs from a consent condition or Technical Specifications, in an emergency, if such action is immediately needed to protect the public health and safety and it is apparent that no action consistent with consent conditions and Technical Specifications can provide adequate or equivalent protection. Such actions shall be reported to the Regulatory Body within 24 hours, followed by a detailed report within 20 days.
- S.15. This consent may be suspended or cancelled, if any declaration made or information given in the application is found to be false or if any undertaking given in such application is not carried out.

