

Consent for Siting of Away From Reactor Spent Fuel Storage Facility for KKNPP 3&4 (KK-3,4 AFR) at Kudankulam Site

References

- [1] Application for Siting Consent for AFR Spent Fuel Storage Facility for KKNPP-3&4 from Nuclear Power Corporation of India, [NPCIL/ENGG-LWR/KK3&4/2020/M/6 dated September 01, 2020].
- [2] Review plan for AFR Facility for KKNPP Units 1&2 and 3&4 [AERB/NPSD/SMR/CN/SR/623012/2020/00631 dated September 09, 2020]
- [3] Safety Review Plan for Site evaluation of NPP and other NF sites [AERB/NPSD/LRB/CN/SR/992014/ 2019/00250 dated April 11, 2019]

Consent Number	AFR-KKNPP-3&4/ST/0/0/23082021
Stage of Consent	Siting
Applicant	Project Director KKNPP-3&4, NPCIL [Ref.1].
Brief Description of Nuclear Facility	<p>Name: Away From Reactor Spent Fuel Storage Facility for KKNPP-3&4 (KK 3,4 AFR)</p> <p>Type of facility: Away From Reactor (AFR) spent fuel storage facility.</p> <p>Located at: Kudankulam Nuclear Power Project P.O., Kudankulam, Radhapuram Taluk, Tirunelveli District, Tamil Nadu-627106</p> <p>New Site or Existing Site: Existing Site with KKNPP-1&2 operating and KKNPP-3&4 and KKNPP-5&6 under construction</p> <p>Present status of the Project/site in brief: Investigations and analysis in respect of Siting stage of AFR-KKNPP-3&4 have been completed.</p>
Basis for issuing the Consent	Regulatory requirement as per AERB Codes/Guides, AERB/SC/G (Regulation of Nuclear & radiation facilities), AERB/NF/SG/G-2 (Consenting Process for Nuclear Fuel Cycle Facilities) and AERB/NF/SC/S (Rev-1) (site evaluation of Nuclear Facilities) and other relevant guidance from applicable IAEA/international documents.
Safety Review	Safety review in AERB followed by multi-tier safety reviews by the Site Evaluation Committee for Nuclear Facilities (SEC-NF), by Advisory Committee for Project Safety Review

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	of Nuclear Power Plants (ACPSR-NPP) and by the Board of AERB in its meeting #134. Salient details of Review carried out towards grant of consent is briefly given in Annexure-1.
Responsibility for Safety	The Prime responsibility for safety of the facility or activity lies with the Consentee. It is the responsibility of Consentee to comply with safety requirements as specified in Regulations.
Other statutory requirements	Applicant shall ensure that all necessary statutory clearances are obtained and are valid for present stage of consent i.e. Siting
AERB Stipulations and Conditions	AERB Stipulations and conditions for Siting to enable effective regulatory control are appended as Annexure-2.

Based on satisfactory review as brought out above, Consent is hereby granted for Siting of Away From Reactor Spent Fuel Storage Facility for KKNPP 3&4 (KK-3,4 AFR) subject to satisfactory compliance to the stipulations and conditions as brought out in Annexure-2. The Consent will be subject to re-review for any non-compliance to the stipulations and conditions.

This Consent is valid for five years from the date of issue of consent.

The Consent shall be subject to revocation, suspension, modification or amendment, for causes as provided in the Atomic Energy Act and rules made thereunder, in accordance with the procedures laid down in the Act. This consent shall be suspended or revoked, if any declaration made or information given in Form A of the application is found to be false or if any undertaking given in such application is not carried out.



(G. Nageswara Rao)

Encl.: Annexure-1 and 2

**Chairman and Managing Director
Nuclear Power Corporation of India Limited
NUB, Anushakti Nagar
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Chairman & Member Secretaries, SEC-NF
Chairman & Member Secretaries, PDSC-LWR
Chairman & Member Secretary, CRSA

AFR-KKNPP-3&4 Site

Site Director, KKNPP
Project Director, KKNPP-3&4
Station Director, KKNPP-1&2
Project Director, KKNPP-5&6

SAFETY REVIEW FOR SITING CONSENT

Nuclear Power Corporation of India Ltd. (NPCIL) has proposed to construct Away From Reactor (AFR) Spent Fuel storage facility of KKNPP-3&4, at Kudankulam site, where 2x1000MWe VVERs (KKNPP-1&2) are currently in operation and 4x1000MWe VVERs (KKNPP 3 to 6) are in various stages of construction. Also the siting consent for Away From Reactor (AFR) Spent Fuel Storage Facility at KKNPP-1&2 (AFR KKNPP 1&2) has been issued by AERB in May, 2021.

As per the 'Code for regulation of Nuclear and Radiation facilities', AERB/SC/G there are five stages of consenting viz. Siting, Construction, Commissioning, Operation and Decommissioning in the life time of a Nuclear facilities. Consent has to be obtained for these stages from AERB after detailed safety review to ensure safety. NPCIL submitted an application for obtaining consent for the first stage i.e. Siting. The application was made following the guidance as given in the guide 'Safety Guide on Consenting Process for Nuclear Fuel Cycle Facilities and Related Industrial Facilities other than Nuclear Power Plants and Research Reactors' AERB/NF/SG/G-2. AERB has carried out multi-tier review of the application and associated submissions as per the procedure.

Review of application for siting consent was undertaken against the requirements specified in AERB Safety Code for Site Evaluation of Nuclear Facilities (AERB/NF/SC/S (Rev-1)), AERB Safety Code on Regulation of Nuclear and Radiation Facilities (AERB/SC/G) and associated Safety Guides. Since AFR is a fuel storage facility, guidance for management of safety review viz. consenting process and requirements related to document submission for various consenting stages was as per AERB Safety Guide AERB/NF/SG/G-2. As AERB did not have any specific code level regulatory document for AFR, and since the design safety requirements for such facility being similar to that of spent fuel storage bay in PHWRs, the Design Basis information of AFR facility with respect to siting considerations was reviewed against the guidance provided in AERB Safety Guide "Design of Fuel handling and storage systems for PHWR (AERB/SG/D-24)" and other related IAEA/International documents.

The basic criteria for evaluation of a site for locating a particular Nuclear facility is to ensure that site-plant interaction does not result in radiological impact beyond the criteria prescribed by AERB and site is engineerable with regard to external hazards at the proposed site. AFR facility is proposed to be co-located within main plant boundary of KKNPP-5&6 and all the phenomena/criteria that could result in rejection of site were already reviewed by AERB during Siting review stage of KKNPP-3 to 6. Hence, following the graded approach, the review emphasized on impact of plant on site like Radiological Impact Assessment (RIA) due to postulated releases under normal operation and accident conditions, radioactive waste management, etc. These were reviewed against AERB prescribed dose criteria.



**AERB STIPULATIONS AND CONDITIONS DURING
SITING CONSENT**

- S.1.1. NPCIL shall ensure all applicable & valid statutory clearances for Away From Reactor Spent Fuel Storage Facility for KKNPP 3&4 (KK-3,4 AFR) and comply with the stipulations therein.
- S.1.2. Modifications, which affect Site parameters in the site or location of exclusion zone boundary shall not be carried out without prior approval of the AERB.
- S.1.3. The Consentee shall implement the Quality Assurance Programme laid down as per requirements of the Quality Assurance Code and any other requirements stipulated by AERB in this regard from time to time and adhere to commitments made as part of Licensee submissions to AERB.
- S.1.4. The stipulations and conditions of the Consent can be amended, revised, or modified as considered necessary by AERB in the interest of safety.
- S.1.5. All safety significant changes/observations shall be proactively reported to AERB as per Significant Event/Change Reporting Criteria (SECRC).
- S.1.6. The Consentee shall provide for the development, revision, implementation, and maintenance of its emergency preparedness plan including adequate interfaces with state and local governments.
- S.1.7. No activity or operation shall be carried out for purposes other than those mentioned in the application.
- S.1.8. Full access to facilities/activities shall be accorded to any authorised representative of the AERB.
- S.1.9. The Consentee shall appoint authorised persons who are qualified to perform functions under the Consent.
- S.1.10. The Consentee shall take such steps as may be necessary to prevent unauthorised persons from entering the site or such part thereof as AERB may stipulate.
- S.1.11. The Consentee shall provide suitable access restrictions and/or fences on the site and shall ensure that these are properly maintained.

