



सत्यमेव जयते

भारत सरकार

GOVERNMENT OF INDIA

परमाणु ऊर्जा नियामक परिषद

ATOMIC ENERGY REGULATORY BOARD



Safety Regulation  
Since 1983

अध्यक्ष  
CHAIRMAN

No. AERB/NPSD/SHK/CN/SR/073310/2025/00914

October 16, 2025

**Sub: Permission for Initial Fuel Loading into the Reactor Core, First Approach to Criticality and Low Power Physics Experiments for PFBR**

#### References

1. *Permission for Initial Fuel Loading into the reactor core, First Approach to Criticality and Low Power Physics Experiments for PFBR vide no. AERB/NPSD/SHK/CN/SR/073314/2024/01086 dated July 29, 2024*
2. *Application Form for License under the Factories Act, 1948 (as amended up to 1987) for PFBR vide no. BHAVINI/PFBR/SD/NPSD/R-02/2024/11/281 dated November 11, 2024*
3. *Permission for carrying out activities with respect to alternate fuel handling scheme vide no. AERB/NPSD/SHK/CN/SR/072210/2025/00632 dated July 31, 2025*
4. *PFBR Revised Application for Regulatory Consent for Initial Fuel, Core SA Loading, First Approach to Criticality (FAC) with Vertical Fuel Handling Scheme & Low Power Physics Experiments vide no. BHAVINI/PFBR/SD/PDSC/R-04/2025/08/085 dtd August 11, 2025*

|                                                   |                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Consent No.</b>                                | PFBR/CM/IFL,FAC&LPPE/1/16102025                                                                                                                                                                                                                                                                                                                                                    |
| <b>Stage of Consent</b>                           | Phase-B Commissioning – Fuel SA loading, First Approach to Criticality and Low Power Physics Experiments                                                                                                                                                                                                                                                                           |
| <b>Applicant</b>                                  | Shri Allu Ananth<br>Station Director, PFBR, BHAVINI                                                                                                                                                                                                                                                                                                                                |
| <b>Brief description of Nuclear Power Project</b> | <b>Name:</b> Prototype Fast Breeder Reactor (PFBR)<br><b>Type:</b> Sodium Cooled Fast Breeder Reactor based Nuclear Power Plant (NPP) of 500 MWe capacity<br><b>Location:</b> Kalpakkam, Chengalpattu (Dist.), Tamil Nadu - 603102<br><b>Present Status:</b> PFBR is in the stage of Phase B Commissioning. Presently, all the Control & Safety Rods (9 nos.), Diverse Safety Rods |



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नियामक भवन, अणुशक्तिनगर, मुंबई - 400 094

NIYAMAK BHAVAN, ANUSHAKTI NAGAR, MUMBAI - 400 094

दूरभाष / TELEPHONE : 91-22-2556 2343, 2599 0604 फ़ैक्स / FAX : 91-22-2556 2344, 2556 5717, 2558 3230

E-mail: chairman@aerb.gov.in

वेबसाइट / WEBSITE : www.aerb.gov.in



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|                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                     | (3 nos.) and 114 Blanket SAs have been loaded in the reactor core. Preparatory activities are in progress for loading fuel SAs in the reactor core.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Basis of issuing the Consent</b> | <p>AERB Regulatory requirements as per the AERB Safety Codes and Safety Guides, mainly AERB/SC/G (Regulation of Nuclear &amp; Radiation Facilities), AERB/NPP&amp;RR/SG/G-1 (Consenting Process for NPPs and Research Reactors) and the Factories Act, 1948 and applicable rules framed thereunder, Safety criteria for design of fast reactors. AERB document on 'Nuclear security requirements for NPPs'.</p> <p>Also satisfactory compliance to the Safety Review Plan for Commissioning phase of PFBR.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Regulatory Review</b>            | <p>AERB had issued permission for Initial Fuel Loading (IFL), First Approach to Criticality (FAC) and Low Power Physics Experiments (LPPE) on July 29, 2024 with validity up to July 31, 2025 [Ref.1]. However, loading of fuel subassemblies could not commence due to certain issues encountered in the fuel handling system. To initiate fuel SA loading, a modified fuel handling system was designed and qualified by BHAVINI. After review by NPSD Review Groups and Specialist Groups, further safety reviews were carried out by the Project Design Safety Committee (PDSC-FBR) and second-tier review by the Advisory Committee Project Safety review (ACPSR-NPP) towards modified fuel handling system of PFBR. Also, Nuclear Security aspects having bearing on safety, were reviewed by IT&amp;SS, R&amp;DD, AERB. Considering the satisfactory status of the readiness of site and compliance to the pre-requisites for starting of IFL, FAC and LPPE, AERB agreed for issuing permission for fuel SA loading, FAC &amp; LPPE subject to the stipulations.</p> <p>The proposed activity of Fuel SA loading, First Approach to Criticality (FAC) &amp; Low Power Physics Experiments (LPPE) of PFBR can be carried out without undue risk to workers, public and to the environment.</p> |
| <b>Responsibility of Safety</b>     | The Prime responsibility for safety of the facility or activity lies with the Consentee. It is the responsibility of the Consentee to comply with safety requirements as specified in the Regulations.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Other Statutory requirements</b> | Consentee shall ensure that all other necessary Statutory permissions are obtained and are valid for present stage of permission i.e. Fuel SA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

*22/05*

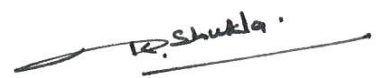
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|                                         |                                                                                              |
|-----------------------------------------|----------------------------------------------------------------------------------------------|
|                                         | loading, First Approach to Criticality (FAC) & Low Power Physics Experiments (LPPE) of PFBR. |
| <b>AERB Stipulations and Conditions</b> | Refer Annexure-1 & Annexure-2.                                                               |

Based on the satisfactory Safety and Security reviews as brought out above, Permission is hereby granted for Fuel SA loading, First Approach to Criticality (FAC) and Low Power Physics Experiments (LPPE) of Prototype Fast Breeder Reactor (PFBR), subject to satisfactory compliance to stipulation and conditions, as brought out in Annexure-1 & Annexure-2. The Permission will be subject to re-review for non-compliance to the Stipulations and Conditions.

This Permission is valid till December 31, 2026. The activity as per AERB/NPP&RR/SG/G-1 shall be completed within the validity period, else extension shall be sought with justification.

The License under the Factories Act, 1948 is valid until October 31, 2030.

  
**(Dinesh Kumar Shukla)**

**Encl.: Annexure-1 & Annexure-2**

**Chairman & Managing Director**  
**Bharatiya Nabhikiya Vidyut Nigam Limited**  
**Kalpakkam, Chengalpattu District**  
**Tamil Nadu - 603102**

**दिनेश कुमार शुक्ला / Dinesh Kumar Shukla**  
 अध्यक्ष / Chairman  
 परमाणु ऊर्जा नियामक परिषद  
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 भारत सरकार / Government of India  
 नियामक भवन / Niyamak Bhavan  
 अणुशक्तिनगर / Anushaktinagar, मुंबई / Mumbai - 400 094.

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