

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 624/MP/2020**

**Coram:  
Shri P.K. Pujari, Chairperson  
Shri I.S. Jha, Member  
Shri Arun Goyal, Member  
Shri P.K.Singh, Member**

**Date of order: 4<sup>th</sup> March, 2021**

**In the matter of**

Petition seeking permission to continue withdrawal of start-up power from the Grid as per Deviation Settlement Mechanism (DSM) till first synchronization of KAPP-3 or 31.3.2021, whichever is earlier.

**And**

**In the matter of**

Nuclear Power Corporation of India Limited (NPCIL)  
Nabhikiya Urja Bhavan/ Vikram Sarabhai Bhavan,  
Anushaktinagar, Mumbai  
Maharashtra – 400094

**.....Petitioner**

**Vs.**

Western Regional Load Dispatch Centre  
F-3, MIDC Area, Andher (East),  
Mumbai, Maharashtra- 400093

**.....Respondent**

**ORDER**

This Petition has been filed by the Petitioner, Nuclear Power Corporation of India Limited under Clause (7) of Regulation 8 of the Central Electricity Regulatory Commission (Grant of Connectivity, Long-term Access and Medium term Open access in inter-State transmission and related matters) Regulations, 2009 (hereinafter referred to as “the Connectivity Regulations”) with the following prayers:

- “(i) to permit drawl of start-up power from the grid under Deviation Settlement Mechanism (DSM) for KAPP-3 commissioning till synchronization of KAPP-3 or 31.3.2021 whichever is earlier; and  
(ii) Pass any such order(s) as deemed fit by the Commission.”*



2. Kakrapar Atomic Power Project 3 and 4 of the Petitioner is located at Kakrapar, Surat District in the State of Gujarat and is being implemented in two stages consisting of Unit-I and Unit-II of 700 MW each. The project is first indigenous 700 MW Pressurised Heavy Water Reactor (PHWR).

3. The Commission vide order dated 20.3.2020 in Petition No. 258/MP/2020 had granted permission for continuation of drawl of start-up power up to 30.9.2020 or date of first synchronization, whichever is earlier. The Petitioner has submitted that COD of Kakrapar Atomic Power Project 3 (hereinafter referred to as 'KAPP-3') could not be achieved due to the following reasons:

*“(a) In this Plant, various First of A Kind (FOAK) systems i.e. Passive Decay Heat Removal System and Containment Spray System, etc. have been provided for enhancement of safety features of the plant. As per the guidelines of Atomic Energy Regulatory Board, all FOAK systems have to be proven to meet their design intent by mock up and experiments. The results are further validated by computed code and analysis. The design of these systems is finalized after successful completion of experiments and verification of data of these experiments.*

*(b) Being the first 700 MW Pressurized Heavy Water Reactor (PHWR), the stringent requirements of quality assurance on the design, selection, qualification, operation and maintenance of critical equipments i.e. Diesel Generator (DG), Steam Generators (SGs) and reactor components, etc. are being incorporated first time. Therefore, manufacturing of critical equipments such as steam generators, diesel generators and reactor component, etc. and their pre-service inspection has added to the delay in supply of these equipments. Further, there are limited qualified vendors in India for manufacturing of nuclear grade reactor equipments and components.*

*(c) Nuclear reactors are being built with the latest technology and engineering knowhow. Numbers of new research and development activities are being conducted to establish design safety features. Operating experience of Nuclear Reactors around the world in design evolution is being incorporated in new reactor's safety features. New System, Structure & Component are being incorporated for establishing robustness in design, erection & operation based upon regulatory recommendations subsequent to operating experience from other nuclear power plants.*

*(d) NPCIL has developed new technology i.e. interleaving of feeders, primary containment liner and partial boiling in primary heat transport system, etc. to enhance the safety and efficiency of Nuclear Power Plants.*

*(e) All new technology developments are reviewed and their efficacy has to be proved before erection, commissioning and implementation. This has increased the project completion time.*

*(f) Due to Covid-19 pandemic, certain restrictions were imposed on employees and the contractors at workplace. During the lockdown period, number of employees were asked to work from home and only essential services were continued. This has caused delay in commissioning activities of KAPP-3.”*

4. The Petitioner has submitted the current status of works of the project as under:

(a) 400 kV switchyard has been charged and all 400 kV transmission lines are in service. Start-up transformer is in service and station auxiliary electrical system buses have been commissioned.

(b) Nuclear fuel loading in reactor was completed in March, 2020.

(c) Heavy water addition in Primary Heat Transport (PHT) system was completed in April, 2020 and PHT has been kept in circulation.

(d) Fuel handling system has been commissioned and refuelling operation was successfully demonstrated.

(e) Bulk addition of heavy water in moderator system was completed in July, 2020 and moderator system has been kept in circulation.

(f) After reactor critically, low power physics experiments are in progress and will be completed by the end of September, 2020.

(g) Main condenser erection work has been completed. Condenser cooling water pump house construction has been completed. Commissioning of condenser cooling water pumps is in progress and would be completed by September, 2020.

(h) Turbine and Generator (TG) auxiliary system commissioning is in progress. TG is expected to be on barring gear in early November, 2020.

(i) Main feed water system commissioning is in progress. Flushing of main feed water system pipelines has been completed. Main boiler feed pump load testing of one pump has been completed and testing is being taken up for other two pumps.

Instrumentation of secondary cycle system is in advance stage of completion and it is expected to be commissioned by November, 2020.

(j) After completion of commissioning of secondary cycle system and reactor low power physics experiments, three months would be required for trial operation of TG system and first synchronization with the grid. The first synchronisation of KAPP-3 is expected by 31.3.2021.

5. Since the Commission was not able to take up the matter in view of the decision of the Hon`ble Supreme Court dated 28.8.2020 in Contempt Petition (C) No. 429/2020 in CA No. 14697 of 2015, the Petitioner was permitted vide letter dated 30.9.2020 of the Secretary of the Commission to draw start up power from the grid to facilitate commissioning test including full load test of KAPP-3 for a period of one month (i.e. from 1.10.2020 to 31.10.2020).

6. Hon`ble Supreme court vide its order dated 20.1.2021 vacated the interdicts. Taking into consideration the difficulties expressed by the Petitioner as mentioned in paragraph 3 above and treating it as exceptional circumstances, the Petitioner was further permitted vide letter of the Secretary of the Commission dated 10.2.2021 to draw start up power from the grid to facilitate commissioning test including full load test of KAPP-3 till 31.3.2021 in terms of Regulation 8(7) of the Connectivity Regulations.

7. The Petition is admitted by circulation.

8. The fourth, fifth and sixth provisos to Regulation 8(7) of the Connectivity Regulations provide as under:

*"Provided that the Commission may in exceptional circumstances, allow extension of the period for inter-change of power beyond the period as prescribed in this clause, on an application made by the generating station at least two months in advance of completion of the prescribed period:*



*Provided further that the concerned Regional Load Despatch Centre while granting such permission shall keep the grid security in view.*

*Provided also that the infirm power so interchanged by the unit(s) of the generating plant shall be treated as deviation and the generator shall be paid/charged for such injection/drawal of infirm power in accordance with the provisions of the Central Electricity Regulatory Commission (Deviation Settlement Mechanism and related matters) Regulations, 2014, as amended from time to time or subsequent re-enactment thereof."*

9. In view of the provisions of Regulation 8(7) of the Connectivity Regulations, the Commission approves the permission accorded to the Petitioner vide letter of the Secretary of the Commission dated 30.9.2020 to draw start-up power from the grid for KAPP-3 for a period of one month from 1.10.2020 to 31.10.2020. Further, the Commission also approves the permission accorded to the Petitioner vide letter of the Secretary of the Commission dated 10.2.2021 to draw start-up power from the grid for KAPP-3 for the period from 10.2.2021 to 31.3.2021.

10. With the above, the Petition No. 624/MP/2020 is disposed of.

**Sd/-  
(P.K.Singh)  
Member**

**sd/-  
(Arun Goyal)  
Member**

**sd/-  
(I.S. Jha)  
Member**

**sd/-  
(P.K. Pujari)  
Chairperson**

