

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 156/MP/2019

**Coram:
Shri P.K. Pujari, Chairperson
Dr. M. K. Iyer, Member
Shri I.S. Jha, Member**

Date of order: 21st of June, 2019

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 31.3.2020, 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.

1. Western Regional Power Committee
F-3, MIDC Area, Andher (East),
Mumbai, Maharashtra- 400093

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

.....Respondents

Parties Present:

Shri Sandeep Sarwate, NPCIL
Shri Upendra Parmanand, NPCIL

ORDER

This Petition has been filed by the Petitioner, Nuclear Power Corporation of India Limited (hereinafter referred to as “Petitioner”), 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 "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 31.3.2020 whichever is earlier; and

(ii) Pass any such order(s) as deemed fit by the Commission."

2. Kakrapar Atomic Power Project 3 and 4 (hereinafter referred to as 'KAPP-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). KAPP-3 started drawing start-up power from 22.3.2017.

3. The Commission vide order dated 11.6.2018 in Petition No.176/MP/2018 had granted permission for continuation of drawl of start-up power upto 30.6.2019 or date of first synchronization, whichever is earlier. The Petitioner has submitted that COD of KAPP-3 could not be achieved due to the following reasons:

"(a) There are 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. This has added to the delay in construction and subsequent commissioning.

(b) Being the first 700 MW PHWR, the manufacturing of critical equipment such as steam generators, diesel generators, reactor component, etc. and their pre-service inspection has added to the delay in supply of these equipment. Further, there are limited qualified vendors in India for manufacturing of nuclear grade reactor equipment 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) Interleaving of feeders of Primary Heat Transport System has been carried out in Indian NPP first time for enhancing reactor safety. Similarly, Reactor Building Primary Containment Liner has been incorporated first time to improve engineering safety features. All these activities are reviewed by regulators & competent authority in each stage.

(e) Statutory clearances are to be obtained from various agencies such as Atomic Energy Regulatory Board (AERB), Chief Controller of Explosives (CCOE), Gujarat Pollution Control Board (GPCB) and Ministry of Environment and Forest (MOEF) during various stages of construction and commissioning.”

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 (220/6.6 kV) is in service and station auxiliary electrical system buses are being commissioned.

(b) Nuclear building construction work is over and integrated leak rate test of primary and secondary containment and primary containment proof test have been completed in May, 2019.

(c) Primary Heat Transport (PHT) system integrated hydro test has been completed.

(d) Reactor erection has been completed and Reactivity device testing is in progress and erection would be completed by June, 2019. Reactor would start sustained fission chain reaction by the end of 4th quarter of the year 2019.

(e) Hot conditioning of PHT system would be completed in third quarter of the year 2019.

(f) 80% of instrumentation works of nuclear systems and common service systems have been completed. Computer based systems of soft controls of station auxiliaries are being commissioned and turbine generator and its auxiliaries and secondary cycle system erection is in progress.

(g) Moderator system erection work and load testing of pumps have been completed.

(h) Station auxiliary systems i.e. Fire Water System, Service Water System, Chilled Water System, Compressed Air System, Active process water system and Emergency Diesel Generator sets are being commissioned and are in service.

(i) Main condenser erection work has been completed. Both Natural Draught Cooling Towers have been constructed and condenser cooling water pump house construction work is in progress.

5. The Petition was heard after notice to the Respondents and none was present on behalf of the Respondents. During the course of hearing, the representative of the Petitioner reiterated the submissions made in the Petition and requested for time for drawal of start-up power till 31.3.2020 or first synchronization, whichever is earlier.

6. We have considered the prayer made by the Petitioner. The Fourth Proviso to Regulation 8 (7) of the Connectivity Regulations, as amended from time to time, provides 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."

7. The Petitioner has submitted that being the first 700 MW PHWR, new system, structure and components are being incorporated for establishing robustness in design, erection and operation based upon regulatory recommendations subsequent to operating experience from other nuclear power plants. The Petitioner has submitted that due to delay in manufacturing of critical equipments such as steam generators, diesel generators and reactor components, etc. and delay in statutory clearances from Atomic Energy Regulatory Board, Chief Controller of Explosive, Gujarat Pollution Control Board and Ministry of Environment and Forest during various stages of construction and commissioning, KAPP-3 could not be synchronized. Accordingly, the Petitioner has sought permission for drawl of start-up power from the grid till 31.3.2020 or first synchronization, whichever is earlier.

8. Taking into consideration the submissions made by the Petitioner, we allow extension of time for drawl of start-up power from the grid up to 31.3.2020 or first synchronization, whichever is earlier. We expect the Petitioner to make all efforts to ensure the synchronization of KAPP-3 of the project by this date.

9. With the above, the Petition No. 156/MP/2019 is disposed of.

Sd/-
(I.S. Jha)
Member

sd/-
(Dr. M.K. Iyer)
Member

sd/-
(P.K. Pujari)
Chairperson

