

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 176/MP/2018

Coram:

Shri P.K. Pujari, Chairperson

Shri A.K. Singhal, Member

Shri A.S. Bakshi, Member

Dr. M.K. Iyer, Member

Date of Order: 11th of June, 2018

In the matter of

Anticipated delay in the declaration of commercial Operation (COD) of Unit-3 of the 2x700 MW Kakrapar Atomic Power Project-3 & 4 (KAPP-3), Nuclear Power Corporation of India Ltd.

And

In the matter of

Seeking Commission`s permission to continue with drawl of startup power from the grid as per the Deviation Settlement Mechanism till 30.6.2019 or first synchronization of KAPP-3, whichever is earlier.

And

In the matter of

Nuclear Power Corporation of India Ltd.
Nabhikiya Urja Bhawan,
Anushaktinagar, Mumbai-400 094

...Petitioner

Vs

1. The Member Secretary
Western Regional Power Committee,
F-3, MIDC Area, Andheri (East), Mumbai-400 093

2. Western Regional Load Despatch Centre
Western Regional Power Committee,
F-3, MIDC Area, Andheri (East), Mumbai-400 093

3. Power System Operation Corporation (POSOCO)
B-9, Qutub Institutional Areas, Katwaria Sarai,
New Delhi-110 016

...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 Ltd. 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:

"(a) Permit drawal of start up power from the grid under Deviation settlement Mechanism (DSM) for KAPP-3 commissioning till synchronization or upto 30.6.2019, whichever is earlier;

(b) Pass such order (s) as deemed fit by the Hon`ble 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 startup power from 20.3.2017 which is getting expired on 22.6.2018.

3. The Petitioner has submitted that KAPP-3 could not be commissioned 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. 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), Ministry of Environment & 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 has been charged and station auxiliary electrical system buses are being commissioned and taken into service.

(b) Station auxiliary systems i.e. Fire Water System, Service Water System, Chilled Water System, Compressed Air System, Diesel Oil Storage and Transfer System have been commissioned.

(c) Turbine Generator set and its auxiliary system erection is in progress.

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

(e) Nuclear building construction is nearby completion.

(f) Erection work of major nuclear equipment e.g. Steam Generators (SGs), Calandria, End Shields have been completed. 80% of nuclear piping works have been completed and remaining is in progress.

(g) Hot conditioning of Primary Heat Transport System (PHT) will commence during the last quarter of this year. Reactor will start sustained fission chain reaction by the 2nd quarter of the year 2019.

5. The Petition was heard after notice to the Respondents. 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 startup till 30.6.2019 or first synchronization, whichever is earlier.

6. We have considered the prayer of the Petitioner. Fourth Proviso to the Connectivity Regulations, as amended from time to time provides as under:

“Provided that the Commission may allow extension of the period of testing including full load testing, and consequent injection of infirm power by the unit, beyond six months, in exceptional circumstances on an application made by the generating company at least two months in advance of completion of six month 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 drawal of startup power from the grid till 30.6.2019 or first synchronization, whichever is earlier.

8. We are of the view that non-availability of start-up power would hamper the progress of commissioning work which would jeopardize the commissioning activities and result in further delay in synchronisation of KAPP-3. Accordingly, we allow extension of time for drawal of start-up power from the grid up to 30.6.2019 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. 176/MP/2018 is disposed of.

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

sd/-
(A.S. Bakshi)
Member

sd/-
(A.K. Singhal)
Member

sd/-
(P.K. Pujari)
Chairperson