

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No.175/MP/2023

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

Date of Order: 29th May, 2023

In the matter of

Petition seeking permission to continue drawal of start-up power from the grid as per Deviation Settlement Mechanism (DSM) till first synchronization of KAPP-4 or 2.7.2024, 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, Andheri (East),
Mumbai-400 093

...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:

“(a) Permit drawal of start-up power from the grid under Deviation Settlement Mechanism (DSM) for KAPP-4 commissioning till synchronization of KAPP-4 or 2.7.2024, whichever is earlier.

(b) Pass such order(s) as deemed fit by the Commission.”

2. Kakrapar Atomic Power Project 3 and 4 of the Petitioner are located at Kakrapar Surat District in the State of Gujarat and are being implemented in two stages consisting of Unit-I and Unit-II of 700 MW each. The project is the first indigenous 700 MW Pressurised Heavy Water Reactor (PHWR). Kakrapar Atomic Power Project 4 (in short 'KAPP-4') started drawing start-up power from 2.4.2021, the permission for which is expiring on 2.7.2023.

3. The Petitioner has submitted that the first synchronization of KAPP-4 is expected by 2.7.2024 and it could not be synchronized yet due to the following reasons:

(a) Construction and commissioning activities of main plant system e.g. Primary Heat Transport (PHT) system, moderator system, TG and secondary cycle system could not be completed within the prescribed period due to surge in the Covid-19 pandemic from March, 2021, which led to the restrictions on inter-State movement of equipment and personnel, etc. and effected the contractor and vendor support for ongoing activities at site.

(b) All efforts are being made to expedite plant commissioning. A major milestone i.e PHT main system hydro test was conducted on 27.4.2022.

(c) In line with KAPP-3, major modification works on civil structural beams and ventilation systems of reactor building need to be carried out, which is mandatory requirement for starting PHT hot conditioning. Moreover, an additional chilled water system is being erected to cater to the heat load of high enthalpy. Subsequent milestones in KAPP-4 commissioning such as fuel loading, heavy water addition, first criticality and synchronization will be achieved after stage-wise clearances.

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 are into service.

(b) Station auxiliary system i.e fire water system, service water system, chilled water system, compressed air system & diesel oil storage and transfer system are in advanced stage of commissioning.

(c) All four emergency diesel generators have been commissioned.

(d) Turbine generator set and its auxiliary system erection is in progress.

(e) PHT system tight water commissioning has been commissioned and system is ready for hot conditioning tests.

(f) 80% works of main plant instrumentation has been completed. TG and secondary cycle system instrumentation is in progress.

(f) Reactor building structural beam modification works have been completed as per the modification carried out in KAPP-3.

(g) An additional chilled water system erection is in progress to cater the heat load of high enthalpy. Commissioning of this system would be completed before going for PHT hot conditioning.

(h) Primary containment integrated leak rate test and proof test is expected to be completed in the month of June, 2023.

(i) Subsequent milestones in KAPP-4 commissioning such as light water draining & drying, coolant channel pre-service inspection, fuel loading, heavy water would take additional six months.

(j) Reactor is expected to become critical and start sustained chain reaction in the first quarter of 2024.

(k) TG rolling and first synchronization is expected in the second quarter of 2024.

5. The Petitioner has submitted that due to reasons beyond its control, it could not synchronize KAPP-4. The Petitioner has requested to grant permission for drawl of start-up power from the grid beyond 2.7.2023 till synchronization of KAPP-4 or 2.7.2024, whichever is earlier.

6. The Petition is admitted by circulation.

7. We have considered the submissions of the Petitioner. The fourth and fifth 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.”

8. The Petitioner has submitted that 700 MW PHWR being a new system, structure and components are being incorporated for establishing robustness in design, erection and operation based upon regulatory recommendations. The Petitioner has submitted that due to the Covid-19 pandemic, KAPP-4 could not be synchronized. Accordingly, the Petitioner has sought permission for drawl of start-up power from the grid till synchronization or 2.7.2024, whichever is earlier.

9. We are of the view that the non-availability of start-up power would hamper the progress of commissioning work and result in a further delay in synchronisation of KAPP-4. Accordingly, in the peculiar facts and circumstances, by way of an exceptional case, we hereby allow the extension of time for drawl of start-up power from the grid, as sought for till synchronization of KAPP-4 or 2.7.2024, whichever is earlier. We expect the Petitioner to make all efforts to ensure the synchronization of KAPP-4 of the project by this date.

10. In terms of the above, Petition No.175/MP/2023 is disposed of.

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

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

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

**sd/-
(Jishnu Barua)
Chairperson**