

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 192/MP/2019

Coram:

**Shri I.S. Jha, Member
Shri Arun Goyal, Member
Shri Pravas Kumar Singh, Member**

Date of Order: 5th July, 2022

In the matter of

Petition for grant of exemption from Technical Minimum operation for NLCIL TPS-II Expansion (2 x 250 MW) CFBC Units till 31.3.2020.

And

In the matter of

NLC India Limited,
135/73, EVR Periyar Salai, Kilpauk,
Chennai – 600 010, Tamil Nadu

...Petitioner

Vs

1. Tamil Nadu Generation and Distribution Corporation Limited,
7th Floor, Eastern Wing, 144- Anna Salai,
Chennai – 600002.

2. Kerala State Electricity Board Limited,
Vyduathi Bhavanam, Pattom,
Thiruvananthapuram – 695004.

3. Puducherry Electricity Department,
137, N.S.C. Bose Road,
Puducherry – 605001.

4. Power Company of Karnataka Limited,
Kavery Bhavan, Bengaluru – 560009.

5. APTRANSCO / APPCC,
Vidyut Soudha, Khairatabad,
Hyderabad - 500 082

6. TSTRANSCO / TSPCC,
Vidyut Soudha, Khairatabad,
Hyderabad - 500 082.



7. Southern Regional Load Dispatch Centre,
Power System Operation Corporation Ltd.,
29, Race Course Cross Road,
Bengaluru – 560009.

8. Southern Regional Power Committee,
29, Race Course Cross Road,
Bengaluru – 560009.

...Respondents

Parties present:

Ms. Anushree Bardhan, Advocate, NLCIL
Ms. Shikha Sood, Advocate, NLCIL
Ms. Srishti Khindaria, Advocate, NLCIL
Shri Nambirajan, NLCIL
Shri Anil Kumar Sahni, NLCIL
Shri A. Srinivasan, NLCIL
Shri S.Vallinayagam, Advocate, TANGEDCO
Ms. B. Rajeswari, TANGEDCO
Ms. R. Ramalakshmi, TANGEDCO
Ms. R. Alamelu, TANGEDCO

ORDER

The Petitioner, NLC India Limited has filed this petition with the following prayers:

- “1. To grant Exemption from Technical Minimum operation for TPS-II Expansion (2 x 250 MW) CFBC Units till 31.03.2020;*
- 2. To pass such order(s) as deemed by the Hon’ble Commission.”*

Submissions of the Petitioner

2. The Petitioner in this petition has mainly submitted the following:

(a) The boilers of NLCIL Thermal Power Station-II Expansion (2 x 250 MW) (in short ‘the generating station/project’) are based on CFBC technology, which were installed for the first time in India. The COD of Unit-I & II is 5.7.2015 and 22.4.2015 respectively. The stable and sustained operation of the units of the generating station, at full load, could not be achieved even after COD of the units due to certain technical constraints in FBHEs of CFBC boiler.

(b) The Commission has notified the fourth amendment to the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010 on 6.4.2016, wherein, Regulation 6.3B.1 stipulates Technical Minimum



as 55% of MCR loading or installed capacity of the unit of at generating station.

(c) The Commission vide its notification dated 5.5.2017 had stipulated the detailed operating procedure on reserve shutdown & compensation mechanism for implementation of 55% technical minimum MCR and the above procedure came into effect from 15.5.2017.

(d) The implementation of the above notification had telling effects on the operations of the power plants of the Petitioner and therefore, Petition No. 144/MP/2017 was filed by the Petitioner praying to ensure reliable, safe and stable operation of the units on a sustained basis by reviewing the Technical Minimum of 55 % of MCR loading or installed capacity of a generating unit, fixed for stable operation without oil support in the IEGC 4th amendment and consider revising the same for the lignite fired stations of the Petitioner. The Petitioner also prayed to consider the URS sold in market to be treated independently and allowed over and above the technical minimum schedule of 70%.

(e) The Commission vide its order dated 9.4.2019 in Petition No.144/MP/2017, allowed the Technical Minimum of 65% MCR and by corrigendum order dated 23.5.2019 decided that the Technical Minimum of the units of the generating station shall be 65% after 30.6.2019. The technical minimum exemption issued for the generating station beyond 30.6.2019, practically had a time duration of only one month.

(f) In compliance to the Commission's order dated 9.4.2019 in Petition 144/MP/2017 and based on the recommendations of the Central Electricity Authority (CEA), modifications were carried out in the generating station. As per performance parameters for 2016-17 to 2018-19, the Plant Load Factor of the generating station reached a maximum of approximately 45% only. In 2018-19, FBHE tube leakage accounted for 71% of the total forced outages.

(h) In the generating station, several modifications were carried out in FBHEs to overcome the coil puncture. Since the coils are closely placed in FBHEs, one coil puncture leads to heavy secondary damages to neighboring coils creating cascade punctures due to presence of bed material and high-pressure steam. Since the coils are made up of T91 material, the duration of repairing the coil puncture is of the order of 15 days due to the following reasons:

- (i) Cutting & replacement of damaged coils
- (ii) Welding of coils (edge preparation, preheating and welding)
- (iii) Stress relieving of the weld joints of T91 material
- (iv) 100% Radiographic Testing of all the weld joints to avoid any chance of weld defects



(i) Moreover, if the coil puncture occurs in the bottom portion of the FBHEs, a lot of coils have to be cut for approaching the failed tubes. This also increases the quantum of repair work and increases duration of shut down.

(j) In the refractory front, the original provision consisted of Calcium silicate blocks, insulation bricks & andalusite bricks. Any cracks developed in the refractory enables bed material to penetrate through them leading to bed material leak and red hotness in the mother plate. To overcome this, two-layer system of refractory (Insulyte application by guniting method and dense castable) has been adopted. Plastic refractory (Phosphate bonded), a superior quality material is being used at locations where repetitive failures have occurred due to process-oriented damages.

(k) In order to overcome the above difficulties, the following works are planned to be carried out in Units-1 during 01.09.2019 to 15.10.2019 (45 days) and Unit-2 during 5.7.2011 to 18.8.2019 (45 days).

(A) Modification in FBHEs as per the recommendations of M/s BHEL (OEM);

- (i) Replacement of existing SS Hanger tubes with T-91 hanger Tubes.
- (ii) Providing sleeves in the bottom coils leaving from FBHE.
- (iii) Replacement all the existing Dog bones with new ones.

(B) Replacement of the existing T-11 material Hanger tubes in back pass with T91 material as per the recommendations of M/s BHEL (OEM)

(C) Overhaul of LP Turbine & Generator.

(D) Metal spray of water wall tubes in combustor Kick off zone.

(E) Refractory Modification in Cyclone cone with two-layer system of refractory (Insulyte application by guniting and dense castables);

(F) Refractory rectification in Combustor, Cyclones cylindrical portion, target & non-target wall, flue gas ducts and FBHEs;

(G) Shifting of Drive head of Lignite Transport Conveyors (LTC) in 1D, 2C & 2D.

(I) After carrying out the modifications in FBHEs and back pass in both the Units, it is expected that the performance of both units of the generating station will improve and stable operation at full load can be achieved. Based on the past experience, approximate time period of six months is required to test, stabilize and to achieve the sustained operation of both the units.



Hearing dated 5.9.2019

3. The matter was heard on admission on 5.9.2019. After hearing the learned Senior counsel for the Petitioner and the learned counsel for Respondent TANGEDCO, the Commission admitted the Petition and directed to complete pleadings in the matter. The Commission also directed the staff to refer the matter to CEA and obtain its expert opinion in the matter.

Reply of the Respondent TANGEDCO

4. The Respondent TANGEDCO vide reply affidavit dated 24.9.2019 has submitted the following:

(a) The generating station of the Petitioner has been commissioned after a delay of 77 months and 71 months from the scheduled COD of Unit-I and Unit-II respectively. Even after the commissioning of the generating station, after a huge delayed period, the generating station is not performing to the tune and is running at a very low PLF level than the PLF level determined in the Tariff Regulations and even after four years after commissioning, the generating station is not able to generate energy equivalent to its full capacity at 75% level.

(b) From the REA accounts of SRPC for 2018-19 it could be seen that the Respondent has not given any request for surrender of power from the generating station. The CEA in its report dated 12.9.2018, has informed that there is no limitation in plant operation up to the stipulated Technical Minimum load of 55% and thus, there is improvement in the performance of the units over the years.

(c) The Commission in its various orders had considered the Petitioners plea for injection infirm power for a longer period, which lead to abnormal delay in commissioning of the generating station. the Commission in its order dated. 24.7.2017 in Petition No. 146/GT/2015 while determining the generation tariff in respect of the generating station, had stated that the risk due to adoption of new technology and cost overrun should be borne by the project developers and the beneficiaries to encourage new technology.

(d) Even after the delayed commissioning of TPS-II Expansion and non-fulfilment of normative parameters set out in the Tariff Regulations, the beneficiaries are still bearing the cost without getting any benefits from the CFBC technology as it was demonstrated earlier. Since the generating station could not run at full capacity corresponding to installed capacity even after 5



years from the COD, the Commission may direct the Petitioner to file a separate petition before this Commission seeking approval to de-rate the capacity to the lower level.

5. Accordingly, the Respondent has submitted that the claim of the Petitioner for exemption from technical minimum for the generating station till 31.3.2020 may be rejected.

Hearing dated 28.6.2022

6. During the hearing of the petition through virtual hearing on 28.6.2022, the learned counsel for the Petitioner pointed out to the problems/difficulties faced by the Petitioner to stabilise and achieve the sustained operation of both the units of the generating station, as mentioned in the petition. On an observation by the Commission that the prayer of the Petitioner has become infructuous, the learned counsel for the Petitioner submitted that though the prayer for exemption from technical minimum operation of the generating station (till 31.3.2020) had expired, the Commission, may, considering the problems faced by the Petitioner to stabilise the generating station and as modification works carried out through M/s BHEL are still ongoing, permit the Petitioner to amend the present petition or file a fresh petition seeking appropriate reliefs.

7. The learned counsel for the Respondent TANGEDCO submitted that the Petitioner may not be granted liberty to file fresh petition seeking exemption from technical minimum operation for the generating station, since, the Commission vide its order dated 9.4.2019/ 23.5.2019, had granted the said relief to the Petitioner only till 30.6.2019. He also submitted that the Petitioner cannot be allowed to seek benefit for its own default, as the beneficiaries, and ultimately the consumers, will be affected by the grant of such exemption.



8. The submission of the parties has been considered. Considering the fact that the prayer of the Petitioner seeking exemption from technical minimum operation of the generating station till 31.3.2020 has become infructuous, we find no reason to keep the present petition pending. The learned counsel for the Petitioner has however, pointed out that the generating station is facing operational problems in terms of flexibility of scheduling and load variations. In view of the submission, it was observed that the Petitioner or any other entity is always at liberty to approach the Commission with a proper petition, seeking appropriate reliefs and the same is to be considered in accordance with law. The filing fees deposited by the Petitioner for this petition shall be adjusted, if appropriate petition is filed.

9. Petition No.192/MP/2019 is disposed of in terms of the above.

Sd/-
(Pravas Kumar Singh)
Member

Sd/-
(Arun Goyal)
Member

Sd/-
(I.S. Jha)
Member

