

**Central Electricity Regulatory Commission
New Delhi**

RECORD OF PROCEEDINGS

Petition No. 19/2010

Subject: Petition for in-principle approval for procurement of generator at Rihand Super Thermal Power Station, Stage-I (1000 MW).

Date of Hearing: 11.11.2010

Coram: Dr. Pramod Deo, Chairperson
Shri S.Jayaraman, Member
Shri V.S.Verma, Member
Shri Deena Dayalan, Member

Petitioner: NTPC Ltd

Respondents: UPPCL, JVVNL, AVVNL, JoVVNL, BSES Rajdhani, BSES, Yamuna, NDPL, HPPC, PSEB, HPSEB, PDD (J&K) Jammu, PD Chandigarh and UPCL.

Parties present: Shri V.K.Padha, NTPC
Shri S. Saran, NTPC
Shri Ajay Dua, NTPC
Shri D.K. Chaturvedi, NTPC
Shri A.K. Mukherjee, NTPC
Shri V.S.Goerge, NTPC

This petition has been filed by the petitioner NTPC Ltd, for in-principle approval for procurement of generator at Rihand Super Thermal Power Station, Stage-I (1000 MW) (hereinafter referred to as 'the generating station') in terms of Regulation 44 the Central Electricity Regulatory Commission (Terms and conditions of Tariff) Regulations, 2009 (hereinafter 'the 2009 regulations').

2. The representative of the petitioner submitted as under:

(a) The petition has been filed for in-principle approval of the Commission for purchase of a spare generator which was necessary for effective operation of the generating station;

(b) The generators for both the Units of the generating station were supplied by M/s NEI, UK (presently M/s Alstom). The date of commercial operation of the generating station was 1.1.1991 and the units are in operation for about 19 years. The rotor and stator of generators of both the Units have developed problems which resulted in outage of the units on a number of occasions. As there was no spare rotor, any major breakdown in

the generators would cause prolonged outages as at present there were only two generators of this design in the country;

(c) The failure of these generators could only be inferred from past behavior and not predictable. It was apprehended that in case of failure of any of the generators, the same need to be transported to UK for repair which would involve shipping from site to OEM works and back, thereby consuming longer time. The supply of generator with a compatible design from sources other than OEM was not available and the time for repair/replacement in case of any eventuality would be considerably longer;

(d) The main recurring problems were the Earth fault of rotor and the high Differential Pressure (DP) of De-mineralized (DM) water used for stator cooling. The problem of Rotor Earth Fault has been addressed to a certain extent by the OEM by carrying out de-tuning of stator core by making access in stator core and by providing additional weights on selected core pockets. However, this de-tuning could not be carried out for the entire stator core on account of limited access.

(e) The generator stator cooling water system was another critical area wherein problems were being faced in both the Units. In order to operate the generator safely and to maintain the differential pressure of stator water system across winding within the specified limit, the generating station carried out (as an usual practice) hot water reverse flushing during annual overhauling as well as during unit outages for other reasons. However, the problem of stator water DP again resurfaced during the years 2006 and 2007. In addition, the acid cleaning also resulted in thinning of the conductor;

3. On a specific query by the Commission whether the thickness of the conductor at present in comparison to the minimum thickness required had been measured, the representative of the petitioner clarified that the thinness of conductor due to acid cleaning was based on assumption considering the molten slag of material which had come out during acid cleaning;

4. On a further query as to whether the rotor could be repaired at site, with indigenous manufactures like BHEL, considering the nature of damage, the representative of the petitioner clarified that the OEM had conducted RLA study on the Rotor and Stator of the generators and had suggested for the replacement of the generator. The representative further clarified that it had consulted M/s BHEL on this count, and M/s BHEL had expressed its inability to do the repair of the rotor and stator, on account of its different nature of design;

5. The Commission after hearing the submissions directed the petitioner to furnish the following information/documents on affidavit, latest by 30.11.2010:

- (i) Complete RLA study report of the OEM on the status and condition of the generator rotor and stator, along with recommendations of the OEM.

(ii) Certificate from M/s BHEL to the effect that it was unable to repair the rotor and stator of the generators supplied by the OEM.

6. Matter shall be listed for further hearing on 21.12.2010.

Sd/-
(T.Rout)
Joint Chief (Law)