

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. MP/065/2014

- Subject : Petition under Regulation (4) of Part 7 of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010 read with Regulation 111 of Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 seeking relaxation of Regulation 5.2 (f) (iv) regarding requirement of implementing FGMO for certain units of NTPC.
- Date of hearing : 28.8.2014
- Coram : Shri Gireesh B. Pradhan, Chairperson
Shri M. Deena Dayalan, Member
Shri A.K. Singhal, Member
Shri A.S.Bakshi, Member
- Petitioner : NTPC Limited, New Delhi
- Parties present : Shri Alok Gupta, NTPC
Shri Ajay Dua, NTPC
Shri P.B. Venkatesh, NTPC
Shri K. P. Satpati, NTPC
Shri A.S. Pandey, NTPC
Shri Uday Shankar, NTPC
Shri S.S. Barpanda, NLDC

Record of Proceedings

The representative of the petitioner submitted as under:

- (a) The reply to the queries raised by the Commission vide Record of Proceedings for the hearing dated 2.7.2014 have already been submitted under affidavit dated 3.8.2014.
- (b) The capacity of the LMZ machines for which relaxation is being sought constitute 7% of the installed capacity of NTPC. These units have been equipped with Mechanical Hydraulic Governors and if put on FGMO with droop setting of 4%, unload by 50% on frequency rise of 1 Hz.
- (c) Though with the tightening of frequency band, the variation in the frequency has come down but still the frequency varies by 0.5 Hz over a

day causing unloading of the machines by 25%. The resultant process disturbances will also be frequent and large, and beyond the capability of the relevant control system to manage. Such a situation would lead to frequent outages on process parameter violation. The only way these machines can be prevented from wild load fluctuations is to keep frequency constant (within the Governor dead band of 0.06%).

(d) With regard to FGMO with manual intervention, it is physically not possible for the operator to implement FGMO with manual intervention as prescribed in the Grid Code, as he has to monitor interrelated operational parameters of several other equipments being operated simultaneously.

2. The Commission observed that NTPC should go ahead with the R & M of these units and the petitioner would be allowed the capital expenditure incurred on making these machines compliant to Grid Code requirements regarding RGMO/FGMO.

3. In response, the representative of the petitioner submitted that it would not be possible to meet the Grid Code requirements of RGMO scheme, without replacing the entire Mechanical Hydro Governor (MHG) with Electro Hydraulic Governor (EHG) for these machines. The conversion of existing MHG to EHG was attempted recently at OBRA TPS by BHEL/Siemens. However, when NTPC's team visited, it was not functional. The representative of the petitioner submitted that since the retrofit carried out at Obra by BHEL is yet to be operated for sustainable period and not proven anywhere else, conversion of governing system at these stations is not being attempted so far under R&M of LMZ machines.

4. The representative of NLDC submitted as under:

(a) Regarding apprehension of the petitioner that the machines will unload by 50% on frequency rise of 1 Hz, it is clarified that frequency change of a load/generation loss involving 1000 MW is of the order of 0.01-0.2 Hz. For this increase in frequency, a 210 MW machine having droop 4%, will unload the machine only 11-21 MW.

(b) After the tightening of frequency band, on 12.3.2014, Maximum frequency change was observed during the incident of tripping of CGPL Mundra (3800 MW generation loss), led to frequency dip of 0.6 Hz which is a very rare case.

(c) For this instance frequency vs generator output in respect of the petitioner's stations in Eastern Region have been plotted, where generators of Farakka, Kahalgaon, Talcher units responded within 408 MW (Kahalgaon U#5,6 being maximum-22,32 MW), whereas a few units did not respond or aggravated the situation .

5. After hearing the representatives of the petitioner and NLDC, the Commission admitted the petition. The Commission directed the respondents to file their replies on merits by 19.9.2015 with an advance copy to the petitioner, who may file its rejoinder, if any, by 30.9.2014

6. The Commission directed that due date of filing the replies and rejoinders should be strictly complied with.

7. The petition shall be listed for hearing on 14.10.2014.

8. The Commission directed CEA to depute an officer well acquainted with the facts of the case on the next date of hearing to assist the Commission.

By order of the Commission

**SD/-
(T. Rout)
Chief (Law)**