CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 302/MP/2013

Subject : Endangering the secured grid operation of Southern region through inadequate/ non-performance of Restricted Govern Mode Operation (RGMO) / Free Govern Mode Operation (FGMO) with Manual Intervention and non- compliance of Regulation 5.2 (f), (g), (h), (i) of Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010 read with 5 (2) of Central Electricity Regulatory Commission (Indian Electricity Grid Code) (First Amendment) Regulations, 2012 by the generators in Southern Region.

Date of hearing : 18.3.2014

Coram : Shri Gireesh B. Pradhan, Chairperson
Shri M. Deena Dayalan, Member
Shri A.K. Singhal, Member

Petitioner : Southern Regional Load Despatch Centre

Respondents : Andhra Pradesh Power Generation Corporation Limited and others.

Parties present : Shri V. Suresh, SRLDC
MS. Jayantika Singh, SRLDC
Shri S. Vallinayagam, Advocate, TANGEDCO
Shri M. Murlikrishna, APTRANSCO
Shri G. Venkatesan, TANTRANSCO
Shri P. Rajagunanidhi, TANTRANSCO
Shri M. Jojhikrishnan, NTECL Vallur
Shri S. Ravi Sankar, NLC
Shri C.L. Sabrina, NLC
Shri K. Periasamy, NLC
Shri Guru Prasad, KPCL
Shri R. Kumar, KPCL
Shri N.V. Raghuram, KPCL
Shri Ajay Dua, NTPC Limited
Shri Rohit Chabra, NTPC Limited
Shri C.V. Anand, NTPC Limited
Shri A.S. Pandey, NTPC Limited
Shri V.K. Garg, NTPC Limited
Shri Uday Shankar, NTPC Limited
Shri K.P. Sabpathy, NTPC Limited
Shri Austin D' Cruz, KSEB

Record of Proceedings

The representative of the petitioner submitted that the necessity for implementation of FGMO/RGMO by the generators has been underlined by the Commission since 2003. In the Grid Code of 2010, it has been mandated that during fall in grid frequency, generation from units of the generating stations should increase by 5% by way of FGMO/RGMO response. However, even after the stabilization of frequency band and after allowing considerable time to the generators for implementation of FGMO/RGMO, the generators are coming up with new difficulties to justify their inability to give the mandated response. The implementation of RGMO/FGMO has prolonged for more than a decade.

2. The representative of the petitioner cited the example of tripping of all units of CGPL on 12.3.2014 at 19:22 hrs which resulted in loss of 3700 MW and consequently, the frequency of N-E-W-S grid fell from 49.9 Hz to 49.5 Hz within a minute and to 49.2 Hz in the next minute i.e. frequency fall of 0.7 Hz within two minutes. The representative of the petitioner submitted that the power number of the N-E-W-S grid is about 4500-5000 MW/Hz. As such the decrease in frequency by 0.7Hz on account of tripping of 3700 MW units shows that the response of RGMO/FGMO was almost 'NIL' and the rate of fall in frequency was more than 0.03 Hz per second. He further explained that the expected RGMO response based on the on-bar capacity of Southern Region was about 1002 MW whereas the actual contribution observed on 12.3.2014 was only 128 MW. Frequency drop has the impact on system stability, line loading and power oscillations. He further submitted that although the generators of the Southern Region have given the declarations that RGMO or FGMO with manual intervention are kept in service for all mandated units, still the desired response is not being observed. This casts doubt about the veracity of declarations given by the generators. The representative of the petitioner submitted that the generators often attribute 'poor coal quality' as reason for non-performance of RGMO/FGMO. If their generation is coming down due to poor coal quality, they need to adjust the set point of the governors such that it remains at a permissible level for the corresponding MW. It is however observed that the generators are allowing the machines to operate continuously on wide valve operation mode without any margins for fluctuations, possibly due to commercial reasons of achieving maximum PLF. The representative of the petitioner further submitted that the other plea taken by the generators is that below 70% generation level, the RGMO/FGMO should not be performed as the machine go into unstable region. He submitted that such apprehension has not been proved, and even the units of NTECL Vallur are operating at about 60% level for significant duration without oil support. In response to the query of the Commission as to why the generators are not operating on RGMO/FGMO when it is technically feasible, the representative of the petitioner submitted that the desired response is not coming due to commercial considerations and attitude of the generators.

3. The representatives of Neyveli Lignite Corporation, Tamil Nadu Transmission Corporation Limited and Karnataka Power Corporation Limited submitted that they have

put all their units either on RGMO or on FGMO with manual intervention. During the hearing, the issue of lack of desired response was discussed at length. The respondents expressed their difficulties like moisture in lignite, reduction in generation below technical minimum etc. as the reasons for absence of adequate response from RGMO/FGMO which were countered by the representative of the petitioner.

4. The staff of the Commission brought to the notice of the Commission that primary response should come instantaneously by way of RGMO or FGMO with manual intervention which increases steam supply to the turbine, thereby increasing the generation. The increased level of generation is sustainable for 8-9 minutes without the fuel support as the fuel support comes subsequently. However, it has been observed that the desired response is not forthcoming.

5. The representative of the petitioner submitted that response is required for 3-4 minutes and if the same is not sustainable technically or commercially, units may ramp down at the rate of 1% per minute.

6. The Commission expressed grave concern that response from RGMO/FGMO was only 128 MW on 12.3.2014 as against the required response of 1002 MW from the Southern grid. The Commission observed that grid safety is of paramount importance and commercial considerations cannot override the technical considerations for ensuring safe and secure operation of the grid. The Commission warned that serious view shall be taken if the generators fail to comply with the provisions of the Grid Code with regard to governor actions on account of commercial considerations. The Commission further observed that proper governor response is important and should be implemented by all concerned to ensure safe and secure operation of the grid in view of the synchronous interconnection of Southern Regional Grid with NEW Grid.

7. After hearing the representatives of the parties, the Commission directed the SLDCs of Southern Region to analyze the case of frequency fall on 12.3.2014 and submit a report with details about the responses of each generating station within their control area by 30.4.2014.

8. The representative of the petitioner requested the Commission to direct SLDCs of the Southern Region to analyze the case of major frequency excursions in their control areas and submit periodic reports regarding response of each generating station to such frequency excursions.

9. The Commission directed SLDCs of Southern Region to follow the periodic submission of reports as per "Procedure for Assessment of Frequency Response

Characteristics (FRC) of Control Areas in Indian Power System" prepared by POSOCO and approved by the Commission in its order dated 3.5.2013 in Petition No.52/MP/2012.

10. The petition shall be listed for hearing on 20.5.2014.

By order of the Commission

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