**CENTRAL ELECTRICITY REGULATORY COMMISSION**
**NEW DELHI**

**Miscellaneous Petition No. 237/2010**

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

**Date of Hearing: 25.11.2010** **Date of Order: 21.6.2011**

**IN THE MATTER OF**

Application for granting exemption for operating 7 Nos. LMW units in RGMO and extension of time for operating 5 Nos KWU units in RGMO in the Thermal Power Stations of Tamil Nadu Electricity Board.

**AND**

Tamil Nadu Electricity Board, Chennai ....**Petitioner**

**The following were present**:
1. Shri K.Palanirajan, TNEB
2. Shri V.Suresh, SRLDC

**ORDER**

This petition has been filed by the Tamil Nadu Electricity Board, (TNEB) with specific prayers as under:

(a) To grant exemption for operation on RGMO for 4 Nos LMW sets at Mettur Thermal Power Station (MTPS) and 3 Nos LMW sets at Tuticorin Thermal Power Station (TTPS), as the original Equipment Manufacturer, M/s BHEL have stated that there is no scheme available to implement RGMO in LMW units.

(b) To grant extension of time for operation on RGMO for 3 Nos KWU sets at North Chennai Thermal Power Station (NCTPS) and 2 Nos. KWU sets at TTPS.

**Background**

2. In Petition No. 66/2003 (SRLDC-v-NTPC) and in other connected petitions, the Commission by its order dated 20.8.2009 directed the implementation of Restricted Governor Mode operation (RGMO) as under:

> *"41. Based on the above and having specific regard to the prevailing condition of shortage, we direct the implementation of only restricted governor operation in various types of thermal and hydro units as per the following schedule:*
>
> *(a) KWU & LMZ turbines for thermal sets of 200 MW and above:*
>
> *(i) Software based EHG system : 1.3.2010*
>
> *(ii) Hardware based EHG system where boiler controls are in "auto" : 1.6.2010*
>
> *(b) Hydro units of 10 MW and above : 1.3.2010*
>
> *42. All the generating companies are directed to place before the Commission, within a month, their action plan in line with the above schedule and furnish monthly progress reports to the Commission in this regard"*

3. While so, the Commission relaxed the implementation of RGMO schedule by amendment of Clause 5.2 (f) of the Indian Electricity Grid Code (IEGC), 2010 with effect from 3.5.2010, as detailed hereunder:

> *"Following Thermal and Hydro (except those with three hours pondage) generating units shall be operated under restricted governor mode operation (RGMO) with effect from the date given below:*
>
> *(a) Thermal generating units of 200 MW and above:*
>
> *(i) Software based EHG system: 1.8.2010*
>
> *(ii) Hardware based EHG system: 1.8.2010*
>
> *(b) Hydro units of 10 MW and above: 1.8.2010*

4. In the backdrop of the above, we now examine the prayers of the petitioner, in this petition in the subsequent paragraphs.

5. As regards prayer (a) in paragraph 1 above, the petitioner has submitted that RGMO could not be implemented in the LMW turbine units of its generating station

namely, Units-I to IV of Mettur Thermal Power Station (MTPS) and the Units-I to III of Tuticorin Thermal Power Station (TTPS) for the following reasons:

(i) The governor system employed in BHEL make LMW Turbines is hydro mechanical governing system with centrifugal fly ball mechanism.

(ii) It is a pure hydraulic system and responds freely as and when there is change in grid frequency. The inbuilt design characteristics of this hydro mechanical governing system is that any change in frequency/speed is sensed by a mechanical governing system and changes in control valve position with corresponding change in unit load, and this cannot be blocked.

(iii) The requirement of RGMO is that, there should not be any load change while the grid frequency/speed is rising towards 50 Hz, from a lower level. This requirement could not be made available in a hydro-mechanical Governing System.

(iv) The original Equipment Manufacturer (OEM) M/s BHEL has been informed several times to suggest possibilities of implementing RGMO in LMW turbines and in response, the OEM has stated vide their e-mail dated 21.5.2010, that there is no such scheme available at their end for implementation of RGMO in LMW turbines.

6. As regards prayer (b) in paragraph 1 above, the petitioner has submitted that extension of time for implementation of RGMO in KWU Turbine units of its generating station, namely, Units-I to III of North Chennai Thermal Power Station (NCTPS) and Units-IV and V of Tuticorin Thermal Power Station (TTPS) was required for the following reasons:

(i) Based on the clarification and confirmation received from M/s BHEL, placement of purchase order on M/s BHEL is in the final stage and as per the offer, the period of supply of hardware/software is about 3 months and shutdown of Unit for two/four days have been requested by M/s BHEL for implementation and commissioning of the system.

(ii) In respect of NCTPS, on checking the compatibility with Iskametic analogue panel and performance of the new digital card for the desired operation as stipulated by the Commission, the procurement of electronic cards for other two units will be taken.

(iii) In NCTPS, the rectification of stator windings of 210 MW generator of Unit-1 for three times and the limitation due to maximum loading of PA fans due to primary air circuit problem, restrict this 210 MW unit for RGMO. Further,

rise in 210MW KWU Turbine axial shift of Unit-II restricts sudden load rejection or raise for the frequency influence. For the operation of RGMO on both these units, M/s BHEL will be addressed for guidelines.

7. SRLDC in its submissions has submitted that sharp variations in system frequency not only weakens the grid security but makes the situation vulnerable posing severe threat to grid security. It has also pointed out that despite sufficient time given for implementation of RGMO, the progress of implementation was marginal and that the grant of extension /exemption by the utilities would further dilute the seriousness in the implementation of RGMO thereby exposing the grid to threat.

8. After examining the issues and considering the submissions of the parties, we dispose of the prayers of the petitioner as under:

(a) In view of the statement of the OEM (M/s BHEL) dated 21.5.2010 that there was no such scheme available at their end for implementation of RGMO in LMW turbines of Units-I to IV of Mettur Thermal Power Station (MTPS) and the Units-I to III of Tuticorin Thermal Power Station (TTPS), the petitioner is directed to put these units of the generating stations on Free Governor Mode Operation (FGMO) with manual intervention to perform the function of RGMO.

(b) As regards extension of time for implementation of RGMO in Units-I to IV of Mettur Thermal Power Station (MTPS) and the Units-I to III of Tuticorin Thermal Power Station (TTPS), it is observed that the petitioner has not submitted any justification for the delay in taking up the matter with M/s BHEL for the implementation of RGMO as per the original schedule of 1.3.2010 specified by the Commission in its order dated 20.8.2009. Subsequent revision in the schedule for implementation of RGMO to 1.8.2010 as amended in para 5.2(f) of the IEGC, cannot be a valid reason for delayed action in this regard by the

petitioner. The petitioner has neither furnished any firm date nor any reasonable time schedule for the implementation of RGMO in its units. In view of this, we direct that the petitioner shall ensure that these units shall be put on FGMO with manual intervention to perform the function of RGMO, till such time RGMO is implemented.

9. Petition No. 237/2010 is disposed of in terms of the above.

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| **Sd/-** | **Sd/-** | **Sd/-** |
| **[M.DEENA DAYALAN]** | **[V.S.VERMA]** | **[DR.PRAMOD DEO]** |
| **MEMBER** | **MEMBER** | **CHAIRPERSON** |