CENTRAL ELECTRICITY REGULATORY COMMISSION

NEW DELHI

Petition No. 209 of 2010

Coram:

1. **Dr. Pramod Deo, Chairperson**
2. **Shri S.Jayaraman, Member**
3. **Shri V.S.Verma, Member**
4. **Shri M.Deena Dayalan, Member**

DATE OF HEARING: 21.10.2010

DATE OF ORDER: 12.3.2012

In the matter of

Application for extension of time for implementation of Restricted Governor Mode Operation for GSECL plants as per Indian Electricity Grid Code.

And
In the matter of

Gujarat State Electricity Corporation Limited, Vaodara **……Petitioner**

Following were present:

1. Shri Anand K. Ganesan, Advocate for the petitioner
2. Shri A.J.Mehta, GSECL

ORDER

This petition has been filed by the Gujarat State Electricity Corporation Limited (GSECL), erstwhile Gujarat Electricity Board for deferring the requirement of RGMO as provided in Clause 5.2 of the Indian Electricity Grid

Code (IEGC) for Ukai and Kadana Hydro Stations of the petitioner.

Background

2. Regulation 5.2.(f) of the of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010 (hearinafter referred to as "Grid Code") provides that all thermal generating units of 200 MW and above and all hydro units of 10 MW and above which are synchronized with the grid, irrespective of their ownership, shall be required to have their governors in operation at all time in accordance with the provisions in sub-clauses (i) to (iii) of the Grid Code. The provisions of governor action is extracted as under:-

> *"**Governor Action***
> *(i) Following Thermal and hydro (except those with up to three hours pondage) generating units shall be operated under restricted governor mode of operation with effect from the date given below:*
>
> *(a) Thermal generating units of 200 MW and above,*
>
> *(1) Software based Electro Hydraulic Governor (EHG) system : 1.8.2010*
> *(2) Hardware based EHG system: 1.8.2010*
>
> *(b) Hydro units of 10 MW and above: 1.8.2010*
>
> *(ii) The restricted governor mode of operation shall essentially have the following features:*
>
> *(a) There should not be any reduction in generation in case of improvement in grid frequency below 50.2 Hz. (for example if grid frequency changes from 49.3 to 49.4 Hz. then there shall not be any reduction in generation). Whereas for any fall in grid frequency, generation from the unit should increase by 5% limited to 105 % of the MCR of the unit subject to machine capability.*
>
> *(b) Ripple filter of +/- 0.03 Hz. shall be provided so that small changes in frequency are ignored for load correction, in order to prevent governor hunting.*
>
> *(c) If any of these generating units is required to be operated without its governor in operation as specified above, the RLDC shall be*

immediately advised about the reason and duration of such operation. All governors shall have a droop setting of between 3% and 6%.

(d) After stabilisation of frequency around 50 Hz, the CERC may review the above provision regarding the restricted governor mode of operation and free governor mode of operation may be introduced.

(iii) All other generating units including the pondage up to 3 hours Gas turbine/Combined Cycle Power Plants, wind and solar generators and Nuclear Power Stations shall be exempted from Sections 5.2 (f), 5.2 (g), 5.2 (h) and ,5.2(i) till the Commission reviews the situation."

3. Commission vide its order dated 4.10.2011 in *Suo-motu* Petition No. 191/2011 observed as under:

"2. It has been brought to the notice of the Commission by the National Load Despatch Centre that out of the 700 generating stations/ units, about 560 generating stations have not yet switched over to the operation under restricted governor mode. The list of such generating stations / units is enclosed as *Appendix* to this order. NLDC has submitted that adequate response is not coming from generating units which have declared themselves in RGMO. The fluctuation in system frequency also occurs at system boundary due to load change over or sudden increase in generation due to change in schedule. With all the units operating with RGMO the fluctuation in system frequency would have been restricted to large extent.

3. As all the generating stations are not on the RGMO mode, fluctuation in system frequency is adversely affecting the power system and the generating stations. Non-operation of the generating stations under the restricted governor mode after 1.8.2010 amounts to non-compliance of the provisions of the Grid Code.

4. All the respondents are directed to explain by 25.10.2011 the reasons for not switching over to the restricted governor mode of operation and to show cause as to why appropriate action under the Electricity Act, 2003 should not be initiated against the respondents for non-compliance of the provisions of the Grid Code."

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

5. The petitioner has submitted that GSECL has at present the following

13 thermal power plants of 200 MW or 210 MW capacity and 8 Hydro Generating stations of 10 MW and above capacity in operation:

(i) 3 units of Gandhinagar Thermal Power Station (GTPS);
(ii) 7 units of Wanakbori Thermal Power Station (WTPS);
(iii) 3 units of Ukai Thermal Power Station (UTPS);
(iv) 4 units of Ukai Hydro Power Station (UHPS);and
(v) 4 units of Kadana Hydro Power Station (KHEP).

6. The petitioner has further submitted that out of the above units, the following thermal and hydro units of the petitioner get covered for implementation of the Restricted Governor Mode of Operation (RGMO) with effect from 1.8.2010:

S. No.	(A) Thermal stations	Units
(i)	Software based FHG System	GTPS Unit No. 5 WTPS Unit No. 7
(ii)	Hardware based EHG System	GTPS Unit No. 3 GTPS Unit No. 4 WTPS Unit No. 4 WTPS Unit No. 5 WTPS Unit No. 6
	(B) Hydro Stations	
		UHPS 4 Units KHEP 4 Units

7. The petitioner has submitted that 3 units of UTPS have a Mechanical Hydro Governor and hence, the RGMO is not applicable to them. With regard to GTPS Units No. 3, 4 and 5 and WTPS Units No. 4, 5, 6, and 7, relevant changes has been made in consultation with the Original Equipment Manufacturer and the RGMO will be implemented from 1.8.2010 onwards. It is seen from the NLDC report for the month of December, 2011, the

RGMO has been implemented in these units.

8. The petitioner has submitted that with regard to UHPS and KHEP, the matter has been taken up with the Original Equipment Manufacturer, M/s BHEL for development and installation of the relevant software and making necessary charges for Governing System for making RGMO functional. The petitioner has submitted the details of the correspondence exchanged with BHEL. The petitioner has submitted that the software to be installed and changes to be carried out for implementation of RGMO in UHPS and KHEP have not fructified, since the concerned expert in BHEL was not available.

9. The petitioner has also submitted that he is pursuing the matter with BHEL and is trying to get an alternative expert to visit the hydro stations and develop the necessary software for implementation of RGMO at UHPS and KHPS and this entire process will take time.

10. The petitioner has further submitted that it is endeavoring to comply with the implementation of RGMO in its hydro stations and requires further time for the same. However, if for any reason, GSECL is unable to get a satisfactory solution from BHEL, it would be required to explore other possibilities including import of technologies.

11. Considering the submission of the petitioner and the documents on

record, we observe that the petitioner has not submitted any justification for the delay in taking up the matter with M/S BHEL for 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 IEGC, cannot be a valid reason for delayed action in this regard by the petitioner. The petitioner has furnished neither any firm date nor any reasonable time schedule for the implementation of RGMO in its hydro units. In view of this, we direct that the petitioner shall ensure that these hydro units, namely UHPS and KHEP shall be put on FGMO with manual intervention to perform the function of RGMO, till such time RGMO is implemented.

12. Petition No. 209 of 2010 is disposed of in terms of the above.

Sd/-	sd/-	sd/-	sd/-
(M.DEENA DAYALAN)	**(V.S.VERMA)**	**(S.JAYARAMAN)**	**(Dr. PRAMOD DEO)**
MEMBER	**MEMBER**	**MEMBER**	**CHAIRPERSON**