

CENTRAL ELECTRICITY REGULATORY COMMISSION

NEW DELHI

Petition No. 3/MP/2012

Coram:

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

DATE OF HEARING: 9.2.2012

DATE OF ORDER: 13.6.2012

In the matter of

Compliance with the Regulation 5.2 (f) of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010 regarding Restricted Governor Mode of Operation (RGMO) by the generating stations- Condone the delay, extension of time and exemption for implementation of RGMO in various thermal and hydel generating station operated by Karnataka Power Corporation Ltd. (KPCL).

And

In the matter of

Karnataka Power Corporation Ltd., Bangalore **...Petitioner**
Vs.
Southern Regional Load Despatch Centre, Bangalore **...Respondent**

Following were present:

1. Shri Guru Prasad, KPCL
2. Shri V.Suresh, SRLDC
3. Shri V.K.Agarwal, NLDC
4. Miss Joyti Prasad, NRLDC

ORDER

This petition has been filed by the Karnataka Power Corporation Limited (KPCL), for condonation the delay, extension of time and grant



exemption from implementing the Restricted Free Governor Mode of Operation (RGMO) in the thermal and hydro generating stations of the petitioner, under Regulation 5.2 (f) of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010 (hereinafter referred "Grid Code"), as detailed below:

(a) Condonation of delay

i	BTPS-Unit-I (500 MW)	Commissioned on 24.12.2010	Delayed by 5 months (Approx)
ii	ADPH (1X15 MW +5X55 MW)	Implementation in the month of November, 2011	Delayed by 16 months (Approx)

(b) Extension of Time

S. No.	Thermal/Hydro generating stations	Extension Up to
i	RTPS Unit-I,3 and 5 of 210 MW each	31.12.2012
ii	RTPS Unit-4 of 210 MW	31.12.2012
iii	Supa PH (2X50 MW) Kadra PH (3X50 MW) Kodasalli PH (3X40 MW) Gerusoppa PH (4X60 MW) Ghataprabha PH (2X16 MW)	31.12.2012
iv	VUGPH (4 x115 MW) NPH (5x150 MW +1x135 MW) LPH (2x27.5 MW)	31.12.2012
v	SGS (10x103.5 MW)	31.12.2012
vi	Bhadra (2x103.5 MW)	31.12.2014

(c) Exemption from RGMO

S. No.	Thermal/Hydro generating stations
i	Munirabad Hydro station (1x10 MW)
ii	MGHE (4x21.6 MW +4X13.2 MW)
iii	YDGS (6x18 MW)-Thermal station

Background

2. Regulation 5.2.(f) of the of 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 all the governors installed in the power projects has feature of FGMO as defined in IEGC. However, modifications have to be carried out in all governors to have features of RGMO as directed by

Commission vide order dated 20.8.2009 in Petition No. 66/2009 which requires considerable time since it is to be done by the Original Equipment Manufacturers (OEMs) of Governors and steps to be followed include obtaining quotations, processing of quotations, placement of orders, implementation after availing consent from SLDC for shut down. The petitioner has further submitted that the matter was discussed in 229th Technical Committee meeting of Board of Directors of the Corporation held on 16.2.2010. The said Committee recommended to implement the Commission's order regarding RGMO and also resolved to seek extension of time for implantation of orders. The petitioner has further submitted that action has already been initiated to implement the Commission's order and necessary budget provision was made in this regard. The petitioner vide its letter No. AIR8LC/247 dated 5.3.2010 had requested the Commission to grant time by initial period of one year for implementation of the Commission's orders regarding RGMO operation .

6. The petitioner has submitted that in terms of the Regulations 5.2(f) of the IEGC, RGMO could not be implemented in its various power projects within the specified time due to delay in response by the Original Equipment Manufacturers of governors and requested to condone the delay. The petitioner has enumerated the reasons for delay as under:

S.No.	Generating station	Present status	Reason for delay	Period of delay
1	BTPS-Unit-I (500 MW)	Commissioned on 24.12.2010	Implemented during annual maintenance period	5 months (Approx)

2	ADPH (1X15 MW +5X55 MW)	Implementation in the month of November, 2011	Order was placed on BHEL on 6.9.2010. Scheme could not be implemented earlier since it is a seasonal station (55 MW unit work only during rainy season) and 15 MW station irrigation. It was implemented in the month of November 2011 when there was restricted discharge through units.	16 months (Approx.)
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7. The petitioner has submitted that RGMO is being implemented in the following generating stations and accordingly, has requested to grant time to implement it.

S.No.	Station	Present status	Reason for delay	Likely completion period/delay
1.	RTPS: (Units-1, 3 and 5: , 210 MW each)	Installed during annual maintenance on 20.11.2012. Simulation checking done. The scheme is to be tested on-load.	Orders placed on M/s. BHEL on 20.11.2010. M/s. BHEL has completed supplies of materials at site. Implementation was taken up during annual maintenance shut down period. Any modification required could be done by during next annual maintenance period.	Time required up to 31.12.2012
2.	RTPS: Unit- 4 of 210 MW	M/s. Sumitomo Corporation has been requested to furnish the offer. Matter is being followed up with firm. Reply is awaited.	Firm has been requested to furnish the offer. Matter is being followed up with firm. They have raised certain queries and same is under discussion.	Time required up to 31.12.2012
3.	Supa PH (2X50 MW) Kadra PH (3X50 MW). Kodasalli PH (3X40 MW). Gerusoppa PH (3X60 MW),	P.O. dated 14/171-11 and 2.2.2011 placed on M/s. BHEL for the supply, supervision of erection and	Delivery period is quite long. Shut down of units is required for erection of equipment. Delay is due to long delivery period and erection period required thereafter.	Time required up to 31.12.2012

	Ghataprabha PH (2X16 MW)	commissioning of Governor and HMC cubicles for Supa power house, electronic cubicles of governors of Ghataprabha, Kadra, Kodasalli and Gerusoppa power houses. Delivery period is 18 months for Supa and 14 months for other projects. Inspection of EHGC panels of all the above projects has been carried out at BHEL, EDN, and Bangalore in the last week of March, 2011. EHGC cubicles were dispatched from BHEL, Bhopal and received at site.		
4.	VUGPH (4X115 MW), NPH (4X150 MW+2X135 MW) LPH (2X27.5 MW)	M/s. Andritz have furnished their preliminary offer. Clarification on the offer has been sought from the firm. Being followed up with the firm regarding clarifications.	There was delay in response from the Original Equipment Manufacturer. Now, they have furnished their preliminary offer. Offer is under discussion with the firm. Hence the delay.	Time required up to 31.12.2012
5.	SGS (10X103.5 MW)	M/s. Alstom has furnished the scheme. A comment has been furnished on the scheme. Revised scheme from the firm is awaited.	There was delay in response from the Original Equipment Manufacturer. Now, they have furnished their offer. Offer is under discussion with the firm. Hence the delay.	Time required upto 31.12.2012

6.	Bhadra (2X12 MW River bed Units)	To be taken up	Units are they old and commissioned during 1963. Major R&M works pertaining to Turbine has been taken up and orders placed on M/s. Andritz on 27.11.2009. As per the present status, turbines are likely to be renovated by 2013. R&M of governors would be taken up after renovation of turbine during which time RGMO could also be done.	Time required upto 31.12.2014
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8. The petitioner has further requested to grant exemption from implementation of RGMO in terms of Regulation 5.2 (f) of the IEGC. The petitioner has enumerated reasons for not implementing the RGMO as under:

S. No.	Thermal/Hydro generating stations	Reasons
i	Munirabad (1x10 MW)	M/s Andritz Hydro Pvt. Ltd. (OEM) has informed that RGMO cannot be implemented in the existing governor and require up gradation of governor electronics. This is irrigation canal based power house and unit rating is just 10 MW. Generation depends on the discharges allowed by irrigation authorities and variations in discharges are not allowed. Hence, exemption is requested in implementation of RGMO.
ii	MGHE (4x21.6 MW+4x13.2 MW)	OEM (M/s Andritz Hydro Pvt. Ltd. has informed that RGMO cannot be implemented in the existing governor and requires upgradation of governor electronics from DTL to SICAM 1703. Also spares have been procured to last for considerable period. RGMO proposed to be taken up when R&M of governors are taken up. Hence, exemption is requested in implementation of RGMO .
iii	YDGS (6X18 MW)	It uses LSHS as fuel. Unit size is lesser than 200MW.

9. Considering the submission of the petitioner and the documents on record, we are of the view that the steps taken by the petitioner for implementation of the RGMO in its units of the generating stations are belated. 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. However, considering the difficulty faced by the petitioner, we are not inclined to take any action against the petitioner for delay in implementation of RGMO in BTPS (unit-I, 500 MW) and ADPH (1X15 MW+5X55 MW) for a period of 5 months and 15 months, respectively.

10. With regard to the petitioner's prayer for exemption from implementation of RGMO in its generating stations mentioned in para 8 of this order, we observe that YDGS's units being of size less than 200 MW, provisions of IEGC regarding RGMO are not applicable to these generating stations. In respect of other Hydro stations, namely Munirabad (1x10 MW), and NGHE (4x 21.6 MW+4x13.2 MW), which are operating on DTL-595, which is an obsolete technology, the petitioner is directed to carry out necessary modification/up gradation in the adjusting governor electronics at an early date.

11. The petitioner has also prayed for extension of time for implementation of RGMO in the generation stations mentioned in para 7 of the this order. We

direct the petitioner to expedite and make all-out efforts for implementation of RGMO in the units of generating stations . We further direct the petitioner to ensure that these thermal and hydro generating units are put on FGMO with manual intervention with immediate effect, till such time RGMO is implemented.

12. Petition No. 3/MP/2012 is disposed of in terms of the above.

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