TELANAGANA STATE ELECTRICITY REGULATORY COMMISSION
5th Floor, Singareni Bhavan, Red Hills, Hyderabad-500 004

O. P. No. 4 of 2016

Dated: 29.07.2016

Present
Sri Ismail Ali Khan, Chairman
Sri H. Srinivasulu, Member
Sri L. Manohar Reddy, Member

Between

State Load Dispatch Center / Telangana State
Transmission Corporation Ltd., Vidyut Soudha, Hyderabad. …. Petitioner

And

1. Telangana State Power Generation
   Corporation Limited, Vidyut Soudha, Hyderabad.

2. Southern Regional Load Despatch Centre,
   29, Race Course Cross Road, Bangalore – 560 009.

3. Southern Regional Power Committee,
   29, Race Course Cross Road, Bangalore – 560 009. …. Respondents.

This petition has come up for hearing on 15.06.2016 and 04.07.2016 Sri. P. Suresh Babu, SE, SLDC of the petitioner appeared on 15.06.2016 and 04.07.2016. Sri. K. Venkateshwarlu, Chief Engineer, Generation for the 1st respondent appeared on 15.06.2016. Sri. S. Laxmi Narayana representative of the 1st respondent appeared on 04.07.2016. There is no representation in respect of respondents No. 2 and 3 on both the days. The matter having stood over for consideration to this date, the Commission passed the following:

ORDER

M/s. Telangana State Load Dispatch Centre (TSSLDC) (petitioner) has filed a petition under sec 86 (1) (f) of the Electricity Act, 2003 seeking compliance of the provisions of the Indian Electricity Grid Code (IEGC) regarding restricted governor

mode operation (RGMO) / free governor mode operation (FGMO) as provided in clauses 5.2 (f), (g), (h) and (i) of the IEGC.

2. The petitioner stated that, in its control area, TSGENCO thermal 500 MW – KTPS – VI, 500 MW – KTPP and 2 x 250 MW – KTPS – V) and Hydel units (6 x 100 MW and 1 x 110 MW Nagarjunasagar and 6 x 150 MW Srisailam Laft bank) will come under RGMO / FGMO with manual intervention operation as per clause No. 5.2 (F) of IEGC 2010. NLDC / RLDC is reviewing the performance of all ISG stations of national grid in respect of RGMO / FGMO for providing primary response to the frequency changes for secure operation of national grid. The TSSLDC is analysing the performance of RGMO / FGMO of generators in their control area for the instances identified by the SRLDC. The analysis is being communicated to SRLDC duly corresponding with generators. During OCC / Special meetings, the same had been reviewed by SRLDC & SRPC.

3. The petitioner stated that NLDC approached Central Electricity Regulatory Commission (CERC) vide petition 84 / MP / 2015 against ISGS and state SLDCs for poor / inadequate performance of RGMO / FGMO of generators in their control area. TSSLDC submitted reply to CERC vide counter affidavit dated 04.05.2015. In the affidavit, the analysis of previous instances and the action taken by SLDC in improvement of performance by way of conducting meetings and follow up with generators details were submitted.

4. The petitioner stated that CERC vide proceedings dated 22.05.2015 directed SLDCs to file the clarifications on affidavit by 12.06.2015 on the following points.

a. FRC report of their control areas including reasons for poor / negative response from their control areas bringing out generator wise response in MWs etc.
b. Seek reasons from the generators who have shown poor or no response as per their respective grid code or negative response to the frequency excursions.

SLDC submitted reply for above proceedings on dated 11.06.2015 submitting the details / clarifications on above points.

5. The petitioner stated that subsequently the CERC has issued record of proceedings dated 18.08.2015 against petition No. 84 / MP / 2015. In the proceedings the CERC directed SLDCs to approach their SERCs to initiate appropriate action under the Act, 2003 against the state generating stations which have not provided adequate primary response during both grid events reported by the petitioner.

6. The petitioner stated that the brief back ground of grid events analysed in the petition is as follows:

a) On 25.04.2015 at around 11.43 hrs, there was demand reduction of approximately 3500 MW in 3 – 4 min due to trippings / manual load shedding especially in NR & ER regions due to earth quake in Nepal. The frequency changed to 50.5 Hz from 49.95Hz i.e. variation of 0.55 Hz was observed in few minutes.

b) On 14.01.2015, one unit at Kudankulam nuclear plant tripped and frequency fell to 49.87 Hz from 50.04 Hz.

7. The petitioner has sought the following prayer in the petition.

"It is therefore prayed that this Hon'ble Commission may be pleased to direct the respondent to provide adequate primary response as per IEGC in sections 5.2 (f), (g), (h) and (i). And further it is prayed that the Hon'ble Commission may issue suitable direction to the state generating stations as deemed fit duly considering inadequate / non – performance of RGMO / Free Governor Mode operation (FGMO) with manual intervention in respect of 500 MW KTPP, 2 x 250 MW KTPS V, 500 MW KTPS – VI, Nagarjuna Sagar Main Power House (NSR) and Srisailam Left Bank Power House as per Regulation 5.2 (f), (g), (h), (i) of Indian Electricity Grid Code."

8. The respondent No.1 has filed the counter affidavit to the original petition filed by the petitioner, which is as follows.

"a) It is stated that the petitioner herein filed the above petition under section 86 (1) (f) of the Act, 2003, wherein the petitioner sought for relief to comply the regulation 5.2 (f), (g), (h) and (i) of the IEGC and thereby not getting adequate primary response as per IEGC.

b) It is stated that earlier the same subject matter was filed by 2nd respondent herein before Hon'ble CERC at New Delhi and the Hon'ble CERC registered a Petition No. 302 / MP / 2013. At the time of adjudication of the said petition present issue was considered along with other contentious issues and disposed of with a direction to keep watch on the response of generators during major frequency excursions and submit report on quarterly basis to Hon'ble SERC concern and POSOCO.

c) It is stated that all technical issues as well as factual issues raised in this petition are being read and in reply to the said contentions are as follows:

THERMAL

A. **KTPS-VI stage (1 X 500 MW):** Unit responded very good for all three instances (Viz., for the instances dated 14.01.2015, 25.04.2015 and 26.04.2015).

B. **KTPP (1 X 500 MW):** Unit responded good for two instances (Viz., for the instances dated 25.04.2015 and 26.04.2015) that is rising in frequency and one instance dated 14.01.2015 not responded that is fall in frequency. It is stated that at that time unit is running with wide valve open condition due to poor quality of coal. KTPP receiving coal from different mines with different quality through lorries and it is dumping into the Raw Coal Hoppers. Hence wide load fluctuations. Turbine control valves are moving to wide valve opening condition. At full load of 500 MW, the MS Pressure reaching 174 Kg/cm2 and if RGMO operates, MS pressure shooting up to safety valves lifting. Boiler is taking 5-7 minutes to respond for any fuel change.

C. **KTPS-V stage (2X 250 MW):** Units 9 & 10 are responded for one instance dated 25.04.2015 that is rising in frequency. On 26.04.2015, it was stated that both units have under poor RGMO response. But as per the data received from KTPS V stage the response was only (-7) (-8) MW as indicated below.

Station	Generation before rise of frequency at generator	Generation after rise of frequency at generator	Expected response	Actual response	Schedule Ex-bus	% response

	terminal @ 12.41 Hrs	terminal @ 12.42 Hrs				
KTPS/V Unit-9 (250MW)	251	244	-12.5	-7	258	56%
KTPS-V Unit-10 (250MW)	251	243	-12.5	-8	228	64%

From that above it may be noted that the response was only (-7) (-8) MW as against the expected -12.5 MW, because the firing side air mill dampers were in manual mode due to poor quality of coal. It is also to state that all efforts are being taken to give adequate RGMO response.

For the incident dated 14.01.2015, it is to submit that the data recorders were not available for analysing RGMO response. The Data recorders were procured and commissioned in the month of March, 2015.

D. In addition to the above, following points are also submitted to TSERC.

a) TSGENCO thermal power stations are always kept in RGMO mode.

b) The visibility of RGMO status (on/off) of TSGENCO thermal power stations are incorporated in the SCADA system by extending status data to respective SLDC / SRLDC.

c) The RGMO data and analysis reports are furnished immediately after receipt of request from SLDC.

d) KTPS-VI stage (1 X 500 MW) unit is responded all above instances.

e) KTPP stage (1 X 500 MW) and KTPS-V stage (2 X 250 MW) units are also responded most of the instances whenever the grid frequency variation in the prescribed limits. In few cases the units responses are partial / no response due to operational constraints.

f) TSGENCO thermal stations are using coal which is not as per the designed calorific value at all times. The installed Mills (in 500 MW) units are 7 Nos. utilities putting 7 Nos. of Mills without standby to meet the total demand which is also a factor of consideration with regard to functioning of RGMO as Load Vs frequency.

HYDEL

E. All the Hydel Units of SLBPSP & NSHES are operating in FGMO with Manual Intervention. The 1st Unit of Nagarjunasagar HES is operating in RGMO. However, data from Srisailam Left Bank Pwer House is not retrievable due to lack of sufficient data storage. Now, TSGENCO has addressed a letter to M/s. MELCO, Japan (Original Equipment Manufacturer) for taking up of upgradation of data storage. Once, this storage problem is solved, the feedback on FGMO with Manual Intervention will be furnished to SLDC as & when required".

d) It is stated that issue raised before this Commission pertains to the non-compliance of Regulation of Electricity Grid Code. As per the section 86 (1) any dispute which is to be adjudicated between the licence and generating companies and this Hon'ble Authority has got power to adjudicate the same. In the instant case, it is stated that petitioner being a equivalent organisation of this respondent and petitioner and this respondent being organs of state can be settle any issue which crop up, by mutual understanding and also by mutual co-operation with each other. The petitioner being a part of organisation of the state company ought to have put a notice to this respondent and got clarified the same. If same is not complied with the petition filed before this Commission may not be entertained on the issue of equity or lack of reasonable opportunity as the same is voilative of natural justice. Therefore, the petitioner is to be rejected on this ground alone.

e) It is stated that in view of the facts and circumstances where this respondent is functioning in respect of monitoring / generating power and RGMO / FGMO with MI and operating the same with due care and cautious. During the course of operations due to unexpected technical problems as explained supra under technical grounds, there is no wilful nor wanton a default on part of this respondent if any such negligible / small omissions are the same may not be strictly construed as non-compliance of the Regulation 5.2 (f), (g), (h) and (i) of the Indian Electricity Grid Code. However, this respondent is obliged to rectify any such omissions or non-compliance if occurred in future in the interest of parties to this petition. As such the present petition is liable to be dismissed."

9. The petitioner has filed its written submission on the following lines.

“i) The subject matter was discussed with GENCO Officials and they have informed as follows:

a) Recently in last two months May and June, 2016, all TSGENCO thermal Units are responded very well and also RGMO performance was improved compared to earlier. Analysis of incidents for the date 09.06.2016 is enclosed for perusal.

b) For the Grid incidents mentioned in the present petition, KTPS-VI unit-11 (1 X 500 MW) responded very well and KTPP stage-1 (1 X 500 MW). KTPS-V stage Units 9 & 10 (2 X 250 MW) are partially responded due to poor coal quality & wide valve opening of HP valves.

c) As per the Hon’ble TSERC instructions on 15.06.2016, the C & I logic in KTPS units 9 & 10. KTPP stage-1 checked and found some control parameter deviation. The same parameters were corrected and uploaded in the C & I system software in unit 9 (1X250MW), unit 10 (1 X 250 MW) and KTPP unit (1 X 500 MW) and the performance is under observation, which will further improve the RGMO performance of the units in future.

d) TSGENCO is always adhering to the guidelines of Hon’ble CERC and following grid code for safety, security and reliability of Indian Grid. Whenever there is situation of wide valve open condition due to poor coal quality, TSGENCO will adjust the load set point of the Generator to current generation level and also assure that they follow the guide lines of the Hon’ble CERC order No. 302 dated 23.10.2015 for implementation of RGMO.

e) The 1st Unit of Nagarjuna Sagar HES is operating in RGMO and other Units of NSHES (that is 2 to 8) & All 6 Units of SLBHES are operating in FGMO with manual intervention mode with satisfactory performance.

f) The storage capacity of SLBHES CPU is only 135 MB which is sufficient for storage of data up to 24 Hrs only. However, it is proposed to upgrade the existing storage capacity of CPU within a period of 6 months.

ii) In this regard, it is stated that there is certain improvement in RGMO performance in respect of KTS-V and KTPP based on instance report dated

09.06.2016. However SLDC will continue to monitor the RGMO performance for future instances as per the regulations."

10. The Respondent No.1 has filed his written submissions as follows.

"a) It is stated that the petitioner herein filed the above petition U/s 86 (1) (f) of the Electricity Act, 2003, wherein the petitioner sought for relief to comply with the regulation 5.2 (f) (g) (h) and (i) of the IEGC and thereby for not getting adequate primary response as per IEGC.

b) It is stated that earlier a petition on the same subject matter was filed by the 2nd respondent herein before the Hon'ble CERC at New Delhi, and the Hon'ble CERC registered the same as petition No. 302 / MP / 2013. At the time of adjudication of the said petition present issue was considered along with other contentious issues and disposed of with a direction to keep watch on the response of generators during major frequency excursions and submit report on quarterly basis to Hon'ble SERC concern and POSOCO.

c) It is stated that all technical issues as well as factual issues raised in this petition are being read and the replies to the said contentions are as follows.

i) For the grid incidents mentioned in the present petition, KTPS-VI unit-II (1 X 500 MW) responded very well and KTPP stage-1 (1 X 500 MW), KTPS-V stage Units 9 & 10 (2 X 250 MW) are partially responded due to poor coal quality and wide valve opening of HP valves.

ii) Recently in the last two months that is May and June, 2016, all TSGENCO thermal units are responded very well and also RGMO performance was improved compared to earlier instances of grid disturbances.

iii) As per the TSERC instructions on 15.06.2016, the C & I logic in KTPS units 9 & 10 KTPP stage-1 checked and found some control parameter deviation. The same parameters were corrected and uploaded in the C & I system software in unit 9 (1 X 250 MW), unit 10 (1 X 250 MW) and KTPP unit (1 X 500 MW) and the performance is under observation, which will further improve the RGMO performance of the units in future.

iv) It is stated that TSGENCO is always adhering to the guide lines of Hon'ble CERC and following grid code for safety, security and reliability of Indian Grid. Whenever there is situation of wide valve open condition

due to poor coal quality, TSGENCO will adjust the load set point of the generator to the current generation level; and also assured that TSGENCO will follow the Hon'ble CERC orders for implementation of RGMO.

HYDEL STATIONS

v) 1st Unit of Nagarjunasagar HES is operating in RGMO and other Units of NSHEs (i.e. 2 to 8) & All 6 Units of SLBHES are operating in FGMO with Manual Intervention mode with satisfaction.

vi) The storage capacity of SLBHES CPU is only 135 MD which is sufficient for storage of data up to 24 Hrs only. However, it is proposed to upgrade the existing storage capacity of CPU within a period of 6 months.

c) It is stated that this respondent has been functioning in respect of monitoring / generating power and RGMO / FGMO with MI and operating the same with due care and caution. During the course of operations, it is stated that due to unexpected technical problems as explained supra there may be some flaws purely under technical grounds, but neither wilful nor wanton default on the part of this respondent. It is submitted that if any such negligible / small omissions are occurred the same may not be strictly construed as non-compliance of the regulation 5.2 (f), (g), (h) and (i) of the IEGC. However, this respondent assures to rectify any such omissions or non-compliance if occurred in future in the interest of parties to this petition.

11. We have heard the representatives of the petitioner and the 1st respondent and perused the details placed on record. The short point that requires to be examination is that whether the 1st respondent is complying with the requirements of IEGC and if not what remedial measures are required to be directed.

12. Since, the SE / SLDC, TSTRANSCO has stated in written submission that there is a certain improvement in RGMO performance in respect of KTPS-V and KTPP based on instance report dated 09.06.2016. Regarding hydel station, he has also stated that Nagarjuna Sagar HES Unit-I is in RGMO and the other units of NSHES and all 6 units of SLBHS are operating in FGMO with manual intervention mode with satisfactory performance.

13. In view of written statement given by SE / SLDC, we are of the opinion that the SLDC may watch the performance for some more time. If need be efforts should be made by the state utilities to settle the technical difficulties mutually in order comply with the IEGC.

14. The SLDC can initiate fresh action if there is violation of the IEGC at a later date and after submitting a report to the Commission. With these observation the present petition is closed keeping in view of the submission of the SLDC.

This order is corrected and signed on this 29th day of July, 2016.

Sd/-	**Sd/-**	**Sd/-**
(L MANOHAR REDDY)	**(H SRINIVASULU)**	**(ISMAIL ALI KHAN)**
MEMBER	**MEMBER**	**CHAIRMAN**

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