

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. :167/SM/2012

Subject : Grid disturbance on 30.7.2012 to 31.7.2012.

Date of hearing : 10.1.2013

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

Respondents : National Load Despatch Centre
Power Grid Corporation of India Limited

Parties present : Shri S.K.Sonee, POSOCO
Shri V.V.Sharma, POSOCO
Shri V.K.Agarwal, POSOCO
Shri S.R.Narasimhan, NLDC
Shri S.S.Barpanda, NLDC
Shri Rajiv Porwal, NRLDC
Shri P.Pentayya, WRLDC
Shri Ajay Dua, NTPC
Shri Rohit Chabra, NTPC
Shri P.PFrancis, NTPC
Shri S.K.Sharma, NTPC
Miss Shilpa Agarwal, NTPC
Shri Amaresh Mallick, POSOCO
Shri Darshan Singh, SLDC, Delhi
Shri G.Mitra
Shri Uday Sharkar
Shri Naresh Kumar

Record of Proceedings

The representative of POSOCO/NLDC submitted that in compliance with the directions of the Commission in the hearing dated 27.11.2012, NRLDC, WRLDC, ERLDC and NERLDC had filed their reports indicating specific violations of the regulations of the Commission by various entities during the grid disturbance on 30.7.2012 and 31.7.2012. He further submitted that in the light of the observations of the Commission in the order dated 16.11.2012, NLDC had also filed a report dated 10.12.2012 on the following three issues:

- (a) Revision of Total Transfer Capability (TTC) and Available Transfer Capability (after outage of 400 kV Zerda-Kankroli S/C line on 29th July 2012).
- (b) Net over-drawal by constituents of Northern Region was only about 500 MW and the 400 kV Gwalior-Agra section was still heavily loaded.
- (c) No notice for application of congestion charges was given by NLDC/WRLDC.

2. The Commission directed the representatives of each of the RLDCs to explain region-wise violation of the regulations of the Commission. Representative of WRLDC submitted that the system operator had been sending messages to the SLDCs to curtail underdrawal as there was over-injection causing congestions on the inter-regional links. He submitted that WRLDC in its messages had been emphasising the element of urgency, excess loading of the corridors, TTC violations, underdrawal by the constituents which was causing congestions. He further submitted that at 0008 hrs, two and half hours before the grid disturbance, a message was given to Sipat STPS to reduce the infirm injection of power but was not complied with. However, SIPAT responded by saying that further load reduction was not possible and the unit was operating at technical minimum. He also submitted that after receipt of the NTPC response, two more messages were given at 2345 hrs and 0053 hrs where in view of the shutdown of Bina-Gwalior line and TTC violations, Sipat was asked to reduce 100 MW generation but no relief was forthcoming.

3. In reply to the query of the Commission as to why the WRLDC instructions were not complied with by Sipat, the representative of NTPC submitted that since Sipat unit was running at its technical minimum, NTPC offered to reduce generation from other running units. In reply to another query of the Commission whether 100 MW were reduced from the running units, the representative of NTPC submitted that there was no message from WRLDC to reduce the running units and therefore, injection was not reduced. However, NTPC offered to trip the Sipat unit if so directed by WRLDC. The Commission observed that there was no need for entering into conversation at the time of grave danger to the grid. The Commission further observed that NTPC should have reduced the Sipat generation as per the directions of WRLDC and if NTPC felt that the instructions were unreasonable, it was at liberty to approach the Commission.

4. Representative of WRLDC submitted that at that point of time, there was underdrawal by Gujarat (837 MW), Madhya Pradesh (437 MW), Maharashtra (537 MW) and Chhatisgarh (82 MW) which was causing congestion on the inter-regional corridors. In reply to a query of the Commission as to what actions were expected of these underdrawing States, the representative of WRLDC submitted that these States should have reduced their own generation, revised their schedule in ISGS or

taken out some units from generation. The Commission directed the representative of WRLDC to explain what messages were given to the constituent States to reduce underdrawal.

5. The representative of WRLDC submitted that on 30.7.2012, Gujarat was drawing 765 MW as against its schedule of 1372 MW and on 31.7.2012, it was drawing 560 MW as against 1267 MW. He further submitted that Gujarat asked to reduce the generation of CGPL which is a Central Generating station. He also submitted that even close to the disturbance, the under-drawal by Gujarat as per the metered data was 837 MW.

6. Representative of SLDC Gujarat submitted that based on the directions of WRLDC, it had taken the following actions:

- (a) Closed down some units at their power stations viz. Dhuvaran, Ukai and Sikka and backed down generation at Wanakbori giving a relief of 400 MW.
- (b) Reduced Gujarat's requisition from Kawas and Gandhar power stations of NTPC.

He further submitted that despite the above measures, the variability on account of wind generation created a problem. The Commission observed that this should have been taken into account by SLDC Gujarat and actions taken accordingly in a crisis situation. Representative of SLDC Gujarat submitted that CGPL Gujarat was also injecting infirm power into Gujarat system. The representative of WRLDC clarified that CGPL Gujarat formed a separate control area distinct from Gujarat control area and the under-drawal/over-injection figures were worked out control area wise. He further submitted that CGPL unit-2 was under commercial operation from 0000 hours of 30th July 2012 and ideally Gujarat should not have requisitioned its entitlement from CGPL in case of demand reduction in the state. The Commission desired to know whether Gujarat was still required to reduce as per the directions of WRLDC. It was explained that as against 837 MW underdrawal, Gujarat had reduced 600 MW and more than 200 MW remained to be reduced. Representative of NLDC submitted that if load had also reduced in the meantime, the quantum of underdrawal will increase. The commission directed SLDC Gujarat to file its written submission regarding the actions taken on the instructions of WRLDC with copy to WRLDC/NLDC who shall file their reply.

7. The Commission referring to the summary of the submission of WRLDC observed that as per WRLDC, on 30.7.2012, the State entities of Gujarat, Maharashtra, Chhatishgarh, and Madhya Pradesh and the generating entities like

LANCO, NTPC etc. failed to comply with Regulation 6.4.2 of the Grid Code and on 31.7.2012, the State entities of Gujarat, Maharashtra, Chhatishgarh, and Madhya Pradesh and the generating entities like LANCO, NTPC, and JPL failed to comply with the Regulation 5.2(f) of the Grid Code. The Commission desired to know whether these entities have filed their responses.

8. The representative of WRLDC submitted that there was lack of primary response from the generating units in the Western Region. He also referred to SLDC Maharashtra's message on 29th July night stating that below 50 Hz, the over-drawing constituents were only responsible for congestion. He submitted that such response in a crisis situation made the RLDC's task difficult. CEO, POSOCO submitted that such misconception that congestion is only linked to frequency needs to be removed as it creates a serious problem in real time operation.

9. The Commission observed that during crises, delay in response or lack of response to the instructions of RLDCs is not acceptable. The Commission directed to issue notices to all State entities and generation entities who are responsible for non-compliance of the directions of concerned RLDC which led to the grid failure on 30.7.2012 and 31.7.2012 as brought out in the submissions of NLDC and RLDCs. These entities shall submit their replies by 11.2.2013.

10. Learned Counsel for PSTCL submitted that copy of NRLDC's submission was received only on 31st Dec 2012 and sought time for filing the reply. The Commission allowed time to PSTCL to file reply by 11.2.2013.

11. The Commission further directed POSOCO (NLDC/RLDCs), CTU, NTPC, WRPC, Overdrawing/Underdrawing entities and the SLDCs to submit the following information on affidavit:

(a) POSOCO to submit:

- i. When overdrawal messages since the afternoon of 29.7.2012 did not result in reduction in overdrawal, which lines were opened by NRLDC and for TTC violations at 14:41, why congestion notice was not given?
- ii. Actions taken on Commission's order in Petition No. 168, 215 and 217 of 2011 for improvement in telemetry be clearly explained.

- iii. While granting shutdown for Agra Gwalior-II during peak demand period in NR, whether system studies were performed and approval of RPCs were taken as the shutdown resulted in reduction of 400 MW in import capability.
- iv. Why TTC was not revised till 1100 hrs on 30.7.2012 (Post disturbance) when Agra Gwalior Line was under planned shutdown?
- v. If it was found that Bina-Gwalior line had tripped, whether reasons thereof were ascertained by RLDC before allowing charging of the line again?
- vi. Recording of WRLDC/NRLDC and other SLDC control rooms from evening of 29.7.2012 to 31.7.2012 be submitted.
- vii. What facility of backup power supply was available at RLDC control center? Was there any back up control center for NLDC/RLDC operation?
- viii. Instructions issued by WRLDC to SLDCs to reduce underdrawal? Is this the normal format of the message or should they not have been asked to revise their schedule from Central Sector Generating stations or reduce their own generation.

(b) CTU to submit:

- i. While granting connectivity, whether it is ensured by CTU that telemetry is available?
- ii. If initial outage of Agra-Gwalior line was for three days, when extension was requested and when work was actually completed? Whether approvals of RPCs were taken for this outage?
- iii. Details of protective setting in Bina-Gwalior line, Main I & Main II and reasons for tripping.
- iv. Details of insulator replacement (Porcelain to Polymer) in critical inter-State lines due to frequent trippings. The tripping details of Bhinwal-Zerda and Kankroli-Zerda lines during July-August of 2011 and action taken to mitigate the tripping.
- v. Whether planned outage taken for Bhinwal-Zerda and Kankroli-Zerda lines on account of insulator replacement in July 2011, had been used to replace the insulators completely.

(c) NTPC to submit detailed reasons for not reducing its infirm power from SIPAT#3 and explain the consequence of reducing generator/tripping of unit.

- (d) WRPC Secretariat to submit its views on whether the line tripping at load encroachment is correct and whether RPCs' protection philosophy for blocking of tripping on Power swing in zone I and II and zone III is followed.
- (e) SLDCs and generating stations to explain the actions taken by the shift in-charge at SLDCs and generating stations on each message issued by RLDCs on 29, 30 & 31.7.2012 alongwith documentary evidence and whether the instructions of SLDCs were followed by respective transmission/distribution utilities.
- (f) All overdrawing and under drawing entities to submit their demand estimates for three days, namely, 29.7.2012, 30.7.2012 and 31.7.2012 giving 15 minute details of estimated generation, Central sector drawal, import/export of power. For each day, actual values as compared to estimate and action taken by them to meet the Load generation Balance be furnished.
- (g) LANCO & JPL to submit the reasons for not complying with the provisions of 5.2 (f) of Grid Code.

12. The information at para 11(a) shall be submitted by POSOCO by 11.2.2013. The information at para 11(b) to (f) shall be submitted by the respective entity by 11.2.2013 with copy to POSOCO who shall file its response by 16.2.2013.

13. The Commission observed that the representative of CEA and CTU were not present during hearing. The Commission took a serious view and directed that on the next date of hearing, CEA and CTU shall ensure that their authorised representatives who are well conversant with the matter are present during the next hearing.

14. The petition shall be listed for hearing on 20.2.2013.

By Order of the Commission

**sd/-
(T. Rout)
Joint Chief (Law)**