

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 246/SM/2009**

**Coram:  
Shri M. Deena Dayalan  
Shri V.S. Verma, Member**

**Date of Hearing: 11.7.2013  
Date of Order : 7.8.2013**

**In the matter of:**

Maintenance of Grid Discipline-Non compliance of statutory provisions by Gujarat Electricity Transmission Corporation.

**And**

**In the matter of:**

Gujarat Electricity Transmission Corporation Ltd., Vadodara ..... Respondent

**The following was present:**

1. Kanti J. Bhwua, GETCO

**ORDER**

Based on the report of the Western Regional Load Despatch Centre (WRLDC), it was observed that during the period 21.9.2009 to 27.9.2009, Gujarat Electricity Transmission Corporation Ltd, Vadodara had overdrawn electricity from the regional grid as many as 261 timeblocks, at frequency below 49.2 HZ, the specified threshold limit, in contravention of the provisions of the Indian Electricity Grid Code (hereinafter "the Grid Code") and the Central Electricity Regulatory Commission (Unscheduled Interchange charges and related matters) Regulations, 2009 (hereinafter "the UI charges regulation"). It also transpired from the report of WRLDC that the respondent had exceeded the prescribed limit of 12% of schedule in 427 time-blocks during the said period 21.9.2009 to 27.9.2009. It was further noted that on six days during the said period, over-drawal by the respondent at



frequency below 49.5 HZ, exceeded the limit of 3% on a daily aggregate basis. Thereupon, the Commission by its order dated 13.11.2009 directed the respondent to show cause as to why it should not be held guilty of the contraventions reported and punished under Section 142 of the Electricity Act, 2003 (the Act) for over-draw during each occasion in contravention of the provision of the Grid Code and UI charges Regulation. In the course of the proceedings, it emerged that the respondent had acted with due diligence and therefore there was no need to impose any penalty on the respondent. However, the Commission, in pursuance of its relentless efforts to avoid recurrence of such instances of grid jeopardy, issued the following directions vide its order dated 28.4.2010:

“7. Considering the fact that the respondent has acted with diligence in compliance with the Grid Code, we do not propose to impose any penalty on the respondent, taking a lenient view in the light of the past record of the respondent in maintaining grid discipline.

8. We also direct that the SLDC and Distribution Companies in the State should be prepared with contingency scheme to handle such a situation in future. We cannot allow grid security to be jeopardized by the problems of law and order situation in the State. SLDC and distribution companies are accordingly directed to submit within 15 days, contingency scheme for handling such a situation. We further direct SLDC to ensure that such contingency procedures are placed in the control centre of all the distribution companies, these distribution companies are aware of the same and act accordingly.”

2. In compliance of the above extracted directions of the Commission, SLDC, Gujarat submitted the contingency schemes of the distribution companies vide affidavit dated 30.6.2010. Uttar Gujarat Vij Company Limited (UGVCL), Paschim Gujarat Vij Company Limited (PGVCL), Madhya Gujarat Vij Company Limited (MGVCL), Dakshin Gujarat Vij Company Limited (DGVCL), and two private distribution companies viz. Torrent Power Ahmadabad Electric Company and Torrent Power Surat Electric Company, (TPAEC0 and TPSECo' respectively) have made

their submissions under affidavits dated 5.6.2010, 7.6.2010, 7.6.2010, 7.6.2010 and 17.6.2010 respectively.

3. On perusal of the information submitted by Gujarat SLDC and distribution companies of the State, we note the following:

(a) All the distribution companies are aware of the Cumulative Aggregate Growth Rate in terms of the number of consumers and also in terms of connected demand in their respective areas.

(b) As regards the supply side management, allocation of power is done by Gujarat Urja Vikas Nigam Limited. In response to the increasing demand of the distribution companies, GUVNL has revised the allocation of power to four distribution companies.

(c) All the distribution companies have load forecast system in place on day-ahead basis and also on quarterly basis.

4. As regards the demand side management, distribution Companies have established "Area Load Dispatch Centers (ALDCs)" at Gandhinagar, Jetpur, Jambuva and Gotri. At all these ALDCs, Supervisory Control And Data Acquisition System (SCADA) are in place, where, the real time generation data and drawl by the company along with current frequency level, applicable Unsheduled Interchange (UI) rate, and corresponding implemented schedule of company etc. are displayed and are monitored. The Control Centres for TPAECo and TPSECo are located at Ahmadabad and Surat respectively.

5. The load curtailment priorities submitted by GETCO and the distribution companies are detailed below:

- (a) Entire load of the agricultural category has been segregated from the non-agriculture Load. There is protocol to reduce the supply to agricultural buyer and distribution companies have empowered their system operators to resort to load curtailment of agricultural category, if the situation so warrants. The companies have planned to get immediate load relief to the extent as above by imposing load shedding on this category. As regards TPAECo and TPSECo, they are having very limited agriculture consumers.
- (b) All the distribution companies have also identified 66 kV Substations where power is supplied through single source. For getting immediate relief supply, such substations can be switched off as an emergency measure to get load relief. A list of such substations has been prepared by each distribution company.
- (c) In case of exigency and for getting immediate relief, loads of identified feeders having high distribution losses from all the categories i.e. Urban, Jyotigram Yojana (JGY), Industrial and Agriculture Dominant can be switched off. All distribution companies have also identified 66 kV Sub-stations where power is supplied through single source. Supply to such sub-stations can be switched off as an emergency measure and get immediate load relief. List of such substations is maintained in respective ALDCs.

- (d) All Under Frequency Relays (UFRs) in GETCO have been checked and tested for the proper operation at the time of under frequency operation or df/dt operation.
- (e) District-wise holiday is fixed for industrial category consumers. The distribution companies have planned for imposing compulsory holiday for the industrial category consumer and imposition of an additional staggered holiday, if system condition so warrants.
- (f) Rural category consumers' loads have been segregated, through Jyoti Gram Yojna (JGY) into agriculture and non-agriculture categories. Load of non-agricultural category consumers are fed through JGY category feeders. Similarly, urban category consumers are fed through Urban Feeders. In case of exigency, load of the feeders under these categories can be shed on rotation basis.
- (g) All Distribution Companies had planned to enhance vigilance activity to prevent theft in general and particularly when demand rises excessively and system frequency was low.
- (h) Torrent Power Ahmadabad has own generation of 500 MW at Ahmadabad, 400 MW at Sabarmati and 100 MW gas based combined cycle power plant at Vatva in Southern part of the city. TPAECo has also made Power Purchase Agreements with SUGEN and further shortfall in generation is to be met through short term purchases from Power Exchanges. TPAECo has clearly identified feeders serving various categories of loads. It has automatic PLC

based load shedding and islanding schemes at Sabarmati and Vatva plants, with dynamic control to ensure survival of the system. To mitigate contingency, the industrial loads are to be shed first, followed by mixed feeders and residential plus commercial feeders thereafter. The discom has one day weekly staggered holiday, which results in a load relief of around 50 MW. The high losses feeders can be cut off immediately in case of contingencies.

- (i) Torrent Power Surat has made Power Purchase Agreements with SUGEN. Further shortfall in generation is to be met by short term purchases from Power Exchanges. Torrent Power Surat has established control room where the real time drawal data are displayed. All 220 kV, 66 kV sub-stations and 11 kV feeders are monitored through SCADA. The discom has clearly identified feeders serving various categories of loads. To mitigate contingency, the industrial loads are to be shed first, followed by mixed feeders and residential plus commercial feeders thereafter. Torrent Power Surat has total 162 industrial load feeders having total load of about 264 MW. The staggering of all feeders is fixed for one day in a week. The high loss feeders can be cut off immediately in case off contingencies.
  
- (j) All the Distribution Companies have established control centers named as 'Load Management Unit (LMU) of the company. These control centers are manned round the clock and equipped with necessary infrastructure and shall act as Nodal agency and communicate to the field offices/ substation operators for taking corrective action in consultation with the SLDC.

(k) In addition to all above actions, if system condition warrants, SLDC can take following measures:

- (i) Opening of 66 kV lines of radial feeders for distribution companies.
- (ii) Opening of inter distribution companies 132 kV radial line to have desired load relief.
- (iii) The generators have been tested on free-Governor mode operation on 5.4.2010 and instructions have already been given to put them in service as early as possible.

6. We have noted the various steps taken by GETCO and the distribution companies of the State for planning load management and contingency measures. We direct that the SLDC and the distribution companies to formulate and implement the state-of-the-art demand management schemes for automatic demand management like rotational load shedding and demand response etc in accordance with the Regulation 5.4.2 (d) of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010.

7. With this Petition No. 246/2009 (suo-motu) stands disposed of.

sd/-  
**(M. Deena Dayalan)**  
**Member**

sd/-  
**(V.S. Verma)**  
**Member**

