

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram

1. **Shri D.P. Sinha, Member**
2. **Shri G.S. Rajamani, Member**
3. **Shri K.N.Sinha, Member**

In the matter of

Maintenance of Grid Discipline.

ORDER

The Commission in its orders dated 30-10-1999 and 21-12-1999 in Petition No.1/99 had given its approval to the Indian Electricity Grid Code (IEGC). The utilities, Central as well as State, were, however, found lax in following the directions contained in IEGC. Regional Load Despatch Centres, except North Eastern Load Despatch Centre filed petitions before the Commission seeking directions to these utilities to follow the parameters prescribed by the Commission on maintenance of regional grids. After detailed hearing of the parties, the Commission passed appropriate orders during July/August, 2001. Even after passing of these orders, the Commission came across reports of non-observance of grid parameters by the utilities. Therefore, the Commission considered it appropriate to have first hand knowledge/information on the grid frequency maintenance in different regions. For this purpose, the Commission constituted one-Member Benches who visited Eastern, Southern and Western Regions on 2-11-2001 and interacted with the Member Secretary of REBs concerned as also the Officers-Incharge of Regional Load Despatch Centres. The Commission also heard the Member Secretary, Northern Regional Electricity Board as also the Director (Operations), PGCIL and

GM, NRLDC on 7-11-2001. The results of the visits and hearing are summarised below.

Eastern Region

2. It was found that there has been an overall improvement in grid frequency in this region. It was reported that the frequency profile of Eastern Region during the current year up to September 2001 is as follows:

| | | |
|--------------------|---|----------------|
| Below 48.5 Hz | - | 1.97% of time |
| 48.5 Hz to 49.0 Hz | - | 5.72% of time |
| 49.0 Hz to 50.5 Hz | - | 73.53% of time |
| 50.5 Hz to 51.5 Hz | - | 9.80% of time |
| Above 51.5 Hz | - | 8.98% of time |

This reflects a considerable improvement over the grid frequency prevalent during the previous year. Member Secretary, EREB also reported the status of installation of under frequency relays. He also reported that consequent to constant efforts made at EREB forum, the constituents had agreed for implementation of free governor operation w.e.f. 8-11-2001. It was reported that some of the Central generating stations could not achieve their declared availability during peak hours, which contributed to lowering of frequency of the grid during these hours. It has also been reported that NTPC had been found to be not backing down up to the required level at high frequency. It was further reported that, barring the above exceptions, there has been marked improvement on the part of the utilities in adhering to the schedules.

North-Eastern Region

3. It was reported that all generating stations with capacity from 10 MW to 50 MW in the region are put on free governor mode which smoothed the frequency fluctuations. Member Secretary NEREB reported that the frequency profile in the region generally conforms to the IEGC and the directions issued by the Commission.

Southern Region

4. It is reported that the frequency position in the region has worsened as compared to the previous year. No serious effort has been made by the constituents to comply with the Commission's order regarding drawing of an action plan in the Southern Region so that the grid frequency was kept at the minimum level of 48.5 Hz during the period, August-October, 2001. This observation is supported by the fact that an emergency meeting was called in the SREB only on 30th October, 2001, presumably because the Bench had fixed its hearing on this subject on 2nd November, 2001 at Bangalore. In support of the deteriorating frequency position, the composition of the percentage of times the frequency dropped below 48.5 Hz was furnished as under:

| Month | Year 2000 | Year 2001 |
|--------------|------------------|------------------|
| August | 48% | 79% |
| September | 57% | 83% |
| October | 37% | 43% |

While the under frequency relays were reported not to have been connected at all times and their functionality is not ensured, monthly load shedding plan was also not

a serious effort. No doubt, the region is resorting to importing of power from other regions; but the potential of the existing IPPs in various states does not seem to be fully exploited. If the existing resources are not fully utilised by the SEBs, they also do not have the right to put additional burden on the regional grid.

A disturbance in the Southern regional grid on 11.9.2001 as a result of which states of Andhra Pradesh and Karnataka were affected severely was also reported. The directions issued by the Commission whether in Petition No. 1/99 or on the basis of subsequent petitions filed by SRLDC were not kept in view by the state utilities in the region, and more particularly Andhra Pradesh Transmission Corporation Ltd. Neither were the directions of SRLDC complied with. We have noted this situation with great concern and we propose to take appropriate action in accordance with law against those responsible for non-compliance of the directions of the Commission.

Western Region

5. It has been reported that despite the Commission's latest directions contained in the order dated 24-8-2001 in Petition No. 107/2000, MPSEB and GEB continued to draw heavily from the grid at a low frequency. Even though assurances are regularly given by the constituents to stick to drawal schedule, these two boards are reported to have expressed their inability to shed load in the event of low frequency inspite of the directions from WRLDC. MSEB is reported to be only major state in the region cooperating in maintaining in the grid frequency.

Northern Region

6. It has been reported that there has been a general reluctance on the part of the generators in the region to back down at high frequency. In this context constant generation by the State generators at Kota, Panipat and Badarpur and the Central generators at Rihand and Singrauli on 4-8-2001 has been adverted to. It has also been reported that States of Haryana, UP, J&K and Delhi are over-drawing power at a frequency below 49.0 Hz. General Manager, NRLDC specifically referred to over-drawal of power by HVPNL on 3-10-2001 to the extent to 200 - 250 MW at a low frequency. It was also reported that adequate under frequency relays had not been installed and thus they did not bring any major load relief. The shortage in power supply in the region is one of the major factors responsible for over-drawals by the constituents in the region at a low frequency. It was a general view that all the constituents in the region, except Punjab and Rajasthan are defaulting in observing the grid discipline.

Conclusions

7. On detailed examination of the issues, we note with a degree of satisfaction that the consistent efforts made by the Commission seem to have generated a general consciousness, among the utilities of the need for maintenance of proper grid discipline. Nevertheless, some of the utilities have not shown the desired restraint in over-drawal of power at a low frequency or in backing down where necessary due to low system demand. We are inclined to take serious note of these defaults committed by the State/Central utilities. Therefore, we direct the Officers-In-charge of all the Regional Load Despatch Centres to file affidavits before the Commission, latest by 31.12.2001, placing on record the specific instances/incidents

of irregular and erratic conduct on the part of the utilities regarding non-observance of the provisions of IEGC or Commission's specific directions on maintenance of grid discipline. The advance copies of these affidavits shall be sent to the state/central utilities operating in the region. On consideration of the affidavits when filed, the Commission shall take an appropriate view in regard to initiation of further proceedings against the defaulting utilities under Section 45 of the Electricity Regulatory Commissions Act 1998.

8. A copy of this order be sent to the state/central utilities operating in the region, in addition to Member Secretary, REBs and the Officers-in-charge, RLDCs.

**Sd/-
(K.N. Sinha)
Member**

**Sd/-
(G.S. Rajamani)
Member**

**Sd/-
(D.P. Sinha)
Member**

New Delhi dated: 7th December, 2001.