

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 221/MP/2012

Subject : Petition for providing adequate load shedding through automatic under frequency and df/dt relays in the State Systems of Northern Region and keeping them functional in terms of Regulations 5.2 (n) of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) (First Amendment), Regulations, 2012 (Grid Code) for ensuring security of the Northern Regional grid as well as the interconnected Indian grid.

Date of hearing : 15.1.2013

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

Petitioner : Northern Regional Load Despatch Centre, New Delhi

Respondents : Punjab State Transmission Corporation Ltd., Patiala
Haryana Vidyut Prasaran Nigam Limited, Panchkula
Rajasthan Rajya Vidyut Prasaran Nigam Ltd, Jaipur
Delhi Transco Limited, Delhi
Uttar Pradesh Power Transmission Corporation Ltd., Lucknow
Himachal Pradesh State Electricity Board, Shimla
Power Transmission Corporation of Uttarakhand Ltd., Dehradun
Power development Department, Jammu and Kashmir
Electricity Department, Union Territory of Chandigarh, Chandigarh
State Load Despatch Centre, Ablowal (Patiala), Punjab
State Load Despatch Centre, Panchkula, Haryana
State Load Despatch Centre, Heerapur, Rajasthan
State Load Despatch Centre, Delhi
State Load Despatch Centre, Lucknow, Uttar Pradesh
State Load Despatch Centre, Rishikesh, Uttarakhand
State Load Despatch Centre, Totu (Shimla), Himachal Pradesh
State Load Despatch Centre, Gladini, Jammu and Kashmir

Performa Respondents: Member-Secretary, Northern Regional Power Committee
Executive Director (NR-I), Power Grid Corporation of India Ltd.
Executive Director (NR-II), Power Grid Corporation of India Ltd.

Parties present : Shri V.V. Sharma, NRLDC
Shri Rajiv Porwal, NRLDC

Miss Joyti Prasad, NRLDC
 Shri Naresh Kumar, NRPC
 Shri R.K.Sharma, PSTCL
 Shri Daljit Singh Mahal, PSTCL
 Shri Rahul Srivastava, SLDC, UP
 Shri M.K.Gupta, SLDC, UP
 Shri Zahir Ahmed, SLDC,UP
 Shri Rajiv Gupta, SLDC,Uttarakhand
 Shri Neeraj Pathak, SLDC, Uttarakhand
 Shri M.K.Tomar, RRVPNL
 Shri Vinod Khajuria, JKPPD
 Shri Darshan Singh, SLDC/DTL
 Shri B.L Gujar, DTL
 Shri Hem Joshi, HVPNL

Record of Proceedings

At the outset, the representative of the petitioner submitted that the present petition has been filed to bring to the notice of the Commission the inadequate relief received from the system defense mechanisms such as the under Frequency Relay (UFR) and df/dt due to non-compliance of the provisions of the Grid Code by the constituents of the Northern Region. The safety net is very important for the security of the system.

2. The representative of the petitioner submitted that Enquiry Committee constituted after the grid disturbance on 30th and 31st July, 2012 in its report dated 16.8.2012 recommended as under:

“9.3All STUs should immediately enable under frequency and df/dt based load shedding schemes. Central Commission should explore ways and means for implementations of various regulations issued under Electricity Act 2003.....RPCs need to take up the matter for compliance. In case non-compliance persists, POSOCO should report to Central Commission.”

3. The representative of the petitioner further submitted that Power Grid in its survey has audited 175 locations as under:

State	Rajasthan	Uttar Pradesh	Punjab	Delhi	Haryana	Uttarakhand	Jammu and Kashmir	HP	Chandigarh
location	50	30	28	24	20	11	7	3	2

And out of 10000 MW (4000 MW flat under frequency and 6000 MW df/dt load shedding) in Northern Region only 16% and 13% load relief of was obtained during grid disturbance on 30th and 31st July 2012.

4. The representative of the petitioner submitted that rejoinder to the reply filed by Haryana, Delhi, Rajasthan and UP has been filed and no response has been received from Himachal Pradesh Punjab, Uttarakhand, J&K and Chandigarh. However, some of the States i.e. Haryana, have not submitted the details.

5. During the course of hearing the representative of Punjab stated that SLDC, Punjab has filed response on 6th December 2012 on the matter and all UFR, df/dt relays in Punjab system are functional except 5 number UFR and 3 number df/dt relays. For replacement of these defective relays procurement process has been initiated and these would be replaced by 31st March 2013. In response to Commission`s query whether these could be replaced earlier with the help of reserve relays, the representative of SLDC, Punjab submitted that there are no reserves left as of now.

6. The representative of Delhi submitted that there was good relief of 1000-1200 MW by Delhi during July 2012 grid disturbance. In response, the representative of the petitioner submitted that as per the report of the Power Grid only 176 MW out of 600 MW from UFR was received from Delhi on 30th July 2012. Similar low relief, as per Power Grid report, was received from df/dt relays and also on 31st July 2012 which is on record. The low relief may be due to lower setting of 48.0 Hz, 47.9 Hz and 47.7 Hz in place of NRPC recommended 48.8 Hz, 48.6 and 48.2 Hz. The representative of Delhi further submitted that those setting are for islanding schemes. The Commission observed that islanding schemes are separate and adequate relief must be provided as per the NRPC recommended settings. The islanding relief is to be provided separately as per the islanding approved scheme and shall be in addition to the regional UFR, df/dt schemes formulated by NRPC.

7. The representative of Uttarakhand submitted that due to shifting of SLDC, Uttarakhand office, reply could not be filed in time and reply would be filed today.

8. In response to Commission query regarding maximum defective relays in UP, learned counsel of SLDC, UP submitted that as per Grid Code, UFR, df/dt relays are the responsibility of STU and SLDC, UP is not receiving reports from STU. In response to Commission query, the representative of the petitioner submitted that both SLDC and STU have been made respondents and STU, UP has also filed its response. In response, learned counsel admitted that SLDC, UP is under the STU, UP only.

9. The representative of the petitioner informed that as per NRPC letter dated 3.1.2013, relays at 400 kV Panipat and 220 kV Narela sub-stations were also found non-working and feeders of Haryana area did not trip. Similar reports were earlier found in case of UP also. There are issues of relay being on non radial feeders and thus, even with relay operating, the required relief would not be obtained.

10. The representative of petitioner submitted that as per Regulation 5.2 (n) of the Grid Code, RPC secretariat is required to carry out periodic inspection of these relays and impose penalty based on these inspections if found non- working/ inadequate

relief. He submitted that NRPC has been impleaded as proforma respondent to the petition and NRPC would apprise the Commission the status on these issues.

11. The representative of petitioner requested the Commission to issue directions to the utilities to install numerical type of relays as being considered by UP and Delhi and also recommended by Power Grid to help faster response of relays as well as recording of relay operation, remote monitoring etc.

12. The commission took serious view of the state of these relays which are essential for safety of the grid in the event of any untoward incident. The Commission directed all respondents to keep all UFR and df/dt relays in healthy conditions so that adequate relief to the grid is always available. The respondents were also directed to revive all defective relays expeditiously.

13. The Commission directed the respondents to submit data in formats attached with this ROP, within two weeks on affidavit for proper monitoring at RPC level and responsibility of person in each area for each relay is fixed.

14. The Commission also directed to issue notice to the Secretary, NRPC to assist the Commission on next date of hearing.

15. The petition shall be listed for hearing on 14.2.2013.

By order of the Commission

Sd/-
(T. Rout)
Joint Chief (Law)

Name of State Control Area:

Sl. No	Name of substation (including voltage level)	Name of feeder /transformer (including voltage level)	Affected Area	Estimated load relief (MW)/ Minimum load on the feeder (MW)	Whether the feeder is radial	Whether this feeder / underlying feeders are a part of scheduled power cuts / load shedding	Whether this feeder /underlying feeders covered under UFR	Whether this feeder / underlying feeders covered under df/dt shedding scheme	Whether the feeder / underlying feeders covered under any SPS?	UFR (Hz) or df/dt (hz/sec) setting	Whether powerflow and breaker status of the feeder/ underlying feeder visible in SLDC through SCADA	Whether Relay numerical	Model and make of relay	Date & time when relay /load relief /operation was checked last time	Name & Designation of the checking officer
				MW	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No		Yes/No	Yes/No			
1															
2															
3															
4															
...															
n															

Name of State Control Area:

Date & time of operation of under frequency Relay: (dd-MMM-yyyy, hh:mm).....

Sl.No	Name of substation (including voltage level)	Name of feeder /transformer (including voltage level)	Model and make of relay	Exact Time of operation of Relay (as per relay)	Approved load relief (MW) from the feeder	Actual Load relief (MW) obtained from the feeder	Affected Area	Whether powerflow it was monitored in SLDC through SCADA	If yes, time of tripping in SCADA SOE	Total Impact at state Level in SCADA (MW change in drawal of the state)
					MW	MW		Yes/No	Yes/No	MW
1										
2										
3										
4										
...										
n										
Total relief from the state at same time										