

**CENTRAL ELECTRICITY REGULATORY COMMISSION**

**NEW DELHI**

**Petition No. 125/MP/2012**

**With I.A.No. 25/2012**

**Coram**

**Dr. Pramod Deo, Chairperson**

**Shri S.Jayaraman, Member**

**Shri V.S.Verma, Member**

**Shri M.Deena Dayalan, Member**

**DATE OF HEARING: 31.5.2012**

**DATE OF ORDER: 10 .7.2012**

**In the matter of**

Effecting proper load management by Northern Region constituents and curbing Overdrawl in terms of the Indian Electricity Grid Code and Unscheduled Interchange charges Regulations.

**And**

**In the matter of**

Northern Regional Load Despatch Center, New Delhi

**..Petitioner**

**Vs**

1. Punjab State Transmission Corporation Ltd., Patiala
2. Haryana Vidyut Prasaran Nigam Ltd., Panchkula
3. Rajasthan Rajya Vidyut Prasaran Nigam Ltd, Jaipur
4. Delhi Transco Ltd., New Delhi
5. Uttar Pradesh Power Transmission Corporation Ltd., Lucknow
6. Himachal Pradesh State Electricity Board, Shimla
7. Power Transmission Corporation of Uttarakhand Ltd., Dehradun
8. Power Development Department, Government of J & K, Jammu
9. Electricity Department, Chandigarh
10. North Central Railway, New Delhi
11. State Load Despatch Centre, Ablowal (Patiala), Punjab
12. State Load Despatch Centre, Panchkula
13. State Load Despatch Centre, Heerapura, Rajasthan
14. State Load Despatch Centre, Delhi
15. State Load Despatch Centre, Lucknow
16. State Load Despatch Centre, Uttarakhand
17. State Load Despatch Centre, Himachal Pradesh
18. State Load Despatch Centre, Jammu and Kashmir

**.Respondents**



19. Member Secretary, Northern Regional Power Committee, New Delhi  
..Proforma Respondent

**Following were present:**

Shri V.V.Sharma, NRLDC  
Shri Vivek Pandey, NRLDC  
Shri Rajeev Porwal, NRLDC  
Miss Joyti Prasad, NRLDC  
Shri V.K.Agarwal, NRLDC  
Shri Mukesh Kumar Gupta, SLDC, UP  
Shri Chandra Kant Shukla, UPPTCL  
Shri Rahul Srivastava, Advocate, UPPCL  
Shri N.K.Makkar, HVPNL  
Shri Pankaj.Jain, SLDC, RVPN  
Shri A.K.Arya, RRVPNL  
Shri Darshan Singh, SLDC, Delhi  
Shri P.S.Solanki  
Shri Kaman Kant, SLDC, Uttarakhand  
Shri Udai Shankar, NTPC

**ORDER**

The Petitioner, Northern Regional Load Despatch Centre (NRLDC) has filed the present petition seeking the following relief:

- (a) Direct the SLDCs/STUs of Northern Region to comply with Regulations 6.4.8 of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010 (Grid Code);
- (b) Direct the SLDCs/STUs of Northern Region to take necessary steps for utilizing the various avenues available through Central Electricity Regulatory Commission (Open Access in inter-State Transmission) Regulations, 2010 and Central Electricity Regulatory Commission (Power Market) Regulations, 2010 to meet their control area capacity/energy requirements through scheduled interchange;
- (c) Restrain the STUs/SLDCs of Northern Region from consistently overdrawn and heavily relying on the Unscheduled Interchange

mechanism to meet their State control area capacity/energy requirements.

2. The petitioner has submitted that the State constituents in the Northern Region were overdrawing from the grid under Unscheduled Interchange. The petitioner has further submitted that during the period 1.1.2012 to 25.3.2012, and the daily overdrawal by the constituents of Northern Region, particularly the States of Haryana, Uttar Pradesh, Rajasthan, Uttarakhand and Jammu and Kashmir has been significantly high when the frequency of the NEW grid remained below 49.5Hz. It is noted that the overdrawal of the States in Northern Region are in the range of 3% to 51% of the scheduled drawal. The petitioner has summarized the overdrawal/ under drawal of State entities in Northern Region during the period 1.1.2012 to 25.3.2012 as under:

State	Schedule Drawal (MU)	Actual Drawal (MU)	Overdrawal/ Underdrawal (MU)	Overdrawal/ Underdrawal as % of Schedule Drawal
	A	B	C = (B-A)	D = C/A
<b>Haryana</b>	2202	3318	1116	51%
<b>Rajasthan</b>	4194	4929	734	18%
<b>Uttarakhand</b>	1500	1660	160	11%
<b>Jammu and Kashmir</b>	2048	2208	160	8%
<b>Uttar Pradesh</b>	7176	7514	339	5%
<b>Chandigarh</b>	307	316	9	3%
<b>Punjab</b>	3215	3171	-44	-1%
<b>Himachal Pradesh</b>	1583	1518	-65	-4%
<b>Delhi</b>	3419	2658	-761	-22%

3. The petitioner has submitted that during the period 1.1.2012 to 25.3.2012, there were 63 time blocks when the frequency of the NEW grid was 49.5 Hz or below. The petitioner has summarized the overdrawal by various State entities in the Northern Region during the time block when the frequency was 49.5 Hz or below as under:

<b>Violation of regulation 5.4.2 (b) of IEGC 2010 during 1st January 2012 to 25-March 2012</b>						
Description	Number of time blocks when frequency was below 49.5 Hz	No. of time-blocks in which entity was overdrawing when frequency was below 49.5 Hz	% of the time blocks when the entity was overdrawing and the frequency was below 49.5 Hz	Total Scheduled Interchange (MU) of the entity in the time blocks when frequency was below 49.5 Hz and entity was overdrawing	Total Unscheduled Interchange/ overdrawl (MU) when frequency was below 49.5 Hz and entity was overdrawing	Unscheduled Interchange expressed as percentage of Scheduled Interchange
	A	B	C = B/A	D	E	F = E/D
Haryana	63	52	83%	14.53	4.27	29%
Rajasthan	63	46	73%	17.56	3.75	21%
Punjab	63	45	71%	11.59	2.41	21%
Uttarakhand	63	57	90%	2.32	0.38	16%
Uttar Pradesh	63	52	83%	25.95	2.98	11%
Jammu & Kashmir	63	43	68%	48.90	5.50	11%
UT Chandigarh	63	53	84%	11.42	1.25	11%
Himachal Pradesh	63	27	43%	0.59	0.06	10%
Railways	63	26	41%	5.56	0.43	8%
Delhi	63	15	24%	7.30	0.54	7%

4. The petitioner has further submitted that in line with the provisions of Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010 (hereinafter the "the Grid Code"), NRLDC has been issuing messages to the defaulting State Control Areas/Regional Entities in real-time with regard to the overdrawal from the grid during low frequency period. The

petitioner has summarized the type A, B and C messages issued by NRLDC to the defaulting constituents from 1.1.2012 to 25.3.2012 as under:

<b>Message Type A,B&amp;C issued by NRLDC from 1.1.2012 to 25.3.2012</b>			
<b>Regional Entity</b>	<b>Message-A</b>	<b>Message-B</b>	<b>Message-C</b>
	Warning Message in line with Regulation 6.4.7 of Grid Code	Messages intimating violation of 5.4.2(a) and (e) and 6.4.7 of Grid Code and Section 29 (1) of the Electricity Act, 2003	Messages intimating violation of Regulations 5.4.2(e) of Grid Code and Section 29 (2) and (3) of Electricity Act,2003
Haryana	82	28	1
Rajasthan	22	10	1
Uttar Pradesh	58	18	0
Jammu & Kashmir	38	18	0
Punjab	23	8	0
Uttarkhand	5	2	0
Himachal Pradesh	2	2	0
Delhi	1	0	0
UT Chandigarh	0	0	0
<b>Total</b>	<b>231</b>	<b>86</b>	<b>2</b>

5. It has been submitted that during the period in question, there were 1292 time blocks when the frequency was below 49.7 Hz. Number of State entities had violated the UI limit of 12 % in a time block or 3 % over a day prescribed in UI Regulations during the period in question.

6. The petitioner has also submitted that few State entities in Northern Region have relied heavily on the overdrawal/Unscheduled Interchange for meeting their capacity/energy requirements. There are several instances of violations in terms of,-

- (a) Regulation 6.4.8, 5.4.2 (a), 5.4.2(b), 5.4.2(e), 6.4.7 of the Grid Code;

(b) Regulation 7(1) of the Central Electricity Regulatory Commission (Unscheduled Interchange charges and related matters) (Amendment) Regulations, 2010; and

(c) Section 29(1), 29(2) and 29 (3) of the Electricity Act, 2003 by the SLDCs/STUs of the Northern Region.

7. The petitioner has also filed the Interlocutory Application (I.A.) to bring to the notice of the Commission the instances of heavy overdrawal during 1.5.2012 to 14.5.2012 from the Northern Regional Grid by the constituents of the Northern Region and for appropriate directions to maintain safety and security of the grid. The petitioner has explained the current situation of the Northern Region grid as under:

(a) There has been heavy overdrawal by the Northern Region constituents particularly Uttar Pradesh, Rajasthan, Haryana and Uttarakhand during the period 1<sup>st</sup> May 2012 to 14<sup>th</sup> May 2012. The overdrawal figures based on SCADA data are as under:

State Control Area	Average daily overdrawal for the period 1 <sup>st</sup> May to 14 <sup>th</sup> May 2012	Maximum daily overdrawal during the period 1 <sup>st</sup> May to 14 <sup>th</sup> May 2012
Uttar Pradesh	Uttar Pradesh 28 MU / day (Average 1200 MW Round the Clock)	42 MU on 7 <sup>th</sup> & 8 <sup>th</sup> May-12 (Average 1700 MW round the Clock)
Rajasthan	12 MU /day (Average 500MW Round the Clock)	28 MU on 4 <sup>th</sup> May 2012 (Average 1200 MW round the clock)

Haryana	9 MU/day (Average 375 MW Round the clock)	16.5 MU on 6 <sup>th</sup> May 2012 (Average 687 MW round the clock)
Uttarkhand	3 MU/day (Average 125 MW Round the clock)	6 MU on 4 <sup>th</sup> May 2012 (Average 250 MW round the clock)

(b) On 14<sup>th</sup>, 15<sup>th</sup> and 16 May 2012 the minimum grid frequency was 48.91 Hz, 49.05 Hz and 48.82 Hz respectively. The frequency remained below 49.5 Hz for 13%, 18% and 15.3 % of the time and it remained below 49.7 Hz for 36.4%, 61% and 47.6 % of the time on 14<sup>th</sup>, 15<sup>th</sup> and 16<sup>th</sup> May, 2012 respectively.

(c) The issues of overdrawal and violation of various provisions of Grid Code have been taken up by the petitioner with the respective constituents through messages and telephonic conversation. The issue was also brought to the notice of the heads of SLDCs and other senior officials of the respective States.

(d) The petitioner has requested for interim directions be issued to the constituents to stop overdrawal forthwith.

8. After hearing the representative of POSOCO and considering gravity of the situation posing imminent danger to the grid, the Commission in its Record of Proceedings dated 17.5.2012 issued the following directions:

(a) The constituents of the Northern Region, particularly Uttar Pradesh,

Rajasthan, Punjab, Haryana shall restrict their drawal within their schedule forthwith and ensure that there is no violation Regulations 6.4.8, 5.4.2 (a) and 5.4.2 (b) of the Grid Code;

(b) The constituents of the Northern Region shall comply with the directions of NRLDC to maintaining the security of the system; and

(c) Notice to the respondents on the IA returnable by 28.5.2012.

9. The Commission also directed the Officers in charge of the respective State Load Despatch Centres, State Transmission Utilities and State Electricity Boards/the Distribution licensees in the Northern Region, particularly Uttar Pradesh, Rajasthan, Punjab, Haryana to explain by 28.5.2012 the reasons for non-compliance of the various provisions of the Grid Code with regard to overdrawal from the grid and non-compliance of the directions of NRLDC in violation of Section 29 of the Electricity Act, 2003 during the period 1<sup>st</sup> January 2012 to 25<sup>th</sup> March 2012 and during 1<sup>st</sup> May to 14<sup>th</sup> May 2012.

10. In compliance of the said directions, Delhi Transco Ltd. (DTL), Haryana Vidyut Prasaran Nigam Limited (HVPNL), SLDC, Uttarakhand and SLDC, UP have filed their replies. The summary of replies are discussed as under:

(a) Delhi Transco Ltd. (DTL) in its reply dated 14.5.2012 has submitted that there was no overdrawal by Delhi during the period in question. In fact, Delhi has under drawn as most of the time Delhi was surplus in power.



b) Harayana Vidyut Prasaran Nigam Ltd. (HVPNL) in its reply dated 28.5.2012 has submitted that the overdrawal during the period in question was mainly due to forced outages of the State sector generating units. It has also been submitted that HVPNL forwarded the messages received from NRLDC to the Distribution Companies and prayed that the Distribution Companies should be made respondents in present case.

(c) SLDC, Uttarakhand in its reply has submitted that overdrawal during the months of January and February, 2012 was limited to around 12%. However, during the month of March, 2012, due to excessive shortage of power and code of conduct for State assembly election, overdrawal was increased up to 25%.

(d) SLDC, UP in its affidavit dated 28.5.2012 has submitted that due to shortage of time SLDC, UP could not file its reply in time and requested to grant time to file its reply.

11. The matter was heard on 31.5.2012. During the course of hearing, the representative of the petitioner submitted that some State Utilities are overdrawing continuously and requested the Commission to direct the State entities to stop overdrawal at low frequency conditions and to ensure grid discipline.

12. Learned counsel for the SLDC, UP submitted that due to less availability of power and increased demand on account of summer season, the UPPCL had to resort to overdrawal of power.

13. During the course of hearing of the petition on 31.5.2012, the representative of the petitioner submitted that despite Commission's directions, the respondents have not reduced their overdrawal. The representative of the petitioner further submitted that during the period 20.5.2012 to 30.5.2012 following A, B and C messages were issued to defaulting constituents:

	Message A	Message B	Message C
Uttar Pradesh	56	37	20
Rajasthan	33	21	2
Haryana	42	17	2
Punjab	44	10	1

14. The representative of the petitioner further summarized the overdrawal by various State entities in the Northern Region during the period 20.5.2012 to 30.5.2012 as under:

Date	% time of frequency		Over drawl (MU's) during the whole day							
	Below 49.5Hz	Below 49.7Hz	Uttar Pradesh		Rajasthan		Haryana		Punjab	
			Daily MU	Max MW	Daily MU	Max MW	Daily MU	Max MW	Daily MU	Max MW
20-May-12	4.90	23.20	32.1	2109	2.3	774	4.4	523	7.9	1010
21-May-12	18.00	53.20	29.7	2100	12.3	909	0.8	699	2.6	631
22-May-12	18.00	53.20	29.7	2156	12.3	1053	0.8	313	2.6	440
23-May-12	20.97	45.52	27.8	2273	12.0	1085	0.2	329	1.9	423
24-May-12	20.90	51.40	26.2	2415	10.0	947	5.8	1020	2.7	658

25-May-12	11.30	37.30	31.9	2096	3.1	738	17.3	1269	8.9	1101
26-May-12	10.20	32.90	32.3	2303	5.4	869	15.7	1217	0.5	402
27-May-12	10.10	37.00	27.6	1931	4.2	585	13.3	1132	4.5	604
28-May-12	7.30	32.00	28.31	1923	4.38	832	10.61	1003	3.07	595
29-May-12	17.80	53.50	32.83	2648	-0.49	684	8.39	1393	1.05	273
30-May-12	6.50	35.85	30.51	2515	-0.84	393	10.99	1680	2.68	644

15. We have considered the submission of the petitioner and the respondents, it is observed that overdrawal by some utilities specially U.P. during the month of May, 2012 was serious due to which, 7 and 20 number of "C" messages were issued during 1-14 May and 20-30 May, 2012, respectively to U.P. It is also observed that some other State entities also Rajasthan, Punjab and Haryana continued with the overdrawal in the month of May 2012. From the communications of NRLDC to State utilities on 28th May, 2012, copies of which were forwarded to the Commission, it is noted that States control areas of Rajasthan, Punjab, Haryana and UP were overdrawing from the grid at low frequency. The Commission during the hearing of the petition on 3.5.2012 and 17.5.2012 directed the respondents to stop overdrawal from the grid.

16. From the records available, it is evident that only HVPNL, DTL, SLDC, Uttarakhand and SLDC,UP have submitted their replies. Other respondents have not filed any response to Records of Proceeding dated 17.5.2012. We do not approve the conduct of the respondents not to file response to the directions of the Commission in such a grave matter as grid security.

17. It is evident from above that there was overdrawal of State entities in Northern Region when the frequency was 49.5 Hz or below. This is clearcut violation of Regulation 5.4.2 (b) of Grid Code. Regulation 5.4.2 (b) of the Grid Code provides that *"the SLDC/SEB/distribution licensee and bulk consumer shall ensure that requisite load shedding is carried out in its control area so that there is no overdrawal when frequency is 49.5 Hz or below."*

18. In terms of Regulation 5.4.2 (d) of the Grid Code, SLDC through respective State Electricity Boards/Distribution licensees are required to formulate and implement state-of-the-art demand management schemes for automatic demand management like rotational load shedding, demand response before 1.1.2011, to reduce overdrawal. The relevant provision of Regulation 5.4.2 (d) of the Grid Code is as under:

*"(d) The SLDC through respective State Electricity Boards/Distribution Licensees shall also formulate and implement state-of-the-art demand management schemes for automatic demand management like rotational load shedding, demand response (which may include lower tariff for interruptible loads) etc. before 01.01.2011, to reduce overdrawal in order to comply para 5.4.2 (a) and (b). A Report detailing the scheme and periodic reports on progress of implementation of the schemes shall be sent to the Central Commission by the concerned SLDC."*

19. In view of the above provisions, the State utilities are directed to submit the status of compliance of Regulation 5.4.2 (d) of the Grid Code, on affidavit, latest by 27.7.2012.

20. The Commission in its order dated 15.12.2009 in Petition No. 152/2009 had directed all the STUs/ SEBs to submit periodic report consisting of their estimated demand and the plan to meet this demand as under.

*"4. We feel that compliance of the above quoted statutory responsibilities, may reduce the instances of excessive drawal to some extent. Accordingly, we direct all the State Transmission Utilities in the country including State Electricity Boards/Departments where a separate STU has not yet been constituted to submit the report as per Annexure A to this order, to this Commission, their respective State Commission and State Government, and the Regional Load Despatch Centre for the first week of January, April, July and December by the last day of the preceding November, February, May and August respectively.*

*5. We also make it clear that any laxity in submission of the reports "shall amount to non-compliance of the order of the Commission as well as the provisions of the Grid Code and thereby render the defaulting utility liable for appropriate action under the provisions of the Electricity Act, 2003."*

21. It is noted that in compliance of said directions, some utilities are submitting their data. However, number of other utilities have not complied with the directions of the Commission`s order dated 15.12.2009. It is violation of Commission`s directions. Further in compliance of Regulation 6.4.8 of the Grid Code, the State utilities have to carry out demand estimation. The relevant provision of Regulation 6.4.8 of the Grid Code is as under:

*"6.4.8. The SLDCs/STUs/Distribution Licensees shall regularly carry out the necessary exercises regarding short-term demand estimation for their respective States/area, to enable them to plan in advance as to how they would meet their consumer`s load without overdrawing from the grid."*

All the State utilities are directed to comply Regulation 6.4.8. of the Grid Code and submit their reports in accordance with the Commission`s directions dated 15.12.2009, on affidavit, latest by, 27.7.2012.

22. Considering the seriousness of the situation, notice is issued to Head of State Load Despatch Centres, State Transmission Utilities and State Electricity Boards/the Distribution licensees in the Northern Region as to why they will not be held personally liable for the penalty for non-compliance with the directions of the Commission and provisions of the Grid Code with regard to maintenance of required grid frequency demand estimate and installation of automatic demand management schemes.

23. The petitioner has sought directions to the respondents for ensuring safety and security of the grid and to obviate any possibility of grid disturbance. We are convinced that urgent actions are called for to maintain the grid at the frequency specified in the Grid Code and to ensure smooth operation of the grid. Accordingly, the following directions are issued for strict compliance by the respondents:

(a) The respondents shall not resort to any overdrawal from the NEW grid when the frequency is below 49.5 Hz. and shall comply with the provisions of Grid Code.

(b) The respondents shall ensure that the directions of NRLDC issued under section 29 of the Act are faithfully complied with and compliance of these directions are reported to NRLDC immediately.

(c) The respondents shall ensure that the Under Frequency Relays (UFR) are kept in service at all times and the feeders used for load shedding

through UFRs are different from the feeders used for manual load shedding so that the security of the grid is not compromised.

(d)The respondents shall submit the status of compliance of Regulations 5.4.2 (d) and 6.4.8 as well as Commission`s directions contained in order dated 15.12.2009.

24. We direct that it shall be the personal responsibility of the officers in overall charge of the State Transmission Utilities/ State Load Dispatch Centres to ensure compliance of the directions in Para 22 and 23 above and non-compliance of the above directions in any form will be viewed seriously and appropriate actions under provisions of the Act shall be taken.

25. The matter will be listed for hearing on 14.8.2012.

Sd/-	sd/-	sd/-	sd/-
(M.DEENA DAYALAN)	(V.S.VERMA)	(S.JAYARAMAN)	(Dr. PRAMOD DEO)
MEMBER	MEMBER	MEMBER	CHAIRPERSON