

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Adjudication Case No. 5/2010

**Coram:
Shri M Deena Dayalan, Member and Adjudicating Officer**

Date of hearing: 11.4.2011

Date of Order: 27.9.2011

In the matter of

Maintaining grid security of the entire North East West (NEW) grid by curbing overdrawals and effecting proper load management by Northern Region constituents.

And

In the matter of

Power Transmission Corporation of Uttarakhand Limited., Dehradun
Respondent
Member Secretary, Northern Regional Power Committee
..Proforma Respondent

The following were present:

1. Shri Vivek Pandey, NRLDC
2. Shri A Mani, NLDC-POSOCO

ORDER

Petition No. 129/2010 was filed by Northern Regional Load Despatch Centre (NRLDC) seeking the following reliefs:

- (a) Direct the Northern Regional SLDCs and State Control Areas in the Northern Region to honour paras 5.4.2, 6.4.7 and 6.4.8 of the



Indian Electricity Grid Code (hereinafter referred to as "IEGC") and curb their overdrawals when the frequency is below 49.20 Hz. so that the NEW grid is secure;

(b) Direct SLDCs and State Control Areas in the Northern Region to honour the directions of RLDC under section 29 (1) of the Electricity Act, 2003 (hereinafter referred to as "the Act"); and

(c) Direct SLDCs and State Control Areas in the Northern Region to take necessary steps for proper load management so as to avoid overdrawal in the ensuing months.

2. According to the petitioner, the frequency profile of the NEW grid had undergone sharp deterioration since the start of the month of April 2010 and the percentage of time during which frequency remained below 49.2 Hz reached up to 80 % on 9th April 2010. The petitioner submitted that the primary reason for the sustained low frequency was overdrawals by the State Control Areas/Regional Entities in Northern Region. As per the details submitted by the petitioner, during 1st to 9th April 2010 all the State Control Areas with the exception of Delhi, were heavily overdrawing from the grid. Based on SCADA data, it was urged that the maximum over-drawal by Uttarakhand State control area during 1st to 9th April 2010 was up to 447 MW when frequency was below 49.2 Hz. (during the subject time period

the stipulated frequency range as per IEGC was 49.2-50.3 Hz.) and average overdrawal was 4.2 MU per day.

3. The petitioner submitted that in line with the provisions of IEGC, it issued different types of messages to the defaulting State Control Areas/Regional Entities in real-time with regard to overdrawal from the grid during low frequency period. Briefly, the scheme for issue of different types of message is as given below:

Message-Type	Subject Description
Caution message in line with para 6.4.7 of IEGC (Message type A)	Intimation of Low frequency operation and request to restrict the drawal within schedule
Violation of IEGC paras 5.4.2 (a) and 6.4.7 (Message type B)	Intimation regarding violation of paras 5.4.2 (a) and 6.4.7 of the IEGC and directions under paras 5.4.2 (b) of IEGC and sub-sections (1) and (2) of Section 29 of the Electricity Act, 2003 (hereinafter referred to as "Act") for immediate action for restriction of overdrawal in order to avert threat to system security
Violation of IEGC para 5.4.2 (b) and sub-sections (2) and (3) of Section 29 of the Electricity Act, 2003. (Message type C)	Intimation of violation of para 5.4.2(b) of IEGC and sub-sections (2) and (3) of Section 29 of the Act and request for immediate action for curtailing the overdrawal, in the interest of grid safety and security

4. As regards the respondent in the present Adjudication proceedings, it was submitted that during 1st to 9th April, 2010 at least 33 numbers of "Caution messages" (Message type A) and 25 numbers of "Violation

messages" (16 numbers type "B" Message and 9 numbers type "C" messages) were issued to SLDC, Uttarakhand.

5. The petition was heard after notice to the parties. Consequent to the hearing in which several utilities of the Region participated, the Commission vide its order dated 4.11.2010 noted that there was indiscriminate overdrawal from the Grid and non-compliance of directions issued by NRLDC under sub-sections (2) and (3) of Section 29 of the Act, by many utilities in Northern Region including the respondent herein viz. Power Transmission Corporation of Uttarakhand Limited (PTCUL). The Commission accordingly, appointed the undersigned as the Adjudicating Officer for conducting the enquiry against the respondent for non-compliance with the directions of NRLDC under Section 143 of the Act.

6. The undersigned had issued notice under Section 143 of the Act directing the respondent to show cause as to why enquiry for the reported overdrawl should not be held against for non-compliance of the directions of the NRLDC. Thereafter, the undersigned issued notice on 11.2.011 to the respondent for holding enquiry against it for non-compliance with the direction of NRLDC.

7. None appeared on behalf of the respondent during the course of hearing.

8. Respondent in its reply dated 12.5.2011 has made following submissions:-

(a) Overdrawal from grid during 1st to 9th April, 2010 was due to Kumbh Mela, shortage of generation and closing of industrial package to State from Central Government;

(b) SLDC was taking sufficient steps by implementing load shedding of 80 to 330 MW during the period in question. This load shedding was nearly four times as compared to previous year;

(c) Presently SLDC is working as sub-LDC of U.P. and availability of SCADA data is poor due to non-availability of RTUs at each load point. Monitoring of effect of load shedding is also manual;

(d) SLDC took best possible steps to manage the system and maintenance of grid security of NEW grid;

9. The NRLDC, in its submission dated 18.5.2011 submitted that the respondent has mentioned various reasons for overdrawal for which sufficient planning would have been done and extra power would have purchased from the market. Regarding the compliance of NRLDC

message, it was submitted that the logic of respondent in indicating compliance of the directions was not clear. In most of the cases, either there was not appropriate reduction in overdrawal or frequency did not improve and therefore, the response was inadequate implying the non-compliance of the directions by NRLDC.

Analysis of the actions taken by the Respondent on B and C Messages

10. The respondent had not denied overdrawl or receipt of the messages from NRLDC. The respondent has submitted that it received 15 "B" and 10 "C" messages. Only these messages have been considered for analysis of the action of the respondent.

11. The relevant provisions under para 5.4.2 of IEGC (as was in vogue during April 2010) are reproduced below:

"5.4.2 Manual Demand Disconnection

- (a) As mentioned elsewhere, the constituents shall endeavour to restrict their net drawal from the grid to within their respective drawal schedules whenever the system frequency is below 49.5 Hz. When the frequency falls below 49.2 Hz, requisite load shedding (manual) shall be carried out in the concerned State to curtail the over-drawal.*
- (b) Further, in case of certain contingencies and/or threat to system security, the RLDC may direct an SLDC to decrease its drawal by a certain quantum. Such directions shall immediately be acted upon.*

(c) Each Regional constituent shall make arrangements that will enable manual demand disconnection to take place, as instructed by the RLDC/SLDC, under normal and/or contingent conditions.

(d) The measures taken to reduce the constituents' drawal from the grid shall not be withdrawn as long as the frequency/voltage remains at a low level, unless specifically permitted by the RLDC."

12. Further, para 6.4.7 of IEGC (as was in vogue during April 2010)

provided as under:

"7. Provided that the States, through their SLDCs, shall always endeavour to restrict their net drawal from the grid to within their respective drawal schedules, whenever the system frequency is below 49.5 Hz. When the frequency falls below 49.2 Hz, requisite load shedding shall be carried out in the concerned State(s) to curtail the over-drawal."

13. The relevant provisions under Section 29 of the Act are reproduced

below:

"29. Compliance of directions- (1) The Regional Despatch Centre may give such directions and exercise such supervision and control as may be required for ensuring stability of grid operations and achieving the maximum economy and efficiency in the operation of the power system in the region under its control.

(2) Every licensee, generating company, generating station, substation and any other person connected with the operation of the power system shall comply with the direction issued by the Regional Load Despatch Centres under sub-section (1).

(3) All directions issued by the Regional Load Despatch Centres to any transmission licensee of State transmission lines or any other licensee of the State or generating company (other than those connected to inter State transmission system) or sub-station in the State shall be issued through the State Load Despatch Centre and the State Load Despatch Centres shall ensure that such directions are duly complied with the licensee or generating company or sub-station. "

14. From the records of the case, it emerges that out of the 25 messages, reported to have been received by the respondent itself, at least on 7 numbers of "B" messages and 2 number of "C" message, the direction of NRLDC was not complied with, as the overdrawal was continued even after more than 15 minutes of the message, with the frequency still below 49.2 Hz . In case of other messages either the overdrawal was reduced or the frequency improved and went above 49.2 Hz. it is also significant to mention that the improvement in frequency cannot be attributed exclusively to the respondent, but it could have been due to action by some other utility i.e. reduction of overdrawal or increase of underdrawal or increase in generation.

15. The non-compliance of clear cut instances of 7 numbers "B" messages and 2 number "C" message which were not responded to by the respondent, are discussed below in detail:

(i) Message "B" at 2316 hours on 5.4.2010:

Before issuance of this "B" message on 5.4.2010, the grid frequency was below 49.5 Hz. since 2234 hours. The respondent was overdrawing about 30 MW from the grid. Gradually frequency went below 49.2 Hz and the overdrawl by the respondent was increased instead of decreasing. This action of the respondent

constitutes violation of para 5.4.2 (b) of IEGC. At 2301 hours frequency remained below 49.2 Hz. and overdrawl by the respondent was increased about 70 MW. After this, frequency remained below 49.2 Hz and overdrawl was continued even with increased quantum. Message "B" was issued at 2316 hours when frequency was 49.06 Hz. and overdrawl by the respondent was about 110 MW. The frequency continued to be below 49.2 Hz. till 2341 hours and during this period the overdrawl was reduced up to about 120 MW by the respondent. Subsequently, despite slight improvement, frequency remained below 49.5 Hz. till 2355 hours and the overdrawl of about 130 MW was continued by the respondent. In the message "B" issued by NRLDC to SLDC, Uttarakhand, it was clearly directed to restrict drawl within its schedule. The relevant portion of the message "B" issued by NRLDC are as under:

" Further, it is a matter of serious concern that despite the low frequency conditions in the grid, the overdrawl by Uttarakhand State Control Area is continuing. You would agree that operation of grid at present level of frequency is a threat to system security and in order to ensure stability of the Grid, NRLDC is issuing directions under Clause 5.4.2 (b) of IEGC and Section 29(1) of Indian Electricity Act 2003, to increase the generation and / or carry out manual load shedding in Uttarakhand State Control Area in order to restrict its drawl within schedule and also inform the details of the action taken. Please note that the non-compliance of these directions would be construed as violation of IEGC and IE Act 2003 and would be brought to the notice of the Hon'able Central Electricity Regulatory Commission (CERC)."

From above discussions, it is observed that overdrawal was increased instead of curtailment after issue of the "B" message. The overdrawal of more than 110 MW for a substantial period of time i.e. about for 25 minutes when frequency was below 49.2 Hz. and for about 40 minutes when frequency was below 49.5 Hz., was continued, even after direction by NRLDC to restrict drawl within its schedule. In its submission, the respondent had also admitted that the direction of NRLDC was not complied by it. Therefore, non-compliance of direction of NRLDC in form of message "B" issued at 2316 hours on 5.4.2010 is established.

(ii) Message "B" at 2313 hours and message "C" at 2321 hours on 6.4.2010 :

Before issuance of this "B" message, at 2313 hours on 6.4.2010, the grid frequency was below 49.5 Hz. (remaining below 49.2 Hz. for substantial period of time) since 2228 hours and the respondent was overdrawing about 100 MW from grid. This was against the stipulation in para 5.4.2 (b) of IEGC. Message "B" was issued at 2313 hours when frequency was 49.02 Hz. and overdrawal by the respondent was about 150 MW. Frequency remained below 49.2 Hz. and overdrawal was continued. Consequently, "C" message

was issued at 2321 hours. After this, the frequency was 49.2 Hz till 2338 hrs and overdrawal was continued by more than 100 MW. Though, after this instant, frequency improved slightly, but remained below 49.5 Hz till 2355 hours. During this period, the overdrawl was reduced but it was continued. In the message "B" SLDC, Uttarakhand was clearly directed to restrict drawl within its schedule. But it was continued for a substantial period of time i.e. for about 25 minutes when frequency was below 49.2 Hz. even after direction by NRLDC to restrict drawl within its schedule. Even after "C" message overdrawal was continued till 20 minutes and frequency remained below 49.5 Hz. The respondent in its submission submitted that at the instance of "B" and "C" messages, manual load shedding of 70 MW was carried out, but the time of manual load shedding was not indicated. Further, from the data submitted by the NRLDC, it is observed that after "B" message, overdrawl was increased instead of decreasing and after issuance of "C" message overdrawl was decreased to some extent but continued for a long time, frequency remaining below 49.02 Hz, except improvement for few minutes. The respondent in its reply has not indicated the reduction of overdrawl. This implies that there was in-adequate action by the respondent on the "B" and "C" messages issued on 6.4.2010 at 2313 hours and 2321 hours,

respectively , which amounts to non-compliance of directions of NRLDC.

(iii) "B" Messages at 1638 hours on 7.4.2010:

Before issuance of the "B" message on 7.4.2010, the grid frequency was below 49.5 Hz. since 1405 hours (touching 48.87 Hz.), except improvement for few minutes at 1604 hours. The respondent was overdrawing about 200 MW from the grid during the sustained low frequency condition. This amounts to contravention of para 5.4.2 (b) of IEGC. At 1614 hours, the frequency went below 49.2 Hz., even then overdrawl up to 200 MW was continued. At 1638 hours, "B" message was issued when frequency was 48.86 Hz. and overdrawal by the respondent was about 170 MW. After this "B" message, frequency remained below 49.2 Hz. till 1700 hours and the overdrawl was continued up to 100 MW by the respondent. Though, subsequently, frequency was improved slightly but remained below 49.5 Hz till 1737 hours. The overdrawl of about 100-180 MW was continued by the respondent. In the Message "B", SLDC Uttarakhand was directed to restrict drawl within its schedule. Overdrawl, however, continued unabated for a substantial period of time i.e. for about 22 minutes when frequency remained below 49.2 Hz and for about 1 hours when frequency

was below 49.5 Hz even after direction by NRLDC to strict drawl within its schedule. In the reply submitted by the respondent, it is indicated that at the time of this "B" message, manual load shedding of 80 MW was carried out by the respondent but time of load shedding was not indicated. After "B" message, overdrawl was reduced by about 60 MW after about 20 minutes and then again increased up to 180 MW, frequency remained below 49.5 Hz. Therefore, it is held that the respondent is guilty of non-compliance of direction of NRLDC, in the form of "B" messages issued at 1638 hours on 7.4.2010.

(iv) Message "B" at 1713 hours on 8.4.2010:

Before issuance of this "B" message, the grid frequency was below 49.5 Hz. since 1605 hours on 8.4.2010, except improvement for very short interval of 3 minutes between 1702 to 1704 hours. The respondent was overdrawing about 200-300 MW from the grid. As this was against the stipulation in para 5.4.2 (b) of IEGC, Message "B" was issued at 1713 hours when frequency was 48.99 Hz. and overdrawal by the respondent was about 260 MW. After this "B" message, frequency further deteriorated and overdarawal was continued to the extent of 100-250 MW till 1753 hours when frequency improved to 49.23 Hz. In the message "B" SLDC,

Uttarakhand was clearly directed to restrict drawl within its schedule. But overdrawl was continued for a substantial period of time i.e. for about 40 minutes when frequency was below 49.2 Hz even after direction by NRLDC to strict drawl within its schedule. In its submission, the respondent has submitted that manual load shedding of 160 MW was done after issuance of "B" message. From the data submitted by the respondent it is noted that after "B" message, overdrawl was continued by more than 100 MW for about 40 minutes and frequency remained below 49.2 Hz. Therefore. I hold that the action by the respondent was inadequate and there was clear non-compliance of direction of NRLDC, in the form of "B" message issued at 1713 hours on 8.4.2010.

(v) Message "B" at 0250 hours on 9.4.2010:

Before issuance of this "B" message, the grid frequency was below 49.2 Hz. since 0207 hours on 9.4.2010 and overdrawl by the respondent was about 100-160 MW from the grid. This was against the stipulation in para 5.4.2 (b) of IEGC. Message "B" was issued at 0250 hours when frequency was 48.87 Hz. and overdrawal by the respondent was about 160 MW. Frequency remained below 49.2 Hz. till 0351 hours and overdrawal continued by 120-200 MW. In the message "B" SLDC, Uttarakhand was clearly directed to restrict

drawl within its schedule, but overdrawl was continued for a substantial period of time i.e. for about than 1 hour when frequency was below 49.2 Hz. even after direction by NRLDC to strict drawl within its schedule. In its submission, respondent has submitted that generation was increased by 45 MW (against overdrawl of 165 MW), after 15 minutes of the issuance of "B" message. It is noted that the respondent has not indicated about manual load shedding or reduction in overdrawl. This establishes that there was inadequate action and non-compliance of direction of NRLDC, in form of message "B" issued at 0250 hours on 9.4.2010.

(vi) Message "B" at 0446 hours and "C" message at 0524 hours on 9.4.2010:

Before issuance of this "B" message, on 9.4.2010, the grid frequency was hovering around or remained below 49.2 Hz. since 0409 hours. The respondent was overdrawing about 20-60 MW from the grid, since 0426 hours i.e. 20 minutes before issue of "B" message, the frequency was below 49.2 Hz. and respondent was overdrawing more than 50 MW. Even after deterioration in frequency, the overdrawl was increased instead of decreasing. This was against the stipulation in para 5.4.2 (b) of IEGC. Message "B" was issued at 0446 hours when frequency was below 48.92 Hz. and overdrawl by

the respondent was about 60 MW. Frequency slightly improved for few minutes at 0504 hours and again went below 49.2 Hz. and overdrawl was continued with increased quantum of up to about 140 MW. "C" message was issued to the respondent at 0524 hours. Even after "C" message, the overdrawl by the respondent was continued. In the message "B", SLDC, Uttarakhand was clearly directed to restrict drawl within its schedule. But it was continued for a substantial period of time i.e. for about 1 hour and 15 minutes when frequency was below 49.2 Hz. (except for improvement in frequency up to 49.26 Hz. for 5 minutes), even after direction by NRLDC to strict drawl within its schedule. After issuance of "C" message also, frequency remained below 49.2 Hz. for more than 30 minutes and overdrawl was continued by the respondent. In the reply by the respondent, it is mentioned that at the instant of "B" message manual load shedding of 140 MW was done. The respondent, in its reply, has not indicated the time of manual load shedding. Further, from the data submitted by NRLDC it is observed that after "B" message overdrawl was increased instead of decreasing and after "C" message, overdrawl was decreased to some extent and then increased and continued for a long time, frequency remaining below 49.2 Hz., except improvement for few minutes. The respondent has not indicated about reduction of

overdrawal. It is observe that though overdrawl was reduced to some extent after the messages but it was not reduced to zero as directed in these messages. Therefore, I hold that the action by the respondent was inadequate and there was clear non-compliance of direction of NRLDC, in form of message "B" and "C" message issued on 9.4.2010 at 0446 hours and 0524 hours, respectively.

(vii) Message "B" at 1051 hours on 9.4.2010:

Before issuance of this "B" message, frequency was below 49.5 Hz. since 1009 hours and overdrawl by the respondent was about 100-170 MW. At 1051 hours "B" message was issued to SLDC, Uttarakhand. After "B" message, the overdrawl continued for substantial period of time, till 1127 hours instead of stopping overdrawl, when grid frequency remained below 49.2 Hz. After the message "B" , SLDC, Uttarakhand was directed to curtail overdrawl, immediately, within its schedule, but it was continued for a substantial period of time i.e. for about 30 minutes when frequency remained below 49.2 Hz. In the reply submitted by the respondent it is indicated that at the time of this "B" message the overdrawl by the respondent was about 180 MW and the manual load shedding was about 35 MW only. No reduction in overdrawl or improvement in frequency after "B" message has been indicated in the reply by

the respondent. This establishes that there was inadequate action by the respondent on the "B" message and there was non-compliance of direction of NRLDC, in form of message "B" issued at 1051 hours on 9.4.2010.

16. From the foregoing, it is observed that on the above mentioned instances of "B" and "C" messages, overdrawal was continued for a substantial period of time. Though overdrawal was marginally and momentarily reduced on some instances, after a short while, it was increased, even when frequency remained low i.e below 49.5 Hz. or 49.2 Hz. This is undoubtedly non-compliance of para 5.4.2 (d) of IEGC (in vogue during April, 2010) also, which stipulates that measures taken to reduce constituents' drawl from grid shall not be withdrawn as long as the frequency remains low. Increasing of overdrawal instead of decreasing it, indicates clear violation of NRLDC messages.

17. Further, I must place on record my anguish and dismay at the conduct of the respondent in not participating in the proceedings. Lack of response of the respondent to the various notices and orders of the Commission and Adjudicating Officer manifests its disregard for the adjudicating process under the Act and the directions of the Commission.

18. From the details given above, it is established that the respondent did not comply with the directions of NRLDC under sub-sections (2) and (3) of Section 29 of the Act, given through above mentioned 7 numbers "B" messages and 2 number "C" message. Therefore, under the provisions of sub-section (6) of Section 29 and sub-section (2) of Section 143 of the Act, I impose the penalty of ₹ one lakh on the respondent for each of the aforesaid nine instances of non-compliance of the message by NRLDC. The petitioner is directed to deposit the penalty within one month from the date of issue of this order.

Sd/-

**[M. Deena Dayalan]
MEMBER
and Adjudicating Officer**

