

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 121/MP/2013

Coram:

Shri V.S. Verma, Member

Shri M. Deena Dayalan, Member

Date of Hearing: 04.07.2013

Date of Order : 01.01.2014

In the matter of

Petition under Section 79 (1) (c), Regulations 12 & 13 of the Central Electricity Regulatory Commission (Unscheduled Interchange charges and related matters) Regulations, 2009, Part 7 of the CERC (Indian Electricity Grid Code) Regulations, 2010 and Regulations 111-113 of CERC (Conduct of Business) Regulations, 1999.

And

in the matter of

1. Karnataka Power Transmission Corporation Limited
Cauvery Bhawan, Bangalore-560 001

2. State Load Despatch Centre, Karnataka
28, Race Course Road,
Bangalore- 560 009

Petitioners

Vs

1. National Load Despatch Centre
Power System Operation Corporation Ltd.
18/A, Qutab Institutional Area,
Katwaria Sarai, New Delhi-110 016

2. Southern Regional Load Despatch Centre
POSOCO, No. 29, Race Course Cross Road
Bangalore-560 009

Respondents

Parties Present:

For Petitioners: Ms Swapna Seshadri, Advocate for the petitioners

For Respondents: 1. Shri V.Suresh, SRLDC
2. Ms. Joyti Prasad, NRLDC



ORDER

In the present petition filed under Regulations 12 and 13 of the Central Electricity Regulatory Commission (Unscheduled Interchange Charges and related matters) Regulations, 2009 (**the UI Regulations**) read with Chapter 7 of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010 (**Grid Code**), the petitioners, Karnataka Power Transmission Corporation Limited and State Load Despatch Centre, Karnataka have prayed for the following:

- “a) Clarify/Modify/Relax the Regulation 7 of the UI Regulations to the extent sought above and hold that the calculation of the drawal Schedule as per the present practice for all the constituents;*
- b) Direct the SRLDC to calculate the over/under drawl limit to the 12% of the CGS entitlements or 150 MW whichever is less instead of prevailing ABT UI Regulations;*
- c) Appropriately modify the sudden injection/withdrawal limit to 300 MW instead of prevailing 100 MW under clause 5.2 (j) of IEGC Regulations;*
- d) Direct SRLDC to allow petitioners to overdraw beyond 150MW to contain the high frequency, whenever the system frequency is crossing the higher limits fixed by IEGC Regulations or till such time system frequency stabilizes within the IEGC limits subject to the condition that without endangering the grid stability;*
- e) Pass ex-parte interim orders in terms of prayers (a) – (c) above;*
- f) Pass any such further order(s) as deemed fit in the circumstances of the case.”*

2. The petitioners have primarily sought relief of relaxation, modification, etc. of clause (1) of Regulation 7 of the UI Regulations and clause 5.2 (j) of the Grid Code.

3. Clause (1) of Regulation 7 of the UI Regulations lays down the limits of over-drawal from the grid. It provides that over-drawal by any beneficiary or a buyer



during a time block shall not exceed 12% of its scheduled drawal or 150 MW whichever is lower, when frequency is below 49.8 Hz. It further lays down the over-drawal limit of 3% on a daily aggregate basis for all the time blocks at frequency below 49.80 Hz. Clause (1) of Regulation 7 is extracted hereunder:

"The over-drawal of electricity by any beneficiary or a buyer during a time block shall not exceed 12% of its scheduled drawal or 150 MW whichever is lower, when frequency is below 49.8 Hz and 3% on a daily aggregate basis for all the time blocks when the frequency is below 49.80 Hz".

4. Clause 5.2 (j) of the Grid Code provides that except in an emergency, or to prevent an imminent damage to costly equipment, no user shall suddenly reduce his generating unit output by more than 100 MW (20 MW in case of NER), without prior intimation to and consent of the Regional Load Despatch Centre, particularly when frequency is falling or is below 49.7 Hz. Clause 5.2 of the Grid Code is reproduced hereunder:

"Except under an emergency, or to prevent an imminent damage to a costly equipment, no User shall suddenly reduce his generating unit output by more than one hundred (100) MW (20 MW in case of NER) without prior intimation to and consent of the RLDC, particularly when frequency is falling or is below 49.7 Hz. Similarly, no User / SEB shall cause a sudden variation in its load by more than one hundred (100 MW) without prior intimation to and consent of the RLDC. Similarly, no User / SEB shall cause a sudden variation in its load by more than one hundred (100 MW) without prior intimation to and consent of the RLDC."

5. The petitioners have submitted that Southern Regional Load Despatch Centre (SRLDC), Respondent No. 2, has been implementing the UI Regulations to place the limit of 12% deviation from drawal on the net schedule for the State, that is, on the difference between the schedule of import of electricity from outside the State and the schedule of export of electricity from the State. In other words, it has been stated, as against Regulation 7 of the UI Regulations which states "12% of its scheduled drawal", SRLDC as the implementing authority has applied it as "12% of

the net drawal schedule by the State". The petitioners have further stated that the State was importing 750 MW (500 MW from Gujarat and 250 MW from Chhattisgarh) through medium-term open access, in addition to procurement of 530 MW from the generators within the State. The import was said to have been contracted up to 15.6.2013, According to the petitioners, the entitlement of the State from the Central Generating Stations (CGSs) is 1350 MW but the drawal schedule is only 900 MW. The quantum of power being exported outside the State is 1000 MW which is increasing by the day. The petitioners have stated that because of the continuously increasing power export from the State, the drawal schedule from the Central Generating Stations is decreasing. The petitioners have averred that because of excess of import of power from the State, at times net schedule prepared by SRLDC is zero or negative, in which case, according to the petitioners, the limit of over-drawal of 12% of the net schedule has become insignificant and is zero and thus no margin of over-drawal is available in the real time.

6. It has been stated that the petitioners are handling the demand in the range of 7500 MW-8000 MW on daily basis, which makes it practically impossible to contain the unscheduled interchange (UI) of State of Karnataka within the limit of 100 MW round the clock for myriad of reasons which include load variation of around 100 MW at Jindal Steel Plant located in the State of Karnataka having 600 MW load, sudden variation of wind energy injection/withdrawal, sudden loss of generation/load in Southern Region, supply of bad quality of coal at RTPS and BTPS, and change in 15-minute block-wise schedule by SRLDC.

7. The petitioners have submitted that the issue was brought to the notice of SRLDC at 78th meeting of the OCC held on 11.12.2012 in which SRLDC clarified that in accordance with the existing regulations, 12% violation messages were being generated and issued to all the constituents based on the net schedule of the State.

8. Accordingly, the petitioners seek relaxation, modification, etc., of clause (1) of Regulation 7 of the UI Regulations and clause 5.2 (j) of the Grid Code of the over-drawal/under-drawal limits to 12% of its entitlement from the Central Generating Stations or 150 MW, whichever is lower, instead of considering the scheduling procedure being followed by SRLDC under the UI Regulations.

9. The petitioners have further submitted that SRLDC is issuing violation messages when over-drawal exceeds 150 MW though the grid frequency has crossed the upper limit of 50.20 Hz specified under the Grid Code and over-drawal in such circumstances helps the grid to bring it down within the permissible range. The petitioners have averred that even in such a situation the State has to increase its generation to balance over-drawal which causes the grid frequency to rise further. The respondents have pleaded that in such a situation SRLDC should allow over-drawal from the grid till such time the frequency stabilises.

10. We have heard the learned counsel for the petitioners and the representative of SRLDC on admission of the petition.

11. During the course of hearing, learned counsel for the petitioners has reiterated the averments made in the petition.

12. The representative of SRLDC has submitted that since the objective of the UI Regulations is to bring grid discipline through appropriate commercial mechanism, though the commercial aspect is of secondary importance. He has submitted that the grid security being of primary significance in real time grid operation, SRLDC issues messages to the constituents when their over-drawal exceeds the permissible limits with a view to ensuring grid security by strict implementation of Grid Code on consideration of network conditions. He has admitted that computation of UI limit by SRLDC is based on net schedule and is equally applied to the situations where export transaction quantum from the State is more than that its entitlement from the Central Generating Stations and import transactions, which is in conformity with the prevailing UI Regulations. The representative of SRLDC has submitted that system frequency is not the only parameter that determines the grid security level. According to him, the values prescribed in the UI Regulations are with the consideration of Grid at normal condition, but, the conditions prevailing are much different. He has brought out that the Southern Regional grid remains in alert condition for most of the time and the following reasons are responsible for such a state of affairs:

- (i) There was no adequate RGMO/FGMO response in Southern Region. A special meeting was held on 29.6.2013 in this regard with detailed analysis of RGMO performance for the instances of May / June 2013.
- (ii) The performance of AUFR and df/dt in Southern Region is far below the required level. Though all the constituents declare that the quantum

is made available, due to overlapping of groups, not connected with adequate feeders considering average load of the feeder, non-operative etc., the actual relief seen were less than declared quantum.

- (iii) There were at least 24 instances of grid disturbance of type GD-I in Southern Region during the period 13th January to 13th June 2013. Out of which three disturbances were pertaining to Sharavati station alone. All the three events were attributable either to failure to operate or very much delayed operation of protection system at Sharavati. Had SRLDC failed from its responsibility of giving utmost importance for grid security and allowed limitless over-drawals or under-drawals by the constituents, many of these Grid disturbances would have been of severe category.

13. SRLDC in its reply filed after the hearing has reiterated the above submissions.

14. The petitioners have filed the status of defence mechanism, etc. under the affidavit dated 26.7.2013 in compliance with the direction of the Commission. The petitioners have submitted that the contingency procedure made by SRLDC has been fully implemented by them. It has been stated that the implementation of Under Frequency Relays, df/dt schemes, special protection scheme and automatic demand disconnection schemes are already in place. In this regard the following details have been placed on record by the petitioners:

“a) UF Relays
49.0 Hz
48.8 Hz

Load relief
757.7 MW
892.2 MW

48.6 HZ

853.3 MW

b) df/dt Relays

Group-1	49.5 Hz & 0.2 Hz/Sec fall of frequency	550.9 MW
Group-2	49.3 Hz & 0.3 Hz/Sec fall of frequency	608 MW

c) SPS Scheme

- *Special protection scheme is in service at;*
 - Nagjahri Complex,*
 - Varahi Complex,*
 - BTPS Complex*

to avoid cascade tripping of vital lines during contingency.

- *SPS scheme is also in service at Nelamangala
When one of the ICT trips;*

And one of the 220 kV line between Nelamangala and Peenya trips and also 66 kV loads will be shed at Peenya to an extent of 110 MW.

- d) *Automatic disconnection scheme: Automatic load management scheme in accordance with Clause No. 5.4.2 (d) of IEGC is implemented from July 2012. This scheme provides immediate relief of 350 MW and in this scheme identified 110 kV and 66 kV feeders will be automatically opened through remote operations from SLDC. The details of feeders are already furnished to SRLDC, SRPC and to the Hon'ble Commission."*

15. It has been submitted by the petitioner that RGMO logic has been tested for all units of JSWEL power plant and final fine tuning is under progress. However, in the meantime, JSWEL is abiding by the provisions of the Grid Code to implement the same by end of October 2013. In real time grid operation the dynamic variation of steel plant is around 70-100 MW. The petitioners have fully implemented SCADA system to all generation stations, sub-stations, and feeders up to 11KV, also IPPs, NCE and Solar units are covered under the scheme. Based on the above SCADA, SLDC is monitoring the grid on real time for smooth functioning of grid operation without causing any disturbances in the system. In the light of these averments, the

petitioners have contested the correctness of the allegations by SRLDC regarding non-compliance by the petitioners.

16. We have carefully considered the submissions made by the petitioners and SRLDC.

17. The first question that requires examination is regarding the correctness of the scheduling procedure adopted by SRLDC. The petitioners have a grievance that the net drawal schedule prepared by SRLDC works to their disadvantage as the procedure does not leave them with any latitude when deviation is unavoidable. For a view on the issue, we refer to the definitions of 'scheduled generation' and 'scheduled drawal' given under the UI Regulations. Under the UI Regulations, 'scheduled generation' is defined as schedule of generation in MW or MWh ex-bus given by the concerned Load Despatch Centre at any time or for any period or time block. The term 'scheduled drawal' is similarly defined as schedule of despatch in MW or MWh ex-bus given by the concerned Load Despatch Centre at any time or for any period or time block. These definitions are extracted hereunder:

*“(k) **‘scheduled generation’** at any time or for any period or time block means schedule of generation in MW or MWh ex-bus given by the concerned Load Despatch Centre.*

*“(l) **‘scheduled drawal’** at any time or for any period or time block means schedule of despatch in MW or MWh ex-bus given by the concerned Load Despatch Centre.”*

18. Thus, the Regional Load Despatch Centre is conferred with the authority to work out the scheduled generation and the scheduled drawal.

19. The Grid Code defines 'drawal schedule' as the summation of the station-wise ex-power plant drawal schedules from all inter-State generating stations and drawal from or injection to regional grid consequent to other long term access, medium term and short term open access transactions. The definition given in the Grid Code is reproduced hereunder:

“Drawal Schedule” means the summation of the station-wise ex-power plant drawal schedules from all ISGS and drawal from/injection to regional grid consequent to other long term access, medium term and short term open access transactions.”

20. From the definition of drawal schedule given in the Grid Code it is clear that the Regional Load Despatch Centre has to prepare the drawal schedule on net basis as the drawal schedule is the arithmetic sum of electricity imported from the inter-State generating stations and other sources, which is taken as a positive number and electricity exported which denotes a negative number for preparation of the drawal schedule. The practice of preparing net schedule is being consistently followed by the Regional Load Despatch Centres for all the five regions. Therefore, the action of SRLDC in this regard cannot be faulted. It is noted that the petitioners have not brought to our notice anything to the contrary.

21. The petitioners have prayed for relaxation in limits of deviation from schedule permitted under the UI Regulations and the Grid Code. It has been urged on behalf of the petitioners that limit of 12% of entitlement in Central Generating Stations without reducing net export or 150 MW, whichever is lower should apply in their case by relaxing the relevant provisions. In this regard it is pertinent to bring out that no exceptions can be made in favour of the petitioners. The Grid Code and UI

Regulations are applicable equally to all States and are required to be complied with by all concerned without any exception.

22. The sudden variation in the load can be mainly attributed to the distribution companies and bulk consumers and may also be on account of RGMO/FGMO in generating units not properly functioning. The Commission is in the process of bringing out the regulations on Deviation Settlement Mechanism and related matters.

23. The petitioners have submitted that SRLDC does not permit over-drawal even in situations where the grid frequency is above 50.2 Hz. Though the petitioners have not given any specific instances the allegation has not been denied by SRLDC in its reply. It seems that RLDC is acting in very cautious manner even under normal conditions and do not allow over-drawal beyond 150 MW even when the frequency is above 50.2 Hz. It may be noted that the Commission has, in the order dated 14.1.2013 in Petition Nos. 249, 250 and 264/MP/2012 observed as under:

"With regard to the submission of NLDC that over-drawal irrespective of the frequency should not be allowed, we intend to clarify that at present, UI Regulations and Grid Code allow over-drawal within prescribed limits in normal situations and therefore, no such directions can be issued which would be contrary to the regulations."

However, it is clarified that normal situations means that the line flows are within limit as prescribed in Revised Congestion Management Procedure in Real Time System Operation read with conjunction with CEA's manual on Transmission Planning Criteria.

24. SRLDC shall keep the above observations in view while giving any instructions to the State constituents for curtailment of over-drawal at the frequencies higher than the threshold limit specified under the UI Regulations.

25. With the above observations, the petition stands disposed of at the admission stage.

Sd/-
(M Deena Dayalan)
Member

sd/-
(V.S.Verma)
Member