

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Record of Proceedings

Petition No. : 67/2010(Suo Motu)

Coram: Dr. Pramod Deo, Chairperson
Shri S Jayaraman, Member

Respondents: Central Transmission Utility
Central Electricity Authority
National Load Despatch Centre
Northern Regional Load Despatch Centre
Western Regional Load Despatch Centre
Southern Regional Load Despatch Centre
Eastern Regional Load Despatch Centre
North Eastern Regional Load Despatch Centre

Date of hearing: 23.03.2010

Subject: Frequent Congestion in the inter-State transmission system affecting operation of the Power Exchanges

Parties present:

- (1) Shri S.K. Soonee, NLDC
- (2) Shri S.C. Saxena, NLDC
- (3) Shri Rajiv Parwal, , NLDC
- (4) Shri Nripen Mishra, NLDC
- (5) Shri S.S. Barpanda, , NLDC
- (6) Shri V.K. Agrawal, NRLDC
- (7) Shri S.R. Narasimhan, NRLDC
- (8) Shri M.G. Raoot, WRLDC
- (9) Ms. Pushpa. S, WRLDC
- (10) Shri U.K. Verma, WRLDC
- (11) Shri S.P. Kumar, SRLDC
- (12) Shri P Penayya, ERLDC
- (13) Shri M. Mukhopadhyay, ERLDC
- (14) Shri. T.S. Singh, NERLDC
- (15) Shri S.Sen, Power Grid
- (16) Shri R.V.M. Rao, Power Grid
- (17) Shri V. Thigarajan, Power Grid

- (18) Shri Pankaj Kumar, Power Grid
- (19) Shri Ashok Kumar, Power Grid
- (20) Shri Sanjeev, PTC
- (21) Shri Vijay Bathwal, PTC
- (22) Shri Akhilesh Awasthy, IEX
- (23) Shri Satyajit Ganguly, PXIL

The Commission in its order dated 10.3.2010 took note of the fact that all transactions carried out through the power exchanges could not be fructified on account of frequent congestions being experienced in the transmission of power and directed National Load Despatch Centre, Central Transmission Utility, all Regional Load Despatch Centres and Central Electricity Authority to make presentations before the Commission on the causes of congestion and remedial measures being taken by them to relieve the congestion.

2. A written submission was received from the Central Electricity Authority in which the under utilization of the inter-regional transmission capacity of Northern Region was stated to be the main reason for congestion. As against the transmission capacity of 10,550 MW in the Northern Region, the Available Transfer Capability was of the order of 4,000 MW. It has been further stated that the possible cause of restriction could be due to low voltage problem in Punjab and Haryana.

3. Executive Director (SO & NLDC), PGCIL made a general presentation on the issue of congestion. He said that the approach paper on calculation of inter-regional transfer capability is available on websites of all the RLDCs. He further stated that congestion does not mean that generation is not being fully evacuated. Congestion is happening on all India basis for market operations. The reason is that in the priority of reservation of transmission capacity, long – term access comes first, then medium term, then short-term on advance reservation basis, then First-Come-First-Serve basis, and then Power Exchanges on day-ahead basis. The power exchanges are therefore, operating on the margins remaining after all the above priorities on the already planned and constructed transmission systems. He stated that existence of congestion shows that there is a vibrant power market in our country.

4. The Commission enquired about the basis of 4,000 MW transfer capability in the Northern Region as against the transmission capacity of about 10,000 MW. ED (SO&NLDC) explained that the transfer capability is not arithmetic summation of transmission capacities of all the transmission lines but is dependent on

temperature, voltage, line loading conditions, etc. He stated that presently long-term planning is done considering N-1 planning criteria. The transmission capacity is only theoretical, whereas the transmission capability is that which actually can be achieved under real-time system operation. There are uncertainties for planners also because of slippage of generation coming in a particular State/ Region. The Commission observed that the constituents are paying for transmission capacity and not for the transmission capability. ED (SO & NLDC) replied that there is a behavioural shift of drawing through Unscheduled Inter-change rather than through scheduled transactions through short-term open access (STOA). There are constituents in the Northern Region, who are drawing to the extent of 30% of their requirement through short-term open access (STOA) during certain months. Planning of transmission lines has not considered the STOA transactions.

5. The Commission enquired if STOA was due to load growth, then why planning did not take care of it. ED (SO&NLDC) stated that the utilization factor for a transmission line should not be high and it should be less than 50%. Also lines are planned to take care of peak power flows. The planners do not know in advance how much capacity is needed for the short term market. Our STOA itself is three years old. The Commission stated that as per National Electricity Policy “network expansion should be planned and implemented keeping in view the anticipated transmission needs that would be incident on the system in the open access regime”.

6. On being asked about the identification of congestion points, ED (SO&NLDC) stated that there is congestion in certain periods between Eastern and Western Uttar Pradesh and sometimes low voltage in Punjab. He said that congestion flow gates keep moving on the basis of seasonal demand and generation variation. He showed the changing pattern of congestion across the flow gates in the country in the presentation. ED (SO&NLDC) stated that the total volume of electricity traded through Power Exchanges is about 1% of the total volume of electricity generated in the country and only 0.2% volume of the total volume of electricity traded in the country were curtailed due to congestion. In reply to the query of the Commission as to whether NLDC was doing anything to relieve congestion between Eastern UP and Western UP, ED (SO & NLDC) stated that every line should be loaded upto 90% for 10% of the time. He said that in order to remove congestion, there is explicit requirement for transmission corridors for STOA.

7. On a query by the Commission as to why certain transactions of STOA were not allowed due to congestion while in the real time heavy UI drawal took place during that time in the same corridor, ED (SO&NLDC) stated that if someone has overdrawn through UI, he should be booked under Section 142 of the Act. He further stated that along with the load forecast, there should be drawal forecast also. On the query of Commission regarding procedure for congestion in real time operation to be formulated by NLDC as per regulations, he assured to submit the required procedure for approval of the Commission shortly.

8. General Manager, NRLDC stated that congestion occurs during the months from July to September in the Northern Region, which coincides with the paddy season. The maximum number of refusals due to congestion is for First-Come-First-Serve (FCFS) category. The same application is sometimes repeated a number of times by the constituents, so that they can use that as an excuse for overdrawing since they did not get the transmission corridor they asked for in STOA. He suggested that this practice can be stopped if some sort of a penalty is imposed for cancellation of transmission corridor. The Commission enquired if by putting Special Protection Schemes, the transmission corridors could be operated at higher loadings. GM, NRLDC agreed, but stated that the same is not feasible for all the transmission lines. About the low voltage problem in Punjab, he stated that the same has to be rectified by the State concerned.

9. General Manager, SRLDC in his presentation stated that peak months in Southern Region are from January to May. Delay in Kudankulam (2,000 MW) generation capacity is causing congestion in SR. He further stated that sometimes heavy overdrawal by Tamil Nadu is causing congestion.

10. General Manager, ERLDC in his presentation on the issue of congestion in the Eastern Region submitted that the generating stations are located in the Central and Western parts in the Eastern Region. Power flow takes place from these parts to the eastern parts of the region and the Northern Region. There are seasonal constraints on certain lines in the Eastern Region. When asked by the Commission when Malda – Purnea line in the Eastern Region, which was under outage for a long time, would come back into service, GM, ERLDC indicated the possible time line as May, 2010.

11. The representative of CTU made a presentation on the issue of congestion. He said that National Electricity Policy mandates for planning of transmission lines for Open Access. The congestion is actually happening due to flow of

power not occurring as per planning/ anticipation. He gave details of lines to be constructed for strengthening of East – West Corridor.

12. The representative of Indian Energy Exchange Ltd. submitted that curtailment of Power Exchange volumes was upto 87% of Market Clearing Volume (MCV). He clarified that due to congestion, around 660 MUs during the period December 2008 to February, 2010 could not be despatched. He further submitted that the total volume of transactions in the IEX during this period was about 8000 MUs. He submitted that PX is not getting the corridor for scheduling as the Total Transfer Capability (TTC) is being declared conservatively. According to the representative of IEX, constituents are continuously overdrawing from the grid while the transactions through PX are not getting cleared due to congestion in the transmission corridor. Hence, supply side is being suppressed. He pleaded that if more power is scheduled through PX, frequency regime would be much better. He submitted that STOA is expected to go upto 15-20% in near future and requested that transmission planning should take care of these transactions. He further submitted that in our country, reliability margin is 12.5% of TTC in respect of Northern Region, where as the world over it is 2% plus 2% for capacity margin. He urged that the same reliability margin should be applied in India. He requested for reservation of transmission corridors for the Power Exchanges.

13. The representative of PXIL also requested for reservation of transmission corridors for the Power Exchanges. The representative of PTC stated that the grid security and stability is paramount and the RLDCs are competent to regulate the transmission corridors, keeping that in view.

14. There was also a suggestion that congestion affected area could be reduced by increasing the number of zones for market splitting.

15. The Commission directed the NLDC, NRLDC, SRLDC, ERLDC, WRLDC, NERLDC and CTU to furnish the details on congestion points, if any, and measures proposed to relieve congestion at these points on affidavit within a week's time.

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