



**पावर सिस्टम ऑपरेशन कारपोरेशन लिमिटेड**  
(पावरग्रिड की पूर्ण स्वामित्व प्राप्त सहायक कंपनी)  
**POWER SYSTEM OPERATION CORPORATION LIMITED**  
(A wholly owned subsidiary company of POWERGRID)

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Ref. No.: SRLDC/AGM/2013

Date: 21.11.2013

**From:**  
AGM, SRLDC,  
Bangalore

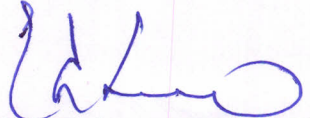
**To:**  
COO, CTU, New Delhi

**Copy to:**

1. GM, NLDC, POSOCO, New Delhi
2. CEO, POSOCO, New Delhi
3. Member Secretary, SRPC, Bangalore.

**Sub: Comments on Synchronisation of Southern Region with NEW Grid –TTC/ATC from NEW Grid to Southern region- Agenda -Reg.**

With reference to the Letter No. C/CTU/W/Operations/Sholapur-Raichur dated 18.11.2013 for comments on Synchronisation of Southern Region with NEW Grid – TTC/ATC from NEW Grid to Southern region- Agenda the observations of SRLDC are attached herewith at Annexure-1.

  
(G. Anbunesan) 21/11/13.

**Copy to:**

1. Director (Transmission), AP Transco, Hyderabad.
2. Member (Transmission), KPTCL, Bangalore.
3. Member (Transmission), KSEB, Thiruvananthapuram.
4. Director, TANTRANSCO, Chennai.
5. Superintending Engineer-I, Electricity Department, Puducherry.

## **SRLDC OBSERVATIONS ON SR-NEW GRID POST**

### **SYNCHRONISATION ATC**

The document detailing the TTC/ATC from NEW Grid to SR post synchronization published by CTU was examined and our observations are as follows:-

- The Stiffness Constant (Power Order) for SR is generally varying from 1100MW/Hz- 2500 MW/Hz based on our observations of past events.
- TRM may be considered by taking the Kudankulam unit tripping with no SPS operation as there may be teething troubles during the first few years till Unit and SPS stabilizes.
- **In the Basecase : 2000 MW To SR,**
  - i. The ICT Drawls considered at upcoming 400kV stations in the Basecase :2000 MW To SR are as follows,

Station Name	Drawl considered
400kv Yelahanka SS	603 MW
400kV Madhugiri SS	271 MW
400kV Bidadi SS	414 MW (Present loading 170 MW)
400kV Tiruvalam SS	628 MW

The above ICT drawls possible only if the sufficient 220kV/230kV network is planned. In case the 220/230 Kv Network is not available the S1-S2 lines (Hosur-Salem, Sriperumbudur-SV Chatram) would get loaded. Already we have seen flows exceeding 750 MW on these lines with N-1 frequently violated. The ATS for NCTPS is not in place and we have taken up the same with TN.

- ii. Flow on 400kV Kolar-Hosur DC line is 590 MW each, which will not be satisfying N-1 criteria.
- iii. 765kV Raichur-Karnool SC line flow is 1579 MW, N-1 of this line would force the flow in to 400kV Raichur NEW bus and there on to Bangalore area/Mehaboobnagar in 400kV path. The sufficiency of Network may be examined.
- iv. Narendra ICT drawl considered as 370 MW but presently the loading is only 240 MW maximum.



- v. Loading at Hiriya SS is considered 366 MW whereas this area would be injecting during high wind. Maximum drawal possible at Hiriya at present is about 250 MW.
- vi. 230kV network connected at Hosur may not be capable of drawing 723 MW. 230 kV Shoolagiri-Hosur is already loaded to 250 MW.

**The observations on loading of Metro areas are as follows:-**

In CTU study, Chennai area approximately 2800 MW from 400 kV was shown and considering about 1100 MW generation at 230 and 110 kV (NMTPS, ETS, SDEV, Meenakshi, Kamakshi, OPG1,2, Vasavi etc which is not seen in study result) the Metro load of Chennai is 3900 MW in study, whereas it is about 2000-2300 MW at present.

Kerala drawal is already in the range of 1600-1700 MW at present. S1-S2 is getting congested at present (Kolar-Kosur DC line, Hosur-Salem and Bangalore -Salem as well as SP Budur-SV Chatram) at S2 drawal levels of 4600 MW especially when Mettur injection is not available. NCTPS generation (2 units) is not considered. These units are already in service.

Hence, it is felt that power levels of 2000 MW would be possible only after sufficient strengthening takes place in the Intra State network also. It may also be appreciated that there is large skewing in the load generation balance in TN-Kerala system with generation coming up at Chennai area. Reduction of hydro generation, pumping of Kadamparai units and hydro conservation by Kerala cause severe line flows in Bangalore-Salem corridor. The lines planned between S1-S2 thus become crucial.

Further, the following line of the Inter-State network become important in addition to the network augmentation foreseen by CTU for import of 2000 MW. The commissioning of these lines would alleviate the loadings.

1. 765 kV Madhugiri-Salem with 400/765 kV Connectivity and associated intra-state network
2. Downstream connectivity of Thiruvalam SS.
3. 400 kV Salem –Bangalore D/C
4. LILCO of existing Bangalore-Salem at Hosur.

It is understood that the six months holiday period for scheduling would start from the day both lines of Sholapur-Raichur are commissioned.