

**CENTRAL ELECTRICITY REGULATORY COMMISSION
(NEW DELHI)**

Suo-Motu Petition No. 9/SM/2024

Coram:

Shri Jishnu Barua, Chairperson

Shri Ramesh Babu V., Member

Shri Harish Dudani, Member

Date of Order : 7th October, 2024

In the matter of :

Planning for safe, secure, and reliable integrated operation of the power system during critical periods arising on account of seasonal variations wherein the electricity demand increases rapidly by undertaking specific measures to mitigate the risks on the power system, under clause (h) of sub-section (1) of Section 79 of the Electricity Act, 2003 and the Regulation 31 of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2023.

And in the matter of :

1. National Load Despatch Centre,
Grid Controller of India Ltd. (CIN U40105DL2009GOI188682)
B-9 (1st Floor), Qutab Institutional Area, Katwaria Sarai,
New Delhi -110016
2. Northern Regional Load Despatch Centre,
Grid Controller of India Ltd.
18-A, Shaheed Jeet Singh Sansanwal Marg,
Katwaria Sarai, New Delhi -110016
3. Western Regional Load Despatch Centre, Mumbai
Grid Controller of India Ltd.
F-3, M.I.D.C. Area, Marol Andheri (East),
Mumbai -400093
4. Southern Regional Load Despatch Centre
29, Race Course Cross Road,
Bangalore -560009



5. Eastern Regional Load Despatch Centre, Kolkata
Grid Controller of India Ltd. 14, Golf Club Road, Tollygunge, Kolkata -700 03
6. North Eastern Load Despatch Centre, Shillong
Grid Controller of India Ltd.
Lower, Nongrah, Lapalang, Shillong,
Meghalaya 793006
7. The Chief Engineer,
State Load Dispatch Centre,
SLDC Complex. PSTCL,
Near 220 kV G/Stn,
Ablowal, Patiala- 147001
8. The Chief Engineer (LD),
Electricity Department,
UT Secretariat,
Sector - 9D, UT of Chandigarh-160009
9. The Managing Director,
Himachal Pradesh Power Transmission Corporation Limited,
Barowalias House,
Khalini, Shimla-171002
10. The Executive Director,
State Load Dispatch Centre,
Delhi Transco Ltd, 33kV Substation Building,
Minto Road, New Delhi, 110002
11. The Superintending Engineer
State Load Dispatch Centre.
Rajasthan Rajya Vidya Prasaran Nigam Limited.
Ajmer Road, Heerapur. Jaipur – 302004
12. The Managing Director,
State Load Dispatch Centre,
Haryana,
Behind BBMB Power house,
Sewah, Panipat, Haryana 132103
13. The Chief Engineer
State Load Dispatch Center,
SLDC Complex TOTU,
Shimla, Himachal Pradesh-17 10 1 1
14. The Director,
State Load Dispatch Centre,



Uttar Pradesh Power Transmission Corporation Limited (UPPTCL),
Phase II, Vibhuti Khand, Lucknow- 226001

15. The Chief Engineer,
State Load Dispatch Centre,
Vidyut Bhawan, Saharanpur Road Majra,
Near ISBT Dehradun-248001
Uttarakhand
16. The Chief Engineer,
Maharashtra State Load Dispatch Centre,
Thane-Belapur Road. Airoli
Navi Mumbai-400 708
17. The Chief Engineer,
State Load Dispatch Centre,
Gujrat Energy Transmission Corporation Limited (GETCO),
GSSC Compound Near TB Hospital,
Gotri Road, Gotri, Vadodara - 390 021
18. The Chief Engineer (LD),
State Load Dispatch Centre (SLDC),
Chhattisgarh State Power Transmission Co. Ltd.
Danganiya, Raipur, Chhattisgarh- 492013
19. The Chief Engineer,
State 3 Dispatch Centre,
MP Power Transmission Co. Ltd
Nayagaon, Rampur, Jabalpur-482008
20. The Chief Engineer (Electrical),
State Load Dispatch Centre (SLDC),
Race Course Cross Road, A. R. Circle, Bengaluru-560009
21. The Chief Engineer,
State Load Dispatch Centre (SLDC),
Transmission corporation of Andhra Pradesh Limited (APTRANSCO),
Vidvut Soudha, Gunadala,
Eluru Road Vijayawada, Andhra Pradesh 520004
22. The Chief Engineer/Operation,
State Load Dispatch Centre,
Tamil Nadu Transmission Corporation Limited (TANTRANSCO),
144 Anna Salai, Chennai- 600002
23. The Chief Engineer,



State Load Despatch Centre (SLDC), Transmission Corporation of
Telangana Ltd. (TSTRANSCO),
Vidvut Soudha, Khairatabad. Hyderabad- 500 082

24.The Chief Engineer (Transmission- System Operation),
State Load Despatch Centre (SLDC)
Vaidyuthi Bhavanam, Pottam, Trivandrum- 695 009 Kerala

25.The Chief Engineer (TRANS., O&M),
State Load Despatch Center (SLDC),
Bihar State Power Transmission Company Limited (BSPTCL),
4th Floor, Vidyut Bhawan, Bailey Road, Patna-1

26.The Chief Load Despatcher,
State Load Despatch Centre (SLDC),
SLDC Building. GR1DCO Colony,
P.O. Mancheswar Railway Colony,
Bhubaneswar- 751017

27.The Chief Engineer,
State Load Despatch
Center, Jharkhand Urja Sancharan Nigam Limited,
Engineering Building, H.E.C.,
Dhurwa. Ranchi – 834004

28.The Chief Engineer,
West Bengal State Load Despatch Centre WBSLDC),
Danesh Seikh Lane,
Andul Road, Howrah-711109

29.The Additional Chief Engineer,
State Load Despatch Centre (SLDC),
Power Department, Govt. of Sikkim, Gangtok-737201

30.The Chief Engineer,
State Load Despatch Centre (SLDC), Damodar
Valley Corporation (DVC), Danesh Saikh Lane,
Andul Road, Howrah 711109

31.The Executive Engineer (SLDC),
Department of Power,
Government of Arunachal Pradesh,
National Highway 52A,Vidyut Bhawan, Itanagar-791111

32.The Asst. General Manager,
SLDC Division,
Assam Electricity Grid Corporation Ltd.,



ASEB Colony, Power House Kahilipara,
Guwahati-781 019

33. The Superintending Engineer,
P&E Office Complex, North Block (III Floor)
Electric Veng, Aizawl- 796001, Mizoram.
34. The Superintending Engineer,
Load Despatch Centre
Meghalaya Power Transmission Corporation Limited,
Short Round Road,
Lum Jingshai, Meghalaya, Shillong 793022.
35. The Chief Engineer,
Department of Power Govt. of Nagaland, Kohima-797 001
36. The General Manager, State Load Despatch Centre
Manipur State Power Company Ltd (MSPCL)
Electricity Complex, Keisumphat Junction,
Imphal-795001, Manipur.
37. The Director (Tech.),
Tripura State Electricity Corporation Ltd (TSECL),
Banamalipur, Agartala -799 001
38. Northern Regional Power Committee, New Delhi
Shaheed Jeet Singh Marg,
Qutab Institutional Area,
New Delhi -110016
39. Western Regional Power Committee, Mumbai
M.I.D.C. Central Road,
Krantiveer Lakhuj Salve Marg, Seepz,
Andheri East, Mumbai, Maharashtra-400093
40. Southern Regional Power Committee,
29, Race Course Rd, Nehru Nagar,
Gandhi Nagar, Bengaluru,
Karnataka 560009
41. Eastern Regional Power Committee, Kolkata
14, Golf Club Rd, Golf Gardens,
Tollygunge, Kolkata,
West Bengal- 70003316
42. North Eastern Regional Power Committee,
Jowai Rd, Umpling, Shillong,



Meghalaya-793006

43. Central Electricity Authority,
Sewa Bhawan, R. K. Puram, Sector-1,
New Delhi

...Respondents

ORDER

This Commission, in the exercise of the powers conferred under Section 178 read with Section 79(1)(h) of the Electricity Act, 2003 (hereinafter referred to as “the Act”), has specified CERC (Indian Electricity Grid Code), Regulations 2023 (hereinafter referred to as “the Grid Code”) on 29.05.2023 effective from 1.10.2023. Section 28(2) of the Act provides that the Regional Load Despatch Centre shall comply with such principles, guidelines and methodologies in respect of wheeling and optimum scheduling and despatch of electricity as the Central Commission may specify in the Grid Code. Section 29(1) of the Act provides that the Regional Load Despatch Centre shall issue such directions and exercise such supervision and control as may be required for ensuring the stability of the grid operation and for achieving the maximum economy and efficiency in the operation of the power system in the region under its control. Section 33(3) of the Act provides that the State Load Despatch Centre shall comply with the directions of the Regional Load Despatch Centre (“RLDC”). Section 29(4) of the Act provides that the Regional Power Committee in the region may, from time to time, agree on matters concerning the stability and smooth operation of the integrated grid and the economy and efficiency of the power system within the region. Therefore, the Act envisages and assigns responsibilities to the



Regional Load Despatch Centres and State Load Despatch Centres as apex bodies at the regional level and state level, respectively, to ensure safe, secure, stable, and integrated operation of the power system in the respective region or the state, as the case may be, and to the Regional Power Committees to coordinate among the constituents in their respective regions to achieve agreement with regard to stability and smooth operation of the integrated grid.

2. Regulation 31 of the Grid Code provides for the time horizon for operational planning, demand estimation, generation estimation, and adequacy of resources for the purpose of operational planning in the following manner: -

(a) For operational planning, National Load Despatch Centre, Regional Load Despatch Centres, and State Load Despatch Centres have been assigned the responsibility to carry out operational planning within their respective control areas on Intra-day, Day Ahead, and Weekly time horizons.

(b) For demand estimation, the State Load Despatch Centres are mandated to carry out demand estimation as part of operational planning for both active power and reactive power incidents on the transmission systems based on the details collected from distribution licensees, grid-connected distributed generation resources, captive power plants and other bulk consumers embedded within the State and to estimate the peak and off-peak demand on a weekly and monthly basis for load - generation balance planning as well as for operational planning. Based on the demand estimate furnished by SLDCs and other entities directly connected to the ISTS, RLDCs shall prepare regional

demand estimates based on which NLDC shall prepare national demand estimates.

(c) For generation estimation, RLDCs have been mandated to forecast generation from wind, solar, ESS, and renewable energy hybrid generating stations, which are regional entities, and SLDCs have been mandated to forecast generation from such resources which are intra-State entities for different time horizons, for the purpose of operational planning.

(d) SLDCs are required to estimate and ensure adequacy of resources, identify generation, demand response capacity, and generation flexibility requirements, and furnish time block-wise information for the following day in respect of all intra-State entities to the concerned RLDCs who shall validate the adequacy of resources with due regard to the aggregated demand forecast for the control area, renewable energy generation forecast for the control area, injection schedule of intra-State entity generating stations, requisition from regional entity generating stations, secondary and planned procurement through tertiary reserve requirements, and planned procurement through bilateral or collective transactions.

3. Regulation 33 provides that based on the operational planning analysis data, NLDC, RLDCs, and SLDCs shall carry out operational planning studies in real time, intra-day, day-ahead, and weekly basis, and RPCs shall carry out operational planning studies on monthly/yearly basis. This Regulation further provides that operational studies shall be carried out to assess whether the planned operations would result in



deviations from any of the operational limits defined under the Grid Code and applicable standards issued by the Central Electricity Authority. Regulation 33 further enjoins upon Regional Power Committees to monitor significant deviations for early resolution. NLDCs, RLDCs, RPCs, and SLDCs are required to develop operating plans to address potential deviation from system operational limits identified as a result of the operational planning study and communicate the same to the users in advance for taking corrective measures. The detailed reasons and explanations given by the users shall be discussed in the monthly operation sub-committee of the respective regions, and quarterly reports shall be submitted by RPCs to the Commission and CEA.

4. An extract of Regulations 31 and 33 of the Grid Code is enclosed in this order for the convenience of reference.

5. The Commission sought details of the load-generation scenario for the months of September and October 2024 from NLDC, followed by meetings of the Commission with the officers of NLDC. NLDC has submitted forecast scenarios for the months of September 24 and October 2024. The NLDC has also conducted the meeting of the Forum of Load Despatchers to ensure the proper projection of demand by the State Load Despatch Centre. We have considered the peak demand forecast for the month of October 2024. A summary of these scenarios is as under:-



Table 1: Peak demand forecast and load generation balance during Oct-24
(in GW)

	Oct-24
Demand Forecast	
Peak Demand forecast	230
Peak Demand (including ISTS losses) forecast	232.2
Available generation (other than thermal generation)	59.4
Ex-bus Thermal Requirement (without reserve)	172.8
Gross Thermal Requirement (without reserve)	187.9
Estimated Thermal Generation	
Net available thermal capacity	182.20
Availability of generation required	
Additional generation required	5.7
Additional generation required (with reserve 3% of peak demand)	12.60

It is observed from the above table that the projected load generation balance based on peak demand during October 2024 indicates the requirement for additional generation. The rise in demand during solar generation hours can be met from renewable generation provided the solar generation is as per the past trends. However, during non-solar hours (including evening and morning peaks), there is a requirement of additional requirement of Generation resources of about 12.60 GW with a reserve requirement of 3% to meet contingency.

6. The Grid Code enjoins the responsibility upon all concerned stakeholders to ensure stable and economic operation of power system and resolve the issues of significant deviations, if any. The Commission, taking cognizance of the previous year's record, intends to impress upon all the stakeholders that there is an imperative need for prudent planning of load generation balance and issue of alerts to all the grid-connected user entities of the concerned control areas to make them aware about the

anticipated challenges in the operation of the power system and for undertaking the preventive measures as may be required to maintain load generation balance.

7. The Commission is of the view that there is a need to sensitize all the stakeholders, monitor their actions, and bring about behavioural changes through specific and proactive regulatory interventions. The Commission believes that it is advisable to take preventive *ex-ante* measures instead of the *ex-post* reactive measures of finding instances of violation of the Grid Code, initiating penal proceedings for violation, and imposing penalty under the provisions of the Act. This proactive approach would also help to encourage collective efforts on the part of the National Load Despatch Centre, Regional Load Despatch Centres, State Load Despatch Centres, and the grid connected entities to make concerted efforts to ensure stable and economic operation of the grid.

8. The projected requirement of generation is significantly higher than the annual growth of the electricity demand and the addition of generation capacity. The projected requirement of thermal generation during October, 2024 needs proper operational planning and adequacy of resources in terms of Regulation 31(4) of the Grid Code. Any uncertain variation in the electricity demand arising on account of seasonal variations leading to a rapid increase in demand causes undesirable stress in the power system. The steep rise in electricity demand without adequate generation sources may put the power system operation at risk. It is the statutory responsibility of the RLDCs and SLDCs to carry out the operational planning for the increase in demand due to seasonal variations while discharging their functions under Sections 28



and 32 of the Act, respectively, read with the provisions of Regulations 31 and 33 of the Grid Code. 12. In light of the above, the Commission feels that there is a need to prepare the system operators and the stakeholders to meet the situation arising out of the abrupt increase in demand due to seasonal variations, especially during October 2024. Regulation 60 of the Grid Code empowers the Commission to issue practice directions through suo-moto proceedings with regard to implementation of the provisions of the said Regulations. Regulation 60 of the Grid Code is extracted as under:-

“60. Issue of Suo Motu Orders and Directions

The Commission may from time to time issue suo motu orders and practice directions with regard to implementation of these regulations and matters incidental or ancillary thereto, as the case may be.”

9. In exercise of the powers vested under Regulation 60, read with all relevant provisions of the Grid Code, the Commission issues the following directions to NLDC, RLDCs, and SLDCs in connection with the implementation of Regulations 31 and 33 of the Grid Code to address the anticipated surge in demand of electricity during October 2024 on account of seasonal variations:

- a) All the State Load Despatch Centres and RLDCs shall furnish the details of operational planning undertaken by them in terms of Regulation 31(4) (a) of the Grid Code especially for October 2024. RLDC shall validate the adequacy of resources in terms of Regulation 31(4)(b) of the Grid Code.
- b) All State Load Despatch Centres and Regional Load Despatch Centres shall prepare the worst-case scenario due to possible surge in demand during the



period 1.10.2024 to 31.10.2024 in their respective control area and submit within seven days to the Commission with a copy to National Load Despatch Centre.

- c) The State Load Despatch Centres or Regional Load Despatch Centres, as the case may be, should assess their demand-generation scenario in the upcoming months, ensure the optimum generation, avoid undesirable planned outages, and advise the generating company to offer their availability. The State Load Despatch Centre or Regional Load Despatch Centre shall ensure the optimum scheduling during the shortage period and surplus power to get despatched during the deficit period.
- d) The Distribution Companies, in case of a shortage scenario, can procure the power from surplus or requisitioned capacity of other states so that optimum despatch can be ensured for safe and reliable power system operations. The State Load Despatch Centre shall monitor the generation-demand deficit of the respective distribution companies.
- e) The generating companies operating their plant with capacity less than its installed capacity due to technical issues, i.e., capacity under partial outage or forced outage, are advised to fix the issues to ensure the maximum generation capacity on-bar.
- f) The draw schedule of the respective control area needs to adhere to prevent the reduction of system frequency. The State Load Despatch Centre or Regional Load Despatch Centre, as the case may be, shall monitor the deviation of the key system parameters.

g) The State Load Despatch Centres or Regional Load Despatch Centres, as the case may be, shall issue the system alerts to their respective grid-connected entities for the possible deficit during the likely surge in demand.

10. The Regional Load Despatch Centres and State Load Despatch Centres shall submit the report on the implementation of the above measures, a load-generation scenario in their respective control areas, and any other measures taken to address the deficit of power supply during the period 1.10.2024 to 31.10.2024.

11. The objective of the present proceedings is to prepare the system operators and other stakeholders to meet the challenges and threats to the power system that may arise due to the abrupt increase in demand. The responses of the SLDCs, RLDCs, and NLDC with regard to the implementation of the measures detailed in para 9 of this order shall, in the first instance, be examined in detail by a Single-Member Bench comprising a Member of the Commission. Accordingly, in the exercise of powers under Section 97 of the Electricity Act,2003, the Commission nominates Shri Ramesh Babu V., Member, to conduct the proceedings for this purpose. The Single Member Bench shall provide due opportunity to the parties to make their submissions. The Single Member Bench shall have the authority to direct the parties to submit such further information and to take such remedial measures as may be considered necessary. The Single Member Bench shall submit a report to the Commission with regard to the preparedness of the System Operators and other stakeholders to meet the challenges arising on account of the sudden surge in demand for power and his recommendations with regard to the remedial measures to be taken for the future. The



Commission, after consideration of the report of the Single Member Bench shall issue appropriate directions as may be considered appropriate.

12. NLDC, RLDCs, and SLDCs are directed to submit their responses to the measures contained in para 9 of this order by 16.10.2024.

Sd./-
(Shri Harish Dudani)
Member

Sd./-
(Shri Ramesh Babu V)
Member

Sd./-
(Shri Jishnu Barua)
Chairperson



Extract of Regulation 31 and 33 of the Grid Code

31. OPERATIONAL PLANNING

(1) Time Horizon

- (a) Operational planning shall be carried out in advance by NLDC, RLDCs and SLDCs within their respective control areas with Monthly and Yearly time horizons in co-ordination with CTU, RPCs or STUs, as applicable.
- (b) Operational planning shall be carried out in advance by NLDC, RLDCs and SLDCs within their respective control areas on Intra-day, Day Ahead, Weekly time horizons.
- (c) RLDCs in consultation with NLDC shall issue procedures and formats for data collection to carry out:
 - (i) Operational planning analysis,
 - (ii) Real-time monitoring,
 - (iii) Real-time assessments.
- (d) SLDC may also issue procedures and formats for data collection for the above purposes.

(2) Demand Estimation

- (a) Each SLDC shall carry out demand estimation as part of operational planning after duly factoring in the demand estimation done by STU as part of resource adequacy planning referred to in Chapter 2 of these regulations. Demand estimation by SLDC shall be for both active power and reactive power incidents on the transmission system based on the details collected from distribution licensees, grid-connected distributed generation resources, captive power plants and other bulk consumers embedded within the State.

- (b) Each SLDC shall develop methodology for daily, weekly, monthly, yearly demand estimation in MW and MWh for operational analysis as well as resource adequacy purposes. Each SLDC, while estimating demand may utilize state of the art tools, weather data, historical data and any other data. For this purpose, all distribution licensees shall maintain a historical database of demand.
- (c) The demand estimation by each SLDC shall be done on day ahead basis with time block wise granularity for the daily operation and scheduling. In case SLDC observes a major change in demand in real time for the day, it shall immediately submit the revised demand estimate to the concerned RLDC for demand estimate correction.
- (d) Each SLDC shall submit node-wise morning peak, evening peak, day shoulder and night off-peak estimated demand in MW and MVA on a monthly and quarterly basis for the nodes 110 kV and above for the preparation of scenarios for computation of TTC and ATC by the concerned RLDC and NLDC.
- (e) SLDC shall also estimate peak and off-peak demand (active as well as reactive power) on a weekly and monthly basis for load - generation balance planning as well as for operational planning analysis, which shall be a part of the operational planning data. The demand estimates mentioned above shall have granularity of a time block. The estimate shall cover the load incident on the grid as well as the net load incident taking into account embedded generation in the form of roof-top solar and other distributed generation.
- (f) The entities such as bulk consumers or distribution licensees that are directly connected to ISTS shall estimate and furnish such a demand estimate to the concerned RLDC.
- (g) Based on the demand estimate furnished by the SLDCs and other entities directly connected to ISTS, each RLDC shall prepare the regional demand estimate and submit it to the NLDC. NLDC, based on regional demand estimates furnished by RLDCs, shall prepare national demand estimate.



- (h) Timeline for submission of demand estimate data by SLDCs or other entities directly connected to ISTS, as applicable, to the respective RLDC and RPC shall be as follows:
- (i) SLDCs, RLDCs and NLDC shall compute forecasting error for intra-day, dayahead, weekly, monthly and yearly forecasts and analyse the same in order to reduce forecasting error in the future. The computed forecasting errors shall be made available by SLDCs, RLDCs and NLDC on their respective websites.

(3) Generation Estimation

- (a) The modalities of generation estimation by entities shall be as per the Procedure referred to in sub-clause (c) of clause (1) of Regulation 31 of these regulations.
- (b) RLDC shall forecast generation from wind, solar, ESS and Renewable Energy hybrid generating stations that are regional entities and SLDC shall forecast generation from such sources that are intra-state entities, for different time horizons as referred to in clause (1) of Regulation 31 of these regulations for the purpose of operational planning.

(4) Adequacy of Resources

- (a) SLDCs shall estimate and ensure the adequacy of resources, identify generation reserves, demand response capacity and generation flexibility requirements with due regard to the resource adequacy framework as specified under Chapter 2 of these regulations.
- (b) SLDCs shall furnish time block-wise information for the following day in respect of all intra-state entities to the concerned RLDC who shall validate the adequacy of resources with due regard to the following:
 - (i) Demand forecast aggregated for the control area;
 - (ii) Renewable energy generation forecast for the control area;

- (iii) Injection schedule for intra-State entity generating station;
- (iv) Requisition from regional entity generating stations;
- (v) Secondary and planned procurement through Tertiary reserve requirement;
- (vi) Planned procurement of power through other bilateral or collective transactions, if any.

33. OPERATIONAL PLANNING STUDY

- (1) Based on the operational planning analysis data, operational planning study shall be carried out by various agencies for time horizons as under:
- (2) SLDCs, RLDCs and NLDC shall utilize network estimation tool integrated in their EMS and SCADA systems for the real time operational planning study. All users shall make available at all times real time error free operational data for the successful execution of network analysis using EMS/SCADA. Failure to make available such data shall be immediately reported to the concerned SLDC, the concerned RLDC and NLDC along with a firm timeline for restoration. The performance of online network estimation tools at SLDC and RLDC shall be reviewed in the monthly operational meeting of RPC. Any telemetry related issues impacting the online network estimation tool shall be monitored by RPC for their early resolution.
- (3) SLDCs shall perform day-ahead, weekly, monthly and yearly operational studies for the concerned State for:
 - (a) assessment and declaration of total transfer capability (TTC) and available transfer capability (ATC) for the import or export of electricity by the State. TTC and ATC shall be revised from time to time based on the commissioning of new elements and other grid conditions and shall be published on SLDC website with all the assumptions and limiting constraints;



- (b) planned outage assessment;
 - (c) special scenario assessment;
 - (d) system protection scheme assessment;
 - (e) natural disaster assessment; and
 - (f) any other study relevant in operational scenario.
- (4) RLDCs and NLDC shall perform day-ahead, weekly, monthly and yearly operational studies for:
- (a) assessment of TTC and ATC at inter-regional, intra-regional, and inter-state levels;
 - (b) planned outage assessment;
 - (c) special scenario assessment;
 - (d) system protection scheme assessment;
 - (e) natural disaster assessment; and
 - (f) any other study relevant to operational scenarios
- (5) RLDC shall assess intra-regional and inter-state level TTC and ATC and submit them to NLDC. NLDC shall declare TTC and ATC for import or export of electricity between regions including simultaneous import or export capability for a region, and crossborder interconnections 11 (Eleven) months in advance for each month on a rolling basis. TTC and ATC shall be revised from time to time based on the commissioning of new elements and other grid conditions and shall be published on the websites of the NLDC and respective RLDCs with all the assumptions and limiting constraints
- (6) Operational planning study shall be done to assess whether the planned operations shall result in deviations from any of the system operational limits defined under these regulations and applicable CEA Standards. The deviations, if



any, shall be reviewed in the monthly operational meeting of RPC and significant deviations shall be monitored by RPC for early resolution.

- (7) NLDC, RLDCs, RPCs and SLDCs shall maintain records of the completed operational planning study, including date specific power flow study results, the operational plan and minutes of meetings on operational study.
- (8) NLDC, RLDCs, RPCs and SLDCs shall have operating plans to address potential deviations from system operational limit identified as a result of the operational planning study. These operating plans shall be communicated to users in advance so that they can take corrective measures. In case any user is unable to adhere to such an operating plan, it shall inform the respective SLDC, RLDC and NLDC in advance with detailed reasons and explanations for the non-adherence. These detailed reasons and explanations shall be discussed in the monthly operation sub-committee of the respective region and a quarterly report shall be submitted by the respective RPC to the Commission and CEA.
- (9) Each SLDC shall undertake a study on the impact of new elements to be commissioned in the intra-state system in the next six (6) months on the TTC and ATC for the State and share the results of the studies with RLDC.
- (10) Each RLDC shall undertake a study on the impact of new elements to be commissioned in the next six (6) months in (a) the ISTS of the region and (b) the intrastate system on the inter-state system and share the results of the studies with NLDC
- (11) NLDC shall undertake study on the impact of new elements to be commissioned in the next six (6) months in (a) inter-regional system, (b) cross-border link and (c) intraregional system on the inter-regional system.
- (12) NLDC, RLDCs and SLDCs shall compare the results of the studies of the impact of new elements on the system and transfer capability addition with those of the interconnection and planning studies by CTU and STUs, and any significant

variations observed shall be communicated to CEA, RPCs, CTU and STUs for immediate and long-term mitigation measures.

- (13) Defense mechanisms like system protection scheme, load-rejection scheme, generation run-back, islanding scheme or any other scheme for system security shall be proposed by the concerned user or SLDC or RLDC or NLDC and shall be deployed as finalized by the respective RPC.

