

SRLDC Agenda for the 239th OCC Meeting of SRPC

It is requested that the following operational issues may be included in the agenda of the forthcoming OCC meeting of SRPC.

1. Persistent Overloading of Critical ISTS Corridors in Tamil Nadu under High RE Injection Scenario

During high Renewable Energy (RE) generation scenarios, continuous N-1 violations are being observed on the following critical ISTS corridors:

- 400 kV Madurai–Udumalpet S/c
- 400 kV Tirunelveli–Udumalpet D/c
- 400 kV Madurai–Pugalur D/c

Detailed analysis indicates that the overloading is primarily due to heavy RE power injection from the Tamil Nadu intra-state network into the ISTS network through the 400/230 kV ICTs at Madurai, Tirunelveli, Udumalpet, Pugalur and Trichy substations. In addition, substantial power flow is also being observed from 400 kV Kanarpatty towards Tirunelveli through the 400 kV Tirunelveli–Kanarpatty S/c line.

Further, low voltage conditions are also being observed at several substations where significant RE power is being injected from the 230 kV network to the 400 kV network, mainly due to high MVar drawal by RE plants. The excessive reactive power consumption by RE generators is aggravating voltage profile issues in the Southern Region grid, particularly during high RE generation periods.

It is observed that nearly 2935 MW of additional RE capacity has been integrated into the Tamil Nadu system during FY 2025-26, as per MNRE installed capacity data dated 30.03.2026. However, as per the CEA transmission progress report dated 30.03.2026, no corresponding 400 kV / 765 kV transmission infrastructure appears to have been commissioned for evacuation of this additional RE capacity.

The above network condition is resulting in persistent stress on key ISTS corridors and is significantly impacting secure grid operation. Further, due to the overloading of the above lines, SRLDC may not be able to operate the Raigarh–Pugalur HVDC link in reverse power flow mode (SR → WR), thereby adversely affecting the export TTC/ATC of the Southern Region.

In view of the above, Tamil Nadu is requested to furnish the following details:

- (i) Details and locations of the additional 2935 MW RE capacity integrated during FY 2025-26.
- (ii) The identified transmission system and evacuation scheme planned for the above RE capacity, including associated 400 kV / 765 kV infrastructure.
- (iii) Status of commissioning timelines of the evacuation system corresponding to the above RE integration.
- (iv) Basis on which the RE integration was permitted by Tamil Nadu SLDC in the absence of matching transmission augmentation at the 400 kV level.
- (v) Measures proposed by Tamil Nadu to mitigate persistent ISTS overloading and N-1 violations under high RE scenarios.

- (vi) Whether any generation regulation / curtailment mechanism is being implemented to maintain secure loading on ISTS corridors during high RE injection conditions.
- (vii) Expected timeline by which the identified transmission constraints will be resolved.
- (viii) Actions taken / proposed by Tamil Nadu to mitigate low voltage conditions at substations experiencing high RE injection, including installation of shunt capacitors/reactors, implementation of dynamic reactive compensation, enforcement of RE plant reactive power support, and voltage control measures at pooling stations and generating stations.

2. Persistent Overloading of Critical ISTS substations in Karnataka under High RE Injection Scenario

During high Renewable Energy (RE) generation scenarios, N-1 violations are being observed on the following critical ISTS substations:

- 765/400kV Raichur (PG) ICTs
- 400/220kV Kudgi (NTPC) ICTs
- 400/220kV Narendra ICTs
- 400/220kV Munirabad ICTs
- 400/220kV Hiriyur ICTs

Detailed analysis indicates that the overloading is primarily due to heavy RE power injection from the Karnataka intra-state network into the ISTS network. These injections are affecting SR Export TTC/ATC.

It is observed that nearly 878 MW of additional RE capacity has been integrated into the Karnataka system during FY 2025-26, as per MNRE installed capacity data dated 30.03.2026. However, as per the CEA transmission progress report dated 30.03.2026, no corresponding 400 kV / 765 kV transmission infrastructure appears to have been commissioned for evacuation of this additional RE capacity. The above network condition is resulting in persistent stress on key ISTS corridors and is significantly impacting secure grid operation.

In view of the above, Karnataka is requested to furnish the following details:

- (i) Details and locations of the additional 878 MW RE capacity integrated during FY 2025-26.
- (ii) The identified transmission system and evacuation scheme planned for the above RE capacity, including associated 400 kV / 765 kV infrastructure.
- (iii) Status of commissioning timelines of the evacuation system corresponding to the above RE integration.
- (iv) Basis on which the RE integration was permitted by Karnataka SLDC in the absence of matching transmission augmentation at the 400 kV level.
- (v) Measures proposed by Karnataka to mitigate persistent ISTS overloading and N-1 violations under high RE scenarios.
- (vi) Whether any generation regulation / curtailment mechanism is being implemented to maintain secure loading on ISTS corridors during high RE injection conditions.
- (vii) Expected timeline by which the identified transmission constraints will be resolved.
- (viii) Actions taken / proposed by Karnataka to mitigate low voltage conditions at substations experiencing high RE injection, including installation of shunt capacitors/reactors, implementation of dynamic reactive compensation,

enforcement of RE plant reactive power support, and voltage control measures at pooling stations and generating stations.

3. Timely Submission of Monthly PSS/E cases by states

As per agreed procedure, all the states must submit the PSSE cases by 10th of every month for D+11 month & 8th of every month for D+1 month. The following table shows dates on which SR states have submitted the PSSE cases for D+11 month.

State	Month Ahead Cases	11-month ahead Cases
Last Date of Submission	08-04-2026	10-04-2026
AP	22-04-2026	24-04-2026
TS	22-04-2026	22-04-2026
KA	22-04-2026	22-04-2026
TN	15-04-2026	15-04-2026
KL	06-04-2026	06-04-2026
PY	10-04-2026	10-04-2026

States are requested to submit the PSS/E cases timely for preparing all India PSS@E file for carrying out the power system simulation studies.

4. Periodic testing of Power System Elements

Regulation-40 of IEGC-2023, stipulates that “Periodic testing of power system elements must be carried out once every year”. IEGC effective from 1st October 2023 and almost 2.5 years are over but many conventional generators, RE generators, HVDC owners, STATCOM owners are yet to carry out the test and the owners who have carried out the tests are yet to submit the report as per NLDC “periodic Testing of power system Elements” to SRLDC/SRPC.

All owners are requested to carry out the Periodic testing of power system elements and furnish the reports to SRLDC/SRPC as per the NLDC format.

5. Prolonged outage of Bus reactors & Line reactors w.r.t following substations

Sl. No.	400 kV Station	Reason	Outage Date and Time	Updates as per previous OCCM
1	Hebbanahalli - 400KV B/R 1	Forced outage due to CB issues. R phase bushing flashover	22-Nov-2024 20:39	KAR SLDC informed that the required material is yet to be received for installation of Hebbanahalli B/R. Hence, it may be expected by July/August 2026.
2	SEIL_P2 - 400KV B/R 1	Oil Leak from the Radiator.	24-Jun-2025 10:01	Expected by August 2026.

		Later isolator got damaged		
3	KV Kota - 400KV B/R 1	PRV Operated	21-Aug-2025 10:54	BHEL (OEM) is required to carry out physical inspection and submit the quotation, which is presently under process. It was further informed that issuance of LOI to BHEL and finalization of the exact restoration timeline would be taken up after approval of the quotation.
4	Talguppa - 400KV B/R 2	Y-ph CB failed	07-Feb-2026 06:46	Expected by July 2026.

6. Prolonged AC transmission elements outage

Sl. No.	Element Name	Reason	Outage time	Updates as per previous OCCM
	Nil			

7. Operational issues faced in SR Grid:

i. ICT loading issues:

ICT N-1 loading violation observed at Bidadi, Guttur, Hoody, Kalburgi, Kalvendapattu, KV Kota, Kozhikode, Mysore, Narendra, Nelamangala, Neyveli, NNTTP, UPCL, Vemagiri and Yelahanka substations during May 2026. Respective entity may please take action.

ii. Low voltages in Southern Region:

Low voltage conditions were observed at 400 kV stations, particularly during the morning peak hours, at Bidadi, Hosur, Hoody, Jagalur, Doni, Devanahalli, Guttur, Hoody, Kalburgi, Munirabad, Mylasandra, Nelamangala, Somanahalli, Sungavachatram, NNTTP and Yelahanka.

As per IEGC 2023 Annexure-4 regarding Reactive Power Compensation,

“Reactive power compensation should ideally be provided locally, by generating reactive power as close to the reactive power consumption as possible. The regional entities are expected to provide local VAR compensation or generation such that they do not draw VARs from the EHV grid, particularly under low-voltage condition. “

It is therefore requested that, corrective actions in this regard may please be taken for safe & secure operation of the grid.

iii. Deviation in drawal by States:

Persistent deviations from the schedule by Tamil Nadu have been observed on several days during May 2026. This issue has been consistently taken up through various communications and real-time messages. On certain occasions physical regulatory measures were also taken in view of the obstinate deviations.

However, despite these efforts, instances of significant deviations have continued. At times, these deviations have pushed the grid into critical operating conditions, particularly during non-solar hours, thereby adversely affecting frequency stability and overall grid security.

In light of the above, it is reiterated that proactive planning of the Load-Generation Balance (LGBR) and optimal management of the State's power portfolio must be ensured.

In this regard following clauses of the Indian Electricity Grid Code (IEGC) 2023 shall be noted and complied:

30.(3) All users shall adhere to their schedule of injection or drawl, as the case may be, and take such action as required under these regulations and as directed by NLDC or respective RLDCs or respective SLDCs so that the grid frequency is maintained and remains within the allowable band.

45. (6) Each regional entity shall regulate its generation or demand or both, as the case may be, so as to adhere to the schedule of net injection into or net drawal from the inter-State transmission system.

Communications issued in this regard are enclosed as Annexure-A.

iv. Grid Frequency Dip Event on 13.05.2026 - Observations and Compliance Requirements

There was frequency dip to 49.40 Hz at 14:09 Hrs on 13.05.2026, due to solar generation loss in the Western Region. Subsequently, the frequency recovered to around 49.55 Hz, initially aided by the operation of Under Frequency Relays (UFRs).

It was observed that the designed load relief was not achieved during the low frequency instance.

The defence mechanisms, including UFR and df/dt schemes, shall be maintained in a healthy and operational state at all times to ensure grid security under all conditions.

It is also pertinent to highlight that during the frequency dip event, approximately 1800 MW of pumping load was in operation in the Southern Region, comprising:

- ~210 MW at Nagarjunasagar PSP
- ~1600 MW at Greenko PSP

It is appreciated that Nagarjunsagar, stopped pumping operation after issuing operational instruction.

In this regard, your kind attention is invited to Note-2 of Regulation 29(12) of IEGC-2023, stipulates that ***“Pumped storage hydro plants operating in pumping mode or ESS operating in charging mode shall be automatically disconnected before the first stage of UFR”.***

As per the Minutes of the 15th Meeting of National Power Committee (NPC) chaired by Chairperson, NPC held on 14.11.2024 at Nagpur (Maharashtra):

"f) Chairperson, NPC suggested that BESS (in charging mode) may disconnect first at 49.6 Hz, while pumped hydro (in pumping mode) may disconnect at 49.5 Hz "

It is also pertinent to mention deliberations in the 52nd Meeting of TCC and 55th Meeting of SRPC held at Udaipur on 25th and 26th July 2025, regarding Automatic Under Frequency Load Shedding (AUFLS) and df/dt scheme. Relevant extract from Minutes of the Meeting is as below:

"26.XII. c) The AUFLS scheme must ensure Pumped storage hydro plants operating in pumping mode (at 49.5 Hz) or ESS operating in charging mode (at 49.6 Hz) shall be automatically disconnected before the first stage of UFR.

26.XII d) Bulk consumers connected to ISTS and STU networks must implement the UFR scheme. Compliance should be ensured during the grant of connectivity by CTU and STU."

In view of the above, all SLDCs and Utilities are requested to:

1. Ensure adherence to the provisions of the Indian Electricity Grid Code (IEGC 2023)-Note-2 of Regulation 29(12).
2. Enable the disconnection of BESS (in charging mode) at 49.6 Hz and disconnection of pumped hydro (in pumping mode) at 49.5 Hz.
3. Keep UFR / df/dt and other defence mechanisms fully functional and periodically validated.
4. Ensure timely and adequate load relief as per the approved scheme.

Letter regarding this matter sent on 15th May 2026.

v. Tripping of 765KV-Ariyalur-NCPS line

765KV-Ariyalur-NCPS-1 feeder tripped at 23:30 hrs. on 18.05.2026. Insulator decapping reported in multiple locations after patrolling. During antecedent conditions, 765kV Ariyalur NCPS line-2 was under outage. Tripping of the only source led to complete outage of 765kV NCPS Pooling station and 765kV NCPS Generating station which resulted in a generation loss of 520MW.

The details of tripping of lines connected to NCPS station is given below:

Element	Tripping time	Restoration time	Reason	Outage period in days
765KV-Ariyalur-NCPS-2	2026-01-01 03:25	2026-01-12 11:36	Tripped on Y-N fault	11
765KV-Ariyalur-NCPS-1	2026-01-12 16:54	2026-01-24 19:13	Insulators decap has been identified LOC NO 12 20 38 70 83	12
765KV-Ariyalur-NCPS-2	2026-01-24 16:34	2026-02-10 09:32	Tripped on Y-N fault	17

Element	Tripping time	Restoration time	Reason	Outage period in days
765KV-Ariyalur-NCPS-2	2026-03-01 03:59	2026-03-09 18:54	Tripped on Y-N fault	9
765KV-Ariyalur-NCPS-1	2026-03-15 06:50	2026-03-31 14:02	Tripped on Y-N fault	16
765KV-Ariyalur-NCPS-1	2026-04-04 10:22	2026-04-04 11:38	Low SF6 gas pressure	0
765KV-Ariyalur-NCPS-2	2026-05-08 09:28	2026-05-11 15:15	Tripped on Y-N fault	3
765KV-Ariyalur-NCPS-2	2026-05-11 15:16	2026-05-21 13:00	Tripped on Y-N fault	10
765KV-NCPS-NCPS STG3-1	2026-05-18 23:30	2026-05-21 13:00	Tripped due to loss evacuating NCPS-Ariyalur line-1	3
765KV-NCPS-NCPS STG3-2	2026-05-18 23:30	2026-05-21 13:00	Tripped due to loss evacuating NCPS-Ariyalur line-1	3
765KV-Ariyalur-NCPS-1	2026-05-18 23:30	Outage going on	Tripped on Y-N fault	11

The time taken for attending insulator decapping is high and this delay in attending insulator decapping activities in Tamil Nadu is impacting smooth and secure grid operation. Tamil Nadu may plan for the early restoration of transmission lines affected by insulator decapping to minimize operational risks and enhance grid reliability.

vi. Review of Transmission Line Trippings during Thunderstorm/Adverse Weather Conditions and need for enhanced Situational Awareness of Stressed Corridors

During recent weeks, many transmission line trippings have been observed across the Southern Region due to thunderstorms, heavy winds, lightning activity, and other adverse weather conditions. These incidents have resulted in load loss, generation loss, system constraints, and operational challenges. Further, incidents such as tower collapse and conductor snapping have also been observed, leading to prolonged restoration timelines and reduction in transmission corridor availability.

The following major trippings have been observed recently:

S. No.	Name of the Transmission line	Owner	Outage	Revival	Reason	Remarks
1	400KV-Kaiga-Guttur-2	KPTCL	14-May-26 17:39 Hrs.	Yet to Revive	Tower Collapse	Kaiga, Kadra, Kodalalli generation is being evacuated through 400kV Kaiga-Narendra D/c and tripping of any one line on this section may lead to evacuation constraints from Kaiga.
2	400KV-Kaiga-Guttur-1		14-May-26 17:39 Hrs.	Yet to Revive	Tower Collapse	

S. No.	Name of the Transmission line	Owner	Outage	Revival	Reason	Remarks
3	220KV Vena-GadagPS-1	Vena	17-May-26 16:14 Hrs.	Yet to Revive	Tower Collapse	Due to loss of evacuation line, 160 MW generation effected.
4	220KV Green Infra-GadagPS-1		17-May-26 16:16 Hrs.	Yet to Revive	Tower Collapse	Due to loss of evacuation line, 69 MW generation effected.
5	400KV Gadag-Koppal-1	GADAG IIA	23-May-26 18:13 Hrs.	Yet to Revive	Tower Collapse	Tripping of 400kV Koppal-Kudgi D/c or 400kV Gadag-Kudgi D/c may lead loss of RE generation at Koppal PS & Gadag PS
6	400KV Gadag-Koppal-2		23-May-26 18:13 Hrs.	Yet to Revive	Tower Collapse	
7	400KV-Nagapattnam_PS-Trichy-1	POWERGRID	31-May-26 17:04 Hrs.	Yet to Revive	Tower Collapse	
8	400KV-Nagapattnam_PS-Trichy-2	POWERGRID	31-May-26 17:04 Hrs.	Yet to Revive	Tower Collapse	
9	400KV Kudgi PG-Kolhapur PG-1	POWERGRID	24-May-26	25-May-26	TRIPPED ON R-N FAULT	SR EXPORT TTC/ATC would reduce
10	765KV Warora-Warangal (New)- 1	WKTL (ADANI)	25-May-26	25-May-26	Tripped on R-B Fault	SR Import TTC/ATC would reduce.
11	765KV Warangal (New) - Chilakaluripeta-2	WKTL (ADANI)	25-May-26	28-May-26	Tripped on B-N FAULT	SR Import TTC/ATC would reduce
12	765KV Warangal (New) - Chilakaluripeta-1	WKTL (ADANI)	25-May-26	26-May-26	Tripped on B-N fault	SR Import TTC/ATC would reduce
13	765KV Warangal (New) - Chilakaluripeta-1	WKTL (ADANI)	26-May-26	27-May-26	Tripped on R-G fault	SR Import TTC/ATC would reduce

During the tripping of 220KV Gadag PSS, there was generation loss of 82MW from 220kV Vena Gadag PS and 70MW from Green Infra Gadag PS. In the present operating scenario, the grid is continuously operating under high loading conditions and stressed network conditions. There is a need for periodic review and enhanced situational awareness of vulnerable transmission corridors/zones by Transmission licenses.

Further, all concerned transmission licensees are requested to provide details of the corrective and preventive measures/actions taken by them to avoid recurrence of such incidents in future. The transmission licensees may also furnish the expected restoration timelines for the affected transmission elements along with periodic status updates of restoration activities being undertaken. Detail of Availability of ERS also to be provided.

8. Submission of Self Audit Compliance Report (as per IEGC, 2023)

As per Clause 55 of IEGC 2023, the performance of all users, CTU, STUs, NLDC, RLDCs, SLDCs and RPCs, power exchanges, QCAs, SNAs with respect to compliance of these regulations shall be assessed periodically. IEGC mandates all entities to undertake self-audit and submit a report containing compliances, non-compliances (if any) along with sufficient information to understand how and why the non-compliance occurred, extent of damage caused by such non-compliance, steps and timeline planned to rectify the same, steps taken to mitigate any future recurrence etc., with regard to various regulations of IEGC to the respective nodal agency.

Further as per clause 56 (2) of IEGC, in order to ensure compliance, all users, CTU, STUs, NLDC, RLDCs, RPCs and SLDCs, power exchanges, QCAs, SNAs shall conduct annual self-audits to review compliance of these regulations and submit the reports by 31st July of every year. All users of the Southern Regional Load Despatch Centre (SRLDC) are required to submit their Self-Audit Report to SRLDC on an annual basis by **31st July**.

The agenda regarding of submission of the Self-Audit Report was also discussed in the 54th TCC meeting (16.03.2026) and the 57th SRPC meeting (17.03.2026) and also in 238th OCC Meeting (11.05.2026), where it was emphasized that all Users to furnish Self Audit reports to SRLDC at the earliest as it a regulatory requirement.

The Self-Audit Compliance Report is a crucial requirement to ensure adherence to grid discipline, operational standards, and regulatory compliance and timely submission of the same will help in maintaining grid reliability and efficiency.

In view of the above it is requested to submit the report to SRLDC as compliance of the regulatory provisions of IEGC. Any non-compliance may result in necessary actions as per regulatory provisions.

A letter in this regard was sent to all entities, enclosed as **Annexure-B**.

As per the discussion in the 238th OCC Meeting, an online awareness workshop was conducted by SRLDC on 13.05.2026 to facilitate better understanding and compliance by the constituents. Monitoring and Compliance Chapter of IEGC 2023 was briefed to all the entities. The sample format of Self Audit Compliance Report was also shared with all the constituents.

All users are once again requested to submit the Self Audit Report by **31.07.2026**.