सत्यमेव जयते

भारत सरकार Government of India
विद्युत मंत्रालय Ministry of Power
उत्तर पूर्वी क्षेत्रीय विद्युत समिति
North Eastern Regional Power Committee
एन ई आर पी सी कॉम्प्लेक्स, डोंग पारमाओ, लापालाङ, शिल्लोंग-७९३००६, मेघालय
NERPC Complex, Dong Parmaw, Lapalang, Shillong - 793006, Meghalaya

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No.: No. NERPC/SE (O)/OCC/2024/ 3463-3505 23rd December, 2024

To
As per list attached

Sub: 221वीं ओ.सी.सी बैठक का कार्यवृत्त
Minutes of 221st OCC Meeting.

महोदय/महोदया,

कृपया 17 दिसंबर, 2024 को एन.ई.आर.एल.डी.सी कॉन्फ्रेंस हॉल, गुवाहाटी में आयोजित 221 वीं ओ.सी.सी बैठक के कार्यवृत्त को अपनी जानकारी और आवश्यक कार्रवाई के लिए प्राप्त करें। कार्यवृत्त एन.ई.आर.पी.सी की वेबसाइट: www.nerpc.gov.in पर भी उपलब्ध है।

कृपया कोई भी टिप्पणी जल्द से जल्द एन.ई.आर.पी.सी सचिवालय को सूचित करें।

Sir/Madam,

Please find enclosed herewith the minutes of the 221st OCC Meeting held at NERLDC Conference Hall, Guwahati on 17th December, 2024 for your kind information and necessary action. The minutes is also available on the website of NERPC: www.nerpc.gov.in.

Any comments/observations may kindly be communicated to NERPC Secretariat at the earliest.

भवदीय / Yours faithfully,

अलीक

(ए. दे/A. De)
(उप निदेशक / Deputy Director)

Encl: As above

Distribution List:

1. Managing Director, AEGCL, Bijuli Bhawan, Guwahati – 781 001
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3. Managing Director, APDCL, Bijuli Bhawan, Guwahati – 781 001
4. Managing Director, MSPCL, Electricity Complex, Keishampat, Imphal – 795 001
5. Managing Director, MSPDCL, Secure Office Bldg. Complex, South Block, Imphal – 795 001
6. Director (Transmission), MePTCL, Lumjingshai, Short Round Road, Shillong – 793 001
7. Director (Generation), MePGCL, Lumjingshai, Short Round Road, Shillong – 793 001
8. Director (Distribution), MePDCL, Lumjingshai, Short Round Road, Shillong – 793 001
9. Director (Tech.), TSECL, Banamalipur, Agartala -799 001.
10. Director (Generation), TPGCL, Banamalipur, Agartala -799 001.
11. GM (Transmission), TPTL, Bidyut Bhaban, Banamalipur, Agartala -799 001.
12. Chief Engineer (WE Zone), Department of Power, Govt. of Arunachal Pradesh, Itanagar- 791111
13. Chief Engineer (TP&MZ), Department of Power, Govt. of Arunachal Pradesh, Itanagar- 791111
14. Chief Engineer (Commercial) -cum- CEI, DoP, Govt. of Arunachal Pradesh, Itanagar- 791111
15. Engineer-in-Chief, P&E Department, Govt. of Mizoram, Aizawl – 796 001
16. Engineer-in-Chief, Department of Power, Govt. of Nagaland, Kohima – 797 001
17. ED (O&M), NEEPCO Ltd., Brookland Compound, Lower New Colony, Shillong-793003
18. ED (O&M), NHPC, NHPC Office Complex, Sector-33, Faridabad, Haryana-121003
19. Group GM, NTPC, Bongaigoan Thermal Power Project, P.O. Salakati, Kokrajhar- 783369
20. Vice President (Plant), OTPC, Badarghat Complex, Agartala, Tripura – 799014
21. ED, PGCIL/NERTS, Dongtieh-Lower Nongrah, Lapalang, Shillong -793 006
22. AGM (BD), NVVN, Core 5, 3rd floor, Scope Complex, 7 Institutional Area, Lodhi Rd., N. Delhi-3
23. Vice President, PTCIL, 2nd Floor, NBCC Tower, 15, Bhikaji Cama Place, New Delhi – 110066
24. Dy. COO, CTUIL, "Saudamini", 1st Floor, Plot No. 2, Sector-29, Gurugram, Haryana – 122001
25. Chief Engineer, GM Division, Central Electricity Authority, New Delhi – 110066
26. Chief Engineer, NPC Division, Central Electricity Authority, New Delhi – 110066
27. ED, NERLDC, Dongtieh, Lower Nongrah, Lapalang, Shillong -793 006
28. CGM, AEGCL, Bijuli Bhawan, Guwahati – 781001
29. CGM, APGCL, Bijuli Bhawan, Guwahati – 781001
30. CGM, DISCOM, Bijuli Bhawan, Guwahati – 781001
31. Head of SLDC, Dept. of Power, Govt. of Arunachal Pradesh, Itanagar – 791111
32. CGM, (LDC), SLDC Complex, AEGCL, Kahilipara, Guwahati-781 019
33. Head of SLDC, MSPCL, Imphal – 795001
34. Head of SLDC, MePTCL, Lumjingshai, Short Round Road, Shillong – 793 001
35. Head of SLDC, P&E Deptt. Govt. of Mizoram, Aizawl – 796 001
36. Head of SLDC, Dept. of Power, Govt. of Nagaland, Dimapur – 797103
37. Head of SLDC, TSECL, Agartala – 799001
38. Chief Engineer (Elect), Loktak HEP, Vidyut Vihar, Kom Keirap, Manipur- 795124
39. DGM (O&M), OTPC, Badarghat Complex, Agartala, Tripura – 799014
40. Director, NETC, 2C, 3rdFloor, D21Corporate Park, DMRC Building Sector 21, Dwarka, Delhi-77
41. AGM Regulatory & Commercial, NER II TL, 10th Floor, Berger Tower, Noida sector 16B-201301
42. Project Head, NERPSIP/PGCIL, Pub Suraj Nagar, Nutun Bazar, Kahelipara, Guwahati- 781019
43. ED, Comprehensive Scheme (Ar. Pradesh), PGCIL, Tayeng Building, Nitivihar, Itanagar-791111

अलीक

(ए. दे/A. De)

(उप निदेशक / Deputy Director)

MINUTES

OF

221st OCC MEETING

Time of meeting : 10:30 Hrs.

Date of meeting : 17th December, 2024 (Tuesday)

Venue : NERLDC Conference Hall, Guwahati

Contents

NORTH EASTERN REGIONAL POWER COMMITTEE

MINUTES OF 221st OCC MEETING HELD ON 17.12.2024 (TUESDAY) AT 10:30 HRS

1. PART-A: CONFIRMATION OF MINUTES

1.1. Confirmation of Minutes of 220th Meeting of OCC Sub-Committee of NERPC

The minutes of 220th meeting of OCC Sub-committee held on 27.11.2024 at NERPC Conference Hall, Shillong were circulated vide letter No. NERPC/SE (O)/OCC/2024/ 3159-3199 dated 5th December, 2024.

The following observation has been received from NERLDC vide e-mail dated 7th December-2024.

"Your kind attention may be drawn to ***agenda point. 3.1.*** *(Receipt of SEM data from 132 kV Budhjungnagar, 132 kV Ambassa, 132 kV Dharmanagar, 132 kV PK Bari & 132 kV SM Nagar (TSECL) Substations:). Deliberation of the Sub-committee against this agenda is mentioned in the MOM as follows*

"Tripura updated the forum that the meters have been received day before yesterday and installation of the new meters is pending."

As opined by NERLDC representative in OCCM, Tripura may assign 3 new DCDs received on said date, One for Dharmanagar(State) S/S, one for Ambassa(State) S/S and one for SM Nagar(State) & Budhjungnagar(State) S/Ss at the earliest. Hence, it is humbly requested to do the necessary modification in minutes and so as to cover Tripura's Receipt of 3 new DCDs along with said meter and the assignment of the DCDs to the aforementioned S/S."

Deliberation of the subcommittee:

Tripura confirmed the receipt of 3 nos. of DCDs which have been dispatched to Dharmanagar(State) S/S, Ambassa(State) S/S and for SM Nagar(State) & Budhjungnagar(State) S/Ss. Tripura further intimated that the remaining

works shall be completed by 21/12/2024 and the meters shall be reporting successfully from 23/12/24 (Monday) onwards.

The sub-committee thus confirmed the minutes of 220th OCC meeting with above modification.

The sub-committee noted as above.

2. PART-B: ITEMS FOR DISCUSSION

AGENDA FROM NERPC

2.1. Outage planning

I. Generation Planning (ongoing and planned outages)

a. In 217th OCCM, NEEPCO informed that they would provide daily inflow data for storage-type Hydro PS. NHPC also agreed to provide inflow data as per the NER operational data format. Based on that data provided from NEEPCO and NHPC present per day MU and projected number of days of operation.

Plants	Reservoir Level in meters (as on 09/10/2024)	MU Content	Present DC (MU)	No of days as per current Generation
Khandong + Khandong STG II	722.11	32	0.5928	54
Kopili	608.5	93	2.0007	46
Doyang	318.4	33	0.37445	88
Loktak	769.09	250	2.474	101

b. The outage of other generating stations may be approved considering the present water levels in reservoirs.

c. Outage Planning of Transmission elements

As per the Outage planning procedure of NER the planned outages approved in the OCC forum has to be reconfirmed by the availing utilities on 10:00hrs. of D-4 to 12:00 hrs. of D-3) to NERLDC in order to either avail the approved shutdown or cancel it.

If an outage is to be availed on say 10th of the month, the shutdown availing agency would reconfirm to NERLDC between 10 hrs. of 6th of the month to 1200 hrs. of 7th of the month. This practice is necessary to ensure optimal capacity utilization and the time required for associated system study/coordination by/amongst RLDC/NLDC.

Subsequently NER stakeholders have provided shutdown request for transmission elements for the month of December-2024. That is attached as **Annexure B.1**

Deliberation of the sub-committee

The sub-committee noted the shutdown proposals from each utility. All the shutdown proposals were deliberated extensively in the OCC forum as well as in the online meeting which was scheduled on 13/12/2024. The list of shutdowns approved for the month of January'25 is attached as **Annexure B.2.1**.

The sub committee noted as above.

2.2. Transmission Availability Certificate (TAC) for the month of October'24:

Transmission utilities have submitted the outage data for the month of October 2024. The attributability of outage of the said elements is being finalized by NERLDC and NERPC.

Availability certificate for the month of September'24 have been issued on 20.11.2024.

The availability percentages of utilities for July, August and September 2024 are as follows:

SN	Licensee	Availability for July'24(%)	Availability for August'24 (%)	Availability for September'24 (%)
1	NETC	99.6304	100.0000	99.8624
2	KMTL	100.0000	99.9843	100.000
3	NER-II TL	99.7803	99.8590	99.8072

4	PGCIL	99.8124	-	-
5	MUML(Sterlite)	100.0000	100.0000	99.7905

Deliberation of the sub committee

NERPC informed the forum that TAC of PGCIL shall be issued shortly.

The sub-committee noted as above.

2.3. Timely submission of shutdown proposals for OCC forum

As per the common outage planning procedure adopted by NERPC, indenting agency shall submit the proposed shutdowns by 3rd of the current month to NERPC and NERPC shall send the consolidated shutdown proposals by 6th of every month to NERLDC for necessary study.

Despite the stringent timeline, NERPC Secretariat has allowed the submission of shutdown proposals till 5th of every month so that the consolidated list can be sent for study by 6th of every month for study.

It has been observed that many utilities are still not submitting the shutdown proposals on planned basis for OCC forum and instead are availing shutdowns on D-3 basis. In many cases, planned OCC approved shutdowns need to be deferred to accommodate such D-3 proposals.

It is a humble request to all stakeholders to abide by the common outage planning procedure adopted by NERPC.

Deliberation of the sub committee

Member Secretary, NERPC advised all the constituents to abide by the common outage procedure adopted by NERPC. The forum also advised all the stake holders to avail the planned shutdowns as declared in the OCC approved shutdown lists. Further, the forum opined that the utilities should provide proper justification in case of non-availing of approved shutdowns.

The sub-committee noted as above.

AGENDA FROM NERLDC

2.4. Operational Performance and Grid discipline during November 2024:

Deliberation of the sub committee

NERLDC presented the Operational Performance and Grid Discipline Report for the month of November 2024(Annexure B 2.4).

The subcommittee noted as above.

2.5. Performance of online network estimation tools at RLDC

IEGC mandates RLDCs and SLDCs to utilize the network estimation tool integrated in their EMS and SCADA systems for the real time operational planning study. Also, performance of the online estimator tools shall be reviewed in monthly operational meetings as per IEGC clause 33 sub-clause2.

Quote:

"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."

Unquote

Performance Summary of the Online Estimation Tool for a sample dated 31.10.2024 is given below:

31-Oct-2024 12:40:00

31-Oct-2024 12:40:00

Difference & % Error of RTCA and RTNET

Constituents	SCADA	RTCA		RTNET	
		Difference	Error %	Difference	Error %
NER Generation	2192	298	11.00	330	12.00
NER Load	2193	195	7.00	330	7.00
Tripura	234	19	9.00	19	9.00
Assam	1330	368	20.00	368	20.00
Meghalaya	248	15	7.00	15	7.00
Manipur	92	16	22.00	16	22.00
Arunachal	114	21	18.00	21	18.00
Nagaland	99	5	5.00	5	5.00
Mizoram	77	15	39.00	15	39.00

Performance Summary of the Online Estimation Tool for a sample dated 30.11.2024 is given below:

30-Nov-2024 12:40:00

30-Nov-2024 12:40:00

Difference & % Error of RTCA and RTNET

Constituents	SCADA	RTCA		RTNET	
		Difference	Error %	Difference	Error %
NER Generation	1593	573	29.00	562	28.00
NER Load	1997	517	26.00	562	26.00
Tripura	181	14	7.00	14	7.00
Assam	1174	141	13.00	141	13.00
Meghalaya	242	45	16.00	45	16.00
Manipur	115	14	10.00	14	10.00
Arunachal	114	15	16.00	15	16.00
Nagaland	96	1	1.00	1	1.00
Mizoram	75	15	18.00	15	18.00

Performance Summary of the Online Estimation Tool for a sample dated 09.12.2024 is given below:

09-Dec-2024 12:40:41

Difference & % Error of RTCA and RTNET

Constituents	SCADA	RTCA		RTNET	
		Difference	Error %	Difference	Error %
NER Generation	1493	118	4.00	109	4.00
NER Load	1944	246	9.00	109	9.00
Tripura	166	24	9.00	24	9.00
Assam	1079	223	14.00	223	14.00
Meghalaya	253	27	8.00	27	8.00
Manipur	154	2	1.00	2	1.00
Arunachal	113	5	4.00	5	4.00
Nagaland	98	5	3.00	5	3.00
Mizoram	81	36	26.00	36	26.00

Deliberation of the sub committee

NERLDC intimated the forum that the mismatch between the data obtained from SCADA and data obtained from RTCA and RTNET is occurring due to lack of complete information about circuit breaker, isolator status etc. The forum advised NERLDC to share a consolidated list of all utilities whose status of circuit breaker and isolator along with status.

Based on request of Meghalaya representative, NERLDC intimated that a workshop on network estimation tool shall be held for all the NER utilities shortly.

The sub-committee noted as above.

2.6. Periodic testing schedule and actual testing update as per IEGC:

As per clause no. 40 of IEGC 2023, periodic tests have to be carried out on power system elements for ascertaining the correctness of mathematical models used for simulation studies as well as ensuring desired performance during an event in the system.

The general features are as follows:

(a) The owner of the power system element shall be responsible for carrying out tests and for submitting reports to NLDC, RLDCs, CEA and CTU for all elements and to STUs and SLDCs for intra-State elements.

(b) All equipment owners shall submit a testing plan for the next year to the concerned RPC by 31st October to ensure proper coordination during testing as per the schedule.

(c) The tests shall be performed once every five (5) years or whenever major retrofitting is done.

(d) The owners of the power system elements shall implement the recommendations, if any, suggested in the test reports in consultation with NLDC, RLDC, CEA, RPC and CTU.

Accordingly, a google sheet already shared earlier and based on All-India format the file has been updated. Link is as follows: *https://docs.google.com/spreadsheets/d/14BlwKwh6mSM7BifMU8uuIAxHRDj1TT348KyTB3pVTx4/edit?pli=1&gid=1213310128#gid=1213310128*

All GENCOS and POWERGRID are requested to update the report and conduct the test as per schedule and submit the report to NERLDC and NERPC.

Deliberation of the sub committee

Member Secretary, NERPC advised all the utilities to share periodic testing schedule (as mandated by IEGC) for each unit separately.

NTPC representative informed the forum that all the requisite tests have been completed for Unit#1 of BgTPP and the test reports shall be shared with NERLDC/NERPC. NTPC further intimated the forum that all requisite tests shall be carried out for Unit#2 shortly.

NEEPCO also intimated the forum that all requisite tests have been completed for Kopili HPS and the test report/results shall be shared with NERLDC.

The sub-committee noted as above.

2.7. Restoration of FSC (Fixed Series Compensator) Operation for Balipara-Bongaigaon Lines 3 & 4:

On 6th December 2024, a mock test was conducted to verify the operational health of the Fixed Series Compensation (FSC) on the 400 kV Bongaigaon – Balipara transmission lines 3 & 4. FSC were in off condition due to current flow in the circuits being below 300 A.

Test Procedure:

- HVDC Flow Increase: The test began by increasing the HVDC flow to 700 MW initially and further to 900 MW.
- Resulting Power flow: This increased the flow in each of the 400 kV Bongaigaon – Balipara circuits (3 & 4) to about 223 MW.

Operational Codes Issued:

Switching Code: 2024-25/12/357 (19:02 hrs) to bring FSC of Circuit 3 @ Balipara Substation into service.

Switching Code: 2024-25/12/358 (19:03 hrs) to bring FSC of Circuit 4 @ Balipara Substation into service.

Issue Encountered:

Despite multiple attempts, Powergrid could not open the Bypass Circuit Breaker of the FSC at the Balipara Substation, as it automatically closed as soon as the bypass CB open due to capacitive current imbalance.

NERLDC requested Powergrid to investigate and resolve the issue urgently and same has been intimated to Powergrid dated 09-12-2024 via mail (Annexure 2.7).

Deliberation of the sub committee

PGCIL representative intimated the forum that the issue of the bypass circuit breaker of the FSC at the Balipara substation has been resolved for Ckt 3 and

work is going on for Ckt 4. The entire work is expected to be completed by 21/12/2024.

The sub-committee noted as above.

2.8. Submission of harmonic measurement test report as prescribed by the Central Electricity Authority (CEA) and Central Electricity Regulatory Commission (CERC) Regulations

Referring to the Agenda C.12 of 216th OCC and 2.7 of 220th OCC forum, sharing of harmonics measurement test report from substation with NERLDC and CTUIL was sought. Additionally, a letter on the same was issued to all the transmission utilities on dated 01.10.2024. No report has been received from any of the utilities so far.

Transmission utilities are requested to ensure the completion of these test and to submit the reports to NERLDC and CTUIL as per the Annexure 2.8.

As recommended by NLDC, all transmission utilities are requested to install PQ meter for smooth monitoring and measurement of harmonic.

Deliberation of the sub committee

NERLDC intimated the forum that as per NLDC recommendation, all transmission utilities are required to install PQ meter for continuous monitoring and measurement of harmonic.

MS, NERPC opined that the matter will be taken up in the upcoming NPC forum in order to devise a unified approach for harmonic measurement keeping in mind the technical feasibility and financial aspect.

The sub-committee noted as above.

2.9. Preparedness for secured grid operation during winter season (winter advisory)

Winter season is experienced by NER states during December-March. For safe and secure operation of Grid during Winter Season, following actions are suggested by NERLDC:

- Ensure appropriate action for proper load – generation balance of respective systems by SLDCs
- MVAR absorption according to machine capability curve as per system requirement & operation synchronous condenser mode as per machine design ensuring frequency by Generators
- Appropriate action to keep Line loading and voltage within prescribed limit by SLDCs
- Proper cleaning of insulators by Transmission utilities & cleaning/replacement of Inlet air filters by Gas Plants wherever required to avoid tripping due to fog
- Availability of Bus/Line/Tertiary reactors needs to be ensured by utilities & shutdown of reactors in this period may be deferred

Deliberation of the sub committee

The forum advised all the stake holders to abide by the winter advisory as issued by NERLDC.

In the deliberation for winter preparedness of NER grid, the following was apprised:

SL No	**Elements**	**Action**
1	400kV Silchar-Byrnihat transmission line	Porcelain insulators are replaced with polymer ones at critical locations to avoid insulator puncture
2	Khandong Unit 1(2*50 MW)	Expected to be operational in May 2025
3	Khandong Unit 2 (2*50 MW)	Expected to be operational in July 2025.

4	3 units of Lower Subhansiri HEP (8*250MW)	Expected to be operational in March 2025.
5	5 units of Lower Subhansiri HEP (8*250MW)	Expected to be operational in May 2026

The sub-committee noted as above.

2.10. Early implementation of FGMO as per IEGC:

IEGC 2023 was effective for 01 October 2023 for all the utilities. Accordingly, the generating stations and units thereof with governors shall be under Free Governor Mode of Operation in accordance with clause 30(10)(d) of IEGC 2023. Also, the inherent dead band of a generating unit or frequency controller shall not exceed +/- 0.03 Hz and the governor shall be set with respect to a reference frequency of 50.000 Hz and response outside the dead band shall be with respect to a total change in frequency in compliance with clause 30 (10) (k).

Fuel/ Source	**Minimum unit size/Capacity**	**Up to**
Coal/Lignite Based	200 MW and above	±5% of MCR
Hydro	25 MW and above	±10% of MCR
Gas based	Gas Turbine above 50 MW	±5% of MCR (corrected for ambience

Table 2: Primary Response of various Types of Generating Units

All the generating units as per the table 2 shall have their governors or frequency controllers in operation all the time and the FGMO status signal

should be visible at (NERLDC for Central Sector Generating Stations and SLDC for Intra-State Generating Station) control centre for monitoring.

Accordingly, a google sheet has been shared earlier as follows:

https://docs.google.com/spreadsheets/d/1mKPf52okOT9LhBoxP6KNk6RNMMogmle2bVDAqo8mwU8/edit?gid=0#gid=0

All concerned generating stations are requested to submit the latest status of FGMO implementation (unit-wise) and take corrective actions.

Deliberation of the sub committee

NERLDC apprised the forum that all the eligible generating stations (ISGS)have implemented the FGMO.

The sub-committee noted as above.

2.11. Early implementation of SPS at BTPS S/s and non-compliance of BTPS ICT:

The 220/132 kV BTPS (Assam) substation is equipped with 2x160 MVA, 220/132 kV ICTs. The BTPS (Assam) substation supplies power supply to the areas of Kokrajhar, Bilasipara, Gauripur, Gossaingaon, Dhaligaon, APM, Barpeta, Nalbari, Barnagar, Nathkuchi, Kamalpur, Sipajhar, BGR, and Railway TSS within the Assam Power System.

As it is observed during the month of July: 84.21%, August: 88.43 % and September: 80.66% of the time loading of these elements together was more than 160 MW, thus not satisfying the N-1 contingency criterion. Tripping of one of these ICTs will result in reduction in reliability in BTPS (AS) Area of Assam Power System.

A short-term measure to address the N-1 contingency of the 2 x 160 MVA ICTs at BTPS, an SPS scheme was reviewed by NERLDC on 14th October 2024, with several suggestions provided for its implementation. However, no update has been received from AEGCL regarding the progress of this critical scheme. The delay in implementation remains a significant concern, as the non-compliance directly impacts the reliability and safety of the Assam Power

System in the BTPS area. AEGCL is once again urged to prioritize the implementation and commissioning of the SPS at the earliest to mitigate risks and ensure system reliability and same has been intimate via mail dated 09-12-2024. (Annexure 2.11)

Cooperation from all stakeholders is requested to support the safe, reliable, and integrated operation of the grid. This matter is submitted for the committee's kind information and necessary action.

Deliberation of the sub committee

AEGCL representative intimated the forum that proposal for funding for procurement of one no. 160 MVA transformer at BTPS substation is already submitted to MoP. However, due to funding issues the scheme has not been finalised yet.

OCC forum advised AEGCL that the proposal for the said project can be submitted to PSDF.

SLDC, Assam also apprised the forum that the SPS shall be operational within one month.

The sub-committee noted as above.

2.12. Update on commissioning of 220kV AGBPP – Namsai DC to ensure reliability of Arunachal system:

The commissioning of the 132kV Chapakhowa-Roing D/C line on July 4th, 2023, has significantly contributed to stabilizing the power grid in Arunachal Pradesh by reducing grid disturbances and ensuring a reliable power supply. However, the limited capacity of the 132kV Tinsukia-Ledo and 132kV Tinsukia-Rupai lines, which can handle approximately 60 MW, has restricted the full utilization of the Assam-Arunachal Pradesh interconnection. Frequent tripping incidents, primarily due to jumper breakages, have caused partial blackouts in both states, highlighting the need to strengthen these lines.

To further enhance the reliability and robustness of the regional power system, the early commissioning of the 220kV Namsai-Kathalguri (AGBPP)

D/C line is essential. This measure is critical for ensuring uninterrupted power flow, supporting economic growth, and fostering overall development in the region.

As per the 220th OCC forum, the expected commissioning of the 220kV Namsai-Kathalguri line is targeted for October 2025, subject to RoW issue.

Deliberation of the sub committee

Representative of Powergrid apprised the forum that 220 kV bus bar replacement work at Kathalguri end is also a part of the original scope of work. And for the said work support from NEEPCO is required. The forum advised NEEPCO to extend necessary support to Powergrid in completing the bus bar replacement work.

Further, the forum advised Powergrid to expedite the commissioning of 220 kV Namsai-Kathalguri line.

On query of Member Secretary, NERPC on revised DPR for reconductoring of 132 kV Tinsukia-Rupai and 132 kV Tinsukia-Ledo to PSDF ,Assam representative informed that the revised DPR was submitted to PSDF Secretariat on 12.12.2024.

The sub-committee noted as above.

2.13. Early restoration of Tower collapse and its update:

Sl. No	Element Name	Outage Date/Remarks	Revival Month	Impact on Grid and System Operation
1	132 kV Panchgram - Srikona	14-01-19	To be completed by March'2026	Reliability of the South Assam & Meghalaya power system has reduced.

2	132 kV Roing - Pasighat	Charged through ERS tower	Restored on 09.10.2024	Reliability of the Arunachal Pradesh power system has reduced.
3	132 kV Lekhi - Nirjuli-1	28-06-2022	Tower collapse in tower no. 12 near Lekhi. To be completed by March'2025	Line has been charged 132kV Pare-Lekhi-Nirjuli transmission line through the old 132kV LILO transmission line between NDTL and Lekhi S/s on 11-07-2022.
4	132 kV Pare - Lekhi-1	28-06-2022	Tower collapse in tower no. 12 near Lekhi. To be completed by March 2025	The line has been charged 132kV Pare-Lekhi-Nirjuli transmission line through the old 132kV LILO transmission line between NDTL and Lekhi substation on 11-07-2022.
5	220 kV BTPS - Rangia	21-06-2023	Tower collapse in tower no. 452 near Pub-Barsiral under Ghograpar revenue Circle. To be	The 220 kV BTPS-Rangia line I and II has been charged through ERS tower on 29th June and 05th

			completed by January 2025 on new tower as per Assam	July 23 respectively.
6	132kV Jiribam - Haflong line		Restored on 08-07-2024	Line was restored on ERS. Status as per 220th OCCM: By January'25. Work underway

Data Source: *Information given by concerned power utilities.*

Deliberation of the sub committee

The forum advised Assam to update the latest status for 132 kV Panchgram-Srikona TL.

PGCIL apprised the forum that OPGW works on 132 kV Roing-Pasighat shall be completed by January-2025. PGCIL further informed the forum that foundation work is under progress for132 kV Jiribam-Haflong TL and it may be completed by March-2025.

Assam apprised the forum that 220 kV BTPS-Rangia TL has been restored in December-2024.

The sub-committee noted as above.

2.14. TTC/ATC violation of states in Nov'24 and its measures:

In November 2024, high drawl from Tripura was observed, resulting in violations of state Total Transfer Capability (TTC) and Available Transfer Capability (ATC), thereby compromising grid security. We once again urge all utilities to strictly limit their power drawl within the defined TTC/ATC margins.

No. of Blocks, hours and percentage of time in which TTC/ATC violation observed during Nov'2024 is shown in table below:

TTC Violation:

Date	No. of Blocks in which violation observed	Total No. of Hours during which TTC violation observed In Hrs	Percentage of time violation observed In %
01-11-2024	12	3.00	12.5
03-11-2024	10	2.5	10.42
04-11-2024	17	4.25	17.71
11-11-2024	9.53	2.38	9.93
12-11-2024	6.00	1.53	6.39
13-11-2024	3.00	0.75	3.13

ATC Violation:

Date	No. of Blocks in which violation observed	Total No. of Hours during which TTC violation observed In Hrs	Percentage of time violation observed In %
01-11-2024	14	3.50	14.58
03-11-2024	12.00	3.00	12.50
04-11-2024	20.00	5.00	20.83
11-11-2024	13.07	3.27	13.61
12-11-2024	8.00	2.12	8.82
13-11-2024	6.00	1.48	6.18
14-11-2024	13.07	3.27	13.61
15-11-2024	0.60	0.15	0.63

Deliberation of 220th OCC Meeting as follows:

Tripura updated the forum that for reconductoring of the critical intra-state lines, proposal for state govt funding has been put up to the Government of Tripura. Further Tripura informed that tender has been floated for three new lines namely Monarchak - Ravindranagar, Rokhia - Udaipur and Ambassa – Kamalpur.

Deliberation of the sub committee

NERLDC apprised the forum that 3 nos. of transmission lines namely 132 kV SM Nagar-SM Nagar, 132 kV Bodhjumnagar-SM Nagar and 132 kV PK Bari (ISTS)-PK Bari are critical from grid operational point of view. The forum

advised Tripura to resubmit the DPRs for reconductoring of these lines under PSDF funding before December 2024.

The sub-committee noted as above.

2.15. Early commissioning of 80 MVAR Bus Reactor at Byrnihat to be replaced with 80 MVAR Reactor:

The persistent issue of the 400kV Byrnihat Substation being observed on the higher voltage side, which has necessitated the early commissioning of 80 MVAR Bus Reactor. The issue has been discussed/ raised since the 188th OCCM, it's crucial to emphasize the urgency of completing the replacement of the Bus Reactor. The reactor is out of service since December 2014.

In the latest 215th OCC meeting, MePTCL informed that Pre-commissioning tests going on and to be commissioned by June'24. It has been observed that the commissioning date has been extended in the latest 219th OCC meeting, MePTCL informed that the Bus reactor had been installed at site, but relay system was still pending. The work will be completed shortly.

In 220th OCC meeting, Meghalaya intimated the forum that the 80 MVAR Bus Reactor at Byrnihat shall be operational by first week of December-2024 tentatively.

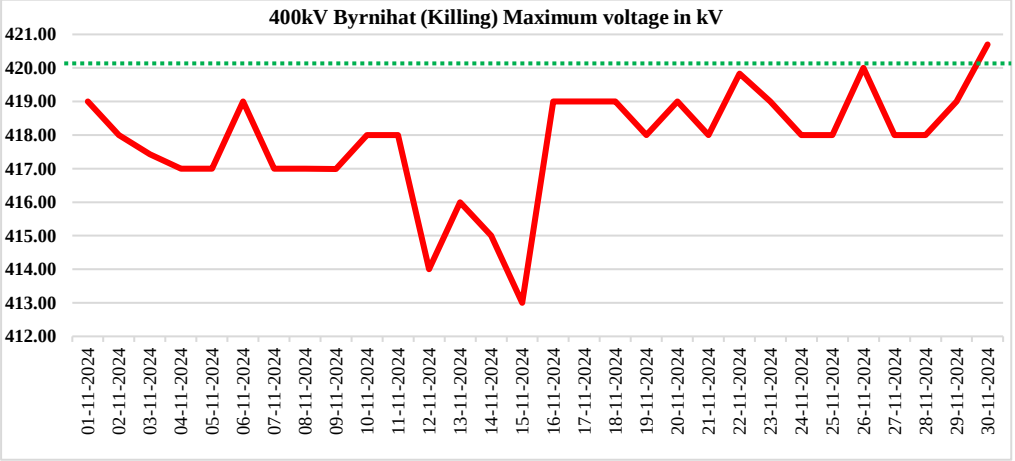
% of time voltage was outside IEGC band:

SL	400 KV S/S	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
1	AZARA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	BALIPARA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	BNC	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	BONGAIGAON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	BYRNIHAT	0.0	0.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
6	BgTPP (NTPC)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	IMPHAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	KAMENG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	MARIANI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	MISA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	NEW KOHIMA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	PALATANA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

13	PK BARI (INDIGRID)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	PAYNOR	0.0	3.2	0.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	SILCHAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	SM Nagar (INDIGRID)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Low VDI Medium VDI High VDI

The voltage profile analysis of the 400 kV nodes in the North Eastern Region (NER) for last 1 year indicates that, for the most part, the voltage levels were within the Indian Electricity Grid Code (IEGC) band, except for the 400 kV Byrnihat node and 400 kV Panyor Node which experience high voltage during December to March off-peak hours.



The installation of an 80 MVAR bus reactor at Byrnihat is expected to help in reducing the voltage, and it will contribute to a voltage reduction of approximately 6–8 kV at 400 kV Byrnihat node and 2 kV reduction at 400 kV Panyor node upon its commissioning.

MEPTCL may kindly expedite the installation process and take element into service before the end of this month.

Deliberation of the sub committee

MePTCL apprised the forum that the 80 MVAR bus reactor at Byrnihat is expected to be operational by 20/12/2024.

The sub-committee noted as above.

2.16. Mock Black start of Units in compliance with IEGC:

As per IEGC Clause 34 (3), The user shall carry out a mock trial run of the procedure for different sub-systems including black-start of generating units along with grid forming capability of inverter based generating station and VSC based HVDC black-start support at least once a year under intimation to the concerned SLDC and RLDC.

Accordingly, to facilitate this, a Google Sheet was shared on 21-10-2024 with all concerned utilities.as mentioned in below.

https://docs.google.com/spreadsheets/d/1trCif7KHJfWbToWTjqjvWG823WV5vepOismom7FskUs/edit?gid=0#gid=0

All utilities are requested to submit the latest status of planning related to mock black-start trials of units that are pending or yet to be conducted and to complete these activities within FY 2024-25 to ensure compliance with IEGC.

Deliberation of the sub committee

The sub committee opined that Mock Black Start exercise for Doyang can be explored in December-2024. NEEPCO will update on the feasibility of the same to the forum.

The sub-committee noted as above.

2.17. Implementation and commissioning of Arunachal Islanding Scheme (Capital area) and Upper Assam:

Itanagar Islanding Scheme:

Following the meeting held on 17.09.2024 with the Department of Power, Arunachal Pradesh (DOP, AP), the Itanagar Islanding Scheme has been finalized. A detailed summary of the meeting, including the Islanding Scheme details and the Dynamic Study, was circulated via email on 23.09.2024. The same is attached here as Annexure 2.17.

Note: The SMS and Salasar feeder at 132kV Lekhi S/S is currently included in AUFLS (stage I 49.4 Hz). These two feeders UFR setting needs to be changed at 47.8Hz and 47.7Hz respectively. As these feeders are identified as UFR for Load-Generation balance after island formation. Therefore, AUFLS load quantum at these two feeders are to be shifted outside Itanagar Island in Arunachal Power System.

It is requested to implement the Itanagar Islanding Scheme at the earliest.

Upper Assam Islanding Scheme:

Following the meeting held on 14.08.2024 regarding the Upper Assam Islanding Scheme, the scheme has been finalized. Both the dynamic study and the load-generation study have been completed.

As part of the implementation, the UFR Stage II setting of AGBPP Unit V and Unit VI is to be revised from 48.0 Hz to 47.5 Hz, with the inclusion of a time delay of 400 ms. A mail regarding this setting change has already been sent to NEEPCO.

Deliberation of the sub committee

For Itanagar Islanding scheme, Arunachal Pradesh agreed to change the frequency settings of SMS and Salasar feeders at 132kV Lekhi S/S to 47.8Hz and 47.7Hz respectively. As these feeders are identified as UFR for Load-Generation balance after island formation, DoP,AP agreed to shift AUFLS load quantum at these two feeders outside Itanagar Island in Arunachal Power System. Moreover, new loads will be identified for AUFLS scheme pertaining to the same load quantum as previous.

For Upper Assam Islanding scheme NEEPCO has implemented the UFR Stage II setting of AGBPP Unit V and Unit VI to 47.5 Hz, with the inclusion of a time delay of 400 ms.

The sub-committee noted as above.

2.18. Reliability Issue at 220 kV Kathalguri (AGBPP) - Tinsukia DC:

Kathalguri Generation of (NEEPCO is connected to NER grid through 220kV Kathalguri-Mariani (AS), Kathalguri - Mariani (PG), Kathalguri- Tinsukia 1 and, Kathalguri- Tinsukia 2 line.

On 27-11-2024 and 28-11-2024 there was OCC approved Bus-1 shutdown at Kathalguri SS. To facilitate the Bus shutdown, Outage of Kathalguri- Tinsukia 1, Kathalguri- Tinsukia 2 required as shifting cannot be done online due to damaged isolator.

The above-mentioned situation impacts the reliability of upper Assam generation. It is also pertinent to mention that AGBPS, Kathalguri S/S is of Double Main Type and hence, provision for Shifting Elements Online should be available at all times.

NEEPCO and Assam is therefore requested to look for possible mitigation strategies and ensure healthiness of Both isolators at all times.

Deliberation of the sub-committee

NEEPCO intimated the forum that the issue of the damaged isolator at AGBPS, Kathalguri S/S has been resolved and intimation regarding the same has been sent to NERLDC vide e-mail dated 13/12/2024.

ED, NERLDC intimated the forum that NERLDC shall share a consolidated list of all the uncharged elements like transfer bus and associated isolators, bus couplers etc. And the utilities are requested to charge these elements at least once in six months to ensure their healthiness. The time of charging shall be communicated by NERLDC in real time.

The sub-committee noted as above.

2.19. Infirm Power Injection by Generators before COD:

In accordance with the provisions of the IEGC and other relevant regulations, NERLDC has prepared a procedure. The document is attached for discussion by the members (Annexure 2.19).

Deliberation of the sub committee

NERLDC presented the draft procedure (**Annexure B 2.19**) for injection of infirm power by generators before COD.

NEEPCO and NTPC opined that submission of intimation for injection of infirm power before COD 30 days prior is difficult subject to unexpected grid scenarios. The forum opined that generators can submit a tentative intimation 30 days prior and the final intimation to be shared in requisite format 15 days advance.

The forum also advised all the stake holders to go through the draft procedure prepared by NERLDC and share the comments (if any) within 2 weeks.

The sub-committee noted as above.

2.20. Letter from CEA regarding Charging of Electric Supply lines without having obtained PTCC approval:

As per section 80 of "Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2023" specifies as follows:

"Protection against electromagnetic interference. – The owner of every electric supply line of voltage level 11 kV or above shall obtain the clearance of Power Telecommunication Co-ordination Committee to ensure the safety of the personnel and telecommunication line as per the requirement of section 160 of the Act."

In view of the above all transmission utilities (including STUs) are requested to furnish PTCC approval for transmission lines before first time energization and integration.

Letter dated 17.10.2024 from CEA is attached for your kind information and necessary action please (Annexure 2.20).

Deliberation of the sub committee

The forum advised all the FTC issuing authorities (RLDC, SLDCs and Discoms/NERPC) to be aware about the required PTCC approval before first time charging of elements. The forum opined that the matter shall also be taken up in upcoming CCM/RPC for information to Discoms.

The sub-committee noted as above.

2.21. Registration of state embedded generators in NOAR for facilitating sale of URS in the Power Market:

As of now, the state generators under APGCL (Assam) have registered in NOAR:

NERLDC has sent several request mails to both Tripura and Meghalaya dated 03.10.2024 and 03.11.2024 to get their respective state embedded generators registered in NOAR as urged to RLDC by NLDC.

The pending intra state generators include the following:

Utitilities/Stations	**State/UT**	**Capacity (MW)**	**Developer**
Kydremkulai	Meghalaya	60	Meghalaya Power Generation Corporation
Umiam Stg I	Meghalaya	36	Meghalaya Power Generation Corporation
Umiam Stg IV	Meghalaya	60	Meghalaya Power Generation Corporation
New Umtru	Meghalaya	40	Meghalaya Power Generation Corporation
Myntdu Stg-I	Meghalaya	126	Meghalaya Power Generation Corporation
Umiam Stg -II	Meghalaya	20	Meghalaya Power Generation Corporation
Baramura GT	Tripura	42	Tripura Power
Monarchak GT	Tripura	101	Tripura Power
Rokhia GT	Tripura	63	Tripura Power

NERLDC NOAR team therefore requests Tripura and Meghalaya to expedite the process of registration in NOAR and follow up with NERLDC for any clarification regrading doubts faced while registering in NOAR.

Deliberation of the sub committee

Representative of Tripura informed the forum that they do not have any URS power available right now. He further intimated that Tripura would proceed with the registration process once URS is available.

Representative of Meghalaya agreed to register the generators in NOAR.

The sub-committee noted as above.

AGENDA FROM POWERGRID

2.22. Upgradation of 02 Nos 400/220 KV 315 MVA ICTs at Balipara S/s POWERGRID

The 02 Nos. 400/220KV ICT available at Balipara S/s, with one 4x105 MVA Single Phase ICT(Make-TELK) was commissioned in the Year 1998 at Balipara SS under Khatalguri Transmission Line Project and the other Commissioned around 2014-15, Toshiba Make 315MVA 3 Phase Unit. The ICT facilitates power transfer from 400 kV side to 220 kV Lines connected at Balipara SS and plays a major part for the stability to NER Grid.

To further mention that One of the Transformers is in service for more than 26 Years.

The effect of such ageing has led to leakages- inaccurate Temperature recordings. Moreover, with addition of new generators the fault level of Balipara SS has increased significantly and the ICT is not capable of handling such fault current

From the operation point of view, as per data gathered from NERLDC, a single ICT is loaded as high as 260 MW during peak summer thus not fulfilling the N-1 criteria. The load flow pattern is attached herewith-

Thus, considering the deteriorating health condition of One of the Transformer and limitation of power handling capability during N-1 condition for the combined with the existing capacity, it is proposed for Upgradation to 2* 500MVA, 400/220 KV Transformers at Balipara Sub-station.

As per the deliberation of the 220th OCCM, the forum advised PGCIL and NERLDC to conduct necessary power flow studies and present the findings in the next OCC meeting. Further, the forum opined that if the findings require the augmentation of MVA capacity, the issue of upgradation of the ICTs shall be referred to in the CMETS meeting of CTU.

Deliberation of the sub committee

NERLDC presented the load study of 02 Nos. 400/220KV ICT available at Balipara S/s. As per the load study, the maximum combined loading observed in the ICTs is 343 MW .

For 97% of operating time, the combined loading of the ICTs remains below 250 MW. In the event of outage of one no. of ICT, 40% of the load is shifted to the other ICT. Hence, the system is N-1 reliant.

As such the forum opined that upgradation of the ICTs is not necessary as per the load study.

The sub-committee noted as above.

2.23. Procurement of cold spare transformers and reactor for Northern Eastern Region

CERC had set up a committee on dated 15.03.2018 consisting of representatives from CERC, NLDC, CEA & POWERGRID under the Chairmanship of the Chief (Engineering) of the CERC to assess the requirement of regional spares including bus reactors, line reactors, ICTs, etc. This would ensure reliability of the grid and reduce downtime in case of any failure/outage.

1. As per CERC Committee recommendation, the following spares transformers & reactors are required to be kept as spare for North Eastern Region as per POWERGRID assets base:

Transformer:

MVA Rating of Transformers	Voltage Rating	Total Installed unit in POWERGRID	Spare Required as per CERC report	RPC Approved Spares	Qty Proposed for procurement	Location/State of spare requirement
3Ø-315MVA	400/132/33 kV	1	1	0	1	Assam
3Ø-160MVA	220/132kV	6	2	1	1	Nagaland
3Ø-100MVA	220/132kV	2	2	1	1	Assam
3Ø-50MVA	132/33kV	4	2	1	1	Manipur
TOTAL:				**4**		
Tentative Cost				**43.94 Cr**		

Reactors:

MVAR Rating of Reactors	Voltage Rating	Total Installed unit	Spare Required as per CERC report	RPC Approved Spares	Qty Proposed for procurement	Spare requirement
3Ø-125MVAR#	420kV	6	2	1	1	Manipur
3Ø-63MVAR*	420kV	32	3	2	1	Manipur
3Ø-31.5MVAR	245kV	1	1	0	1	Nagaland
3Ø-20MVAR	245kV	1	1	0	1	Assam
3Ø-20MVAR	132kV	7	3	0	3	Manipur, Mizoram, Tripura
TOTAL:				7		
Tentative Cost				**34.56 Cr**		

Quantity considered for both 125MVAR & 80MVAR reactors in Manipur. In case of failure of existing 80MVAR reactor, replacement can be done with 125MVAR.

Quantity considered for both 50MVAR & 63MVAR reactors. In case of failure of existing 50MVAR reactor, replacement can be done with 63MVAR.

In view of the above, it is requested for approval for procurement of cold spare transformers & reactors of various ratings as per CERC. The tariff for the investment made is to be shared by constituents as per the provisions of CERC Regulation.

As per the deliberation of the 220th OCCM, the forum requested PGCIL to submit the complete details regarding state wise requirement of spares as well details of available spares. Accordingly, PGCIL has submitted the requisite details via e-mail dated 29/11/24. The list is attached as Annexure 2.23.

Deliberation of the sub committee

Representative of Tripura intimated the forum that they would submit their views in the next OCC forum.

Further, NERPC advised NERLDC to conduct a detailed study about the requirement of reactors, installed in short T/Ls(<100kM) and their impact on grid voltage. And if any reactor is found to be redundant (having nominal effect on the grid voltage) after the due study, the same can be taken out and be used as a spare.

The sub-committee noted as above.

2.24. Request for continuous shutdown of 132kV S/C Loktak-Imphal line for construction works:

It is to bring to your kind attention that reconductoring works for 132 kV S/C Loktak-Imphal Transmission Line under NERES-XIX Project have been awarded in North Eastern Region which is to be executed by POWERGRID. All the materials have been supplied at site and the executing agency has also deployed the required manpower for taking up the reconductoring works.

It may be mentioned that POWERGRID had requested M/s NHPC on 29.10.2024 for continuous shutdown of the subject line for the months of Nov-24 & Dec-24. However, NHPC had expressed that shutdown of their

HEP in the current season would not be viable as the water level in the dam is at the highest levels and all 3 nos. generating units are running at full capacity.

Further, M/s NHPC has intimated that the scheduled maintenance of all 3 units has also been postponed to Jan25 & Feb25. A copy of the minutes of meeting between POWERGRID and M/s NHPC at Loktak is enclosed.

The timely completion of above works is important for the improvement of power system in the state of Manipur as well as the region as a whole. As the shutdowns have not been concurred, the mobilized manpower by the agencies have also become idle.

Hence, we are requesting your good self to look into this matter and make necessary arrangements for sanctioning the shutdown for 45 days from 15.12.2024 onwards, so that the above transmission line can be upgraded to carry more power, which improves overall grid stability.

Deliberation of the sub committee

NERLDC informed that in case of s/d of the said line, only two lines (132kV Loktak-Jiribam and 132kV Loktak-Ningthounkong) will remain for evacuation of Loktak Power (135 MW) and considering the N-1 criteria of any of the lines, outage of one unit of Loktak is required in order to allow the s/d.

NHPC Loktak apprised the forum that the water level in the reservoir is full and in case of outage of any unit, spillage will occur. This will cause not only wastage of the natural resources but also the financial loss to NHPC.

He further intimated that the water level is expected to decrease by February-2025 and the shutdown can be allowed once the water level decreases to avoid spillage.

Forum opined that matter will be reviewed in the next OCC Meeting.

The sub-committee noted as above.

AGENDA FROM ARUNACHAL PRADESH

2.25. Overloading of 3X5 MVA,132/33 kV ICT at Ziro:

Ziro Electrical Division, DoP, AP has informed that due to over loading of 3X5 MVA, 132/33 kV ICT of PGCIL at Ziro, the concerned electrical division has to resort to load shedding of one number of 11 kV feeders at 33/11 kV sub-station at Ziro on rotational basis during peak hours. It is informed that maximum power drawl of Ziro feeder has been set at 200 A approximately at 33 kV level. Hence, any increase in load beyond 12 MW causes tripping of 33 kV old Ziro feeder. Shutdowns during evening peak hours is creating a lot of public resentment and badly affecting the tourism sector of Ziro.

Deliberation of the sub committee

PGCIL apprised the forum that the CTs at Ziro substation are already operating at 133% of normal continuous operating rating as against the advisable 120% MCR. DoP,AP and NERLDC further apprised the forum that the load at Ziro is expected to rise in the coming time.

The forum noted that the 15 MVA ICT at Ziro is not sufficient to meet the load requirement at Ziro. The forum advised DoP,AP to submit the demand forecast for the next 10 years.

Further, the forum referred the matter to CEMETS.

The sub-committee noted as above.

AGENDA FROM MIZORAM

2.26. Commissioning of 2 nos. of 132kV bays at Sihhmui Sub-station constructed by POWERGRID:

132kV substation Sihhmui was constructed to connect 132kV Sakawrtuichhun (Melriat PG) substation, and additionally 132kV substation of Luangmual, Kolasib, Zuangtui and Melriat which are owned by P&ED Mizoram. Due to inappropriate connection between bays and lines as per the

original scheme, it has become necessary to rearrange the entry of lines and bays. In order to meet this requirement, according to the mutually agreed conditions on a temporary basis the bays constructed by P&ED shall be utilized by POWERGRID, and similarly the bays constructed by POWERGRID shall be utilized by P&ED temporarily. As such, the bays constructed by P&ED has been utilized by POWERGRID with effect from 26th June 2020. However, the 2 nos. of bays constructed by POWERGRID is not yet ready for utilization by P&ED, even though necessary equipment have been installed, the two bays have not yet been officially commissioned.

Accordingly, P&ED has been requesting POWERGRID through letters and meetings vide letter no. T-13013/02/22-SE(APC)/26, dt. 4th July 2024, and letter no. T-13013/02/22-SE(APC)/23, dt. 21st June 2024, to commission the said bays. However, till date no favourable response is received from POWERGRID. Therefore, the matter is put up in the OCC forum for disposal.

Deliberation of the sub committee

PGCIL apprised the forum that 2 nos. of bays were constructed by POWERGRID at 132 kV Sihhmui substation. However, due to approach problems, PGCIL and Mizoram mutually agreed to interchange the bays. As per the agreement PGCIL would use the old bays of Mizoram until the new bays with equipment are handed over to POWERGRID by Mizoram. In the meantime, Mizoram would use the PGCIL commissioned bays.

PGCIL also apprised the forum that the bays at Sihhmui substation are already commissioned and are readily available for use by Mizoram.

Forum advised PGCIL and DoP Mizoram to hold a physical meeting along with necessary documents and bilaterally resolve the issue.

The sub-committee noted as above.

AGENDA FROM MEGHALAYA

2.27. Downward revision of Schedule by M/S Ranganadi HEP and Pare HEP

In this regard, we would like to bring to your kind attention that there were downward revisions observed executed by PARE Hydro Electric Project (HEP)

and Ranganadi HEP in the evening peak hours for the first half of the month of December, 2024.

Eg. 1. Revision of schedule on 10-12-2024 during Peak Hours: Upon reviewing the schedule and actual data available on the WBES portal, it has been observed that there was revision from the scheduled generation during peak hours on 10-12-2024. Actual schedule was from (16:15 hrs for Ranganadi HEP but it was revised to 17:15 hrs & for Pare HEP actual schedule was from 16:30 hrs but it was revised to 17:00 hrs. This revision has potential implications for our energy scheduling, and it is essential to address and rectify such discrepancies promptly.

Eg. 2. Revision of Schedule on 11-12-2024 during peak hours: In the Entitlement, the declared generation of Ranganadi HEP is w.e.f. 16:15 Hrs One Machine and w.e.f. 17:00 Hrs declared three Machines full load (46.13MW Meghalaya Share). Accordingly, as per the availability of power, Meghalaya has declared its Supply vrs Demand. But, due to downward revision of Ranganadi and Pare in the evening peak hours, it has become very difficult to meet the demand of the State. As you are aware that the cost of power during evening peak Hours is maximum @ Rs. 10 PU. To add to the high cost, there is no power available in the Real time market to purchase and supply to the already committed consumers. As a result of which it could have led the grid into instability and has led to technically and financially loss.

To add to the worsen scenario, it was observed that there was an upward revision during the morning hours w.e.f. 5:30 AM onwards which could have been declared during evening peak hours since the water level is still much below the FRL.

Such inaccurate and uneconomical declaration of Ex-PP availability (i) Leads to improper planning and uneconomical Grid operation (ii) Incurred revenue losses to the DISCOMs being the beneficiaries of LTA.

Deliberation of the sub committee

NERLDC apprised the forum that the downward revision was done to accommodate (as system requirement) the already approved shutdown of 400

kV BNC-Ranganadi TL. NERLDC further intimated the forum that such incident was a one-time event and shall not be repeated.

The sub-committee noted as above.

AGENDA FROM NTPC

2.28. NTPC Bongaigaon schedule below MTL

NTPC Bongaigaon is facing the problem of schedule below MTL on D Day in off peak hours. NTPC Bongaigaon remains committed to supplying affordable and reliable power to its beneficiaries. Furthermore, it is the only coal-based station contributing significantly to grid stability in North East region. In light of these factors, it is crucial to ensure the uninterrupted operation of the units by scheduling them at least up to their MTL. We kindly request all beneficiaries, along with NERLDC and NLDC, to provide schedules for NTPC Bongaigaon units above MTL.

Deliberation of the sub committee

NERLDC apprised the forum that IEGC Amendment is under implementation to ensure schedule at least up to MTL on D-Day for generators.

MS, NERPC advised NTPC to submit detailed case studies and mechanism for long term where both the generator and beneficiaries are in a win-win situation.

The sub-committee noted as above.

AGENDA FROM NEEPCO

2.29. Reconsideration on IEGC 2023 Clause 4 Regulation 49

As per IEGC 2023 Clause 4 Regulation 49 “any revision in schedule made in odd time blocks shall become effective from 7th time block and any revision in schedule made in even time blocks shall become effective from 8th time block”.

Because of this Clause, in cases of tripping of revision is allowed only from 7th or 8th 15-minute Blocks as highlighted above. In case the machine could be restored within a smaller duration, further revision for bringing the machine into grid is possible only after same number of blocks. In case of spurious tripping of Kopili machine it is possible to bring back units within 30 minutes of time.

Because of above mentioned longer duration of effective time of revision, in one hand grid suffers from possible increase of generation in the grid during upward revision even after machine becomes ready for generation. Again, during downward revision generating station suffers for applicable negative DSM charges although some tripping is not always under control. It seems that with present fast communication systems, change of these effective DC revision durations in 3rd block is possible for better interest of the Grid and the Power Stations.

Deliberation of the sub committee

MS, NERPC advised NEEPCO to submit the details of the difficulties faced due to time block restriction on schedule revision and proposed solutions to NERPC. After verification, NERPC Secretariat can flag the issue to CERC.

The sub-committee noted as above.

2.30. Request for providing a uniform schedule to avoid fuel restriction in respect of 135 MW AgGBPS

We would like to inform that AgGBPS plant is run by the fuel gas supplied by ONGC through GAIL. The gas grid of ONGC/GAIL in Tripura is isolated. The gas produced from ONGC well is uninterruptedly supplied to consumers through the integrated Tripura gas grid. Now, AgGBPS is facing acute problem due to uneven scheduling which is leading to disruption in uniform fuel gas supply and regulation of generation thereby. M/s GAIL & ONGC Ltd conveyed their concern related to our irregular gas drawal which is affecting their wells.

As per GSTA with GAIL, the fluctuation of fuel gas drawal on hourly basis is limited to 10% only. This clause sometimes becomes impractical whwn there is abrupt change in NERLDC generation schedule. It is very difficult to

maintain the gas quantity and pressure by our fuel gas supplier M/s GAIL & M/s ONGC Ltd in small isolated gas grid due to abrupt change in schedule. Under these circumstances, we are unable to generate as per our DC resulting in facing penalties in DSM by NERLDC. Also, we are forced to reduce our PAF.

It was also discussed in 214th OCC that with implementation of Ancillary Services it will become very difficult for our generating units to manage the high Ramp-up and Ramp-down which causes back pressure in isolated gas grid system. It is also observed that there is a trend of implementation of AS by reducing our generation schedule by reducing our PAF.

Deliberation of the sub committee

Forum opined that NEEPCO can refer the matter to CERC regarding the gas pressure/supply issues related to high ramp rate deviations due to Ancillary Services (AS). The forum further advised Tripura & NEEPCO to hold bilateral meeting in the 1st week of January-2025 and discuss the outcome of the same in the next OCC meeting.

The sub-committee noted as above.

AGENDA FROM NHPC

2.31. Approval of charging of 5MVA, 132KV/11KV Station Aux Transformer at Loktak

Our old 5MVA, 32KV/11KV Station Aux Transformer at Loktak, failed on 03 Aug 2022. Now new transformer of same rating has been purchased and reached at site. This will be ready for charging in the next 8-10 days. This is for the information and approval of the forum.

Deliberation of the sub committee

The forum noted the same and advised NHPC Loktak to follow the FTC procedure before charging the element.

The sub-committee noted as above.

3. PART-C: METERING ITEMS

3.1. Issue in Receipt of Data from Luangmual S/S

Weekly SEM data from 132 kV Luangmual (Mizoram) Substation is important for accounting of Mizoram drawal. However, SEM data for said substation is not being received since 11/11/2024. Issue with licence of Vinplus Software in Designated laptop has been reported by the concerned Substation. NERLDC requested Luangmual S/S to seek support from L&T personnel on the matter.

Deliberation of the sub committee

The forum advised Mizoram to take up the matter with L&T and resolve the issue by next OCC meeting.

The sub-committee noted as above.

3.2. Receipt of SEM data from 132 kV Budhjungnagar, 132 kV Ambassa, 132 kV Dharmanagar, 132 kV PK Bari & 132 kV SM Nagar (TSECL) Substations:

As per 175th OCCM dated 18th Feb 2021 agenda D.12, Indigrid and Powergrid NERTS were given responsibility to collect and send SEM data on weekly basis for Tripura owned substations viz 132kV Ambassa S/s,132kV Budhjungnagar S/s, 132 kV PK Bari S/s and 132 kV SM Nagar S/s for the interim period, due to shortage of DCDs. The relevant extracts are furnished below

Quote:

"The forum noted that due to the existing shortage of DCDs, the same cannot be provided to Tripura for some time for new locations. This creates difficulty in getting SEM data from Budhjangnagar, Ambasa, PK Bari and SM Nagar. The Matter was discussed and it was decided that during the interim period Powergrid NERTS will provide readings from PK Bari and SM Nagar of Tripura

and Sterlite will provide readings from Budhjangnagar and Ambassa of Tripura."

Unquote

As per IEGC 2023 Clause 49(12)(e) entity shall be responsible to send weekly meter data to RLDC. The relevant extracts are furnished below

Quote:

"Entities in whose premises the IEMs are installed shall be responsible for (i) monitoring the healthiness of the CT and PT inputs to the meters, (ii) taking weekly meter readings for the seven day period ending on the preceding Sunday 2400 hrs and transmitting them to the RLDC by Tuesday noon, in case such readings have not been transmitted through automatic remote meter reading (AMR) facility (iii) monitoring and ensuring that the time drift of IEM is within the limits as specified in CEA Metering Regulations 2006 and (iv) promptly intimating the changes in CT and PT ratio to RLDC."

Unquote

In 220th OCCM, Tripura updated the forum that the DCDs and meter have been received on 25/11/2024. NERLDC requested Tripura to assign 3 new DCDs received on said date, One for Dharmanagar (State) S/S, one for Ambassa (State) S/S and one for SM Nagar (State) & Budhjungnagar (State) S/Ss at the earliest.

Deliberation of the sub committee

Tripura confirmed the receipt of 3 nos. of DCDs which have been dispatched to Dharmanagar(State) S/S, Ambassa(State) S/S and for SM Nagar(State) & Budhjungnagar(State) S/Ss. Tripura further intimated that the remaining works shall be completed by 21/12/2024 and the meters shall be reporting successfully from 23/12/24 (Monday) onwards.

The sub-committee noted as above.

3.3. High Time Drifted SEMs:

Time drift in SEMs may result in computational errors in Regional Energy Accounts & Weekly Loss. All constituents in whose premises the meters are installed are required to take corrective action for the same. Time drift of more than 2 mins observed in the following meters:

Sl. No.	Entity	Feeder Name	Meter No	Time Drift	Remarks
1	Tripura	132 kV Udaipur End of Palatana FDR	NP – 8470 A	Around 30 mins	Since 210th OCCM

Constituents are also requested to regularly check and rectify Time Drift of SEMs situated in their premises.

All Constituents are also requested to submit Time Drift Report without fail to NERLDC.

Deliberation of the sub committee

Tripura apprised the forum that the issue shall be resolved by 21/12/2024.

The sub-committee noted as above.

4. PART-D: ITEMS FOR UPDATE/FOLLOW-UP

4.1 Status of ADMS:

Status for Automatic Demand Management Scheme in 7 States of NER.

Name of the utility	SAT Completion	DoCO
DoP Ar.Pradesh	27-01-2021	Enabled & in-operation
AEGCL/APDCL	07-12-2020	Enabled & in-operation
MSPCL	24-11-2020	Enabled & in-operation
MePTCL/MePDCL	31-08-2020	Enabled & in-operation
P&ED Mizoram	22-02-2021	Enabled & in-operation
DoP Nagaland	17-11-2020	Enabled & in-operation
TSECL	24-12-2020	Enabled for two substations while yet to be enabled for other three substations

In 214th OCCM, TSECL updated that LoA for ADMS installation at Takerjhala, Bishalgarh, Khyarpur and Manu has been issued in Feb'24 and work to be completed by June'24

In 217th OCCM, TSECL updated that at Kyarpur and Manu, inspection has been done and LoA will be issued after receipt of the price offer this month.

In 218th OCCM they have started to identify load point that can be relieved in case of operation of ADMS for SM Nagar, and Bishalgarh.

Status of ADMS in Tripura

i. Feeders where ADMS is installed

Sl. No.	Name of Feeder	Area Under The Feeder	Load in MW
1	BISHALGARH 33-11 KV	STATION, LALSINGH MURA, DURGA NAGAR, KADAMTALI, BAZAR	4.9
2	TAKARJALA 33-11 KV	FACTORY GOLAGHAT, TAKARJALA, JAMPUIJALA, GABORDI, MOHARAM GOLAGHATI	4.4
2	S M NAGAR 132-33-11 KV	KANCHANMALA, ANANDA NAGAR, STATION, RANIKHAMAR, CHOWMUHONI BAZAR	3.8

ii. Expected load to be relieved when ADMS operates

Sl. No.	Name of Feeder	Area Under the Feeder	Load in MW
1	BISHALGARH 33-11 KV	LALSINGH MURA, DURGA NAGAR, KADAMTALI	3.2
2	TAKARJALA 33-11 KV	FACTORY GOLAGHAT, TAKARJALA, GABORDI, MOHARAM GOLAGHATI	3
2	S M NAGAR 132-33-11 KV	KANCHANMALA, ANANDA NAGAR, RANIKHAMAR	2.5

iii. Setting of each feeder

Overdraw: 40MW or 20% of schedule when frequency < 49.85 Hz

Note: 1. ADMS not operated in last 6-7 months (Jan'24 – August'24).

2. Shifting work is completed for Bishalgarh and Takarjala Sub-station.

In 219th OCC, TSECL apprised the forum that the shifting works are still underway and is expected to be completed in 3 months' time.

Members will update the latest status via e-mail to NERPC.

4.2 Implementation/Review of Islanding schemes of NER:

As per Clause 10 of the Central Electricity Authority (Grid Standards), Regulations, 2010: "Islanding Schemes- (1) The Regional Power Committees shall prepare Islanding schemes for separation of systems with a view to save healthy system from total collapse in case of grid disturbance. (2) The Entities shall ensure proper implementation of the Islanding Schemes". In this regard the Islanding schemes which are being planned/have been implemented in NER are mentioned below, along with the updates from 218th OCCM.

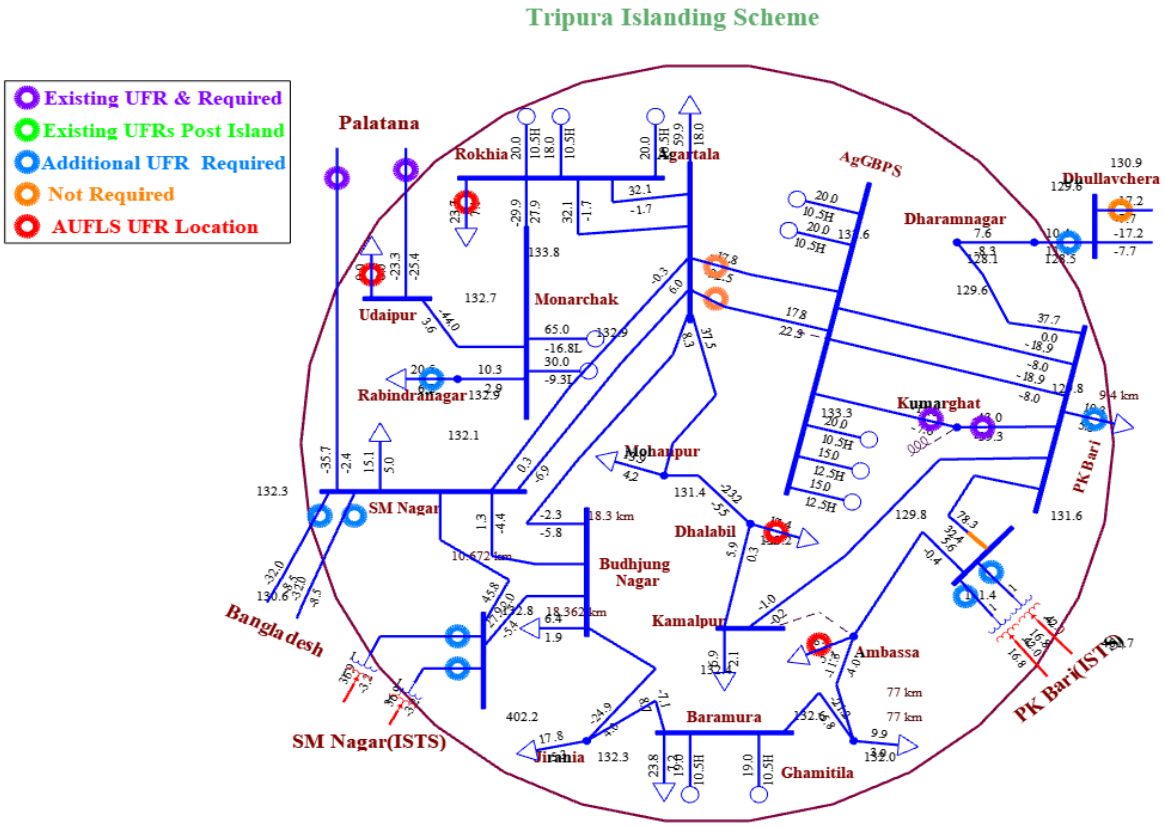
A. Guwahati Islanding Scheme

Assam updated that modified DPR has been sent to PSDF.

B. Tripura/Agartala Islanding Scheme

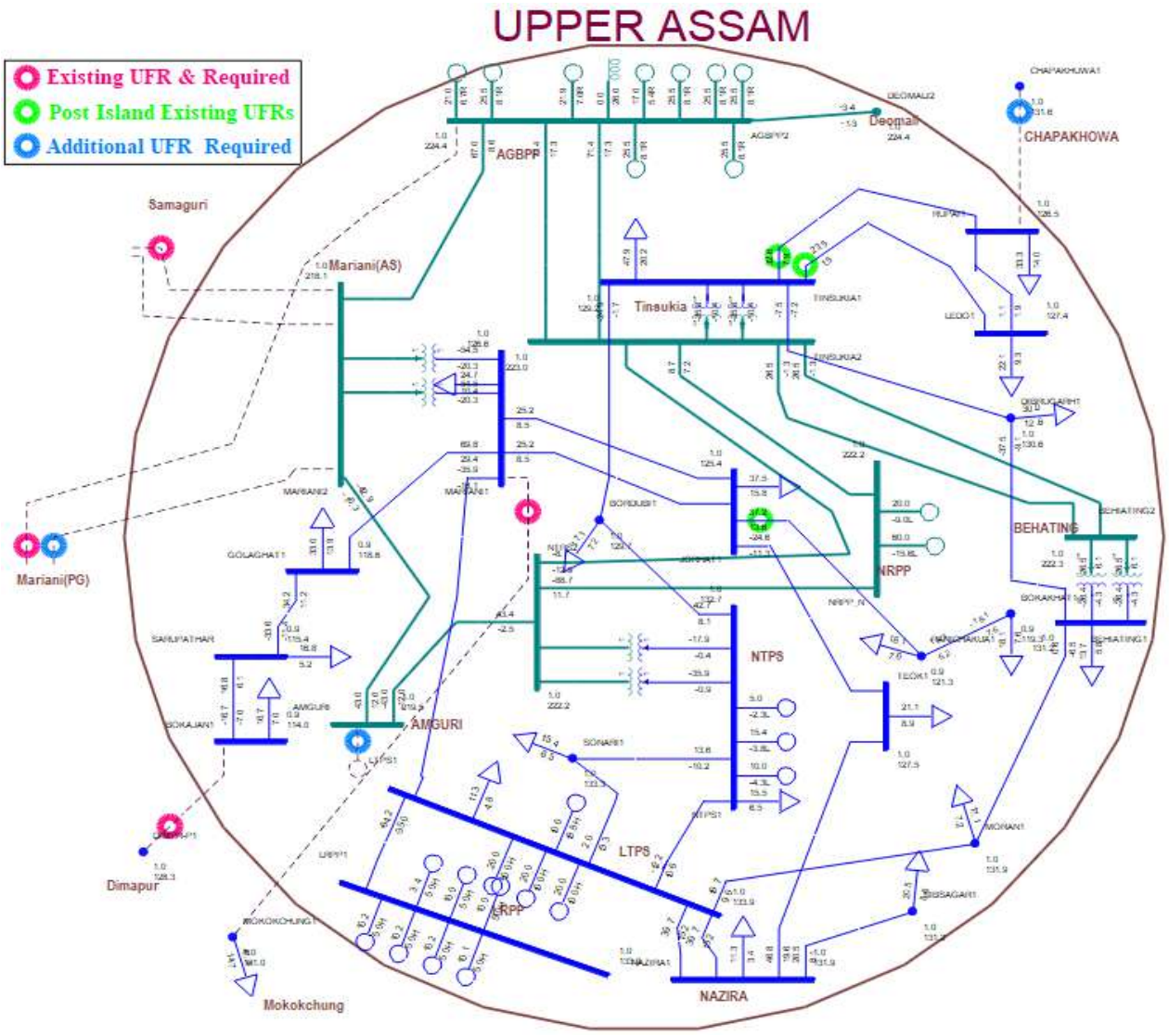
NERLDC informed forum that required format was shared with Tripura.

NERLDC have also apprised forum that generation data form Tripura along with load data yet to be received from Tripura. Forum requested Tripura to provide all the required data at earliest.



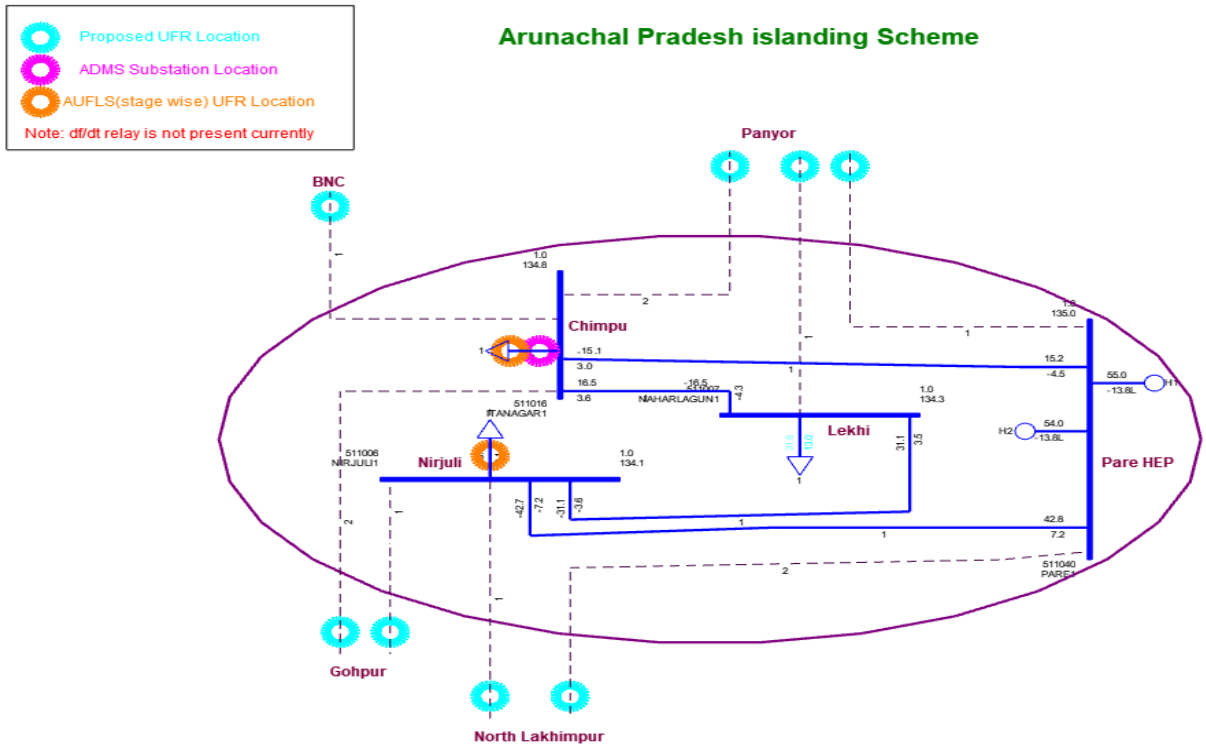
C. Upper Assam Islanding Scheme

Assam informed forum that NTPS was a very old power station and they did not have the data as required for updation for islanding scheme. For LTPS, regarding change in frequency settings, communication has been done with BHEL and we are awaiting response from their end. For LRPP, Stage I frequency setting is alarm and Stage II frequency setting is Trip. Forum asked NEEPCO and AEGCL to make the necessary changes and update their settings in consultation with their respective OEMs.



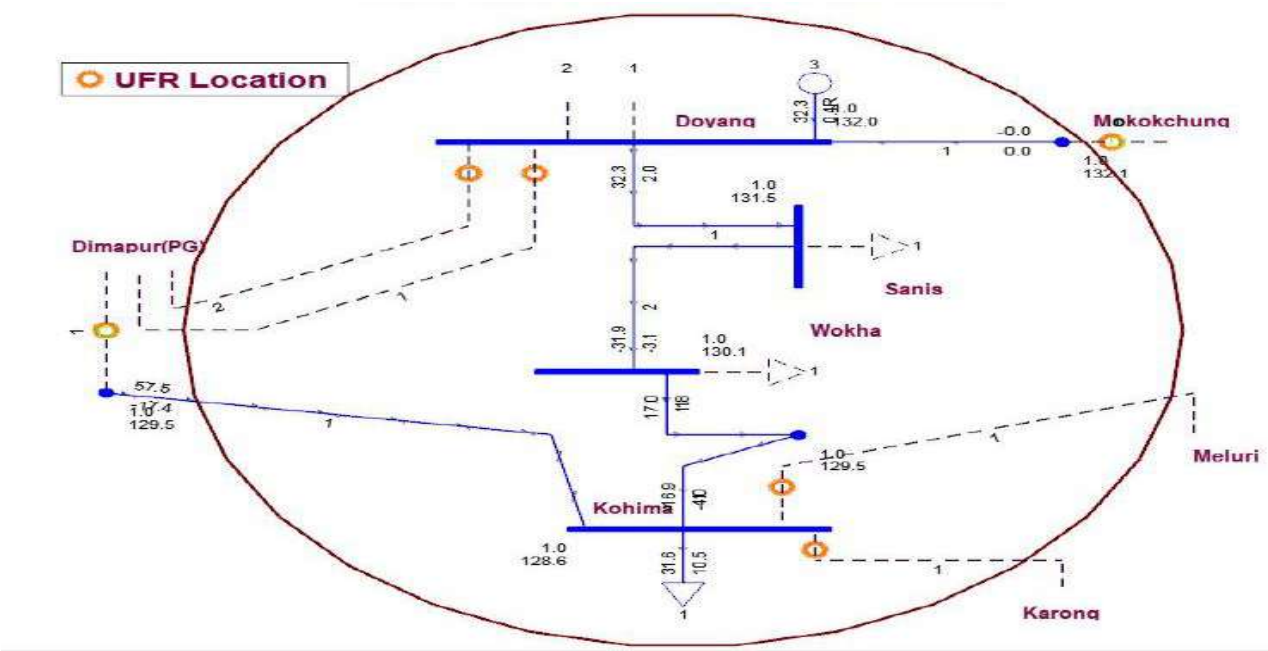
D. Itanagar Islanding Scheme

Arunachal Pradesh informed that the required load data had been submitted to NERLDC.



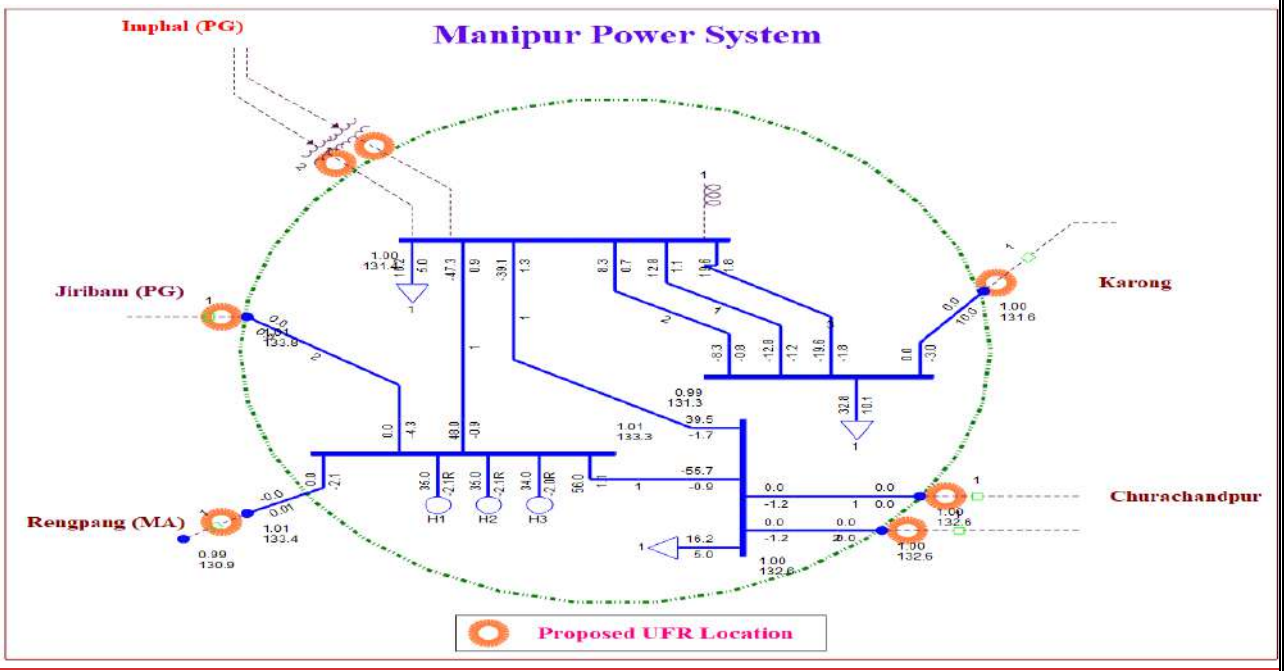
E. <u>Kohima Islanding scheme</u>

DoP Nagaland updated that the DPR preparation was underway, as they have not received budgetary offer from vendor. MS, NERPC urged DoP Nagaland to take the budgetary offer from a vendor at the earliest so that the same may be got approved in the upcoming RPC meeting.



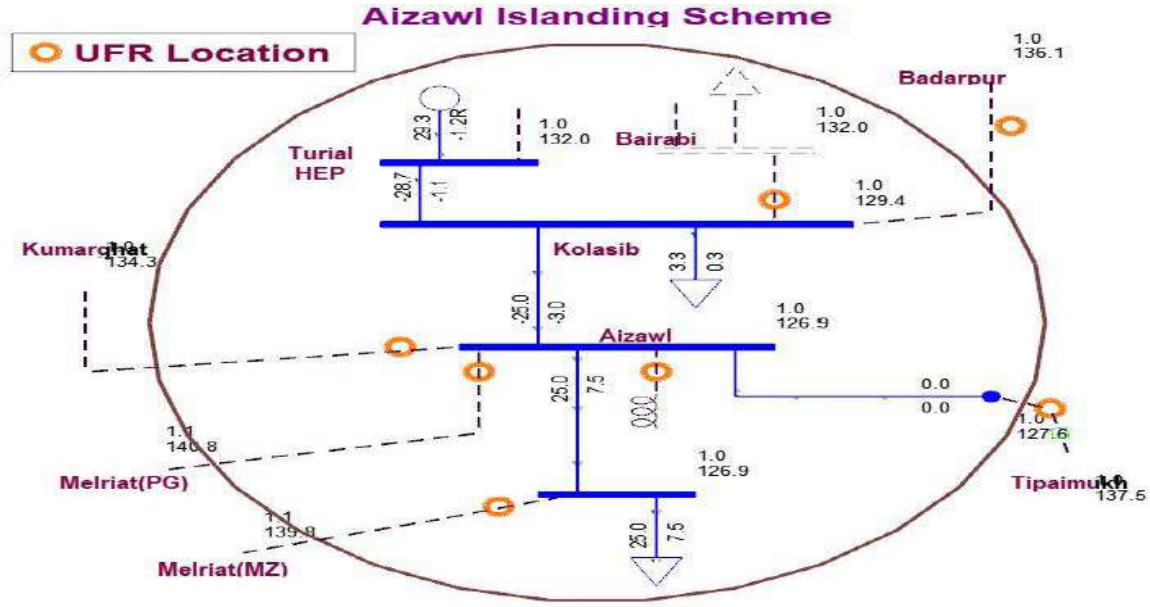
F. Imphal Islanding scheme

Manipur informed forum that due to law-and-order situation AUFLS mapping was pending from sub-station's end and assured to provide the required data shortly. NERLDC stated that data from NHPC was yet to be received. NHPC stated that they would provide required data shortly.



G. Aizawl Islanding scheme

Mizoram informed that the required load data had been provided to NERLDC. The forum stated that a special meeting would be held shortly to finalize the scheme.



H. Meghalaya/Shillong Islanding Scheme

NERLDC requested Meghalaya utilities to provide the load and generation data at the earliest as format for data had already been shared with Meghalaya.

MS, NERPC has urged all the stakeholder to expedite the process so that this Islanding Scheme can be approved in next RPC meeting. Schematic diagram is under process.

The following deliberations followed in 220th OCCM:

Tripura/Agartala Islanding Scheme:

NERLDC apprised the forum that all the data has been received from Tripura. Dynamic study has been completed and Load-Generation study is under way.

Upper Assam Islanding Scheme:

NERLDC apprised the forum that dynamic study as well as Load-Generation study has been completed. However, NEEPCO is required to submit the UFR settings for 2 nos. of units of AGBPP. NEEPCO agreed to

submit the information at the earliest. Assam may prepare the DPR post submission of data by NEEPCO.

Itanagar Islanding Scheme:

NERLDC apprised the forum that all necessary study has been completed. Arunachal Pradesh may prepare the DPR for Itanagar Islanding Scheme.

Kohima Islanding Scheme:

NERLDC apprised the forum that dynamic data has not been received from Doyang completely. As such dynamic study is pending. NEEPCO agreed to share the data at the earliest to NERLDC.

Imphal Islanding Scheme:

NERLDC apprised the forum that data from NHPC Loktak has been received. Manipur has identified the 33 kV feeders but are yet to share load-generation data for the identified feeders. Dynamic study is going on.

Aizawl Islanding Scheme:

NERLDC apprised the forum that dynamic data has not been received from Turial. NEEPCO agreed to share the data at the earliest. Mizoram also intimated the forum that exploration for a change in feeders is under way as per priority. Load-generation data for such feeders shall have to be shared with NERLDC.

Shillong Islanding Scheme:

Meghalaya apprised the forum that the old machine at Umium stage III is being replaced with a new machine. As such, NERLDC requested Meghalaya to share dynamic data for Umium Stage I, Stage II and Stage IV and also for New Umtru.

Members will update the latest status via e-mail to NERPC.

4.3 Automatic Under Frequency Load shedding (AUFLS) scheme of NER:

Status as updated in 219th OCCM

Name of the State/utility	Installation of UFRs	Status of mapping
Ar. Pradesh	Completed	DoP Arunachal Pradesh stated that mapping of feeder at Lekhi SS (Industry feeder, stage 1) will be carried out by end of Oct'24. For rest of the feeders and substations, coordination with GE is underway and will be taken up gradually.
Assam	Completed	Completed
Manipur	UFR installed but not enabled as system integration work is underway, to be completed by Aug'24.	Mapping is pending from substations end, which is being hampered due to Law & Order situation in the State. It is in the last stage of integration (90%) and will be completed by Aug'24.
Meghalaya	Completed	Completed
Mizoram	Completed	Coordination with GE is underway for mapping, completion by Sep'24.
Nagaland	Completed	Completed
Tripura	Completed	All mapping done except for Ambassa SS due to communication link issue. To be done by next NeTEST meeting.

Forum noted the status updated as provided in the above table. NERPC informed that AUFLS quantum has been revised for NER for the FY 2024-25 and presented the revised quantum for load shedding to the forum, which is provided below:–

UFR load shedding for NER States for the FY 2024-25

State	stg I (MW)	Stg II	Stg III	Stg IV
Ar. Pradesh	8.659594937	10.39151392	12.12343291	12.12343291
Assam	112.3419494	134.8103392	157.2787291	157.2787291
Manipur	11.54612658	13.8553519	16.16457722	16.16457722
Meghalaya	18.85556962	22.62668354	26.39779747	26.39779747
Mizoram	7.542227848	9.050673418	10.55911899	10.55911899
Nagaland	8.100911392	9.721093671	11.34127595	11.34127595
Tripura	16.85362025	20.2243443	23.59506835	23.59506835
Total	183.9	220.68	257.46	257.46

For FY 2023-24 (already under operation)

State	stg I (MW)	Stg II	Stg III	Stg IV
Ar. Pradesh	10	14	12	10
Assam	90	125	113	115
Manipur	10	10	10	10
Meghalaya	25	25	25	25
Mizoram	5	5	5	5
Nagaland	10	10	10	10
Tripura	15	12.2	21.2	30
Total	165	201	196	205

The forum requested the States to implement the revised load shedding quantum within two months.

As per IEGC provisions, Tripura is requested to provide the MW and CB status data for further mapping activities.

The forum requested RLDC to prepare a feeder-wise report (MW and CB status) for those States that have completed the mapping and present it at the next OCC meeting

DoP, AP apprised the forum that new loads have been identified but new UFR scheme has not been implemented yet. DoP,AP further apprised the forum that the new UFR scheme shall be implemented by March-2025.

Assam apprised the forum that revised load quantum shall be implemented in 10-12 days.

Manipur apprised the forum that the new UFR scheme shall be implemented in three months' time.

Meghalaya updated that the additional load identification (for stg III and IV) is underway.

Mizoram apprised the forum that new loads have been identified and UFR will be implemented on these feeders shortly

Tripura apprised the forum that new loads have been identified for implementation of UFR. He further informed that Mapping at Ambassa is still pending due to communication link issue.

Deliberation of the sub committee

Arunachal Pradesh, Assam and Meghalaya apprised the forum that the new UFR load shedding scheme shall be implemented by January-2025.

The sub-committee noted as above.

4.4 Monthly Review of LGBR

PARTICULARS (Peak Demand in MW as per LGBR vs Actual)	Aug-24 (LGBR)	Aug-24 (Actual)	Sep-24 (LGBR)	Sep-24 (Actual)	Oct-24 (LGBR)	Oct-24 (Actual)
Arunachal Pradesh	170.24	186	174.39	194	180.84	170
Assam	2933.00	2524	2823.00	2812	2756.00	2262
Manipur	225.00	213	223.60	235	223.40	226

Meghalaya	385.00	359	390.00	317	380.00	354
Mizoram	137.00	130	147.00	148	145.00	136
Nagaland	191.60	188	191.20	184	187.00	176
Tripura (exc. Bangladesh)	368.06	359	379.65	376	354.00	333
NER DEMAND (exc. Bangladesh)	3851.10	3764	4045.80	3936	3759.80	3482

PARTICULARS (Energy Requirement in MU as per LGBR vs Actual)	Aug-24 (LGBR)	Aug-24 (Actual)	Sep-24 (LGBR)	Sep-24 (Actual)	Oct-24 (LGBR)	Oct-24 (Actual)
Arunachal Pradesh	177.87	98.627	148.91	92.642	111.04	85.779
Assam	1647.00	1379.249	1476.00	1399.326	1156.00	1071.669
Manipur	92.00	74.102	89.00	76.968	97.00	80.690
Meghalaya	218.32	172.613	219.00	136.361	220.00	154.880
Mizoram	78.76	54.084	79.80	56.046	78.76	56.529
Nagaland	106.00	80.122	96.30	84.694	89.00	77.279
Tripura (excl. Bangladesh)	200.40	209.847	176.72	190.18	174.38	220.047
NER DEMAND (exc. Bangladesh)	2520.35	2068.642	2285.73	2036.217	1926.18	1747.493

LGBR projection for November'24, December'24 and January'25

PARTICULARS (Peak Demand in MW as per LGBR)	Nov-24 (MW)	Nov-24 (MU)	Dec-24 (MW)	Dec-24 (MU)	Jan-25 (MW)	Jan-25 (MU)
Arunachal Pradesh	185.00	92.32	184.70	108.85	187.37	111.21
Assam	2020.00	935.75	1761.00	923.00	1761.00	951.00
Manipur	252.73	98.00	283.65	118.00	275.31	129.00
Meghalaya	425.00	234.00	450.00	253.00	465.00	259.00
Mizoram	157.00	78.77	166.00	82.91	184.00	86.02

Nagaland	190.00	82.00	190.00	86.00	190.00	82.00
Tripura (exc. Bangladesh)	321.56	116.63	279.53	99.17	282.00	110.60
NER DEMAND (exc. Bangladesh)	3324.98	1637.48	3250.16	1670.92	3247.18	1728.83

Deliberation of the sub committee

The sub committee noted the LGBR data for NER grid till January-2025.

The sub-committee noted as above.

4.5 Long Outage of NER State Generator and transmission lines:

The following NER State generators and Transmission lines are under long outage since long time. Considering the increasing demand trend and reliable power supply in the Region, respective utilities are requested to take necessary action to restore the mentioned units as follows:

Unit Details	Outage time	Reason	Expected Date
Baramura Unit 4	11:15 Hrs of 08-02-2023	Excitation problem.	
NTPS Unit 2	15:04 Hrs of 02-09-2023	Low Gas Pressure.	
Baramura Unit 5	20:17 Hrs of 26-03-2024	Gas fuel hydrolic trip low.	

Transmission Line	Outage time	Reason	Expected Date
400kV Imphal - Thoubal I	13:32 Hrs of 18-10-2021	Tripped on DP, ROW issue. Expected revival not furnished	
132kV Kohima - Meluri	10:05 Hrs of 27-09-2023	S/D taken by Kohima transmission div for dismantling of Tower no. AP 130	
132 kV Jiribam-Rengpang	18:18 Hrs of 17-11-2023	Tripped on Earth fault	

In 219th OCCM, utilities updated as under: -

Generating units-

Sl. No	Unit details	Utility	Update on revival
1	Baramura Unit 4	TPGCL (Tripura)	Out due to shortage of gas
3	Baramura Unit 5	TPGCL	Out due to shortage of gas
4	LTPS Unit 7	APGCL	OEM parts ordered. Expected by Feb-25

Transmission lines-

Sl. No	Element	utility	Update on revival
1	400 Imphal-Thoubal ckt I &II	MSPCL	Ckt I - ROW, Litigation pending in court. Ckt II is already charged on 14th September 2024.
2	132kV Kohima-Meluri	DoP Nagaland	NHIDLC payment pending. 3 months after the payment
3	132kV Jiribam-Rengapng	MSPCL	Line partially charged. i.e. sectionalize charged upto Nongba from the Rengpang end (a distance of 5 km). The section from Nongba to Jiribam (Manipur) is yet to be charged which is around 45 km. Full charging will take time as no access to the affected area. Expected by December-24.

Members will update the latest status via e-mail to NERPC.

4.6 Methodology for calculation of FRO of Intra-State entities:

Methodologies to assign FRO to its intra-state entities. These are given below:

Method-I: FRO allotted to a State control area to be distributed only among the intra-State generating stations giving due consideration to generation within the State control area and details as given in Table 4 under sub-clause(g) of Reg. 30 Clause (10) of CERC (IEGC) Regulations, 2023. The FRO in MW/Hz shall be calculated as:

$$\textbf{FRO} = \left(\frac{Average\ Generation\ of individual\ generating\ station}{Sum\ of\ Avg.\ Generation\ of\ all\ considered\ generating\ stations}\right) *$$

$$FRO\ alloted\ to\ the\ state\ control\ area$$

Method-II: FRO allotted to a State control area to be distributed among the intra-state generating stations and load, giving due consideration to generation and load within the State control area and details as given in Table 4 under sub-clause(g) of Reg. 30 Clause (10) of CERC (IEGC) Regulations, 2023. The FRO in MW/Hz shall be calculated as**:**

$$\textbf{FRO} = \left(\frac{Average\ Generation\ of individual\ generating\ station}{Sum\ of\ Avg.\ Generation\ of\ all\ considered\ generating\ stations + Average\ Demand\ of\ State\ Control\ Area}\right) *$$

$$FRO\ alloted\ to\ the\ state\ control\ area$$

Method-III: FRO alloted to a State control area to be distributed among the intra-state generating stations and load giving due consideration to generation within the State control area and details as given in Table 4 under sub-clause(g) of Reg. 30 Clause (10) of CERC (IEGC) Regulations, 2023. The demand response to be considered equal to the maximum 4% of Average Demand per Hz

$$\textbf{FRO} = \left(\frac{Average\ Generation\ of individual\ generating\ station}{Sum\ of\ Avg.\ Generation\ of\ all\ considered\ generating\ stations - Demand\ Response(4\%\ of\ Avg.Demand\ per\ Hz)}\right) *$$

$$FRO\ alloted\ to\ the\ state\ control\ area$$

Method –IV: FRO alloted to a State control area to be distributed only among the intra-State generating stations giving due consideration to generation and

load within each control area across the All-India grid and details as given in Table 4 under sub-clause(g) of Reg. 30 Clause (10) of CERC (IEGC) Regulations, 2023. The FRO in MW/Hz shall be calculated as

$$\textbf{FRO} = \left(\frac{\textit{Average Generation of individual generating station}}{\textit{Sum of Avg. Generation and Avg.Demand of all control areas}}\right) * \textit{FRO alloted to the state control area}$$

As per 220th OCCM deliberation, NERLDC has prepared case studies for all the above-mentioned methods. The case studies shall be shared with all the states. The forum requested the states to go through the case studies and finalize the method for calculation of FRO for intra-state entities.

Members will update the latest status via e-mail to NERPC.

5. PART-E: ITEMS FOR STATUS

5.1 Implementation of projects funded from PSDF:

The status as informed in 219thOCCM:

State	R&U scheme	ADMS	Capacitor Installation	SAMAST**	Line Differential Protection
Ar. Pradesh	Package-I (Diagnostic tools) Complete in all respects. P-II (for PLCC & communication) Supply completed. Erection WIP. 50% requisition submitted. P-III (Substation equipment) Agreement signed and 10% requisition submitted. Total 90% requisition by Apr'22. Completion by Dec'22. (Approval from TSA and Account opening in 3 months)	Project completed in all respects.	-	30% requisition submitted. Amount not received in the TSA account.	By Aug.'24
Nagaland	Completed in all respects.	Work completed in all respects. UC submitted	-	30% requisition submitted	Lines identified. Under DPR preparation stage.

Mizoram	Final 10% disbursed. UC to be submitted.	Work completed in all respects. Remaining part of final 10% to be disbursed ASAP.	To reply to TESG queries.	30% requisition submitted.	Revised DPR including both 132kV Aizawl-Luangmual and 132kV Khamzawl-Khawiva to be submitted.
Manipur	Package-II: completed Package-I: all stations complete except Ningthoukhong. By May'22.	Work completed in all respects. UC submitted in Oct'21.	WIP.	10% disbursed for IT portion, no disbursement for Meter, AMR portion. 20% disbursement for IT portion after completion of 3rd milestone. 30% to be disbursed for Meter, AMR portion	Revised DPR for LDP of 132kV Imphal-Yurembam-III to be submitted by June'22.
	33kV System Integration with SLDC	In tendering stage			
	Reliable Communications for grid connectivity	In tendering stage			
Tripura	Completed. Final UC submitted on 04th May'22.	Final 10% requisition submitted.	Not relevant in present scenario with commissio	10% successfully disbursed. 20% fund reversed back from vendor	For 132kv 79Tilla-Budhjungnagar line and for Rokhia link

			ning of ISTS lines. Issue dropped	account. Will be resolved soon.	LDP at own cost. Tendering undergoing . DPR preparation for rest of the lines
Assam	Work completed except CRP, SAS work in 8stations which have been retendered and awarded to M/s SIEMENS. Completion by Dec'22	Project completed in all respects.	-	30% funds yet to be fully disbursed. 60% requisition sent.	Lines identified. DPR submitted.
Meghalaya	MePTCL – completed in all respects. MePGCL – Completed in all respects.	Project completed in all respects.	-	90% works completed. Communication pending.	All works except OPGW done

Members will share the latest status via e-mail to NERPC.

5.2 Status update of important grid elements under prolonged outage impacting system operation:

Sl. No	Element	Owner	Status up to the 218thOCCM	Latest Status
1	132kV Mariani – Mokokchung (*out since April'2008*)	AEGCL	DPR sent to PSDF	
2	132kV Roing-Pasighat (*charged through ERS tower*	NERTS	September'24	
3	132kV Srikona – Panchgram	AEGCL	task will be completed by Sept.'24	

4	400kV Imphal – Thoubal-I and 315MVA 400/132kV ICT at Thoubal	MSPCL	RoW, litigation pending in court.	
5	63MVAR Bus Reactor at Byrnihat to be replaced with 80MVAR Reactor	MePTCL	Installed. Relay system pending. To be completed shortly.	
6	Permanent restoration of Tower loc. No. 4 of 132kV Jiribam-Haflong line	NERTS	line was restored on ERS on 8th July. For permanent restoration survey is underway and the work will tentatively be completed within six months.	

Members will share the latest status via e-mail to NERPC.

5.3 Status of commissioning for upcoming projects

Sl. No	**Name of the element**	**Utility**	**Status up to the 218th OCCM**	**Latest Status**
1	132kV Monarchak-Surjamaninagar	TSECL	20 km stringing left, 2 tower foundation pending and pending 8 nos. tower erection. Tentative completion by Sept.'24	
2	PLCC for 132kV Loktak-Ningthoukong and 132kV Loktak-Rengpang(existing lines)	MSPCL	Sept.'24. Work hampered due to Law & order situation in Manipur	
3	220kV Samaguri – Mariani-I	AEGCL	Survey completed. Cost estimate being prepared.	
4	220kV AGBPP –Namsai D/C	TBCB	Oct'25, subject to RoW issue	

5	Upgradation of 132kV Surjamaninagar-Surjamaninagar(ISTS), 132kV Bodhjungnagar-SMNagar, 132kV P.K.Bari-Ambassa, 132kV P.K. Bari-P.K.Bari(ISTS)	TSECL	Resolution adopted in 26th RPC. Sent to MoP, GoI	
6	LILO of 132kV Leshka-Khliehriat-I at Mynkre and Mynkre SS and 33kV downstream at Mynkre.	NERPSIP	LILO line charged. SS by Sept.'24	
7	220kV Rangia – Amingaon D/C and 220/132kV 2x160MVA Amingaon S/S	NERPSIP	SS charged; Line idle charged. Load charging to be done shortly	
8	132kV Rengpang-Tamenglong and 132/33kV 4x6.67MVA at Tamenglong at Manipur	NERPSIP	Works hampered due to present law and order condition.	.
9	132/33kV West Phaileng S/S at Mizoram	NERPSIP	Ready for charging.	
10	132/33kV 2x12.5MVA Marpara S/S at Mizoram	NERPSIP	20 km stringing left, 2 tower foundation pending and pending 8 nos. tower erection. Tentative completion by August'24	
11	132/33kV 2x12.5MVA Lungsen S/S at Mizoram	NERPSIP	Sept.'24. Work hampered due to Law & order situation in Manipur	
12	132kV Chawngte – S.Bungtlang S/S at Mizoram	NERPSIP	Ready for charging.	.

13	132kV W.Phaileng-Marpara S/C at Mizoram	NERPSIP	Sept.'24, works hampered due to delay in tree cutting in forest area	
14	220kV Zhadima – Mokokchung at Nagaland	NERPSIP	Ckt 1 charged in Mar'23. Other ckt waiting for finalization of MoU	
15	132kV Wokha-Zunheboto – Mokokchung at Nagaland	NERPSIP	WokhaZunheboto section has been completed. Balance section by By Sept.'24	
16	132kV Tuengsang – Longleng at Nagaland	NERPSIP	Tuensang SS upgradation package has been awarded. August'24	
17	132/33kV Amarpur S/S at Tripura	NERPSIP	Sept.'24	
18	132/33kV Manu(new) S/S at Tripura	NERPSIP	Sept.'24	
19	132kV Dharmanagar-Kailashor	NERPSIP	Sept.'24	
20	132kV Ziro-Yazali and 132/33kV Yazali S/S	POWERGRID-Comprehensive	Sept.'24	
25	132kV Chimpu – Holongi and 132/33kV Holongi S/S	POWERGRID - Comprehensive	Clearance form AAI for SS and line is pending	
26	Unit 1 and 2 of Lower Subansiri HEP	NHPC	Sept.'24	
27	400kV Lower Subansiri-BNC line2	PGCIL	Line idle charged	
28	Gantry for LS-BNC line 2	NHPC	Sept.'24	

29	Bus reactor at Lower Subhansisri	NHPC	Sept.'24	
30	Conversion of MT to DM at (i)132kV Khliehriat, (ii)132kV Badarpur, (iv) 132kV Imphal	NERTS	Imphal-depends upon the law and order in Manipur. No contracts coming up. Badarpur and Khleihriat-order yet to receive	
31	220kV New Shillong-NangalBibra(ISTS 220/132kV) TL	MEPTCL	As updated by PGCIL, survey completed and report also completed	
32	220kV Bongaigaon-Nangalbibra (ISTS) DC and 220/132kV Nagngalbibra (ISTS) substation	Sterlite	Tentative completion by Sept.'24.	
33	HTLS reconductoring of 132kV Hailakandi-Dullavcherra	AEGCL	During 23rd TCC RPC meeting, the forum recommended for the upgradation and preparation of DPR by AEGCL. AEGCL is already planning for reconductoring of the lines. However, Funding source is not finalized yet.	
34	HTLS reconductoring of 132kV Panchgram-Hailakandi	AEGCL	Included in CEA 2030 Augmentation Scheme. AEGCL is already planning for reconductoring of the lines. However, Funding source is not finalized yet	.
35	HTLS reconductoring of 132kV Srikona-Pailapool	AEGCL	Included in CEA 2030 Augmentation Scheme. AEGCL is already planning for reconductoring of the lines. However,	

			Funding source is not finalized yet.	

Members will share the latest status via e-mail to NERPC.

5.4 Status of ISTS expansion scheme in NER

A. Status of downstream 220kV or 132kV network by STUs from the various commissioned and under-construction ISTS substations in NER

Sl	ISTS S/s	State	Voltage ratio, Trans. Cap	Down- stream Voltage level (kV)	Unutilized bays	Status of ISTS bay	STU Lines for unutilized bays	Status of Lines (as updated in 219thOCCM)	
								Date of Award	Completion schedule
1	New Mariani (POWERGRID)	Assam	400/220kV, 2x500MVA	220	2	Commissioned	New Mariani (POWERGRID) – Diphu (Assam) 220kV D/c line	Plan for route survey from Diphu to New Mariani is underway. The transmission route traverses designated forest area. Survey work is completed only funding is pending. Three years from date of LoA. Completion is expected by 2028.	Plan for route survey from Diphu to New Mariani is underway. The transmission route traverses designated forest area. Survey work is completed only funding is pending. Three years from date of LoA. Completion is expected by 2028.

2	New Kohima (TBCB)	Nagaland	400/220kV, 2x500 MVA	220	2	Commissioned	New Kohima (TBCB) – New Kohima (Nagaland) 220kV D/c line	LoA Feb'2021	OPGW and PLCC work will be completed by Oct 2023. All works are being implemented by Nagaland only. Line would be charged after completion of communication link.
3	Nangalbibra (TBCB)	Meghalaya	220/132kV, 2x160MVA	132	2	Under construction (Dec'23)	Nangalbibra (ISTS) – Nangalbibra (MePTCL) 132kV D/c (HTLS,800A) Line:about 5km	LoA is under process. Fund is yet to be released from the Govt. of Meghalaya.	within 6 months after award.

B. Status of 400kV substations and other important elements being implemented by STUs in NER under intra-state schemes to be connected through ISTS

Sl. No.	**Substation/Location**	**Transformation Capacity/ Element**	**Date of Award**	**Completion Schedule**
B	**Tripura (to be implemented by TSECL)**			
I	**Surajmaninagar (TSECL)**	400/132kV, 2x315MVA	JV formation, between PGCIL and STU by Mar'23	12 months from Date of Award
a)	LILO of both circuits of Surajmaninagar (ISTS) – Palatana 400kV D/c line atSurajmaninagar (TSECL) S/s	400kV D/c	All works except 400kV termination at Surjamaninagar(TSECL) by POWERGRID to be done. Balance works under separate contract.	LILO completed for 400kV ckt 2 (by PGCIL) without bay readiness, LILO has been charged.Total completion subjected to Sub-station readiness at Surajmaninagar

Members will share the latest status via e-mail to NERPC.

5.5 Status Review for the Items Referred from previous OCCMs:

SL No.	Item for Discussion	Status as per 219thOCCM	Latest Status
1.	Voltage and MVAR issues at 400kV Kameng S/Sn (Agenda No. C7 of 189th OCCM)	Discussion with OEM M/s BHEL is underway.	
2.	Implementation of Bus Bar Protection at 132 kV Kahilipara (AEGCL) Substation (C.8 of 196th OCCM)	CT under procurement. Tentative target is Dec'24	
3.	Installation of Line differential protection in Rokhia-N.Rokhia line	CBs arrived. Tentative completion by Sept.'24	
4.	Reconductoring of Umiam stg I stg III, upgradation of CT ratio to 800/1	Approaching PSDF for funding	
5.	Restoration of tower no. 3 and 12 of LILO of Nirjuli-Dikrong Transmission line to Lekhi Substation (B.23. of 193rd OCCM)	Tower locations in spate of floods. Works stalled. Expected completion after monsoon.	
6.	Upgradation of Tuensang substation to 132kV level, under NERPSIP. (item B.15 of 203rd OCCM)	NERPSIP updated that tender has been awarded by the end of June'23 and the work will be completed in Sept.'24	
7.	Khandong Bus A, Kopili ckt 1 bay and Khliehriat ckt 1 bay at Khandong SS	NEEPCO updated that LoA has been awarded on 30th August 2023 and work to be tentatively completed by Sept.'24	
8.	400kV Bus Bar 2 at Panyor Lower HEP (Item C.9 of 216th OCCM)	NEEPCO informed that the isolator spares had arrived and for SF6 breaker, retendering was underway. He further stated that the work would be tentatively completed by May'25.	

Members will share the latest status via e-mail to NERPC.

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Annexure-I

List of Participants in the 221st OCC Meeting held on17.12.2024

SN	Name & Designation	Organization	Contact No.
1	Sh. Geyi Yinyo, J.E (E)	Ar. Pradesh	09436200050
2	Smt. Jayashree Saha, AGM, SLDC	Assam	
3	Sh. Anand Kumar, DM (E), SLDC, AEGCL	Assam	07002350891
4	Sh. Dipmoni Nath, AM, AEGCL	Assam	08011117393
5	Sh. Dhrubajyoti Bora, AM, SLDC	Assam	-
6	Sh. Akash Jha, AM, SLDC	Assam	-
7	Sh. A.Rahul,Mgr, MSPCL	Manipur	-
8	Sh. Sh.S.Sanjoy, AM, MSPCL	Manipur	-
9	Sh. T.Gidon, SE, SLDC, MePTCL	Meghalaya	06009094044
10	Sh.B.Samiam, EE, MePTCL	Meghalaya	09862021883
11	Sh.Yuri Kharpuri, AEE (CSD), MePGCL	Meghalaya	09774507325
12	Sh. Lalawmpuia Chawngthu, AE	Mizoram	08730843706
13	Sh. Rokobeito Iralu, EE	Nagaland	09436832020
14	Sh. P.Tiakaba Yimchunger, JE	Nagaland	-
15	Sh. Debabrata Pal, Sr.Mgr, TSECL	Tripura	09436500244
16	Sh. Anil Debbarma, DGM, SLDC	Tripura	09612559250
17	Sh. H.Talukdar, GM (E/M)	NEEPCO	09435339690
18	Sh. Sandipan Sarkar, Sr. Mgr (E/M)	NEEPCO	-
19	Sh. Manas Pratim Sharma, Sr.Mgr	NEEPCO	08729901871
20	Sh. Amaresh Mallick, ED	NERLDC	09436302720
21	Sh. Biswajit Sahu, CGM	NERLDC	09425409539
22	Sh. Pranjal Borkataki, DGM(MO)	NERLDC	09402196303
23	Sh. Sunil Singha, Manager	NERLDC	08414865365
24	Sh. Sachin Singh, Manager	NERLDC	-
25	Sh. Subhra Ghosh, Asst.Mgr	NERLDC	-
26	Sh. Saksham Rithe, AM	NERLDC	09669532776
27	Sh. Manas Jyoti Baishya, Ch.Manager	PGCIL	09435555740
28	Sh. M.S. Dutt, CGM	PGCIL	09775002038
29	Sh. Chayanka Das, AM, NERPSIP	PGCIL	08986161373
30	Sh. R.K. Tenzing, Mgr (E)	NHPC	08732836775
31	Sh. S.Das, Lead	OTPC	08240573239
32	Sh. Rakesh Kumar, AGM	NTPC	09131171001
33	Sh. Niranjan Rabha, Dy.Mgr.	NETC	07002022736
34	Sh. Jyotirmoy Barman, AM	NETC	07002036191

35	Sh. K.B.Jagtap, Member Secretary	NERPC	-
36	Sh. Anil Kawrani, Director	NERPC	-
37	Sh. Alikpanth De, Dy.Director	NERPC	-
38	Sh. Maya Kumari, Dy.Director	NERPC	-
39	Sh. Vikash Shankar, AD-I	NERPC	09455331756
40	Sh. Ashim Goswami, AD-II	NERPC	08638966481

Rectification of Issues in Fixed Series Compensation (FSC) on 400 kV Bongaigaon – Balipara Circuits 3 & 4

NERLDC Protection

Mon 12/9/2024 3:45 PM

To:Haribabu Rudraraju {रुद्र राजू हरिबाबू} <rudraraju@powergrid.in>; DEEP SARKAR {दीप सरकार} <deepsarkar@powergrid.in>; nerts_rtamc@powergrid.co.in <nerts_rtamc@powergrid.co.in>;

Cc:nerpc@ymail.com <nerpc@ymail.com>; Amaresh Mallick (अमरेश मल्लिक) <amareshmallick@grid-india.in>; Biswajit Sahu (बिस्वाजित साहू) <biswajit@grid-india.in>; vikashiitk308@gmail.com <vikashiitk308@gmail.com>; ashimkumarpaul@powergrid.in <ashimkumarpaul@powergrid.in>; Manas Ranjan Chand (मानस रंजन चंद) <manas@grid-india.in>; Post-Dispatch Analysis <protectionnldc@grid-india.in>; msdutt@powergrid.in <msdutt@powergrid.in>;

महोदय/महोदया,
जैसा कि आप जानते हैं कि 6 दिसंबर 2024 को, 400 केवी बोंगाईगांव - बालीपारा ट्रांसमिशन लाइन 3 और 4 पर फिक्स्ड सीरीज़ मुआवजे (एफएससी) के परिचालन स्वास्थ्य को सत्यापित करने के लिए एक मॉक टेस्ट आयोजित किया गया था। वर्तमान प्रवाह के कारण एफएससी बंद स्थिति में थे। 300 ए से नीचे के सर्किट में।
मॉक टेस्टिंग के दौरान निम्नलिखित चरणों का पालन किया गया-

1. एचवीडीसी प्रवाह में वृद्धि: परीक्षण एचवीडीसी प्रवाह को शुरू में 700 मेगावाट और आगे 900 मेगावाट तक बढ़ाकर शुरू किया गया।
2. परिणामी विद्युत प्रवाह: इससे 400 केवी बोंगाईगांव-बालीपारा सर्किट (3 और 4) में से प्रत्येक में प्रवाह लगभग 223 मेगावाट तक बढ़ गया।
3. एनईआरएलडीसी द्वारा जारी परिचालन कोड:

- कोड: 2024-25/12/357 (19:02 बजे) सर्किट 3 @ बालीपारा सबस्टेशन के एफएससी को सेवा में लाने के लिए।
- कोड: 2024-25/12/358 (19:03 बजे) सर्किट 4 @ बालीपारा सबस्टेशन के एफएससी को सेवा में लाने के लिए।

कई प्रयासों के बावजूद, पीजीसीआईएल बालीपारा सबस्टेशन पर एफएससी के लिए सर्किट ब्रेकर (सीबी) को पूरी तरह से खोलने में असमर्थ रहा। जैसा कि बताया गया है, कैपेसिटिव करंट असंतुलन के कारण सीबी खुलने के तुरंत बाद स्वचालित रूप से बंद हो गया।

इसलिए, अनुरोध है कि इस मुद्दे के मूल कारण की तत्काल जांच की जाए और यह सुनिश्चित करने के लिए आवश्यक उपचारात्मक उपाय लागू किए जाएं कि सिस्टम द्वारा आवश्यकता पड़ने पर एफएससी को सेवा में लाया जा सके।
कृपया इसे अति आवश्यक मानें और हमें प्रगति से अवगत कराते रहें।

विश्वसनीय, सुरक्षित और एकीकृत ग्रिड संचालन बनाए रखने के लिए सहयोग का अनुरोध किया गया।

Sir/Madam,
As you are aware that on 6th December 2024, a mock test was conducted to verify the operational health of the Fixed Series Compensation (FSC) on the 400 kV Bongaigaon – Balipara transmission lines 3 & 4. FSC were in off condition due to current flow in the circuits being below 300 A.

Following steps followed during mock testing-

1. HVDC Flow Increase: The test began by increasing the HVDC flow to 700 MW initially and further to 900 MW.
2. Resulting Power flow: This increased the flow in each of the 400 kV Bongaigaon – Balipara circuits (3 & 4) to about 223 MW.
3. Operational Codes Issued by NERLDC:

- Code: 2024-25/12/357 (19:02 hrs) to bring FSC of Circuit 3 @ Balipara Substation into service.
- Code: 2024-25/12/358 (19:03 hrs) to bring FSC of Circuit 4 @ Balipara Substation into service.

Despite multiple attempts, ***PGCIL was unable to fully open the Circuit Breaker (CB)*** for the FSC at the Balipara Substation. As reported CB automatically closed immediately after opening due to capacitive current imbalance.

Therefore, it is requested to urgently investigate the root cause of this issue and implement the necessary remedial measures to ensure that the FSC can be brought into service as and when required by the system.
Please treat this as **MOST URGENT** and keep us informed of the progress.

Co-operation requested for maintaining reliable, secure and integrated grid operation.

भबदीय / Regards,
Bimal Swargiary

एस.ओ. बिभाग /System Operation Department
उ.पु.क्षे.भा.प्रे.कें. /North Eastern Regional Load Despatch Center
ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड (ग्रिड - इंडिया)/Grid Controller of India Limited (GRID - INDIA)

ग्रिड-इंडिया
GRID-INDIA

ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड
(भारत सरकार का उद्यम)
GRID CONTROLLER OF INDIA LIMITED
(A Government of India Enterprise)
[Formerly Power System Operation Corporation Limited (POSOCO)]
उत्तर पूर्वी क्षेत्रीय भार प्रेषण केंद्र/ North Eastern Regional Load Despatch Centre

संदर्भ: **उपूक्षेभाप्रेके / एस.ओ** */ 2024/6765* ***दिनांक : 01.10.2024***

सेवा में/To:

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प्रतिलिपि /Copy to:

1. Member Secretary, NERPC, Shillong- 793006
2. Executive Director, NERLDC, Shillong- 793006

विषय /Sub: Ensuring harmonic content in the All India electricity grid within the safe limits and statutory provision.

महोदय/ महोदया,

This is to bring to your notice that apart from voltage and frequency, uncontrolled harmonics can cause damage to the equipment/protective system mis-operations. Director SO, Grid-India, has issued a letter regarding the importance of maintaining harmonic content within the safe statutory limits as prescribed by the Central Electricity Authority (CEA) Standards/Regulation and Central Electricity Regulatory Commission (CERC) Regulations. Copy of the above letter which was circulated earlier is once again attached at Annexure-I for your ready reference.

Subsequently, the above matter was also discussed in 216th OCCM (agenda C.12).

Therefore, it is once again requested to all the utilities to share the harmonic measurement test report from their respective sub-station with Grid-India and the Central Transmission Utility of India (CTUIL).

If these tests have not yet been conducted, please ensure that they are carried out at the earliest convenience and subsequently copy of the report to be shared with NERLDC and CTUIL.

सादर/ **With Regards**

भवदीय / Yours sincerely,

BISWAJIT SAHU
Digitally signed by BISWAJIT SAHU
Date: 2024.10.01 15:41:31 +05'30'

(विश्वजीत साहू / Biswajit Sahu**)**
मुख्य महाप्रबंधक (एस.ओ) /C.G.M. (S.O.)
उपूक्षेभाप्रेके , गुवाहाटी / NERLDC, Guwahati

Encl: Annexure-I (Letter issued from Director SO, Grid-India**)**

<u>वितरण सूची / Distribution List</u>

1. Superintendent Engineer, SO & PSC, Raj Bhawan Power House, Itanagar- 791111.

2. CGM, SLDC Assam, **AEGCL**, Near 132 kV Grid Substation, Kahilipara, Guwahati – 781019

3. GM (Transmission), SLDC Manipur, MSPCL, Keishampat, Imphal West, Manipur-795001

4. Superintendent Engineer, **SLDC Meghalaya**, MePTCL, Mawlai Umjarain, NEHU Substation, Shillong – 793022

5. Superintendent Engineer, SLDC Mizoram, Power & Electricity Dept., Tuikhuahtlang, Aizawl, Mizoram – 796001

6. Executive Engineer (Transmission), SLDC Nagaland, Dept. of Power, Govt. of Nagaland, Electricity Colony, Full Nagarjan, Dimapur, Nagaland – 797112

7. DGM (System Operation), SLDC Tripura, **TSECL**, Tripura (West), Agartala- 799001

8. CGM (I/C), **NERTS**, Power Grid Corporation of India Limited (PGCIL), Lapalang, Lower Nongrah, Dongtieh, Shillong, Meghalaya-793006

9. Director (Projects), **North - Eastern Transmission Company Ltd**., 2C, 3rd Floor, D-21 Corporate Park, DMRC Building, Sector -21, Dwarka, New Delhi- 110077

10. Vice president Asset management, **ENICL**, SDX-38/39- New Minal Residency, J.K. Road, Near Ayodha Bypass Bhopal- 462023, INDIA

11. Chief Executive Office, **Mumbai Urja Marg Ltd**., 4th Floor, Godrej Millennium, 9 Koregaon Road, Pune Maharastra, 411001

POWERGRID:

Sl. No.	Name of the Sub-Station and Location	Voltage Level	Measurement	Harmonic measurement report	Remarks
1.					
2.					
...					

AEGCL:

Sl. No.	Name of the Sub-Station and Location	Voltage Level	Measurement	Harmonic measurement report	Remarks
1.					
2.					
…					

NTL:

Sl. No.	Name of the Sub-Station and Location	Voltage Level	Measurement	Harmonic measurement report	Remarks
1.					
2.					
…					

Annexure B 2.11

Re: Submission of Logic for SPS Salakati

Bimal Swargiary (बिमल स्वर्गीयारी)

Mon 09-12-2024 11:59

To:SLDC ASSAM <sldcassam@aegcl.co.in>; Protection Cell <protection.aegcl@gmail.com>;

Cc:Biswajit Sahu (बिस्वाजित साहू) <biswajit@grid-india.in>; nerpc <nerpc@ymail.com>; vikashiitk308@gmail.com <vikashiitk308@gmail.com>; GM TnC and Comm AEGCL <gm.tcc@aegcl.co.in>; NERLDC Protection <nerldcprotection@grid-india.in>;

Bcc:Keshab Borah (केशब बोराह) <keshabborah881@grid-india.in>;

सर/मैडम,
कार्यान्वयन के लिए कुछ सुझावों के साथ 14 अक्टूबर 2024 को एनईआरएलडीसी द्वारा एसपीएस योजना की समीक्षा की गई। हालाँकि, 2 x 160 एमवीए आईसीटी के एन-1 उल्लंघन को संबोधित करने के लिए बीटीपीएस में एसपीएस योजना के कार्यान्वयन के संबंध में एईजीसीएल से कोई अपडेट प्राप्त नहीं हुआ है, जो चिंता का विषय है।
इसलिए, एईजीसीएल टीम से एक बार फिर अनुरोध है कि असम पावर सिस्टम के बीटीपीएस क्षेत्र में विश्वसनीय संचालन सुनिश्चित करने के लिए एसपीएस के कार्यान्वयन और कमीशनिंग को जल्द से जल्द प्राथमिकता दें।
यह आपकी जानकारी एवं आवश्यक कार्यवाही हेतु प्रस्तुत है।
सुरक्षित, विश्वसनीय और एकीकृत ग्रिड संचालन सुनिश्चित करने के लिए सहयोग का अनुरोध किया गया।
Sir/Madam,
The SPS scheme was reviewed by NERLDC on 14th October 2024, with a few suggestions for implementation. However, no update has been received from AEGCL regarding the implementation of the SPS scheme at BTPS to address the N-1 violation of the 2 x 160 MVA ICTs, which is the matter of concern.
Therefore, it is once again request to the AEGCL team to prioritize the implementation and commissioning of the SPS at the earliest to ensure reliable operation in the BTPS area of the Assam Power System.
This is submitted for your kind information and necessary action.
Co-operation requested for ensuring safe , reliable and integrated grid operation.
भवदीय / Regards,
बिमल स्वर्गीयारी/ Bimal Swargiary
उप महाप्रबंधक/ Dy General Manager
उ.पु.क्षे.भा.प्रे.कें. /NERLDC
ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड (ग्रिड - इंडिया)/
Grid Controller of India Limited (GRID - INDIA)
Member CIGRE
Follow GRID-INDIA on:

From: Bimal Swargiary (बिमल स्वर्गीयारी)
Sent: 14 October 2024 16:43:19
To: SLDC ASSAM; Protection Cell
Cc: Biswajit Sahu (बिस्वाजित साहू); nerpc; vikashiitk308@gmail.com
Subject: Fw: Submission of Logic for SPS Salakati

Sir/Madam,

Please find the trailing mail and implement the scheme at earliest.
भवदीय / Regards,

बिमल स्वर्गीयारी/ Bimal Swargiary
उप महाप्रबंधक/ Dy General Manager
उ.पु.क्षे.भा.प्रे.कें. /NERLDC
ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड (ग्रिड - इंडिया)/
Grid Controller of India Limited (GRID - INDIA)
Member CIGRE
Follow GRID-INDIA on:

From: Bimal Swargiary (बिमल स्वर्गीयारी)
Sent: 23 September 2024 17:22
To: CGM T&C , Communication; nerpc; vikashiitk308; shankar vikash308; NERLDC Protection
Cc: sldcassam; GM TnC and Comm AEGCL; DGM LA MRT TandC Circle AEGCL; AGM TandC Division Bongaigaon AEGCL; agm salakati; AGM Dhaligaon GSS AEGCL; DGM Bongaigaon T and T Circle AEGCL
Subject: Re: Submission of Logic for SPS Salakati

Sir/Madam,
Thank you for sharing the scheme. The scheme has been reviewed from our end. For the OC Stage-2 and Stage-3, the proposed SPS pickup of 121% seems too close to the existing ICT Backup Overcurrent (B/U OC) pickup of 120%. Therefore, we kindly request that the SPS OC pickup for Stage-2 and Stage-3 be increased to 122% for sufficient margin.
It is requested to implement the scheme as soon as possible as a short term solution until upgradation of 2 X 160 MVA ICT/installation of 3rd ICT.
भवदीय / Regards,
बिमल स्वर्गीयारी/ Bimal Swargiary
उप महाप्रबंधक/ Dy General Manager
उ.पु.क्षे.भा.प्रे.कें. /NERLDC
ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड (ग्रिड - इंडिया)/
Grid Controller of India Limited (GRID - INDIA)
Member CIGRE
Follow GRID-INDIA on:

From: CGM T&C , Communication <cgm.tcc@aegcl.co.in>
Sent: 21 September 2024 16:41:46
To: nerpc; vikashiitk308; shankar vikash308; NERLDC Protection; Bimal Swargiary (बिमल स्वर्गीयारी)
Cc: sldcassam; GM TnC and Comm AEGCL; DGM LA MRT TandC Circle AEGCL; AGM TandC Division Bongaigaon AEGCL; agm salakati; AGM Dhaligaon GSS AEGCL; DGM Bongaigaon T and T Circle AEGCL
Subject: Submission of Logic for SPS Salakati

Sir/Madam,
The logic designed for SPS Salakati (Preserving system stability against loss of N-1 contingency for 2x160MVA, 220/132kV ICTs at Salakati during peak load conditions) has been attached herewith.

With regards,
Chief General Manager,
T&C and Communication,

Narengi, Guwahati-781026.

Gist of discussion on Proposal of Islanding Schemes in Arunachal Pradesh Power System dated 17-09-24

Date: 17-09-2024 (Tuesday)

Time: 15:30 hrs

Mode: video conference (VC)

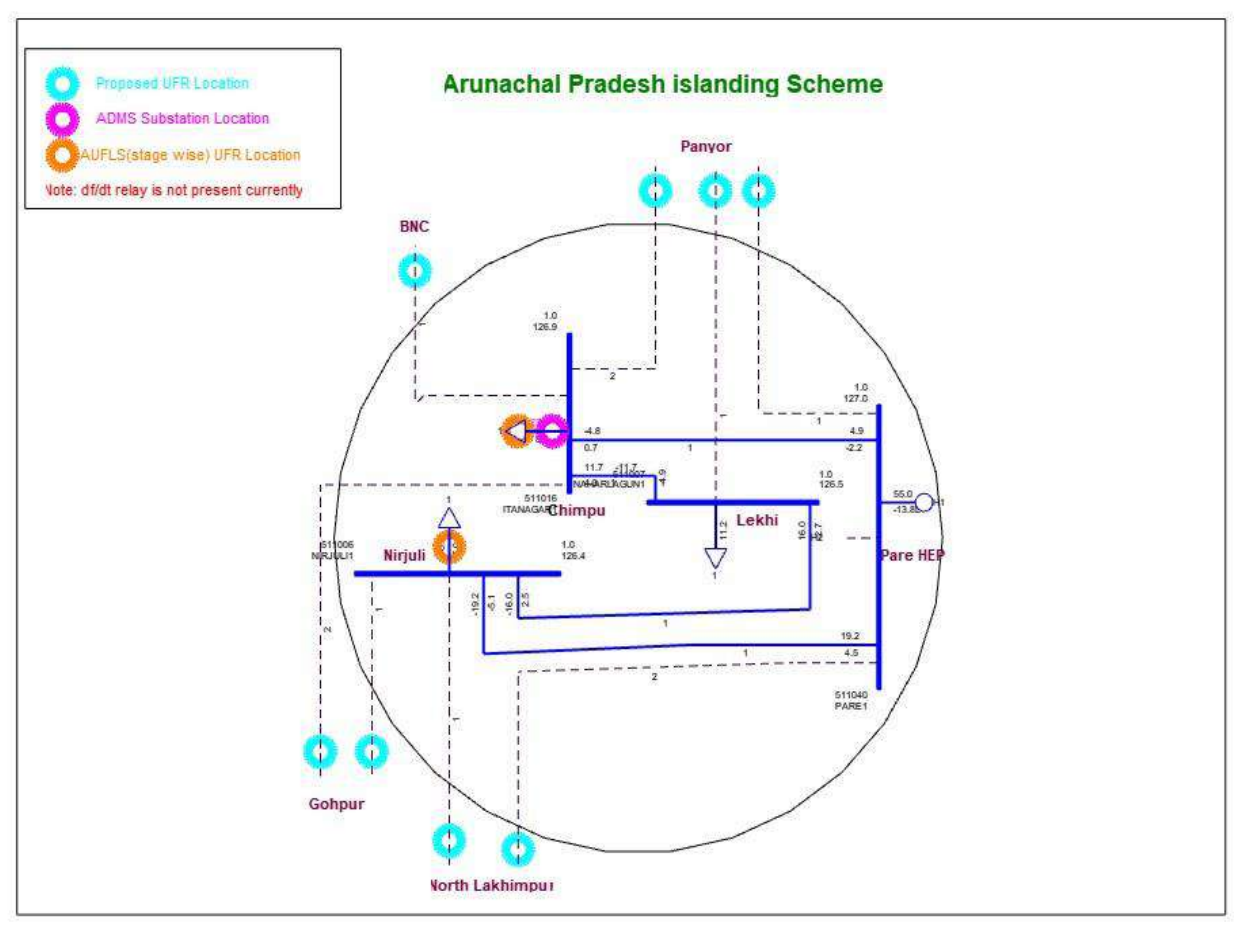
As per earlier meeting held on 09.02.2024, Itanagar Island will include 132kV Chimpu, 132kV Nirjuli and 132kV Lekhi S/S with one unit of Pare HEP. Frequency of island formation may be 48.0 Hz.

1. **Proposed UFR location for Islanding schemes along with the status:**

Sl. No	Existing	Comments on UFR	Status to be updated by Utilities		
			Weather Numerical relays are available or not	Weather UFR setting can be enabled	Any remarks(additional)
1	132 kV Panyor HEP-Pare HEP line at 132 kV Panyor HEP	**New Required**	Yes	Yes	Confirmed by 132 kV Panyor HEP
2	132 kV Panyor HEP-Itanagar line at 132 kV Panyor HEP	**New Required**	Yes	Yes	Confirmed by 132 kV Panyor HEP
3	132 kV Panyor HEP-Lekhi line at 132 kV Panyor HEP	**New Required**	Yes	Yes	Confirmed by 132 kV Panyor HEP
4	132 kV Itanagar-BNC line at 132 kV BNC	**New Required**	Yes	Yes	Confirmed by 132 kV PGCIL
5	132 kV Itanagar-Gohpur line at 132 kV Gohpur	**New Required**	Yes	Yes	Confirmed by Assam(through mail)
6	132 kV Nirjuli-Gohpur line at 132 kV Gohpur	**New Required**	Yes	Yes	Confirmed by 132 kV PGCIL

7	132 kV Nirjuli-North Lakhimpur line at 132 kV North Lakhimpur	**New Required**	Yes	Yes	Confirmed by 132 kV Indi-grid
8	North Lakhimpur - Pare HEP line at 132 kV North Lakhimpur	**New Required**	Yes	Yes	Confirmed by 132 kV Indi-grid

The Islanding schematic is given below:



- UFR at marked location will operate instantly within 100 ms.
- ADMS will operated in 5 min when frequency is below 49.85 Hz and AP Overdrawal is above 10 MW.
- AUFLS will also operate instantly within 100 ms.
- Additional UFR at Salasar and SMS feeders at 132kV Lekhi S/S will operate at 47.8 HZ and 47.7 Hz instantly within 100 ms.

2. **Data provided by Utilities:**
   Generator details (Dynamic data, OFR and UFR details, Output range): by Pare HEP
   Transmission lines (parameter data, ADMS, AUFLS data): SLDC AP, PGCIL, NEEPCO
   Distribution data (load pattern): SLDC AP

3. Load and Generation scenarios in islanding scheme:

Nodes in Itanagar Islanding Scheme						
Sl. No.	Node / Bus	Details of 33 kV or 66 kV Feeders connected	Load		UFR	Criticality of Load (I, II, III)*
			Off-Peak	peak		
1	Chimpu					
		Chandan Nagar	8	9.5	NO	III
		Panchali	8	9.1	NO	III
		Rajbhawan	**3**	**3.6**	NO	I
		MLA Apartment	4	5.6	NO	II
		Assembly	0.2	0.5	NO	I
		Civil Secretariat	**1**	**1.7**	NO	I
		Holangi	4	5.8	Stage-IV(48.8 Hz)	III
subtotal			28.2	35.8		
2	Lekhi					
		Naharlagun (TRIMS)	11	16	NO	I
		SMS	4	6	**Stage-I(49.4 Hz)	III
		Salasar	5	7	**Stage-I(49.4 Hz)	III
		ICT-1	0.1	0.3	NO	
		ICT-2	0.3	0.5	NO	
subtotal			20.4	29.8		
3	Nirjuli					
		Naharlagun	9	13	No	II
		Nirjuli	8	12	No	I
		Bandardawa	13	16	Stage-II(49.2 Hz)	III
subtotal			30	41	No	
Total			**78.6**	**107**		
Average			92.8			
AUFLS-(17,21)						
ADMS-7MW						
Load cut before Island-(24,28)						
OFF peak load just before Island-54 MW						
Peak load just before Island-						
*Note:	Critical I means Super Critical Loads, Criticality II means Critical Loads and Criticality III means Non- Essential					

**** In the meeting, it was decided that Salasar and SMS load under Lekhi S/S will be used for UFR after Island Formation at 47.8Hz and 47.7 Hz (instantaneous tripping) respectively. Load identified as AUFLS stage wise may be shifted outside island.**

4. **Existing ADMS Implemented in Arunachal Pradesh inside island:**

esent Status of ADMS Implementation in Arunachal Pradesh as on 08.04.22						
State	**132 kV Substation Name**	**Feeder Name in kV level**	**Priority Ranking of 11 kV Feeders (Highest to Lowest)**	**Approx Load in MW**	**Time Delay (if any)**	**Activated (Yes/No)**
Arunachal Pradesh	Chimpu	33 kV C/Nagar	11 kV Panchali Feeder	1.02	5 Mins	Yes
	Chimpu	33 kV C/Nagar	11 kV Niti Vihar Feeder	1.79	5 Mins	Yes
	Chimpu	33 kV C/Nagar	11 kV PHQ Feeder	0.7	5 Mins	Yes
	Chimpu	33 kV C/Nagar	11 kV PHED Feeder	0.67	5 Mins	Yes
	Chimpu	33 kV C/Nagar	11 kV Lobi Feeder	0.35	5 Mins	Yes
	Chimpu	33 kV Holongi	33 kV Holongi Feeder	3.3	5 Mins	Yes

5. **Additional UFR required after formation of Island: (Load > Generation):**

   NERLDC recommended for additional UFR required after island formation, SLDC AP and SE, STU suggested utilizing the load identified for AUFLS at Lekhi S/S (Salasar and SMS) as UFR Post Island Formation. For AUFLS, load may be shifted anywhere else outside the island.

   It was decided that Salasar load will be disconnected at 47.8 Hz and SMS load at 47.7 Hz instantly. So, frequency setting of these existing UFR should be adjusted accordingly.

6. **Load and Generation details :**

   A detailed analysis was conducted based on the SCADA data from the past three years, focusing on load duration curve. This analysis helped in identifying the worst-case scenarios and facilitated planning for maintaining adequate load-generation balance during islanding formation.

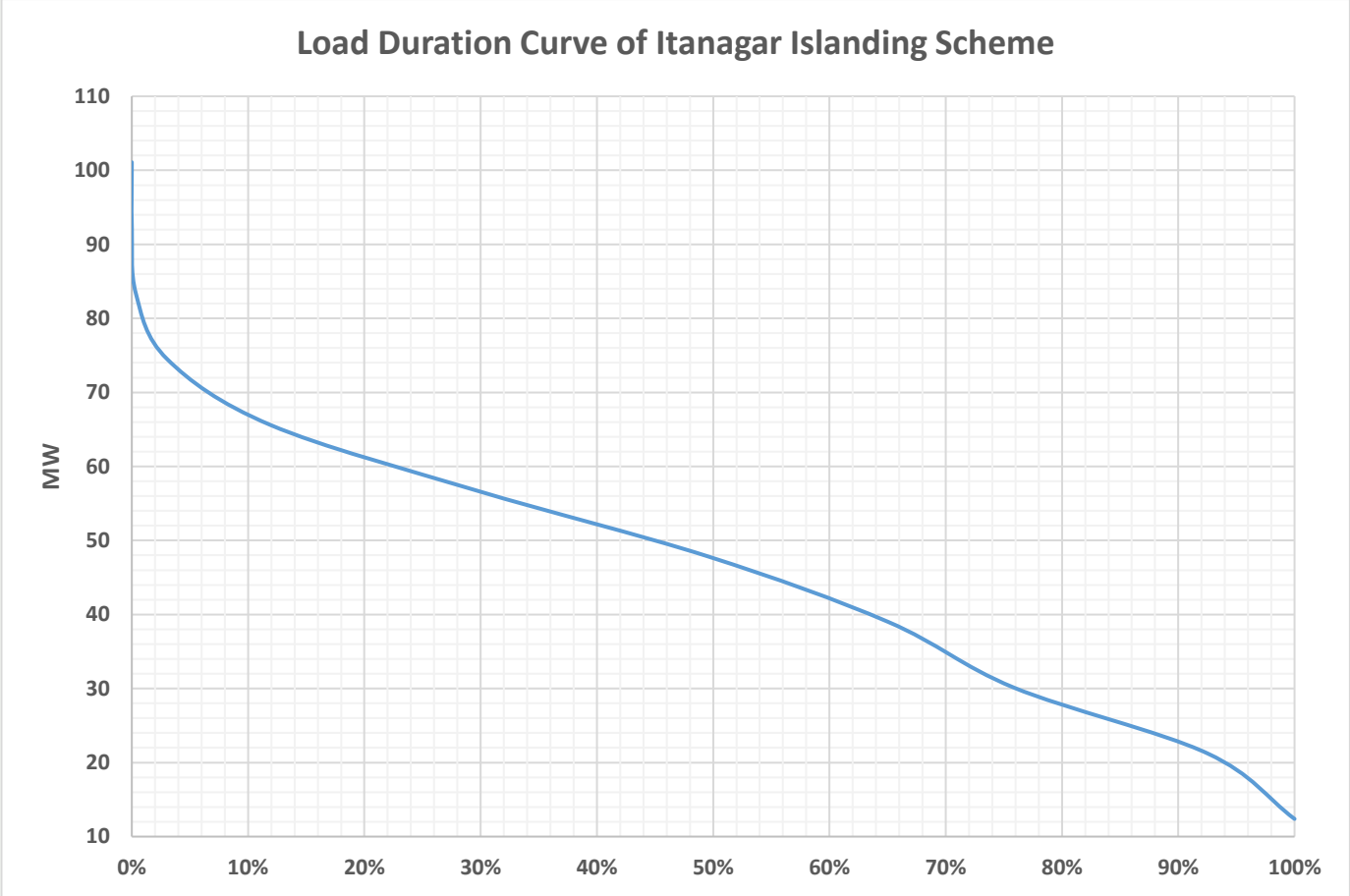


Fig: Load Duration Curve of Itangar Island

Pare Generation varies from 45 MW (min) to 55 MW (max). Governor may give frequency response upto 110 % of Installed capacity i.e. 60.5 MW.

Based on the above duration curve, maximum and minimum load and generation has been derived. The load and generation considered for study purpose are as tabulated below:

Islanding Scenarios(after load shed by ADMS and AUFLS)

Load	Generation	Load (MW)	Gen(MW)	Shortfall(-) & Surplus(+) in MW
Min	Min	25	45	20
Max	Min	79	45	-34
Max	Max	79	55	-24
Min	Max	25	55	30

The load is considered after deduction of load identified as ADMS and stage wise AUFLS, and it is as per the maximum load observed in Load Duration Profile and peak data submitted by SLDC AP.

The load in Island below 50 MW cannot be feasible inside island as frequency inside island reach more than 52 Hz (OFR setting).

The dynamic study and plots is given in Annexure I.

7. Operating frequency range of machines in Islanding scheme:

As per mail received from Pare HEP,

Sl. No	Existing	Status to be updated by Utilities				
		Existing Frequency Setting (Over frequency) in Hz			Existing Frequency Setting (Under frequency) in Hz	
		Stage	OFR Setting	Time delay	UFR Setting	Time delay
1	Pare HEP (NEEPCO)	I	52	5 sec	48.5	5 sec
		II	52.5	2 sec	47.5	instantaneous

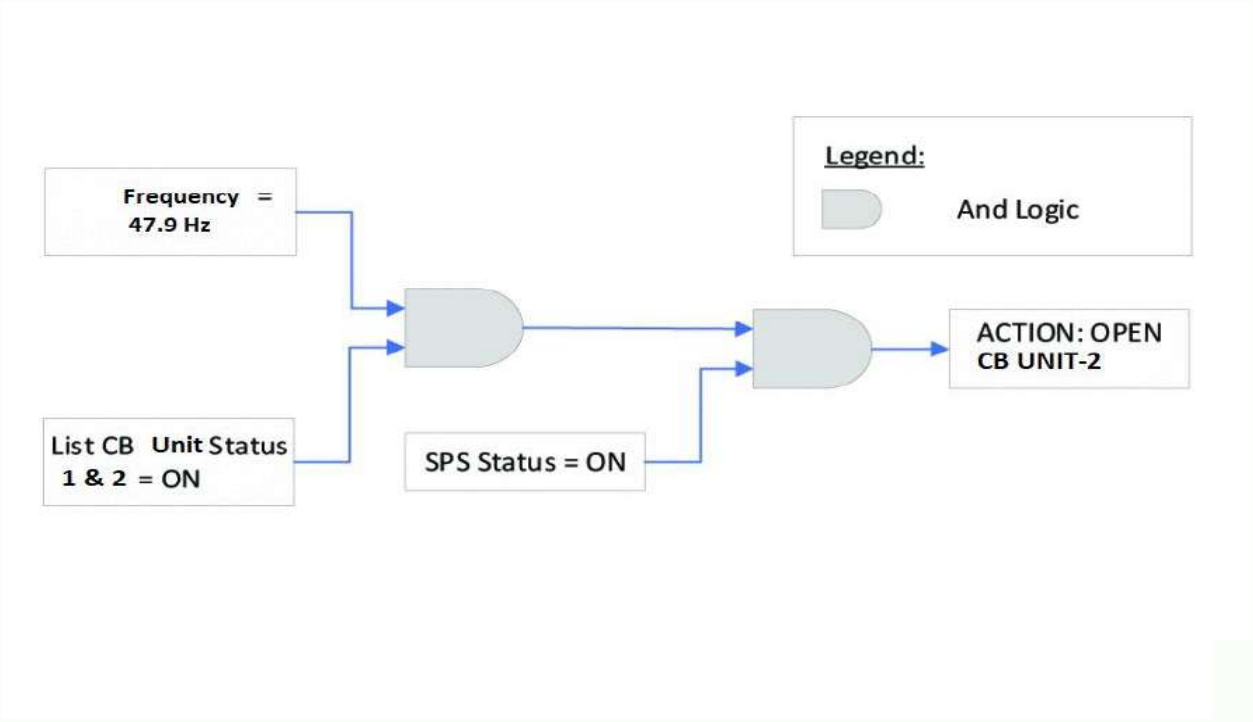
The minimum generation during normal operation is 45MW/Unit and Maximum possible generation using one unit of PHPS is 60 MW subjected to river inflow and RWL.

Stg 1 UFR setting of Pare is for Alarm purpose only, confirmed by Pare HEP via mail.

8. SPS to be implemented at Pare HEP:

As per the earlier meeting held on 09.02.2024, as SPS logic was proposed to be implemented at Pare HEP to trip one unit during island formation in order to ensure that generation is closer to the designated loads of Island.

The SPS logic is presented below:



9. OPGW requirement for the Itanagar Island:

The details of OPGW availability is shown below:

Sl. no	Elements Name	OPGW availability
1	132 kV Panyor HEP-Pare HEP line	**Yes**
2	132 kV Panyor HEP- Itanagar line	**Yes**
3	132 kV Panyor HEP-Lekhi line	**Yes**
4	132 kV Itanagar-BNC line	**Yes**
5	132 kV Itanagar-Gohpur line	**Yes**
6	132 kV Nirjuli-Gohpur line	**Yes**
7	132 kV Nirjuli-North Lakhimpur line	**Yes**
8	132 kV North Lakhimpur -Pare HEP line	**Yes**

10. PMU requirement for the Itanagar Island:

PMU are also required for monitoring of load & generation within the island. NERLDC informed AP delegates for PMU placement in following nodes.

Sl. no	Bus Name	Elements to be monitored
1	132 kV Pare HEP station	**All 132 kV elements**
2	132 kV Nirjuli station	**All 132 kV elements**
3	132 kV Lekhi station	**All 132 kV elements**
4	132 kV Itanagar station	**All 132 kV elements**

List of Participants:

Sl. No.	Name	Designation	Organization
1.	Geyi Yonyo	SE, SLDC	DoP Arunachal Pradesh
2.	Hibu Bama	EE (E), TD-II	DoP Arunachal Pradesh
3.	Bimal Swargiary	DGM	NERLDC
4.	Anjan Kumar Pandey	Deputy Manager	NERLDC
5.	Yogendra Singh	Engineer	NERLDC

Annexure I

Itanagar Island Study

1. Introduction:

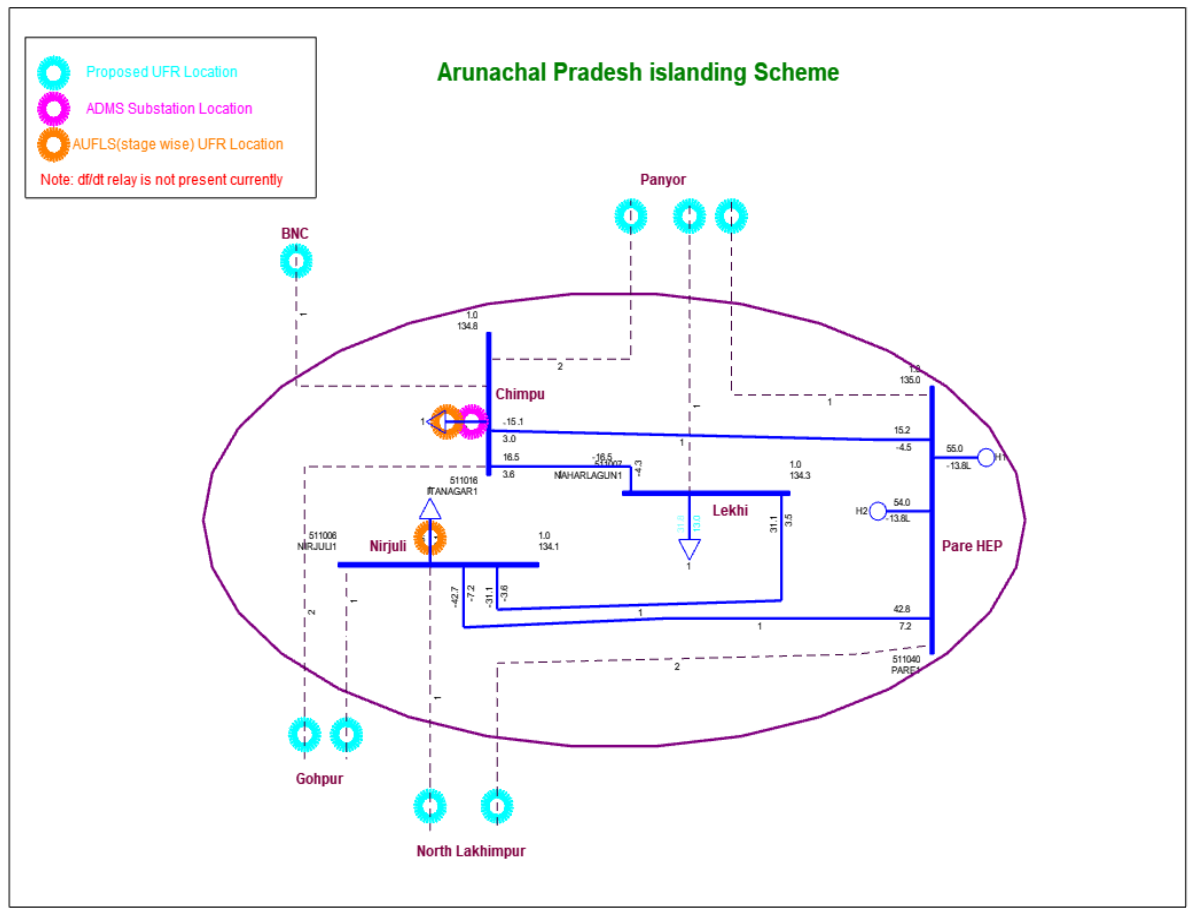
One of the key features of a resilient power system is robust islanding scheme. Success of an islanding scheme depends on the design as well as implementation of the logic. Logic needs to be robust as well as simple. Extensive study is required to design an effective islanding scheme. For Itanagar islanding scheme design various preliminary studies are done and the results are discussed below. However these studies are done based on certain assumption (which will be discussed below) and its purpose is to check the broader feasibility of an islanding scheme. Hence the final islanding logic must be finalized by the respective generating plants in consultation with their OEM.

2. Modeling:

A. Network:

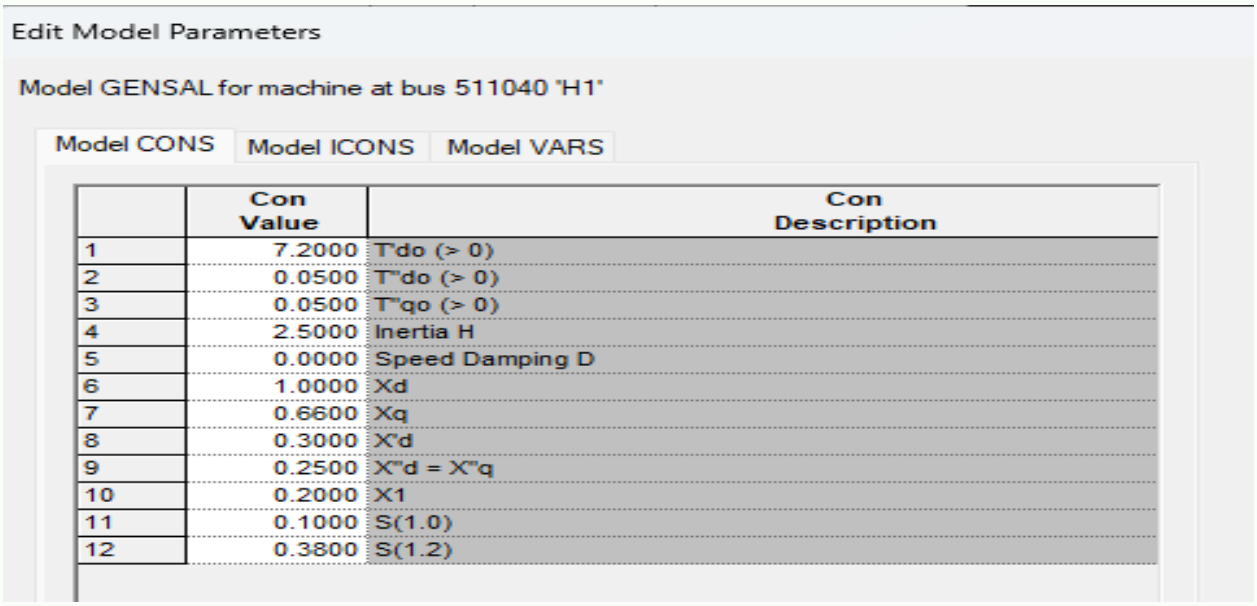
Network modelling data is taken from latest All India PSSE base case. Only the part of Itanagar Network which corresponds to the Island to be formed, is taken into consideration. Rest of the grid is modelled as an equivalent generator or load.

In one of the equivalent generator bus(Bus 1) two loads are added: 1) Load 1 is a negative load and used for creating the frequency disturbance during the dynamic simulation. 2) Load 2 is All India load.



B. Generator:

Pare unit is modelled as “GENSAL” (salient rotor synchronous machine) based on the OCC magnetization curve. The parameters of “GENSAL” are populated based on the Manufacturer’s data sheet shared by Pare HEP:



	Con Value	Con Description
1	7.2000	T'do (> 0)
2	0.0500	T"do (> 0)
3	0.0500	T"qo (> 0)
4	2.5000	Inertia H
5	0.0000	Speed Damping D
6	1.0000	Xd
7	0.6600	Xq
8	0.3000	X'd
9	0.2500	X"d = X"q
10	0.2000	X1
11	0.1000	S(1.0)
12	0.3800	S(1.2)

Figure 1: CTPS generator parameters.

The equivalent generator representing the All-India grid is modelled by a simple classical cylindrical rotor “GENCLS” model and its Inertia value is used as per the inertia calculated during real frequency excursion event in the grid.

C. Exciter and PSS:

Excitation system of Pare Unit is represented by AC6C model of PSSE library. Due to unavailability of PSS data, it is taken as none.

Model AC6C for machine at bus 511040 'H1'

Model CONS | Model ICONS | Model VARS

	Con Value	Con Description
1	0.0200	TR (sec)
2	120.0000	KA
3	24.0000	TA (sec)
4	1.6000	TK (sec)
5	0.1200	TB (sec)
6	0.6000	TC (sec)
7	5.0000	VAMAX
8	-5.0000	VAMIN
9	5.0000	VRMAX
10	-5.0000	VRMIN
11	0.2000	TE(>0.)(sec)
12	0.0000	VFELIM
13	0.0000	KH
14	100.0000	VHMAX
15	1.0000	TH (sec)
16	1.0000	TJ (sec)
17	0.1400	KC
18	0.4500	KD
19	0.5090	KE
20	4.0000	E1
21	0.1000	SE(E1)
22	5.2000	E2
23	0.5000	SE(E2)
24	999.0000	VFEMAX

Figure 2: CTPS exciter model AC6C

For the equivalent generator no separate exciter is modelled as our area of interest is only the frequency excursion in the grid side.

C. Governor model:

Governor model of Pare Unit is HYGOV based on the data provided. The parameters values are shown below:

Model HYGOV for machine at bus 511040 'H1'

Model CONS | Model ICONS | Model VARS

	Con Value	Con Description
1	0.0500	R, Permanent Droop
2	0.3000	r, Temporary Droop
3	2.0000	Tr (> 0) Governor Time Constant
4	0.0500	Tf (> 0) Filter Time Constant
5	0.3000	Tg (> 0) Servo Time Constant
6	0.2500	VELM, Gate Velocity Limit
7	0.8900	GMAX, Maximum Gate Limit
8	0.6800	GMIN, Minimum Gate Limit
9	0.8000	TW (> 0) Water Time Constant
10	1.2000	At, Turbine Gain
11	0.0000	Dturb, Turbine Damping
12	0.0800	qNL, No Load Flow

D. Load modelling:

Loads are modelled as below:
Real Power: 100% Constant Current
Reactive Power: 100% Constant Admittance
Frequency dependency of the load is not modelled.

3. Design logic:

Following points are considered in designing the islanding logic:
i. Frequency setting for last stage of the existing All-India UFLS scheme is 48.8 HZ; therefore island formation should happen below this frequency with sufficient margin.
ii. Inside the Island it is assumed that there is no UFLS relays as per the above scheme.

iii. However during few scenarios after the formation of the island, island may be generation deficit. To tackle such some UFLS scheme is designed for island. But this UFLS scheme starts much below the grid side UFLS scheme.

iii. Present frequency protection setting for CTPS units is as follows:
Under Frequency: 47.5 Hz, Instatneous that may be changed to 500 ms delay after consultation with OEM.
Over frequency: 52 Hz, Instantaneous that may be changed to 500 ms delay after consultation with OEM.

Based on the above inputs following islanding logic is proposed:
i. Islanding should commence before pick up of any of the frequency protection stage of Pare Unit and that's why island formation will start at 47.9 Hz Hz.
ii. Under frequency inside the island is proposed to trigger at 47.8 Hz. The details is as follows
47.8 HZ instantaeous 10 % of island load (Salasar load tripped)
47.7 Hz instantaeous 10% of Island load (SMS load tripped)

4. Simulation:

Different LGB scenario is studied in the simulation for checking the robustness of the proposed scheme. Details of different scenario are summarized as follows:

Islanding Scenarios(after load cut by ADMS and AUFLS)

Load	Generaqtion	Load	Gen	Shortfall(-) & Surplus(+)
Min	Min	25	45	20
Max	Min	79	45	-34
Max	Max	79	55	-24
Min	Max	25	55	30

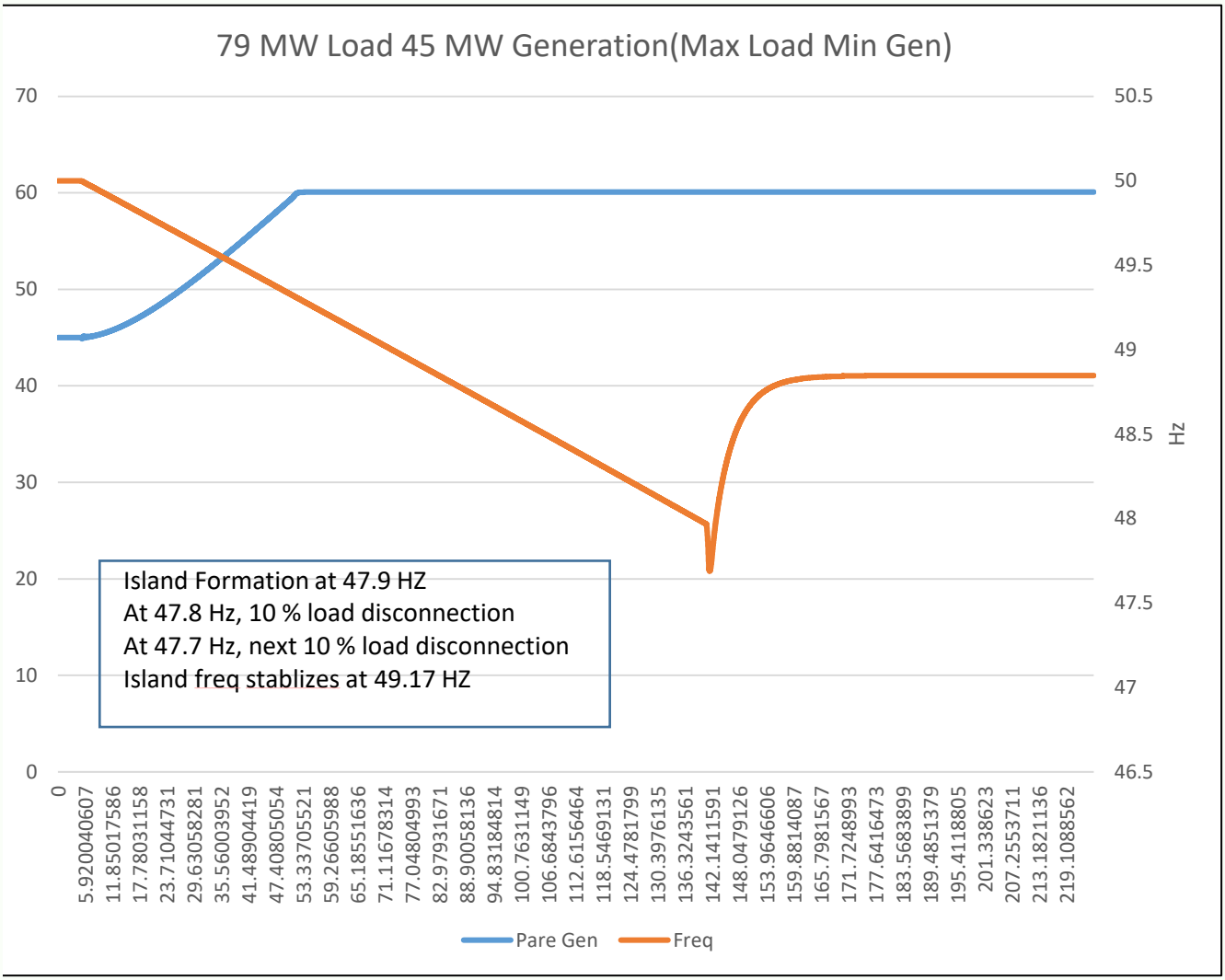
The above LGB is prepared based on input from SLDC AP and NER SCADA data.

With above islanding logic following steps are followed:

Step-1. First a grid disturbance is created by tripping 15000 MW generation (i.e. the negative load). This triggers the island formation logic in which the equivalent generator or load buses are tripped, 500ms after the frequency drops to 47.9 Hz. And island is formed

Step-2. After formation of island the simulation is further carried out for 100 sec to check stabilization of the island frequency with all generator protection and island UFLS in action.

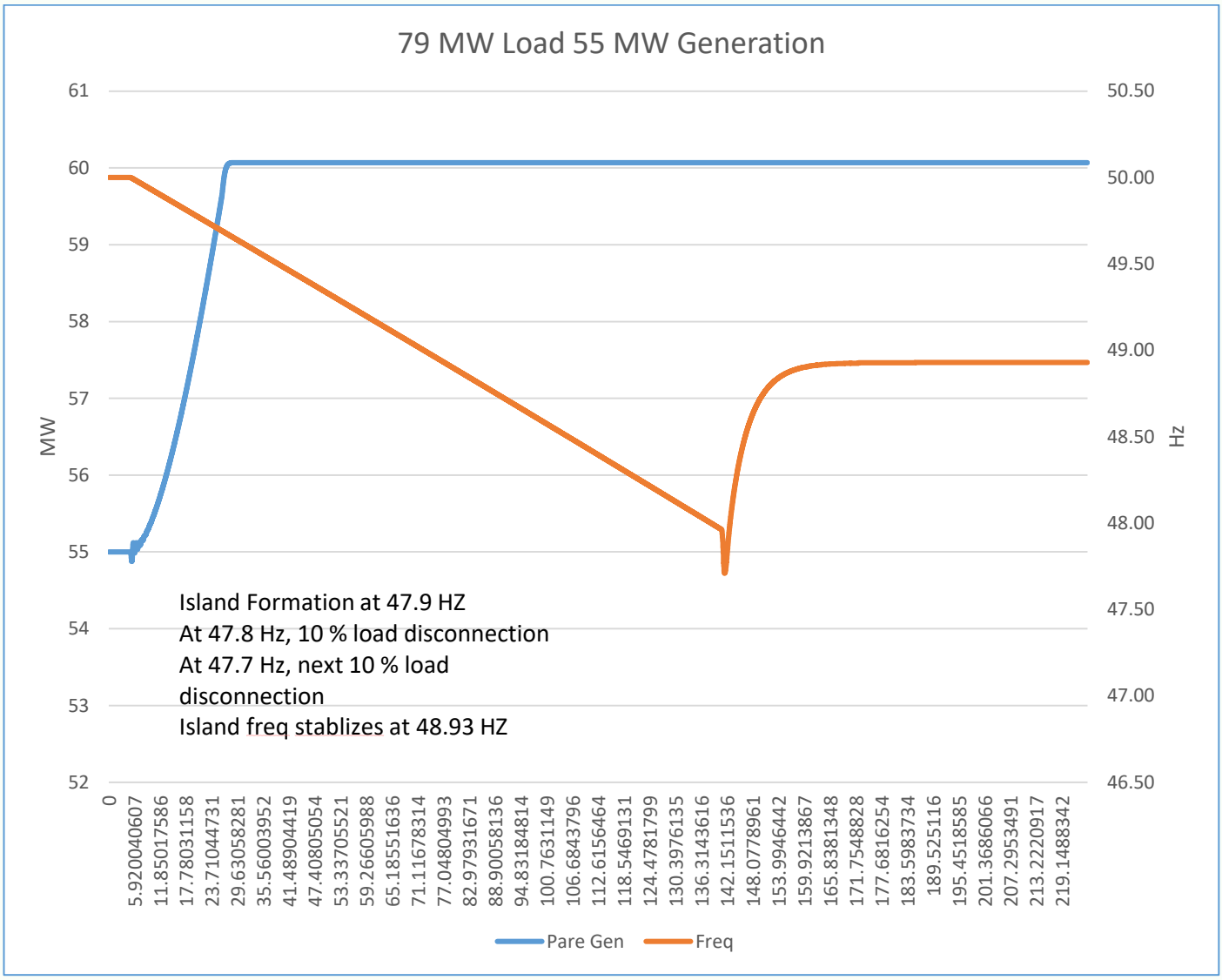
Scenario-1: Minimum generation & Maximum load



Discussion:

1. In min generation max load scenario there is 34 MW shortfall generation inside the Island
2. Here pre disturbance generation was 45 MW. After disturbance frequency start dropping and Pare generation starts increasing as per governor response and output of Pare was restricted to 110 % of MCR.
3. At 47.9 Hz, island was formed. At that time frequency drops again due to shortfall in generation. So two load at Salasar and SMS were disconnected at 47.8 Hz and 47.7 Hz respectively. Then frequency starts rising and stabilzes at 49.17 Hz.

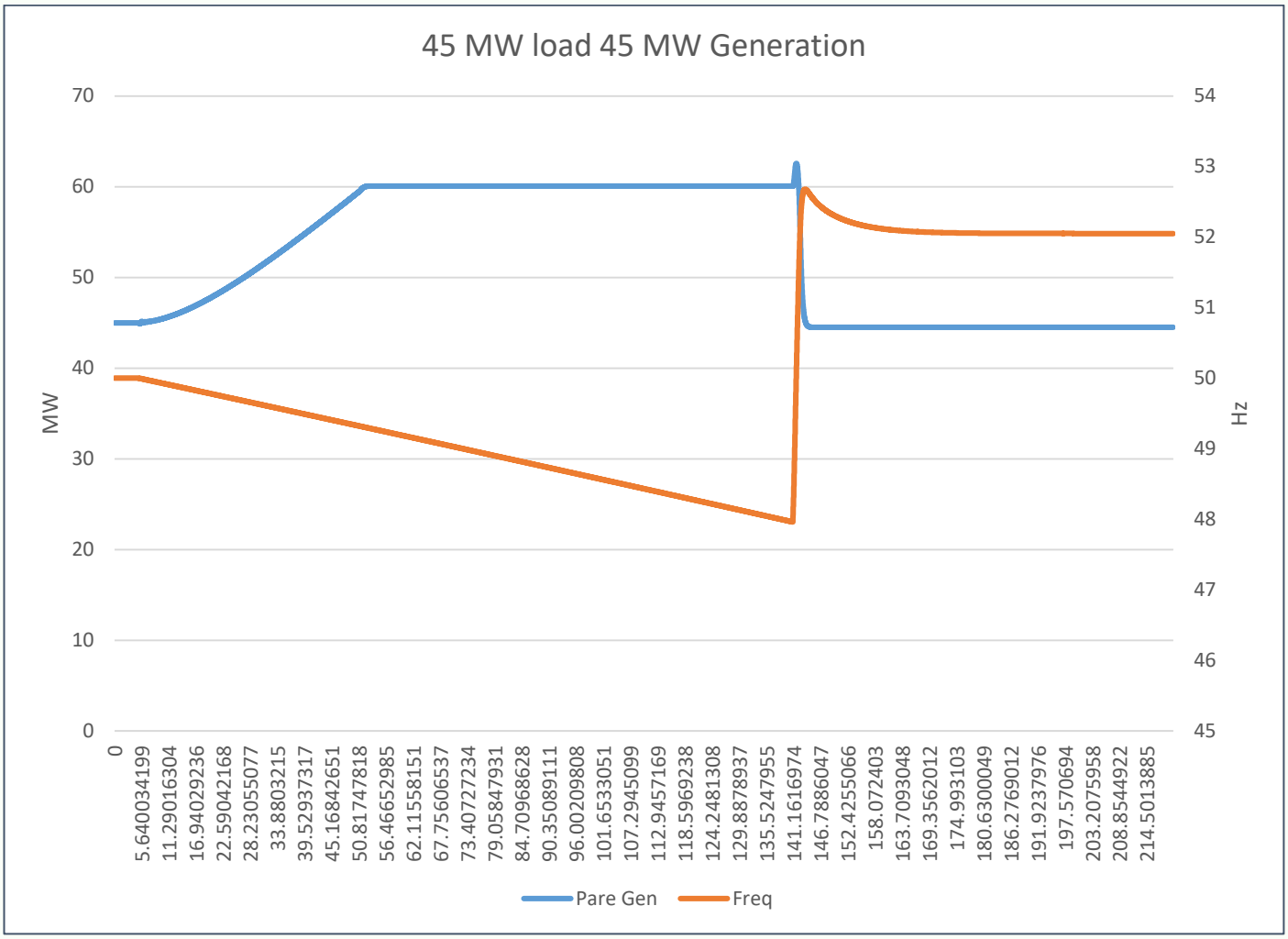
Scenario-2: Maximum generation & Maximum load



Discussion:

1. In max generation max load scenario there is 24 MW shortfall generation inside the Island
2. Here pre disturbance generation was 55 MW. After disturbance frequency start dropping and Pare generation starts increasing as per governor response and output of Pare was restricted to 110 % of MCR.
3. At 47.9 Hz, island was formed. At that time frequency drops again due to shortfall in generation. So two load at Salasar and SMS were disconnected at 47.8 Hz and 47.7 Hz respectively. Then frequency starts rising and stabilzes at 48.93 Hz.

Scenario-3: 45 MW Load and 45 MW Generation:

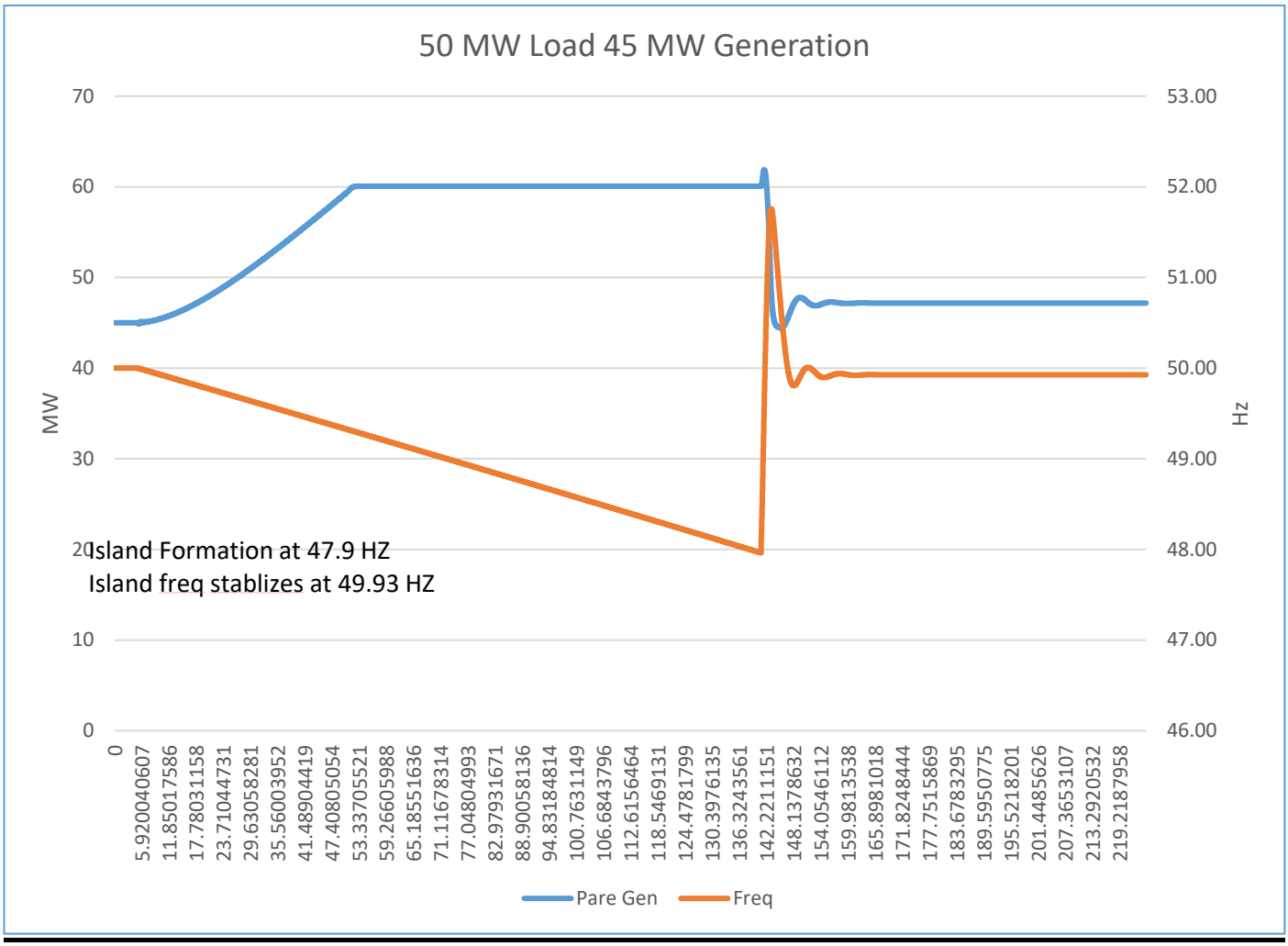


Discussion:

1. In 45 MW load and 45 MW generation was taken inside the Island
2. Here pre disturbance generation was 45 MW. After disturbance frequency start dropping and Pare generation starts increasing as per governor response and output of Pare was restricted to 110 % of MCR.
3. At 47.9 Hz, island was formed. At that time frequency starts rising due to surplus in generation. Frequency reached more than 52 Hz for 25 sec which will trip Pare unit on Over Frequency Protection.

At last 50 MW load and 45 MW Generation were taken for next scenario to check the feasibility of island.

Scenario-4: 50 MW Load and 45 MW Generation:



Discussion:

1. In 50 MW load and 45 MW generation was taken inside the Island

2. Here pre disturbance generation was 45 MW. After disturbance frequency start dropping and Pare generation starts increasing as per governor response and output of Pare was restricted to 110 % of MCR.

3. At 47.9 Hz, island was formed. At that time frequency starts rising due to surplus in generation. Frequency reached at max 51.73 Hz and stabilizes at 49.93 Hz.

Summary:

1. Additional UFR at Salasar and SMS required at 47.8 HZ and 47.7 Hz instantaneous for Scinario I & II.
2. For Island load below 50 MW, island frequency reaches OFR setting of Pare unit, therefore for island load below 50 MW, island will not survive.

Procedure for Infirm Power Injection by Generators in NERLDC Control Area

1. Objective:

the purpose of this procedure is to establish a systematic process for the injection of infirm power into the grid by generators within the NERLDC (North Eastern Regional Load Dispatch Centre) Control Area, ensuring compliance with relevant regulations, standards, and roles.

2. Scope:

This procedure applies to all generating stations and captive generating plants that have been granted connectivity to the inter-State Transmission System (ISTS) under the GNA Regulation, within the NERLDC Control Area.

3. Definitions and relevant regulatory provisions:

- Definition of Infirm Power **(IEGC 2023, Clause 3.69)** : "*means the electricity injected into the grid prior to the date of commercial operation of a unit of the generating station* "
- **(IEGC 2023, Clause 19.1) :** " *A unit of a generating station including unit of a captive generating plant that has been granted connectivity to the inter-State Transmission System in accordance with GNA Regulations shall be allowed to inter-change power with the grid during the commissioning period, including testing and full load testing before the COD, after obtaining prior permission of the concerned Regional Load Despatch Centre: Provided that the concerned Regional Load Despatch Centre while granting such permission shall keep grid security in view."*
- **(IEGC 2023, Clause 19.7): "***The onus of proving that the interchange of infirm power from the unit(s) of the generating station is for the purpose of pre-commissioning activities, testing and commissioning, shall rest with the generating station, and the concerned RLDC shall seek such information on each occasion of the interchange of power before COD. For this, the generating station shall furnish to the concerned RLDC relevant details, such as those relating to the specific commissioning activity, testing, and full load testing, its duration and the intended period of interchange. The generating station shall submit a tentative plan for the quantum and time of injection of infirm power on day ahead basis to the respective RLDC."*

4. Procedure:

4.1 Notification and Application for Infirm Power Injection:

- **Advance Notification**:
    - The generator shall provide information regarding the tentative first-time unit synchronization time and their intention to inject infirm power in the NERPC OCC forum.

- **Application Submission**:
    - The generator shall apply to NERLDC for approval of infirm power injection at least **30 days** before the tentative synchronization date. The application must include but not limited to:
        - Tentative synchronization date.
        - Type of test (e.g., commissioning, full load testing).
        - Estimated period for infirm power injection.
        - Quantum of power to be injected into the grid.
- **Approval Process:**
    - Upon receipt of the application, NERLDC's Reliability/Study/Operation Group will review the request, considering grid conditions and overall system safety.
    - NERLDC will issue **provisional consent** for the infirm power injection at least **15 days** before the tentative synchronization date.

4.2 Documentation and Communication for Infirm Power Injection:

- **Day-Ahead Reporting**:
    - The generator must submit a day-ahead plan for the quantum and time of infirm power injection, using the format provided in **Annexure I**, to the NERLDC Control Room for review.
- **Real-Time Communication with NERLDC**:
    - The generator is required to communicate with the NERLDC Control Room prior to each test or activity and obtain a code.
    - The generator shall not proceed with any infirm power injection without obtaining the code from NERLDC Control Room.
- **Details After End of Operational Day**
    - Generators need to provide net and gross generation in mu at the end of each operational day.
- **Record Retention:**
    - The generator shall retain comprehensive records of all communications related to infirm power injection. These records must be available for review upon request.

4.3 Monitoring and Real-Time Updates:

- NERLDC will monitor the infirm power injection through SCADA or other real-time monitoring systems. The generator is expected to provide periodic updates on the status of the unit and the power being injected.
- Any deviation from the approved injection plan shall be immediately informed to NERLDC control room by the Generator.

- NERLDC may direct the plant to modify the schedule or injection of infirm power based on any situation deemed necessary by NERLDC.

4.4 Termination of Infirm Power Injection:

- NERLDC reserves the right to direct the termination of infirm power injection at any time if it is deemed necessary for maintaining grid security or stability, or if the generator fails to comply with the established procedures or fails to comply NERLDC instructions.

5. Conclusion:

- The generator must follow the procedure for each unit's first-time synchronization and infirm power injection.
- Regular reviews and updates to this procedure may be made based on operational experience, regulatory changes, or any other circumstances deemed necessary by NERLDC or relevant authorities.

****

Annexure -I

Tentative plan for the injection of infirm power						
Name of Generating Station:	……			**Category (Thermal/Hydro /RE):**	……	
Capacity of the Unit (in MW)	……..					
Sl. No.	**Period of injection of infirm power (Date and Time)**			**Purpose of injection of infirm power**	**Details of specific tests to be carried out during the injection of infirm power**	**Quantum of infirm power injection (in MW)**
	Date	**Block No**	**Time period**			

Annexure B 2.20

सत्यमेव जयते

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
केन्द्रीय विद्युत प्राधिकरण
Central Electricity Authority
विद्युत प्रणाली संचार विकास प्रभाग
Power System Communication Development Division
****

विषय:	Charging of Electric Supply lines without having obtained PTCC approval

S. No	Reference No.	Dated
(i)	CEA Letter No: CEA/PCD/10CLPTCC/72	18.01.2019

Vide CEA letter referred at S. No. (i) (copy enclosed), request was made to NLDC for issuance of necessary directions to respective RLDCs for seeking documentary evidence of PTCC clearance from concerned utilities before issuing charging code/ permission.

In the recently held 112th CLPTCC Meeting, BSNL highlighted that some State Transmission Utilities (STUs) are getting their transmission lines charged without verifying the status of PTCC approval and for few of these cases are applying for post-facto PTCC approval. Such a situation wherein charging of transmission lines has been allowed without verifying the impact on nearby communication assets of BSNL, Railway and Defense may pose serious hazard for the personnel working and telecom equipment installed in nearby communication assets.

In this regard, attention is drawn towards amended "Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2023" wherein Section- 80 specifies as follows:

*"Protection against electromagnetic interference. – The owner of **every electric supply line of voltage level 11 kV or above** shall obtain the clearance of Power Telecommunication Co-ordination Committee to ensure the safety of the personnel and telecommunication line as per the requirement of section 160 of the Act."*

Though PTCC approval is mandatory for charging of Transmission Lines as per Electricity Act 2003 and CEA Safety Regulations 2023, it has been brought to our notice that some Utilities are getting their lines charged without getting necessary PTCC approvals.

Thus, it is advised that necessary directions shall be issued to concerned officials for allowing charging of *electric supply line of voltage level 11 kV or above* after due diligence pertaining to PTCC approval. Also for electric supply lines which have already been charged without having obtained PTCC approvals shall be regularized at the earliest for compliance with provisions of Electricity Act 2003 and CEA Safety Regulations 2023.

Encl: A/a

Signed by Suman Kumar Maharana
Date: 17-10-2024 12:25:00

Chief Engineer

सेवा भवन, आर.के. पुरम-I, नई दिल्ली-110066 टेलीफ़ोन: 011-26565214 ईमेल: cepcd.cea@gov.in वेबसाइट: www.cea.nic.in
Sewa Bhawan , R.K Puram-I, New Delhi-110066 Telephone: 011-26565214 Email: cepcd.cea@gov.in Website: www.cea.nic.in

To,

1. National Load Despatch Centre
2. Northern Regional Load Despatch Centre
3. Western Regional Load Despatch Centre
4. Southern Regional Load Despatch Centre
5. Eastern Regional Load Despatch Centre
6. North Eastern Regional Load Despatch Centre
7. Andhra Pradesh State Load Dispatch Center
8. Assam State Load Dispatch Center
9. Bihar State Load Dispatch Center
10. Chhattisgarh State Load Dispatch Center
11. Delhi State Load Dispatch Center
12. Gujarat State Load Dispatch Center
13. Haryana State Load Dispatch Center
14. Himachal Pradesh State Load Dispatch Center
15. Jharkhand State Electricity Board
16. Karnataka State Load Dispatch Center
17. Kerala State Load Dispatch Center
18. Madhya Pradesh State Load Dispatch Center
19. Meghalaya State Load Dispatch Center
20. Mizoram State Load Dispatch Center
21. Odisha State Load Dispatch Center
22. Punjab State Load Dispatch Center
23. Rajasthan State Load Dispatch Center
24. Sikkim State Load Dispatch Center
25. Tamil Nadu State Load Dispatch Center
26. Telangana State Load Dispatch Center
27. Tripura State Load Dispatch Center
28. Uttar Pradesh State Load Dispatch Center
29. Uttarakhand State Load Dispatch Center
30. West Bengal State Load Dispatch Center
31. CGM, QA&I, BSNL (For information)

Annexure-1

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
केन्द्रीय विद्युत प्राधिकरण
Central Electricity Authority
पावर कम्युनिकेशन डवलप्मेंट प्रभाग
Power Communication Development Division

No. CEA/PCD/10CLPTCC/72 Date: 18/01/2019

ED, NLDC, POSOCO,
B-9, Qutub Institutional Area,
Katwaria Sarai,
New Delhi – 110 016

Subject: PTCC Clearance mandatory before charging Transmission Line

Sir,

Section 77 of CEA (Measures relating to Safety and Electric Supply) Regulations, 2010 relates to protection against electromagnetic interference. It has derived strength from Section 160(1) of the Act which provides protection to telephonic and signaling communication.

Section-77
"The owner of every overhead power line of voltage level 11kV or higher shall submit proposal for obtaining Power Telecommunication Co-ordination Committee (PTCC) clearance to ensure safety of the personnel and telecom Equipment"

Regarding PTCC, it is to inform that PTCC (Power and Telecommunication Coordination Committee) is a Standing Committee having stakeholders – Power Utilities, BSNL, Railways and Defense. PTCC is for coexistence of Power and Telecom sectors by ensuring safety of human lives and telecommunication equipment from hazardous induction effects due to power line under fault conditions. PTCC clearance is issued after taking care of protection of affected telecom circuits.

Though PTCC clearance is mandatory but some power lines are charged without PTCC. RLDCs can check such action by denying the charging code. Therefore, it is requested that NLDC may issue instructions that RLDCs may ask for documentary evidence of PTCC clearance from the concerned transmission licensee in their respective Region, before issuing charging code/permission.

Yours faithfully,

(Naresh Bhandari)
Chief Engineer

एन आर पी सी परिसर, कटवारिया सराय, नई दिल्ली-110016 टेलीफैक्स: 011-26565214 ईमेल: nbnareshbhandari@nic.in
NRPC Complex, Katwaria Sarai, New Delhi-110016 Telefax: 011-26565214 Email: nbnareshbhandari@nic.in

Agenda Item for 27th TCC meeting of NER

Annexure B 2.23

Item No. 1	**Procurement of cold spare transformers and reactor for Northern Estern Region (Agenda by POWERGRID)**

1. CERC had set up a Committee on dated 15.03.2018 consisting of representatives from CERC, NLDC, CEA & POWERGRID under the Chairmanship of the Chief (Engineering) of the CERC to assess the requirement of regional spares including bus reactors, line reactors, ICTs, etc. This would ensure reliability of the grid and reduce downtime in case of any failure/outage.

2. As per CERC Committee recommendation, the following spares transformers & reactors are required to be kept as spare for North Eastern Region as per POWERGRID assets base:

i) Transformer:

MVA Rating of Transformers	Voltage Rating	Total Installed unit in POWERGRID	Installed State	Spare Required as per CERC report	Available Spare (As per RPC Approved)	Qty Proposed for procurement	Location/State of spare requirement
3Ø-315MVA	400/132/33kV	1 No-**Silchar**	**Assam, Silchar**	1	0	1	**Assam, Silchar**
3Ø-160MVA	220/132kV	06 Nos **02-Balipara** **02- Dimapur** **02- Kopili**	**Assam-Balipara** **Nagaland-Dimapur** **Assam-Balipara**	2	**1(Assam- Balipara)**	1	**Nagaland , Dimapur**
3Ø-100MVA	220/132kV	02 Nos **01 No-Dimapur** **01 No- Salakati**	**Nagaland-Dimapur** **Assam-Salakati**	2	**1(Nagaland- Dimapur)**	1	**Assam, Salakati**
3Ø-50MVA	132/33kV	04 Nos **02- Imphal** **02- Nirjuli**	**Manipur- Imphal** **Arunachal Pradesh**	2	**1 (Arunachal Pradesh - Nirjuli)**	1	**Manipur, Imphal**
	TOTAL:					**4**	
	Tentative Cost						**43.94 Cr**

Agenda Item for 27th TCC meeting of NER

Annexure B 2.23

ii) Reactors:

MVAr Rating of Reactors	Voltage Rating	Total Installed unit in POWERGRID	Installed State	Spare Required as per CERC report	Available Spare (As per RPC Approved)	Qty Proposed for procurement	Location/State of spare requirement
3Ø-125MVAR#	420kV	06 Nos 01-Silchar 01-Imphal 01 – Balipara 01 – BNG 02- Mariani	Assam-Silchar **Manipur-Imphal** Assam-Balipara Assam-Bongaigaon Assam-Mariani	2	**1(Assam-Silchar)**	1	**Manipur, Imphal**
3Ø-63MVAR*	420 kV	**22 Nos** 06- Balipara 06-Bongaigaon 04-Silchar 02- Imphal 04- BNC	Assam-Balipara Assam- Bongaigaon Assam-Silchar **Manipur- Imphal** Assam- BNC	2	**1(Assam-Balipara)**	1	**Manipur, Imphal**
3Ø-50MVAR*	420 kV	**9 Nos** 02- Balipara 04- Bongaigaon 02- Silchar 01-Misa	Assam- Balipara Assam-Bongaigaon Assam-Silchar **Assam-Misa**	1	0	1 *** proposed to be replaced with 63 MVAr**	**Assam-Misa**
3Ø-31.5MVAR	245kV	01-Mokukchung	**Nagaland-Mokukchung**	1	0	1	**Nagaland,Mokukchung**
3Ø-20MVAR	245kV	01-Mariani	**Assam-Mariani**	1	0	1	**Assam, Mariani**
3Ø-20MVAR	132kV	3		3	0	3	**Manipur- Imphal**

		01 No- Imphal 01 No- Aizwal 01 No- Kumarghat	Manipur-Imphal Mizoram-Aizwal Tripura-Kumarghat				**Mizoram- Aizwal Tripura-Kumarghat**
	TOTAL:					**8**	
	Tentative Cost						**50.0 Cr**

- Quantity considered for both 125MVAR & 80MVAR reactors in Manipur. In case of failure of existing 80MVAR reactor, replacement can be done with 125MVAR.

* - Quantity considered for both 50MVAR & 63MVAR reactors. In case of failure of existing 50MVAR reactor, replacement can be done with 63MVAR.

01 In view of the above, it is requested for approval for procurement of cold spare transformers & reactors of various ratings as per CERC committee recommendation as mentioned above. The Tariff for the investment made is to be shared by constituents as per the provisions of CERC Regulation.