I/30915/2023

सत्यमेव जयते

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
उत्तर क्षेत्रीय विद्युत समिति
Northern Regional Power Committee

विषय: उत्तर क्षेत्रीय विद्युत समिति की प्रचालन समन्वय उप-समिति की 211 वीं बैठक का कार्यवृत |

Subject: Minutes of the 211th OCC meeting of NRPC.

उत्तर क्षेत्रीय विद्युत समिति की प्रचालन समन्वय उप-समिति की 211 वीं बैठक दिनांक 19.09.2023 को आयोजित की गयी थी। उक्त बैठक का कार्यवृत्त उत्तर क्षेत्रीय विद्युत समिति की वेबसाइट http://164.100.60.165 पर उपलब्ध है। यदि कार्यवृत पर कोई टिप्पणी हो तो कार्यवृत जारी करने के एक सप्ताह के अन्दर इस कार्यालय को भेजें |

The 211th meeting of the Operation Co-ordination Sub-Committee (OCC) of NRPC was held on 19.09.2023. The Minutes of this meeting has been uploaded on the NRPC website http://164.100.60.165. Any comments on the minutes may kindly be submitted within a week of issuance of the minutes.

संलग्नक:यथोपरि

Signed by Santosh Kumar
Date: 11-10-2023 17:22:39
Reason: Approved
(संतोष कुमार)
अधीक्षण अभियंता (प्रचालन)

सेवा में,

उ.क्षे.वि.स. के प्रचालन समन्वय उप-समिति के सभी सदस्य

उत्तर क्षेत्रीय विद्युत समिति की प्रचालन समन्वय उप-समिति की 211 वीं बैठक का कार्यवृत्त

The 211th meeting of OCC of NRPC was held on 19.09.2023 through video conferencing.

खण्ड-क:उ.क्षे.वि.स. PART-A:NRPC

1. Confirmation of Minutes

Minutes of the 210th OCC meeting was issued on 12.09.2023. OCC confirmed the minutes.

2. Review of Grid operations of August 2023

Anticipated vis-à-vis Actual Power Supply Position (Provisional) for August 2023

Reasons submitted by States for significant deviation of actual demand from anticipated figures during the month of August 2023 are as under:

- **Delhi**

Delhi experienced high temperature and rain deficiency in month of August, 23 so peak demand and energy consumption was on higher side than expected.

- **Himachal Pradesh**

The Anticipation in Energy Requirement as well as peak demand in respect of Himachal Pradesh for the month of August, 2023 came on the lower side due to continuous rainfalls in the month of August.

- **Rajasthan**

The Actual Energy requirement and peak demand w.r.t. Anticipated Energy requirement and peak demand for the month August, 2023 increased by 28.5% and 22.7% respectively due to unexpected increase in domestic and agriculture demand due to no rains and rise in temperature during the month of August, 2023 in Rajasthan state.

- **Haryana**

As far as reason of variation in Anticipated vs Actual figure of PSP for August, 2023 is concerned, it is stated that August, 2023 is observed as driest month since 1901 i.e. driest in last 120 years. Accordingly, there is an abrupt rise in energy consumption during August, 2023. However, variation in demand is within 5%.

- **Uttarakhand**

The reason for negative variation in energy requirement and Peak Demand was due to significant rainfall above normal in first fortnight of month, however the energy requirement and peak demand for the month was anticipated based on the

available data/trend for the month of August, 2023, which has lead to forecasting error due to change in weather conditions.

3. Maintenance Programme of Generating units and Transmission Lines

The maintenance programme of generating units and transmission lines for the month of October, 2023 was deliberated in the meeting on 18.09.2023.

Following shutdown request was also approved/denied in the OCC meeting:

Element Name	Owner	Reason	Requested Date	Requested Time	Daily/ Continuous	Decision of OCC
765kV Jawaharpur - Gr. Noida and 765kV Jawaharpur – Mainpuri line	WUPPTCL	SPS to be taken into service before synchronisation of 01 unit of Jawaharpur TPS for safe and reliable grid operation	20-Sep-23	06:00 to 16:00	Daily	OCC approved the shutdown

4. Anticipated Power Supply Position in Northern Region for October 2023

The updated anticipated Power Supply Position for October 2023 is as below:

State / UT	Availability / Requirement	Revised Energy (MU)	Revised Peak (MW)	Date of revision
CHANDIGARH	Availability	130	280	No Revision submitted
	Requirement	130	290	
	Surplus / Shortfall	0	-10	
	% Surplus / Shortfall	0.0%	-3.4%	
DELHI	Availability	3721	5598	18-Sep-23
	Requirement	2750	5450	

State / UT	Availability / Requirement	Revised Energy (MU)	Revised Peak (MW)	Date of revision
	Surplus / Shortfall	971	148	
	% Surplus / Shortfall	35.3%	2.7%	
HARYANA	Availability	6975	8625	11-Sep-23
	Requirement	4497	9730	
	Surplus / Shortfall	2478	-1105	
	% Surplus / Shortfall	55.1%	-11.4%	
HIMACHAL PRADESH	Availability	1097	1777	12-Sep-23
	Requirement	1061	1840	
	Surplus / Shortfall	37	-63	
	% Surplus / Shortfall	3.4%	-3.4%	
J&K and LADAKH	Availability	1520	4120	No Revision submitted
	Requirement	1770	2960	
	Surplus / Shortfall	-250	1160	
	% Surplus / Shortfall	-14.1%	39.2%	
PUNJAB	Availability	5090	11320	18-Sep-23
	Requirement	5400	12200	
	Surplus / Shortfall	-310	-880	
	% Surplus / Shortfall	-5.7%	-7.2%	
RAJASTHAN	Availability	8650	18260	18-Sep-23
	Requirement	8525	14780	
	Surplus / Shortfall	125	3480	
	% Surplus / Shortfall	1.5%	23.5%	
UTTAR PRADESH	Availability	11160	23300	12-Sep-23
	Requirement	10540	23300	
	Surplus / Shortfall	620	0	
	% Surplus / Shortfall	5.9%	0.0%	
UTTARAKHAND	Availability	1209	2180	12-Sep-23
	Requirement	1240	2250	
	Surplus / Shortfall	-31	-70	

State / UT	Availability / Requirement	Revised Energy (MU)	Revised Peak (MW)	Date of revision
	% Surplus / Shortfall	-2.5%	-3.1%	
NORTHERN REGION	Availability	39552	70800	
	Requirement	35913	68300	
	Surplus / Shortfall	3640	2500	
	% Surplus / Shortfall	10.1%	3.7%	

5. Follow-up of issues from various OCC Meetings - Status update

5.1. The updated status of agenda items is enclosed at ***Annexure-A.I.***

5.2. In 211th OCC, SLDCs were requested again to coordinate with respective Transmission Utilities of states/UTs and submit details about the updated status of Down Stream network by State Utilities from ISTS Station (enclosed as ***Annexure-A-I.I***) before every OCC meeting.

6. NR Islanding scheme

6.1. In the meeting (211th OCC), UPPTCL representative apprised forum that with regard to Lucknow-Unchahar islanding scheme, delivery of UFR is almost complete and the UFR installation has commenced at the site which is expected to be completed by 20th October 2023.

6.2. With regard to Agra islanding scheme, UPPTCL representative apprised forum that as per the changes suggested, final report from CPRI has been received on 07th September 2023 and the same is under examination by both UPPTCL and UPSLDC.

6.3. Representative from RRVPNL intimated forum that draft DPR for Jodhpur-Barmer Rajwest and Suratgarh islanding scheme has been received and is under examination which is expected to be finalized by the October 2023 and thereafter would be shared with NRPC Sectt. and NRLDC.

6.4. With regard to Patiala-Nabha Power Rajpura islanding scheme representative from Punjab SLDC informed that technical specifications for procurement of UFR relays have been submitted for approval of their management. It is expected that scheme shall be operational by 31st March 2024.

6.5. With regard to Kullu-Manali Islanding scheme, representative from HPSLDC apprised forum that response from HPSEB is awaited. SE(O), NRPC stated that it seems there is some lack of co-ordination between HPSEB and HPSLDC, therefore a letter from MS, NRPC may be written to higher management of both HPSEB and HPSLDC for expediting the implementation of the cited islanding scheme.

6.6. With regard to Shimla-Solan islanding scheme representative from HPSLDC apprised forum that they have asked HPSEB to organize a meeting with the officials of BHEL to resolve the issue of switching of Bhaba HEP to automatic mode during the situation of islanding formation.

6.7. DTL representative informed forum that the revised islanding scheme of their control area is expected to be implemented by 10th October 2023.

7. Coal Supply Position of Thermal Plants in Northern Region

7.1. In the meeting, NRPC representative apprised the forum about the coal stock position of generating stations in northern region during current month (till 10th September 2023).

7.2. Average coal stock position of generating stations in northern region, having critical stock, during first seven days of September 2023 is as follows:

Station	Capacity (MW)	PLF % (prev. months)	Normative Stock Reqd. (Days)	Actual Stock (Days)
ANPARA C TPS	1200	84.40	12	2.4
GOINDWAL SAHIB TPP	540	54.12	20	2.4
KAWAI TPS	1320	55.27	20	2.9
TALWANDI SABO TPP	1980	60.41	20	3.7

7.3. In the meeting, above mentioned generating station was requested to take adequate measures.

8. Furnishing of Data for finalization of Generation programme 2024-25 (Agenda by OPM Division CEA)

8.1. In the meeting, Chief Engineer (OPM), CEA stated that the Annual assessment and finalization of the generation program of generating units is undertaken by CEA every year. The generation performance of various stations and their planned & unscheduled outages are regularly monitored in CEA.

8.2. Further, CE (OPM), CEA stated that the yearly assessment and finalization of the generation program for the year 2024-25 is being taken up now and it is requested that, the anticipated Generation details in regard to power generating units may be furnished.

In view of the high peak demand, he emphasized to furnish the anticipated generation data for the year 2024-25 so that the generation Planning can be carried out. List of Station of northern region who has not furnished the data yet is attached as Annexure-III of agenda.

8.3. CE (OPM), CEA requested the Generating Stations to furnish the data latest by 22.09.2023.

Decision of the OCC forum

- *Forum asked the generating stations of northern region who have not furnished the data for Electricity Generation Program 2024-25 to kindly furnish the data latest by 22.09.2023 to OPM division CEA at **targetopmcea@gmail.com**.*

9. Phaser Measurement Unit (PMU) for Naitwar Mori HEP (Agenda by SJVN)

9.1. In the meeting, SJVN representative apprised the forum that as per the 64th NRPC meeting it was agreed for installation of PMU during First Time Charging (FTC) of Sub stations/Generating stations.

9.2. Further, he submitted that the PMU was not been envisaged in original contract of EM package awarded to M/s Voith Hydro on 11.06.2018 for Naitwar Mori HEP. During the awarding of EM package of Naitwar Mori in 2018, such requirement of PMU was not there in the applicable CEA regulation, 2010.

9.3. Presently, in view of 64th NRPC minutes, the planning including procurement, supply, erection, testing and commissioning action i.r.o of installation of PMU along with all associated item has been taken up by SJVN with M/s Voith Hydro (EM contractor) under variation clause of existing EM contract. Additionally, SJVN is exploring the above item through tendering process in open market as well. After exploration of market, it has been observed that lead time for same is around 6-8 month.

9.4. However, it is pertinent to mention here that project pre-commissioning work is in full swing and water filling & subsequent commissioning thereof is scheduled in next 15- 20 days.

9.5. SJVN representative stated that in view of the above, PMU installation during FTC may not be feasible at Naitwar Mori HEP.

9.6. Accordingly, SJVN submitted that a relaxation/Wavier in respect of installation of PMU during FTC at Naitwar Mori may be accorded for 6-8 Month.

9.7. NRLDC representative suggested SJVN to approach HPSLDC on the cited matter, as Naitwar Mori HEP is connected at intra-state point.

Decision of the OCC forum

- *Forum asked SJVN to approach HPSLDC for relaxation as Naitwar Mori HEP is connected at intra-state point.*

10. Table Agenda No.1: High power loading in 400KV Bhadla PGCIL-Bhadla RVPN line 1 and 2. (Agenda by Powergrid-NR1)

10.1. In the meeting, Powergrid NR-1 representative informed forum that due to recent change in RVPNL network (Bikaner RVPNL got disconnected from

PGCIL Bikaner and got directly connected with Bhadla RVPNL), it is observed Line loading of 400kV Bhadla PGCIL- Bhadla RVPNL D/C lines increased from 350MW to 900MW in each circuit due to which severe hotspot issues in both ends are frequently observed.

10.2. Therefore, Powergrid NR-1 requested that Power loading may please be reviewed for healthiness of the system.

10.3. On the cited matter, NRLDC representative informed that said line is having quad moose conductor. He apprised forum that Bhadla(PG) is connected to Bhadla-II (PG) which is further connected to upcoming Sikar_II(PG), which is expected by mid of July next year.

10.4. Further, he mentioned that presently power from Bhadla_II S/s is not being able to evacuate through Sikar_II S/s and therefore it is flowing through Rajasthan network.

10.5. Powergrid representative intimated that Fatehgarh-III PS – Fatehgarh- II PS 400kV D/c line and Fatehgarh–III PS– Jaisalmer-II (RVPN) 400 kV D/c line is expected to be charged by end of this month.

10.6. NRLDC representative stated that considering these new circuits which are expected to be energized by end of this month they would be conducting a study to understand the power flow pattern.

10.7. Further, CTU representative added that in winter power flow increases from NR to WR as wind generation decreases in Gujarat, therefore situation in expected to improve after October.

10.8. MS, NRPC asked to deliberate the issue again in the next OCC meeting after the study by NRLDC and CTU.

11. Table Agenda No.2: High Loading in Jhatikara Substation. (Agenda by Powergrid-NR1)

11.1 In the meeting, Powergrid NR-1 representative informed that in switchyard of Jhatikara substation, 400kV bus are in split bus arrangement to reduce the fault level of Delhi Ring Main system since commissioning.

- 1500 MVA ICT - 1 & 1500 MVA ICT - 2 feed to 400 kV Jhatikara - Bamnauli line & Jhatikara - Dwarka Line and both are connected to 400 kV Bus -1 & 2.
- Similarly, 1500 MVA ICT - 3 & 1500 MVA ICT - 4 feed to 400KV Jhatikara - Mundka ckt -1 & 2 and both are connected to 400KV Bus -3 & 4.

11.2 To simulate the N-1 Criterion at Jhatikara Substation, typical load flow pattern on dt. 05/09/2023 is taken as shown below.

Line/Element	Load as on 05/09/2023	Remarks

1500 MVA ICT-1	777MW	In case tripping/maintenance of any ICT, another ICT has loading beyond their capacity. In case tripping / maintenance of any line, another line has loading beyond their capacity.
1500 MVA ICT-2	757MW	
Total	1534MW	
400KV Jhatikara - Bamnauli Line.	912MW	
400KV Jhatikara-Dwarka line	625MW	
Total	1537MW	
1500MVA ICT - 3	816MW	
1500MVA ICT - 4	817MW	
Total	1633MW	
400KV Jhatikra-Mundka ckt-1	819MW	
400KV Jhatikara-Mundka ckt-2	816MW	
Total	1635MW	

11.3 He stated that from the above table, it is evident that N-1 criterion does not meet for 1500 MVA ICT & 400 kV Line at Jhatikara Substation.

11.4 CTU representative informed that loading of ICT's at Jhatikara S/s are mainly governed by the load at the downstream of Delhi. Further, he apprised forum that augmentation of 1X1500 MVA ICT (3rd), 765/400kV at Jhatikara S/s is already approved under Ph-III transmission scheme and is under implementation through Powergrid in RTM which is expected to be completed by early 2025.

11.5 CTU representative suggested to have a separate meeting with CTU, NRLDC and CEA Planning division to explore remedial measures possible to tackle the issues presently being faced by Powergrid.

11.6 OCC forum agreed on the suggestion of CTU as mentioned in para 11.5.

12. Table Agenda No.3: S/D of 15 days of 765 KV Koteshwar-Meerut Ckt-2 for shifting of tower loc no 79 (D+0) due to landslide (Agenda by Powergrid-NR1) (Agenda by Powergrid NR-3).

12.1. In the meeting, Powergrid NR-1 representative informed forum that due incessant rain in August'23 near tower loc no 79 (D+0) in 765 KV Koteshwar Meerut Circuit-2 TL massive landslide has taken place leading to deformation in 15 nos. tower members of Tower no 79.

12.2. Further, he mentioned that many cracks were developed in the ground near the tower no 79, the ground near the tower has been disturbed and has become unstable. As the ground near existing tower no.79 is disturbed, the existing tower no.79 is required to be abandoned & shifted to another safer location by about 90 meters towards tower no 78 the same line corridor.

12.3. Therefore, Powergrid NR-1 representative stated that new foundation of TW.79 shall be casted below the line corridor and for this shutdown of 15 days of 765 KV Koteshwar -Meerut is required from 25.10.22023 to 10.11.2023.

12.4. SE(O), NRPC asked Powergrid to start the pre-activities and apply for the shutdown in next OCC meeting.

12.5. Further, Powergrid NR-1 asked forum for consideration of deemed availability for outage of the aforesaid circuit as per the extant CERC regulations.

12.6. MS, NRPC suggested Powergrid to submit a formal request for inspection of site by the committee as per the decisions of the 59th NRPC meeting (held on 31.10.2022).

13. Table Agenda No.4: SPS scheme for safe evacuation of Power from Alaknanda-Vishnuprayag HEP complex (Agenda by UPSLDC)

13.1 In the meeting, UPSLDC representative informed forum that at Vishnuprayag HEP, overcurrent protection is enabled at 120% on 400kV Vishnuprayag-Muzaffarnagar line. At normal operating condition, current on this line remains well below over current setting.

13.2 However, in case of tripping of 400kV Alaknanda-Muzaffarnagar line and high injection of power from Uttarakhand through 400kV Srinagar-Alaknanda DC line, overcurrent protection at 400kV Vishnuprayag operates, tripping 400kV Vishnuprayg- Muzaffarnagar line. Therefore, due to loss of evacuation path, generation loss occurs at Alaknanda & Vishnuprayag HEP.

13.3 To tackle this issue, UPSLDC representative presented to forum the proposed SPS logic (copy attached as Annexure-A.II) for safe evacuation of Power from Alaknanda-Vishnuprayag HEP complex.

13.4 Power of 82.5*4 MW Alaknanda HEP, 100*4MW Vishnuprayag HEP and 33*3MW Singoli Bhatwari HEP evacuates through 400 KV Alaknanda GVK (UPC)- Muzaffarnagar(UP) ckt and 400 KV Muzaffarnagar(UP)-Vishnuprayag(JP) (UP) ckt.

13.5 In case of tripping of any one line i.e., 400 KV Alaknanda GVK (UPC)-Muzaffarnagar(UP) ckt or 400 KV Muzaffarnagar(UP)-Vishnuprayag(JP) (UP) ckt, load will shift to another line and total power flow on remaining line may increase to ~880MW.

13.6 Representative from Alaknanda HEP suggested that generation should be backed down on pro-rata basis at all three HEPs rather than tripping of one unit of Alaknanda HEP as proposed by UPSLDC. He also suggested that another option is to open both the circuits of 400kV Srinagar-Alaknanda D/C line as then around 770 MW generation from both all Alaknanda and Vishnuprayag can be safely evacuated.

13.7 NRLDC stated that if 400kV Srinagar-Alaknanda D/C is tripped then there would be complete black out at 400kV Khandu Khal S/s that is not desirable.

13.8 MS, NRPC suggested that a separate meeting may be convened by UPSLDC with officials of Uttarakhand and all three concerned HEPs to arrive at amicable solution on this issue and thereafter submit revised SPS logic to OCC forum.

14. Table Agenda No.5: Construction of 220/132 KV, 80/100 MVA Sub-Station at Tahliwal (Distt. Una in Himachal Pradesh) by LILO of 220 KV S/C Bhakra-Jamalpur line of BBMB. (Agenda by HPPTCL)

14.1. HPPTCL vide letter dated 31.08.2023 (copy attached as Annexure-A.III) submitted a revised scheme for construction of 220/132 KV, 80/100 MVA Sub-Station at Tahliwal (Distt. Una in Himachal Pradesh) by LILO of 220 KV S/C Bhakra-Jamalpur line of BBMB.

14.2. In the meeting, HPPTCL representative intimated forum that this revised plan has been approved by BBMB constituents in the 148th meeting of Power subcommittee of BBMB held on 25.08.2023 (copy of MoM is attached in above cited letter).

14.3. He further stated that this substation is required on urgent basis to provide construction power to Bulk Drug Pharma Park proposed in Haroli Distt-Una of Himachal Pradesh.

14.4. He also apprised forum that in view of Himachal Pradesh's need of 50MVA power for construction of its Drug Pharma Park, PSTCL has given its concurrence to LILO of single circuit of 200kV Bhakra-Jamalpur double circuit line at 220kV substation Tahliwal subject to installation of suitable SPS by HPPTCL for restricting drawl of power to 50 MVA by Himachal Pradesh and to prevent any drawl from Jamalpur in case of outage of Bhakra-Tahliwal section.

14.5. Further, HPPTCL informed that as long term plan they have submitted a proposal to CEA for approval of construction of 220/132 kV, 200 MVA Substation near Una and 200kV (Twin Zebra) D/C line from 220/132 kV Nehrian Substation to proposed 220/132 kV, 200 MVA Substation near Una.

14.6. MS, NRPC asked NRLDC to examine the HPPTCL proposal and thereafter a separate meeting would be conveyed with the official of NRPC, NRLDC, CTU, HPPTCL and PSTCL for further deliberation on the matter.

खण्ड-ख: उ.क्षे.भा.प्रे.के. Part-B: NRLDC

15. NR Grid Highlights for August 2023

Major grid highlights of August 2023 were presented in the meeting:

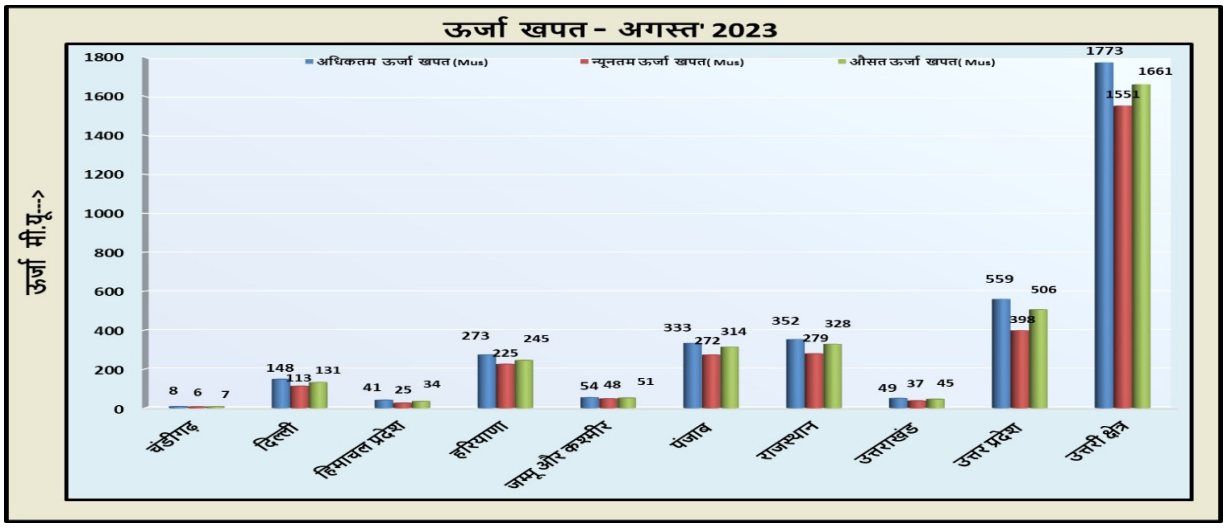
- Maximum energy consumption of Northern Region was **1773 MUs** on 18th Aug'23 and it was 9.5 % higher than Aug'22 (1619 MUs 31st Aug'22)
- Average energy consumption per day of Northern Region was **1661 MUs** and it was 12.7 % higher than Aug'22 (1474 Mus per day)
- Maximum Demand met of Northern Region was **80548 MW** on 18th Aug'23 @14:00 hours (*based on data submitted by Constituents)* as compared to 72045 MW on 31st Aug'22 @13:00 hours.

Northern Region all time high value recorded in Aug'23:

States	Max. Demand Met during the day (MW)		Energy Consumption (MU)	
	As per Format28/hourly data Submitted by States (MW)	As on date	As per PSP (Mus)	As on date
Haryana	12844	18-08-2023 14:45 hrs	273	18.08.2023
Rajasthan	17266	18-08-2023 14.45 hrs	351	18.08.2023

All Time High Record		
Generation	Value (MU)	Achieved on
Hydro Generation	442.6	01.08.2023
Wind Generation	85.7	07.08.2023

Energy Consumptions



- **Comparison of Average Energy Consumption (MUs/Day) of NR States for the Aug'22 vs Aug'23**

क्षेत्र/राज्य	अगस्त- 2022	अगस्त- 2023	% अंतर
चंडीगढ़	6.6	6.9	4.4%
दिल्ली	119.1	131.5	10.4%
हिमाचल प्रदेश	31.6	34.1	7.7%
हरियाणा	216.7	244.9	13.0%
जम्मू और कश्मीर	51.2	51.1	-0.2%
पंजाब	290.8	313.5	7.8%
राजस्थान	236.5	328.1	38.8%
उत्तराखंड	46.2	45.2	-2.1%
उत्तर प्रदेश	475.0	505.6	6.4%
उत्तरी क्षेत्र	**1473.6**	**1660.8**	**12.7%**

Frequency Data

Month	Avg. Freq. (Hz)	Max. Freq. (Hz)	Min. Freq. (Hz)	<49.90 (% time)	49.90 – 50.05 (% time)	>50.05 (% time)
Aug'23	50.00	50.29 On 02.08.23 at 13:18:10 hrs	49.51 on 31.08.23 at 22:25:00 hrs	7.08	**77.28**	15.63
Aug'22	50.00	50.31 on 14.07.22 at 13:14:10 hrs	49.47 on 18.07.22 at 19:20:00 hrs	8.77	**75.77**	15.45

Detailed presentation on grid highlights of Aug'2023 as shared by NRLDC in OCC meeting is attached as Annexure-B.I.

16. SPS in Western Rajasthan ISTS RE Complex

In 209 OCC meeting, NRLDC representative shared concerning information about the significant number of grid events (over 30 incidents) involving RE generation loss that occurred between January 2022 and May 2023. The most severe event resulted in a maximum RE generation loss of 7120 MW, which took place on 15th May 2023. Such substantial losses in RE generation pose a serious threat to grid security, as they have the potential to trigger cascade tripping and lead to electricity supply disruptions over wide areas.

To evacuate the mentioned ~12.4 GW of ISGS RE generation, the Northern region relies on 16 number of 765kV lines. These transmission lines play a critical role in transferring the renewable energy from the generating sources to the consumption centers. Ensuring the reliability and proper functioning of these lines is of utmost importance to maintain grid stability and meet the increasing demand for renewable energy in the region.

NRLDC representative addressed the recent outage of 400kV and above transmission lines due to tower collapses and proposed several measures to enhance the reliability and resilience of the grid, especially in the context of the Rajasthan RE complex. The proposed suggestions are as follows:

1. Review of Wind Zones:

2. Single Circuit Lines in Critical Corridors:

3. n-2 Reliability Criteria for Prone Areas:

However, while these long-term suggestions are being implemented on the field, the NRLDC representative proposed a SPS Scheme logic for the ISTS RE complex to ensure n-1-1/n-2 compliance during events like tower collapse. NRLDC representative also briefed the forum about the basecase assumptions considered while doing the study for SPS requirement. Proposed SPS logic is attached as Annexure-B.I of agenda.

CTUIL representative requested NRLDC to share the basecase used for conducting the SPS study. CTUIL wanted to re-verify the study and provide their inputs to ensure its accuracy and effectiveness. NRLDC agreed to share the basecase for review and incorporation of additional insights. CTUIL recommended that designing the SPS logic may be done based on the loading of lines rather than the combined RE generation quantum.

In 210 OCC meeting,

1. NRLDC representative reiterated that since large amount of RE is being commissioned in the complex at rapid pace whereas the associated transmission system is slightly delayed, so lot of power is also being evacuated under short term open access. Since large number of lines are on

D/C tower, in case of tower collapse or any other event it may become a bottleneck for safe evacuation of power. Therefore, SPS was proposed in the complex and was also discussed in detail in the last OCC meeting.

2. NRLDC representative further displayed the base case and updated SPS logic after implementation of inputs given by CTUIL i.e. inclusion of line loading in SPS logic.

Assessment of Generation backdown of n-2 SPS requirement for 765kV lines of Rajasthan RE pocket

Basecase assumption

400kV Bhadla(RS)-Bikaner(RS) D/C	in service
400kV Bikaner(PG)-Bikaner_2(PG) D/C	in service
STATCOM -1 and 2 @ Bhadla_2	in service
STATCOM-1 @ Bikaner_2	in service
All 400kV lines presently out in Rajasthan	in service
Rajasthan demand	15500 MW
Raj Solar	3400 MW
Raj Wind	1500 MW

Result :

Contingency / Line Loading	Loading of 765kV Fatehgarh2-Bhadla2 D/C > 2000 MW and < 2200 MW	[Loading of 765 kV Fatehgarh2-Bhadla D/C > 1350 and < 1450] or [Loading of 765kV Fatehgarh2_Bhadla2 D/C > 2200 And < 2400]	[Loading of 765 kV Fatehgarh_2-Bhadla D/C > 1450] or [Loading of 765kV Fatehgarh2_Bhadla2 D/C > 2400] or [Loading of 765kV Bhadla2-Ajmer D/C > 3200]
765kV Fatehgarh2-Bhadla D/C	no SPS required	200 MW generation backdown at Fatehgarh-1/2	500 MW backing at Fatehgarh-1/2
765kV Fatehgarh2-Bhadla2 D/C	100 MW backing at Fatehgarh_1	500 MW backing at Fatehgarh-1/2	800 MW backing at Fatehgarh-1/2
765kV Bhadla-Bikaner D/C	no SPS required	no SPS required	no SPS required
765kV Bhadla2-Bikaner D/C	no SPS required	no SPS required	no SPS required
765kV Bhadla2-Ajmer D/C	no SPS required	400 MW backing at Bhadla_2 (due to overloading of Jodhpur-Kankroli/ Bhadla-Jodhpur)	500 MW backing at Bhadla_2 (due to overloading of Jodhpur-Kankroli/ Bhadla-Jodhpur)
765kV Bikaner- Moga D/C	no SPS required	no SPS required	no SPS required
765kV Bikaner- Khetri D/C	no SPS required	no SPS required	no SPS required

3. CTUIL representative stated that they are still examining the previous file shared with them and agreed to give comments on the latest logic discussed in this meeting. CTUIL representative further informed that inputs from their side will be shared by 1st week of September.

4. Powergrid representative stated that implementation of logic can be done without any issues

5. OCC asked all members to submit their comments by first week of Sep.

In 211 OCC meeting, the agenda was again discussed:

- NRLDC representative presented the suggestions given by CTUIL on 15.09.2023 i.e inculsion of Fatehgarh-II STATCOMs, Establishment of 400kV Fatehgarh-III PS (Sec-1) along with its interconnection to Fatehgarh-II PS and Jaisalmer (RVPN) and Reconductoring of 400kV Jodhpur-Kankroli and bypass at 400kV Bhinmal and requested CTU to present their comments.

- CTUIL representative stated that as per study conducted at their end contingency at 765kV Fatehgarh_2-Bhadla_2 D/C and 765kV Fatehgarh_2-

Bhadla D/C was resolved after including STACOM at Fatehgarh2. Further, given the implementation time of SPS, STATCOMs at Fatehgarh-2 & Fateharh-III interconnector are expected shortly and these can be considered in study. Bhadla_2-Ajmer D/C outages causes overloading of 400Kv Jodhpur-Kankroli and 400Kv Bhadla-Jodhpur.

- POWERGRID representative agreed that the logics can be implemented without any issues as decided in NRPC/OCC forum.

In the meeting, RVPN expressed concern on simultaneous outage of 400kV Jodhpur-Kankroli line and bypass of 400kV Bhinmal to form direct 400kV Kankroli-Zerda. POWERGRID and RVPN agreed to discuss the issue bilaterally regarding bypass of 400kV Bhinmal. Further, if required the matter may be discussed involving CTUIL, NRLDC and NRPC also.

Accordingly, following was agreed in 211 OC meeting:

- No requirement of SPS for 765kV Fatehgarh2-Bhadla D/C and 765kV Fatehgarh2-Bhadla2 D/C lines given the commissioning of new transmission elements in Sep-Oct 2023.
- SPS may be implemented for 765kV Bhadla2-Ajmer D/C contingency as follows:

Contingency / Line Loading	**Antecedent loading of 765kV Bhadla2-Ajmer D/C > 3200**
765kV Bhadla2-Ajmer D/C	400-500 MW backing/generation tripping at Bhadla_2

NTPC Kolayat(400MW) is connected at 765kV Bhadla2 (through 400kV line) which is evacuating power under short term arrangement. In case of above contingency, 400kV Bhadla2-Kolayat line may be tripped to achieve the desired loading relief.

The above SPS will be reviewed based on further network commissioning and its need will be once again deliberated after commissioning of 765kV Sikar-II and its interconnections.

The proposed SPS will be implemented by POWERGRID at the earliest given that Bhadla-2 is SAS based substation.

OCC forum approved the logic as discussed.

17. Opening of 400 KV Singrauli(NT)-Anpara(UP) to control fault level

As per the recommendations of the 1st Meeting of Northern Regional Power Committee (Transmission Planning) (NRPCTP), 400 kV Singrauli – Anpara has to be opened to control the high fault levels in Anpara – Singrauli – Rihand complex.

Extract from the meeting are shown below:

6.13. After deliberations, following was agreed:

(i) The transmission system for evacuation of power from Singrauli III:

I. LILO of both circuits of Tie line (Vindhyachal Stage-IV to Vindhyachal Stage-V 400kV D/C Twin Moose line) at Singrauli Stage-III- under the scope of NTPC.

II. Reconductoring of Singrauli Stage-III - Vindhyachal stage-IV 400 kV D/C TM line (formed after above proposed LILO) with HTLS conductor - under the scope of NTPC

III. Singrauli-III–Rihand-III 400kV D/c line- under ISTS scope

IV. 2x125 MVAR Bus Reactor at Singrauli-III generation switchyard- under scope of NTPC

(ii) Singrauli- Anpara 400 kV line will be kept normally open (can be closed in emergency conditions) after commissioning of Anpara D –Unnao 765kV line to restrict high short circuit level in Singrauli-Anpara complex.

(iii) The short circuit level in Singrauli will again be studied by CEA and CTU and accordingly, would be discussed in the next NRPCTP meeting.

The above scheme may also be rectified in next NRPCTP meeting.

In 210 OCC meeting, NRLDC representative informed the forum that a meeting was organized on 10.07.2023 among NLDC, NRLDC & SLDC – UP to discuss on the constraints faced in the operation of HVDC back-to-Back Vindhyanchal in WR to NR direction due to high loading of 400 kV Anpara – Obra. In the meeting it was discussed & agreed that:

- As per the recommendations of the 1st Meeting of Northern Regional Power Committee (Transmission Planning) (NRPCTP), 400 kV Singrauli – Anpara will be opened to control the high fault levels in Anpara – Singrauli – Rihand complex. NRLDC & SLDC - UP shall conduct a study to observe the impact of opening 400 kV Singrauli – Anpara on the fault level of the complex.
- Also, the opening of 400 kV Singrauli – Anpara will relieve the loading of 400 kV Anpara – Obra and provide flexibility in the operation of HVDC back-to-Back Vindhyanchal in both directions. The same shall be studied by NRLDC & UP – SLDC to identify operational issues with 400 kV Singrauli – Anpara in open condition. The contingencies/planned outages which may require closing of the line will also be identified.
- For due consultation with all the stakeholders i.e. POWERGRID, NTPC & UP, the matter shall be taken up in the OCC forum before implementation.

Singrauli	1850 MW
Rihand	1856 MW
Anpara A&B	1546 MW
Anpara C	1100 MW
Anpara D	944 MW
Vindhyanchal BTB	500 MW towards NR
Obra	903 MW
Bara	1760 MW
NR Demand	73200 MW
UP Demand	27000 MW

HVDC Rihand Dadri : 1400 MW towards Dadri
HVDC Balia Bhiwadi : 250 MW towards Bhiwadi

Sl. No	Bus number	Substation	Voltage level	Case: Maximum Generation		After opening 400kV Anpara-Singrauli		Relief
				Fault MVA	Fault current	Fault MVA	Fault current	
1	154056	SINGRL4	400	33.32166	48095.7	22.17586218	32008.1	16087.6
2	154014	ANPARA4	400	37.90139	54705.9	28.11090748	40574.6	14131.3
3	154016	ANPARAC	400	37.11426	53569.8	27.78389629	40102.6	13467.2
4	154015	ANPARA-D	400	33.37294	48169.7	25.77984422	37210	10959.7
5	154057	RIHAND-G	400	22.57143	32579	19.22666463	27751.3	4827.7
6	157000	ANPARAC	765	35.06184	26461.4	32.26407693	24349.9	2111.5
7	157001	ANPARA-D	765	35.23052	26588.7	32.45792719	24496.2	2092.5
8	154018	OBRA4	400	18.54675	26769.9	17.59133154	25390.9	1379
9	157027	OBRA_C_TPS	765	21.62366	16319.5	20.69268716	15616.9	702.6

NRLDC representative further shared the observations of the study conducted to assess the effects resulting from the opening of the 400 KV Singrauli(NT)-Anpara(UP) (PG) transmission line on the system, and the fault level of the Anpara-Singrauli generation complex, along with the potential contingencies that could occur.
From the study results, it is clear that the fault level in the Singrauli-Anpara complex has significantly decreased. Maximum relief is observed at Singrauli (16kA), Anpara TPS (14kA), Anpara C (13kA) and Anpara D (11kA)

NRLDC representative stated that as per the study conducted for various contingencies the system was seen to be N-1 Compliant and stable.

Other major findings of the study:

i. The system is compliant w.r.t to N-2 contingency of HVDC Rihand Dadri D/c.

ii. However, Singrauli complex would be N-1 non-compliant w.r.t further tripping of any one ckt of 400kV Singrauli-Allahabad, 400kV Singrauli-Lucknow, 400kV Rihand-Allahabad. By shifting Vindhyachal towards WR (Western Region) with a minimum of 200 MW, the system becomes N-1 compliant

Action: *Therefore, in case of tripping on any one ckt in Singrauli complex power flow in HVDC Vindhyachal may be shifted towards WR with a minimum of 200 MW*

iii. The system is compliant w.r.t to N-1 contingency of 765 kV Anpara_C – Unnao and 765 kV Anpara D – Obra_C. No major contingency was observed

iv. However, if the generation at Obra is below 400 MW before the tripping incident, it would result in an overload on the 400 kV Anpara-Obra line after the tripping of any one of the 765 kV line.

v. In order to maintain N-1 compliance, the safe limit for HVDC Balia-Bhiwadi power transfer should be **300 MW** from Bhiwadi to Balia which was **400 MW** prior to opening of 400 KV Singrauli(NT)-Anpara(UP) (PG).

The study results and basecase were shared with UP SLDC on 02.08.2023.

In 210 OCC meeting,

- NRLDC representative requested SLDC UP to provide the results of the study carried out on their part and requested CTUIL to provide their comments as the above was approved in NR-PCTP meeting**.**
- SLDC UP representative stated that they received similar results from the study conducted at their end and will share the observations with NRLDC shortly.
- NTPC and POWERGRID were also requested to provide any comments from their side.
- OCC asked all members to submit their comments by first week of September 2023.
- No comments have been received at NRLDC end.

In 211 OCC meeting, the agenda was again discussed:

- NRLDC representative requested UP SLDC, UPPTCL, POWERGRID, NTPC and CTUIL to provide their inputs if any
- Representative from SLDC UP stated that an internal meeting was organized separately in 1st week of September and comments from all the constituents are awaited and will be shared soon.
- No comment was received from NTPC/ POWERGRID.
- CTUIL representative stated that Bhiwadi-Ballia HVDC is expected to be in service with 1000MW from Bhiwadi to Ballia side and in case there is any kind of limitation on Bhiwadi Ballia HVDC due to high line loading of 400kV Ballia-Mau, then reconductoring of line may need to be taken up.
- NRLDC representative stated that for Bhiwadi-Ballia, power is generally flowing from Bhiwadi to Ballia in range of 500-1000MW. In evening/night

time, when demand of UP state is high, high loading of 400kV Ballia-Mau is being observed which is even N-1 non-compliant.

- In view of above, in future, there may be requirement of reducing the power order of Bhiwadi-Ballia HVDC during evening time so as to avoid N-1 non-compliance of 400kV Ballia-Mau line.

OCC forum agreed to discuss the agenda in next OCC meeting.

18. Transmission related issues observed during high demand season

As discussed in previous OCC meetings, most of the NR states except J&K, Ladakh and Chandigarh U/Ts are sharing basecase and ATC/TTC assessment with NRLDC. OCC has advised all states to timely declare TTC/ATC for prospective months and revise the figures as per requirement.

Latest state wise issues are listed below:

Haryana:

TTC: 9100MW

ATC: 8800MW

In 211 OCC meeting, NRLDC representative requested HVPN to share the status of new elements to be commissioned.

HVPN representative stated that :

- Revised timeline for the commissioning of the 220kV lines to Sec-32 Panchkula (PG) is Feb 2024 and for 220kV lines to Pinjore for December 2023 as of now.
- No definite timeline was given for Deepalpur ICT.

Punjab:

TTC: 9500MW

ATC: 9000MW

In 211 OCC meeting, NRLDC representative requested Punjab SLDC to share update regarding 400/220kV Dhanansu S/s. Punjab representative stated that the revised timeline for Dhanansu S/S is December 2023 end.

Delhi:

TTC: 7300MW

ATC: 7000MW

In 211 OCC meeting, NRLDC representative stated that ATC of Delhi has been updated to 7000 MW as per reassessed figures after mock testing of SPS at Bawana and report submission.

Rajasthan:

Discussed in next agenda.

Constraints observed at major 400/220kV ICTs of different states for the last 30 days are listed below:

- For Punjab – Ludhiana ICT loadings were near N-1 limit during early week of the month, Nakodar ICTS were N-1 non-compliant, SLDC Punjab was requested to expedite augmentation of 2nd ICT at Nakodar.
- For Delhi – ICT loadings were well within range except at 400/220kV Bawana (2 ICT section). CEA has also approved for ICT capacity augmentation at Bawana.
- For UP – Azamgarh, sarnath, obra, Allahabad and lucknow ICT loadings were near N-1 limit, However, in Gorakhpur N-1 violations has been observed, augmentation at Gorakhpur needs to be expedited for resolution.
- For Haryana – Deepalpur ICTs are N-1 non-compliant at many incidents. Panipat and Kurushetra ICT loadings are also N-1 non-compliant at the time of high demand of Haryana state. Loading of 220kV Sonepat-Mohana D/C and 220kV Hisar(PG)-Hisar(IA) D/C lines were also highly loaded (n-1 non-compliant).

It is again requested that SLDCs may ensure that loading of ICTs and lines are below their N-1 contingency limits. While requisitioning power from various sources, states should take care to limit their scheduled drawl as well as actual drawl in real time within the Available Transfer Capability (ATC) limits assessed by SLDC and NRLDC. NRLDC is continuously sending emails in real-time for ensuring N-1 compliances as well as restricting schedule till ATC limit and maximizing internal generation. SLDCs need to ensure this during real-time operation.

As discussed in last several OCC meetings, all SLDCs need to furnish ATC/TTC details of their control area at respective SLDC websites. Now, it is being observed that most of the SLDCs except J&K are uploading ATC/TTC limits on their websites.

SLDC	Link for ATC on website

UP	https://www.upsldc.org/documents/20182/0/ttc_atc_24-11-16/4c79978e-35f2-4aef-8c0f-7f30d878dbde
Punjab	https://www.punjabsldc.org/downloads/ATC-TTC0321.pdf
Haryana	https://hvpn.org.in/#/atcttc
Delhi	https://www.delhisldc.org/resources/atcttcreport.pdf
Rajasthan	https://sldc.rajasthan.gov.in/rrvpnl/scheduling/downloads
HP	https://hpsldc.com/mrm_category/ttc-atc-report/
Uttarakhand	https://uksldc.in/ttc-atc
J&K and Ladakh U/T	**NA**

All SLDCs are requested to regularly update ATC/TTC limits after mutually agreement between SLDC and NRLDC.

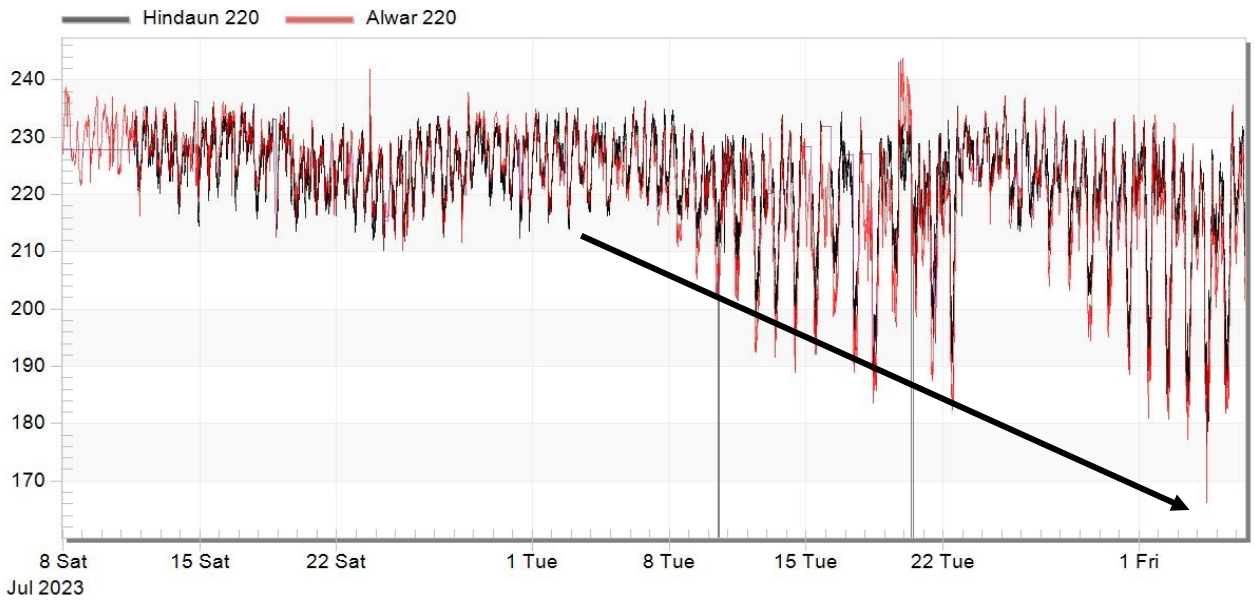
Members may please discuss

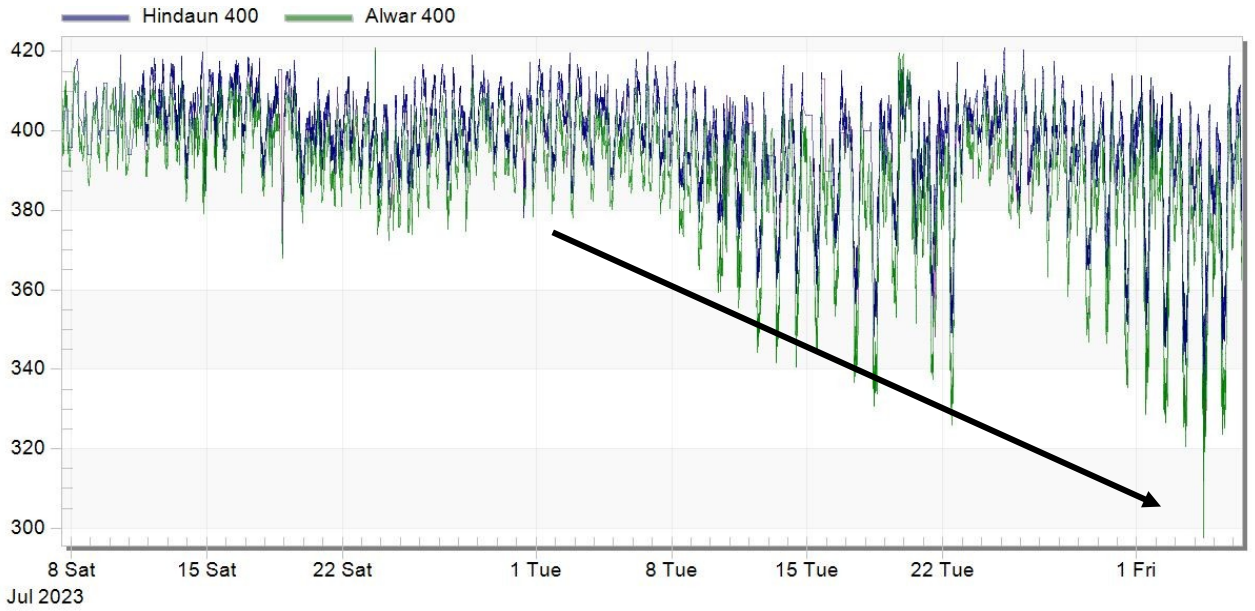
19. Grid Operation related issues

a. Progress of transmission augmentation in RVPN control area

NRLDC representative expressed serious concerns on the transmission related issues being observed in RVPN control area. NRLDC representative asked RVPN to expedite the works as election dates are nearing and the tendering work may be completed before Code of conduct for election gets applicable. For Rajasthan – Majority of 400/220kV RVPN substations are N-1 non-compliant. 400/220kV ICTs at RVPN substations such as Ajmer, Chittorgarh, Bikaner, Hindaun are N-1 non-compliant most of the time whereas other 400/220kV ICTs at Merta, Jodhpur, Bhilwara and Bhinmal(PG) are alsol N-1 non-compliant for some duration in last 30 days**. It was clearly mentioned by NRLDC representative that situation with present transmission network is expected to remain worse during the upcoming winter season.**

NRLDC representative stated that the issue of low voltages in Hindaun/Alwar area is still persisting as shown below:





As per latests status available:

i. ICT capacity augmentation at 400/220kV Chittorgarh is expected by Nov'2023.

ii. New 500MVA ICT approved at 400/220kV Hindaun, Ajmer, Merta, Bikaner & Jodhpur station

iii. Status of ICT augmentation at 400/220kV Bhilwara & Babai S/s not available.

RVPN representative in the meeting informed that:

Status of 765 kV GSS Kankani-

1. Being valued more than 250 Cr. this scheme shall be executed under TBCB mode as per the order of Hon'ble regulatory commission of Rajasthan. Approval of SCT has been obtained for this.

2. Project shall take around 24 months from SPV transfer, this project shall tentatively be commissioned up to FY 2026-27.

Status of capacitor banks of RVPN-

1. Proposal of Installation of 33/11 kV capacitor banks at various substations of Rajasthan has been technically approved by the NRPC in its 68th NRPC meeting on 18.08.2023. Minutes of the same are expected shortly and after receiving the minutes, the same has been posed to PSDF for sanction of the requisite grant.

Status of new ICTs and transmission lines:

For ICTs					
S.No.	Transformer rating	Location	Date of bid opening	Date of Commisioning	Tender status
1	500 MVA	Ramgarh	12.09.2023	18 months from LOA	
2	500 MVA	Surpura	12.09.2023	18 months from LOA	
3	500 MVA	Bhadla	12.09.2023	18 months from LOA	
4	500 MVA	Ajmer	04.09.2023	24 months from LOA	Opened
5	500 MVA	Bikaner	04.09.2023	24 months from LOA	Opened
6	500 MVA	Hindaun	04.09.2023	24 months from LOA	Opened
7	500 MVA	Merta	04.09.2023	24 months from LOA	Opened
8	3x500 MVA	Jaisalmer-2	06.09.2023	18 months from LOA	Opened
9	500 MVA	Babai	04.09.2023	24 months from	Opened

				LOA	
10	500 MVA	Kalisindh TPS	04.09.2023	24 months from LOA	Opened
For HTLS Lines					
1	Uprating of existing (A) 220 kV S/C Bap - Barsingsar LTPS		12.09.2023	24 months from LOA	
2	220 kV S/C Barsingsar - Bikaner				
3	220 kV S/C Tinwari - Jodhpur Ckt I (400 kV)				
4	220 kV S/C Tinwari - Jodhpur Ckt II (400 kV)				
5	132 kV S/C Pugal Road - Bikaner (220 kV)				
6	132 kV S/C - Pokran-Dechu (22O kV)				
7	UPRATING OF EXISTING (A) 220 KV S/C JODHPUR (400 KV) - BILARA				
8	(B) 220 KV S/C JODHPUR (400 KV NEW) - PALI				
9	(C) 220 KV S/C BHOPALGARH - MERTA (400 KV)				
10	(D) 132 KV S/C PS2 - PS1				
11	(E) 132 KV S/C PS1 - BAJJU				
12	(F) 132 KV S/C BAJJU - KOLAYAT				
13	UPRATING OF EXISTING (A) 220 KV D/C BHAWAD –				

	BHOPALGARH				
14	(B) 132 KV S/C PS4 - PS3				
15	(C) 132 KV S/C PS5 - PS4				
16	(D) 132 KV S/C PHALODI (220 KV) - PS5				
17	(E) 132 KV S/C KOLAYAT - GAJNER				
18	(F) 132 KV S/C GAJNER – BHINASAR				
19	(G) 132 KV S/C GAJNER - PUGAL ROAD				

RVPN representative stated that technical bids have been opened and price bid are to be opened shortly.

NRLDC representative further asked Rajasthan SLDC to conduct meeting with intrastate thermal generators (to provide reactive power support to minimize low voltages), DISCOMs and RE generators so that action plan is prepared and submitted in OCC forum. There is urgent requirement for the same.

OCC forum expressed concern on the persisting issues in RVPN control area and asked Rajasthan STU to expedite their actions. Rajasthan SLDC was also asked to ensure that no major grid operation related issues are observed during the upcoming winter season.

b. ERS availability related issues

Issues arising due to tower collapse events have been deliberated in recent NRPC meetings. The issue was also discussed in 68th NRPC meeting held on 18.08.2023. In the meeting it was discussed that :

i. Outage of lines on tower collapse has led to major issues in grid operation as well as for safe evacuation of generation.

ii. Shutdown of 400kV Bikaner(PG)-Bikaner(RJ) D/C lines were also availed by POWERGRID for commissioning of 400kV Bikaner-II S/s (appreciable work helped to minimize curtailment). First time in Northern Region, ERS line of

Quadmoose conductor was implemented, high current carrying capacity of Quadmoose ERS reduced the quantum of RE curtailment significantly.

iii. All other utilities were requested to ensure that they have availability of ERS, trained manpower and also gangs which can complete such tasks swiftly, in case of requirement.

iv. MoP, Govt. of India had already issued instructions for procurement of ERS (also discussed in 150th OCC meeting).

v. CEA (Grid Standards) Regulations, 2010 also suggests keeping necessary arrangement for ERS.

vi. In view of increase in line length under jurisdiction of different utilities over the years, it is suggested that the nos. of ERS requirement may be reviewed and regularly monitored at OCC level.

vii. As agreed in 63rd NRPC meeting (held on 24.02.2023), ERS availability monitoring may be included in follow up agenda in monthly OCC meetings.

MS, NRPC stated that ERS availability monitoring shall be included as rolling/followup agenda in OCC meeting. Chairperson, NRPC stated that availability of suitable ERS is compulsion for all the utilities to ensure reliability of electricity supply, to avoid any power outage in case of long outage of line on tower collapse, to harness the generation in case of long outage of any evacuating line.

Finally, it was concluded that:

I. ERS availability monitoring shall be taken as rolling/follow-up agenda in OCC meetings for regular monitoring of ERS under different utilities in Northern region.

II. NRPC Sectt. in coordination with NRLDC, PGCIL and other stake holders (having expertise in ERS) shall prepare a guideline on requirement of ERS for any utility based on its total ckt kms in line with CEA (Grid Standards) Regulations, 2010. Requirement, availability and procurement of ERS may also be included in the guidelines.

Brief writeup on ERS related benefits and issues is attached as Annexure-B.IV of agenda.

In 211 OCC meeting, NRLDC representative requested NRPC to include ERS availability monitoring shall be taken as rolling/follow-up agenda in OCC meetings for regular monitoring of ERS under different utilities in Northern region.

MS NRPC appreciated the draft prepared by NRLDC and added that the agenda would be included in OCC meeting for follow up by NRPC Sectt.

c. Submission of grid operation related data by Railways

Indian railways is connected to number of 220kV ISTS nodes such as Dadri NTPC, Auraiya NTPC, Allahabad (PG) and Abdullapur (PG). In future also, Indian railways may get connected at other ISTS stations. It is to be noted that the drawl pattern by Indian railways is significantly different from other drawees such as state DISCOMs.

The MW and MVAR drawl by Indian Railways has significant impact on the loading as well as voltage profile of connected ISTS node. Recently, issue related to high voltage at 220kV Auraiya NTPC was being reported which lead to tripping of 220kV feeders from Auraiya NTPC supplying power to Railways. This disruption of power proves to be a hindrance in providing regular traction supply impacting the major railway routes. Similar issue has also been reported at 220kV Allahabad (PG) supplying power to Indian Railways in the past.

In view of above, it is suggested that Indian Railways provides information about MW, MVAR drawl and expected voltage profile in their network so as to assess its impact on the nearest ISTS node. This would help to suggest appropriate measures in advance and avoid any possible disruption of traction supply.

Railways representative attended the meeting and informed the forum about various drawl points of Railways from ISTS network. Details attached as Annexure-B.II. It was also informed that presently there are no issues at Railways drawl point from ISTS grid (including no issues at Auraiya (Phaphund)).

NRLDC representative asked Railways to submit the voltage profile of stations drawing power from ISTS points.

OCC forum noted the same.

20. J&K and Ladakh (UT) related pending issues

In the meeting, NRLDC representative highlighted the issues pertaining to J&K:

a. J&K Telemetry Issues

Reliability and accuracy of SCADA data and its associated communication system is essential for monitoring and coordinating operations of a large electricity grid. It helps in visualization and management of the critical grid element failure/grid incident in real time and minimizes the possibility of any untoward incidences/disturbances. Network applications in Energy management system (EMS) such as State Estimator (SE), Real Time Contingency Analysis (RTCA) also necessitate reliable and accurate real time analog and digital data. Data communication has to be made through redundant and alternate path communication channel.

Real-Time data availability from Jammu and Kashmir is very poor. There is zero visibility of data in J&K stations. With poor monitoring of data, it is very difficult to monitor grid in efficient manner.

The matter has been discussed in various TCC and TeST Meetings but there is no improvement of the same.

Brief details are as follows:

- Under SCADA upgrade project 66 RTUs were installed by M/s Siemens at all 400KV / 220 KV and 132 KV sub-stations/generating Stations of J&K PDD.
- RTUs were not integrated with Control centre due to non-availability of communication network.
- RTUs were tested locally and commissioned without data availability at Control Centre.
- **Due to Non availability of data, JK PDD is not able to monitor its drawal from grid and its generation**. It is dependent of Central sector data for monitoring of drawal.
- *Matter was also discussed in Special Meeting with J&K on 28.07.2020 where in Representative of J&K informed that they have given consultancy work to POWERGRID for installation of OPGW in J&K. However, due to funding issue OPGW work has been stalled by POWERGRID. According to J&K almost 95% of the work is complete and once funding issue is resolved Non-availability of telemetry issue will be resolved.*
- *Matter was also discussed in 47th TCC-49th NRPC Meeting dated 27.12.2021,* J&K confirmed that they will resolve the issues mutually with POWERGRID so that data starts reporting to SLDC/ NRLDC.
- During 19th TeST Meeting dated 07.03.2022 J & K representative informed that by 31st December 2022 all 70 RTUs will be integrated with SLDC.
- During 20th TeST Meeting dated 09.09.2022, it was discussed that J&K informed that they are in process of rectification of RTU issues and joint visit is planned with M/s Siemens.
- NRLDC has also written to Principal Secretary (PDD), vide letter NRLDC/SCADA/Telemetry/2022 dated 03.10.2022 regarding reliable telemetry from J &K Sub-stations
- Issue was also discussed in 21st TeST Meeting held on **13.12.2022**

- During 64th NRPC held on 24th March 2023 Representative from Jammu & Kashmir informed that 47 OPGW links out of 73 links have been commissioned by POWERGRID and remaining links are expected to be completed by June 2023. He further informed that 68 crores funds for OPGW installation has already been given to POWERGRID and they are in process of approval of additional 21 crores fund.

- Further, Representative from POWERGRID informed that RTU were commissioned in 2015 by M/s Siemens without communication link. Now when the links are available there are issues in RTU reporting which needs to be addressed. Also at some of the location during 64thNRPC Meeting (24th March 2023)–Minutes of Meeting 33 Sub-station, retrofitting CT& PT cables were disconnected and new cabling needs to be done.

MS NRPC expressed serious concern and requested that a joint meeting may be conducted including members from POWERGRID, NRLDC, J&K and M/s Siemens to finalise the work needed to integrate the RTUs and for further action by J&K.

J & K is requested to please take up for restoration of data at the earliest.

J&K to update the status.

b. UFR and df/dt status:

- As per the agreed quantum relief for NR, total target in respect of J&K for UFR and df/dt are 336 MW and 270 MW respectively. Confirmation on relief quantum is yet to be received from J&K. Moreover, in compliance of NPC decision, NR states/constituents agreed to raise the AUFR settings by 0.2 Hz in 47th TCC/49th NRPC meetings held on 20.07.2020. However, no update received from J&K and Ladakh (UT).

- Same issue was again deliberated in 198th OCC meeting held on 17.08.2022 and 57th NRPC meeting held on 31.08.2022.

- Issue was again deliberated in 68th NRPC meeting held on 18.08.23.

Status furnished by J&K and Ladakh (UT) in 68th NRPC meeting:

"List of feeders along with their load parameters where the under frequency relays and df/dt relays are installed in Jammu province was also attached". **However, no such updated feeders list received yet at NRPC/NRLDC.**

"Meanwhile 132kV feeders identified and details also shared with NRLDC which are curtailed manually in case of over-drawl / low frequency". **It may be noted that**

these are the feeders list which can be opened manually to control the over drawl and does not have any automatic relay (UFR or df/dt) to address the low frequency without any manual intervention.

J&K may update the status on following;

i. Status/confirmation on raising the AUFR settings by 0.2 Hz as agreed in 47th TCC/49th NRPC meetings held on 20.07.2020.

ii. Share the List of feeders and load wise breakup of the feeders in which UFR and df/dt relays are installed to trip 336 MW (UFR) and 270 MW (df/dt) respectively.

iii. Tentative timeline to resolve the above issue as it has been under discussion since last ~3 years as mentioned above.

J&K to update the status.

c. Long outage of 220kV Kishenpur-Mirbazar line

- 220kV Kishenpur-Mirbazar line is under long outage since 19.02.2022 due to tower collapse. It is to be noted that significant time (much higher than time specified in CEA regulations) has passed since line outage and still the line has not been revived yet.
- In 57th NRPC meeting held on 31.08.22, J&K representative stated that revival of 220kV Kishenpur-Mirbazar line would be completed in nearly 2-3 months. However, it is still pending.
- Same was again deliberated in 68th NRPC meeting held on 18.08.23.

Status furnished by J&K and Ladakh (UT) in 68th NRPC meeting:

"Foundation work of 1 no. out of total 2 nos. of tower has been laid down and foundation work on 2nd tower is in progress and shall be completed by 15th Sept'2023 subject to fair weather condition. Work got delayed due to inclement weather condition".

It may be noted that it has been **18 months 12 days** as on 31.08.23 since this 220kV line is under outage and impacting the reliability of the J&K control area grid.

J&K should put best efforts for earliest revival of line.

J&K to update the status.

d. Mock black start exercise of URI-I & URI-II HEP, Lower Jhelum HEP:

- Mock black start exercises are necessary to make sure that generating units are able to start in case of requirement/ blackout of grid. Mock black start exercise of URI-I & URI-II HEP, Lower Jhelum HEP is yet to be conducted. In 198th OCC meeting, JKPTCL representative agreed that the issue is well known and important and the same would be taken up with SLDC.

- As per latest discussion held with J&K & NHPC officers on 27.07.2023, the blackstart exercise for Uri-I & Uri-II are planned in Oct-Nov this year. As the blackstart exercise has not been carried out since number of years, it is requested to plan and adhere to the dates for black start exercise as number of agencies are involved in the exercise.

i. **Representative from NHPC stated that mock black start exercise of URI hydro plant shall be conducted in 1st week of Nov'23.**

ii. **J&K is requested to do the needful preparation and coordinate to carry out the mock black start exercise of URI HEP in 1st week of Nov'23 with 70-100MW of load.**

J&K to update the status.

e. Reactive compensation details:

- J&K grid being weakly connected from the rest of the grid and due to its isolated location suffers from issues of severe low voltage. During winter months when hydro generation is not available and demand in J&K control area is high due to heating load requirements, the issue of low voltage gets aggravated. J&K also has to pay large amounts as reactive energy charges to pool due to high MVAr drawl from ISTS grid at the time of low voltage.

- It has been discussed and suggested to J&K to plan & expedite commissioning of reactive power devices especially capacitors at lower voltage level to improve the voltage profile in valley area and also avoid large sums payable as reactive energy charges. J&K is requested to furnish latest status of their reactive energy management plan.

- Low voltage issues of J&K and Ladakh (UT) has been regularly informed through quarterly operational feedback report of Grid-India, issue was deliberated in 57th NRPC meeting held on 31st Aug'22, but no appreciable work is done to mitigate the issue.

- Issue was again deliberated in 68th NRPC meeting held on 18.08.23.

Status furnished by J&K and Ladakh (UT) in 68th NRPC meeting:

"The distribution wing of Jammu, i.e. JPDCL Jammu has already taken up the work of the installation of Capacitor banks at 11KV level in approximately 90 receiving stations in Jammu province with approx. 350MVAr capacity. However, JKPTCL has kept a provision in its CAPEX budget itself to get the damaged capacitors banks rectified such as 220/132/66/33KV GSS's i.e. Hiranagar, Bishnah, Gladni etc. and to install new capacitor banks wherever required to improve the voltage profile/power factor at 220/132/33KV OR 66KV level and 132/33KV or 66kV level grid Substation of Jammu province".

J&K and Ladakh (UT) may share the following;

i. List of nodes and node wise capacitor bank requirement (in MVAr) as finalized by JPDCL & JKPTCL.

ii. Tentative timeline for tendering and commissioning of capacitor bank.

iii. List of nodes (Sub-stations) in J&K and Ladakh (UT) facing the low voltage along with their voltage profile.

iv. Status of 350MVAr capacitor bank at 11kV may be furnished by JPDCL.

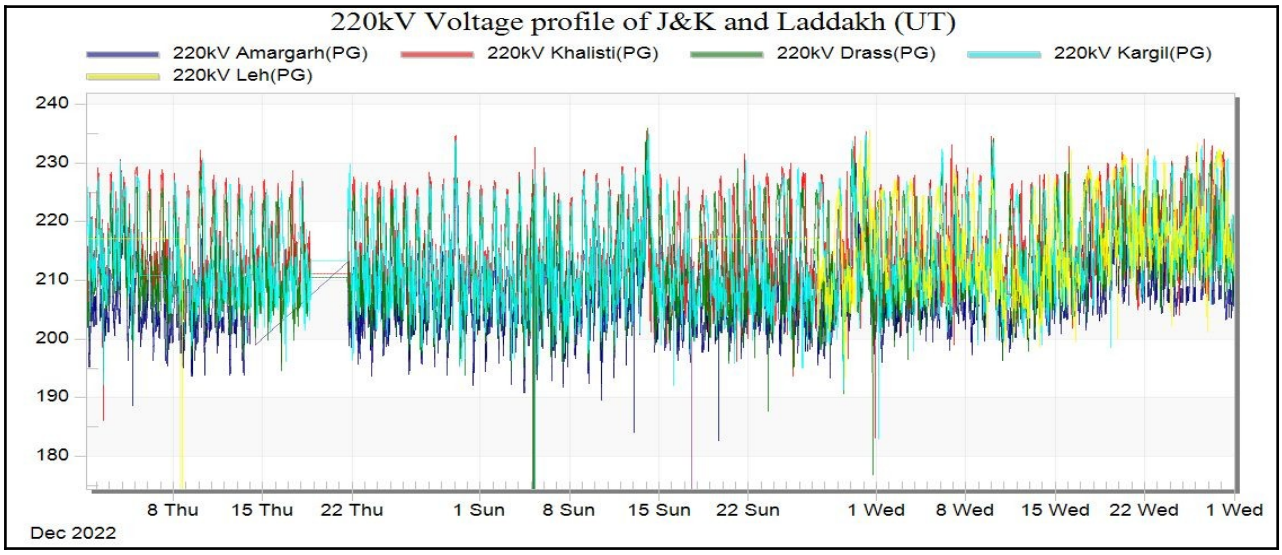
J&K and Ladakh (UT) to update the status.

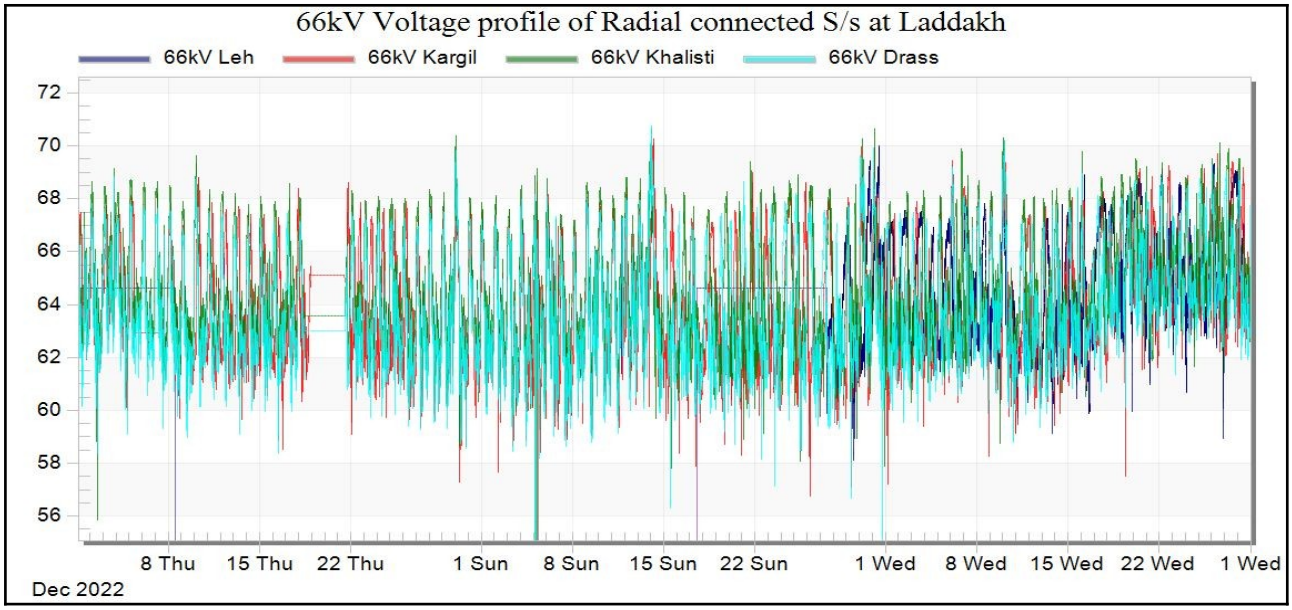
f. Low Voltage issues:

Followings nodes experienced significant low voltage during last winter (low generation period and high demand of J&K).

- 400kV URI-I, 220kV Amargarh, 220kV Wagoora, and 220kV Alusteng.
- 220kV/ 66kV Drass, Kargil, Khalsti and Leh.
- 220kV Bus voltage at Amargarh, Kargil, Khalsti and Drass and Leh S/s were in the range of **195kV-205kV** during Dec'22 to Jan'23. (Voltage profile shown below).
- 66kV Bus voltage at Drass, Kargil, Khalsti and Leh were in the range of **58kV-62kV** during Dec'22 to Jan'23. (Voltage profile shown below).
- **As the Leh-Khalsti-Kargil-Drass-Aulsteng being the radially connected stations to Ziankot**. Ziankot is connected to Wagoora, Wagoora is connected to Amargarh and Amargarh is connected to URI-I, low voltage at URI-I, Amargarh and Wagoora results in significantly low voltage during high demand in J&K an Ladakh(UT) at Drass, Kargil, Khalsti and Leh as system is connected radially.

- During winter, majority of the time generation at Chutak and Nimoo Bazgo HEP remains under outage, results significant low voltage at 66kV Leh, 66kV Khalisti etc. due to drawl from radial network.

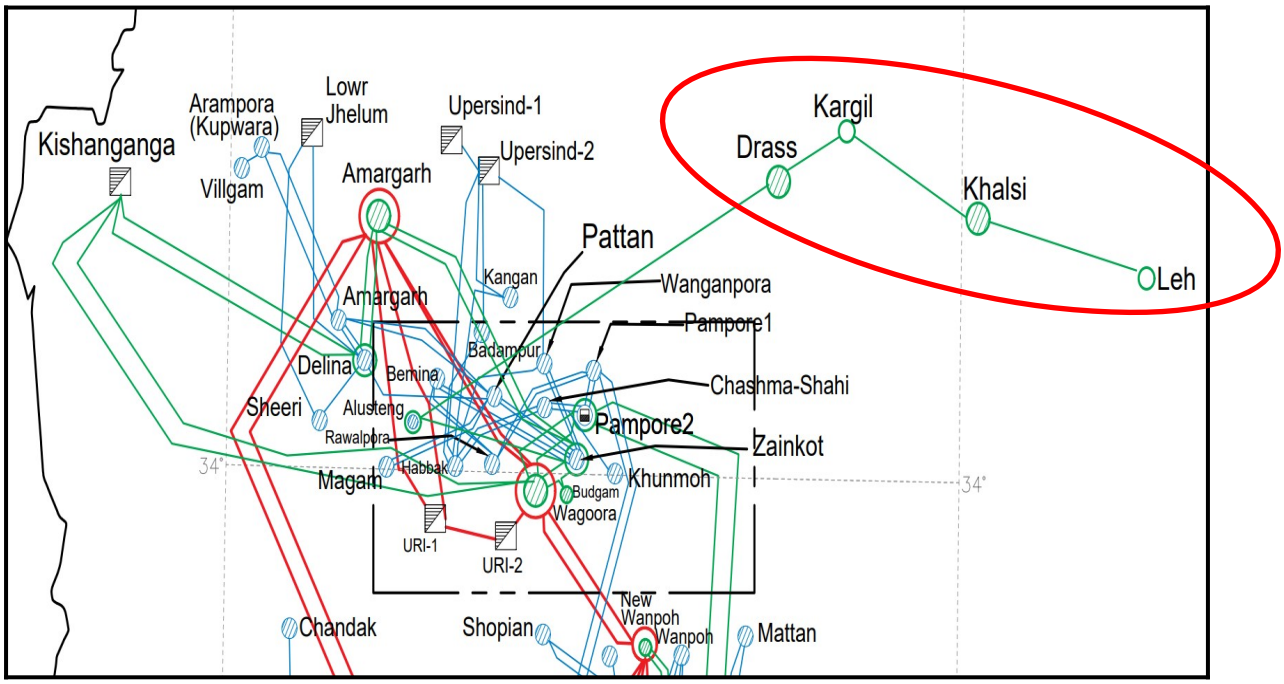




J&K and Ladakh (UT) to update the status on what action has been taken to mitigate this low voltage issue at Ladakh(UT).

g. Ladakh (UT) radial connection issues:

Leh-Khalsti-Kargil-Drass is the radially connected stations to Alusteng through S/C 220kV line.



- In any case, if 220kV Alusteng-Drass S/C goes under outage it would lead to power outage at 220kV Drass, 220kV Kargil, 220kV Khalsti and 220kV Leh.
- Similarly, Outage of 220kV Drass-Kargil would lead to power outage at 220kV Kargil, 220kV Khalsti and 220kV Leh.
- Outage of 220kV Kargil-Khalsti would lead to power outage at 220kV Khalsti and 220kV Leh.
- Outage of 220kV Khalsti-Leh would lead to power outage at 220kV Leh.

Table** 1**: Outage of 220kV Alusteng-Drass S/C line from Sept'22 to Aug'23

Sl. No	Element Name	Outage		Revival		Reason / Remarks
		Date	Time	Date	Time	
1	220 kV Alusteng-Drass (PG) Ckt-1	10-09-2022	13:21	10-09-2022	21:59	To attend melted aluminium dead end jumper cone and loose nuts and bolts of Y-phase jumper at Tower no. 327.
2		10-	23:0	11-	20:5	Y-N fault, Dist. 55.38km, Fault

		09-2022	6	09-2022	6	current ly 537A from Drass (PG) & Fault current ly 2.2kA from Alusteng.
1		20-10-2022	11:42	20-10-2022	18:14	For rectification of critical defects of line.
2		25-11-2022	10:33	25-11-2022	17:48	NHIDCL diversion work of 220kV DRASS-AULSTANG line near Sonamarg due to construction of a connecting road across ZOJILA pass on SONAMARG-KARGIL section of NH-01.
3		27-11-2022	08:43	27-11-2022	15:36	
4		28-11-2022	08:51	28-11-2022	17:11	
5		29-11-2022	08:58	29-11-2022	18:35	
1		05-01-2023	06:13	06-01-2023	06:59	Phase to earth fault Y-N, Zone-1 from Alusteng end. Line tripped from Alusteng and auto-reclosed from Drass end.
1		02-05-2023	15:19	02-05-2023	16:08	Line tripped during the maintenance work that was being done in DC supply panel at Alusteng (JKPDD) end. Line has no fault, as Drass end CB remained in closed position.
2		15-06-2023	12:20	15-06-2023	15:44	Hotspot observed on Y-phase jumper at Loc. no. 425 (nearby Drass).

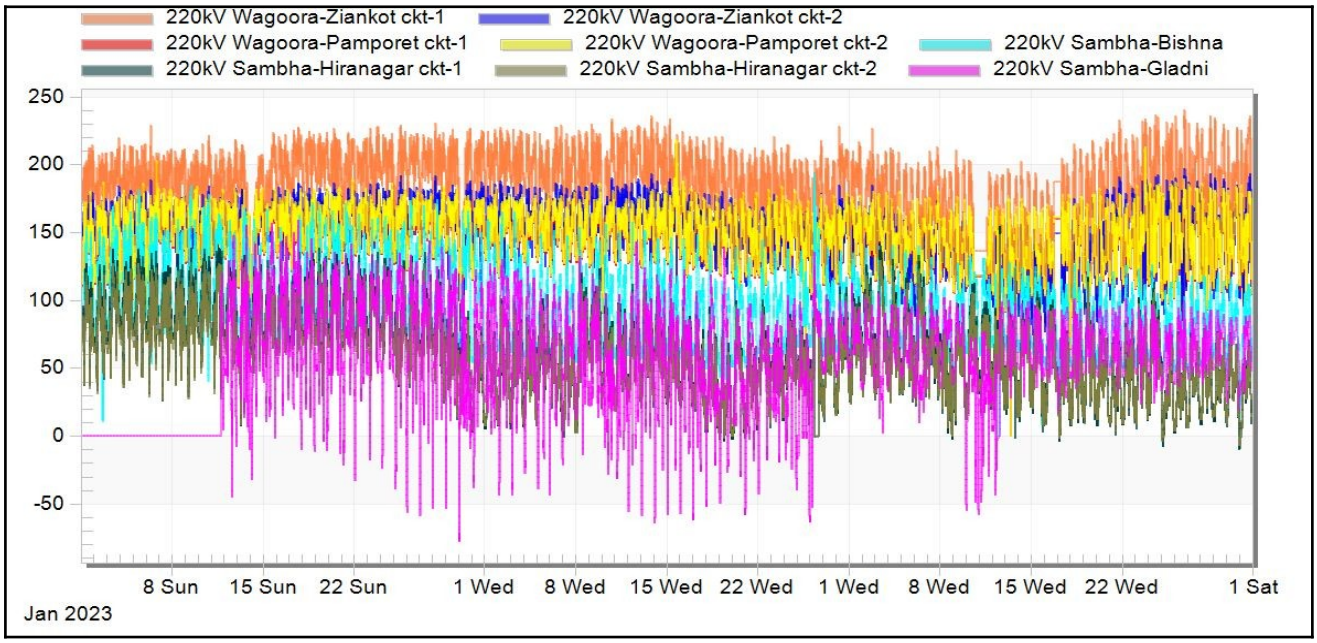
i. **Due to outage of 220kV Alusteng-Drass, power outage/ load impact occurred at 220kV Drass, 220kV Kargil, 220kV Khalsti and 220kV Leh.**

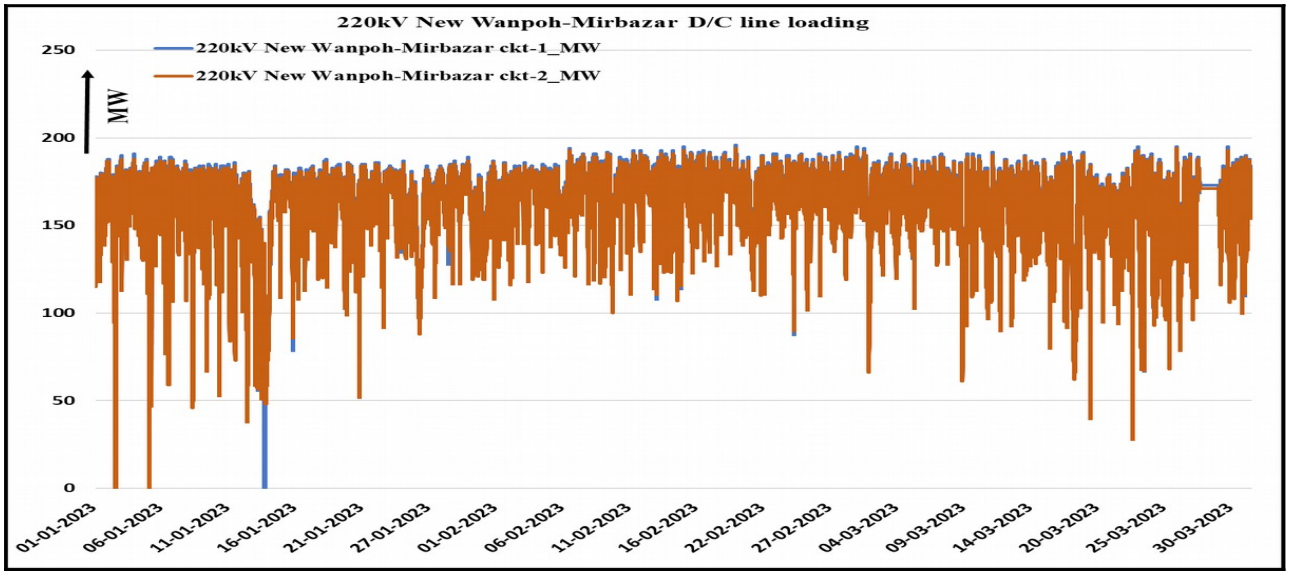
ii. **Additional connectivity or feeding from other S/s or D/C lines need to be planned for these radially connected system (Leh, Khalsti, Kargil, Drass, Alusteng) of Ladakh (UT).**

J&K and Ladakh (UT) to update the status.

h. High loading lines & ICTs and N-1 Non-compliance of system:

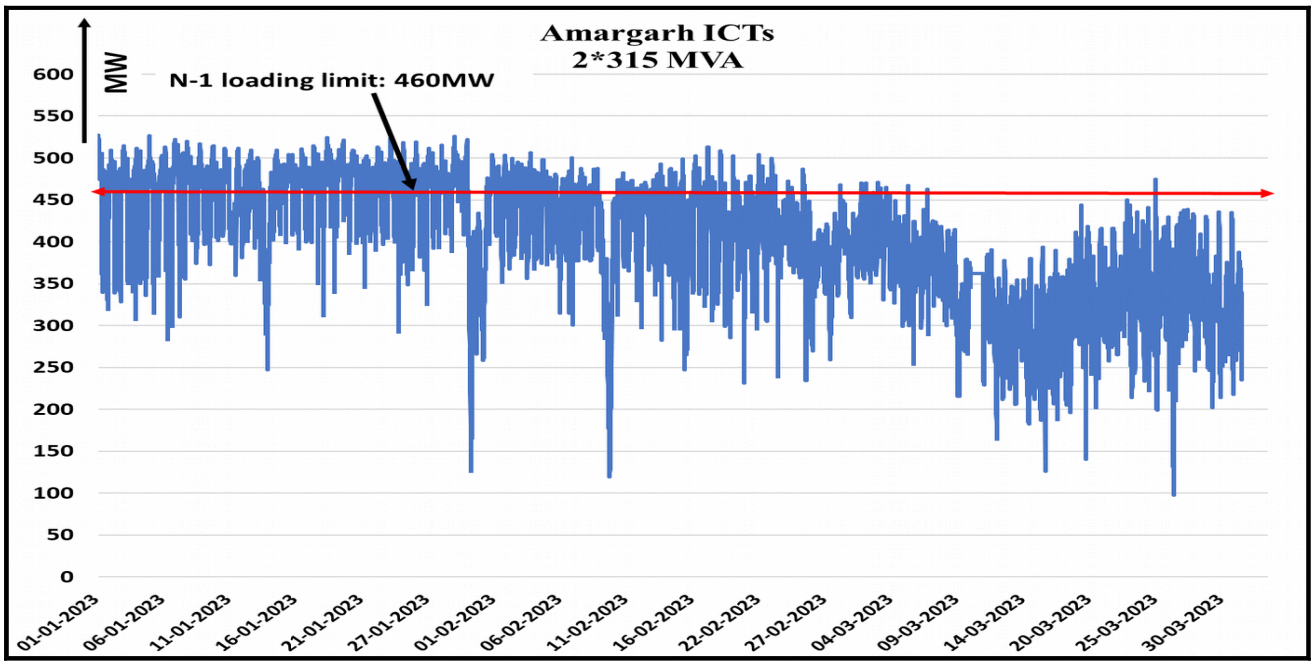
- Due to high demand of J&K and Ladakh (UT) in winter'22-23, line loading of following lines were observed high for considerable duration of time in Q-4 2022-23. Line loading observed in Q-4 2022-23 are as follows;
  - i. 220kV Wagoora-Ziankot ckt-1&2 (160-210MW in each line).
  - ii. 220kV Wagoora-Pampore Ckt-1&2 (150-200MW in each line).
  - iii. 220kV Sambha-Bishna (100-150MW).
  - iv. 220kV Sambha-Hiranagar ckt-1&2 (100-120MW in each line).
  - v. 220kV Sambha-Glandni (100-140MW).
- During winter due to heating load, demand of J&K increases significantly, in Q-4'22-23 J&K peak demand was reaching 2800-3000MW.





i. 220kV Wagoora-Ziankot ckt-1&2 and 220kV Wagoora-Pampore Ckt-1&2 lines were N-1 Non-compliant for considerable duration in this Q-4 2022-23. (N-1 loading limit for each Ckt is 155MW).

ii. High line loading observed mainly in Jan'23 and Feb'23 months, same is anticipated between Dec'23-Feb'24.



i. Amargarh (PG) has 2*315MVA ICTs. The ICTs are N-1 non-compliant above 460MW loading of ICTs.

ii. Loadings above N-1 contingency limits were observed in Jan'23 and Feb'23 during high demand of J&K.

iii. Additional connectivity in line with growing demand of J&K and Ladakh UT may be planned by J&K and Ladakh (UT).

iv. ICT augmentation at Amargarh (PG) may be expedited by CTUIL./NRSS XXIX.

J&K to update the status on what actions has been taken and proposed transmission line & ICT to mitigate this high loading and N-1 non-compliance issue in the control area. Status of implementation of additional lines/ICT in line with demand growth of J&K and Ladakh (UT) control area.

No representative from J&K was available for comments.

MS NRPC appreciated the concerns highlighted by NRLDC and suggested that separate physical meeting may be called with participation from J&K officers.

21. Frequent forced outages of transmission elements in the month of August'23:

The following transmission elements were frequently under forced outages during the month of **August'23**:

S. NO.	Element Name	No. of forced outages	Utility/SLDC
1	220 KV Ganguwal(BB)-Gobindgarh(PS) (BB) Ckt-2	5	BBMB/ Punjab
2	220 KV Nara(UP)-Roorkee(UK) (UP) Ckt-1	4	UP/UK
3	220 KV New Tanda (UP)-Sohawal(PG) (UP) Ckt-1	4	UP
4	220 KV Saharanpur(PG)-Shamli(UP) (UP) Ckt-1	4	PG/UP
5	220 KV Singoli Bhatwari(Singoli(LTUHP))-Srinagar(UK) (PTCUL) Ckt-1	4	Singoli/UK
6	400 KV Alaknanda GVK(UPC)-Muzaffarnagar (UP) Ckt-1	4	UP/GVK
7	400 KV Bareilly-Unnao (UP) Ckt-1	6	UP

8	400 KV Muzaffarnagar(UP)-Vishnuprayag(JP) (UP) Ckt-1	5	UP/JP
9	400 KV Talwandi Saboo(PSG)-Muktsar(PS) (PS) Ckt-2	4	Punjab

The complete details are attached at **Annexure-B.V** of Agenda.

Discussion during the meeting:

- **220 KV Ganguwal(BB)-Gobindgarh(PS) (BB) Ckt-2:** *NRLDC representative raised concerned on frequent tripping of line and non A/R operation in line. BBMB representative informed that relays at Ganguwal end are very old and A/R function is not there. Protection at Ganguwal end is maintained by PSTCL, issue has been taken up with PSTCL to replace the relays. Punjab representative informed that Gobindgarh is industrial area and frequent faults were reported due to damage of porcelain disc insulators due to pollution. He further informed that insulators will be replaced with polymer disc insulators during lean period (after paddy season). NRLDC representative requested Punjab and BBMB to resolve the issues in coordination and expedite the process of replacement of relays and ensure proper A/R operation in line. Punjab & BBMB agreed for the same.*

- **220 KV Nara(UP)-Roorkee(UK) (UP) Ckt-1:** *NRLDC representative raised concerned on frequent tripping of line and non A/R operation in line. He further asked the status of actions taken w.r.t. Main-2 relays at Nara end. UP representative informed that issues related to Main-2 relay not resolved yet, proposal to replace the Main-2 relay is still at head quarter. He further informed that general testing was done at Nara end, unsuccessful A/R operation is observed during fault on 29th August and in September month. NRLDC representative requested UP to take necessary follow-up actions to expedite the replacement of Main-2 relay and to minimise the occurrence of fault in the line. UP agreed for the same.*

- **220 KV New Tanda(UP)-Sohawal(PG) (UP) ckt-1:** *NRLDC representative raised concerned on frequent tripping of the line and non-operation of A/R during single phase to earth fault. UP representative informed that fault was of phase to phase nature during all four (04) trippings and thus A/R operation was not there. Regarding frequent fault, it was informed that fault location during all four 9040 tripping was ~27km and issue related to phase to phase clearance is suspected. NRLDC representative requested UP to taken necessary remedial actions to resolve the issue and minimise the occurrence of faults. UP agreed for the same.*

- **220 KV Saharanpur(PG)-Shamli(UP) (UP) Ckt-1:** *NRLDC representative raised concerned on frequent tripping of the line and non-operation of A/R during single phase to earth fault. UP representative informed that frequent faults occurred due to flashover of porcelain insulators, insulators have been replaced with polymer insulators at 7-8 locations. He further informed that during all the four (04) trippings, A/R operated at Shamli end, there is issue related to A/R operation at Saharanpur(PG) end. NRLDC representative requested POWERGRID (NR-3) to ensure the healthiness and proper operation of A/R at their end during single phase to earth fault and UP was requested to take further necessary corrective actions to minimise the occurrence of fault in line.*

- **220 KV Singoli Bhatwari(Singoli(LTUHP))-Srinagar(UK) (PTCUL) Ckt-1:** *NRLDC representative raised concerned on frequent tripping of line and A/R operation. He further said that generation of Singoli Bhatwari HEP also get affected during tripping of both the lines. PTCUL representative informed that, on 04th August, issue related to A/R operation was resolved. Further, NRLDC representative requested PTCUL to disable the over voltage protection in line and if there is any requirement then it can be enabled after prior approval at PSC forum. PTCUL agreed the same.*

- **400 KV Alaknanda GVK(UPC)-Muzaffarnagar (UP) Ckt-1:** *NRLDC representative raised concerned on frequent tripping of line, non-operation of A/R in line at Alaknanda end. UP representative informed that tripping on 10th August, occurred due to maloperation of 52LX multiplier relay and same has been replaced during shutdown of the line on 14th August, 2023, action taken w.r.t. A/R operation at Alaknanda end will be shared after confirmation from Alaknanda HEP.*

- **400 KV Bareilly-Unnao (UP) Ckt-1:** *NRLDC representative raised concerned on frequent tripping of line and non-operation of A/R in line. He further said that issue related to Barielly-Unnao ckt tripping were raised in last many OCC meeting however, no improvement is observed. UP representative informed that faults were of transient nature, A/R operated at Unnao end however line tripped due to REF protection operation at Bareilly end of 63MVAr line reactor. During investigation, CT polarity of NGR of 63MVAr line reactor was found reversed. Issue related to CT polarity of NGR was corrected during shutdown on 29th August, 2023. Further, healthiness of A/R operation will be observed during incidents of single phase to earth faults in future.*

- **400 KV Muzaffarnagar(UP)-Vishnuprayag(JP) (UP) Ckt-1:** *NRLDC representative raised concerned on frequent tripping of line, non-operation of A/R in line. UP representative informed that A/R is operational at both the ends, however due to faulty auxiliary contacts of CB at Muzaffarnagar end,*

A/R operation didn't complete at Muzaffarnagar end and line tripped on pole discrepancy, issue related to auxiliary contacts have been resolved. Regarding tripping on 23rd August, It was informed that positive terminal of DC supply is found earthed same will be resolved during shutdown as per opportunity.

- **400 KV Talwandi Saboo(PSG)-Muktsar(PS) (PS) Ckt-2:** *NRLDC representative raised concerned on frequent tripping of line, non-operation of A/R in line. Punjab representative informed that frequent faults occurred due to flashover of flashover of porcelain insulators at different tower locations. It was further informed that insulators in both the circuits 400 KV Talwandi Saboo(PSG)-Muktsar(PS) (PS) will be replaced with polymer insulators after paddy season, process will start in November, 2023. In 400 KV Talwandi Saboo(PSG)-Muktsar(PS) (PS) ckt-1, all the insulators will be replaced and in ckt-2 only tension insulators will be replaced as suspension insulators have already been replaced in ckt-2.*

NRLDC representative emphasized that A/R (auto re-closer) issue was found in many of these tripping. He sensitized all the utilities to ensure healthiness/in service of A/R in 220 kV and above transmission lines in compliance to CEA Grid Standards. He further informed that most of the tripping are transient in nature but due to non-operation of A/R, it resulted into tripping of the transmission element thus reducing the reliability of the grid. All the utilities shall endeavor to keep auto re-closer in service and healthy condition of 220 kV and above voltage level transmission line. Issue of time syncing of DR/EL at many of the stations was highlighted, constituents were requested to ensure the time syncing of DR/EL. In addition, necessary actions also need to be taken to ensure the Right of Way to minimize the frequent faults in the line. All utilities agreed for the same.

OCC forum reiterated that frequent outages of such elements affect the reliability and security of the grid. Members were requested to look into such frequent outages and share the remedial measures taken/being taken in this respect.

22. Multiple element tripping events in Northern region in the month of August'23:

A total of 37 grid events occurred in the month of Aug'23 of which **17** are of GD-1 category, **08** are of GI-2 Category & **12** is of GI-1 category. The tripping report of all the events have been issued from NRLDC. A list of all these events is attached at **Annexure-B.VI.**

Further, despite persistent discussions/follow-up in various OCC/PCC meetings, it is observed that provisions 5.2(r) and 5.9.4(d) of the IEGC, pertaining to reporting of events / tripping to RLDC, is not being complied with by many utilities.

Maximum delayed clearance of fault observed in event of multiple elements tripping at 220kV Shahjhanpur(UP) on 22nd August, 2023. As per PMU, R-N phase to earth fault which converted to R-Y phase to phase fault with delayed clearance of 2840msec is observed.

Delayed clearance of fault (more than 100ms for 400kV and 160ms for 220kV system) observed in total **10** events out of **37** grid events occurred in the month. The major events with delayed clearance of faults are as follows:

i. Multiple elements tripping at 220/132kV Amarsagar(RS) at 09:48hrs on 06th August, 2023, fault clearance time of 1560msec:

Rajasthan representative informed that main issue is related jumper snapping and same is observed during high loading season (high wind season). It was further informed that issue has been communicated to transmission wing to ensure proper operation and maintenance and to resolve if any design related issue is there before next wind season.

ii. Multiple elements tripping at 220kV Pong(BBMB) at 12:29hrs on 18th August, 2023, fault clearance time of 2160msec:

BBMB representative informed that faulty distance protection relay of 220kV Pong(BBMB)-Dasuya(PS) ckt-3 at Pong(BBMB) end has been replaced. Regarding bus bar protection operation, analysis and review of protection logic is being done. Report of the same will be shared. NRLDC representative also raised concern over DR/EL submission. He informed that DR of any none of the elements tripped during the event at Pong(BBMB) received till date. BBMB was requested to ensure the timely submission of tripping details. BBMB agreed to ensure the same.

iii. Multiple elements tripping at 220kV Shahjhanpur(UP) at 12:39hrs on 22th August, 2023, fault clearance time of 2840msec:

UP representative informed that recommendation for replacement of distance protection relay at 220kV Shahjhanpur-Azizpur ckt at Shahjhanpur end has been given. NRLDC representative requested UP to expedite the process for the same and also ensure time syncing of DR at Shahjhanpur end. UP agreed to ensure the same.

iv. Multiple elements tripping at 220kV Verpal(PS) at 21:51hrs on 22th August, 2023, fault clearance time of 880msec:

NRLDC representative raised concern over non-submission of tripping report of the event. Punjab representative informed that report has been received and same will be uploaded on the NR tripping portal. He further informed that due to highly resistive nature of fault, distance protection at Verpal end didn't sense the fault, protection settings are being reviewed and necessary corrective actions will be

taken if required. NRLDC representative requested Punjab to ensure timely submission of the tripping details. Punjab agreed to ensure the same.

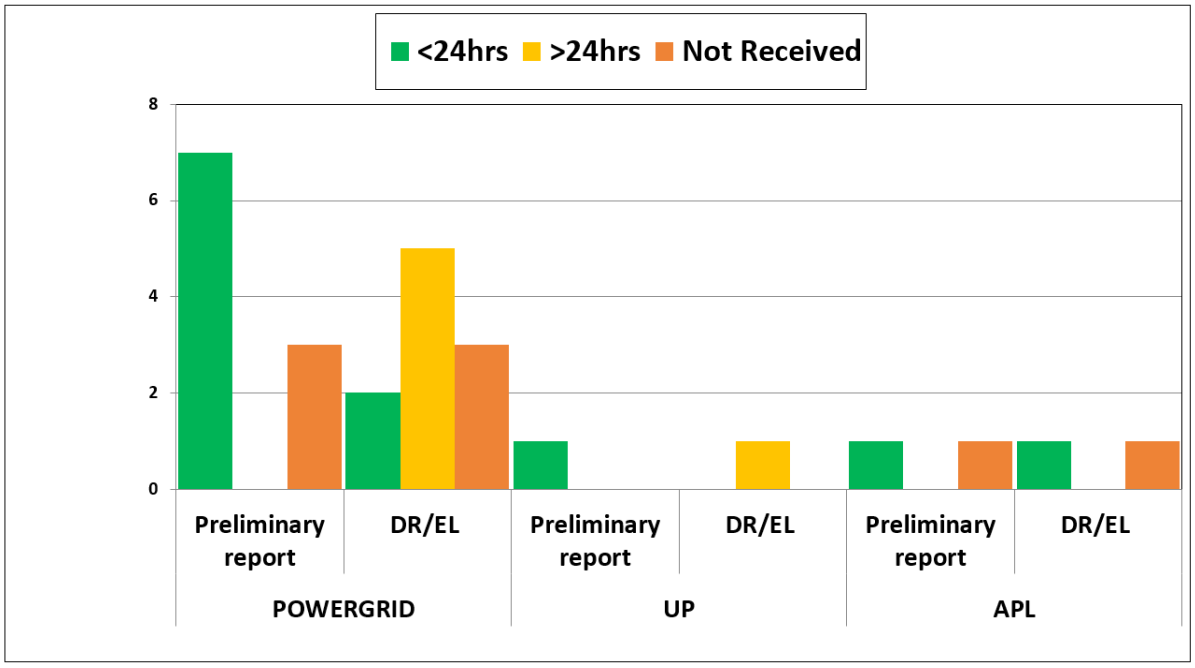
NRLDC representative requested concerned utilities to analyse the tripping incidents at their end and taken necessary actions to avoid the similar events in future. Also share the detailed report of the tripping incidents along with remedial action taken. Utilities agreed for the same.

OCC forum suggested all the NR constituents to update the information on tripping portal developed by NRLDC. All the constituents agreed to take proactive remedial actions in this regard to minimize the tripping.

Members were asked to take expeditious actions to avoid such tripping in future, Moreover, utilities may impress upon all concerned for providing the preliminary report, DR/EL & detailed Report of the events in line with the regulations. Members were further requested to ensure the time syncing of recording devices (DR, EL etc.) with GPS/NAVIK at substation of their respective control area. Members agreed to take action in this regard.

23. Details of tripping of Inter-Regional lines from Northern Region for August' 23:

A total of 13 inter-regional lines tripping occurred in the month of August'23. The list is attached at **Annexure-B.VII** of Agenda**.** The status of receipt of preliminary reports, DR/EL within 24hrs of the event and fault clearing time as per PMU data has also been mentioned in the table. The non-receipt of DR/EL & preliminary report within 24hrs of the event from SLDCs / ISTS licensees / ISGSs is in violation of regulation 5.2(r) of IEGC and regulation 15(3) of CEA Grid Standards. As per regulations, all the utilities shall furnish the DR/EL, flag details & preliminary report to RLDC/RPC within 24hrs of the event. They shall also furnish the detailed investigation report within 7 days of the event if fault clearance time is higher than that mandated by CEA (Grid Standard) Regulations.



NRLDC representative highlighted the incidents of tripping of multiple poles of 800kV Kurukshetra_Champa HVDC link in August 2023. POWERGRID(NR-1) was requested to share the details of tripping and remedial action taken to minimise such tripping in future.

NRLDC representative requested members to advise the concerned for taking corrective action to avoid such tripping as well as timely submission of the information. Members agreed for the same.

OCC forum emphasized the importance of inter- regional links and requested all the concerned utilities to take necessary corrective to minimise such tripping in future.

24. Status of submission of DR/EL and tripping report of utilities for the month of August'23.

The status of receipt of DR/EL and tripping report of utilities for the month of August'2023 is attached at **Annexure-B.VIII** of Agenda. It is to be noted that as per the IEGC provision under clause 5.2 (r), detailed tripping report along with DR & EL has to be furnished within 24 hrs of the occurrence of the event. However, it is evident from the submitted data that reporting status is not satisfactory and needs improvement.

NRLDC representative stated that reporting status of POWERGRID, UP, Haryana, Rajasthan & Uttarakhand is improved and status is satisfactory, reporting status from Punjab, Delhi, HP, NHPC & J&K need further improvement.

Delhi, HP & Punjab representative stated that they will further improve the reporting status in coming months.

OCC forum emphasized the importance of DR/EL & tripping report data for analysis of the trippings. In addition, these data are also base for the availability verification. Unavailability of these details delays the availability verification process also. Hence, timely submission of DR/EL & tripping report is very much necessary. Members were requested to comply the IEGC 5.2(r) and submit the details in time. Members agreed to take necessary follow-up actions to improve the reporting status

Members may please note and advise the concerned for timely submission of the information. It is requested that DR/EL of all the trippings shall be uploaded on Web Based Tripping Monitoring System "http://103.7.128.184/Account/Login.aspx" within 24 hours of the events as per IEGC clause 5.2.r and clause 15.3 of CEA grid standard. Apart from prints of DR outputs, the corresponding COMTRADE files may please also be submitted in tripping portal / through email.

25. Status of PSS tuning/ re-tuning and Step Response Test of generator

Since 182nd OCC meeting, this point was discussed and Utilities were requested to submit the present status of PSS tuning/re-tuning and Step Response Test of their respective generators as per the below mentioned format.

S. No.	Name of the Generating Station	Date of last PSS tuning / re-tuning performed (in DD/MM/YYYY format)	Date of last Step Response Test performed (in DD/MM/YYYY format)	Report submitted to NRLDC (Yes/ No)	Remarks (if any)

The status of test performed till date is attached at **Annexure-B.IX** of Agenda**.**

It is to be noted that as per regulation 5.2(k) of IEGC, Power System Stabilizers (PSS) in AVRs of generating units (wherever provided), shall be got properly tuned by the respective generating unit owner as per a plan prepared for the purpose by the CTU/RPC from time to time.

Members were requested to update about their future plan for PSS tuning.

Rajasthan representative informed that out of 23 coal fired units in Rajasthan control area, PSS tuning of 21 units have been completed. PSS tuning of 02 units of CSCTP (Chhabra TPS) are remaining and same is in process.

NRLDC representative informed that all the units who have done Step response test before 2018 were requested to plan the exciter step-response test and submit the tentative schedule of step-response test on the units with NRPC/ NRLDC.

OCC forum deliberated that members may kindly accord due priority in this regard and update about their future plan for PSS tuning as there is little progress despite including this agenda in every OCC meeting. Members agreed for the same.

26. Frequency response characteristic:

Two FRC based event occurred in the month of **August-2023**. Description of the event is as given below:

Table:

S. No.	Event Date	Time (In hrs.)	Event Description	Starting Frequency (in Hz)	Nadir Frequency (in Hz)	End Frequency (in Hz)	*Δf*	NR FRC during the event (%)
1	06-Aug-23	09:48hrs	As reported by SLDC Rajasthan, at 09:48hrs on 06th August, 2023, Y phase Jumper of 132kV Amarsagar – Ludarva Ckt-2 snapped. (Bus bar protection is not available at 132kV side). On this fault, 132kV Amarsagar-Jaisalmer Ckt-2 tripped at the same time sensing fault in zone-4 (B-N fault) and 220/132kV ICTs	50.05	49.91	49.97	0.08	27

			tripped from 132kV side on O/C E/F. As per SCADA, change in Rajasthan wind generation of approx. 1600 MW is observed. Hence, generation loss of 1600 MW has been considered for FRC calculation.					

Status of Data received till date for 06th Ausgust, 2023 event:

Status of Field Data received of FRC of Grid event occurred at wind generation complex in Rajasthan in Northern Region at 09:48 Hrs on 06.08.2023			
Data Received from		Data Not Received from	
NJPS	Haryana	Uttarakhand	APCPL Jhajjar
UP	HP	Delhi	Rihand NTPC
Tehri HEP	Karcham Wangtoo HPS	Punjab	Unchhahar NTPC
Koteshwar HEP	NHPC	BBMB	Dadri NTPC
Rajasthan	Singrauli NTPC		
Rosa Reliance	TSPL		

FRC of ISGS generators:

Generator	06-Aug-23 event	Generator	06-Aug-23 event
Singrauli TPS	6%	Salal HEP	3%
Rihand-1 TPS	-2%	Tanakpur HEP	125%
Rihand-2 TPS	-23%	Uri-1 HEP	-5%
Rihand-3 TPS	-26%	Uri-2 HEP	0%
Dadri-1 TPS	38%	Dhauliganga HEP	21%
Dadri -2 TPS	1%	Dulhasti HEP	13%
Unchahar TPS	No generation	Sewa-II HEP	No generation
Unchahar stg-4 TPS	No generation	Parbati-3 HEP	No generation
Jhajjar TPS	150%	Jhakri HEP	1%
Dadri GPS	-15%	Rampur HEP	0%
Anta GPS	No generation	Tehri HEP	120%
Auraiya GPS	5%	Koteswar HEP	16%
Narora APS	-3%	Karcham HEP	37%
RAPS-B	21%	Malana-2 HEP	No generation
RAPS-C	18%	Budhil HEP	0%
Chamera-1 HEP	0%	Bhakra HEP	1%
Chamera-2 HEP	3%	Dehar HEP	8%
Chamera-3 HEP	3%	Pong HEP	-10%
Bairasiul HEP	0%	Koldam HEP	44%
		AD Hydro HEP	0%

FRC of State generators:

Generator	06-Aug-23 event	Generator	06-Aug-23 event
PUNJAB		UP	
Ropar TPS	-4%	Obra TPS	19%
L.Mohabbat TPS	5%	Harduaganj TPS	150%
Rajpura TPS	-15%	Paricha TPS	10%
T.Sabo TPS	-43%	Rosa TPS	63%
Goindwal Sahib TPS	189%	Anpara TPS	34%
Ranjit Sagar HEP	221%	Anpara C TPS	86%
Anandpur Sahib HEP	15%	Anpara D TPS	5%
HARYANA		Bara TPS	42%
Panipat TPS	5%	Lalitpur TPS	4%
Khedar TPS	0%	Meja TPS	-1%
Yamuna Nagar TPS	No generation	Vishnuprayag HEP	0%
CLP Jhajjar TPS	52%	Alaknanda HEP	2%
Faridabad GPS	No generation	Rihand HEP	No generation
RAJASTHAN		Obra HEP	No generation
Kota TPS	10%	UTTARAKHAND	
Suratgarh TPS	7%	Gamma Infra GPS	No generation
Kalisindh TPS	-29%	Shravanti GPS	No generation
Chhabra TPS	No generation	Ramganga HEP	No generation
Chhabra stg-2 TPS	527%	Chibra HEP	3%
Kawai TPS	33%	Khodri HEP	4%
Dholpur GPS	No generation	Chilla HEP	-2%
Mahi-1 HEP	-5%	HP	
Mahi-2 HEP	0%	Baspa HEP	0%
RPS HEP	0%	Malana HEP	No generation
JS HEP	13%	Sainj HEP	2%
DELHI		Larji HEP	No generation
Bawana GPS	36%	Bhabha HEP	-3%
Pragati GPS	35%	Giri HEP	0%
		J&K	
		Baglihar-1&2 HEP	No generation
		Lower Jhelum HEP	No generation

Members who haven't shared the data yet are requested to share the data and analysis of FRC of their control area. It was also requested to share unit wise 1 sec resolution data of FRC.

NRLDC representative stated that primary frequency response is not satisfactory at some of the ISGS and intrastate generating stations. Members are requested to analyse the PFR of units of their control area and take necessary corrective actions / tuning required to improve the PFR of generating units of their respective control area. States may plan to conduct the primary frequency response testing of their generating stations. Any tuning required may also be conducted in coordination with OEM.

Rajasthan representative informed few stations have some limitations in extracting 1sec resolution data. It was further informed that process of conducting PFR testing of units of their control area has already been started and issues related to PFR and FRC data extraction may improve after PFR testing.

NRLDC representative requested all the constituents to timely share the details of FRC w.r.t. their control area and also analyse the FRC of generating units of their control area.

OCC forum further requested to take corrective actions and also take initiative of conducting PFR testing of generating units for further turning and improvement. Constituents agreed for the same

27. Status of Bus bar protection:

Clause - 4 in schedule - V of Central Electricity Authority (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2010 reads as

"Bus bar protection and local breaker backup protection shall be provided in 220kV and higher voltage interconnecting sub- stations as well as in all generating station switchyards".

During analysis of many grid incidents/disturbances, it has been found that the Busbar protection at the affected substation was **not present or non-operational** which resulted in considerably increasing both the number of affected elements and fault clearance time. Accordingly, it becomes critical to monitor and keep Busbar protection at all the 220 kV and above voltage level substations healthy and operational.

Constituents were requested vide NRLDC letter dated 28th Dec 2022 to furnish status of Busbar protection in the following format in your control area**.**

Details are yet to be received from J&K.

Constituent wise status of bus bar protection where bus bar protection is either not installed or installed but not operational along with present status as per detail received from constituents is attached as **Annexure-B.X** of Agenda.

Constituents were requested to share the status of remedial action taken/to be taken regarding commissioning and healthiness of bus bar protection at 220kV & above substations.

BBMB representative informed that bus bar protection is not feasible at 220kV Dhulkote and 220kV Jagadhari as elements are connected in mesh system and there is not any separate bus. Exact information regarding 220kV Narela & 220kV Barnala will be shared after confirmation from protection wing.

UP representative informed that updated status has been sent to NRLDC by mail. Bus abr protection has been made operational at few of the stations. Bus bar protection is made operational at 220kV Bansi on 10th August 2023, at 220kV Chandausi on 13th September 2023 and at 220kV Farrukhabad on 25th August 2023.

NRLDC representative informed that as per details received from Rajasthan, bus bar protection has been commissioned at 220kV Bhawanimandi, 220kV Lakshmangarh & 220kV Mandalgarh. Rajasthan was requested to expedite the work related to bus bar protection at other stations also.

Haryana and HP were requested to share the present status of the bus bar protection and also take necessary actions to expedite the commissioning/restoration of bus bar protection at 220kV & above substations. Members agreed the same.

NRLDC requested all the concerned members to expedite the commissioning of bus bar protection at 220kV & above stations wherever it is not healthy/not commissioned. Constituents are also requested to ensure the healthiness of bus bar protection at stations of their control area.

OCC forum requested all the constituents to update the status of bus bar protection at S/s of their control area and also expedite the commissioning and implementation work of bus bar protection system. Members agreed for the same.

28. Replacement of electromechanical relays with numerical relays:

Clause-5.2(r) of IEGC, clause-15(4) of CEA Grid standards and clause-48(4) of CEA Construction Standards 2022 mandates that *''each line or transformer or reactor or any other bay shall be provided with facility for disturbance recording, event logging and time synchronizing equipment''.*

During analysis of grid incidents/disturbances, it has been found that there are few stations where electromechanical relays are still in use and thus disturbance recorder are not available there which accounts for violation of Clause-5.2(r) of IEGC, clause-15(4) of CEA Grid Standards and clause 48(4) CEA Construction Standards 2022.

In addition, clause-3 in part III (Grid Connectivity Standards applicable to Transmission Line and Sub-Station) of Standards for Connectivity to the Grid, 2007 reads as

‘*'Two main numerical Distance Protection Schemes shall be provided on all the transmission lines of 220 kV and above for all new sub-stations. For existing sub-stations, this shall be implemented in a reasonable time frame''*

It is known that Disturbance recorder (DR) is essential for analysis of grid incidents/ disturbances. Its non-availability eventually affects the proper analysis of grid incidents/disturbances and monitoring of protection system.

Deliberation on same subject has also been done during previous OCC meetings. During the meeting, all the constituents/SLDC/STU were requested to review the

same in their control area and take expedite actions to replace electromechanical relays with numerical relays.

Constituents were requested to share the status of remedial action taken/to be taken regarding replacement of electromechanical relays with numerical relays w.r.t. their control area**.**

Constituent wise details of static/electromechanical type protection relays at their respective substations along with its present status per detail received from constituents is attached as **Annexure-B.XI** of Agenda.

NRLDC representative stated that further update on status of protection relay type is not received yet from constituents. Constituents are requested to share the present status along with timelines of action plan. Constituents agreed to share the same.

NRLDC representative deliberated that there are significant number of elements at 220kV & above level where static/electromechanical type protection relays are in use. All the concerned constituents are requested to initiate the process of replacement of static/electromechanical type protection relays with numerical relays and share the present status of the same.

OCC forum requested all the constituents to update the status of type of protection relays at S/s of their control area and also expedite the replacement work of static/electromechanical type protection relays with numerical relays. Members agreed for the same.

29. Nomination of Nodal officer by UP SLDC for meter data collection (Additional Agenda by NRLDC)

In Northern region around 2700 meters are installed at 380 locations. Every week SEM data each location comes through various state utilities/AMR(Kalkitech) by Tuesday. In case of non-availability of any meter data it becomes very difficult for NRLDC to co-ordinate with persons at individual stations, as the number locations are more than 300. Further in line with clause 49(12(e (ii))) of IEGC 2023,

“Entities in whose premises the IEMs are installed shall be responsible for (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 “

The issue has been raised earlier in many meetings. Subsequently, it was agreed to designate one/two nodal officer from each state for overall meter data co-ordination. However, as of now, nomination of nodal officers has been received from all the states but nodal officer from UP is yet to be received.

This issue regarding **Nomination of Nodal officer by UP SLDC for meter data collection** has been raised in latest 47th NRPC sub commercial meeting. As there was no representative from SLDC, UP or UP control area in the meeting, MS NRPC suggested to raise this issue in upcoming OCC meeting of Sept-2023.

Hence UP SLDC was requested to nominate two Nodal executives(max 3 nos.) at nodal/SLDC level not at zone/subzone level, for ensuring complete meter data delivery at NRLDC and also to co-ordinate regarding any issue in sending meter data. NRLDC will communicate the non-received meter list with them by Tuesday evening. In case of non-receive of meter data at NRLDC by Thursday morning, NRLDC may consider other end data for those elements if available or SCADA data in case both end data is not received .**The information related to nominated Nodal executives (their contact number and their mail id) from UP SLDC may kindly be send to nrldcos@yahoo.com and** nrldcmetering@gmail.com.

UP SLDC representative agreed to look into the matter and send their reply after internal discussions.

30. Regular Monitoring of Time drift in IEMs (Additional Agenda by NRLDC)

Several times it is noticed that time drift in meter is not reported to NRLDC and time drift issue increases from multiple hours to multiple days. NRLDC is regularly uploading the discrepancy report on weekly basis indicating the time drift in meters. Besides uploading weekly report, NRLDC metering group is also taking up the matter with concerned over telephonically/e-mail also. Further in line with clause 49(12(e (iii))) of IEGC 2023,

"Entities in whose premises the IEMs are installed shall be responsible for (iii) monitoring and ensuring that the time drift of IEM is within the limits as specified in CEA Metering Regulations 2006."

All members in whose premises the meters are installed, are requested to periodically check (on weekly basis) the time drift in meters and send the time drift/ compliance report as per following format to nrldcos@yahoo.com and nrldcmetering@gmail.com:

"Station Name " SEM Time drift Report Date :								
Sr. No.	**Name of Sub Station**	**Meter No.**	**Element Name**	**Time in GPS**	**Time in SEM**	**Advance/ Retard**	**Time drift Period(hh:mm:ss)**	**Action taken (Advanced / Retarded)**

Also account revision of any constituents pertaining to time drift in meters shall not be entertained if the same is not reported to NRLDC timely.

A list of meters having time drift more than one minute has been attached, we already have nodal officers from state/utilities. All of them are requested to go through the discrepancy report and rectify the issue. If replacements of meter is required, representatives are requested to coordinate with CTU/PGCIL and informed NRLDC about the same via mail at nrldcos@yahoo.com along with contact details of the concerned person to whom CTUIL/PGCIL can contact directly for meter replacement.

Table below contains the data of time drift in meters and the list of the stations whose time drift report NRLDC received this week(04.09.2023-10.09.2023).

Sr.N	**Station**	**Meter No.**	**Time Drift Report Received**	**Time drift (Sec)**
1	Singrauli	NP-1549-A	Yes	8715
2	Salal	WR-2159-A	Yes	62
		NP-1956-B	Yes	61
3	RAPS-C	NP-3031-A	Yes	180
4	RAPS-B	NP-3022-A	Yes	120
		NP-1321-A	Yes	600
		NP-3021-A	Yes	240

5	Anta	NP-1314-A	Yes	160
		NP-1304-A	Yes	82
		NP-1303-A	Yes	64
		NP-1302-A	Yes	86
		NP-8139-A	Yes	76
6	Dhulkote	NP-7025-A	Yes	60
		NP-3107-A	Yes	60
		NP-8541-A	Yes	60
7	Bhakra Left Bank	NP-3094-A	Yes	292
		NP-3089-A	Yes	112
		NP-3097-A	Yes	222
		NP-1384-A	Yes	416
		NP-1386-A	Yes	538
		NP-1849-A	Yes	231434
8	Kotla	WR-2156-A	Yes	62
9	Jamalpur	NP-7151-A	Yes	206100
10		NP-7520-A	Yes	480
11		NP-7153-	Yes	600

		A		
12		NP-6572-A	Yes	420
13		NP-8591-A	Yes	360
14	Dasuya	NP-1871-A	Yes	85
15	Ropar	NP-1687-A	Yes	105
		NP-8556-A	Yes	96
		NP-1688-A	Yes	233
16	Majra	NP-1563-A	Yes	64
17	Lehra Mohabbat	NP-1838-A	Yes	141
18	Mohali	NP-8822-A	Yes	69
		NP-7085-A	Yes	72
19	Nakodar	NR-3469-A	Yes	105
20	Uri-2		Yes	
21	Uri-1		Yes	
22	Unchahar-4		Yes	
23	TPGEL		Yes	
24	THAR-SURYA		Yes	
25	Singrauli Solar		Yes	
26	Singrauli Hydro		Yes	
27	SB_Energy_Six_Pokaran(600MW)		Yes	
28	Rampur		Yes	
29	Pong		Yes	

30	Parbati2		Yes	
31	SAINJ HEP		Yes	
32	Jhajjar(APCPL)		Yes	
33	Ad Hydro		Yes	
34	NAPS		Yes	
35	Koldam HEP		Yes	
36	Jhakri		Yes	
37	Dadri Solar		Yes	
38	Dadr- Gas		Yes	
39	Chamera-2		Yes	
40	Chamera-1		Yes	
41	Bhakra-Complex		Yes	
42	Bairasul		Yes	
43	AVAADA_RJHN		Yes	
44	AHEJ4L		Yes	
45	AHEJ3L		Yes	
46	AHEJ2L		Yes	
47	Adani_Hybrid		Yes	
48	Auraiya		Yes	
49	Lahal		Yes	
50	ABC Renew		Yes	
51	Kotputli		Yes	
52	Bareilly		Yes	
53	Bhadrekhi		Yes	
54	Hisar		Yes	
55	Abdullapur		Yes	
56	Jalandhar		Yes	
57	Fatehabad		Yes	

58	Sahupuri-UPPCL		Yes	
59	JHAJJAR		Yes	
60	Bhinmal		Yes	
61	Orai-UPPCL		Yes	
62	ANTA		Yes	
63	BAWANA		Yes	

OCC asked all members to periodically check (on weekly basis) the time drift in meters and send the time drift/ compliance report to NRLDC.

31. Timeline for Meter replacement by CTU/Power grid (Additional Agenda by NRLDC)

Issues related to rectification/replacement of faulty meters is communicated to Power grid/CTU by NRLDC.

However it is observed that sometimes replacement of faulty meters takes too much time which creates multiple issues in data validation, substitution etc. Few of the cases are mentioned here:

Meter detail	Mailed date	Issue in meter	Action
NP1849A at Bhakra left (BBMB)	25.05.2023,30.05.2023, 24.07.2023,03.08.2023	Time drift	Not replaced yet
NP1724A at Dhalipur(UK)	24.07.2023,04.08.2023, 14.08.2023	Time drift	Not replaced yet
NS1045A, NP7196A, NR3642A at Hissar(BBMB)	21.07.2023,27.07.2023	Zero reading	Not replaced yet

Hence a timeline shall be decided for the period required for replacement/rectification of faulty meters from the date of intimation by NRLDC to CTU/Power grid.

In addition, BBMB representative highlighted that there is some confusion related to payment of replacement of fault meter by constituents. It was informed that CTU is billing directly to constituents for installation of meters.

Also as mentioned in IEGC 2023 *"The CTU shall be responsible for procurement and installation of Interface Energy Meters (IEMs), at the cost of respective entity. CTU shall be responsible for replacement of faulty meters." One of the reason we have observed that there is a confusion related to payment of meter installation and replacement by utilities to CTUIL. Since it is mentioned in IEGC 2023, utilities are requested to adhere to the regulation and expedite the process of meter replacement from their end."*

As discussed in 47th NRPC sub commercial meetingit was suggested that the standard price of IEM meters shall be finalized on any common forum or CTU/PGCIL may share the related document if the price is already finalized since as per the new grid code IEGC 2023, entities have to pay meters cost directly to CTU/PGCIL.

CTU/PGCIL was asked to update the status on progress and also may state the issues/reasons for delay in replacement/rectification of faulty meters and actions required to resolve it.

OCC forum noted the same.

32. Regular checking of accounts and uploaded data by constituents (Additional Agenda by NRLDC)

It is observed that after processing of meter data and issuance of final accounts, various discrepancies in account/meter data are being reported by constituents after very long duration of issuance of account. In some cases, such discrepancies are reported even after 2-3 month. Such long backlog requires multiple revision for a particular week which used to hamper current week data processing and other related issues. NRLDC issuing weekly processed SEM data every Thursday along with discrepancy report on its website "https://nrldc.in/commercial/sem-data/" on weekly basis. Further in line clause 49(12(f)) of IEGC 2023,

"RLDC shall, based on the IEM readings, compute time block wise actual net injection and drawal of regional entities and cross border entities within their control area: Provided that the computations done by RLDCs shall be open to all regional entities and cross border entities for a period of fifteen (15) days for checking and verification."

Hence constituents are requested to regularly monitor their injection/drawal/ account and intimate any discrepancy related to meter data to NRLDC within 15 days of issuance of account by NRPC. **Any meter data related discrepancy intimation after 15 days of issuance of account shall not be entertained.**

OCC forum noted the same.

33. Delay in submission of weekly Special (Interface) Energy meter data in Northern Region. (Additional Agenda by NRLDC)

Delay or non-availability of meter data results in discrepancy in Deviation settlement Account and huge financial implications. Therefore, it is requested that all concerned may be advised to transmit SEM weekly meter reading data to NRLDC by Monday itself and in no case, it should be delayed by Tuesday noon, as per IEGC provision.

As per Sub-proviso (21) of proviso 4 of Regulation 6 of CERC (Indian Electricity Grid Code) Regulations, 2010

"All concerned entities (in whose premises the Special Energy Meters are installed) shall take weekly meter readings and transmit them to the respective RLDC by Tuesday afternoon. It must be ensured that the meter data from all installations within their control area are transmitted to the RLDC within the above schedule"

However, it is observed that Special Energy Meter data(SEM) from the following locations has not been received in time in accordance with IEGC provisions.

Further, It is to be ensured that checking of the healthiness of DCD/Cables, Special Energy Meter and functioning of data dumping software etc for meter data transmission shall be monitored periodically.

Communication to all stakeholders vide NRLDC letter is being forwarded on every Tuesday regarding delay in receipt of SEM data along with the list of sites/location who have not send the data by Tuesday. It has been observed that some of the sites are not sending the SEM data to NRLDC in every week. Hence, all coordinators are requested to take up with these sites and provide the data timely to NRLDC.

A list of the sites have been attached for your reference.

WEEKLY SEM DATA DISCREPANCY REPORT FOR THE WEEK (21/08/23-27/08/23)

Delay in uploaded meter data

S. No	Station_Name	Feeder Name	Owner	Data uploading time
1	ANTA1	Anta CCPP	NTPC	22-08-2023 11:01
2	WAGOORA	Wagoora-PG	PGCIL_NR2	22-08-2023 11:18

3	PATIALA	Patiala-PG	PGCIL_NR2	22-08-2023 11:23
4	LALITPUR01	Lalitpur-UPPCL (AMR)	UP_SOUTH CENTRAL	22-08-2023 11:24
5	VARANASI	Varanasi PG	PGCIL_NR3	22-08-2023 11:32
6	BAWANA	Bawana-DTL	DELHI	22-08-2023 11:38
7	JHAJJAR	JHAJJAR	IPP	22-08-2023 11:42
8	CHITTORGARH01	Chittorgarh-RVPNL (AMR)	RAJASTHAN	22-08-2023 11:45
9	URI2	Uri-II HPS	NHPC	22-08-2023 12:55
10	BASTI	Basti-UPPCL	UP_NORTH EAST	22-08-2023 13:33
11	SORANG	Sorang HEP	SORANG-HP	22-08-2023 14:13
12	BTPS01	BTPS (AMR)	DELHI	22-08-2023 14:47
13	MAKHU1	Makhu-PSEB	PUNJAB	22-08-2023 15:31
14	AGRAHVDC	Agra-HVDC	PGCIL_NR3	22-08-2023 16:00
15	KOTA01	Kota-RVPNL (AMR)	RAJASTHAN	22-08-2023 16:06
16	MEERUT	Meerut-PG	PGCIL_NR1	22-08-2023 16:11
17	NEHRIAN	Nehrian-HPSEB	HP	22-08-2023 16:55
18	AGRAPG	Agra-PG	PGCIL_NR3	22-08-2023 17:12
19	SULTANPUR	400kV Sultanpur-UPPCL	UP_CENTRAL	23-08-2023 14:22
20	BHADLA1	Bhadla1-PG	PGCIL_NR1	23-08-2023

				16:28

WEEKLY SEM DATA DISCREPANCY REPORT FOR THE WEEK (28/08/23-03/09/23)

Delay in uploaded meter data

S. No	Station_Name	Feeder Name	Owner	Data uploading time
1	KISHENPUR	Kishenpur-PG	PGCIL_NR2	05-09-2023 11:20
2	ALIGARH	Aligarh-PG	PGCIL_NR3	05-09-2023 11:20
3	PILIBHIT	Pilibhit-UPPCL	UP_CENTRAL	05-09-2023 12:45
4	BHADLA2	Bhadla2-PG	PGCIL_NR1	05-09-2023 12:46
5	SULTANPUR	400kV Sultanpur-UPPCL	UP_CENTRAL	05-09-2023 13:04
6	KIRORI	Kirori-HVPN	HARYANA	05-09-2023 17:17
7	KHEDAR02	Khedar-HVPN(AMR)	HARYANA	05-09-2023 17:18
8	PATIALA	Patiala-PG	PGCIL_NR2	06-09-2023 11:40
9	NAKODAR	Nakodar-PSEB	PUNJAB	06-09-2023 11:44
10	KANPURGIS	Kanpur GIS-PG	PGCIL_NR3	06-09-2023 12:29
11	DHAULIGANGA	Dhauliganga HPS	NHPC	06-09-2023 16:15
12	GANGUWAL	MISS Ganguwal	BBMB	06-09-2023 16:20
13	APTFPL	APTFPL_Jodhpur Azure-	RE	07-09-2023

		34(130MW)		10:43

WEEKLY SEM DATA DISCREPANCY REPORT FOR THE WEEK (04/09/23-10/09/23)

Delay in uploaded meter data

S. No	Station_Name	Feeder Name	Owner	Data uploading time
1	BALIA	Balia-PG	PGCIL_NR3	12-09-2023 11:46
2	SHAHJAHANPUR	Shahjahanpur PG(AMR)	PGCIL_NR3	12-09-2023 13:12
3	BHADLA2	Bhadla2-PG	PGCIL_NR1	12-09-2023 13:28
4	KOTESHWARP	KOTESHWAR POOLING(PG)	PGCIL_NR1	13-09-2023 14:16
5	SAHARANPUR	Saharanpur-PG	PGCIL_NR1	12-09-2023 13:44
6	MOGA	Moga-PG	PGCIL_NR2	13-09-2023 10:55
7	PATIALA	Patiala-PG	PGCIL_NR2	12-09-2023 18:16
8	GANGUWAL	MISS Ganguwal	BBMB	14-09-2023 10:25
9	TANAKPUR	Tanakpur HPS	NHPC	12-09-2023 15:53
10	CHAMERA3	Chamera-3 HPS	NHPC	12-09-2023 15:40
11	PINJORE	Pinjore-HVPN	HARYANA	13-09-2023 06:58
12	KARIAN	Karian-HPPTCL	HP	12-09-2023 13:31
13	NEHRIAN	Nehrian-HPSEB	HP	13-09-2023

				10:31
14	CBCITY	CG City-UPPCL	UP_CENTRAL	12-09-2023 11:47
15	PILIBHIT	Pilibhit-UPPCL	UP_CENTRAL	12-09-2023 11:11
16	THARSURYA	THAR SURYA	RE	13-09-2023 11:10

OCC forum noted the same and asked all stakeholders to submit the required data latest by Tuesday afternoon every week.

Follow up issues from previous OCC meetings

Annexure-A.I

<table>
<tr><td>1</td><td>Down Stream network by State utilities from ISTS Station</td><td>Augmentation of transformation capacity in various existing substations, addition of new substations along with line bays as well as requirement of line bays by STUs for downstream network are under implementation at various locations in Northern Region. Further, 220kV bays have already been commissioned at various substations in NR. For its utilization, downstream 220kV system needs to be commissioned.</td><td>List of downstream networks is enclosed in Annexure-A.I.I.</td></tr>
<tr><td>2</td><td>Progress of installing new capacitors and repair of defective capacitors</td><td>Information regarding installation of new capacitors and repair of defective capacitors is to be submitted to NRPC Secretariat.</td><td>Data upto following months, received from various states / UTs:
◎ CHANDIGARH — Sep-2019
◎ DELHI — Jun-2023
◎ HARYANA — May-2023
◎ HP — Jul-2023
◎ J&K and LADAKH — Not Available
◎ PUNJAB — Jun-2023
◎ RAJASTHAN — Aug-2023
◎ UP — Aug-2023
◎ UTTARAKHAND — Aug-2023
All States/UTs are requested to update status on monthly basis.</td></tr>
<tr><td>3</td><td>Healthiness of defence mechanism: Self-certification</td><td>Report of mock exercise for healthiness of UFRs carried out by utilities themselves on quarterly basis is to be submitted to NRPC Secretariat and NRLDC. All utilities were advised to certify specifically, in the report that “All the UFRs are checked and found functional”.</td><td>Data upto following months, received from various states / UTs:
◎ CHANDIGARH — Not Available
◎ DELHI — Jun-2023
◎ HARYANA — Jun-2023
◎ HP — May-2023
◎ J&K and LADAKH — Not Available
◎ PUNJAB — Jun-2023
◎ RAJASTHAN — Jun-2023
◎ UP — Jun-2023
◎ UTTARAKHAND — Jun-2023
◎ BBMB — Jun-2023
All States/UTs are requested to update status for healthiness of UFRs on monthly basis for islanding schemes and on quartely basis for the rest .</td></tr>
<tr><td></td><td></td><td>In compliance of NPC decision, NR states/constituents agreed to raise the AUFR settings by 0.2 Hz in 47th TCC/49th NRPC meetings.</td><td>Status:
◎ CHANDIGARH — Not Available
◎ DELHI — Increased
◎ HARYANA — Increased
◎ HP — Increased
◎ J&K and LADAKH — Not increased
◎ PUNJAB — Increased
◎ RAJASTHAN — Increased
◎ UP — Increased
◎ UTTARAKHAND — Increased
◎ BBMB — Increased
J&K and LADAKH were requested to update status for increasing settings of UFRs.</td></tr>
</table>

<table>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td>4</td><td>Status of FGD installation vis-à-vis installation plan at identified TPS</td><td>List of FGDs to be installed in NR was finalized in the 36th TCC (special) meeting dt. 14.09.2017. All SLDCs were regularly requested since 144th OCC meeting to take up with the concerned generators where FGD was required to be installed.
Further, progress of FGD installation work on monthly
basis is monitored in OCC
meetings.</td><td>Status of the information submission (month) from states / utilities is as under:
<table><tr><td>◎</td><td>HARYANA</td><td>Sep-2022</td></tr><tr><td>◎</td><td>PUNJAB</td><td>Jul-2023</td></tr><tr><td>◎</td><td>RAJASTHAN</td><td>Jul-2023</td></tr><tr><td>◎</td><td>UP</td><td>Aug-2023</td></tr><tr><td>◎</td><td>NTPC</td><td>Feb-2023</td></tr></table>FGD status details are enclosed as Annexure-A.I.II.
All States/utilities are requested to update status of FGD installation progress on monthly basis.</td></tr>
<tr><td>5</td><td>Submission of breakup of Energy Consumption by the states</td><td>All states/UTs are requested to submit the requisite data as per the billed data information in the format given as under:
<table><tr><td>Category→</td><td>Consumption by Domestic Loads</td><td>Consumption by Commercial Loads</td><td>Consumption by Agricultural Loads</td><td>Consumption by Industrial Loads</td><td>Traction supply load</td><td>Miscellaneous / Others</td></tr><tr><td><Month></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table></td><td>Status of the information submission (month) from states / utilities is as under:
<table><tr><td></td><td>State / UT</td><td>Upto</td></tr><tr><td>◎</td><td>CHANDIGARH</td><td>Not Submitted</td></tr><tr><td>◎</td><td>DELHI</td><td>May-23</td></tr><tr><td>◎</td><td>HARYANA</td><td>Jul-23</td></tr><tr><td>◎</td><td>HP</td><td>Aug-23</td></tr><tr><td>◎</td><td>J&K and LADAKH</td><td>Not Submitted</td></tr><tr><td>◎</td><td>PUNJAB</td><td>Jul-23</td></tr><tr><td>◎</td><td>RAJASTHAN</td><td>Jul-23</td></tr><tr><td>◎</td><td>UP</td><td>Apr-23</td></tr><tr><td>◎</td><td>UTTARAKHAND</td><td>Mar-23</td></tr></table>J&K and Ladakh and Chandigarh are requested to submit the requisite data w.e.f. April 2018 as per the billed data information in the given format</td></tr>
<tr><td>6</td><td>Information about variable charges of all generating units in the Region</td><td>The variable charges detail for different generating units are available on the MERIT Order Portal.</td><td>All states/UTs are requested to submit daily data on MERIT Order Portal timely.</td></tr>
<tr><td>7</td><td>Status of Automatic Demand Management Sysytem in NR states/UT's</td><td>The status of ADMS implementation in NR, which is mandated in clause 5.4.2 (d) of IEGC by SLDC/SEB/DISCOMs is presented in the following table:</td><td>Status:
<table><tr><td>◎</td><td>DELHI</td><td>Fully implemented</td></tr><tr><td>◎</td><td>HARYANA</td><td>Scheme not implemented</td></tr><tr><td>◎</td><td>HP</td><td>Scheme not implemented</td></tr><tr><td>◎</td><td>PUNJAB</td><td>Scheme not implemented</td></tr><tr><td>◎</td><td>RAJASTHAN</td><td>Under implementation. Likely completion schedule is 31.10.2023.</td></tr><tr><td>◎</td><td>UP</td><td>Scheme implemented by NPCIL only</td></tr><tr><td>◎</td><td>UTTARAKHAND</td><td>Scheme not implemented</td></tr></table></td></tr>
</table>

8	Reactive compensation at 220 kV/ 400 kV level at 15 substations			
	State / Utility	Substation	Reactor	Status
i	POWERGRID	Kurukshetra	500 MVAr TCR	Anticipated commissioning: Oct'23
ii	DTL	Peeragarhi	1x50 MVAr at 220 kV	1x50 MVAr Reactor at Peeragarhi has been commissioned on dated 18.09.2023
iii	DTL	Harsh Vihar	2x50 MVAr at 220 kV	2x50 MVAR Reactor at Harsh Vihar has been commissioned on dated 31th March 2023.
iv	DTL	Mundka	1x125 MVAr at 400 kV & 1x25 MVAr at 220 kV	Bay work completed on 25.03.2023. Reactor part tender is dropped and at present same is under revision.
v	DTL	Bamnauli	2x25 MVAr at 220 kV	Bay work completed on 25.03.2023. Reactor part tender is dropped and at present same is under revision.
vi	DTL	Indraprastha	2x25 MVAr at 220 kV	Bay work completed on 07.11.2023. Reactor part tender is dropped and at present same is under revision.
vii	DTL	Electric Lane	1x50 MVAr at 220 kV	Under Re-tendering due to Single Bid
viii	PUNJAB	Dhuri	1x125 MVAr at 400 kV & 1x25 MVAr at 220 kV	400kV Reactors - 1x125 MVAR Reactor at Dhuri has been commissioned on dated 30th March 2023. 220kV Reactors - 1x25 MVAR Reactor at Dhuri has been commissioned on dated 27th January 2023.
ix	PUNJAB	Nakodar	1x25 MVAr at 220 kV	1x25 MVAR Reactor at Nakodar has been commissioned on dated 13th February 2023.
x	PTCUL	Kashipur	1x125 MVAR at 400 kV	Price bid has been opened and is under evaluation. Retendered in Jan'23
xi	RAJASTHAN	Akal	1x25 MVAr	1x25 MVAR Reactor at Akal has been commissioned on dated 25th July' 2022.

xii	RAJASTHAN	Bikaner	1x25 MVAr	1x25 MVAR Reactor at Bikaner has been commissioned on dated 24th June 2023.
xiii	RAJASTHAN	Suratgarh	1x25 MVAr	1x25 MVAR Reactor at Suratgarh has been commissioned on dated 25th November 2022.
xiv	RAJASTHAN	Barmer & others	13x25 MVAr	Agreement signed on dt. 22.06.2020. Grant of Ist Instalment received on dt.19.02.21 & work order placed on dt. 7.04.2022 to M/s Kanohar Electricals Ltd. Schedule time is 18 months.
xv	RAJASTHAN	Jodhpur	1x125 MVAr	Agreement signed on dt. 22.06.2020. Grant of Ist Instalment received on dt.19.02.21 & work order placed on dt. 7.04.2022 to M/s Kanohar Electricals Ltd. Schedule time is 18 months.

Annexure-A-I.I

1. Down Stream network by State utilities from ISTS Station:

Sl. No.	Substation	Downstream network bays	Status of bays	Planned 220 kV system and Implementation status	Revised Target	Remarks
1	400/220kV, 3x315 MVA Samba	Commissioned: 8 Total: 8	Utilized: 6 Unutilized: 2	• Network to be planned for 2 bays.	-	02 No. of bays shall be utilized for LILO-II of 220kV Jatwal-Bishnah Transmission Line, the work of which is delayed due to severe ROW problem at Location No. 1 near Grid Substation Jatwal where the Land owner is not allowing erection of Tower. The Deputy Commissioner Samba has been approached for intervention and facilitating the erection of Tower. He is persuading the Land owner to get the work completed. Updated in 210th OCC by JKPTCL.
2	400/220kV, 2x315 MVA New Wanpoh	Commissioned: 6 Total: 6	Utilized: 2 Unutilized: 4	• 220 kV New Wanpoh - Alusteng D/c Line	End of 2023	02 No. of bays are to be utilized for connecting 220kV New Wanpoh-Alusteng D/c Line. The work is in progress and expected to be commission by the end of 2023. Updated in 204th OCC by JKPTCL.
				• 220 kV New Wanpoh - Mattan D/c Line	End of 2024	02 No. of bays are to be utilized for connecting 220kV New Wanpoh-Mattan D/c Line. The funding source for the project is being identified and the project is expected to be completed by ending 2024. Updated in 204th OCC by JKPTCL.
3	400/220kV, 2x315 MVA Amargarh	Commissioned: 6 Total: 6	Utilized: 4 Unutilized: 2	• 220kV D/C line from 400/220kV Kunzar - 220/33kV Sheeri	End of 2024	02 No. of bays are proposed to be utilized for connecting 220/132 kV GSS Loolipora. The funding source for the project is being identified and the project is expected to be completed by ending 2024. Updated in 204th OCC by JKPTCL.
4	400/220kV, 2x500 MVA Kurukshetra (GIS)	Commissioned: 8 Total: 8	Utilized: 6 Unutilized: 2	• 220kV Bhadson (Kurukshetra) – Ramana Ramani D/c line	Jul'24	Updated in 205th OCC by HVPNL
5	400/220 kV, 2x315 MVA Dehradun	Commissioned: 6 Total: 6	Utilized: 2 Unutilized: 4	• Network to be planned for 4 bays	-	PTCUL to update the status.
6	Shahjahanpur, 2x315 MVA 400/220 kV	Commissioned: 6 Approved/Under Implementation:1 Total: 7	Utilized: 5 Unutilized: 1 (1 bays to be utilized shortly) Approved/Under Implementation:1	• 220 kV D/C Shahajahanpur (PG) - Gola line	30.09.2023	Updated in 211th OCC by UPPTCL
				• LILO of Sitapur – Shahjahanpur 220 kV SC line at Shahjahanpur (PG)	Commissioned	Energization date: 25.02.2022 updated by UPPTCL in 196th OCC
7	Hamirpur 400/220 kV Sub-station	Commissioned: 8 Total: 8	Utilized: 4 Unutilized: 4 (2 bays to be utilized shortly)	• 220 kV Hamirpur-Dehan D/c line	Commissioned	Commisioned date: 09.06.2022. Updated in 198th OCC by HPPTCL
				• Network to be planned for 4 bays	-	HPPTCL to update the status.
8	Sikar 400/220kV, 1x 315 MVA S/s	Commissioned: 8 Total: 8	Utilized: 6 Unutilized: 2	• LILO of 220 kV Sikar (220 kV GSS)-Dhod S/c line at Sikar (PG)	Commissioned	LILO of 220 kV S/C Sikar-Dhod line at 400 kV GSS PGCIL, Sikar has been charged on dt. 31.03.2022
				• Network to be planned for 2 bays.	-	Against the 3rd ICT at 400 kV GSS Sikar, only 2 bays were constructed and same has been utilized by RVPN by constructing LILO of 220 kV S/C Sikar – Dhod line as updated by RVPNL in 195th OCC
9	Bhiwani 400/220kV S/s	Commissioned: 6 Total: 6	Utilized: 2 Unutilized: 4	• 220 kV D/C line Bhiwani (PG) – Bhiwani (HVPNL) line	Commissioned	Updated in 202nd OCC by HVPNL
				• 220 kV Bhiwani (PG) - Isherwal (HVPNL) D/c line.	Dec'23	Issue related to ROW as intimated in 208th OCC by HVPNL.
				• 220 kV Bhiwani (PG) - Dadhibana (HVPNL) D/c line.	Apr'24	Issue related to ROW as intimated in 192nd OCC by HVPNL.

Sl. No.	Substation	Downstream network bays	Status of bays	Planned 220 kV system and Implementation status	Revised Target	Remarks
10	Jind 400/220kV S/s	Commissioned: 4 Approved:4 Total: 8	Utilized: 4 Unutilized: 0	• LILO of both circuits of 220 kV Jind HVPNL to PTPS D/C line at 400 kV substation PGCIL Khatkar (Jind) with 0.5 sq inch ACSR conductor	May'24	Tender is under process Updated in 205th OCC by HVPNL.
11	400/220kV Tughlakabad GIS	Commissioned: 6 Under Implementation: 4 Total: 10	Utilized: 6 Unutilized: 0 Under Implementation:4	• RK Puram – Tughlakabad (UG Cable) 220kV D/c line – March 2023.	-	DTL to update the status.
				• Masjid Mor – Tughlakabad 220kV D/c line.	-	DTL to update the status.
12	400/220kV Kala Amb GIS (TBCB)	Commissioned: 6 Total: 6	Utilized: 0 Unutilized: 6	• HPPTCL has planned one no. of 220kV D/c line from Kala Amb 400/220kV S/s to 220/132kV Kala Amb S/s	Dec'23	Updated in 211th OCC by HPPTCL
				• HPPTCL has planned one no. of 220kV D/c line from Kala Amb 400/220kV S/s to 220/132kV Giri S/s	-	HPPTCL to update the status.
				• Network to be planned for 2 bays	-	HPPTCL to update the status.
13	400/220kV Kadarpur Sub-station	Commissioned: 8 Total: 8	Utilized: 0 Unutilized: 8	• LILO of both circuits of 220 KV Pali - Sector 56 D/C line at Kadarpur along with augmentation of existing conductor from 220 KV Sector-56 to LILO point with 0.4 sq inch AL-59 conductor.	Dec'23	Forest approval is pending for 220 KV Pali - Sector 56 D/C line. Updated in 205th OCC by HVPNL
				• LILO of both circuits of 220KV Sector 65 - Pali D/C line at Kadarpur along with augmentation of balance 0.4 sq. inch ACSR conductor of 220 kV Kadarpur - Sector 65 D/C line with 0.4sq inch AL-59 conductor	Dec'23	Updated in 205th OCC by HVPNL
14	400/220kV Sohna Road Sub-station	Commissioned: 8 Total: 8	Utilized: 4 Unutilized: 4	• LILO of both circuits of 220kV D/c Sohna-Rangla Rajpur at Roj Ka Meo line at 400kV Sohna Road	Jan'24	Updated in 208th OCC by HVPNL
				• LILO of both circuits of 220kV D/c Badshahpur-Sec77 line at 400kV Sohna Road	-	The matter is subjudice in Hon'ble Punjab & Haryana High court, Chandigarh Updated in 205th OCC by HVPNL. **Status:-** Earlier 02 nos 220 kV line bays were to be utilized for the 220 kV GIS S/Stn. Sec-77, Gurugram but due to denotification of land of the 220 kV GIS S/Stn. Sec-77 the said substation is now going to be dismantled and a new substation is proposed at Sec-75A, Gurugram. Now, these 02 no. 220 kV line bays may be utilized at 220 kV GIS S/Stn Sec-75A, Gurugram.
15	400/220kV Prithla Sub-station	Commissioned: 8 Aprroved: 2 Total: 10	Utilized: 4 Unutilized: 4 Under Implementation:2	• 220kV D/C line from Prithla to Harfali with LILO of one circuit at 220kV Meerpur Kurali	31.03.2024	Updated in 205th OCC by HVPNL
				• LILO of both ckt of 220kV D/c Ranga Rajpur – Palwal line	Commissioned	Commisioned date: 31.12.2021. Updated in 198th OCC by HVPNL
				• 220kV D/C for Sector78, Faridabad	31.03.2024	Issue related to ROW and Pending crossing approval from Northern Railways and DFCCIL. as intimated in 205th OCC by HVPNL.
				• Prithla - Sector 89 Faridabad 220kV D/c line	31.03.2024	Updated in 205th OCC by HVPNL
				• LILO of both circuits of 220kV Samalkha - Mohana line at Sonepat	05.10.2023	Updated in 205th OCC by HVPNL

Sl. No.	Substation	Downstream network bays	Status of bays	Planned 220 kV system and Implementation status	Revised Target	Remarks
16	400/220kV Sonepat Sub-station	Commissioned: 6 Under Implementation:2 Total: 8	Utilized: 2 Unutilized: 4 Under Implementation:2	• Sonepat - HSIISC Rai 220kV D/c line	-	Updated in 205th OCC by HVPNL. **Status:** Due to non-performance of work of 220KV GIS Rai S/Stn, the Contract has been terminated & blacklisted by O/o XEN/WB O/o CE/PD&C, HVPNL, Panchkula vide Ch-100/HDP-2418/REC-254/Xen(WB) Dated 24.02.2023. Now pending work will be caried out by HVPNL/ Departmentely
				• Sonepat - Kharkhoda Pocket A 220kV D/c line	31.07.2024	Updated in 205th OCC by HVPNL. **Status:** The Possession of land for construction of 220KV S/Stn. Pocket-A i.e 6.33 Acres and for Pocket-B is 5.55 Acres has been taken over by HVPNL. Work order yet to be issued by O/o CE/PD&C, Panchkula for construction of 2 no. 220KV GIS S/Stn Pocket-A & Pocket-B.
17	400/220kV Neemrana Sub-station	Commissioned: 6 Total: 6	Utilized: 4 Unutilized: 2	• LILO of Bhiwadi - Neemrana 220kV S/c line at Neemrana (PG)	-	Work order is finalized as updated in 201st OCC by RVPNL. 5 months from layout finalization.
18	400/220kV Kotputli Sub-station	Commissioned: 6 Total: 6	Utilized: 4 Unutilized: 2	• Kotputli - Pathreda 220kV D/c line	-	Bid documents under approval as updated in 195th OCC by RVPNL.
19	400/220kV Jallandhar Sub-station	Commissioned: 10 Total: 10	Utilized: 8 Unutilized: 2	• Network to be planned for 2 bays	May'24	LILO of 220 kV BBMB Jalandhar - Butari line at 400 kV PGCIL Jalandhar being planned. Work expected to be completed by May 2024. Updated in 198th OCC by PSTCL.
20	400/220kV Roorkee Sub-station	Commissioned: 6 Total: 6	Utilized: 4 Unutilized: 2	• Roorkee (PG)-Pirankaliyar 220kV D/c line	Commissioned	Roorkee (PG)-Pirankaliyar 220kV D/c line comiisioned in 2020 as intimated by PTCUL in 197th OCC
21	400/220kV Lucknow Sub-station	Commissioned: 8 Total: 8	Utilized: 4 Unutilized: 4	• Network to be planned for 2 bays	30.09.2023	• Lucknow -Kanduni, 220 kV D/C line work is completed, safety clearance from Powergrid is awaited updated by UPPTCL in 211th OCC. _____ • No planning for 2 no. of bays upated by UPPTCL in 196th OCC. The same has been communicated to Powergrid.
22	400/220kV Gorakhpur Sub-station	Commissioned: 6 Total: 6	Utilized: 4 Unutilized: 2	• Network to be planned for 2 bays	22.08.2023	• Gorakhpur(PG)- Maharajganj, 220 kV D/C line expected energization date is 22.08.2023 updated by UPPTCL in 210th OCC
23	400/220kV Fatehpur Sub-station	Commissioned: 8 Under Implementation:2 Total: 10	Utilized: 6 Unutilized: 2 Under Implementation:2	• Network to be planned for 2 bays	-	• UPPTCL intimated that 02 no. of bays under finalization stage. In 201st OCC, UPPTCL intimated that it is finalized that Khaga s/s will be connected (tentative time 1.5 years). _____ • No planning for 2 no. of bays updated by UPPTCL in 196th OCC. The same has been communicated to Powergrid.
24	400/220kV Abdullapur Sub-station	Commissioned: 10 Under Implementation:2 Total: 12	Utilized: 10 Unutilized: 0 Under Implementation:2	• Abdullapur – Rajokheri 220kV D/c line	Dec'23	SCDA System & PLCC work pending at 220 KV S/stn. Rajokheri Updated in 209th OCC by HVPNL
	400/220kV Panchkula	Commissioned: 8 Under tender:2 Total: 10	Utilized: 2 Unutilized: 4	• Panchkula – Pinjore 220kV D/c line	Dec'23	Updated in 211th OCC by HVPNL
				• Panchkula – Sector-32 220kV D/c line	Feb'24	Updated in 211th OCC by HVPNL
				• Panchkula – Raiwali 220kV D/c line	Commissioned	Updated in 194th OCC by HVPNL

Sl. No.	Substation	Downstream network bays	Status of bays	Planned 220 kV system and Implementation status	Revised Target	Remarks
25	400/220kV Panchkula Sub-station	Out of these 10 nos. 220kV Line Bays, 2 bays would be used by the lines being constructed by POWERGRID (Chandigarh-2) and balance 8 nos. bays would be used by HVPNL	Unutilized: 4 Under Implementation:2	• Panchkula – Sadhaura 220kV D/c line: Sep'23	Jul'24	Updated in 205th OCC by HVPNL
26	400/220kV Amritsar S/s	Commissioned:7 Approved in 50th NRPC- 1 no. Total: 8	Utilized: 6 Unutilized: 1 Approved in 50th NRPC- 1 no.	• Amritsar – Patti 220kV S/c line	Nov'23	Route survey/tender under process. Updated in 211th OCC by PSTCL.
				• Amritsar – Rashiana 220kV S/c line (2 bays shall be required for above lines. However, 1 unutilized bay shall be used for Patti and requirement of one additional bay approved for Rashiana by NRPC)	Nov'23	Route survey/tender under process.. Updated in 211th OCC by PSTCL.
27	400/220kV Bagpat S/s	Commissioned: 8 Total: 8	Utilized:6 Unutilized: 2	• Bagpat - Modipuram 220kV D/c line	Commissioned	Updated in 201st OCC by UPPTCL
28	400/220kV Bahardurgarh S/s	Commissioned: 4 Approved: 4 Total: 8	Utilized:2 Unutilized: 2	• LILO of 220 kV Nunamajra-Daultabad S/c line at 400 kV Bahadurgarh PGCIL	31.03.2024	Updated in 205th OCC by HVPNL. **Status:** Tentative route stands submitted by TS wing and accordingly BOQ has been submitted by design wing to contracts wing for award of work.
				• Bahadurgarh - METL 220kV D/c line (Deposit work of M/s METL)	31.03.2024	Updated in 205th OCC by HVPNL. **Status:** Tentative route stands submitted by TS wing and accordingly BOQ has been submitted by design wing to contracts wing for award of work.
				• Bahadurgarh - Kharkhoda Pocket B 220kV D/c line	31.07.2024	
29	400/220kV Jaipur (South) S/s	Commissioned: 4 Total: 4	Utilized:2 Unutilized: 2	• Network to be planned for 2 bays.	-	LILO case of 220 kV Dausa – Sawai Madhopur line at 400 kV GSS Jaipur South (PG) is under WTD approval as updated by RVPNL in 195th OCC
30	400/220kV Sohawal S/s	Commissioned: 8 Total: 8	Utilized: 8	• Sohawal - Barabanki 220kV D/c line	Commissioned	Energization date: 14.04.2018 updated by UPPTCL in 196th OCC
				• Sohawal - New Tanda 220kV D/c line	Commissioned	Energization date: 28.05.2019 updated by UPPTCL in 196th OCC
				• Network to be planned for 2 bays	Commissioned	• Sohawal - Gonda 220kV S/c line (Energization date: 27.04.2020) updated by UPPTCL in 196th OCC _____ • Sohawal - Bahraich 220kV S/c line (Energization date: 15.02.2021) updated by UPPTCL in 196th OCC
31	400/220kV, Kankroli	Commissioned: 6 Total: 6	Utilized: 4 Unutilized: 2	• Network to be planned for 2 bays	-	RVPNL to update the status
32	400/220kV, Manesar	Commissioned: 8 Total: 8	Utilized: 4 Unutilized: 4	• Network to be planned for 2 bays	-	Status:- 2nos bays are being utilised for 220 kV D/C Panchgaon (PGCIL)-Panchgaon Ckt-I & 220 kV D/C Panchagon (PGCIL)-Panchgaon Ckt-II, charged on dated 05.09.2022 & 20.10.2022 respectively. The 2nos bays may be utilised by HVPNL in future.
33	400/220kV, Saharanpur	Commissioned: 6 Under Implementation:2 Total: 8	Utilized: 6 Unutilized: 0 Under Implementation:2	• Network to be planned for 2 bays	Commissioned	Saharanpur(PG)-Devband D/c line (Energization date: 20.04.2023) updated by UPPTCL in 207th OCC

Sl. No.	Substation	Downstream network bays	Status of bays	Planned 220 kV system and Implementation status	Revised Target	Remarks
34	400/220kV, Wagoora	Commissioned: 10 Total: 10	Utilized: 6 Unutilized: 4	• Network to be planned for 4 bays	-	PDD, J&K to update the status.
35	400/220kV, Ludhiana	Commissioned: 9 Total: 9	Utilized: 8 Unutilized: 1	• Network to be planned for 1 bay	Oct'23	Direct circuit from 220 kV Lalton Kalan to Dhandari Kalan to be diverted to 400 kV PGCIL Ludhiana. Work completed but pending for first time charging to be expected by first week of October.Updated in 211th OCC by PSTCL.
36	400/220kV, Chamba (Chamera Pool)	Commissioned: 3 Under tender:1 Total: 4	Utilized:3 Unutilized: 0 Under tender:1	• Stringing of 2nd ckt of Chamera Pool – Karian 220kV D/c line	-	Stringing of 2nd Circuit of Chamera Pool-Karian Tansmission line has been completed & terminal bay at 400/220 kV chamera pooling substation (PGCIL) is not ready.Updated in 198th OCC by HPPTCL
37	400/220kV, Mainpuri	Commissioned: 6 Under Implementation:2 Total: 8	Utilized: 6 Unutilized: 0 Under Implementation:2	• Network to be planned for 2 bays	-	• 02 no. of bays under finalization stage updated by UPPTCL in 196th OCC. Mainpuri S/s planned. Land is not finalized, therefore timeline not available as intimated by UPPTCL in 201st OCC.
38	400/220kV, Patiala	Commissioned: 8 Total: 8	Utilized: 6 Unutilized: 2	• Network to be planned for 2 bays	May'24	2 Nos. bays for 400 kV PGCIL Patiala - 220 kV Bhadson (D/C) line being planned. Work expected to be completed by May 2024. Updated in 198th OCC by PSTCL.

FGD Status

Updated status of FGD related data submission

NTPC (27.02.2023)
MEJA Stage-I
RIHAND STPS
SINGRAULI STPS
TANDA Stage-I
TANDA Stage-II
UNCHAHAR TPS
UPRVUNL (18.07.2023)
ANPARA TPS
HARDUAGANJ TPS
OBRA TPS
PARICHHA TPS

PSPCL (18.07.2023)
GGSSTP, Ropar
GH TPS (LEH.MOH.)
RRVUNL (09.07.2023)
CHHABRA SCPP
CHHABRA TPP
KALISINDH TPS
KOTA TPS
SURATGARH SCTPS
SURATGARH TPS

Updated status of FGD related data submission

Lalitpur Power Gen. Co. Ltd. (17.10.2022)
Lalitpur TPS
Lanco Anpara Power Ltd. (18.06.2022)
ANPARA-C TPS

HGPCL (14.09.2022)
PANIPAT TPS
RAJIV GANDHI TPS
YAMUNA NAGAR TPS

Adani Power Ltd. (18.02.2022)
KAWAI TPS

Rosa Power Supply Company (18.06.2022)
Rosa TPP Phase-I
Prayagraj Power Generation Company Ltd. (17.10.2022)
Prayagraj TPP
APCPL (25.02.2022)
INDIRA GANDHI STPP

Pending submissions

GVK Power Ltd.
GOINDWAL SAHIB

NTPC
DADRI (NCTPP)
Talwandi Sabo Power Ltd.
TALWANDI SABO TPP
L&T Power Development Ltd.
Nabha TPP (Rajpura TPP)

Target Dates for FGD Commissioning (Utility-wise)

Adani Power Ltd.	KAWAI TPS U#1 (Target: 31-12-2024), KAWAI TPS U#2 (Target: 31-12-2024)
APCPL	INDIRA GANDHI STPP U#1 (Target: 31-01-2022), INDIRA GANDHI STPP U#2 (Target: 30-09-2023), INDIRA GANDHI STPP U#3 (Target: 30-06-2023)
GVK Power Ltd.	GOINDWAL SAHIB U#1 (Target: 30-04-2020), GOINDWAL SAHIB U#2 (Target: 29-02-2020)
HGPCL	PANIPAT TPS U#6 (Target: 31-12-2022), PANIPAT TPS U#7 (Target: 31-12-2022), PANIPAT TPS U#8 (Target: 31-12-2022), RAJIV GANDHI TPS U#1 (Target: 31-12-2024), RAJIV GANDHI TPS U#2 (Target: 31-12-2024), YAMUNA NAGAR TPS U#1 (Target: 31-12-2024), YAMUNA NAGAR TPS U#2 (Target: 31-12-2024)

NTPC	DADRI (NCTPP) U#1 (Target: 31-12-2020), DADRI (NCTPP) U#2 (Target: 31-10-2020), DADRI (NCTPP) U#3 (Target: 31-08-2020), DADRI (NCTPP) U#4 (Target: 30-06-2020), DADRI (NCTPP) U#5 (Target: 30-06-2022), DADRI (NCTPP) U#6 (Target: 31-03-2023), RIHAND STPS U#1 (Target: 31-10-2025), RIHAND STPS U#2 (Target: 30-06-2026), RIHAND STPS U#3 (Target: 31-12-2024), RIHAND STPS U#4 (Target: 31-03-2025), RIHAND STPS U#5 (Target: 30-06-2025), RIHAND STPS U#6 (Target: 31-10-2025), SINGRAULI STPS U#1 (Target: 31-12-2024), SINGRAULI STPS U#2 (Target: 31-12-2024), SINGRAULI STPS U#3 (Target: 31-12-2024), SINGRAULI STPS U#4 (Target: 31-12-2024), SINGRAULI STPS U#5 (Target: 31-03-2025), SINGRAULI STPS U#6 (Target: 31-06-2024), SINGRAULI STPS U#7 (Target: 31-03-2024), UNCHAHAR TPS U#1 (Target: 31-12-2023), UNCHAHAR TPS U#2 (Target: 31-12-2023), UNCHAHAR TPS U#3 (Target: 30-09-2023), UNCHAHAR TPS U#4 (Target: 30-09-2023), UNCHAHAR TPS U#5 (Target: 30-09-2023), UNCHAHAR TPS U#6 (Target: 31-08-2022), MEJA Stage-I U#1 (Target: 31-10-2023), MEJA Stage-I U#2 (Target: 30-06-2023), TANDA Stage-I U#3 (Target:), TANDA Stage-I U#4 (Target:), TANDA Stage-II U#3 (Target: 31-03-2023), TANDA Stage-II U#4 (Target: 30-09-2023)

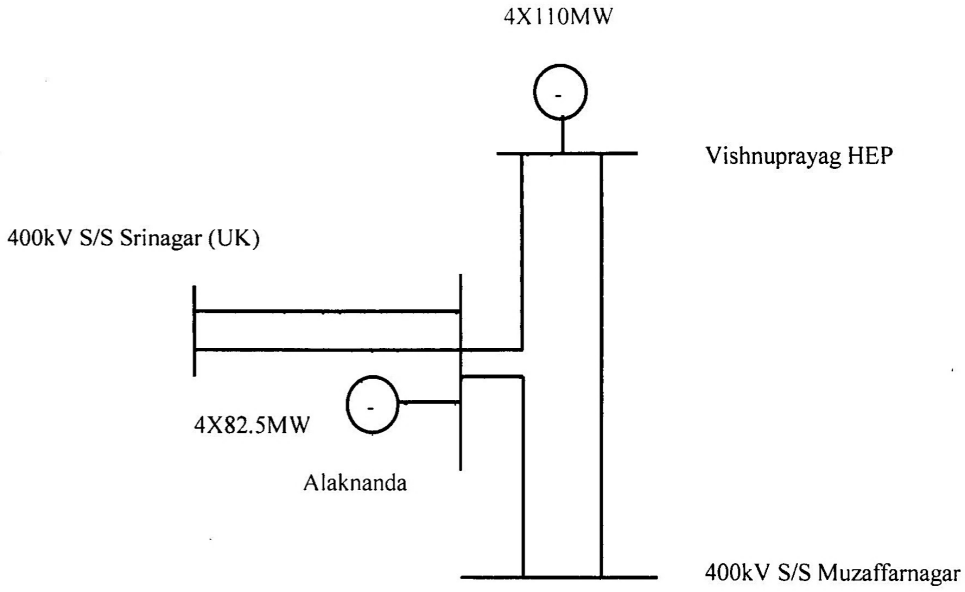
L&T Power Development Ltd (Nabha)	Nabha TPP (Rajpura TPP) U#1 (Target: 30-04-2021), Nabha TPP (Rajpura TPP) U#2 (Target: 28-02-2021)
Lalitpur Power Gen. Company Ltd.	LALITPUR TPS U#1 (Target: 31-12-2026), LALITPUR TPS U#2 (Target: 30-09-2026), LALITPUR TPS U#3 (Target: 30-06-2026)
Lanco Anpara Power Ltd.	ANPARA C TPS U#1 (Target: 31-12-2023), ANPARA C TPS U#2 (Target: 31-12-2023)
Prayagraj Power Generation Company Ltd.	PRAYAGRAJ TPP U#1 (Target: 31-12-2024), PRAYAGRAJ TPP U#2 (Target: 31-12-2024), PRAYAGRAJ TPP U#3 (Target: 31-12-2024)
PSPCL	GH TPS (LEH.MOH.) U#1 (Target: 31-12-2026), GH TPS (LEH.MOH.) U#2 (Target: 31-12-2026), GH TPS (LEH.MOH.) U#3 (Target: 31-12-2026), GH TPS (LEH.MOH.) U#4 (Target: 31-12-2026), GGSSTP, Ropar U#3 (Target: 31-12-2026), GGSSTP, Ropar U#4 (Target: 31-12-2026), GGSSTP, Ropar U#5 (Target: 31-12-2026), GGSSTP, Ropar U#6 (Target: 30-12-2026)

Rosa Power Supply Company	ROSA TPP Ph-I U#1 (Target: 31-12-2026), ROSA TPP Ph-I U#2 (Target: 31-12-2026), ROSA TPP Ph-I U#3 (Target: 31-12-2026), ROSA TPP Ph-I U#4 (Target: 31-12-2026)
RRVUNL	KOTA TPS U#5 (Target: 31-08-2024), KOTA TPS U#6 (Target: 31-08-2024), KOTA TPS U#7 (Target: 31-08-2024), SURATGARH TPS U#1 (Target: 31-12-2026), SURATGARH TPS U#2 (Target: 31-12-2026), SURATGARH TPS U#3 (Target: 31-12-2026), SURATGARH TPS U#4 (Target: 31-12-2026), SURATGARH TPS U#5 (Target: 31-12-2026), SURATGARH TPS U#6 (Target: 31-12-2026), SURATGARH SCTPS U#7 (Target: 28-02-2025), SURATGARH SCTPS U#8 (Target: 28-02-2025), CHHABRA TPP U#1 (Target: 31-12-2026), CHHABRA TPP U#2 (Target: 31-12-2026), CHHABRA TPP U#3 (Target: 31-12-2026), CHHABRA TPP U#4 (Target: 31-12-2026), CHHABRA SCPP U#5 (Target: 28-02-2025), CHHABRA SCPP U#6 (Target: 28-02-2025), KALISINDH TPS U#1 (Target: 28-02-2025), KALISINDH TPS U#2 (Target: 28-02-2025)
Talwandi Sabo Power Ltd.	TALWANDI SABO TPP U#1 (Target: 28-02-2021), TALWANDI SABO TPP U#2 (Target: 31-12-2020), TALWANDI SABO TPP U#3 (Target: 31-10-2020)
UPRVUNL	ANPARA TPS U#1 (Target: 31-12-2023), ANPARA TPS U#2 (Target: 31-12-2023), ANPARA TPS U#3 (Target: 31-12-2023), ANPARA TPS U#4 (Target: 31-12-2023), ANPARA TPS U#5 (Target: 31-12-2023), ANPARA TPS U#6 (Target: 31-12-2023), ANPARA TPS U#7 (Target: 31-12-2023), HARDUAGANJ TPS U#8 (Target: 31-12-2024), HARDUAGANJ TPS U#9 (Target: 31-12-2024), OBRA TPS U#9 (Target: 31-12-2024), OBRA TPS U#10 (Target: 31-12-2024), OBRA TPS U#11 (Target: 31-12-2024), OBRA TPS U#12 (Target: 31-12-2024), OBRA TPS U#13 (Target: 31-12-2024), PARICHHA TPS U#3 (Target: 30-04-2022), PARICHHA TPS U#4 (Target: 31-12-2024), PARICHHA TPS U#5 (Target: 31-12-2024), PARICHHA TPS U#6 (Target: 31-12-2024)

Table Agenda for 211th OCC Meeting

SPS scheme for safe evacuation of Power from Alaknanda-Vishnuprayag HEP complex.

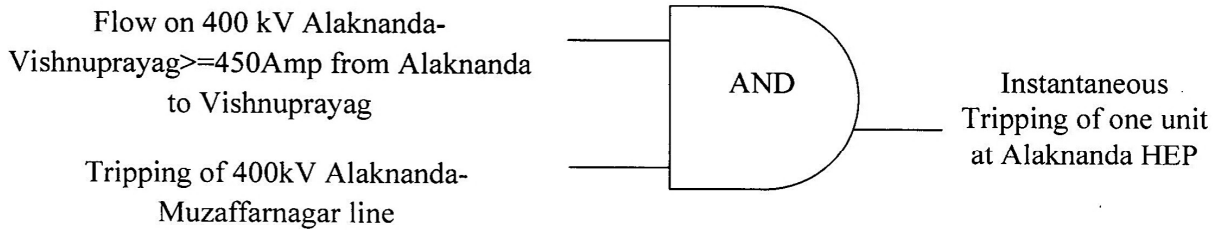
Network Connectivity



Reason for SPS requirement

At Vishnuprayag HEP, overcurrent protection is enabled at 120% on 400kV Vishnuprayag-Muzaffarnagar line. At normal operating condition, current on this line remains well below over current setting. However, in case of tripping of 400kV Alaknanda-Muzaffarnagr line and high injection of power from Uttrakhand through 400kV Srinagar-Alaknanda DC line, overcurrent protection at 400kV Vishnuprayag operates, tripping 400kV Vishnuprayg-Muzaffarnagar line. Therefore, due to loss of evacuation path, generation loss occurs at Alaknanda & Vishnuprayag HEP.

Logic for SPS



Note:- There should be definite time delay in overcurrent protection at Vishnuprayag to ensure that SPS operation occur before the operation of overcurrent protection at Vishnuprayag.

Amit Narain

(Amit Narain)
Superintending Engineer (R&A)

HPPTCL-PLG-008/1/2023-Planning Cell-HPPTCL-Part(11)
/2377627/2023

HPPTCL

HIMACHAL PRADESH POWER TRANSMISSION CORPORATION LTD.

(A State Govt. Undertaking)

Regd. Office: HimfedBhawan, New ISBT Road, Panjari, Shimla-171005
Ph.:- 0177-2831283, 2831284 FAX:-0177-2831284
Web: - www.hpptcl.com
(CIN):U40101HP2008SGC030950
(GSTIN):02AACCH1548M1ZP

Dated:- 31-08-2023.

To

Sh. V.K. Singh
Member Secretary
NRPC,
18-A, Shaheed Jeet Singh Marg,
Katwaria Sarai, New Delhi-110016.

Sub: Agenda for 69th meeting of Northern Regional Power Committee

Sir,

This is with reference to HPPTCL proposal for Construction of 220/132 kV, 80/100 MVA Sub Station at Tahliwal (Distt. Una in Himachal Pradesh) by S/C LILO of 220 kV D/C Bhakra to Jamalpur D/c line of BBMB. The proposal has been approved by BBMB constituents in 148th meeting of Power Sub Committee of BBMB. HPPTCL agenda for upcoming 69th NRPC meeting on subject cited above is enclosed alongwith for your information and perusal please.

Yours truly,

Er. Rajneesh Kumar
GM (C&D)
HPPTCL, Himfed Bhawan
Panjari, Shimla -05
gmcd.tcl@hpmail.in

Copy to-

1. **Chief Operating Officer, CTUIL for information please.**
2. **Chief Engineer PSPA-I for information please.**
3. **Spl. Secretary BBMB Chandigarh for information please.**

/237545/2023

Subject: Construction of 220/132 kV, 80/100 MVA Sub Station at Tahliwal (Distt. Una in Himachal Pradesh) by S/C LILO of 220 kV D/C Bhakra to Jamalpur D/c line of BBMB with provision of SPS to restrict drawl at 50 MVA and to ensure no drawl of Power from Jamalpur side in case of outage of Bhakhra - Tahliwal circuit.

Background-

This is in context of the Construction of 132/220 kV, 80/100 MVA Sub Station at Tahliwal (Distt. Una in Himachal Pradesh) by S/C LILO of 220 kV Bhakra - Jamalpur D/c line of BBMB. The details are as under-

HPPTCL had placed the agenda for BBMB constituent's approval in **119th Power Subcommittee Meeting** held on **29.04.2013**, wherein it was agreed that H.P. may LILO 220 kV Bhakra-Jamalpur (Punjab) D/C line of BBMB, which is passing through H.P. and establish 220/132 kV Substation at Tahliwal in Himachal Pradesh. It was further desired by BBMB that the proposal be got concurred by Northern Region Constituents in the meeting of Standing Committee.

The matter was discussed in **33rd meeting of Northern Region Standing Committee** held on 13.07.2015 **held on 23.12.2013 and 36th meeting of Northern Region Standing Committee** held on **13.07.2015** wherein it was decided that in case HPSEBL desires to draw **80 MW power at Tahliwal**, LILO of 220kV Bhakra (Right) – Jamalpur D/C line at Tahiliwal and re-conductoring of the portion of the line between Bhakra(R) –LILO point with HTLS conductor be carried out by HPSEB at their own cost. HPSEB should restrict the loading on the LILO portion to 80 MW by installing SPS. The proposal was subsequently approved in 123rd Power Subcommittee of BBMB held on 27.07.2015.

Considering that the **decisions were taken in 2015** and significant time has passed, HPPTCL before taking up the construction in year **2020** took matter with BBMB, wherein it was desired that to ascertain the present situation and any changes required in the decisions taken in **36th Standing Committee** and 123rd Power Subcommittee, the proposal shall be again placed before BBMB constituents for approval. The matter was discussed in **144th ,145th & 146th meeting of Power Subcommittee wherein in 146th** meeting of Power Subcommittee **Haryana and Rajasthan intimated no objection to HP proposal** but PSTCL informed that they have some reservations and are not in agreement with the proposal of HP, it was concluded that the HPPTCL shall discuss the matter with PSTCL to explore the possibility of consensus for further progress in the matter.

Subsequently the matter was again discussed with PSTCL by HPPTCL, wherein after deliberations PSTCL consented for drawl of **50 MVA instead of earlier committed 80 MVA** by **S/C LILO of 220 KV Bhakra Jamalpur line of BBMB (without HTLS reconductoring) with provision of SPS to restrict drawl at 50 MVA** and **to ensure no drawl of Power from Jamalpur side in case of outage of Bhakhra - Tahliwal**

circuit (Copy of letter attached as Annexure-I). Accordingly, the scheme has been revised as **Construction of 220/132 KV,80/100 MVA Sub-Station at Tahliwal (Dist. Una in Himachal Pradesh) by S/C LILO of 220 KV D/C Bhakra Jamalpur line of BBMB**. Accordingly, the revised plan was placed for discussion in the **148th meeting of Power Subcommittee of BBMB** held on **25.08.2023** and was approved by BBMB constituents **(Copy of MoM attached as Annexure- II).**

Proposal –

The substation is required on urgent basis to provide construction power to **Bulk Drug Pharma Park** proposed in **Haroli Distt-Una of Himachal Pardesh (A Project of National Importance). The foundation stone laying ceremony of which has been done** by **Hon'ble Prime Minister in October 2022.** Since the overall requirement of **BDP (Bulk Drug Park)** is to the tune of **120 MVA**, HPPTCL has already submitted proposal to CEA for approval of following elements as long term plan i.e. **Construction of 220/132 kV, 200 MVA Substation nearby Una and 220 kV (Twin Zebra) D/C line from 220/132 kV Nehrian Substation to proposed 220/132 kV, 200 MVA Substation near Una.** This proposal shall require time frame of 3 years for construction after approval. The area is already facing acute power supply shortage irrespective of upcoming BDP **(Bulk Drug Pharma Park).** It is requested that the **Construction of 220/132 kV, 80/100 MVA Sub Station at Tahliwal (Distt. Una in Himachal Pradesh) by S/C LILO of 220 kV D/C Bhakra Jamalpur D/c line of BBMB with provision of SPS to restrict drawl at 50 MVA and to ensure no drawl of Power from Jamalpur side in case of outage of Bhakhra - Tahliwal circuit be approved** in line with approval of Power Subcommittee and BBMB constituents.

Annexur-I

pstcl

PUNJAB STATE TRANSMISSION CORPORATION LIMITED
Regd. Office: - PSEB Head Office, The Mall, Patiala – 147001, Punjab, India
O/o SE/Planning, PSTCL, Patiala.
Fax/Ph: - 0175-2205502, Email: - se-planning@pstcl.org
CIN - U40109PB2010SGC033814

To,

Director (P&C),
HPPTCL,
Himfed Bhavan, near ISBT,
Shimla – 171005
Email: directorpc.tcl@hpmail.in

Memo No. 386 /P-I/57 Dated: 04/08/2023

Subject: **Regarding construction of 220/132 kV, 2X80/100 MVA, substation at Tahliwal, Distt. Una, Himachal Pradesh by LILO of 220 kV Bhakra – Jamalpur D/C line of BBMB.**

This is with reference to the DO letter (D.O. No. HPPTCL/Plg/EHV Works Vol-II/2023 Shimla-2, the 5th March, 2023-19019 dated 05.03.23) to Sh. A Venu Prasad, IAS (CMD/PSTCL) received in this office wherein Sh. Prabodh Saxena, IAS (Chief Secretary to the Govt. of Himachal Pradesh) had requested the intervention of CMD/PSTCL to allow construction of 220/132 kV substation at Tahliwal by single circuit LILO of 220 kV Bhakra – Jamalpur D/C line of BBMB with the caping of drawl of 50 MVA.

In this regard, it is informed that the matter was taken up with the higher authorities of PSTCL and the state of Punjab. In view of Himachal Pradesh's need of 50 MVA power by December 2024 for its Drug Pharma Park, PSTCL conveys its concurrence to LILO of single circuit of 220 kV Bhakra – Jamalpur double circuit line at 220 kV substation Tahliwal subject to installation of suitable SPS by HPPTCL for restricting drawl of power to 50 MVA by HP and to prevent any drawl from Jamalpur in case of outage of Bhakra – Tahliwal section.

This issues with the approval of the competent authority.

Chief Engineer/TS,
PSTCL, Patiala.

387/89
CC: 04/08/2023

1. Sh. Prabodh Saxena, IAS, Chief Secretary to the Govt. of Himachal Pradesh.
2. OSD/Power Reforms, Department of Power (Power Reforms Wing), Government of Punjab, Chandigarh.
3. Addl. SE/Tech. to Director/Tech., PSTCL, Patiala.

Annexure-II

भाखड़ा ब्यास प्रबन्ध बोर्ड
मध्य मार्ग, सैक्टर 19-बी, चंडीगढ़-160019
दूरभाष: 0172-5011761
E-Mail: spsecy@bbmb.nic.in

प्रेषक

विशेष सचिव

SPEED POST

सेवा में,

1. निदेशक/उत्पादन,
पंजाब स्टेट पावर कारपोरेशन लिमिटेड,
पटियाला -147001

2. निदेशक /तकनीकी,
पंजाब स्टेट ट्रांसमिशन कारपोरेशन लिमिटेड,
द मॉल, पटियाला - 147001

3. निदेशक/तकनीकी,
हिमाचल प्रदेश राज्य विद्युत बोर्ड, विद्युत भवन,
शिमला-171004

4. निदेशक/तकनीकी,
हरियाणा विद्युत प्रसारण निगम लिमिटेड,
शक्ति भवन, सैक्टर-6, पंचकुला - 134109

5. निदेशक/तकनीकी,
राजस्थान राज्य विद्युत प्रसारण निगम लिमिटेड,
विद्युत भवन, ज्योति नगर, जनपथ, जयपुर - 302005

क्रमांक: 24571-24581 /बी-1684/पावर सब कमेटी/4पी/148वीं दिनांक: 29-08-2023

विषय: भाखड़ा ब्यास प्रबन्ध बोर्ड (विद्युत खण्ड) की विदयुत उप समिति (पावर सब कमेटी) की 148वीं बैठक के कार्यवृत ।

उपर्युक्त विषय पर, दिनांक 25.08.2023 को हुई पावर सब कमेटी की 148वीं बैठक के कार्यवृत की एक प्रति सूचना एवं आवश्यक कार्रवाई हेतू प्रेषित की जाती है जी।

29/8
विशेष सचिव

संलग्न/कार्यवृत्त

प्रतिलिपि:

1. प्रमुख अभियन्ता/प्रणाली परिचालन, भा.ब्या.प्र.बोर्ड, चण्डीगढ़ ।
2. मुख्य अभियन्ता/पारेषण प्रणाली, भा.ब्या.प्र.बोर्ड, चण्डीगढ़ ।
3. मुख्य अभियन्ता/उत्पादन, भा.ब्या.प्र.बोर्ड, नंगल ।
4. अध्यक्ष महोदय के निजी सचिव, भा.ब्या.प्र.बोर्ड, चंण्डीगढ।
5. सदस्य/विद्युत के निजी सचिव, भा.ब्या.प्र.बोर्ड, चण्डीगढ़।
6. विशेष सचिव के निजि सचिव भा.ब्या.प्र.बोर्ड, चण्डीगढ़।

दिनांक 25.08.2023 को चंडीगढ़ में आयोजित बीबीएमबी की विद्युत उप समिति (पीएससी) की 148 वीं बैठक का कार्यवृत्त।

निम्नलिखित अधिकारी उपस्थित थे:-

1. ई. अमरजीत सिंह, सदस्य विद्युत, बीबीएमबी। (समिति के अध्यक्ष)
2. ई. विपिन गुप्ता, मुख्य अभियंता/पारेषण प्रणाली, बीबीएमबी ।
3. ई. अजय कुमार शर्मा, विशेष सचिव, बीबीएमबी, चडीगढ़। (सदस्य सचिव)
4. ई. राजीव सूद/ निदेशक (पी एण्ड सी), एचपीएसईबीएल, शिमला हि.प्र.।
5. ई.हरिमोहन गुप्ता,मुख्य अभियन्ता (एनपीपी एवं आर ए) आरआरवीपीएनएल, जयपुर। (वी.सी. के माध्यम से)
6. ई. योगेन्द्र माथूर, अधीक्षणअभियन्ता(आईएसपी) आरआरवीपीएनएल, जयपुर।(वी.सी. के माध्यम से)
7. ई. ए.पी.सिंह, मुख्य अभियन्ता/टीएस,पीएसटीसीएल, पटियाला।
8. ई. संजीव सूद, मुख्य अभियन्ता/टीएस,पीएसटीसीएल, पटियाला।(वी.सी. के माध्यम से)
9. ई. विवेक कुमार खन्ना, अधीक्षण अभियन्ता/योजना,पीएसटीसीएल, पटियाला।
10. ई. अनिल कुमार यादव, मुख्य अभियन्ता/एसओ एवं कॉमर्शिलय एचवीपीएनएल हरियाणा। (वी.सी. के माध्यम से)
11. ई. संजय अरोड़ा, मुख्य अभियन्ता/पलानिंग,एचवीपीएनएल हरियाणा। (वी.सी. के माध्यम से)
12. ई. रूचि शर्मा, निदेशक/पीआर, बीबीएमबी चण्डीगढ़।
13. ई. बृजेश कुमार यादव, अधीक्षण अभियन्ता, बीबीएमबी, पानीपत ।
14. ई. आर. के. थमन, संयुक्त सचिव/विद्युत एवं सामान्य, चंडीगढ़।

Member (P) welcomed all the Members of Power Sub Committee and other officers present in the meeting and invited the concerned to present their respective Agendas:

Item-I:

Construction of 220/132 KV, 80/100 MVA Sub-Station at Tahliwal (Distt. Una in Himachal Pradesh) by S/C LILO of 220 KV Bhakra-Jamalpur line of BBMB.

Director, HPPTCL presented the agenda to Power Sub Committee members along with brief background of the case.

Further it was intimated that in deference to the decision taken in 146th Power Sub Committee meeting of BBMB, HPPTCL has taken up the matter with PSTCL and PSTCL has given their consent for drawl of 50 MVA instead of 80 MVA Load.

Member/ Power, BBMB observed that LILO of 220 KV Bhakra-Jamalpur circuit should be done only after replacement of existing conductor and also enquired whether PSTCL has given their consent to HPPTCL for LILO of Bhakra-Jamalpur Circuit without replacement of existing conductor with new conductor.

CE/PSTCL replied that they have no objection in drawl of 50 MVA Load by HPPTCL for proposed 220kV Tahliwal Sub-Station without re-conductoring.

Rajasthan and Haryana gave their consent to the proposal.

Agenda was approved with approval of all Power Sub Committee members.

Item-2:

Memorandum for creation of 220KV GIS sub-station & its associated transmission lines for India International Horticulture Market at Ganaur (Distt. Sonipat) to be carried out by HVPNL as deposit work of Haryana International Horticulture Marketing Cooperation Ltd (HIHMCL).

Agenda was received from the HVPNL, Haryana on dated18.08.2023 through e mail but notice for the meeting of 148th PSC meeting was issued on 09.08.2023. Due to late receipt, agenda was not circulated to the Power Sub Committee members for deliberation in the meeting.

But due to urgency of work and on request of Haryana, this agenda was deliberated in the meeting as table agenda.

CE/Planning, HVPNL explained the agenda in detail and requested for LILO of 220KV, BBMB Panipat-Narela Circuit at Gannaur.

All Power Sub Committee members desired HVPNL to share the detailed load flow studies to enable them to take decision in this regard.

Rajasthan, observed that agenda in Power Sub Committee of BBMB should be placed only after obtaining the approval of CEA and NRPC. Haryana assured to put up the agenda in NRPC at the earliest.

SE/Planning, PSTCL also cited Goraya LILO case in which approval of NRPC was desired by Power Sub Committee.

Power Sub Committee decided that agenda should be placed in the next Power Sub Committee of BBMB after sharing the system studies with all members and approval of NRPC/CEA.

Meeting ended with vote of thanks to chair.

29/8

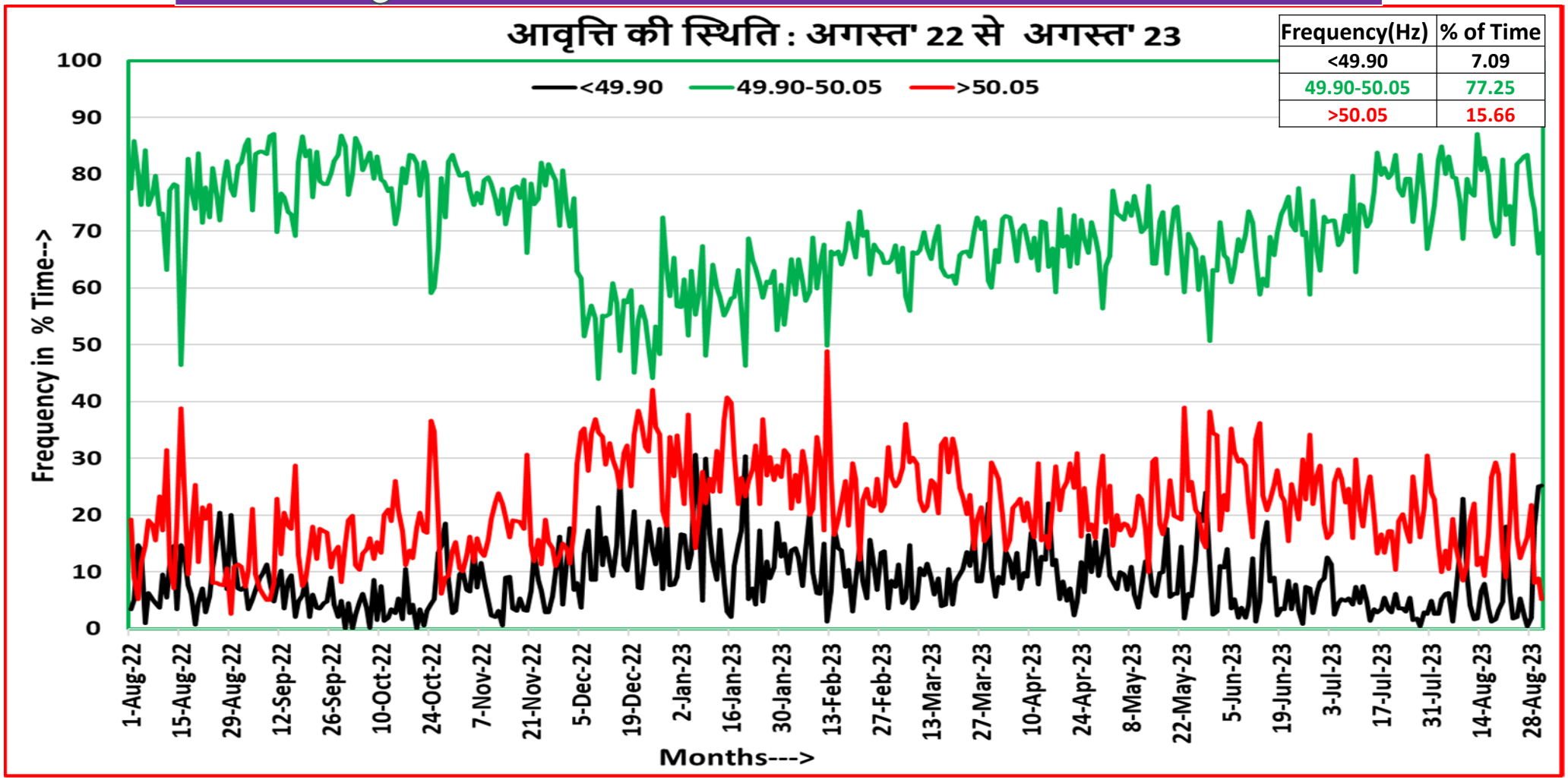
Special Secretary

प्रचालन समन्वय उपसमिति की बैठक
अगस्त- 2023

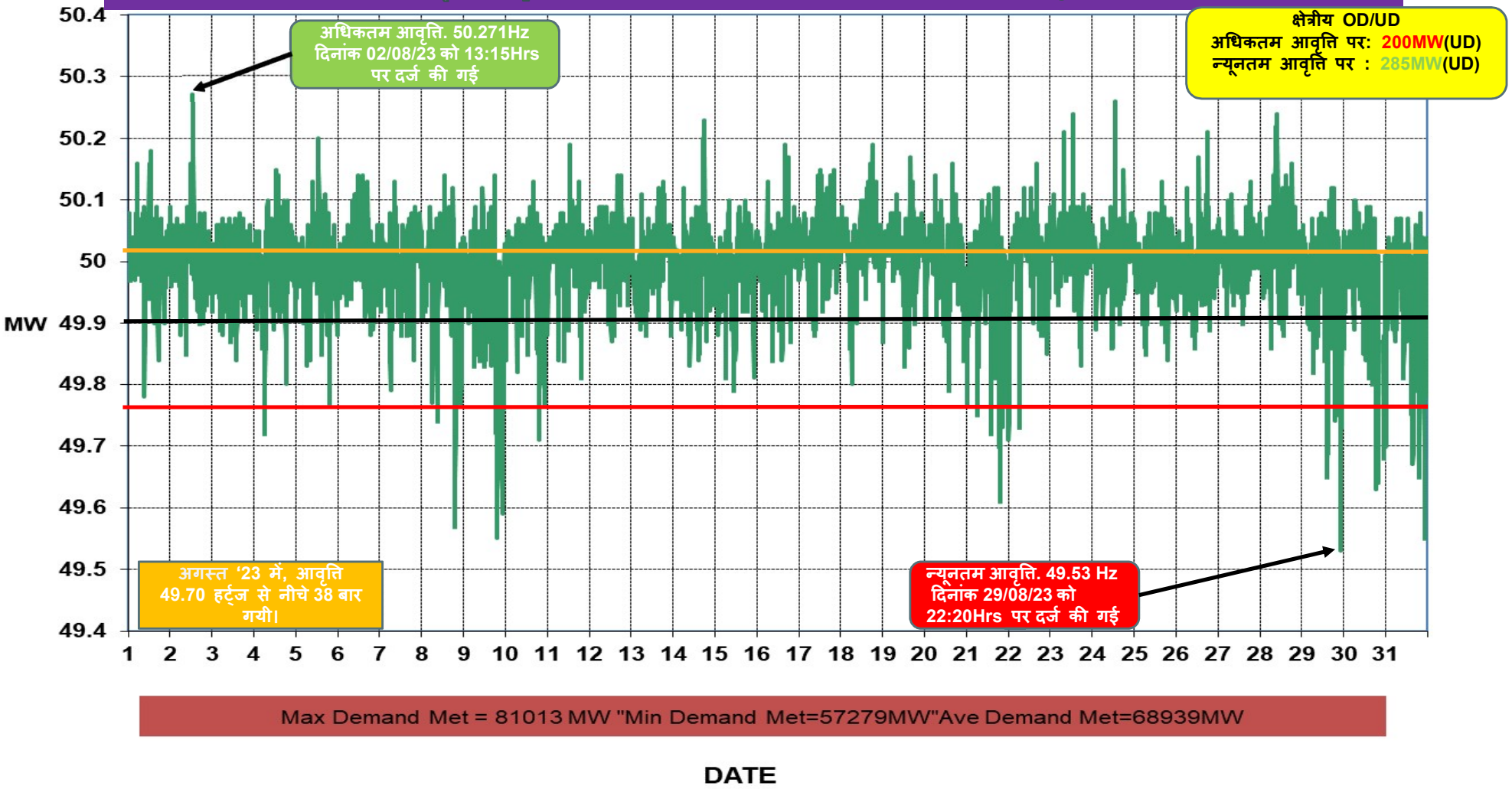
पिछले एक साल मे आवृत्ति की स्थिति

आवृत्ति बैंड	अगस्त 2022	सितम्बर 2022	अक्टूबर 2022	नवम्बर 2022	दिसंबर 2022	जनवरी 2023	फ़रवरी 2023	मार्च 2023	अप्रैल 2023	मई 2023	अगस्त 2023	जुलाई 2023	अगस्त 2023
< 49.7 Hz(%)	0.49	0.17	0.04	0.13	1.11	1.25	0.32	0.16	0.24	0.24	0.22	0.09	0.47
<49.8 Hz(%)	2.02	0.91	0.46	0.76	3.96	3.60	1.95	1.26	1.68	1.48	0.86	0.66	1.63
<49.9 Hz(%)	8.77	5.94	4.88	6.70	12.78	13.30	10.75	9.03	10.54	9.83	8.42	4.60	7.11
49.90-50.05 Hz(%)	**75.77**	**80.77**	**78.27**	**77.00**	**57.39**	**58.70**	**64.68**	**63.84**	**67.90**	**68.48**	**67.83**	**74.96**	**77.25**
50.05-50.10 Hz(%)	11.99	11.55	14.04	13.88	11.99	15.26	14.59	17.86	12.54	13.25	15.59	15.64	13.28
>50.10 Hz(%)	3.00	1.65	2.63	2.30	17.84	12.34	8.49	7.99	6.46	8.44	8.15	4.79	2.35
>50.20 Hz(%)	0.47	0.08	0.18	0.12	4.07	1.83	1.49	1.28	0.88	0.77	1.09	0.80	0.23
औसत आवृत्ति	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	49.99	49.99	50.01	50.01	50.00

आवृत्ति की स्थिति: अगस्त -2022 से 2023



अगस्त -2023 के दौरान आवृत्ति की स्थिति
(As per 5 Minute SCADA data)



Max Demand Met = 81013 MW "Min Demand Met=57279MW"Ave Demand Met=68939MW

DATE

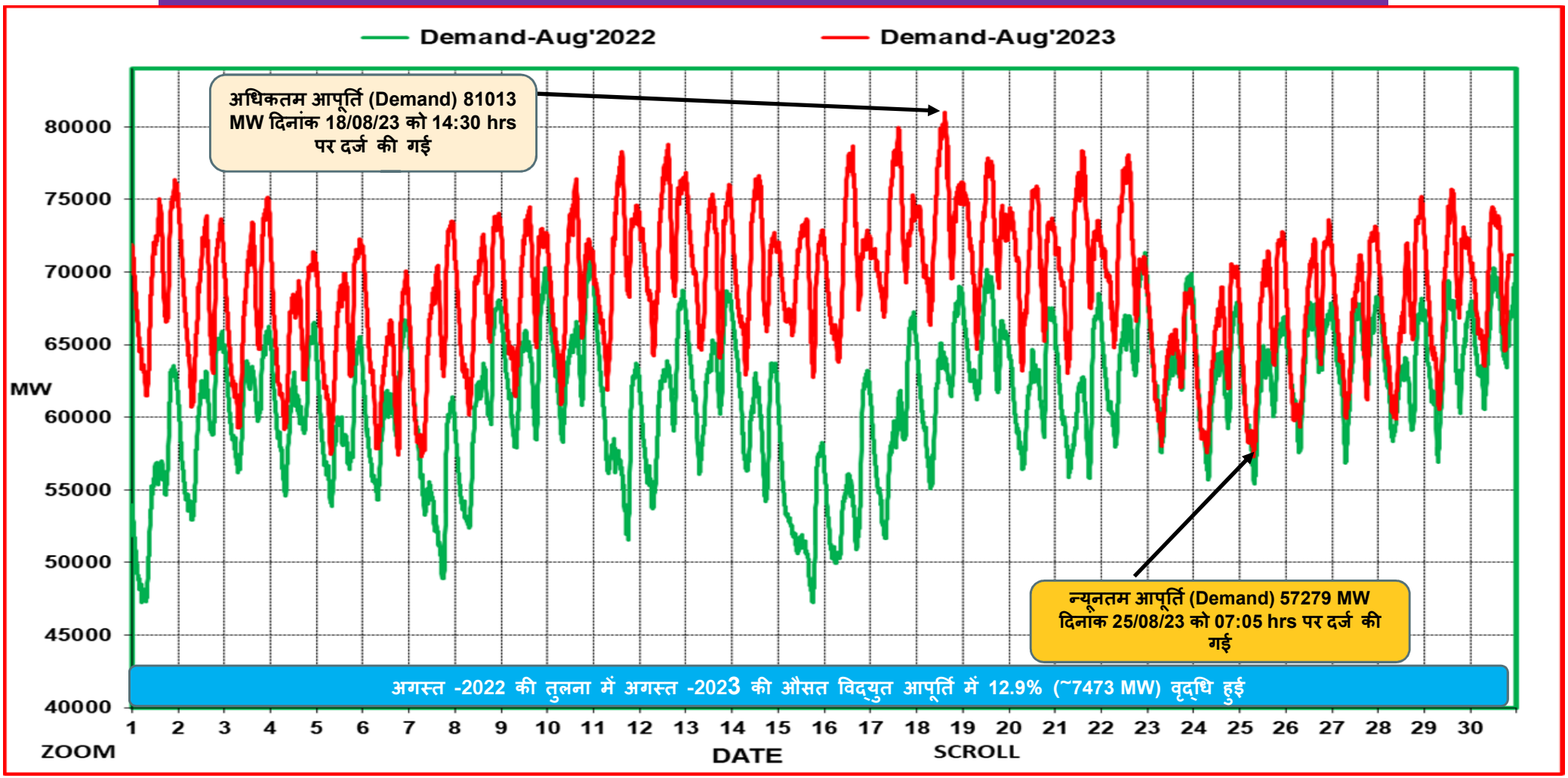
अगस्त-2023 के दौरान अधिकतम मांग (Demand Met), अधिकतम ऊर्जा खपत (Energy consumption) और अब तक का कीर्तिमान (राज्यों द्वारा जमा आंकड़ों के अनुसार)

ग्रिड-इंडिया GRID-INDIA

राज्य	अधिकतम मांग (MW) (in Aug'23)	दिनांक / समय	रिकॉर्ड अधिकतम मांग (in MW) (upto Jul'23)	दिनांक / समय	अधिकतम ऊर्जा खपत (MU) (in Aug'23)	दिनांक	रिकॉर्ड अधिकतम ऊर्जा खपत (MU) (Upto Jul'23)	दिनांक
पंजाब	15220	02.08.23 at 15:00	15293	24.06.23 को 11:45 बजे	332.9	02.08.2023	344.1	24.06.2023
हरियाणा	12844	18.08.23 at 14.45	12768	28.06.22 को 11:56 बजे	273.1	18.08.2023	266.2	07.07.21
राजस्थान	17266	18.08.23 at 14.45	17206	18.01.23 को 14:30 बजे	351.8	18.08.2023	332	13.06.2023
दिल्ली	7437	22.08.23 at 15:16	7695	29.06.22 को 15:10 बजे	147.9	22.08.2023	153.5	28.06.22
उत्तर प्रदेश	27689	01.08.23 at 21:48	28284	24.07.23 को 21:43 बजे	558.6	15.08.2023	577	24.07.2023
उत्तराखंड	2228	01.08.23 at 21:00	2594	14.06.22 को 21:00 बजे	49.4	19.08.2023	56.2	17.06.2023
हिमाचल प्रदेश	1724	04.08.23 at 11.15	2071	06.01.23 को 09:45 बजे	36.7	05.08.2023	37.0	06.01.23
जम्मू और कश्मीर (UT) तथा लद्दाख़ (UT)	2735	01.08.23 at 16.00	3044	02.02.23 को 20:00 बजे	53.6	21.08.2023	64.6	20.01.23
चंडीगढ़	411	02.08.23 at 15:00	426	08.07.21 को 15:00 बजे	7.8	03.08.2023	8.4	08.07.21
उत्तरी क्षेत्र #	81013	18.08.23 at 14:30	77898	23.06.23 को 22:00 बजे	1773.3	18.08.2023	1737.1	28.06.22

उत्तरी क्षेत्र अधिकतम मांग (Demand Met) as per SCADA Data

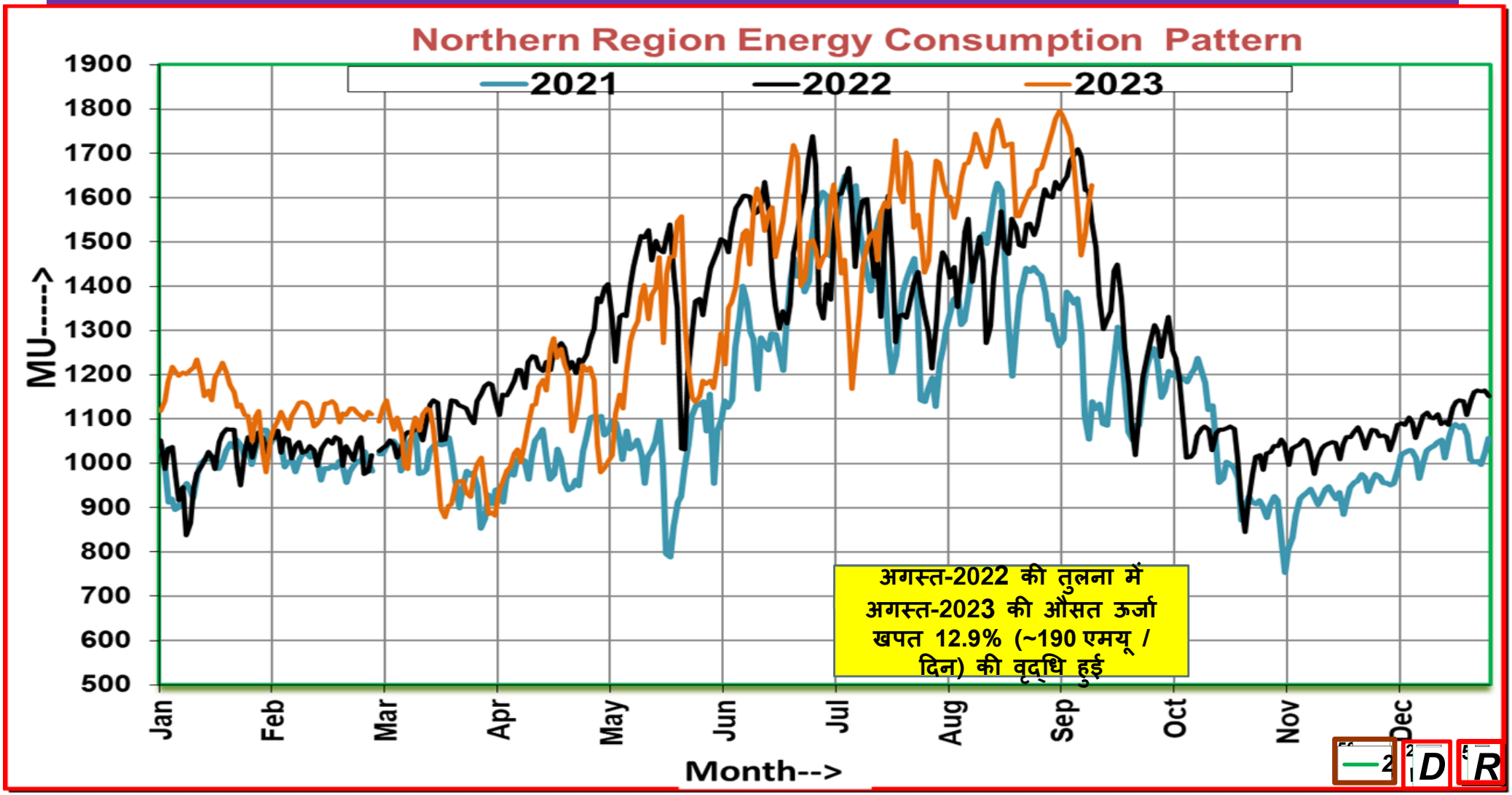
क्षेत्रीय विद्युत आपूर्ति (Demand) अगस्त 2022 बनाम अगस्त 2023 (As per 5 Minute SCADA data)



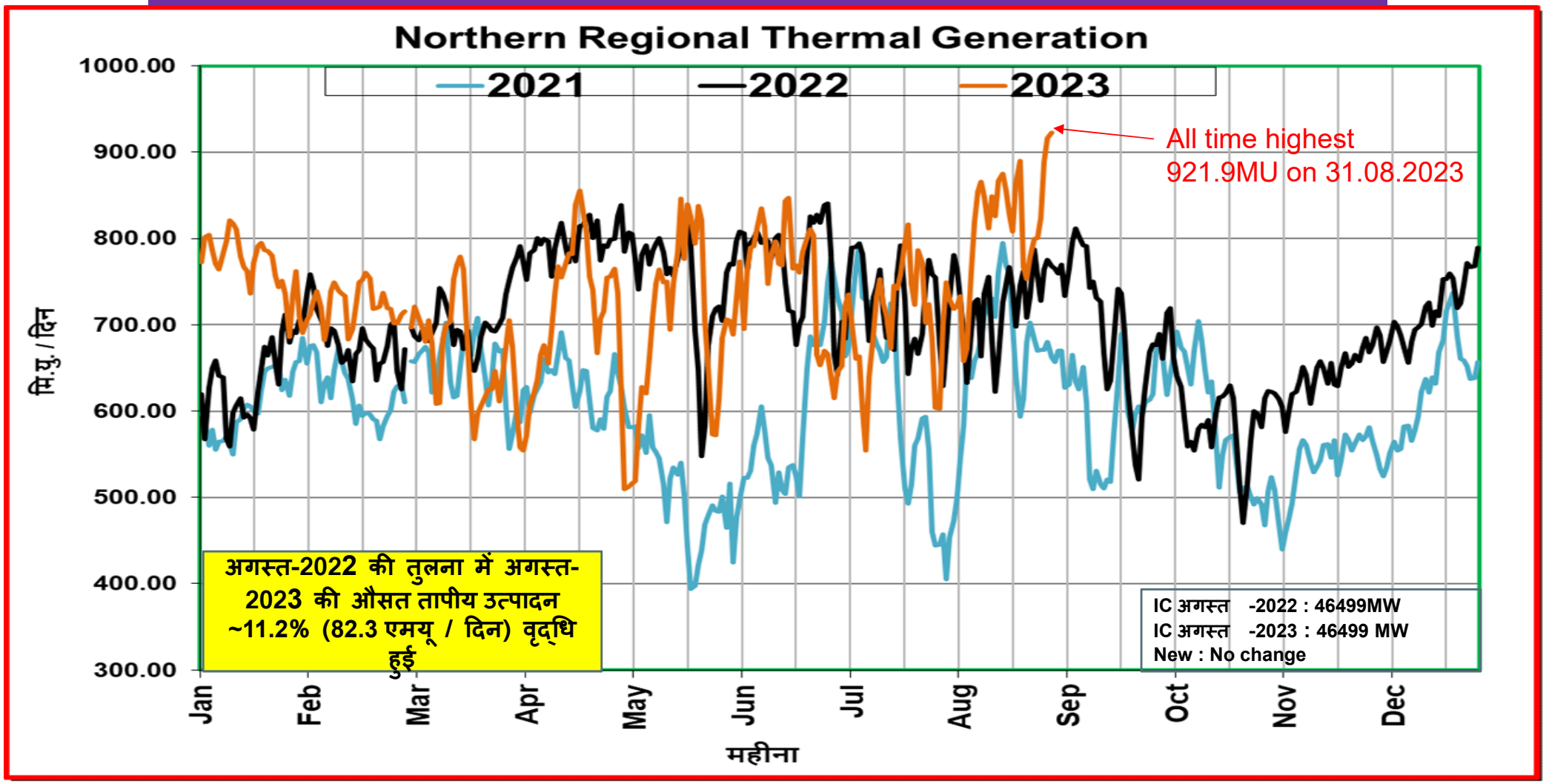
उत्तरी क्षेत्र की औसत ऊर्जा खपत में वृद्धि(% में) अगस्त-2023/ अगस्त-2022 / अगस्त-2021

राज्य	अगस्त -2021	अगस्त -2022	अगस्त -2023	% वृद्धि (अगस्त -2022 vs अगस्त -2021)	% वृद्धि (अगस्त -2023 vs अगस्त -2022)
पंजाब	267.3	290.8	313.5	8.8%	7.8%
हरियाणा	207.2	216.7	244.9	4.6%	13.0%
राजस्थान	264.5	236.5	328.1	-10.6%	38.8%
दिल्ली	113.7	119.1	131.5	4.7%	10.4%
उत्तर प्रदेश	423.8	475.0	505.6	12.1%	6.4%
उत्तराखंड	42.5	46.2	45.2	8.7%	-2.1%
चंडीगढ़	6.0	6.6	6.9	9.4%	4.4%
हिमाचल प्रदेश	31.4	31.6	34.1	0.8%	7.7%
जम्मू और कश्मीर (UT) तथा लद्दाख़ (UT)	45.8	51.2	51.1	12.0%	-0.2%
उत्तरी क्षेत्र	1402.1	1473.6	1664.1	5.1%	12.9%

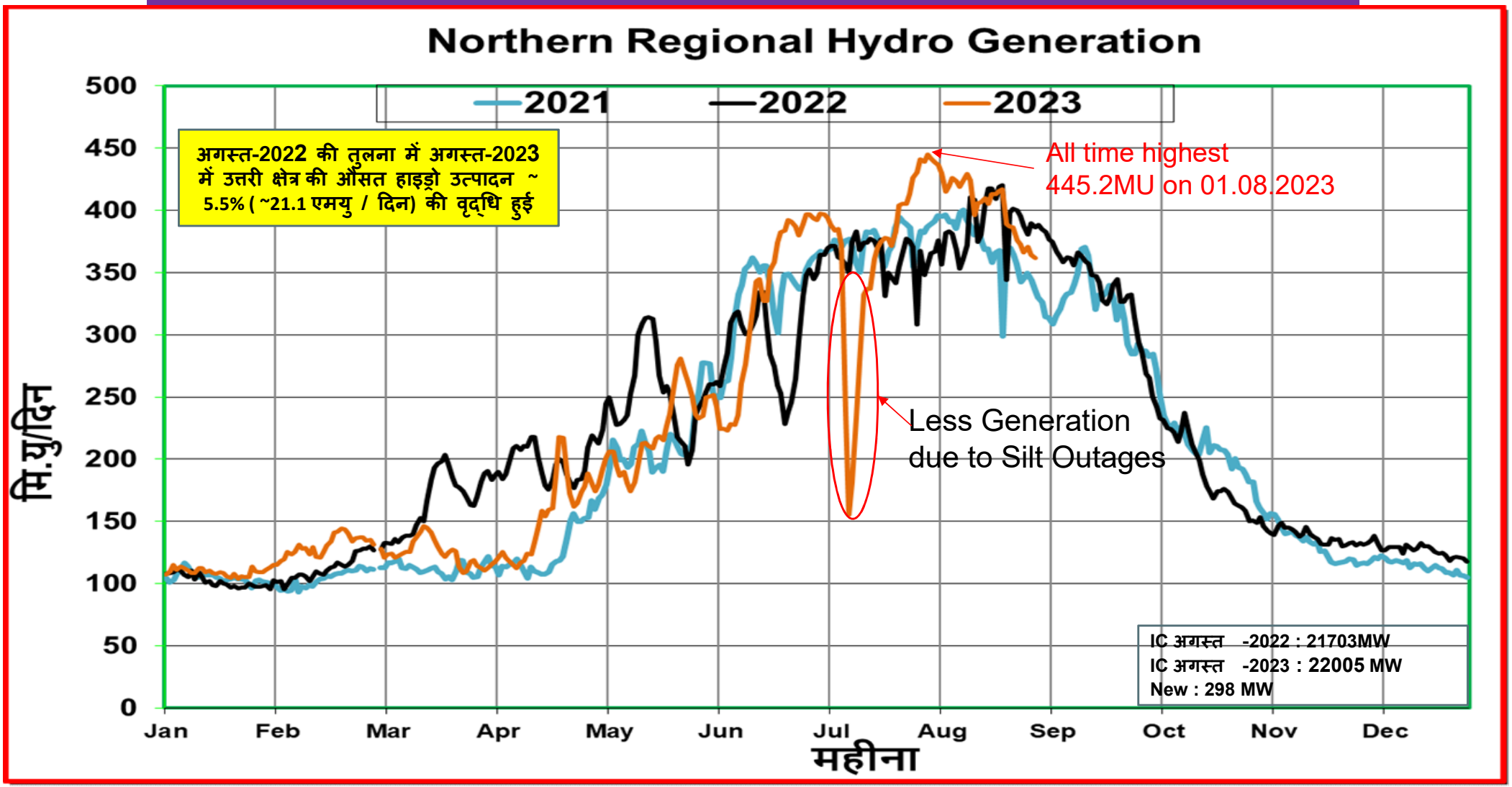
उत्तरी क्षेत्र की ऊर्जा खपत(MUs)



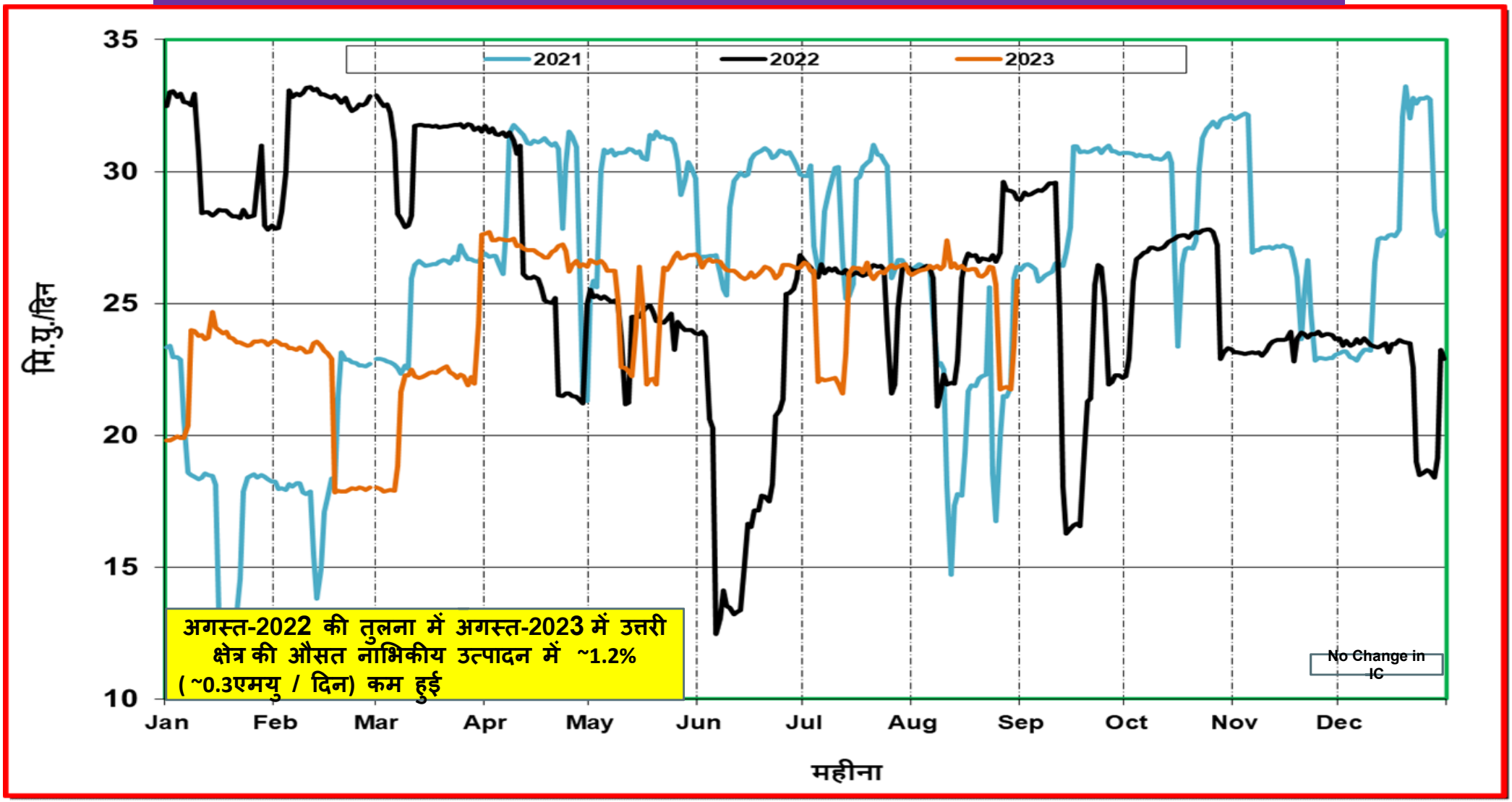
उत्तरी क्षेत्र की तापीय (Thermal) उत्पादन की स्थिति(Mus/Day)



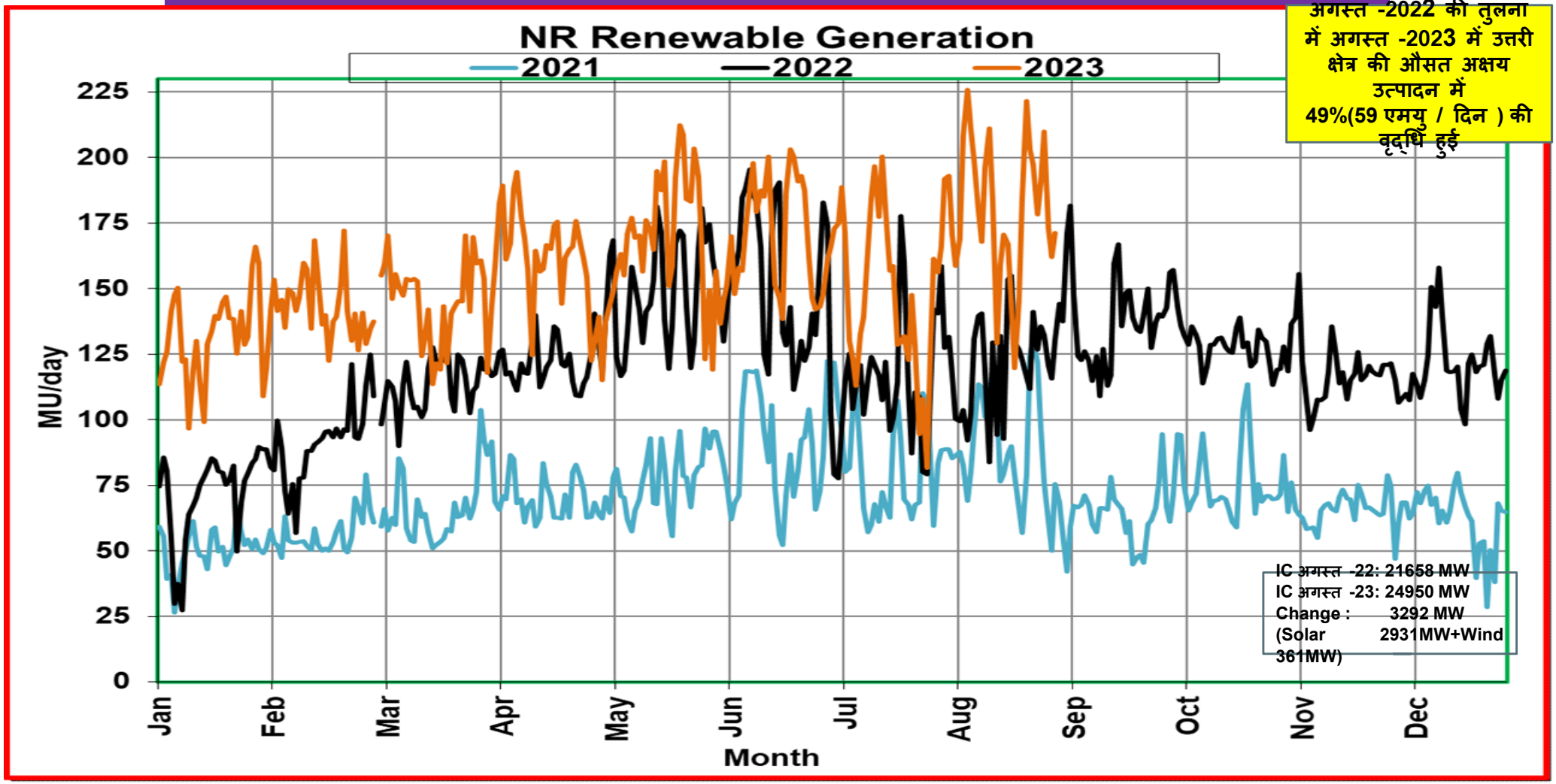
उत्तरी क्षेत्र की जलीय (हाइड्रो) उत्पादन की स्थिति(Mus/Day)



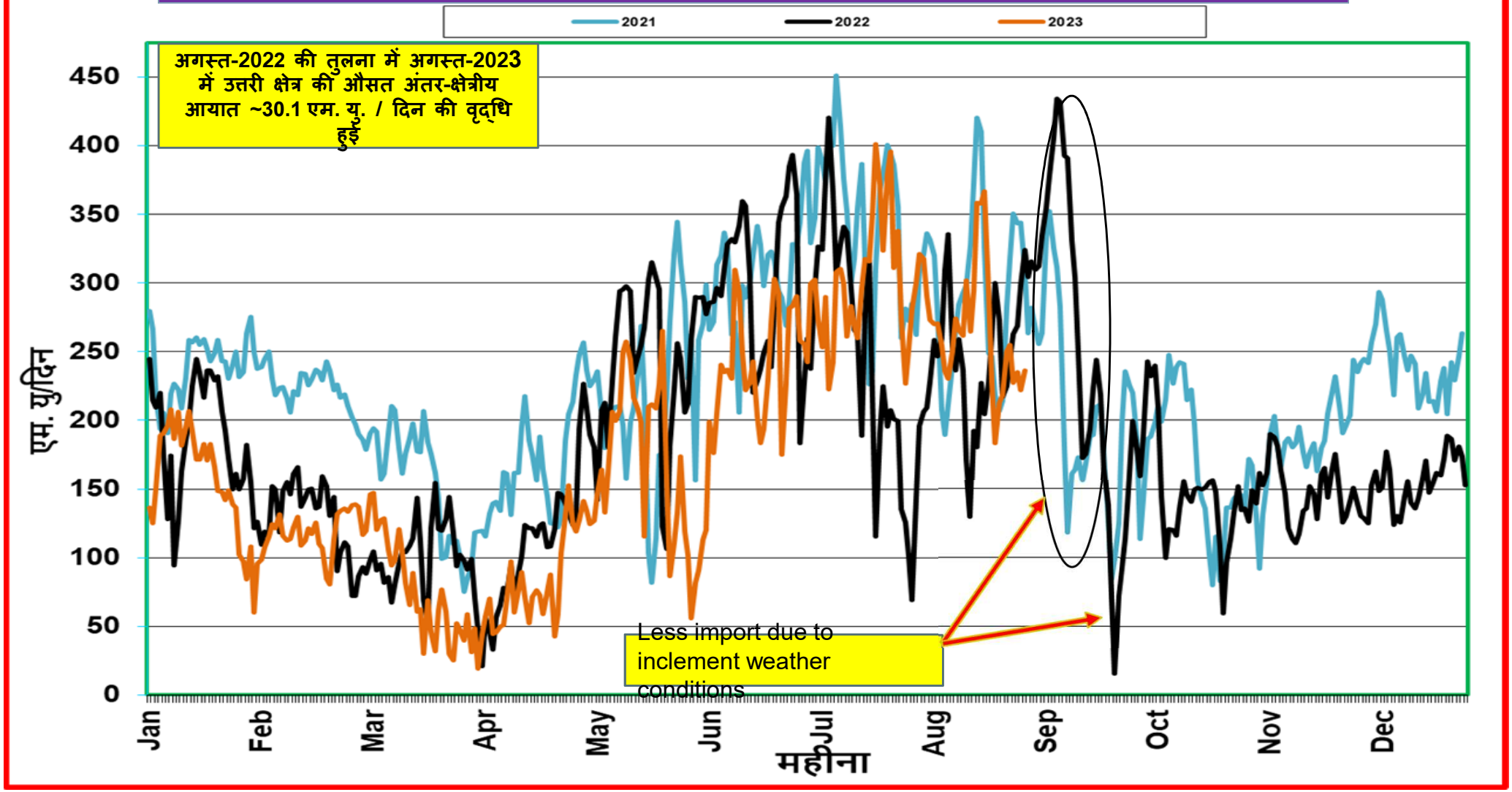
उत्तरी क्षेत्र की नाभिकीय उत्पादन की स्थिति (Mus/Day)



(Mus/Day)


NR Renewable Generation
2021
2022
2023
अगस्त -2022 की तुलना में अगस्त -2023 में उत्तरी क्षेत्र की औसत अक्षय उत्पादन में 49%(59 एमयु / दिन) की वृद्धि हुई
MU/day
225
200
175
150
125
100
75
50
25
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Month
IC अगस्त -22: 21658 MW
IC अगस्त -23: 24950 MW
Change : 3292 MW
(Solar 2931MW+Wind 361MW)

अंतर-क्षेत्रीय आयात(Mus/Day) की स्थिति



वास्तविक सारांश -
अगस्त-2021 बनाम अगस्त-2022

	अगस्त-2022 (मि.यु. /दिन)	अगस्त-2023 (मि.यु. /दिन)	अगस्तमाह में वृद्धि (मि.यु./दिन)
तापीय (Thermal) उत्पादन	725.22	807.47	82.25
जलीय (Hydro) उत्पादन	386.08	407.37	21.29
नाभिकीय (Nuclear) उत्पादन	25.93	25.62	-0.32
अंतर-क्षेत्रीय (Inter-Regional) कुल आयात	238.35	268.44	30.09
अक्षय (Renewable) उत्पादन	121.062	180.377	59.32
कुल	**1496.6**	**1689.3**	**192.6**

RE Penetration

	Maximum Daily MU Penetration			
	Aug '2023		Record upto Jul '2023	
	Max % Penetration	Date	Max % Penetration	Date
Punjab	2.77	07-08-2023	12.28	01-04-2020
Rajasthan	31.13	07-08-2023	36.47	22-10-2021
UP	2.58	26-08-2023	4.72	22-03-2023
NR	14.23	07-08-2023	20.69	02-04-2023

	Maximum Instantaneous Penetration in MW			
	Jul '2023		Record upto Jul '2023	
	Max % Penetration	Date	Max % Penetration	Date
Punjab	4.27	28-08-2023	26.87	22-04-2020
Rajasthan	47.57	07-08-2023	68.38	31-03-2020
UP	9.07	26-08-2023	17.78	13-02-2023
NR	30.03	28-08-2023	53.72	02-04-2023

Outage Summary For Aug 2023									
CONSTITUENTS	PLANNED (A)	FORCED OUTAGES (B=C+D)	EMERGENCY SHUTDOWNS (C)	TRIPPING (D)	% PLANNED SHUTDOWNS (A/(A+C))	% EMERGENCY SHUTDOWNS (C/(A+C)	% ESD SHUTDOWNS(C/B)	% TRIPPING (D/B)	TOTAL OUTAGES (A+B)
POWERGRID	272	295	204	91	57.1%	42.9%	69.2%	30.8%	567
UPPTCL	110	190	55	135	66.7%	33.3%	28.9%	71.1%	300
RRVPNL	52	91	34	57	60.5%	39.5%	37.4%	62.6%	143
HVPNL	36	44	16	28	69.2%	30.8%	36.4%	63.6%	80
BBMB	10	52	13	39	43.5%	56.5%	25.0%	75.0%	62
PSTCL	8	52	14	38	36.4%	63.6%	26.9%	73.1%	60
DTL	10	30	17	13	37.0%	63.0%	56.7%	43.3%	40
PTCUL	5	21	5	16	50.0%	50.0%	23.8%	76.2%	26
NTPC	12	13	9	4	57.1%	42.9%	69.2%	30.8%	25
PDD JK	2	22	4	18	33.3%	66.7%	18.2%	81.8%	24
PKTSL	8	1	0	1	100.0%	0.0%	0.0%	100.0%	9
AHEJ4L	2	5	1	4	66.7%	33.3%	20.0%	80.0%	7
Azure	5	2	2	0	71.4%	28.6%	100.0%	0.0%	7
THDC	2	5	0	5	100.0%	0.0%	0.0%	100.0%	7
GPTL	5	1	0	1	100.0%	0.0%	0.0%	100.0%	6
Adani	5	0	0	0	100.0%	0.0%	0.0%	NA	5
ATIL	0	5	1	4	0.0%	100.0%	20.0%	80.0%	5
MAHINDRA	1	4	1	3	50.0%	50.0%	25.0%	75.0%	5
THAR SURYA1	5	0	0	0	100.0%	0.0%	NA	NA	5
ACME	2	1	1	0	66.7%	33.3%	100.0%	0.0%	3
ESUCRL	1	2	1	1	50.0%	50.0%	50.0%	50.0%	3
NRSS XXIX	0	3	2	1	0.0%	100.0%	66.7%	33.3%	3
AEPL	1	1	1	0	50.0%	50.0%	0.0%	0.0%	2
APCPL	1	1	0	1	100.0%	0.0%	0.0%	100.0%	2
Chandigarh SEB	0	2	0	2	NA	NA	0.0%	0.0%	2
FBTL	2	0	0	0	100.0%	0.0%	NA	NA	2
NHPC	0	2	2	0	0.0%	100.0%	100.0%	0.0%	2
Saurya Urja	1	1	1	0	50.0%	50.0%	100.0%	0.0%	2
SBSRPC-11	1	1	0	1	100.0%	0.0%	0.0%	100.0%	2
Tata Power	1	1	1	0	50.0%	50.0%	100.0%	0.0%	2
JSW	1	0	0	0	0.0%	0.0%	NA	NA	1
Total	561	848	385	463	59.3%	40.7%	45.4%	54.6%	1409

OUTAGE SUMMARY OF LAST THREE MONTHS

MONTH	PLANNED	FORCED OUTAGES	EMERGENCY SHUTDOWNS	TRIPPING	% PLANNED as of TOTAL S/D	% EMERGENCY SHUTDOWNS	TOTAL OUTAGES (A+B)
	(A)	(B=C+D)	(C)	(D)	(A/(A+C))	(C/(A+C))	
May-23	543	1007	359	648	60.2%	39.8%	1550
June-23	537	840	393	447	57.7%	42.3%	1377
July-23	497	834	379	455	56.7%	43.3%	1331
Aug-23	**561**	**848**	**385**	463	**59.3%**	**40.7%**	**1409**

New Elements First Time Charged During August 2023

S. No.	Type of transmission element	Total No
1	Transmission Lines incl Antitheft Charging and LILO lines	05
2	Bus	01
3	Bus Reactor	01
5	LINE REACTOR	02
6	RE Generating Units	01
7	Transformer	01
Total New Elements charged		11

LILO Lines Charging

S.No	Name of element	Line Length of New Line after LILO (In Km)	Conductor Type	Agency/Owner	Actual date
1	220kV Kirawali(UP)-Sikandra(UP)-1(After LILO of 220 KV AGRA(PG)(765)- SIKANDRA LINE at 220 KV KIRAWALI)	32.488 KM	ZEBRA	UPPTCL,PGCIL	24-Aug-2023
2	220kV Kirawali(UP)-Agra(PG)-1(After LILO of 220 KV AGRA(PG)(765)- SIKANDRA LINE at 220 KV KIRAWALI)	47.810 KM	ZEBRA	UPPTCL,PGCIL	24-Aug-2023

Antitheft Charging

S.No	Name of element	Voltage Level (in kV)	Line Length (In Km)	Conductor Type	Agency/Owner	Actual date
1	Antitheft charging of 400kV Jaunpur (UP)-Obra_C_TPS(UP) from Jaunpur (UP) Upto DEAD END TOWER OF OBRA C END	400kV	176.185 KM	Twin Moose	OCBTL,UPPTCL	15-Aug-2023
2	Antitheft charging of 400kV Kanpur(PG)-Ghatampur_TPS(UP) from Kanpur(PG) Upto DEAD END TOWER GHATMPUR (TPS) –CKT#1	400kV	48.99 KM	Twin Moose	GTL	28-Aug-2023
3	Antitheft charging of 400kV Kanpur(PG)-Ghatampur_TPS(UP) from Kanpur(PG) Upto DEAD END TOWER GHATMPUR(TPS)-CKT#2	400kV	48.99 KM	Twin Moose	GTL	28-Aug-2023

Bus

S.No	Name of element	Voltage Level (in kV)	Bus No	Bus Type	Actual date
1	220kV Main Bus I at Kirawali(UP)	220kV	I	Main Bus	24-Aug-2023

Bus Reactor

S.No	Name of element	Voltage LeveL	MVAR Capacity	Actual date
1	400kV, 125 MVAr Bus Reactor 1 at Panki(UP)	400kV	125 MVAr	09-Aug-2023

LINE REACTOR

S.No	Name of element	Owner	MVAR Capacity	Line Name	Actual date
1	63 Non-Switchable LINE_REACTOR of 400 KV UNNAO- BAREILLY CKT-I at Bareilly(UP)	UPPTCL	63	400 KV UNNAO-BAREILLY CKT-I	11-Aug-2023
2	50 MVAr Non-Switchable LINE_REACTOR of 400 KV JAUNPUR- OBRA C LINE at Jaunpur (UP)	OCBTL,UPPTCL	50 MVAr	400 KV JAUNPUR- OBRA C LINE	15-Aug-2023

RE Generating Units

S.No	Plant Name	Capacity to be charged	Total Installed Capacity of Plant	Agency/ Owner	Actual date
1	Thar Surya 1 Private Limited (TS1PL)	9MW	300	THAR SURYA1	26-Aug-2023

Transformer

S.No	Name of element	Voltage Level (HV/LV/Tertiary)	MVA Capacity	Actual date
1	400/33kV, 550 MVA, 3x1-Phase, SIEMENS, Coupling Transformer - 1 at Fatehgarh_II(PG)	400/33/na	550	09-Aug-2023


धन्यवाद

TRACTION POWER SUPPLY PLANNING FOR EDFC