File No.CEA-GO-17-11/1/2023-NRPC

भारत सरकार

Government of India

विद्युत मंत्रालय

Ministry of Power

उत्तर क्षेत्रीय विद्युत समिति

Northern Regional Power Committee

विषय: प्रचालन समन्वय उप-समिति की 213वीं बैठक की कार्यसूची।

Subject: Agenda of the 213th OCC meeting.

प्रचालन समन्वय उप-समिति की **213वीं** बैठक का आयोजन वीडियो कॉन्फ्रेंसिंग के माध्यम से दिनांक **22.11.2023** को **10:30** बजे से किया जायेगा । उक्त बैठक की कार्यसूची उत्तर क्षेत्रीय विद्युत् समिति की वेबसाइट http://164.100.60.165 पर उपलब्ध है ।

बैठक में सम्मिलित होने के लिए लिंक व पासवर्ड सभी सदस्यों को ई-मेल द्वारा प्रदान किया जाएगा।

कृपया बैठक में उपस्थित होने की सुविधा प्रदान करें।

The **213th** meeting of the Operation Co-ordination sub-committee will be conducted through Video Conferencing on **22.11.2023** from **10:30 Hrs**. The agenda of this meeting has been uploaded on the NRPC web-site http://164.100.60.165.

The link and password for joining the meeting will be e-mailed to respective e-mail IDs in due course.

Kindly make it convenient to attend the meeting.

Signed by Santosh Kumar
Date: 15-11-2023 18:01:37
Reason: Approved

(संतोष कुमार)
अधीक्षण अभियंता (प्रचालन)

सेवा में : प्रचालन समन्वय उप समिति के सभी सदस्य।

To : All Members of OCC

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खण्ड-क: उ.क्षे.वि.स. Part-A: NRPC

1. Confirmation of Minutes

212th OCC meeting was held on 20.10.2023. Minutes of the meeting were issued vide letter dtd. 10.11.2023. No comments have been received till the date.

Decision required from Forum:

Forum may approve the minutes of 212th OCC meeting.

2. Review of Grid operations

2.1 Power Supply Position (Provisional) for October 2023

Anticipated Power Supply Position v/s Actual Power Supply Position (Provisional) of Northern Region during the month of October-2023 is as under:

State / UT	Req. / Avl.	Energy (MU)			Peak (MW)		
		Anticipated	Actual	% Variation	Anticipated	Actual	% Variation
CHANDIGARH	(Avl)	130	126	-2.7%	280	265	-5.4%
	(Req)	130	126	-2.7%	290	265	-8.6%
DELHI	(Avl)	3721	2859	-23.2%	5598	5583	-0.3%
	(Req)	2750	2859	4.0%	5450	5583	2.4%
HARYANA	(Avl)	6975	5324	-23.7%	8625	9947	15.3%
	(Req)	4497	5356	19.1%	9730	9947	2.2%
HIMACHAL PRADESH	(Avl)	1097	1101	0.4%	1777	1871	5.3%
	(Req)	1061	1105	4.2%	1840	1871	1.7%
J&K and LADAKH	(Avl)	1520	1504	-1.0%	4120	2735	-33.6%
	(Req)	1770	1540	-13.0%	2960	2735	-7.6%
PUNJAB	(Avl)	5090	5369	5.5%	11320	12491	10.3%
	(Req)	5400	5369	-0.6%	12200	12491	2.4%
RAJASTHAN	(Avl)	8650	9128	5.5%	18260	15641	-14.3%
	(Req)	8525	9184	7.7%	14780	15641	5.8%
UTTAR PRADESH	(Avl)	11160	12147	8.8%	23300	24096	3.4%
	(Req)	10540	12156	15.3%	23300	24096	3.4%
UTTARAKHAND	(Avl)	1209	1234	2.0%	2180	2259	3.6%
	(Req)	1240	1243	0.2%	2250	2259	0.4%
NORTHERN REGION	(Avl)	39552	38793	-1.9%	75700	67000	-11.5%
	(Req)	35913	38938	8.4%	69000	67400	-2.3%

As per above, negative / significant variation (≥5%) in Actual Power Supply Position (Provisional) vis-à-vis Anticipated figures is observed for the month of October-2023

in terms of Energy Requirement for Chandigarh, Haryana, UTs of J&K and Ladakh, Punjab, Rajasthan, UP, and in terms of Peak Demand similar variation is noted for Chandigarh, UTs of J&K and Ladakh, Rajasthan. These states/UTs are requested to submit reason for such variations so that the same can be deliberated in the meeting.

All SLDCs are requested to furnish provisional and revised power supply position in prescribed formats on NRPC website portal by 2nd and 15th day of the month respectively for the compliance of Central Electricity Authority (Furnishing of Statistics, Returns and Information) Regulations, 2007.

3. Maintenance Programme of Generating Units and Transmission Lines

3.1. Maintenance Programme for Generating Units

The meeting on proposed maintenance programme for Generating Units for the month of December-2023 is scheduled on 21-November-2023 via Video Conferencing

3.2. Outage Programme for Transmission Elements

The meeting on proposed outage programme of Transmission elements for the month of Decemmber-2023 is scheduled on 21-November-2023 via Video conferencing.

4. Planning of Grid Operation

4.1. Anticipated Power Supply Position in Northern Region for December 2023

The Anticipated Power Supply Position in Northern Region for December 2023 is as under:

State / UT	Availability / Requirement	Revised Energy (MU)	Revised Peak (MW)	Date of revision
CHANDIGARH	Availability	110	260	No Revision submitted
	Requirement	120	290	
	Surplus / Shortfall	-10	-30	
	% Surplus / Shortfall	-8.3%	-10.3%	
DELHI	Availability	2030	5540	No Revision submitted
	Requirement	2390	5750	
	Surplus / Shortfall	-360	-210	
	% Surplus / Shortfall	-15.1%	-3.7%	
HARYANA	Availability	5200	11510	No Revision submitted
	Requirement	4386	8410	
	Surplus / Shortfall	814	3100	

State / UT	Availability / Requirement	Revised Energy (MU)	Revised Peak (MW)	Date of revision
	% Surplus / Shortfall	18.6%	36.9%	
HIMACHAL PRADESH	Availability	1128	2052	08-Nov-23
	Requirement	1127	2067	
	Surplus / Shortfall	1	-15	
	% Surplus / Shortfall	0.1%	-0.7%	
J&K and LADAKH	Availability	1170	3860	No Revision submitted
	Requirement	2050	3100	
	Surplus / Shortfall	-880	760	
	% Surplus / Shortfall	-42.9%	24.5%	
PUNJAB	Availability	5240	10850	No Revision submitted
	Requirement	4387	8388	
	Surplus / Shortfall	853	2462	
	% Surplus / Shortfall	19.4%	29.4%	
RAJASTHAN	Availability	8850	18700	No Revision submitted
	Requirement	9826	17616	
	Surplus / Shortfall	-976	1084	
	% Surplus / Shortfall	-9.9%	6.2%	
UTTAR PRADESH	Availability	12190	24780	07-Nov-23
	Requirement	10620	20969	
	Surplus / Shortfall	1570	3811	
	% Surplus / Shortfall	14.8%	18.2%	
UTTARAKHAND	Availability	1246	2350	No Revision submitted
	Requirement	1280	2395	
	Surplus / Shortfall	-34	-45	
	% Surplus / Shortfall	-2.7%	-1.9%	
NORTHERN REGION	Availability	37165	72900	
	Requirement	36187	62900	
	Surplus / Shortfall	978	10000	
	% Surplus / Shortfall	2.7%	15.9%	

SLDCs are requested to update the anticipated power supply position of their respective state / UT for the month of December-2023 and submit the measures proposed to be taken to bridge the gap between demand & availability, as well to dispose-off the surplus, if any, in the prescribed format.

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

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

All utilities are requested to update the status.

6. NR Islanding scheme

Latest status of Islanding Scheme of NR is attached as **Annexure-A.II.**

Members may kindly deliberate.

7. Coal Supply Position of Thermal Plants in Northern Region

7.1 In 186th OCC meeting, it was agreed that coal stock position of generating stations in northern region may be reviewed in the OCC meetings on the monthly basis.

7.2 Accordingly, coal stock position of generating stations in northern region during current month (till 10th November 2023) is as follows:

Station	Capacity (MW)	PLF % (prev. months)	Normative Stock Reqd (Days)	Actual Stock (Days)
ANPARA C TPS	1200	0.72	14	9.4
ANPARA TPS	2630	0.69	14	8.3
BARKHERA TPS	90	0.62	22	6.2
DADRI (NCTPP)	1820	0.60	22	4.3
GH TPS (LEH.MOH.)	920	0.43	22	12.9
GOINDWAL SAHIB TPP	540	0.65	22	4.1
HARDUAGANJ TPS	1265	0.60	22	5.7
INDIRA GANDHI STPP	1500	0.74	22	5.6
KAWAI TPS	1320	0.96	22	7.0
KHAMBARKHERA TPS	90	0.62	22	**1.9**
KOTA TPS	1240	0.76	22	**3.8**
KUNDARKI TPS	90	0.62	22	4.1
LALITPUR TPS	1980	0.83	22	**3.4**
MAHATMA GANDHI TPS	1320	0.83	22	**2.0**
MAQSOODPUR TPS	90	0.62	22	4.2
MEJA STPP	1320	0.47	22	**2.8**
OBRA TPS	1094	0.62	22	**2.2**
PANIPAT TPS	710	0.53	22	7.4
PARICHHA TPS	1140	0.58	22	7.6
PRAYAGRAJ TPP	1980	0.80	22	5.1
RAJIV GANDHI TPS	1200	0.50	22	**0.8**
RAJPURA TPP	1400	0.84	22	12.4
RIHAND STPS	3000	0.90	14	28.7
ROPAR TPS	840	0.59	22	18.9
ROSA TPP Ph-I	1200	0.75	22	**0.5**
SINGRAULI STPS	2000	0.71	14	14.1

Station	Capacity (MW)	PLF % (prev. months)	Normative Stock Reqd (Days)	Actual Stock (Days)
SURATGARH TPS	1500	0.52	22	**2.5**
TALWANDI SABO TPP	1980	0.55	22	5.5
TANDA TPS	1760	0.75	22	**3.0**
UNCHAHAR TPS	1550	0.68	22	**2.0**
UTRAULA TPS	90	0.61	22	**1.7**
YAMUNA NAGAR TPS	600	0.49	22	5.6
CHHABRA-I PH-1 TPP	500	0.87	22	**1.4**
KALISINDH TPS	1200	0.68	22	**3.9**
SURATGARH STPS	1320	0.57	22	5.5
CHHABRA-I PH-2 TPP	500	0.74	22	**0.8**
CHHABRA-II TPP	1320	0.75	22	**1.7**

8. Status of availability of ERS towers in Northern Region (Agenda by NRPC Sectt.)

8.1 In the 68th meeting of NRPC issues arising due to non-availability of sufficient ERS were discussed and it was decided that 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.

8.2 Subsequently matter was deliberated in the 211th OCC meeting wherein NRLDC representative briefed about the Requirement of ERS, recent experience in Northern Region, CEA Regulation on ERS, Govt. Guidelines and Present situation on ERS.

8.3 NRPC Sectt. vide letter dated 26.09.2023 requested all transmission utilities of NR to furnish the length of transmission line (ckt-kms) and number of ERS towers available with them at different voltage levels (e.g. 220 kV, 400 KV 765 KV and + -500 kV HVDC latest by 6th October 2023 via email at **seo-nrpc@nic.in**.

8.4 The matter was also discussed in the 212th OCC wherein forum asked the transmission utilities to also mention details regarding the location of the ERS tower in the requisite format and submit the information at the earliest.

8.5 In this regard, inputs received from utilities are attached as **Annexure-A.III.**

Transmission utilities of NR to update status.

9. Planned Annual Maintenance Program of Transmission Elements for the financial year 2024-25-reg. (Agenda by NRPC Sectt.)

9.1. Clause (b) of Section 32(3) of Indian Electricity Grid Code (IEGC) 2023, stipulates for advance preparation of annual outage plan for the transmission elements by the concerned RPC.

9.2. In accordance with above provision, NRPC Sectt. vide letter dated 26.10.2023 requested all State/Central Transmission utilities/ licensees related to Northern Region to submit their annual outage plan of transmission elements in the enclosed

format (**Annexure-A.IV**) for the FY 2024-25 via email at seo-nrpc@nic.in.

Transmission utilities of NR to update status.

10. Tapping Tertiary of 765/400/33 kV ICT-2 (by connecting the same at the point of connection of the UPPCL supply) for Reliable Auxiliary Power Supply to ±500kV HVDC Ballia Sub-Station. (Agenda by Powergrid NR-3)

10.1 Powergrid NR-3 vide mail dated 10.11.2023 have communicated that currently two Auxiliary supplies have been provisioned at Ballia Substation for HVDC, 400kV and 765kV System. One is from Tertiary of 200MVA 400/132kV ICT, and another is UPPCL feeder at 33kV Levels.

10.2 Normally, both supplies are always on load condition to HVDC LVAC buses of Pole-1 and Pole-2 and Bus Coupler under open condition. This provision is standard for HVDC Auxiliary supply to prevent dead bus condition during changeover in case of any one supply fails.

10.3 There are issues with the auxiliary supply provision regarding UPPCL feeder. This feeder is not reliable and sometimes fails 2-3 times in a day and outage duration is most of the cases is generally more than 12 Hrs. Due to frequent breakdowns of UPPCL supply, the Auxiliary Power supply changeover occurs multiple times which is undesirable in view of frequent MV/LT CB operation, Valve Cooling Pump changeovers & UPS bypass operation. Details of Tripping in 33kV UPPCL Feeder in last 5 months(18no) are as below:

TRIPPING OF LINE		Line taken into service	
DATE	TINE	DATE	TIME
01.05.2023	20:05	02.05.2023	10:44
07.05.2023	19:40	08.05.2023	12:09
20.05.2023	11:43	20.05.2023	17:59
06.06.2023	23:59	07.06.2023	09:32
10.06.2023	16:14	10.06.2023	17:45
19.06.2023	06:20	19.06.2023	09:37
15.07.2023	14:18	15.07.2023	14:43
07.08.2023	03:29	07.08.2023	15:58
09.08.2023	06:17	09.08.2023	10:10
13.08.2023	08:53	13.08.2023	10:30
17.08.2023	19:58	18.08.2023	13:19
22.08.2023	22:40	23.08.2023	11:58
30.08.2023	18:46	01.09.2023	16:42
03.09.2023	09:35	03.09.2023	16:25
08.09.2023	09:51	09.09.2023	16:15
09.09.2023	20:54	21.09.2023	10:33
26.09.2023	13:09	26.09.2023	15:32
16.10.2023	22:02	17.10.2023	10:39

10.4 Regarding auxiliary supply from tertiary of 400/132 KV 200 MVA ICT, it may be mentioned that there are 02 nos 132 KV transmission lines of UPPCL connected to UPPCL Sub-Station. There are frequent faults in these lines which are being fed by this ICT, Hence the reliability of this ICT is also not good. Detail of through faults in 132kV UPPCL Lines in last 3 months is attached at **Annexure-A.V**. (Total 673 times relay detected through faults). Any outage of 400/132 KV ICT may lead severe issue regarding auxiliary supply requirement of this station.

10.5 Generally, to avoid this situation, HVDC stations have provision for auxiliary supply from tertiary of the two independent ICTs and dedicated feeders from generating

plants. In case of Ballia, same is not available.

10.6 Now, the Tertiary supply from 765kV ICT is necessitated for reliable sources to HVDC and HVAC Auxiliary Power Supply as various tripping occurred in the past due to the UPPCL unreliability.

10.7 In view of above facts, Powergrid have proposed that –

Tapping Tertiary of 765/400/33 kV ICT-2 (by connecting the same at the point of connection of the UPPCL supply) in addition to the UPPCL Supply & 200MVA 400/132kV ICT Tertiary for Reliable Auxiliary Power Supply to ±500kV HVDC Ballia Substation with approx. cost estimate of Rs 1.25 Cr may be considered under ADD-CAP.

Members may kindly deliberate.

11. Feasibility of Varanasi Islanding Scheme (Agenda by UPSLDC)

11.1 UPSLDC vide letter dated 30.10.2023 has intimated that they have planned a tentative Varanasi Islanding Scheme using generation of Anpara BTPS.

11.2 Details of proposed Islanding Scheme is attached **Annexure-A.VI**.

Members may kindly deliberate.

12. Review of Outages of thermal units planned in the month of March'23 (Agenda by NRPC Sectt.)

12.1 Chairperson, CEA in the recent review meeting stated that in view of upcoming general election, outages of generating units may be avoided in the months of March'23 to May'23. Therefore, he requested all RPC's to review the outages of thermal units planned in the month of March'23 in the current financial year.

12.2 The list of outages of thermal units proposed by utilities in the month of March'23 is attached as **Annexure-A.VII.**

Members may kindly deliberate.

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

13. NR Grid Highlights for October 2023

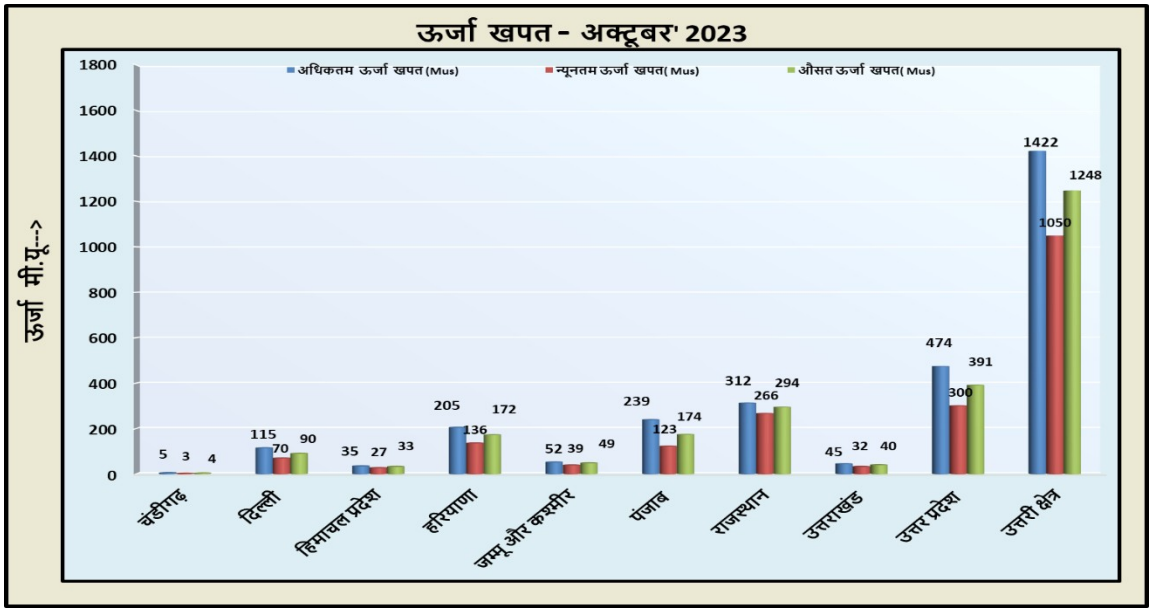
Following are major grid highlights of October 2023:

- Maximum energy consumption of Northern Region was **1422 MUs** on 10th Oct'23 and it was 6.8 % higher than Oct'22 (1332 MUs 04th Oct'22)
- Average energy consumption per day of Northern Region was **1248 MUs** and it was 15.5 % higher than Oct'22 (1081 Mus per day)
- Maximum Demand met of Northern Region was **67829 MW** on 10th Oct'23 @12:47 hours (*based on SCADA data)* as compared to 60710 MW on 01st Oct'22 @20:00 hours.

Northern Region all-time high value recorded in Oct'23:

No new record

Energy Consumptions



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

क्षेत्र/राज्य	अक्टूबर- 2022	अक्टूबर- 2023	% अंतर
चंडीगढ़	3.9	4.1	5.0%
दिल्ली	78.5	90.5	15.2%
हिमाचल प्रदेश	30.2	32.6	7.7%
हरियाणा	140.1	172.4	23.1%
जम्मू और कश्मीर	50.2	48.5	-3.4%
पंजाब	163.0	173.9	6.7%
राजस्थान	254.4	294.5	15.8%
उत्तराखंड	36.0	40.0	11.1%
उत्तर प्रदेश	324.2	391.1	20.6%
उत्तरी क्षेत्र	**1080.6**	**1247.6**	**15.5%**

Frequency Data

Month	Avg. Freq. (Hz)	Max. Freq. (Hz)	Min. Freq. (Hz)	<49.90 (% time)	49.90 – 50.05 (% time)	>50.05 (% time)
Oct'23	49.99	50.30 27.10.23 at 16:03:50 hrs	49.47 16.10.23 at 14:56:40 hrs	8.9	74.4	16.7

Oct'22	50.01	50.41	49.53	4.9	78.3	16.9

Detailed presentation on grid highlights of Oct'2023 will be shared by NRLDC in OCC meeting.

14. Winter preparedness 2023-24

The agenda for winter preparedness by all states and utilities was discussed in detail in 212 OCC meeting. In the meeting, NRLDC representative had mentioned about the common issues observed during winter months and actions required from utilities. One of the important issue related to high voltages in the grid during winter months was also discussed. Number of actions/ measures required from utility side were discussed in the meeting. Some of these agreed actions are listed below:

- Generation resources along with ramp requirement should be optimally planned, taking care to maintain adequate reserves
- All the generating units on bar to absorb reactive power as per grid requirement and their capability curve
- Some of the generators have already been tested (Tehri, Chamera, Pong, RSD etc.) and shall be available for condenser mode of operation as and when required. States/SLDCs are also advised to explore synchronous condenser operation of Hydro & Gas units in their state control area. It is requested that all other utilities may explore possibility of running units as synchronous condenser.
- ICT Tap Optimization at 400kV & above is carried out by NRLDC. Same exercise need to be carried out by SLDCs at 220kV & below levels.
- **Punjab, Haryana & Delhi were also asked to prepare & share with NRPC/NRLDC plan to manage high voltages during the upcoming winter season**
- Priority wise cleaning & insulator replacement to be carried out. Priority to be given to the lines that have historical record of tripping during foggy weather.
- Utilities to ensure that all the protection settings are as approved by NRPC so as to avoid any undesirable tripping on overvoltage / overflux specially during winter season.

Utilities are requested to share plan for measures to be taken by them for carrying out pre-winter maintenance activities. Same may be shared by utilities via mail with NRPC/NRLDC before 213 OCC meeting.

<u>Proposed ICT changes at 400/220kV level</u>

NRLDC has identified few 400/220kV nodes where it seems that there is need for tap change exercise. The analysis has been done based on the SCADA data of October month available at NRLDC. Following 400/220kV nodes have been identified for tap change exercise:

1. 400/220kV Neemrana (increase by 2)
2. 400/220kV Daultabad (increase by 2)
3. 400/220kV Kabulpur (increase by 1)
4. 400/220kV Mainpuri (decrease by 1)
5. 400/220kV Patiala (decrease by 2)
6. 400/220kV Roorkee (decrease by 2)

7. 400/220kV Sarnath-UP (decrease by 1)

Scatter Plots are attached as **Annexure-B.I**. Same exercise needs to be carried out by SLDCs at 220kV & below levels.

It is requested to approve the tap changes at these substations for implementation at site.

Status of washing of insulators & replacement of porcelain insulators with polymer insulators

One more challenge during winter months is tripping of EHV lines due to fog. With low temperature across Northern region and sometimes with high humidity in the air, fog starts to appear across Northern region. This problem is generally most severe from 15Dec- 15Feb period. During this time additional care need to be taken by system operator as many multiple element tripping events have been reported in the past especially in Punjab and Eastern UP. Such tripping are more severe if the lines are tripping from generation complex such as the Singrauli-Anpara-Rihand complex.

For lines such as 400kV Bara-Meja 1 & 400kV Bara-Meja 2 for which pre-winter maintenance was not carried out last year, tripping on number of occasions was reported during Jan month in 2023 at the time of fog.

As requested in last OCC meeting, it is once again requested to furnish the utility-wise latest status of washing of insulators & replacement of porcelain insulators with polymer insulators. Latest status regarding insulator replacement as available with NRLDC is attached as **Annexure-B.II**.

Members may please discuss.

15. Import Capability of states for Winter 2023-24

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.

It is again requested that all SLDCs:

- Assess and share ATC/TTC assessment for Winter 2023-24
- 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.
- Maximizing internal generation in case of drawl near to the transfer capability limits.

CERC vide their order dated 29.09.2023 has granted approval of "'Detailed Procedure for Allocation of Transmission Corridor for Scheduling of General Network Access and Temporary General Network Access under Central Electricity Regulatory Commission

(Connectivity and General Network Access to the inter-State Transmission System) Regulations, 2022". The procedure mentions that:

"SLDCs in consultation with RLDCs shall declare the import and export TTC, ATC, and TRM of the individual control/bid areas within the region in accordance with Regulation 44 (3) of the Grid Code 2023. RLDCs shall assess the import and export TTC, TRM and ATC for the group of control/bid areas within the region (if required). The computed TTC, TRM and ATC figures shall be published on the website of respective SLDCs and RLDCs, along with the details of the basis of calculations, including assumptions, if any, **at least eleven (11) months in advance**. The specific constraints indicated in the system study shall also be published on the website."

Accordingly, SLDCs are requested to send the PSSE cases for four scenarios for November'24 i.e. Morning Peak, Solar Peak, Evening Peak & Off-Peak hours as given below

S. No.	Scenario	Time of Scenario
1	Off-Peak	03:00 Hrs
2	Morning Peak	10:30 Hrs
3	Evening Peak	18:30 Hrs
4	Solar Peak	12:00 Hrs

Same was also requested vide NRLDC email dated 01.11.2023. It is requested that the basecases as well as ATC/TTC assessments may be shared with NRLDC as per CERC approved procedure. Further, above exercise needs to be carried out regularly on monthly basis.

Data for interconnection studies

As per **Regulation 33 of IEGC 2023,**

(9) Each SLDC shall undertake a study on the impact of new elements to be commissioned in the intra-state system in the next six (6) months on the TTC and ATC for the State and share the results of the studies with RLDC.
(10) Each RLDC shall undertake a study on the impact of new elements to be commissioned in the next six (6) months in (a) the ISTS of the region and (b) the intra-state system on the inter-state system and share the results of the studies with NLDC.
(11) NLDC shall undertake study on the impact of new elements to be commissioned in the next six (6) months in (a) inter-regional system, (b) cross-border link and (c) intra-regional system on the inter-regional system.

Further as per the CERC Approved procedure for Assessment of Transfer Capability,

Purpose	Sl No	Action of Stakeholder	Responsibility	Submission to	Data/Information Submission Time line
2. Interconnection Studies for elements to be integrated in the month 'M'	2(a)	Submission of node-wise load and generation data & sharing of network simulation models for intra-state elements coming in the next six months	SLDC	RLDC	8th Day of 'M-6' month
	2(b)	Sharing of inter-connection study results			21st Day of 'M-6' month
	2(c)	Updating state and regional load & generation & modelling of inter-state & intra-state elements coming in the next six months in the regional system base case	RLDCs	NLDC	13th Day of 'M-6' month
	2(d)	Sharing of inter-connection study results			26th Day of 'M-6' month
	2(e)	Update the All-India network model for interconnection studies	NLDC	RLDCs	15th Day of 'M-6' month
	2(f)	Completion of inter-connection study for elements coming in the next six months			Last Day of 'M-6' month

In line with above, utilities are requested to share the list of **elements/LGB data/interconnection study results** etc as per the approved procedure which are expected to be commissioned up to **May 2024, before 8.11.2023. Above was also requested vide mails dated 1.11.2023 & 3.11.2023 by NRLDC. This needs to be practised as monthly exercise on regular basis.**

Latest ATC/TTC figures as available with NRLDC for the month of December 2023 is attached as **Annexure-B.III**. States are requested to go through these figures and provide any comments.

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**

Members may please discuss.

16. Action plan by RVPN for winter season

Concerns on the transmission related issues in RVPN control area have been discussed in various forums including NRPC (last discussed in detail in the 65th NRPC meeting held on 21.04.2023) and OCC forum (last discussed in detail in the 211th OCC meeting held on 19.09.2023).

Based on the discussions and inputs shared by RVPN in these meetings, it was concluded that the works being carried out by RVPN will take some time and the persisting issues are likely to be observed during this winter season also.

Following are the major issues that are likely to be observed during this winter season:

- Continuous N-1 non-compliance issues at ICT level in most of the RVPN substations
- Sustained low voltage operations in several Rajasthan system pockets, like voltage dropping to 340 & 330 kV level at the 400kV Hindaun & Alwar substations respectively
- Huge MVAr drawl by RVPN network leading to very poor power factor at number of substations
- Reactive power performance of intra-state RE generators at point-of connection level.
- Minimizing forced outage of intrastate thermal generating units during high demand season to avoid possibility of power shortages/ excessive drawl from the grid

As requested in 211th OCC meeting held on 19.09.2023, it is once again requested that Rajasthan SLDC may conduct meeting with all intrastate thermal & RE generators, DISCOMs, STU etc. and plan for safe and secure grid management during the upcoming winter months. It is very important given the expected situation in upcoming few months.

Members may please discuss.

17. Upgradation of terminal equipment for 400kV Bhadla(PG)-Bhadla(RVPN) D/C lines

It is being observed in number of cases, especially in RVPN control area that the rating of terminal equipment is lower than thermal capacity of transmission line. This is leading to under-utilisation of line capacity due to limited switchgear rating and even leading to constraints in RE evacuation from Western Rajasthan RE complex. This issue was also discussed in 212 OCC meeting.

In 212 OCC meeting, it was agreed that:

- All utilities to furnish the details to Grid-India /CTUIL/NRPC for consideration in future studies and planning of actions well in advance for lines part of important grid document as published by Grid-India. Format for sharing information and

information available with NRLDC as on date are attached as Annexure B.IV of 212th OCC agenda

- NRLDC/ CTUIL to carry out studies for loading management/ SPS requirement for 400kV Bhadla(PG)-Bhadla(RVPN) D/C lines.
- OCC asked POWERGRID to expedite their proposal for switchgear replacement at 400kV Bhadla(RVPN) end.

With regard to submission of details to Grid-India/CTUIL/NRPC regarding details of terminal equipments as per format submitted in last OCC meeting, it may be noted that information is still awaited from utilities. It is requested to submit the details at the earliest as per the decision of 69NRPC & 212 OCC meeting.

Accordingly, NRLDC has carried out simulation studies to manage loading of 400kV Bhadla(PG)-Bhadla(RVPN) D/C line in case of outage of any one ckt. According to the studies, generation backing down will be required at Bhadla(PG) in such case.

From the studies carried out at NRLDC end, it is observed that 400kV Bhadla(PG)-Bhadla (RS) D/C has **80 %** sensitivity on each other.

As per telephonic communication with Rajasthan, the switchgear rating at Bhadla(RS) is of **2000 A** and therefore the permissible line loading of 400kV Bhadla(PG)-Bhadla(RS) is **~ 1385 MVA per circuit.**

As per present scenario of peak solar generation, in case of tripping of 400kV Bhadla(PG)-Bhadla(RS)-1, the loading of other parallel circuit would increase upto **2000 MW.**

Generation backing down at Bhadla(PG) provides highest relief on loading of 400kV Bhadla(PG)-Bhadla(RS) lines. Accordingly, it is suggested that in case loading of 400kV Bhadla(PG)-Bhadla(RS) exceeds 1400MW, commensurate generation has to be tripped at Bhadla(PG) to bring the loading of 400kV Bhadla(PG)-Bhadla(RS) to safe limits.

To limit the above line loading below 1385 MVA, **a graded generation tripping/ backing down of 1000-1500 MW at Bhadla(PG) would be required during peak solar hours (as per loading of 400kV Bhadla(PG)-Bhadla(RVPN) D/C).**

Accordingly, it is suggested that:

Case	**Possible Actions**	**Remarks**
Load on any circuit of 400kV Bhadla (PG)-Bhadla(RVPN) D/c line exceeds 1350 MW	• Tripping of RE Generations connected at 400kV Bhadla(PG)	• Except 50MW, nearly 3100MW generation is being evacuated through Bhadla(PG) under GNA. • Huge GNA curtailment (1200-1500MW) would be required in this case & it would be difficult to configure as it has to be done on pro-rata/ rotational basis.
	• Tripping of 400kV Bhadla(PG)-Bhadla	• This would avoid any injection from 400kV Bhadla-II, but generally

	II D/C lines	there is little power flow or power flows from 400kV Bhadla to 400kV Bhadla-II (PG), therefore this may further degrade the situation.
	• Tripping of generation connected at 765/400kV Fatehgarh-II/ Fatehgarh-I & Bhadla-II which are not being evacuated under GNA.	• Tripping of nearly 1650MW generation is likely to bring relief of 300MW on 400kV Bhadla(PG)-Bhadla(RVPN) line. Bhadla-II generation has slightly higher sensitivity than Fatehgarh-II/ Fatehgarh generation on 400kV Bhadla(PG)-Bhadla(RVPN). • Tripping of 1650MW generation would have significant impact on grid frequency as well as drawl schedule of various states.

Considering above, deployment of SPS for 400kV Bhadla(PG)-Bhadla(RVPN) line does not seem to be the correct option.

In case of high loading of 400kV Bhadla(PG)-Bhadla(RVPN) beyond 1400MW, the line may be opened. On opening of both ckts of 400kV Bhadla(PG)-Bhadla(RVPN) D/

C in simulation studies, it seems that rest of the network is able to evacuate the power, however, voltage & line loadings need to be carefully monitored in this case.

Moreover, as per studies carried out by NRLDC considering charging of Fatehgarh-III and 400kV Fatehgarh II – Fatehgarh III lines & 400kV Fatehgarh III – Bhensara (Jaisalmer) lines, it seems that the issue of high loading of 400kV Bhadla(PG)-Bhadla(RVPN) would be resolved.

POWERGRID is requested to provide update on the switchgear replacement at 400kV Bhadla(RVPN) end.

POWERGRID is also requested to provide update on the already approved SPS of 765kV Bhadla2-Ajmer D/C.

Members may please discuss.

18. Presentation on primary frequency response tests carried out by M/S Solvina in NR

Regulation 2017, 5.2 (g) of IEGC (Fifth Amendment), with regard to generator governor response, stipulates that 'provided that periodic checkups by third party should be conducted at regular intervals once in two year through independent agencies selected by RLDC or SLDC as the case may be…….'.

In compliance to above, NLDC on behalf of RLDCs formulated a procedure for testing primary frequency response test of regional entity generators and shared the details with generators. The modus-operandi in this regard was also intimated to Hon'ble commission on 12th Oct 2018. A meeting with all generators at NLDC, POSOCO was organized to discuss the important clauses of Request for proposal (RFP). RfP was reviewed and shared with all the five agencies selected during EoI stage. Based on that third parties M/S SOLVINA and SIEMENS were awarded the work of testing generator PFR. Based on experience of testing carried out across NR & All India, representative from Solvina will share a presentation in the OCC meeting covering:

- Primary Frequency Response Test Experience from 200 Units
- PFR Testing as per new IEGC
- Way Ahead

Members may please discuss.

19. Multiple elements tripping at 400kV Dadri TPS & Dadri HVDC on 4th November, 2023:

As reported, on 4th November, at 04:03 hrs, B-N phase to earth fault occurred on 400kV Dadri-Mandola ckt-1. Fault distance was approx. 100meter from Dadri TPS end. As per PMU & DR of 400kV Dadri-Mandola ckt-1, B-N phase to earth fault with successful A/R operation is observed. Steady state fault current was ~35kA, during transient fault current magnitude was ~52kA. Distance protection relay at Harshvihar end of 400kV Dadri-Harshvihar ckt-2 sensed the fault on 400kV Dadri-Mandola ckt in Z-1 and successful autoreclosed from Harshvihar end. Dadri end relay sensed fault in Z-4 as fault was in reverse direction however as informed by Dadri, instant three phase tripping occurred on DT received from Harshvihar end. During fault time, over

voltage of the magnitude of approx. 723kV in 400kV Dadri-Mandola ckt-2 and Dadri end and approx. 560kV in 400kV Bus-2 at Dadri TPS is observed (as per PMU at Dadri TPS). Over voltage sustained for approx. 100msec. On this over voltage, 400kV Dadri-Mandola ckt-2 tripped on over voltage stage-2 protection operation at Dadri end. At the same time, all three filter banks connected at Dadri HVDC tripped on over voltage protection operation. Due to tripping of filter banks, HVDC Rihand-Dadri Bipole got blocked. During the same time, 490 MW Dadri-II TPS - UNIT 2 also tripped due to turbine vibration protection operation.

Some preliminary observations of the said event are as below:

i) Reason of over voltage in 400kV Bus need to be identified.

ii) Reason of Z-1 over reach at Harshvihar end and DT received at Dadri end from Harshvihar end also need be reviewed.

iii) Mismatch is suspected in nomenclature of 400kV Bus at Dadri TPS in SCADA & PMU, it need to be checked.

iv) DR at Dadri TPS end are not time synced. Time sync of DR with GPS need to be ensured.

v) Remedial action taken report to be shared.

POWERGRID, DTL & NTPC may like to provide findings from their end.

Members may like to discuss.

20. Frequent forced outages of transmission elements in the month of October'23:

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

S. NO.	Element Name	No. of forced outages	Utility/SLDC
1	220 KV Ballabhgarh-Charkhi Dadri (BB) Ckt-1	3	BBMB
2	220 KV Debari(RS)-RAPS_A(NP) (RS) Ckt-1	3	Rajasthan/ RAPS
3	220 KV Deoband(UP)-Saharanpur(PG) (UP) Ckt-2	3	PG/UP
4	400 KV Bareilly-Unnao (UP) Ckt-1	4	UP

The complete details are attached at **Annexure-B.IV**.

It may be noted that frequent outages of such elements affect the reliability and security of the grid. Hence, utilities are requested to analyze the root cause of the tripping and share the remedial measures taken/being taken in this respect.

Members may like to discuss.

21. Multiple element tripping events in Northern region in the month of October '23:

A total of 15 grid events occurred in the month of Oct'23 of which **09** are of GD-1 category, **05** are of GI-2 Category & **01** 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.V.**

Maximum delayed clearance of fault observed was 720msec during event of multiple elements tripping at 400/220kV Akal(RS) on 10th October, 2023 and at 400kV Uri2(NHPC) on 14th October, 2023.

Delayed clearance of fault (more than 100ms for 400kV and 160ms for 220kV system) observed in total **05** events out of **15** grid events occurred in the month. The major events with delayed clearance of faults are as follows:

1. Multiple elements tripping at 220kV Laltokalan(PS) at 08:37hrs on 07th October, 2023, fault clearance time: 360msec.
2. Multiple elements tripping at 220kV Nehtaur(UP) at 20:16hrs on 09th October, 2023, fault clearance time: 640msec
3. Multiple elements tripping at 400/220kV Akal(RS) at 10:21hrs on 10th October, 2023, 2023, fault clearance time: 720msec
4. Multiple elements tripping at 400kV Uri2(NHPC) at 04:23hrs on 14th October, 2023, fault clearance time: 720msec

Remedial actions taken by constituents to avoid such multiple elements tripping may be shared.

Members may take necessary preventive measures to avoid such grid incidents / disturbances in future and report actions taken by respective utilities in OCC & PSC forum. Moreover, utilities may impress upon all concerned for providing the Preliminary Report, DR/EL & Detailed Report of the events to RLDC in line with the regulations.

Members may like to discuss.

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

A total of 04 inter-regional lines tripping occurred in the month of October'23. The list is attached at **Annexure-B.VI.** 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 37.2(c) 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.

Members may please note and advise the concerned for taking corrective action to avoid such tripping as well as timely submission of the information.

Members may like to discuss.

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

The status of receipt of DR/EL and tripping report of utilities for the month of October'2023 is attached at **Annexure-B.VII**. It is to be noted that as per the IEGC provision under clause 37.2 (c), 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. Also, it is observed that reporting status has improved however, reporting status from Punjab, Delhi, Rajasthan & J&K need further improvement.

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 37.2(c) 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.

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

In last 27 OCC meetings, 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-BVIII.**

It is to be noted that as per regulation 29.7 of IEGC, Power System Stabilizers (PSS) in AVRs of generating units (wherever provided), shall be got properly tuned by the respective generating unit owner once in five years.

Members were requested to update about their future plan for PSS tuning and share the reports of PSS tuning/re-tuning and Step Response Test if conducted in their control area.

Members may like to discuss.

25. Mock black start exercises in NR:

As per Indian Electricity Grid Code (IEGC) clause 34.3

"*Detailed plans and procedures for restoration after partial/total blackout of each user's/STU/CTU system within a Region, will be finalized by the concerned user's/STU/CTU in coordination with the RLDC. The procedure will be reviewed, confirmed and/or revised once every subsequent year. Mock trial runs of the procedure for different subsystems shall be carried out by the users/CTU/STU at least once every six months under intimation to the RLDC*".

Mock Black-start exercise of power stations therefore needs to be carried out in-order to ensure healthiness of black start facility.

The summary of last conducted mock black start exercise of ISGS hydro & gas stations is tabulated below:

Hydro Power Stations:

Name of stations	**Last conducted exercise date**	**Remark**
Uri-I, II HEP, Lower Jhelum HEP, Upper Sindh and Kishenganga	20th Dec 2016	
Dhauliganga	28th Dec 2021	Exercise carried out successfully
Bairasiul	30th Nov 2022	
Sewa-2	29th May 2022	
N. Jhakri and Rampur	09th Dec 2022	
Karcham and Baspa	29th Dec 2021	Exercise was partially successful
Budhil	–	
Parbati-3 and Sainj	22nd Dec 2020	Black start of only Parbati-3 was carried out successfully. Sainj to explore blackstart capability.
Salal	02nd Dec 2018	
Chamera-3	04th Dec 2017	
Kishenganga	-	
Koteshwar	07th Dec 2022	Exercise carried out successfully
Chamera-1 and Chamera-2	02nd Dec 2022	
Malana-2, AD Hydro and Phozal	27th Jan 2023	
Tehri	14th Dec 2022	
Koldam	11th Nov 2022	Conducted successfully

Gas Power Stations:

Name of stations	Last conducted exercise date	Remark
Anta GPS	03rd Mar 2023	(unsuccessful, Anta Unit couldn't able to charge the dead bus)
Auraiya GPS	-	
Dadri GPS	28th Jan 2022 (without load)	Exercise carried out successfully

The winter months are off peak hydro period and therefore good time to carry out such exercises. Therefore, the schedule of mock exercise dates for different hydro & Gas power station need to be finalized. The power stations may propose the tentative date for mock black start exercise of their generating units. Power stations may confirm and inform to all the concerned persons of control centre/ substations to facilitate the exercise.

Hydro Power Stations:

Name of stations	Tentative Date for Mock Black start exercise (proposed by power plants)
***Uri-I, II HEP, Lower Jhelum HEP, Upper Sindh and Kishenganga**	**Tentative schedule:23rd Nov'23**
Dhauliganga	
Bairasiul	
Sewa-2	
N. Jhakri and Rampur	
Karcham and Baspa	
***Budhil**	
***Parbati-3 and Sainj**	
***Salal**	
***Chamera-3**	
***Kishenganga**	
Koteshwar	
Chamera-1 and Chamera-2	
Malana-2, AD Hydro and Phozal	
Tehri	**Conducted successfully on 07th Nov'23**
Koldam	

*Mock Black start exercise not carried out since Year 2021-22

Gas Power Stations:

Name of stations	Tentative Date for Mock Black start exercise (proposed by power plants)

Anta GPS	
*Auraiya GPS	
Dadri GPS	

*Mock Black start exercise not carried out during Year 2021-22

SLDC's may also carryout mock black-start of station in their respective control area & inform the tentative dates to the OCC as well as outcome of these exercises. The proposed Hydro Power Stations to undergo the exercise are as follows:

S. NO.	Utility	Hydro Power Station	Installed Capacity(MW)
1	J&K	Baglihar	3x150
2		Baglihar stage-2	3x150
3		Lower Jhelum	3x35
4		Upper Sindh	2x11+3x35
5	HP	Larji	3x42
6		Bhabha	3x40
7		Malana -I	2x43
8		Baspa	3x100
9	Punjab	Ranjit Sagar	4x150
11	Rajasthan	Mahi-I&II	2x25+2x45
12		Rana Pratap Sagar	4x43
13		Jawahar Sagar	3x33
14		Gandhi Sagar	5x23
15		Dholpur GPS	3x110
16		Ramgarh GPS	1x35.5+2x37.5+1x110
17	UP	Rihand	6x50
18		Obra	3x33
19		Vishnuprayag	4x100
20		Srinagar (Alaknanda)	4x82.5
21	Uttarakhand	Gamma Infra	2x76+1x73
22		Shravanti	6x75
23		Ramganga	3x66
24		Chibro	4x60

25		Khodri	4x30
26		Chilla	4x36
27		Maneri Bhali-I&II	3x30+4x76
28	Delhi	IP Extn GTs	6x30+3x30
29		Pragati GPS	2x104.6+1x121.2
30		Rithala	3x36
31	Haryana	Faridabad GPS	2x137.75+1x156.07

Members are requested to share the tentative schedule of mock black start exercise of their respective generating stations. SLDCs shall submit the reports of black start exercise in their respective control area. SLDCs may also identify further generating stations/unit for black start exercise.

Members may like to discuss.

26. Revision of document for Reactive Power Management of Northern Region:

NRLDC has been issuing 'Reactive Power document of Northern Region' on annual basis. Reactive Power Management document for Northern region was last revised on 31st Dec 2022 & updated document link is as below:

https://nrldc.in/download/nr-reactive-power-management-2023/?wpdmdl=11903

Document is password protected and password was already informed to all the NR constituents through letter dated 30th Dec 2022.

In view of new addition/modification of transmission & generation element in NR grid since Dec'22, the document is being review for update.

Constituents are requested to provide the feedback, suggestion and updated information by 10th Dec 2023.

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 — Sep-2023
◎ HARYANA — May-2023
◎ HP — Sep-2023
◎ J&K and LADAKH — Not Available
◎ PUNJAB — Sep-2023
◎ RAJASTHAN — Sep-2023
◎ UP — Sep-2023
◎ UTTARAKHAND — Oct-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 — Sep-2023
◎ HP — Sep-2023
◎ J&K and LADAKH — Not Available
◎ PUNJAB — Sep-2023
◎ RAJASTHAN — Sep-2023
◎ UP — Sep-2023
◎ UTTARAKHAND — Sep-2023
◎ BBMB — Sep-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 — 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>

4	Status of FGD installation vis-à-vis installation plan at identified TPS	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.	Status of the information submission (month) from states / utilities is as under: ◎ HARYANA – Sep-2023 ◎ PUNJAB – Jul-2023 ◎ RAJASTHAN – Jul-2023 ◎ UP – Aug-2023 ◎ NTPC – Feb-2023 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.
5	Submission of breakup of Energy Consumption by the states	All states/UTs are requested to submit the requisite data as per the billed data information in the format given as under: Category→ | Consumption by Domestic Loads | Consumption by Commercial Loads | Consumption by Agricultural Loads | Consumption by Industrial Loads | Traction supply load | Miscellaneous / Others <Month> | | | | | |	Status of the information submission (month) from states / utilities is as under: ◎ CHANDIGARH – Not Submitted ◎ DELHI – Sep-23 ◎ HARYANA – Aug-23 ◎ HP – Sep-23 ◎ J&K and LADAKH – Not Submitted ◎ PUNJAB – Aug-23 ◎ RAJASTHAN – Aug-23 ◎ UP – Jul-23 ◎ UTTARAKHAND – Jul-23 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
6	Information about variable charges of all generating units in the Region	The variable charges detail for different generating units are available on the MERIT Order Portal.	All states/UTs are requested to submit daily data on MERIT Order Portal timely.
7	Status of Automatic Demand Management Sysytem in NR states/UT's	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:	Status: ◎ DELHI – Scheme Implemented but operated in manual mode. ◎ HARYANA – Scheme not implemented ◎ HP – Scheme not implemented ◎ PUNJAB – Scheme not implemented ◎ RAJASTHAN – Under implementation. Likely completion schedule is 31.10.2023. ◎ UP – Scheme implemented by NPCIL only ◎ UTTARAKHAND – Scheme not implemented

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: First week of Nov'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 Jul'23 due to [illegible]
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	31.10.2023	Updated in 212th OCC by UPPTCL. Work completed but pending for first time charging to be expected in the month October.
				• 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.

Sl. No.	Substation	Downstream network bays	Status of bays	Planned 220 kV system and Implementation status	Revised Target	Remarks
				• 220 kV Bhiwani (PG) - Dadhibana (HVPNL) D/c line.	Apr'24	Issue related to ROW as intimated in 192nd OCC by HVPNL.
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

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	• LILO of both circuits of 220kV Samalkha - Mohana line at Sonepat	31.12.2023	Updated in 205th OCC by HVPNL. **Status:** Work was held up due to ROW at T.L. No. 7,8,11,12 & 13 by the farmers of Jajji villagers during July'23 and now the matter has been resolve and work under progress from 01.08.2023. The erection work of T.no. 1 is pending due to non availability of shut down at 220KV Mohana-Smk line and 220KV Jajji-Mohana line. • PLCC protection coupler and Forest approval is also pending.
				• Sonepat - HSIISC Rai 220kV D/c line	Mar'24	Updated in 212th 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. Now, the matter is under approval from competent authority of Nigam.,
				• Sonepat - Kharkhoda Pocket A 220kV D/c line	31.07.2024	Updated in 212th OCC by HVPNL. **Status:** Work order has been issued to M/s R.S Infra on dated 09.08.2023 by O/o CE/PD&C, Panchkula for construction of line. The Survey work has been completed.
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 commissioned 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	Commissioned	• Lucknow -Kanduni, 220 kV D/C line work energized on 05.10.2023. Updated in 212th OCC by UPPTCL. _____ • 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	Commissioned	• Gorakhpur(PG)- Maharajganj, 220 kV D/C line energized on 27.09.2023 updated by UPPTCL in 212th 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.

Sl. No.	Substation	Downstream network bays	Status of bays	Planned 220 kV system and Implementation status	Revised Target	Remarks
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
25	400/220kV Pachkula Sub-station	Commissioned: 8 Under tender:2 Total: 10 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	Utilized: 2 Unutilized: 4 Under Implementation:2	• 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
				• 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	Updated in 212th OCC by HVPNL. **Status:** Work order has been issued to M/s R.S Infra on dated 09.08.2023 by O/o CE/PD&C, Panchkula for construction of line. The Survey work has been completed.
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

Sl. No.	Substation	Downstream network bays	Status of bays	Planned 220 kV system and Implementation status	Revised Target	Remarks
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
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 DR/EL not submitted by PSTCL.Updated in 212th 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)

MIS Report for Status of Islanding Schemes

Implemented Schemes

Sl. No.	Islanding Scheme	SLDC	Status	Submission of Self Certification of Healitheness	SOP	SCADA Display Page	Remarks
1	NAPS IS	UP	Implemented	Yes (08-10-2021)	Yes	Yes	-
2	RAPS IS	Rajasthan	Implemented	16-Aug-21	Yes	Yes	List of officials in-charge, format for generation, islanding scheme sld and relays in RAPP IS submitted by RVPN on 04.12.2021.

Under Implementation/ Newly Proposed/Under Discussion

Sl. No.	Islanding Scheme	SLDC	Status	Details of progress	DPR for PSDF funding (Require	Timelines Status - Proposed/Actual									
						Study		Design		Approval		Procurement		Commissioning	
						Proposed	Actual	Proposed	Actual	Proposed	Actual	Proposed	Actual	Proposed	Actual
1	Lucknow-Unchahar IS	UP	Under Implementation	Scheme has been approved in 59th NRPC meeting held on 31.10.2022. Installation of Ufrs is almost complete. Timeline to be intimated by UPPTCL.		-		-	-	-	-	-	-	-	-
2	Agra IS	UP	Under Study	UP has placed offer to CPRI for dynamic study in July, 2022. Final Study report has been submitted by CPRI to UPPTCL. Timeline to be intimated by UPPTCL		-		-	-	-	-	-	-	-	-
3	Jodhpur-Barmer-Rajwest IS	Rajasthan	Under Implementation	Scheme has been approved in 60th NRPC meeting held on 30.11.2022.Preparation of DPR is under finalization. Timeline to be intimated by RVPN	-	-		-	-	-	-	-	-	-	-
4	Suratgarh IS	Rajasthan	Under Implementation	Scheme has been approved in 60th NRPC meeting held on 30.11.2022. Preparation of DPR is under finalization. Timeline to be intimated by RVPN	-	-		-	-	-	-	-	-	-	-
5	Patiala-Nabha Power Rajpura IS	Punjab	Under Implementation	Scheme has been approved in 60th NRPC meeting held on 30.11.2022. Implementation timeline: March,2024		-		-	-	-	-	-	-	-	-
6	Pathankot-RSD IS	Punjab	Implemented	Scheme has been approved in 60th NRPC meeting held on 30.11.2022. Scheme has been implemented in April 2023 as informed by Punjab in 206th OCC. Testing Reports submitted by Punjab.		-		-	-	-	-	-	-	-	-
7	Kullu-Manali-Mandi IS	HP	Under Implementation	Scheme has been approved in 60th NRPC meeting held on 30.11.2022. Timeline to be intimated by HPSLDC		-		-	-	-	-	-	-	-	-
8	Shimla-Solan IS	HP	Under Implementation	Scheme has been approved in 60th NRPC meeting held on 30.11.2022. Timeline to be intimated by HPSLDC		-		-	-	-	-	-	-	-	-
9	Delhi IS	Delhi	Under Implementation	Scheme has been approved in 68th NRPC meeting held on 18.08.2023. Revised scheme is expected to be impletented by Nov'23.		-		-	-	-	-	-	-	-	-

Status of availability of ERS towers in NR

Sl. No.	Transmission Utility	Voltage Level (220kV/400kV/765kV/ 500 kV HVDC etc.)	Length of the transmission lines owned by the Utility (Ckt. Kms.)	Number of ERS Sets (towers) available (Nos.)	ERS Set (towers) required as per the Govt. norms.	Location	Remarks
1	PTCUL	400kV	418.394	NIL	1		
		220kV	1045.135	NIL	1		
2	Powergrid NR-1	220 KV	1842.88	NIL	1		
		400 KV	11074.26	12	3	All 400kV ERS at Ballabhgarh	make-Lindsey
		765 KV	4721.85	15	1	All 400kV ERS at Meerut	Make-SBB
		500 KV HVDC	653.88	NIL	1		
		800 KV HVDC	416.58	NIL	1		
3	Powergrid NR-2	66 KV	37.56	Nil	1		ERS tower available for 400KV rating can be used in place of lower as well as higher voltage Towers. In case used for 765KV Line, No of towers can be erected will reduce due to increase in Tower Hight.
		132 KV	262.7	Nil	1		
		220 KV	2152	Nil	1		
		400 KV	8097.3	02 Set (32 Towers)	2	Kishenpur & Jalandhar	
		765 KV	337.5	Nil	1		
4	Powergrid NR-3	800KV HVDC	2205	NIL	1		400KV ERS will be also be used in other voltage level lines
		500KV HVDC	2566	NIL	1		
		765KV	4396	NIL	1		
		400KV	12254	26	3		
		220KV	1541	NIL	1		
		132KV	207	NIL	1		
5	PARBATI KOLDAM TRANSMISSION COMPANY LIMITED	400kV	457	NIL	1		Procurement under process.
6	PATRAN TRANSMISSION COMPANY LTD	400kV	0.4	NIL	1		Not available, will tie up based on the requirements in future. However the parent company IndiGrid owns one set of ERS for all five regions.
7	NRSS-XXIX TRANSMISSION LTD	400kV	853	NIL	1		
8	GURGAON PALWAL TRANSMISSION LTD	400kV	272	NIL	1		
9	RAPP Transmission Company Limited.	400kV	402	NIL	1		
10	NRSS XXXVI Transmission Limited	400kV	301.924	NIL	1		Element I - Operational comprising of 3 kms. Element II - Work Under Progress comprising of 221.924 kms. Element II - Work Under Progress comprising of 77 kms.
11	HPPTCL	220 kV	659	NIL	1		
		400 kV	75.7	NIL	1		
12	RVPN						
13	DTL						
14	JKPTCL						
15	HVPN						
16	PSTCL						
17	UPPTPCL						
18	POWERLINK						
19	POWERGRID HIMACHAL TRANSMISSION LTD						
20	Powergrid Ajmer Phagi Transmission Limited						
21	Powergrid Fatehgarh Transmission Limited						
22	POWERGRID KALA AMB TRANSMISSION LTD						
23	Powergrid Unchahar Transmission Ltd						
24	Powergrid Khetri Transmission Limited						
25	POWERGRID VARANASI TRANSMISSION SYSTEM LTD						
26	ADANI TRANSMISSION INDIA LIMITED						

27	BIKANER KHETRI TRANSMISSION LIMITED						
28	FATEHGARH BHADLA TRANSMISSION LIMITED						
29	NRSS-XXXI(B) TRANSMISSION LTD						
30	ARAVALI POWER COMPANY PVT LTD						

*The transmission Utility with line length less than 500 ckt kms (of 400 KV lines) may be given option either to procure ERS or have agreement with other transmission utilities for providing ERS on mutually agreed terms, when need arises. (As per MoP directions)

Planned Annual Maintenance Programme of Tramsmission Elements for the year 2024-25

Annexure-A.IV

Note: Category A: AC Transmission elements at 400 kV & above and HVDC elements (excluding lines emanating ISGS)
Category B: Transmission elements at 132 kV & above and below 400kV level emanating from ISGS
Category C: Transmission elements at 132 kV & above and below 400kV which are inter-regional in nature
Category D: Transmission elements at 220 kV level with one end in a state while other end is in another state

Sl. No.	Name of Element (line/ Transformer/ Reactor/ Bay/ Bus)	Type of Element (line/ Transformer/ Reactor/ Bay/ Bus)	Owner (RVPN/ Adani/ PGCIL)	Category (A/ B/ C/D) as mentioned below	Daily / Continuous basis	Corridor (Inter/Intra)	Outage From (mm/dd/yy)	Outage To (mm/dd/yy)	Reason	Remarks, if any
1										
2										
3										
4										
5										
6										
7										
8										

Through Fault Data in 132kV Lines (UPPCL) at HVDC Ballia Terminal Station

Sl. No.	Date	Time	Locat	Volta	Bay/D	Devic	Information Text	Value
1	01-8-2023	01:04:59	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
2	01-8-2023	01:15:22	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
3	01-8-2023	03:00:35	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
4	01-8-2023	21:41:56	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
5	01-8-2023	23:57:47	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
6	02-8-2023	03:12:48	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
7	02-8-2023	07:51:22	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
8	02-8-2023	10:24:49	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
9	02-8-2023	15:45:01	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
10	02-8-2023	17:49:34	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
11	02-8-2023	18:00:08	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
12	02-8-2023	18:48:25	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
13	03-8-2023	08:13:19	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
14	03-8-2023	12:50:21	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
15	03-8-2023	12:54:51	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
16	03-8-2023	13:09:45	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
17	03-8-2023	13:18:16	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
18	03-8-2023	13:25:13	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
19	04-8-2023	00:37:10	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
20	04-8-2023	11:53:14	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
21	04-8-2023	17:02:50	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
22	05-8-2023	06:59:18	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
23	05-8-2023	07:30:00	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
24	05-8-2023	07:30:00	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
25	05-8-2023	10:22:54	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
26	06-8-2023	06:27:10	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
27	06-8-2023	09:00:49	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
28	06-8-2023	12:46:29	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
29	06-8-2023	15:53:08	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
30	06-8-2023	17:42:35	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
31	06-8-2023	17:58:22	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
32	06-8-2023	18:26:03	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
33	06-8-2023	18:28:16	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
34	06-8-2023	18:28:16	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
35	06-8-2023	18:42:54	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
36	06-8-2023	18:46:24	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
37	06-8-2023	18:55:10	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
38	07-8-2023	06:44:03	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
39	07-8-2023	08:44:23	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
40	07-8-2023	12:15:06	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
41	07-8-2023	16:38:49	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
42	08-8-2023	19:18:44	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
43	08-8-2023	19:30:57	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
44	09-8-2023	00:33:50	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
45	09-8-2023	03:56:10	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
46	09-8-2023	04:01:33	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
47	09-8-2023	04:15:21	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
48	09-8-2023	07:04:48	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
49	09-8-2023	15:40:51	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE

Sl. No.	Date	Time	Locat	Volta	Bay/D	Devic	Information Text	Value
50	10-8-2023	06:44:39	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
51	10-8-2023	11:39:50	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
52	11-8-2023	09:01:29	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
53	11-8-2023	14:05:26	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
54	11-8-2023	14:05:26	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
55	11-8-2023	18:26:37	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
56	11-8-2023	21:15:19	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
57	11-8-2023	21:21:05	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
58	11-8-2023	21:26:16	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
59	11-8-2023	23:46:56	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
60	12-8-2023	04:31:26	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
61	12-8-2023	05:12:38	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
62	12-8-2023	05:24:09	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
63	12-8-2023	05:36:29	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
64	12-8-2023	11:51:30	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
65	12-8-2023	12:23:29	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
66	12-8-2023	13:59:49	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
67	12-8-2023	14:24:20	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
68	13-8-2023	06:40:49	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
69	13-8-2023	08:17:50	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
70	13-8-2023	12:11:20	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
71	13-8-2023	13:26:31	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
72	13-8-2023	14:00:45	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
73	14-8-2023	03:14:22	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
74	14-8-2023	05:06:28	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
75	14-8-2023	08:23:48	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
76	14-8-2023	13:17:07	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
77	15-8-2023	06:54:50	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
78	15-8-2023	07:38:49	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
79	15-8-2023	15:04:26	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
80	15-8-2023	17:17:08	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
81	16-8-2023	00:47:08	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
82	16-8-2023	05:53:52	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
83	16-8-2023	06:10:36	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
84	16-8-2023	06:56:52	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
85	16-8-2023	13:34:12	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
86	16-8-2023	18:44:56	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
87	16-8-2023	23:24:28	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
88	17-8-2023	07:01:51	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
89	17-8-2023	07:22:01	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
90	17-8-2023	08:47:22	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
91	17-8-2023	15:42:44	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
92	17-8-2023	15:48:30	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
93	17-8-2023	15:52:54	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
94	17-8-2023	18:19:40	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
95	17-8-2023	19:32:22	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
96	18-8-2023	04:15:47	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
97	18-8-2023	13:43:57	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
98	18-8-2023	14:20:11	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
99	18-8-2023	14:21:36	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
100	18-8-2023	14:56:31	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE

Sl. No.	Date	Time	Locat	Volta	Bay/D	Devic	Information Text	Value
101	18-8-2023	16:22:55	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
102	18-8-2023	18:18:02	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
103	19-8-2023	11:29:13	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
104	19-8-2023	11:38:13	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
105	19-8-2023	17:51:03	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
106	19-8-2023	17:51:03	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
107	20-8-2023	00:54:18	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
108	20-8-2023	07:51:31	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
109	20-8-2023	08:38:54	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
110	20-8-2023	10:22:28	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
111	20-8-2023	13:59:02	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
112	20-8-2023	15:02:18	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
113	20-8-2023	16:22:14	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
114	20-8-2023	18:02:14	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
115	21-8-2023	08:22:34	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
116	21-8-2023	13:09:34	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
117	21-8-2023	17:51:23	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
118	22-8-2023	00:25:35	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
119	22-8-2023	01:14:26	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
120	22-8-2023	01:36:09	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
121	22-8-2023	07:33:17	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
122	22-8-2023	13:11:52	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
123	22-8-2023	13:12:59	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
124	22-8-2023	13:34:06	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
125	22-8-2023	13:38:06	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
126	22-8-2023	13:59:13	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
127	22-8-2023	14:24:57	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
128	22-8-2023	15:15:02	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
129	22-8-2023	16:31:35	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
130	22-8-2023	16:53:33	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
131	22-8-2023	17:08:05	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
132	22-8-2023	17:20:39	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
133	22-8-2023	17:25:00	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
134	23-8-2023	01:00:14	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
135	23-8-2023	01:17:47	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
136	23-8-2023	01:35:10	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
137	23-8-2023	05:00:37	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
138	23-8-2023	07:42:28	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
139	23-8-2023	07:56:13	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
140	23-8-2023	08:06:49	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
141	23-8-2023	09:39:16	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
142	23-8-2023	10:50:21	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
143	23-8-2023	14:39:02	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
144	23-8-2023	15:47:35	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
145	23-8-2023	16:18:57	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
146	23-8-2023	18:04:00	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
147	24-8-2023	13:44:10	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
148	24-8-2023	14:23:58	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
149	25-8-2023	11:59:58	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
150	25-8-2023	17:04:57	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
151	25-8-2023	17:16:09	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE

Sl. No.	Date	Time	Locat	Volta	Bay/D	Devic	Information Text	Value
152	26-8-2023	00:50:36	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
153	26-8-2023	06:40:15	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
154	26-8-2023	08:23:42	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
155	26-8-2023	08:51:40	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
156	27-8-2023	06:01:38	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
157	27-8-2023	17:59:28	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
158	28-8-2023	05:34:46	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
159	28-8-2023	07:51:50	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
160	28-8-2023	16:59:24	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
161	28-8-2023	19:44:11	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
162	29-8-2023	09:06:18	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
163	29-8-2023	19:54:52	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
164	30-8-2023	06:00:14	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
165	30-8-2023	07:08:17	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
166	30-8-2023	08:53:01	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
167	30-8-2023	10:44:37	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
168	30-8-2023	15:48:01	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
169	31-8-2023	05:50:00	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
170	31-8-2023	06:23:29	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
171	31-8-2023	06:23:35	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
172	31-8-2023	18:48:03	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
173	31-8-2023	22:30:48	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
174	01-9-2023	08:32:31	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
175	01-9-2023	22:32:25	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
176	03-9-2023	19:05:55	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
177	03-9-2023	19:14:55	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
178	03-9-2023	20:02:38	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
179	03-9-2023	20:10:42	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
180	03-9-2023	22:34:21	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
181	03-9-2023	23:04:10	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
182	03-9-2023	23:33:29	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
183	03-9-2023	23:49:15	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
184	03-9-2023	23:51:00	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
185	04-9-2023	00:53:18	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
186	04-9-2023	03:33:57	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
187	04-9-2023	09:57:08	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
188	04-9-2023	10:31:01	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
189	04-9-2023	11:56:12	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
190	04-9-2023	12:28:04	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
191	05-9-2023	15:53:28	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
192	05-9-2023	16:10:41	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
193	05-9-2023	16:10:45	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
194	05-9-2023	16:12:05	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
195	05-9-2023	16:25:00	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
196	05-9-2023	16:26:22	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
197	05-9-2023	20:51:04	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
198	06-9-2023	02:23:15	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
199	06-9-2023	06:06:51	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
200	06-9-2023	06:12:29	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
201	06-9-2023	06:57:03	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
202	06-9-2023	07:01:40	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE

Sl. No.	Date	Time	Locat	Volta	Bay/D	Devic	Information Text	Value
203	06-9-2023	09:47:31	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
204	06-9-2023	16:35:43	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
205	06-9-2023	16:36:13	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
206	06-9-2023	17:15:27	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
207	06-9-2023	17:26:33	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
208	06-9-2023	17:33:36	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
209	06-9-2023	17:36:14	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
210	06-9-2023	18:41:59	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
211	06-9-2023	18:47:11	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
212	06-9-2023	19:18:06	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
213	07-9-2023	22:20:11	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
214	07-9-2023	22:47:20	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
215	08-9-2023	12:11:39	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
216	08-9-2023	12:11:39	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
217	09-9-2023	03:05:58	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
218	09-9-2023	03:05:58	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
219	09-9-2023	06:05:44	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
220	09-9-2023	06:05:44	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
221	09-9-2023	09:51:15	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
222	09-9-2023	09:51:15	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
223	10-9-2023	05:31:27	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
224	10-9-2023	05:31:27	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
225	10-9-2023	08:22:09	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
226	10-9-2023	08:22:09	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
227	10-9-2023	10:21:19	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
228	10-9-2023	10:21:19	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
229	10-9-2023	14:30:44	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
230	10-9-2023	14:30:44	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
231	10-9-2023	16:08:39	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
232	10-9-2023	16:08:39	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
233	11-9-2023	06:51:56	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
234	11-9-2023	06:51:56	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
235	11-9-2023	07:09:24	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
236	11-9-2023	07:09:24	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
237	11-9-2023	12:35:13	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
238	11-9-2023	12:35:13	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
239	11-9-2023	16:56:12	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
240	11-9-2023	16:56:12	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
241	12-9-2023	06:08:44	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
242	12-9-2023	06:08:44	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
243	12-9-2023	07:16:07	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
244	12-9-2023	07:16:07	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
245	12-9-2023	13:45:23	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
246	12-9-2023	13:46:41	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
247	12-9-2023	15:03:03	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
248	13-9-2023	02:44:04	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
249	13-9-2023	02:44:04	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
250	13-9-2023	05:37:59	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
251	13-9-2023	05:37:59	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
252	13-9-2023	05:40:39	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
253	13-9-2023	05:40:39	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE

Sl. No.	Date	Time	Locat	Volta	Bay/D	Devic	Information Text	Value
254	13-9-2023	06:59:10	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
255	13-9-2023	06:59:10	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
256	13-9-2023	08:40:10	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
257	13-9-2023	08:40:10	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
258	10-9-2023	05:31:27	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
259	10-9-2023	05:31:27	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
260	10-9-2023	08:22:09	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
261	10-9-2023	08:22:09	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
262	10-9-2023	10:21:19	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
263	10-9-2023	10:21:19	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
264	10-9-2023	14:30:44	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
265	10-9-2023	14:30:44	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
266	10-9-2023	16:08:39	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
267	10-9-2023	16:08:39	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
268	11-9-2023	06:51:56	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
269	11-9-2023	06:51:56	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
270	11-9-2023	07:09:24	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
271	11-9-2023	07:09:24	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
272	11-9-2023	12:35:13	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
273	11-9-2023	12:35:13	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
274	11-9-2023	16:56:12	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
275	11-9-2023	16:56:12	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
276	12-9-2023	06:08:44	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
277	12-9-2023	06:08:44	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
278	12-9-2023	07:16:07	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
279	12-9-2023	07:16:07	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
280	12-9-2023	13:45:23	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
281	12-9-2023	13:46:41	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
282	12-9-2023	15:03:03	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
283	13-9-2023	02:44:04	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
284	13-9-2023	02:44:04	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
285	13-9-2023	05:37:59	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
286	13-9-2023	05:37:59	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
287	13-9-2023	05:40:39	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
288	13-9-2023	05:40:39	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
289	13-9-2023	06:59:10	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
290	13-9-2023	06:59:10	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
291	13-9-2023	08:40:10	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
292	13-9-2023	08:40:10	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
293	13-9-2023	14:09:48	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
294	13-9-2023	14:09:48	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
295	13-9-2023	17:43:40	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
296	13-9-2023	17:43:40	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
297	14-9-2023	17:00:16	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
298	14-9-2023	17:44:12	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
299	15-9-2023	09:05:39	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
300	15-9-2023	10:30:28	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
301	15-9-2023	12:32:31	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
302	16-9-2023	01:34:56	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
303	16-9-2023	01:45:30	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
304	16-9-2023	01:48:34	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE

Sl. No.	Date	Time	Locat	Volta	Bay/D	Devic	Information Text	Value
305	16-9-2023	02:00:14	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
306	16-9-2023	07:29:40	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
307	16-9-2023	13:12:30	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
308	16-9-2023	16:23:33	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
309	16-9-2023	16:34:57	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
310	16-9-2023	17:59:24	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
311	16-9-2023	18:12:43	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
312	16-9-2023	19:04:01	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
313	16-9-2023	20:04:38	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
314	16-9-2023	21:41:17	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
315	16-9-2023	21:46:58	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
316	16-9-2023	21:47:28	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
317	17-9-2023	02:42:18	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
318	17-9-2023	14:03:20	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
319	17-9-2023	14:09:42	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
320	17-9-2023	15:06:34	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
321	18-9-2023	06:53:51	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
322	18-9-2023	11:24:32	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
323	18-9-2023	13:43:15	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
324	18-9-2023	16:28:57	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
325	19-9-2023	02:14:20	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
326	19-9-2023	05:04:46	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
327	19-9-2023	07:21:41	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
328	19-9-2023	07:33:09	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
329	19-9-2023	08:03:51	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
330	19-9-2023	18:51:07	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
331	19-9-2023	23:24:32	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
332	20-9-2023	00:15:11	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
333	20-9-2023	06:54:23	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
334	20-9-2023	09:25:55	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
335	20-9-2023	09:29:21	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
336	20-9-2023	09:30:59	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
337	20-9-2023	11:59:19	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
338	21-9-2023	09:54:48	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
339	21-9-2023	12:36:47	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
340	21-9-2023	15:10:01	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
341	22-9-2023	09:56:34	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
342	22-9-2023	13:51:27	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
343	22-9-2023	17:47:54	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
344	23-9-2023	06:38:02	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
345	23-9-2023	07:27:13	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
346	23-9-2023	10:36:25	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
347	23-9-2023	11:52:35	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
348	23-9-2023	13:17:06	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
349	23-9-2023	13:17:06	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
350	23-9-2023	13:25:58	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
351	23-9-2023	13:27:03	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
352	23-9-2023	13:36:28	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
353	23-9-2023	17:32:18	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
354	23-9-2023	20:10:03	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
355	24-9-2023	02:24:20	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE

Sl. No.	Date	Time	Locat	Volta	Bay/D	Devic	Information Text	Value
356	24-9-2023	08:30:04	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
357	24-9-2023	14:05:37	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
358	24-9-2023	18:29:50	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
359	24-9-2023	23:17:49	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
360	25-9-2023	07:15:52	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
361	25-9-2023	12:56:14	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
362	25-9-2023	18:41:18	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
363	25-9-2023	23:55:06	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
364	26-9-2023	13:02:31	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
365	27-9-2023	10:47:38	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
366	27-9-2023	10:47:38	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
367	27-9-2023	10:56:58	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
368	27-9-2023	10:56:58	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
369	27-9-2023	11:01:38	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
370	27-9-2023	11:01:38	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
371	27-9-2023	11:01:38	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
372	27-9-2023	11:01:38	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
373	27-9-2023	11:12:41	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
374	27-9-2023	11:12:41	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
375	27-9-2023	11:14:46	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
376	27-9-2023	11:14:46	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
377	27-9-2023	13:52:25	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
378	27-9-2023	13:52:25	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
379	28-9-2023	02:03:53	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
380	28-9-2023	02:03:53	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
381	28-9-2023	02:20:52	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
382	28-9-2023	02:20:52	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
383	28-9-2023	05:28:04	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
384	28-9-2023	05:28:04	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
385	28-9-2023	05:44:13	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
386	28-9-2023	05:44:13	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
387	28-9-2023	06:27:08	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
388	28-9-2023	06:27:08	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
389	28-9-2023	06:35:24	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
390	28-9-2023	06:35:24	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
391	28-9-2023	06:46:49	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
392	28-9-2023	06:46:49	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
393	28-9-2023	08:04:35	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
394	28-9-2023	08:04:35	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
395	28-9-2023	08:54:31	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
396	28-9-2023	08:54:31	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
397	28-9-2023	09:00:14	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
398	28-9-2023	09:00:14	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
399	28-9-2023	14:25:21	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
400	28-9-2023	14:25:21	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
401	28-9-2023	14:56:44	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
402	28-9-2023	14:56:44	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
403	29-9-2023	08:26:09	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
404	29-9-2023	08:26:09	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
405	29-9-2023	11:01:31	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
406	29-9-2023	11:01:31	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE

Sl. No.	Date	Time	Locat	Volta	Bay/D	Devic	Information Text	Value
407	29-9-2023	13:05:03	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
408	29-9-2023	13:05:03	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
409	29-9-2023	14:57:16	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
410	29-9-2023	14:57:16	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
411	30-9-2023	02:35:54	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
412	30-9-2023	02:35:54	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
413	30-9-2023	02:56:39	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
414	30-9-2023	02:56:39	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
415	30-9-2023	08:34:34	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
416	30-9-2023	08:34:34	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
417	30-9-2023	08:39:16	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
418	30-9-2023	08:39:16	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
419	30-9-2023	13:39:55	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
420	30-9-2023	13:39:55	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
421	30-9-2023	13:53:33	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
422	30-9-2023	13:53:33	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
423	30-9-2023	20:26:10	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
424	30-9-2023	20:26:10	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
425	30-9-2023	21:24:28	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
426	30-9-2023	21:24:28	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
427	30-9-2023	21:30:30	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
428	30-9-2023	21:30:30	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
429	01-10-2023	00:55:48	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
430	01-10-2023	00:55:48	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
431	01-10-2023	12:53:09	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
432	01-10-2023	12:53:09	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
433	01-10-2023	14:01:22	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
434	01-10-2023	14:01:22	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
435	02-10-2023	07:24:23	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
436	02-10-2023	07:24:23	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
437	02-10-2023	12:58:55	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
438	02-10-2023	12:58:55	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
439	03-10-2023	16:32:35	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
440	03-10-2023	16:32:35	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
441	04-10-2023	04:37:50	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
442	04-10-2023	04:37:50	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
443	04-10-2023	06:08:03	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
444	04-10-2023	06:08:03	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
445	04-10-2023	17:39:58	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
446	04-10-2023	17:39:58	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
447	05-10-2023	12:04:00	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
448	05-10-2023	12:04:00	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
449	05-10-2023	17:26:20	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
450	05-10-2023	17:26:20	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
451	06-10-2023	01:42:27	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
452	06-10-2023	01:42:27	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
453	06-10-2023	04:32:00	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
454	06-10-2023	04:32:00	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
455	06-10-2023	06:10:52	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
456	06-10-2023	06:10:52	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
457	06-10-2023	21:19:59	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE

Sl. No.	Date	Time	Locat	Volta	Bay/D	Devic	Information Text	Value
458	06-10-2023	21:19:59	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
459	06-10-2023	21:55:41	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
460	06-10-2023	21:55:41	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
461	07-10-2023	06:05:47	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
462	07-10-2023	06:05:47	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
463	07-10-2023	07:09:42	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
464	07-10-2023	07:09:42	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
465	07-10-2023	13:55:20	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
466	07-10-2023	13:55:20	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
467	07-10-2023	17:55:07	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
468	07-10-2023	17:55:07	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
469	08-10-2023	05:01:46	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
470	08-10-2023	05:01:46	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
471	08-10-2023	14:24:09	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
472	08-10-2023	14:24:09	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
473	08-10-2023	20:22:24	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
474	08-10-2023	20:22:24	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
475	09-10-2023	01:25:26	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
476	09-10-2023	01:25:26	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
477	09-10-2023	04:37:33	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
478	09-10-2023	04:37:33	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
479	09-10-2023	04:43:46	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
480	09-10-2023	04:43:46	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
481	09-10-2023	07:26:57	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
482	09-10-2023	07:26:57	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
483	09-10-2023	07:43:27	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
484	09-10-2023	07:43:27	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
485	09-10-2023	07:49:44	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
486	09-10-2023	07:49:44	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
487	09-10-2023	10:00:35	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
488	09-10-2023	10:00:35	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
489	09-10-2023	10:39:08	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
490	09-10-2023	10:39:08	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
491	09-10-2023	10:45:46	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
492	09-10-2023	10:45:46	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
493	09-10-2023	23:40:17	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
494	09-10-2023	23:40:17	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
495	10-10-2023	00:14:49	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
496	10-10-2023	00:14:49	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
497	10-10-2023	05:10:36	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
498	10-10-2023	05:10:36	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
499	10-10-2023	08:58:52	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
500	10-10-2023	08:58:52	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
501	11-10-2023	06:57:06	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
502	11-10-2023	06:57:06	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
503	11-10-2023	12:45:09	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
504	11-10-2023	12:45:09	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
505	11-10-2023	15:26:46	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
506	11-10-2023	15:26:46	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
507	11-10-2023	21:13:36	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
508	11-10-2023	21:13:36	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE

Sl. No.	Date	Time	Locat	Volta	Bay/D	Devic	Information Text	Value
509	12-10-2023	06:35:54	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
510	12-10-2023	06:35:54	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
511	12-10-2023	09:13:14	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
512	12-10-2023	09:13:14	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
513	12-10-2023	09:33:28	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
514	12-10-2023	09:33:28	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
515	12-10-2023	15:52:03	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
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518	12-10-2023	16:16:45	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
519	12-10-2023	16:22:54	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
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525	13-10-2023	08:26:33	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
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530	13-10-2023	08:45:47	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
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534	13-10-2023	11:58:11	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
535	13-10-2023	15:59:14	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
536	13-10-2023	15:59:14	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
537	14-10-2023	08:18:24	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
538	14-10-2023	08:18:24	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
539	14-10-2023	09:48:07	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
540	14-10-2023	09:48:07	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
541	14-10-2023	16:03:56	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
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544	14-10-2023	16:05:21	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
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552	16-10-2023	22:36:41	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
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563	20-10-2023	08:13:11	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
564	20-10-2023	08:13:11	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
565	21-10-2023	16:30:56	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
566	21-10-2023	16:30:56	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
567	22-10-2023	00:16:57	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
568	22-10-2023	00:16:57	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
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576	24-10-2023	13:09:17	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
577	24-10-2023	16:28:33	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
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580	01-10-2023	00:55:48	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
581	01-10-2023	12:53:09	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
582	01-10-2023	12:53:09	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
583	01-10-2023	14:01:22	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
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585	02-10-2023	07:24:23	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
586	02-10-2023	07:24:23	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
587	02-10-2023	12:58:55	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
588	02-10-2023	12:58:55	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
589	03-10-2023	16:32:35	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
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592	04-10-2023	04:37:50	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
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594	04-10-2023	06:08:03	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
595	04-10-2023	17:39:58	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
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597	05-10-2023	12:04:00	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
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599	05-10-2023	17:26:20	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
600	05-10-2023	17:26:20	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
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602	06-10-2023	01:42:27	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
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606	06-10-2023	06:10:52	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
607	06-10-2023	21:19:59	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
608	06-10-2023	21:19:59	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
609	06-10-2023	21:55:41	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
610	06-10-2023	21:55:41	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE

Sl. No.	Date	Time	Locat	Volta	Bay/D	Devic	Information Text	Value
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617	07-10-2023	17:55:07	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
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620	08-10-2023	05:01:46	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
621	08-10-2023	14:24:09	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
622	08-10-2023	14:24:09	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
623	08-10-2023	20:22:24	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
624	08-10-2023	20:22:24	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
625	09-10-2023	01:25:26	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
626	09-10-2023	01:25:26	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
627	09-10-2023	04:37:33	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
628	09-10-2023	04:37:33	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
629	09-10-2023	04:43:46	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
630	09-10-2023	04:43:46	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
631	09-10-2023	07:26:57	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
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650	10-10-2023	08:58:52	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
651	27-10-2023	05:43:07	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
652	27-10-2023	05:43:07	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
653	27-10-2023	12:09:27	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
654	27-10-2023	12:09:27	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
655	28-10-2023	02:15:26	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
656	28-10-2023	02:15:26	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
657	28-10-2023	08:15:35	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
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659	28-10-2023	09:10:50	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
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661	28-10-2023	09:16:24	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE

Sl. No.	Date	Time	Locat	Volta	Bay/D	Devic	Information Text	Value
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664	28-10-2023	09:36:54	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
665	28-10-2023	22:09:23	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
666	28-10-2023	22:09:23	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
667	29-10-2023	19:27:23	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
668	29-10-2023	19:27:23	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
669	30-10-2023	08:04:33	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
670	30-10-2023	08:04:33	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
671	30-10-2023	16:54:02	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
672	30-10-2023	16:54:02	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE
673	31-10-2023	08:56:24	KIOS	132	BAY 1	7SJ62	Total.Pickup	RAISE

उत्तर प्रदेश राज्य भार प्रषण कन्द्र
उ0प्र0पॉवर ट्रांसमिशन कारपोरेशन लि0
(उत्तर प्रदेश सरकार का उपक्रम)
यू0पी0एस0एल0डी0सी0 परिसर, विभूति खण्ड–II
गोमती नगर, लखनऊ–226010
ई–मेल : cepso@upsldc.org
sera@upsldc.org

U.P. State Load Despatch Centre
U.P. Power Transmission Corporation Ltd.
(A U.P. Govt. Undertaking)
UPSLDC Complex, Vibhuti Khand – II
Gomti Nagar, Lucknow- 226010
E-mail: cepso@upsldc.org
sera@upsldc.org

Annexure-A.VI

No 3823 SE(R&A) /EE-II /Varanasi islanding Date: - 30.10. 2023

Member Secretary, NRPC,
18 – A, SJSS Marg, Katwaria Sarai,
New Delhi, 110016.
(ms-nrpc@nic.in)

Subject: Regarding agenda on the feasibility of Varanasi Islanding Scheme in the 213th OCC meeting of NRPC.

As per the decision taken at higher management level, UPSLDC has prepared a tentative Varanasi Islanding Scheme using generation of Anpara BTPS. To discuss it further UPSLDC proposes to put up Varanasi Islanding Scheme (VIS) at OCC forum.

It is therefore, requested to include subject issue as an agenda point in 213th OCC meeting of NRPC for further discussion on proposed Islanding Scheme.

Encl: Map of Varanasi Islanding Scheme
Load details of Varanasi Region
Generation pattern of Anpara 'B'TPS

Amit Narain

(Amit Narain)
Superintending Engineer (R&A)

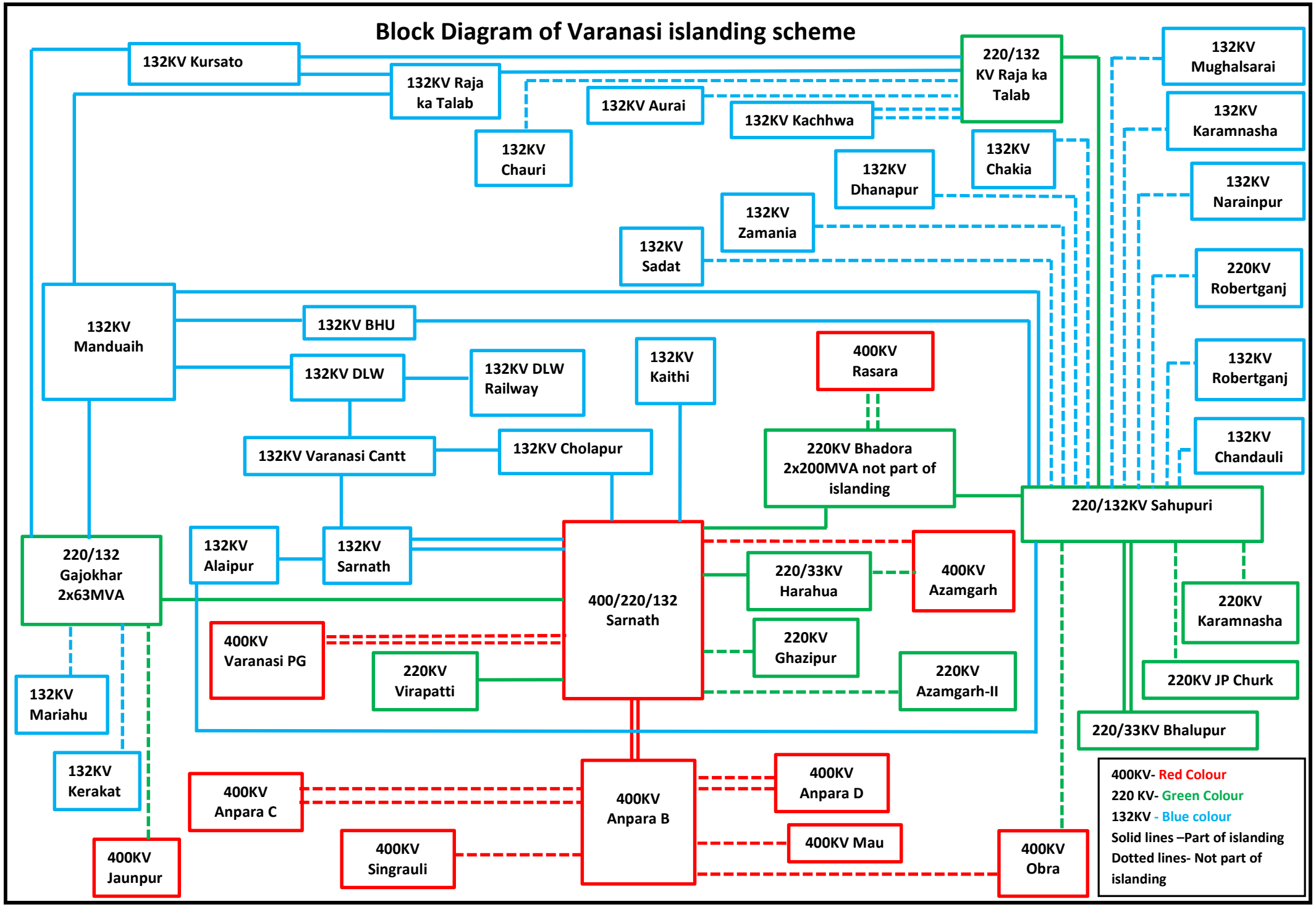
No SE(R&A) /EE-II /Varanasi islanding Date: - 2023

Copy forwarded to following for information and necessary action:-

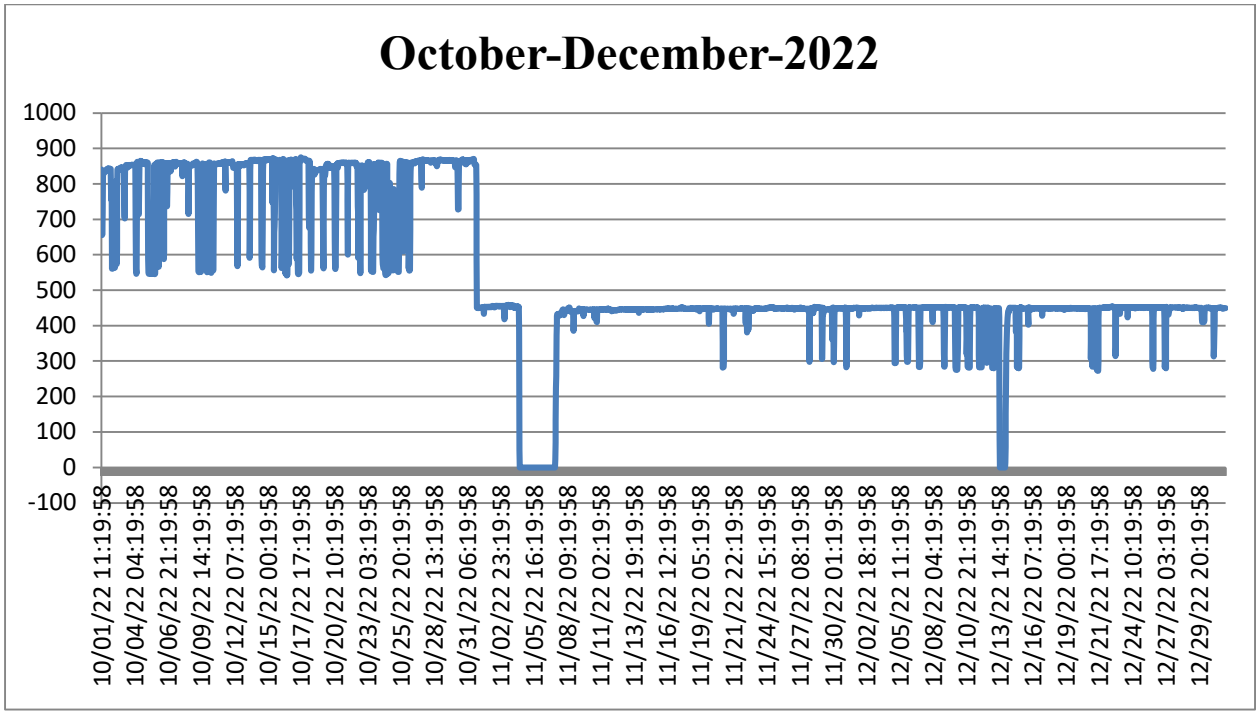
1. Director, UPSLDC, Vibhuti Khand – II, Gomti Nagar, Lucknow.
2. Director (Operation), UPPTCL, 11th Floor, Shakti Bhawan Extn., Lucknow.
3. Director (Technical), UPRVUNL, 8th Floor, Shakti Bhawan Extension, Lucknow.
4. Chief Engineer (PSO), UPSLDC, Vibhuti Khand – II, Gomti Nagar, Lucknow.
5. General Manager, NRLDC 18-A, SJSS Marg, Katwaria Sarai, New Delhi–110016.
6. Superintending Engineer (System Control), UPSLDC, Vibhuti Khand – II, Gomti Nagar, Lucknow.
7. SE (Operations), NRPC, 18 – A SJSS Marg, Katwaria Sarai, New Delhi, 110016. (seo-nrpc@nic.in).

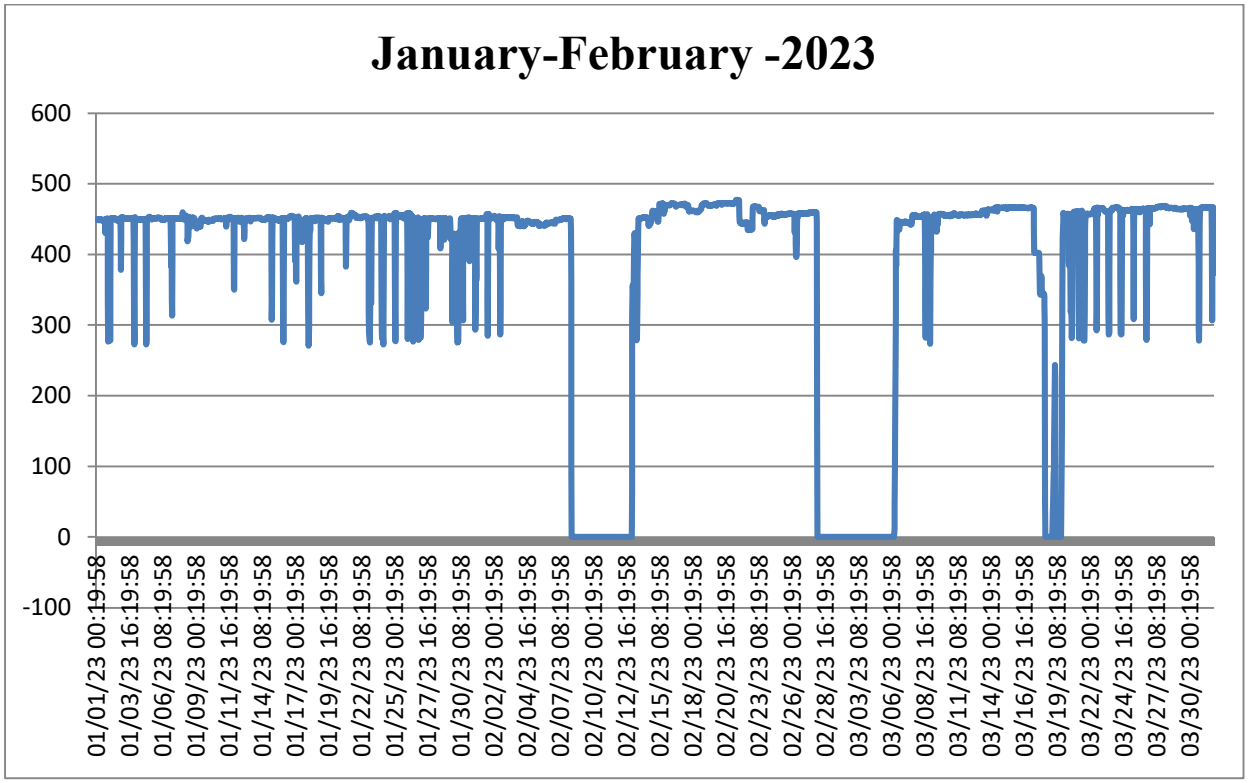
(Amit Narain)
Superintending Engineer (R&A)

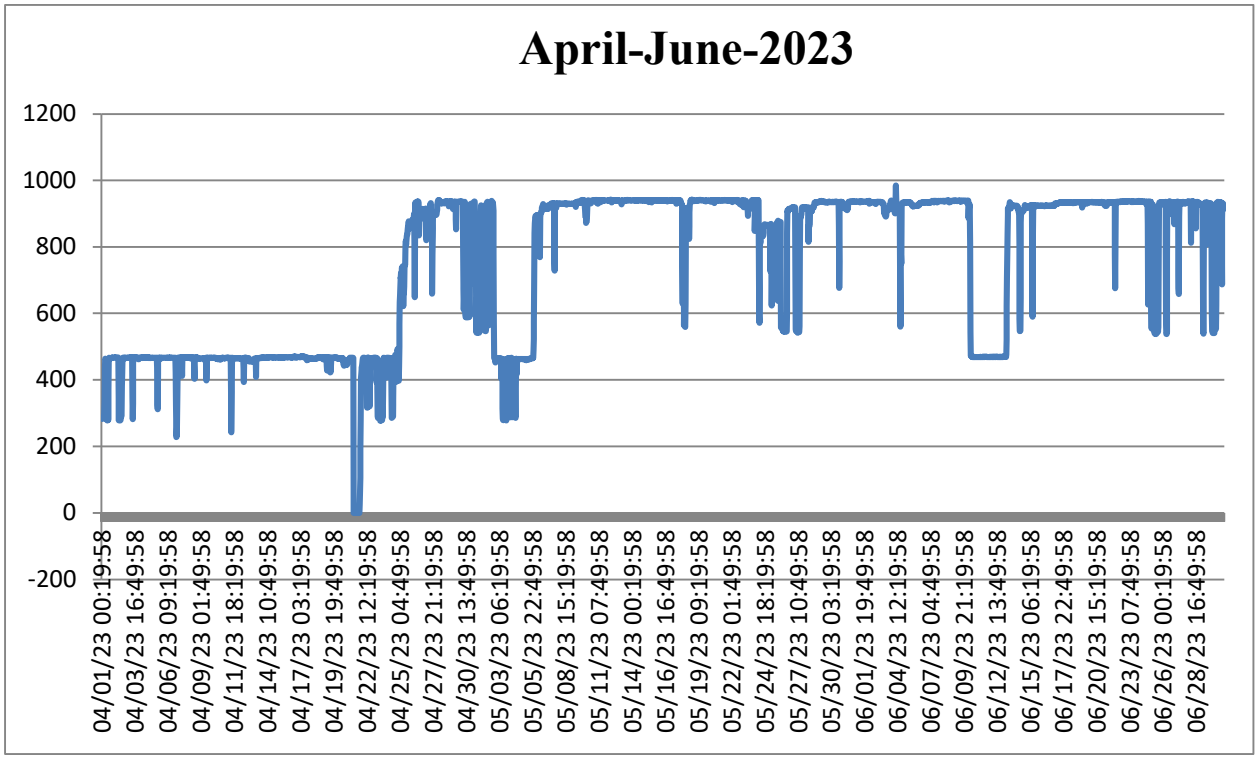
Block Diagram of Varanasi islanding scheme



Generation Pattern of Anpara BTPS (2x500MW)



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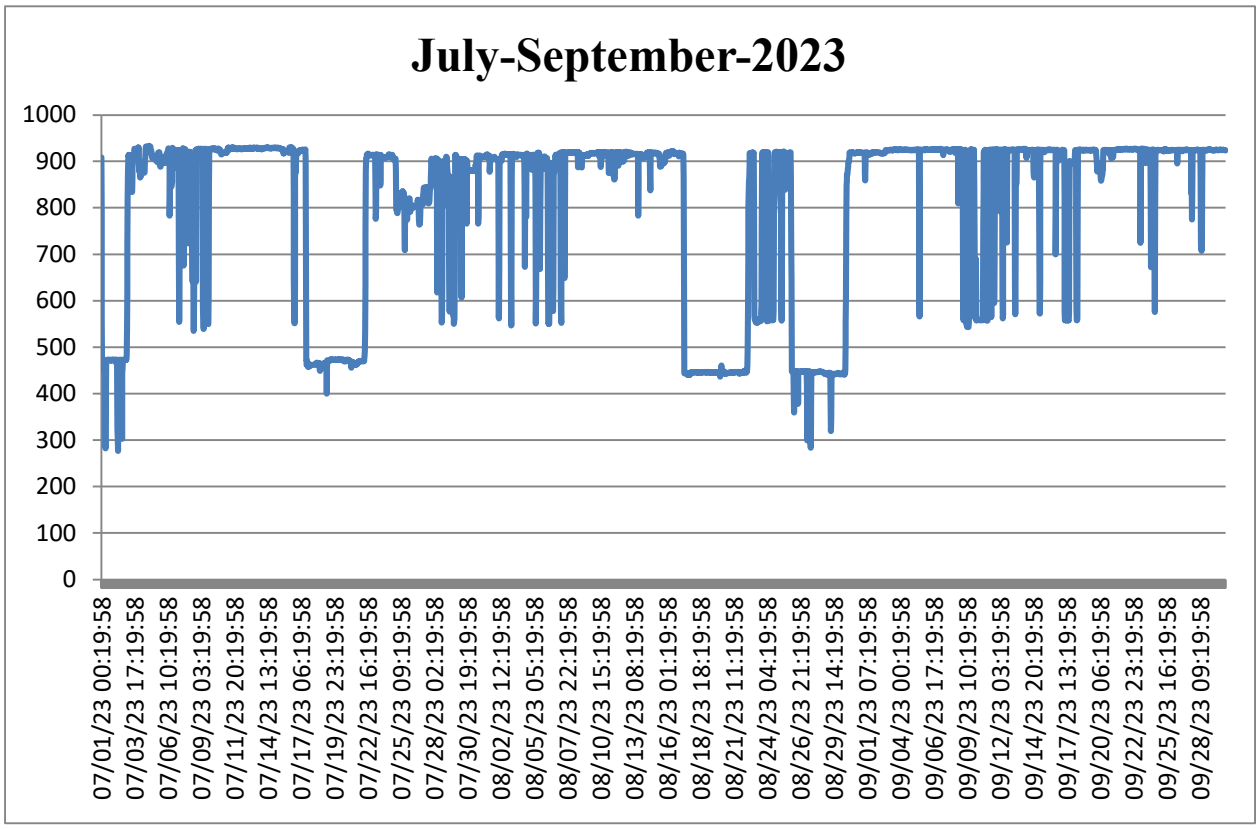
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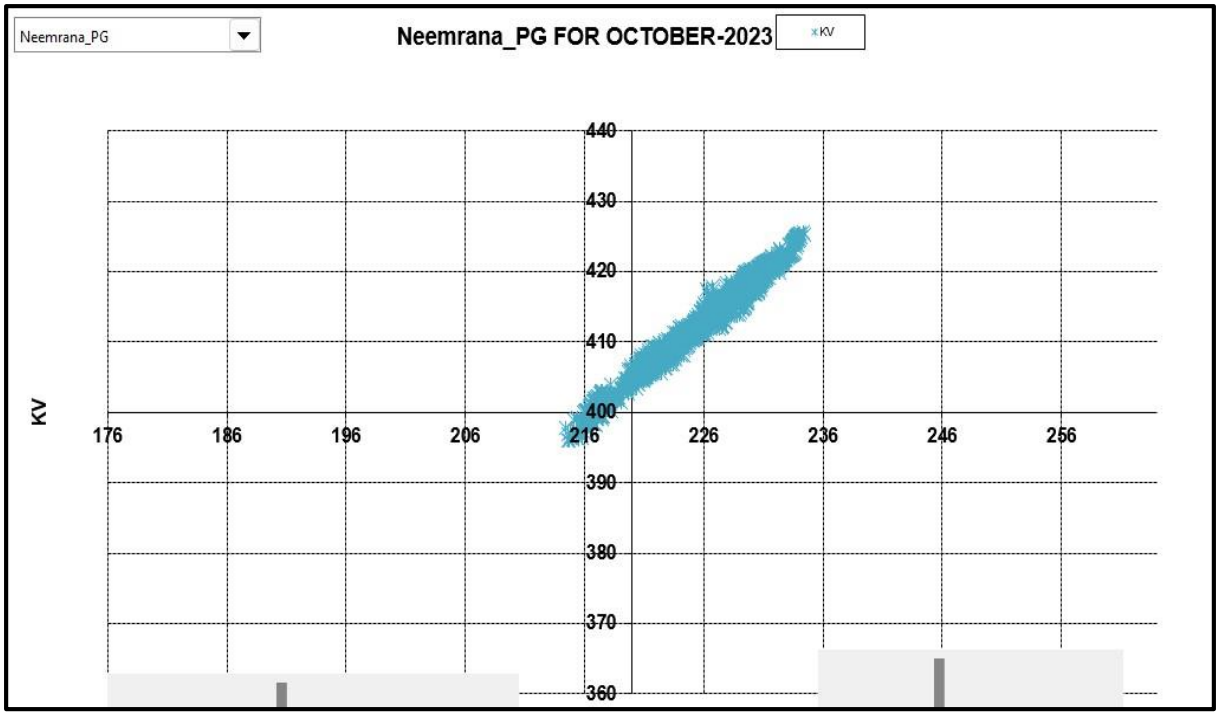
Load for Varanasi Region

S.No.	Name of substation	Name of the ICT/ Feeder	Rating of ICT		Summer Peak (2022-23) MW	date and time	Summer Off Peak (2022-23) MW	date and time	Summer Average (2022-23)	Winter Peak (2022-23) MW	date and time	Winter Off Peak (2022-23)MW	date and time	Winter Average (2022-23)	Details of Essential load If any
			Installed Capacity (MVA)	Installed Capacity (MW)											
1	220kV Substation Gajokhar under ETD-I Varanasi	132kV/33kV Transformer	63 MVA T/F-I		32	01.08.23/06:00	11.5	27.04.23/10:00	21.75	23.5	01.10.23/07:00	8.5	17.12.22/02:00	16	Feeding Airport supply 1.5 MW on 33 KV Voltage level
		132kV/33kV Transformer	63 MVA T/F-II		30	01.08.23/06:00	11.5	27.04.23/10:00	20.75	23.5	01.10.23/07:00	8.5	17.12.22/02:00	16	
2	220/33kV Substation Harahua	220kV/33kV Xmer at 220kV Substation Harahua	60 MVA T/F I		41.1	19.07.2022/21:00	29.15	06.04.2022/22:00	35	33.4	13.01.2023/08:00	15	26.12.2022/02:00	25	Standby supply for Goithahan S.T.P
			60 MVA T/F II		22.16	19.07.2022/21:00	10.85	06.04.2022/22:00	17	21.71	13.01.2023/08:00	13	26.12.2022/02:00	17	
3	132kV Substation Cholapur	132kV/33kV Xmer at 132kV Substation Cholapur	40 MVA T/F-I		13.67	03.09.2023/09:00	8.36	18.04.2023/19:00	12.04	10.81	08.01.2023/10:00	6.93	18.12.2022/11:00	7.75	
			40 MVA T/F-II		13.87	03.09.2023/09:00	8.57	18.04.2023/19:00	12.24	11.02	08.01.2023/10:00	7.12	18.12.2022/11:00	7.8	
4	132kV Substation Sarnath	132kV/33kV Xmer at 132kV Substation Sarnath	100 MVA T/F		61.5	15.06.2022/20:00	53.8	30.07.2022/20:00	55.8	32	08.01.2023/10:00	32.6	08.11.2022/19:00	26.4	Sarnath W.T.P, Tibbatian institute, Kashi Vishwanath temple
			63 MVA T/F(40 MVA since 03.03.2023)		40.5	15.06.2022/20:00	31.4	30.07.2022/22:00	36	15	08.01.2023/10:00	23.6	08.11.2022/19:00	13.8	Deendyal Upadhya(DDU) Hospital
			40 MVA T/F(100 MVA T/F II since 20.12.2022)		21.5	15.06.2022/20:00	18.8	03.05.2021/20:00	19.6	49	08.01.2023/10:00	11.4	08.11.2022/19:00	36	Kaal bhairav temple, Kabir chura hospital, Maridian hospital, Konia S.T.P, Urban area of Varanasi city
5	132 KV Substation Kaithi	132kV/33kV Xmer at 132kV Substation Kaithi	40 MVA T/F-I		7.7	15.07.2022/20:00	6.4	25.04.2022/20:00	7	6.2	08.01.2023/10:00	4.8	20.11.2022/08:00	5.6	Markandey Mahadev temple
			40 MVA T/F-II		7.7	15.07.2022/20:00	6.4	25.04.2022/20:00	7	6.2	08.01.2023/10:00	4.8	20.11.2022/08:00	5.6	Goithahan & Deenapur S.T.P
6	220/33kV Substation Bhelupur under ETD-I Varanasi	220kV/33kV Transformer	60 MVA T/F-I		43.32	25.08.2022/13:00	16.24	30.06.2022/06:00	29.78	33.57	16.01.2023/15:00	16.19	25.10.2022/11:00	24.88	Feeding Baba Viswanath Temple,Dasaswamedh Ghat,Mayre-Mr.Ashok Tiwari,Minister-Dayashankar Mishra(33 KV Godauliya),Rudraksh Convention Center(33 KV Nagar Nigam),Durga Temple(33 KV Kbir Nagar),Harischandra Ghat to Assi Ghat(33 KV Bhadaini), VIP-Mahendra Pandey, Minister-Ravindra Jaiswal(33 KV Shankuldhara)
		220kV/33kV Transformer	60 MVA T/F-II		44.04	12.09.2022/13:00	15.52	30.06.2022/06:00	29.78	33.57	27.01.2023/19:00	11.19	30.10.2022/02:00	22.38	

Station	Unit	Station Type	Region	State	Utility	Capacity (MW)	Original Outage from	Original Outage To	Duration (days)	Remarks
IGSTPP Jhajjar	3	THERMAL	NR	HARYANA	APCPL	500	29-Jan-24	03-Mar-24	35	Annual Overhauling
MAHATMA GANDHI TPS (JPL)	2	THERMAL	NR	HARYANA	JHAJJAR POWER LIMITED	660	01-Feb-24	31-Mar-24	60	Boiler overhauling and chimney repair
DADRI-I (NCTPP)	1	THERMAL	NR	UTTAR PRADESH	NTPC	210	14-Feb-24	09-Mar-24	25	Boiler OH
RIHAND-III STPS	1	THERMAL	NR	UTTAR PRADESH	NTPC	500	10-Feb-24	25-Mar-24	45	Annual OH
SINGRAULI STPS	1	THERMAL	NR	UTTAR PRADESH	NTPC	500	15-Feb-24	15-Mar-24	30	Annual OH
TANDA TPS	2	THERMAL	NR	UTTAR PRADESH	NTPC	110	01-Feb-24	11-Mar-24	40	O/H
UNCHAHAR-II TPS	2	THERMAL	NR	UTTAR PRADESH	NTPC	210	05-Mar-24	10-Mar-24	6	Boiler Licence Renewal
DCR TPS YAMUNA NAGAR	1	THERMAL	NR	HARYANA	HPGCL	300	01-Feb-24	31-Mar-24	60	CAPITAL OH
DCR TPS YAMUNA NAGAR	2	THERMAL	NR	HARYANA	HPGCL	300	26-Feb-24	31-Mar-24	35	Annual OH
BARA TPP (PRAYAGRAJ)	3	THERMAL	NR	UTTAR PRADESH	PPGCL	660	15-Feb-24	15-Mar-24	30	Boiler Licence Renewal + Anuual Overhauling
ANPARA TPS	1	THERMAL	NR	UTTAR PRADESH	UPRVUNL	210	01-Feb-24	01-Mar-24	30	Annual O/H
OBRA TPS	12	THERMAL	NR	UTTAR PRADESH	UPRVUNL	200	01-Feb-24	01-Mar-24	30	AOH
BARKHERA TPS	1	THERMAL	NR	UTTAR PRADESH	Bajaj Energy Limited	45	28-Feb-24	24-Mar-24	26	AOH
GGSSTP ROPAR	2	THERMAL	NR	PUNJAB	PSPCL	270	16-Feb-24	16-Mar-24	30	Capital OH
TALWANDI SABO TPP	1	THERMAL	NR	PUNJAB	Vedanta Limited	660	26-Feb-24	22-Mar-24	26	Annual Overhaul/ Boiler overhaul
KOTA TPS (KSTPS)	4	THERMAL	NR	RAJASTHAN	RVUNL	210	16-Feb-24	07-Mar-24	21	Annual Boiler Overhauling

7	132/33 KV Substation Cantt under ETD-I Varanasi	132kV/33kV Transformer	63 MVA T/F-I		42.26	15.07.23/22:00	16.29	01.05.23/20:00	29.275	39.1	02.10.23/19:00	25.19	09.10.23/18:00	32.145	Feeding Cantoment Board,DM,Commissioner office and Aawas,Kachhari,Circuit House Supply
		132kV/33kV Transformer	63 MVA T/F-II		39.96	03.06.23/15:00	12.16	01.05.23/04:00	26.06	35.62	05.01.23/10:00	14.33	01.10.23/05:00	24.975	
		132kV/33kV Transformer	40 MVA T/F-III		25.63	25.06.23/10:00	8.04	01.05.23/04:00	16.835	19.76	09.10.23/12:00	9.12	01.10.23/05:00	14.44	
8	132/33 KV Substation DLW under ETD-I Varanasi	132kV/33kV Transformer	40 MVA T/F-I		17.4	12.09.23/15:00	. 4	15.06.23/13:00	8.9	11.6	10.01.23/09:00	. 6	25.10.22/10:00	6.1	DLW (RLY)= 2 MW
		132kV/33kV Transformer	20 MVA T/F-II		10.6	11/07.23/07:00	. 4	24.06.23/21:00	5.5	5.4	07.01.23/09:00	. 4	19.02.23/13:00	2.9	
9	132/33 KV Substation BHU under ETD-I Varanasi	132kV/33kV Transformer	12.5 MVA T/F-I		5.6	22.06.2023/12:00	1.6	22.06.2023/12:00	3.6	3.5	13.12.2022/15:00	0.6	13.12.2022/15:00	2.05	1. Cancer Hospital = 2MW 2. BHU and Hospital = 12 MW
		132kV/33kV Transformer	12.5 MVA T/F-II		5.6	22.06.2023/12:00	1.6	22.06.2023/12:00	3.6	3.5	13.12.2022/15:01	0.6	13.12.2022/15:01	2.05	
		132kV/33kV Transformer	40 MVA T/F-III		25.6	22.06.2023/15:00	8	22.06.2023/15:00	16.8	15	13.12.2022/15:02	2.4	13.12.2022/15:02	8.7	
10	132kV Substation Kursato	132/33kv Transformer-I	40MVA		11.2	18-06-22/06.00	8	13-04-22/19:00	8.8	14.2	20-01-2023/18:00	11.6	20-11-23/08:00	8.14	
		132/33kv Transformer-II	40MVA		11.2	18-06-22/06.00	8	13-04-22/19:00	8.8	14.2	20-01-2023/18:00	11.6	20-11-23/08:00	8.14	
11	132kV Substation Rajatalab	132/33kv Transformer-I	63MVA		34.4	17-08-22/20.00	13	20-04-22/20:00	29	28.8	21-01-2023/4:00	25.4	25-03-23/02:00	22	
		132/33kv Transformer-II	63MVA		34.4	17-08-22/20.00	12.8	20-04-22/20:00	29	28.8	21-01-2023/4:00	25.4	25-03-23/02:00	22	
	220kV Substation Raja Ka Talab	220/132/33kv Substation Raia Ka Talab	40mva trf-1		14.3	08-08-2022/14:00	2.2	12-04-2023/19:00	8.91	7.8	01-10-2022/06:00	1.5	12-02-2023/14:00	7	
			40mva trf-2		9.7	19-07-22/14.00	2.2	12-04-2023/19:00	6.48	7.6	01-10-2022/06:00	1.4	12-02-2023/14:00	6.83	
13	132kV Substation Manduadih	132kV/33kV Manduadih at 132kV Substation Varanasi	40MVA-1		28.83	18-07-22/16.00	16.47	29-09-22/20:00	16.4	18.76	04-03-23/10.00	18.7	04-03-23/10:00	9.1	Feeding Hospital and Railways = 4 MW
			40MVA-2		27.68	15-05-22/23.00	23.34	05-09-22/22:00	23.3	17.16	18-01-23/08.00	16	18-02-23/08:00	14.2	
			40MVA-3		27.23	18-07-22/15.00	15.3	29-09-22/20:00	16.4	17.84	04-03-23/10.00	17.8	04-03-23/10:00	8.7	
			40MVA-4		33.4	07-08-22/11.00	25.6	05-09-22/21:00	26	18.99	18-01-23/08.00	16.7	17-02-23/07:00	15.3	
			20MVA-1		8	08-07-22/24.00	5.7	05-09-22/23:00	7.3	5.49	08-01-23/10.00	4.1	20-03-23/07:00	4.5	
	220kV Substation Sahupuri	132/33kV Trnasformers at 220kV Substation Sahupuri	40 MVA T/F -I		32.92	15.06.2023/22:00	4.57	24.06.2023/21:00	18.745	31.09	15.11.2022/10:00	9.14	27.11.2022/14:00	20.12	33kV Ramnagar and 33kV LBS Hospital
			40 MVA T/F -II		36.58	16.06.2023/22:00	4.57	24.06.2023/21:00	20.575	29.26	01.02.2023/15:00	4.57	19.02.2023/13:00	16.92	
			20 MVA T/F -III		17.6	13.06.2023/24:00	1.6	24.06.2023/21:00	9.6	15.55	30.01.2023/11:00	4.34	27.11.202/14:00	9.95	
					879.2		419.5		643.6	688.5		384.1		490.5	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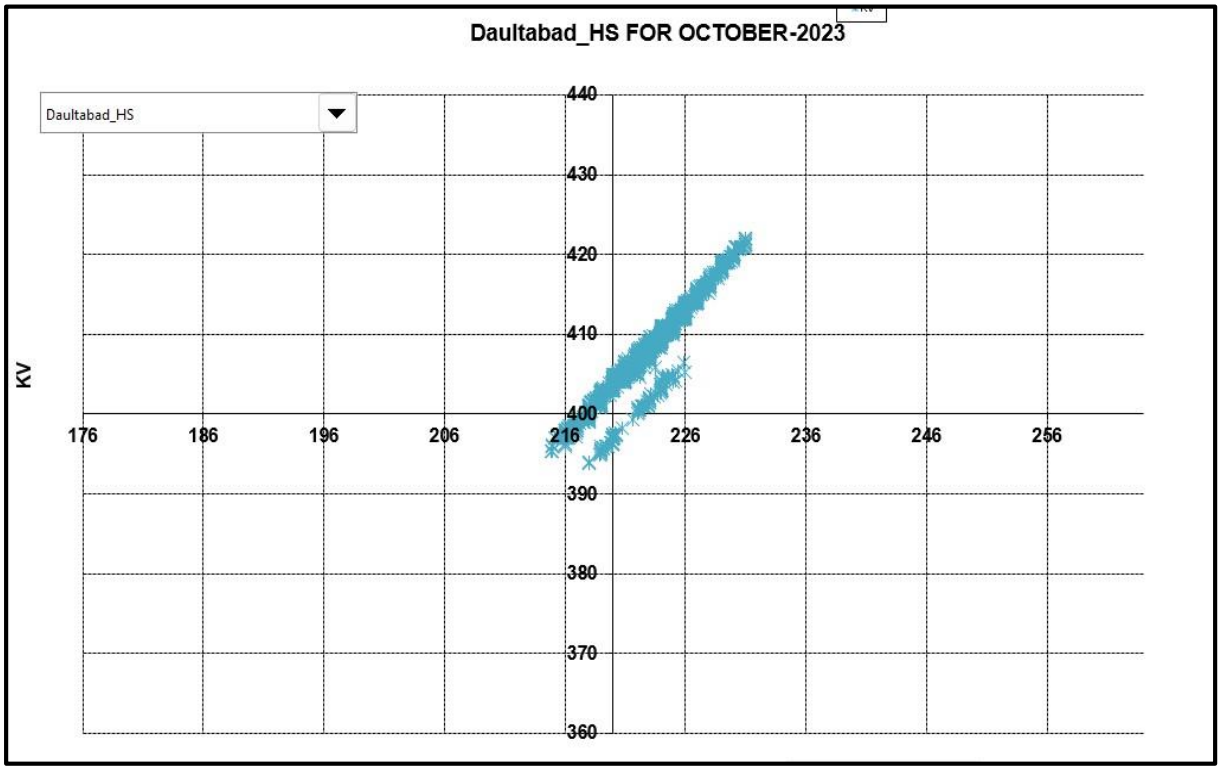
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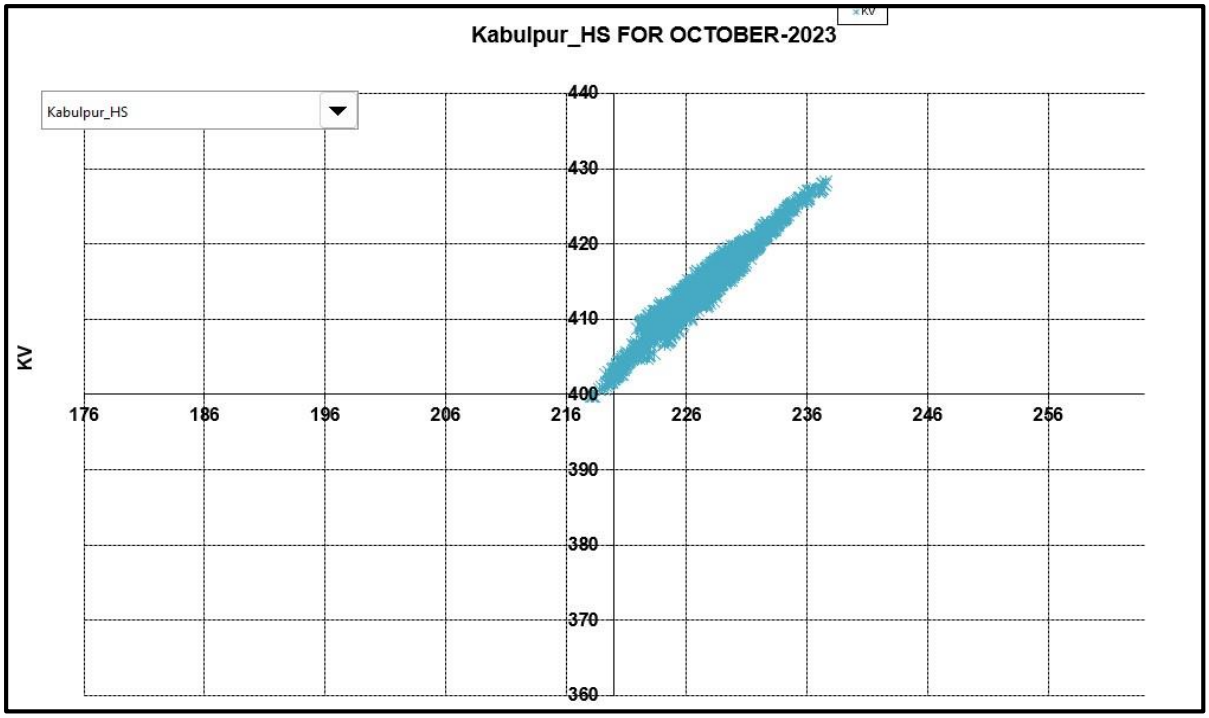
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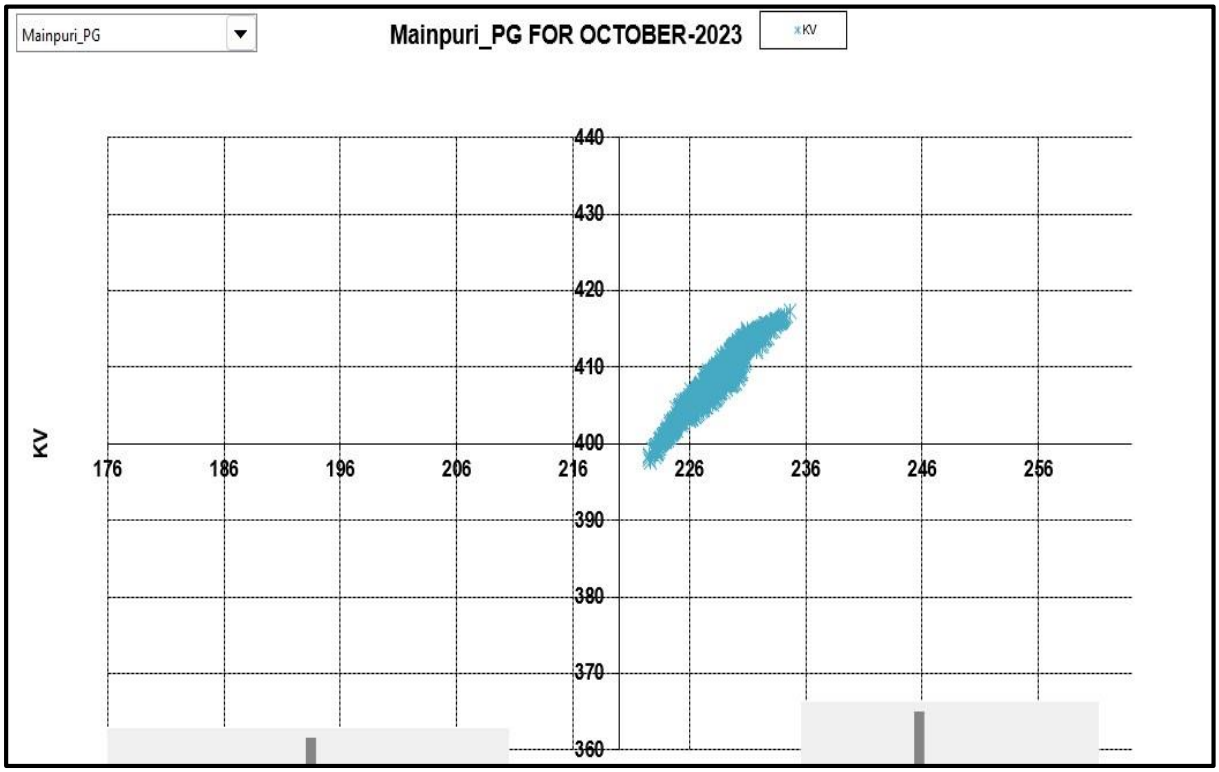
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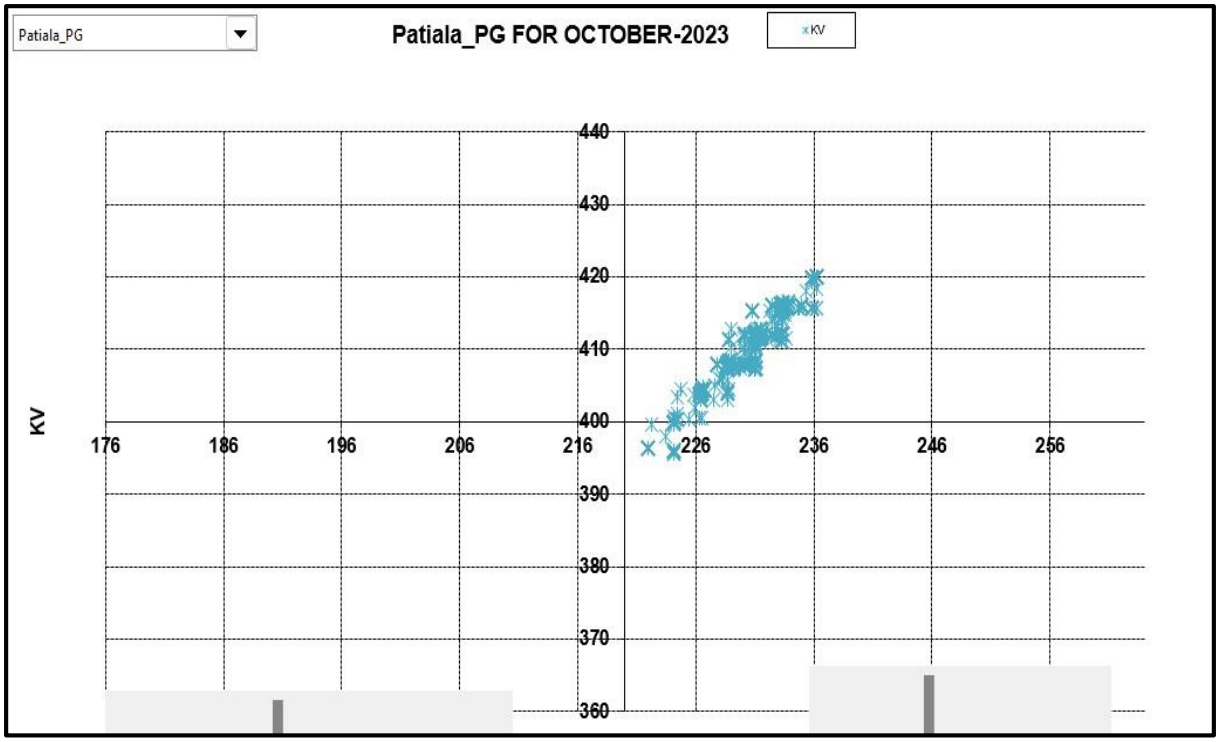
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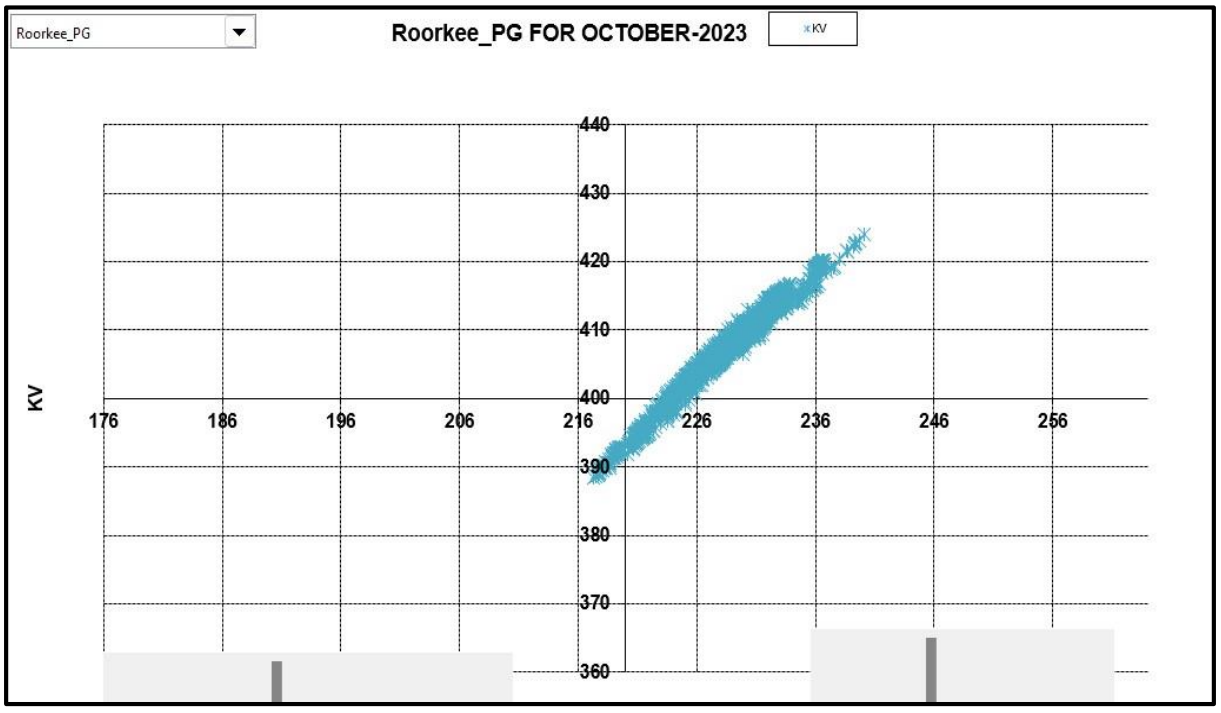
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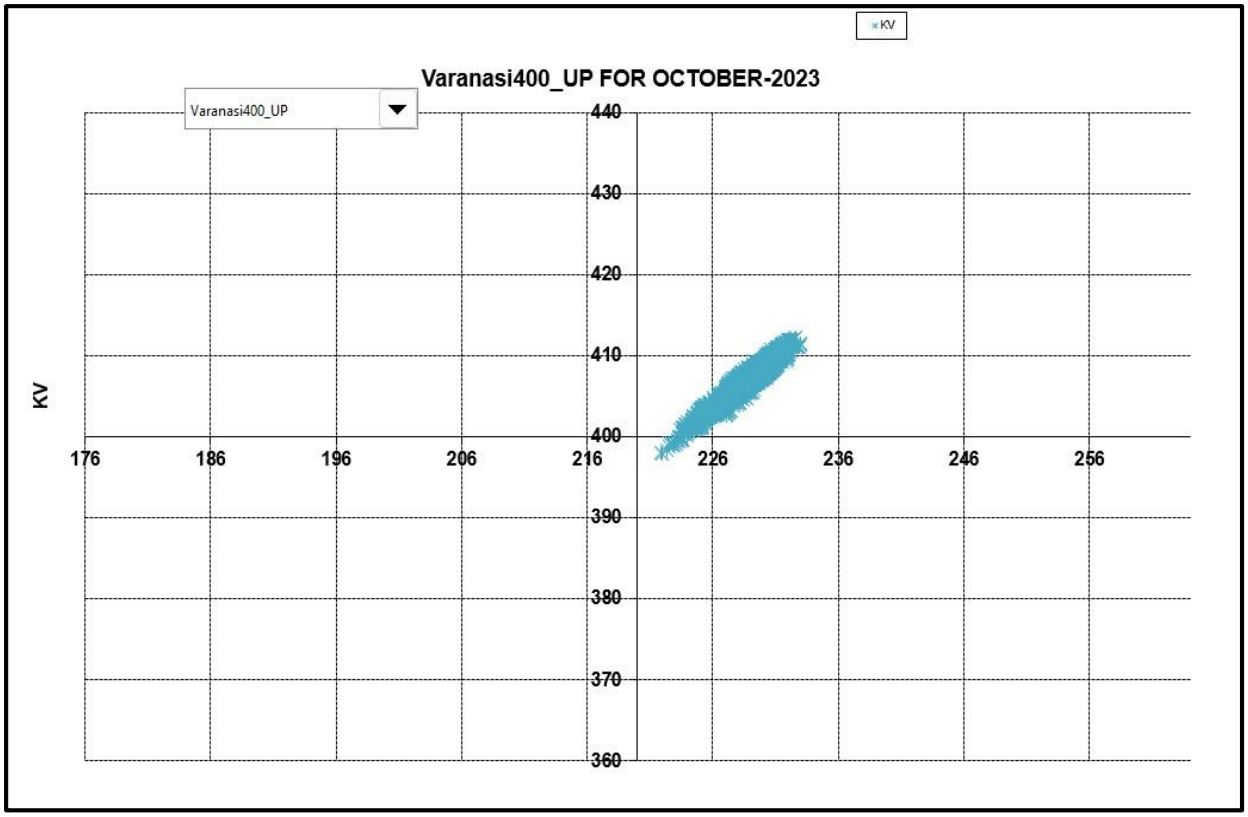
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Varanasi400_UP FOR OCTOBER-2023
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S.No.	Voltage Level	Name of Line	Circuit ID	Tower Configu	Line Length	O&M by	Agency at		Type of conductor	Replaced with Polymer Insulator	Remarks
							End-I	End-II			
1. HVDC lines											
ISTS LINES											
A. POWERGRID											
1	± 800kV	Agra-Bishwanath Chariali Pole-I	1	Bi-pole	1728	POWERGRID	POWERGRID	POWERGRID	Hexagon Lapwing	Partial (11%)	Interconnection between North East region & Northern Region (Multiterminal HVDC system,
2	± 800kV	Agra-Bishwanath Chariali Pole-II	2	Bi-pole	1728*	POWERGRID	POWERGRID	POWERGRID	Hexagon Lapwing	Partial (11%)	
3	± 800kV	Agra-Alipurduar Pole-I	1	Bi-pole	1296	POWERGRID	POWERGRID	POWERGRID		Partial (11%)	Interconnection between North East region & Northern Region
4	± 800kV	Agra-Alipurduar Pole-II	2	Bi-pole	1296*	POWERGRID	POWERGRID	POWERGRID		Partial (11%)	
5	± 800kV	Kurukshetra-Champa Pole-I	1	Bi-pole	1305	POWERGRID	POWERGRID	POWERGRID	Hexagon Lapwing	Partial (11%)	Interconnection between Western region & Northern Region
6	± 800kV	Kurukshetra-Champa Pole-II	2	Bi-pole	1305*	POWERGRID	POWERGRID	POWERGRID	Hexagon Lapwing	Partial (11%)	Interconnection between Western region & Northern Region
7	± 800kV	Kurukshetra-Champa Pole-III	3	Bi-pole	1305	POWERGRID	POWERGRID	POWERGRID	Hexagon Lapwing	Partial (11%)	Interconnection between Western region & Northern Region
8	± 800kV	Kurukshetra-Champa Pole-IV	4	Bi-pole	1305*	POWERGRID	POWERGRID	POWERGRID	Hexagon Lapwing	Partial (11%)	Interconnection between Western region & Northern Region
9	± 500kV	Balia-Bhiwadi Pole-I	1	Bi-pole	790	POWERGRID	POWERGRID	POWERGRID	ACSR Quad Bersimis	Partial (15%)	
10	± 500kV	Balia-Bhiwadi Pole-II	2	Bi-pole	790	POWERGRID	POWERGRID	POWERGRID		Partial (15%)	
11	± 500kV	Rihand-Dadri Pole-I	1	Bi-pole	815	POWERGRID	POWERGRID	POWERGRID	ACSR Quad Bersimis	Partial (62%)	
12	± 500kV	Rihand-Dadri Pole-II	2	Bi-pole	815	POWERGRID	POWERGRID	POWERGRID		Partial (43%)	
B. Adani Power Ltd (Adani Transmission India Ltd.)											
1	± 500kV	Adani Mundra - Mahindergarh Pole-I	1	Bi-pole	990	ATIL	APL Mundra	ATIL	ACSR Quad Bersimis	Partial (7%)	Interconnection between Western region &
2	± 500kV	Adani Mundra - Mahindergarh Pole-II	2	Bi-pole	990	ATIL	APL Mundra	ATIL		Partial (7%)	
2. 765kV Transmission Line											
ISTS LINES											
A. POWERGRID											
1	765kV	Agra-Aligarh	1	D/C	123	POWERGRID	POWERGRID	POWERGRID	Quad Bersimis	Polymer Insulator	Check the status of LILO portion??
2	765kV	Aligarh-Gr.Noida	2	D/C	51	POWERGRID	POWERGRID	WUPPTCL	Quad Bersimis	Polymer Insulator	
3	765kV	Agra-Fatehpur	1	S/C	335	POWERGRID	POWERGRID	POWERGRID	Quad Bersimis	Conventional	
4	765kV	Agra-Fatehpur	2	S/C	334	POWERGRID	POWERGRID	POWERGRID	Quad Bersimis	Conventional	
5	765kV	Agra-Jhatikara	1	S/C	252	POWERGRID	POWERGRID	POWERGRID	Quad Bersimis	Polymer Insulator	
6	765kV	Ajmer-Chittorgarh	1	D/C	211	POWERGRID	POWERGRID	POWERGRID	Hexa Zebra	Not Available	
7	765kV	Ajmer-Chittorgarh	2	D/C	211	POWERGRID	POWERGRID	POWERGRID	Hexa Zebra	Not Available	
8	765kV	Ajmer-Bhadla II	1	D/C	326	POWERGRID	POWERGRID	POWERGRID	Hexa Zebra	Not Available	
9	765kV	Ajmer-Bhadla II	2	D/C	326	POWERGRID	POWERGRID	POWERGRID	Hexa Zebra	Not Available	
10	765kV	Balia - Lucknow765 (N)	1	S/C	319	POWERGRID	POWERGRID	POWERGRID	Quad Bersimis	Conventional	
11	765kV	Bikaner - Bhadla	1	D/C	167	POWERGRID	POWERGRID	POWERGRID	Hexa Zebra	Not Available	
12	765kV	Bikaner - Bhadla	2	D/C	167	POWERGRID	POWERGRID	POWERGRID	Hexa Zebra	Not Available	
13	765kV	Bikaner- Moga	1	D/C	367	POWERGRID	POWERGRID	POWERGRID	Hexa Zebra	Not Available	
14	765kV	Bikaner- Moga	2	D/C	367	POWERGRID	POWERGRID	POWERGRID	Hexa Zebra	Not Available	
15	765kV	Bikaner-Bhadla II	1	D/C	197	POWERGRID	POWERGRID	POWERGRID	Hexa Zebra	Not Available	

16	765kV	Bikaner-Bhadla II	2	D/C	197	POWERGRID	POWERGRID	POWERGRID	Hexa Zebra	Not Available	
17	765kV	Kanpur(GIS)-Aligarh	1	D/C	322	POWERGRID	POWERGRID	POWERGRID	Quad Bersimis	Polymer Insulator	Check the status of LILO portion??
18	765kV	Aligarh-Jhatikara	1	D/C	158	POWERGRID	POWERGRID	POWERGRID	Quad Bersimis	Polymer Insulator	
19	765kV	Jhatikara-Bhiwani (PG)	1	S/C	85	POWERGRID	POWERGRID	POWERGRID	Quad Bersimis	Polymer Insulator	
20	765kV	Koteshwar(PG)-Meerut	1	S/C	176	POWERGRID	POWERGRID	POWERGRID	Quad Bersimis	Not Available	
21	765kV	Koteshwar(PG)-Meerut	2	S/C	176	POWERGRID	POWERGRID	POWERGRID	Quad Bersimis	Not Available	
22	765kV	Lucknow-Bareilly	1	S/C	252	POWERGRID	POWERGRID	POWERGRID	Quad Bersimis	Conventional	
23	765kV	Meerut-Bhiwani(PG)	1	S/C	174	POWERGRID	POWERGRID	POWERGRID	Quad Bersimis	Partial (99%)	
24	765kV	Meerut-Gr.Noida	1	S/C	119	POWERGRID	POWERGRID	WUPPTCL	Quad Bersimis	Polymer Insulator	
25	765kV	Moga- Bhiwani (PG)	1	S/C	273	POWERGRID	POWERGRID	POWERGRID	Quad Bersimis	Partial (96%)	
26	765kV	Moga-Meerut	1	S/C	338	POWERGRID	POWERGRID	POWERGRID	Quad Bersimis	Polymer Insulator	
27	765kV	Orai-Aligarh	1	D/C	331	POWERGRID	POWERGRID	POWERGRID	Hexa Zebra	Not Available	
28	765kV	Orai-Aligarh	2	D/C	331	POWERGRID	POWERGRID	POWERGRID	Hexa Zebra	Not Available	
29	765kV	Phagi-Bhiwani(PG)	1	S/C	272	POWERGRID	RRVPNL	POWERGRID	Quad Bersimis	Partial (18%)	
30	765kV	Phagi-Bhiwani(PG)	2	S/C	277	POWERGRID	RRVPNL	POWERGRID	Quad Bersimis	Partial (16%)	
31	765kV	Varanasi-Balia	1	S/C	166	POWERGRID	POWERGRID	POWERGRID	Quad Bersimis	Conventional	
32	765kV	Varanasi-Fatehpur	1	S/C	223	POWERGRID	POWERGRID	POWERGRID	Quad Bersimis	Conventional	
33	765kV	Varanasi-Kanpur(GIS)	1	S/C	326	POWERGRID	POWERGRID	POWERGRID	Hexa Zebra	Polymer Insulator	
34	765kV	Varanasi-Kanpur(GIS)	2	S/C	326	POWERGRID	POWERGRID	POWERGRID	Hexa Zebra	Polymer Insulator	
B. PKTSL											
1	765kV	Khetri-Jhatikara	1	D/C	146	PKTSL	PKTSL	POWERGRID	Hexa Zebra	Not Available	
2	765kV	Khetri-Jhatikara	2	D/C	146	PKTSL	PKTSL	POWERGRID	Hexa Zebra	Not Available	
C. PFTL											
1	765kV	Fatehgarh II-Bhadla II	1	D/C	186	PFTL	POWERGRID	POWERGRID	Hexa Zebra	Not Available	
2	765kV	Fatehgarh II-Bhadla II	2	D/C	186	PFTL	POWERGRID	POWERGRID	Hexa Zebra	Not Available	
D. FBTL											
1	765kV	Fatehgarh II-Bhadla	1	D/C	175	FBTL	POWERGRID	POWERGRID	Hexa Zebra	Not Available	
2	765kV	Fatehgarh II-Bhadla	2	D/C	175	FBTL	POWERGRID	POWERGRID	Hexa Zebra	Not Available	
E. BKTL											
1	765kV	Bikaner-Khetri	1	D/C	241	BKTL	POWERGRID	PKTSL	Hexa Zebra	Not Available	
2	765kV	Bikaner-Khetri	2	D/C	241	BKTL	POWERGRID	PKTSL	Hexa Zebra	Not Available	
F. PAPTL											
1	765kV	Ajmer-Phagi	1	D/C	134	PAPTL	POWERGRID	RRVPNL	Hexa Zebra	Not Available	
2	765kV	Ajmer-Phagi	2	D/C	134	PAPTL	POWERGRID	RRVPNL	Hexa Zebra	Not Available	
STATE LINES											
A. UPPTCL											
1	765kV	Agra Fatehabad-Ghatampur	1	S/C	229	UPPTCL	UPPTCL	UPPTCL	Quad Bersimis	Not Available	
2	765kV	Agra Fatehabad-Gr. Noida	1	S/C	159	UPPTCL	UPPTCL	UPPTCL	ACSR Quad Bersimis	Not Available	
3	765kV	Agra(Fatehbad)-Lalitpur	1	S/C	337	UPPTCL	UPPTCL	LPGCL	Quad Bersimis	Not Available	
4	765kV	Agra(Fatehbad)-Lalitpur	2	S/C	335	UPPTCL	UPPTCL	LPGCL	Quad Bersimis	Not Available	
5	765kV	AnparaC-AnparaD	1	S/C	3	UPPTCL	LANCO	UPRVUNL	Quad Bersimis	Not Available	

6	765kV	AnparaC-Unnao	1	S/C	409	UPPTCL	LANCO	UPPTCL	Quad Bersimis	Conventional	AnparaB-Unnao shifted to AnparaC and charged at 765kV
7	765kV	AnparaD-Obra_C	1	D/C	53	UPPTCL	UPRVUNL	UPPTCL	Quad Bersimis	Not Available	
8	765kV	Obra_C-Unnao	1	D/C	390	UPPTCL	UPRVUNL	UPPTCL	Quad Bersimis	Not Available	
9	765kV	Bara-Mainpuri	1	S/C	377	UPPTCL	UPPTCL	UPPTCL	Quad Bersimis	Not Available	
10	765kV	Gr. Noida-Meerut_PMSTL	1	S/C	100	UPPTCL	UPPTCL	UPPTCL	Quad Bersimis	Not Available	
11	765kV	Meerut_PMSTL-Hapur	1	S/C	37	UPPTCL	UPPTCL	UPPTCL	Quad Bersimis	Not Available	
12	765kV	Gr. Noida-Jawaharpur	1	D/C	162	UPPTCL	UPPTCL	UPPTCL	Quad Bersimis	Not Available	
13	765kV	Jawaharpur-Mainpuri	1	D/C	40	UPPTCL	UPPTCL	UPPTCL	Quad Bersimis	Not Available	
B. RRVPNL											
1	765kV	Anta-Phagi	1	S/C	214	RRVPNL	RRVPNL	RRVPNL	Quad Bersimis	Not Available	
2	765kV	Anta-Phagi	2	S/C	212	RRVPNL	RRVPNL	RRVPNL	Quad Bersimis	Not Available	
3. 765kV Transmission Line charged at 400kV											
ISTS LINES											
A. POWERGRID											
1	765kV charged at 400kV	Kishenpur-Moga	1	S/C	275	POWERGRID	POWERGRID	POWERGRID	Quad Bersimis	Partial (1%)	
2		Kishenpur-Moga	2	S/C	287	POWERGRID	POWERGRID	POWERGRID	Quad Bersimis	Partial (1%)	
3		Tehri-Koteshwar(PG)	1	S/C	15	POWERGRID	POWERGRID	POWERGRID	Quad Bersimis	Conventional	
4		Tehri-Koteshwar(PG)	2	S/C	17	POWERGRID	POWERGRID	POWERGRID	Quad Bersimis	Conventional	
5		Rihand-Vindhyachal Pool	1	S/C	31	POWERGRID	NTPC	POWERGRID	Quad Bersimis	Not Available	
6		Rihand-Vindhyachal Pool	2	S/C	31	POWERGRID	NTPC	POWERGRID	Quad Bersimis	Not Available	
4. 400kV HVAC Transmission Line											
ISTS LINES											
A. POWERGRID											
1	400kV	Abdullapur- Bawana	1	D/C	167	POWERGRID	POWERGRID	DTL	Triple Snowbird	Partial (99%)	
2	400kV	Abdullapur- Deepalpur	1	D/C	141	POWERGRID	POWERGRID	KT Jhajjar	Triple Snowbird	Partial (99%)	LILO of Abdullapur-Bawana one ckt at Deepalpur
3	400kV	Abdullapur-Kurukshetra	1	D/C	52	POWERGRID	POWERGRID	POWERGRID	Triple Snowbird+Twin HTLS for LILO	Polymer Insulator	LILO of Abdullapur-Sonepat ckts at Kurukshetra
4	400kV	Abdullapur-Kurukshetra	2	D/C	52	POWERGRID	POWERGRID	POWERGRID		Polymer Insulator	
5	400kV	Agra-Agra(Fatehbad)	1	S/C	45	POWERGRID	POWERGRID	UPPTCL	Twin Moose	Polymer Insulator	
6	400kV	Agra(UP)-Agra(Fatehbad)	1	S/C	56	POWERGRID	UPPTCL	UPPTCL	Twin Moose	Polymer Insulator	
7	400kV	Agra-Agra(UP)	1	D/C	30	POWERGRID	POWERGRID	UPPTCL	Twin Moose	Polymer Insulator	
8	400kV	Agra-Ballabgarh	1	S/C	181	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
9	400kV	Agra-Bassi	1	S/C	211	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Conventional	Planned for insulator replacement in 321nos towers under NR3
10	400kV	Agra-Bhiwadi	1	D/C	209	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
11	400kV	Agra-Bhiwadi	2	D/C	209	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
12	400kV	Agra-Jaipur South	1	D/C	254	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Partial (4%)	LILO of Agra-Bassi D/C at

13	400kV	Agra-Jaipur South	2	D/C	254	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Partial (4%)	Jaipur South
14	400kV	Agra-Sikar	1	D/C	386	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Partial (3%)	
15	400kV	Agra-Sikar	2	D/C	386	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Partial (3%)	
16	400kV	Ajmer-Ajmer(PG)	1	D/C	66	POWERGRID	RRVPNL	POWERGRID	Quad Moose	Not Available	
17	400kV	Ajmer-Ajmer(PG)	2	D/C	66	POWERGRID	RRVPNL	POWERGRID	Quad Moose	Not Available	
18	400kV	Allahabad-Fatehpur	3	S/C	154	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
19	400kV	Allahabad-Fatehpur	1	D/C	140	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Conventional	
20	400kV	Allahabad-Fatehpur	2	D/C	140	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Conventional	
21	400kV	Allahabad-Varanasi	1	D/C	99	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Conventional	
22	400kV	Allahabad-Kanpur	1	S/C	225	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
23	400kV	Allahabad-Kanpur(New 765)	1	D/C	240	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Not Available	
24	400kV	Allahabad-Kanpur(New 765)	2	D/C	240	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Not Available	
25	400kV	Allahabad-Meja(NTPC)	1	D/C	28	POWERGRID	POWERGRID	MUNPL	Twin Moose	Polymer Insulator	MUNPL is joint venture between NTPC and
26	400kV	Allahabad-Meja(NTPC)	2	D/C	28	POWERGRID	POWERGRID	MUNPL	Twin Moose	Polymer Insulator	
27	400kV	Amritsar-Jalandhar	1	S/C	60	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
28	400kV	Amritsar-Jalandhar	2	D/C	71	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	LILO of 400kV Amritsar-Hamirpur at Jalandhar
29	400kV	Amritsar-ParbatiPooling (Banala)	1	D/C	251	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Partial (49%)	
30	400kV	Auraiya-Agra	1	D/C	166	POWERGRID	NTPC	POWERGRID	Twin Moose	Partial (86%)	
31	400kV	Auraiya-Agra	2	D/C	166	POWERGRID	NTPC	POWERGRID	Twin Moose	Partial (90%)	
32	400kV	Baglihar II-Kishenpur	1	S/C	130	POWERGRID	JKSPDCL	POWERGRID	Twin Moose	Conventional	
33	400kV	Baghlihar II-New Wanpoh	1	S/C	130	POWERGRID	JKSPDCL	POWERGRID	Twin Moose	Not Available	
34	400kV	Bagpat-Kaithal	1	D/C	154	POWERGRID	POWERGRID	POWERGRID	Quad Moose	Polymer Insulator	
35	400kV	Bagpat-Kaithal	2	D/C	154	POWERGRID	POWERGRID	POWERGRID	Quad Moose	Polymer Insulator	
36	400kV	Bagpat-Saharanpur	1	D/C	121	POWERGRID	POWERGRID	POWERGRID	Quad Moose	Partial (41%)	
37	400kV	Bagpat-Dehradun	1	D/C	165	POWERGRID	POWERGRID	POWERGRID	Quad Moose	Partial (40%)	

38	400kV	Bahadurgarh-Kabulpur	1	S/C	42	POWERGRID	POWERGRID	HVPNL	Twin Moose	Polymer Insulator	LILO of Bahadurgarh-Bhiwani at Kabulpur
39	400kV	Bahadurgarh-Sonepat	1	D/C	53	POWERGRID	POWERGRID	POWERGRID	Triple Snowbird	Polymer Insulator	
40	400kV	Bahadurgarh-Sonepat	2	D/C	53	POWERGRID	POWERGRID	POWERGRID	Triple Snowbird	Polymer Insulator	
41	400kV	Balia-Mau	1	D/C	9	POWERGRID	POWERGRID	UPPTCL	Twin Moose	Conventional	
42	400kV	Balia-Sohawal	1	D/C	229	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Conventional	LILO of Balia-Lucknow (316 KM) D/C at Sohawal
43	400kV	Balia-Sohawal	2	D/C	229	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Conventional	LILO of Balia-Lucknow (316 KM) D/C at Sohawal
44	400kV	Ballabgarh-Tughlakabad	1	M/C	40	DTL	POWERGRID	POWERGRID	HTLS INVAR (LILO portion) & Bersimis (before LILO)	Not Available	
45	400kV	Ballabgarh-Tughlakabad	2	M/C	40	DTL	POWERGRID	POWERGRID		Not Available	
46	400kV	Ballabhgarh-Gurgaon	1	S/C	43	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
47	400kV	Ballabhgarh-Maharanibagh	1	D/C	61	POWERGRID	POWERGRID	POWERGRID	Quad Bersimis	Polymer Insulator	
48	400kV	Ballabhgarh-Nawada	1	D/C	13	POWERGRID	POWERGRID	HVPNL	Quad Bersimis	Polymer Insulator	Ballabhgarh-Gnoida LILOed at Nawada (Faridabad,Haryana)
49	400kV	Bareilly PG-Moradabad	1	D/C	93	POWERGRID	POWERGRID	UPPTCL	Twin Moose	Partial (3%)	
50	400kV	Bareilly PG-Rampur_PRSTL	1	S/C	40	POWERGRID	POWERGRID	UPPTCL	Twin Moose	Not Available	
51	400kV	Rampur_PRSTL-Moradabad	1	S/C	57	POWERGRID	UPPTCL	UPPTCL	Twin Moose	Not Available	
52	400kV	Bareilly PG-Bareilly (765kV)	1	D/C	2	POWERGRID	POWERGRID	POWERGRID	Quad Moose	Conventional	
53	400kV	Bareilly PG-Bareilly (765kV)	2	D/C	2	POWERGRID	POWERGRID	POWERGRID	Quad Moose	Conventional	
54	400kV	Bareilly PG(765kV)-Kashipur	1	D/C	101	POWERGRID	POWERGRID	PTCUL	Quad Moose	Partial (90%)	
55	400kV	Bareilly PG(765kV)-Kashipur	2	D/C	101	POWERGRID	POWERGRID	PTCUL	Quad Moose	Partial (90%)	
56	400kV	Bassi-Bhiwadi	2	S/C	220	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
57	400kV	Bassi-Heerapura	1	D/C	48	POWERGRID	POWERGRID	RRVPNL	Twin Moose	Polymer Insulator	
58	400kV	Bassi-Heerapura	2	D/C	49	POWERGRID	POWERGRID	RRVPNL	Twin Moose	Polymer Insulator	
59	400kV	Bassi-Kotputli	1	S/C	106	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
60	400kV	Bassi-Phagi	1	D/C	48	POWERGRID	POWERGRID	RRVPNL	Quad Moose	Partial (26%)	
61	400kV	Bassi-Phagi	2	D/C	48	POWERGRID	POWERGRID	RRVPNL	Quad Moose	Partial (26%)	
62	400kV	Bassi-Sikar	1	D/C	170	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Partial (16%)	
63	400kV	Bassi-Sikar	2	D/C	170	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Partial (17%)	
64	400kV	Bawana(CCGT)-Bahadurgarh	1	D/C	49	POWERGRID	DTL/Pragati CCGT	POWERGRID	Twin Moose	Polymer Insulator	
65	400kV	Bhadla-Bhadla(PG)	1	D/C	27	POWERGRID	RRVPNL	POWERGRID	Quad Moose	Not Available	
66	400kV	Bhadla-Bhadla(PG)	2	D/C	27	POWERGRID	RRVPNL	POWERGRID	Quad Moose	Not Available	
67	400kV	Bhadla-Bhadla II	1	D/C	52	POWERGRID	POWERGRID	POWERGRID	Twin HTLS+Hexa Zebra	Not Available	
68	400kV	Bhadla-Bhadla II	2	D/C	52	POWERGRID	POWERGRID	POWERGRID	Twin HTLS+Hexa Zebra	Not Available	
69	400kV	Bhinmal-Kankroli	1	D/C	202	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
70	400kV	Bhiwadi-Gurgaon	1	S/C	83	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
71	400kV	Bhiwadi-Hissar	1	S/C	212	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	

72	400kV	Bhiwadi-Hissar	2	D/C	144	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	LILO of Bhiwadi-Moga both ckts at Hisar
73	400kV	Bhiwadi-Hissar	3	D/C	144	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
74	400kV	Bhiwadi-NeemranaPG	1	D/C	48	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
75	400kV	Bhiwadi-NeemranaPG	2	D/C	48	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
76	400kV	Bhiwani BBMB - Hissar	1	S/C	35	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
77	400kV	Bhiwani (PG) - Hissar	1	S/C	64	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	LILO of Bawana-Hisar (132KM) at Bhiwani PG
78	400kV	Bhiwani (PG) - Hissar	2	D/C	57	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
79	400kV	Bhiwani (PG) - Hissar	3	D/C	57	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
80	400kV	Bhiwani PG - Jind	1	D/C	82	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
81	400kV	Bhiwani PG - Jind	2	D/C	82	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
82	400kV	Bhiwani PG- BawanaCCGT	1	D/C	97	POWERGRID	POWERGRID	DTL/ CCGT	Twin Moose	Polymer Insulator	LILO of Bawana-Hisar (132KM) at Bhiwani PG
83	400kV	Bhiwani PG- Bhiwani BBMB	1	S/C	34	POWERGRID	POWERGRID	BBMB	Twin Moose	Polymer Insulator	LILO of Bhiwani (BBMB)-Bahadurgarh (84km) at Bhiwani (PG)
84	400kV	Bhiwani PG-Kabulpur	1	S/C	48	POWERGRID	POWERGRID	HVPNL	Twin Moose	Polymer Insulator	LILO of Bahadurgarh-Bhiwani at Kabulpur
85	400kV	Chamba pool - Jalandhar	1	D/C	162	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Partial (48%)	
86	400kV	Chamba pool - Jalandhar	2	D/C	162	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Partial (48%)	
87	400kV	Chamera-II - Chamba Pool	1	S/C	0.38	POWERGRID	NHPC	POWERGRID	Twin Moose	Conventional	Two tower is S/C and one tower is D/C
88	400kV	Chamera-II-Chamera-I	1	S/C	36	POWERGRID	NHPC	NHPC	Twin Moose	Conventional	
89	400kV	Chamera-II-Kishenpur	1	S/C	135	POWERGRID	NHPC	POWERGRID	Twin Moose	Conventional	
90	400kV	Chamera-I-Jalandhar	1	D/C	152	POWERGRID	NHPC	POWERGRID	Twin ACAR	Partial (43%)	
91	400kV	Chamera-I-Jalandhar	2	D/C	152	POWERGRID	NHPC	POWERGRID	Twin ACAR	Partial (43%)	
92	400kV	Chittorgarh-Chittorgarh(PG)	1	D/C	49	POWERGRID	RRVPNL	POWERGRID	Quad Moose	Not Available	
93	400kV	Chittorgarh-Chittorgarh(PG)	2	D/C	49	POWERGRID	RRVPNL	POWERGRID	Quad Moose	Not Available	
94	400kV	Chittorgarh-Kankroli	1	D/C	71	POWERGRID	RRVPNL	POWERGRID	Twin Moose	Polymer Insulator	LILO of 400 kV Rapp C-Kankroli at Chhitorgarh
95	400kV	Dadri NCTPP-G. Noida	1	D/C	13	POWERGRID	NTPC	UPPCL	Quad Bersimis	Polymer Insulator	
96	400kV	Dadri NCTPP-Maharanibagh	1	D/C	54	POWERGRID	NTPC	POWERGRID	Quad Bersimis	Polymer Insulator	
97	400kV	Dadri NCTPP-Kaithal	1	S/C	213	POWERGRID	NTPC	POWERGRID	Twin Moose	Polymer Insulator	
98	400kV	Dadri NCTPP-Mandola	1	D/C	46	POWERGRID	NTPC	POWERGRID	Quad Bersimis	Polymer Insulator	
99	400kV	Dadri NCTPP-Mandola	2	D/C	46	POWERGRID	NTPC	POWERGRID	Quad Bersimis	Polymer Insulator	
100	400kV	Dadri NCTPP-Muradnagar New	1	S/C	33	POWERGRID	NTPC	UPPTCL	Twin Moose	Polymer Insulator	Line shifted from Muradnagar to Muradnagar New (UPPTCL)
101	400kV	Dadri NCTPP-Panipat	1	S/C	112	POWERGRID	NTPC	BBMB	Twin Moose	Polymer Insulator	
102	400kV	Dadri NCTPP-Panipat	2	S/C	117	POWERGRID	NTPC	BBMB	Twin Moose	Polymer Insulator	
103	400kV	Deepalpur-Bawana	1	D/C	26	POWERGRID	KT-Jhajjar	DTL	Triple Snowbird	Polymer Insulator	

104	400kV	Dehradun-Abdullapur	1	D/C	89	POWERGRID	POWERGRID	POWERGRID	Quad Moose	Not Available	
105	400kV	Dehradun-Abdullapur	2	D/C	89	POWERGRID	POWERGRID	POWERGRID	Quad Moose	Not Available	
106	400kV	Dulhasti-Kishenpur	1	S/C	120	POWERGRID	NHPC	POWERGRID	Quad Moose	Conventional	
107	400kV	Dulhasti-Kishenpur	2	S/C	120	POWERGRID	NHPC	POWERGRID	Quad Moose	Conventional	
108	400kV	Dwarka-Jhatikara	1	S/C	18	POWERGRID	POWERGRID	POWERGRID	Twin HTLS	Not Available	
109	400kV	Dwarka-Bamnauli	1	S/C	10	POWERGRID	POWERGRID	DTL	Twin HTLS	Not Available	
110	400kV	Fatehbad PG-Hissar	1	D/C	89	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
111	400kV	Fatehpur-Kanpur	1	S/C	100	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	LILO of Singrauli-Kanpur at Fatehpur
112	400kV	Fatehpur-Kanpur	2	S/C	107	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Partial (64%)	LILO of Allahabad-Kanpur one ckt at Fatehpur
113	400kV	Fatehpur-Mainpuri	1	D/C	260	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Conventional	LILO of Allahabad-Mainpuri (363 KM) D/C at Fatehpur
114	400kV	Fatehpur-Mainpuri	2	D/C	260	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Conventional	
115	400kV	G.Noida-Nawada	1	D/C	30	POWERGRID	UPPTCL	HVPNL	Quad Bersimis	Polymer Insulator	Ballabhgarh-Gnoida LILOed at Nawada (Faridabad,Haryana)
116	400kV	Gorakhpur PG-Gorakhpur UP	1	D/C	46	POWERGRID	POWERGRID	UPPCL	Twin Moose	Polymer Insulator	Partial Planning has been completed
117	400kV	Gorakhpur PG-Gorakhpur UP	2	D/C	46	POWERGRID	POWERGRID	UPPCL	Twin Moose	Polymer Insulator	Partial Planning has been completed
118	400kV	Gorakhpur PG-Lucknow PG	1	D/C	264	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Partial (3%)	At crossing
119	400kV	Gorakhpur PG-Lucknow PG	2	D/C	264	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Partial (3%)	At crossing
120	400kV	Gorakhpur PG-Basti (UP)	1	D/C	117	POWERGRID	POWERGRID	UPPTCL	Twin Moose	Not Available	
121	400kV	Gorakhpur PG-Basti (UP)	2	D/C	108	POWERGRID	POWERGRID	UPPTCL	Twin Moose	Not Available	
122	400kV	Basti (UP)-Lucknow PG	1	D/C	204	POWERGRID	UPPTCL	POWERGRID	Twin Moose	Not Available	
123	400kV	Gurgaon-Sohna Road	1	D/C	7	POWERGRID	POWERGRID	GPTL	Quad Moose	Not Available	
124	400kV	Gurgaon-Sohna Road	2	D/C	7	POWERGRID	POWERGRID	GPTL	Quad Moose	Not Available	
125	400kV	Hamirpur-ParbatiPooling (Banala)	1	D/C	77	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Conventional	LILO of Amritsar-Banala-1 at Hamirpur
126	400kV	Jaipur South-Bassi	1	D/C	37	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	LILO of Agra-Bassi D/C at

127	400kV	Jaipur South-Bassi	2	D/C	37	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	Jaipur South
128	400kV	Jaipur South-Kota	1	D/C	180	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Not Available	
129	400kV	Jaipur South-RAPP D	1	D/C	228	POWERGRID	POWERGRID	NPCIL	Twin Moose	Not Available	
130	400kV	Jalandhar-Nakodar	1	D/C	42	POWERGRID	POWERGRID	PSTCL	Quad Moose	Polymer Insulator	
131	400kV	Jalandhar-Hamirpur	1	D/C	135	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Partial (43%)	LILO of 400kV Amritsar-Hamirpur at Jalandhar
132	400kV	Kaithal-Hissar	1	D/C	113	POWERGRID	POWERGRID	POWERGRID	Triple Snowbird	LILO of Patiala-Hissar at Kaithal	
133	400kV	Kaithal-Hissar	2	D/C	113	POWERGRID	POWERGRID	POWERGRID	Triple Snowbird	LILO of Patiala-Hissar at Kaithal	
134	400kV	Kaithal-Malerkotla	1	S/C	135	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
135	400kV	Kankroli-Jodhpur	1	S/C	188	POWERGRID	POWERGRID	RRVPNL	Twin Moose	Conventional	
136	400kV	Kanpur-Agra	1	S/C	240	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Conventional	
137	400kV	Kanpur-Auraiya	1	D/C	73	POWERGRID	POWERGRID	NTPC	Twin Moose	Conventional	
138	400kV	Kanpur-Auraiya	2	D/C	73	POWERGRID	POWERGRID	NTPC	Twin Moose	Conventional	
139	400kV	Kanpur-Ballabgarh	1	S/C	386	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	*Series Compensated,Ckt 1-35%, Ckt-2 & 3-40%
140	400kV	Kanpur-Ballabgarh	2	D/C	371	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	*Series Compensated,Ckt 1-35%, Ckt-2 & 3-40%
141	400kV	Kanpur-Ballabgarh	3	D/C	371	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	*Series Compensated,Ckt 1-35%, Ckt-2 & 3-40%
142	400kV	Kanpur-Panki	1	S/C	6	POWERGRID	POWERGRID	UPPTCL	Twin Moose	Polymer Insulator	
143	400kV	Kanpur-Panki	2	S/C	6	POWERGRID	POWERGRID	UPPTCL	Twin Moose	Polymer Insulator	
144	400kV	Kanpur-Kanpur(GIS)	1	D/C	21	POWERGRID	POWERGRID	POWERGRID	Quad Moose	Polymer Insulator	
145	400kV	Kanpur-Kanpur(GIS)	2	D/C	21	POWERGRID	POWERGRID	POWERGRID	Quad Moose	Polymer Insulator	
146	400kV	Kanpur(GIS)-Lucknow(765)	1	D/C	160	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Not Available	
147	400kV	Kanpur(GIS)-Lucknow(765)	2	D/C	160	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Not Available	
148	400kV	Kishenpur-NewWanpoh	1	D/C	130	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Conventional	
149	400kV	Kishenpur-NewWanpoh	3	D/C	135	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Conventional	
150	400kV	Kishenpur-NewWanpoh	4	D/C	135	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Not Available	
151	400kV	Kishenpur-Samba	1	D/C	35	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Not Available	
152	400kV	Kishenpur-Samba	2	D/C	35	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Conventional	
153	400kV	Kota-Merta	1	D/C	256	POWERGRID	POWERGRID	RRVPNL	Twin Moose	Conventional	
154	400kV	Kotputli-Bhiwadi	1	S/C	132	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	LILO of Bassi-Bhiwadi-2 at Kotputli
155	400kV	Kurukshetra-Jind	1	D/C	103	POWERGRID	POWERGRID	POWERGRID	Quad Moose	Not Available	
156	400kV	Kurukshetra-Jind	2	D/C	103	POWERGRID	POWERGRID	POWERGRID	Quad Moose	Not Available	
157	400kV	Kurukshetra-Sonipat	1	D/C	125	POWERGRID	POWERGRID	POWERGRID	Triple Snowbird (Twin HTLS for LILOportion)	Partial (99%)	LILO of Abdullapr-Sonepat ckts at Kurukshetra
158	400kV	Kurukshetra-Sonipat	2	D/C	125	POWERGRID	POWERGRID	POWERGRID		Partial (99%)	
159	400kV	Kurukshetra-Jalandhar	1	D/C	267	POWERGRID	POWERGRID	POWERGRID	Quad Moose	Polymer Insulator	
160	400kV	Kurukshetra-Nakodar	1	D/C	234	POWERGRID	POWERGRID	PSTCL	Quad Moose	Polymer Insulator	
161	400kV	Lucknow-Basti	1	D/C	203	POWERGRID	POWERGRID	UPPTCL	Twin Moose	Not Available	
162	400kV	Lucknow-Basti	2	D/C	203	POWERGRID	POWERGRID	UPPTCL	Twin Moose	Not Available	
163	400kV	Lucknow PG-Lucknow UP	1	S/C	63	POWERGRID	POWERGRID	UPPTCL	Twin Moose	Conventional	
164	400kV	Lucknow PG-Unnao	1	D/C	74	POWERGRID	POWERGRID	UPPTCL	Twin Moose	Conventional	
165	400kV	Lucknow PG-Unnao	2	D/C	74	POWERGRID	POWERGRID	UPPTCL	Twin Moose	Conventional	
166	400kV	Lucknow UP-Bareilly PG	1	S/C	279	POWERGRID	UPPTCL	POWERGRID	Twin Moose	Conventional	

167	400kV	765 Lucknow (PG) - Lucknow (PG)	1	D/C	3	POWERGRID	POWERGRID	POWERGRID	Quad Moose	Polymer Insulator	
168	400kV	765 Lucknow (PG) - Lucknow (PG)	2	D/C	3	POWERGRID	POWERGRID	POWERGRID	Quad Moose	Polymer Insulator	
169	400kV	LucknowPG-Sohawal	1	D/C	98	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Conventional	LILO of Balia-Lucknow (316 KM) D/C at Sohawal
170	400kV	LucknowPG-Sohawal	2	D/C	98	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Conventional	
171	400kV	Lucknow PG-Shahjahanpur	1	D/C	170	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Partial (10%)	
172	400kV	Lucknow PG-Shahjahanpur	2	D/C	170	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Partial (10%)	
173	400kV	Lucknow-Jehta	1	D/C	32	POWERGRID	POWERGRID	UPPTCL	Twin Moose	Not Available	
174	400kV	Lucknow-Jehta	2	D/C	32	POWERGRID	POWERGRID	UPPTCL	Twin Moose	Not Available	
175	400kV	Ludhiana-Jalandhar	1	S/C	85	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
176	400kV	Ludhiana-Malerkotla	1	S/C	36	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
177	400kV	Ludhiana-Patiala	1	D/C	76	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
178	400kV	Ludhiana-Patiala	2	D/C	76	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
179	400kV	Mainpuri-Ballabgarh	1	D/C	236	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
180	400kV	Mainpuri-Ballabgarh	2	D/C	236	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
181	400kV	Malerkotla-Patiala	1	S/C	62	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
182	400kV	Manesar- Sohna Road	1	D/C	17	POWERGRID	POWERGRID	GPTL	Quad Moose	Not Available	
183	400kV	Manesar- Sohna Road	2	D/C	17	POWERGRID	POWERGRID	GPTL	Quad Moose	Not Available	
184	400kV	Mandola-Maharanibagh	1	D/C	29	POWERGRID	POWERGRID	POWERGRID	Twin HTLS	Not Available	
185	400kV	Mandola-Maharanibagh	2	D/C	29	POWERGRID	POWERGRID	POWERGRID	Twin HTLS	Not Available	
186	400kV	Maharanibagh-Bawana	1	D/C	29	POWERGRID	POWERGRID	DTL	Twin HTLS	Not Available	
187	400kV	Maharanibagh-Bawana	2	D/C	29	POWERGRID	POWERGRID	DTL	Twin HTLS	Not Available	
188	400kV	Meerut-Bagpat	1	D/C	71	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
189	400kV	Meerut-Bagpat	2	D/C	71	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
190	400kV	Meerut-Mandola	1	D/C	60	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
191	400kV	Meerut-Mandola	2	D/C	60	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
192	400kV	Meerut-Muzzafarnagar	1	S/C	37	POWERGRID	POWERGRID	UPPTCL	Twin Moose	Polymer Insulator	
193	400kV	Moga-Fatehabad	1	D/C	179	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
194	400kV	Moga-Hissar	1	D/C	209	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
195	400kV	Moga-Hissar	2	D/C	206	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	LILO of Bhiwadi-Moga both ckts at Hisar
196	400kV	Moga-Hissar	3	D/C	206	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
197	400kV	Moga-Jalandhar	1	D/C	85	POWERGRID	POWERGRID	POWERGRID	Twin ACAR	Polymer Insulator	
198	400kV	Moga-Jalandhar	2	D/C	85	POWERGRID	POWERGRID	POWERGRID	Twin ACAR	Polymer Insulator	
199	400kV	Muradnagar-Hapur	1	S/C	28	POWERGRID	UPPTCL	UPPTCL	Twin Moose	Not Available	
200	400kV	Moradabad-Hapur	2	S/C	109	POWERGRID	UPPTCL	UPPTCL	Twin Moose	Not Available	
201	400kV	Nallagarh-Koldam	1	D/C	46	POWERGRID	POWERGRID	NTPC	Quad Moose	Conventional	Koldam to Parbati pool section is of PKTCL & rest is of POWERGRID
202	400kV	Nallagarh-Patiala	1	D/C	94	POWERGRID	POWERGRID	POWERGRID	Triple Snowbird	Polymer Insulator	
203	400kV	Nallagarh-Patiala	2	D/C	94	POWERGRID	POWERGRID	POWERGRID	Triple Snowbird	Polymer Insulator	
204	400kV	Nathpa Jhakri-Gumma	1	D/C	55	POWERGRID	SJVNL	HPPTCL	Triple Snowbird	Not Available	
205	400kV	Nathpa Jhakri-Gumma	2	D/C	55	POWERGRID	SJVNL	HPPTCL	Triple Snowbird	Not Available	
206	400kV	Gumma-Panchkula	1	D/C	112	POWERGRID	HPPTCL	POWERGRID	Triple Snowbird	Not Available	
207	400kV	Gumma-Panchkula	2	D/C	112	POWERGRID	HPPTCL	POWERGRID	Triple Snowbird	Not Available	
208	400kV	Nathpa Jhakri-RampurHEP	1	D/C	21	POWERGRID	SJVNL	SJVNL	Triple Snowbird	Conventional	LILO of Jhakri-Nalagarh-1 at RampurHEP
209	400kV	Nathpa Jhakri-RampurHEP	2	D/C	21	POWERGRID	SJVNL	SJVNL	Triple Snowbird	Conventional	

210	400kV	NeemranaPG-Manesar	1	D/C	67	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
211	400kV	NeemranaPG-Manesar	2	D/C	67	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
212	400kV	NeemranaPG-Babai	1	D/C	85	POWERGRID	POWERGRID	RRVPNL	Twin Moose	Not Available	LILO of 400kV Neemrana-Sikar at Babai by NRSSXXXVI (Essel group):
213	400kV	NeemranaPG-Sikar	2	D/C	176	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Not Available	
214	400kV	NewWanpoh-Wagoora	1	D/C	57	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Conventional	
215	400kV	NewWanpoh-Wagoora	2	D/C	57	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Conventional	
216	400kV	Orai(PG)-Orai	1	D/C	42	POWERGRID	POWERGRID	UPPTCL	Quad Moose	Not Available	
217	400kV	Orai(PG)-Orai	2	D/C	42	POWERGRID	POWERGRID	UPPTCL	Quad Moose	Not Available	
218	400kV	Panchkula -Abdullapur	1	D/C	63	POWERGRID	POWERGRID	POWERGRID	Triple Snowbird	Polymer Insulator	LILO of Jhakri-Abdullapur at Panchkula
219	400kV	Panchkula -Abdullapur	2	D/C	63	POWERGRID	POWERGRID	POWERGRID	Triple Snowbird	Polymer Insulator	LILO of Jhakri-Abdullapur at Panchkula
220	400kV	Patiala-Panchkula	1	D/C	65	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
221	400kV	Patiala-Panchkula	2	D/C	65	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Polymer Insulator	
222	400kV	Patiala-Patran	1	D/C	79	POWERGRID	POWERGRID	POWERGRID	Triple Snowbird	Polymer Insulator	LILO of 400 kV Kaithal-Patiala-D/C at Patran. LILO portion is of Patran Transmission Company
223	400kV	Patiala-Patran	2	D/C	79	POWERGRID	POWERGRID	POWERGRID	Triple Snowbird	Polymer Insulator	
224	400kV	Patran-Kaithal	1	D/C	47	POWERGRID	POWERGRID	POWERGRID	Triple Snowbird	Polymer Insulator	
225	400kV	Patran-Kaithal	2	D/C	47	POWERGRID	POWERGRID	POWERGRID	Triple Snowbird	Polymer Insulator	
226	400kV	RampurHEP-Nallagarh	1	D/C	128	POWERGRID	SJVNL	POWERGRID	Triple Snowbird	Conventional	LILO of Jhakri-Nalagarh-1 at RampurHEP
227	400kV	RampurHEP-Nallagarh	2	D/C	128	POWERGRID	SJVNL	POWERGRID	Triple Snowbird	Conventional	
228	400kV	RAPS-C-Chittorgarh	1	D/C	155	POWERGRID	NPCIL	RRVPNL	Twin Moose	Partial (38%)	LILO of 400 kV Rapp C-Kankroli at Chhitorgarh
229	400kV	RAPS-C-Kankroli	1	D/C	199	POWERGRID	NPCIL	POWERGRID	Twin Moose	Partial (51%)	
230	400kV	RAPS-C-Kota	1	S/C	51	POWERGRID	NPCIL	POWERGRID	Twin Moose	Partial (55%)	400kV RAPS-Jaipur line whose work was completed till Kota section is connected with 400kV
231	400kV	RAPS-C-Kota	2	D/C	55	POWERGRID	NPCIL	POWERGRID	Twin Moose	Not Available	
232	400kV	Rasra-Balia	1	S/C	46	POWERGRID	UPPTCL	POWERGRID	Twin Moose	Not Available	
233	400kV	Rasra-Mau	1	S/C	38	POWERGRID	UPPTCL	UPPTCL	Twin Moose	Not Available	
234	400kV	Rihand-Allahabad	1	D/C	279	POWERGRID	NTPC	POWERGRID	Twin Moose	Conventional	
235	400kV	Rihand-Allahabad	2	D/C	279	POWERGRID	NTPC	POWERGRID	Twin Moose	Conventional	
236	400kV	Roorkee-Kashipur	1	D/C	151	POWERGRID	POWERGRID	PTCUL	Quad Moose	Partial (72%)	
237	400kV	Roorkee-Kashipur	2	D/C	151	POWERGRID	POWERGRID	PTCUL	Quad Moose	Partial (72%)	
238	400kV	Roorkee-Saharanpur	1	D/C	36	POWERGRID	POWERGRID	POWERGRID	Quad Moose	Polymer Insulator	
239	400kV	Roorkee-Dehradun	1	D/C	80	POWERGRID	POWERGRID	POWERGRID	Quad Moose	Partial (50%)	
240	400kV	Sarnath-Varanasi	1	D/C	70	POWERGRID	UPPTCL	POWERGRID	Quad Moose	Partial (52%)	LILO of Sarnath-Allahabad (144 KM) at 765/400kV Varanasi
241	400kV	Sarnath-Varanasi	2	D/C	107	POWERGRID	UPPTCL	POWERGRID	Quad Moose	Partial (52%)	
242	400kV	Shahjahanpur-Bareilly PG	1	D/C	116	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Conventional	
243	400kV	Shahjahanpur-Bareilly PG	2	D/C	116	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Conventional	
244	400kV	Shahjahanpur-Rosa	1	D/C	8	POWERGRID	POWERGRID	UPPCL	Twin Moose	Not Available	
245	400kV	Shahjahanpur-Rosa	2	D/C	8	POWERGRID	POWERGRID	UPPCL	Twin Moose	Not Available	
246	400kV	Shree Cement-Kota	1	D/C	208	POWERGRID	Sh. Cement	POWERGRID	Twin Moose	Polymer Insulator	
247	400kV	Shree Cement-Merta	2	D/C	103	POWERGRID	Sh. Cement	RRVPNL	Twin Moose	Polymer Insulator	
248	400kV	Sikar-Babai	1	D/C	95	POWERGRID	POWERGRID	RRVPNL	Twin Moose	Not Available	
249	400kV	Sikar-Ratangarh	1	D/C	76	POWERGRID	POWERGRID	RRVPNL	Twin Moose	Conventional	
250	400kV	Sikar-Ratangarh	2	D/C	76	POWERGRID	POWERGRID	RRVPNL	Twin Moose	Conventional	
251	400kV	Singrauli-Allahabad	1	S/C	224	POWERGRID	NTPC	POWERGRID	Twin Moose	Conventional	

252	400kV	Singrauli-Allahabad	2	S/C	202	POWERGRID	NTPC	POWERGRID	Twin Moose	Conventional	
253	400kV	Singrauli-Allahabad	3	S/C	215	POWERGRID	NTPC	POWERGRID	Twin Moose	Not Available	
254	400kV	Singrauli-Anpara	1	S/C	25	POWERGRID	NTPC	UPPTCL	Twin Moose	Partial (91%)	
255	400kV	Singrauli-Fatehpur	1	S/C	331	POWERGRID	NTPC	POWERGRID	Twin Moose	Conventional	LILO of Singrauli-Kanpur at Fatehpur
256	400kV	Singrauli-LucknowUP	1	S/C	409	POWERGRID	NTPC	UPPTCL	Twin Moose	Conventional	
257	400kV	Singrauli-Rihand	1	S/C	42	POWERGRID	NTPC	NTPC	Twin Moose	Conventional	
258	400kV	Singrauli-Rihand	2	S/C	44	POWERGRID	NTPC	NTPC	Twin Moose	Conventional	
259	400kV	Singrauli-Vindhyachal	1	S/C	3	POWERGRID	NTPC	POWERGRID	Twin Moose	Conventional	
260	400kV	Singrauli-Vindhyachal	2	S/C	5	POWERGRID	NTPC	POWERGRID	Twin Moose	Conventional	
261	400kV	Koteswar(PG)-Koteswar(THDC)	1	D/C	3	POWERGRID	POWERGRID	THDC	Twin Moose	Conventional	
262	400kV	Koteswar(PG)-Koteswar(THDC)	2	D/C	3	POWERGRID	POWERGRID	THDC	Twin Moose	Conventional	
263	400kV	Tehri-Koteshwar(PG)	3	S/C	14	POWERGRID	POWERGRID	POWERGRID	Quad Moose	Not Available	
264	400kV	Unnao-Jehta	1	D/C	70	POWERGRID	UPPTCL	UPPTCL	Twin Moose	Not Available	
265	400kV	Unnao-Jehta	2	D/C	70	POWERGRID	UPPTCL	UPPTCL	Twin Moose	Not Available	
266	400kV	Uri-I - Amargarh	1	D/C	62	NRSS-29	NHPC	NRSS-29	Twin Moose	Conventional	LILO of 400kV Uri-I - Wagoora D/C at Amargarh
267	400kV	Uri-I - Amargarh	2	D/C	62	NRSS-29	NHPC	NRSS-29	Twin Moose	Conventional	
268	400kV	Amargarh - Wagoora	1	D/C	36	NRSS-29	NRSS-29	POWERGRID	Twin Moose	Conventional	
269	400kV	Amargarh - Wagoora	2	D/C	36	NRSS-29	NRSS-29	POWERGRID	Twin Moose	Conventional	
270	400kV	Uri-II - Uri-I	1	S/C	10	POWERGRID	NHPC	NHPC	Twin Moose	Conventional	
271	400kV	Uri-II - Wagoora	1	S/C	105	POWERGRID	NHPC	POWERGRID	Twin Moose	Conventional	
272	400kV	Jauljivi-Bareilly_2	1	D/C	205	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Not Available	
273	400kV	Jauljivi-Bareilly_2	2	D/C	205	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Not Available	
B. POWERLINK Transmission Ltd											
1	400kV	Bareilly PG-Meerut	1	D/C	250	POWERLINK	POWERGRID	POWERGRID	Twin Moose	Conventional	LILO of Bareilly PG-Mandola-1 (241 Km) at
2	400kV	Bareilly PG-Meerut	2	D/C	250	POWERLINK	POWERGRID	POWERGRID	Twin Moose	Conventional	
3	400kV	Bareilly UP-Bareilly PG	1	D/C	14	POWERLINK	UPPTCL	POWERGRID	Twin Moose	Polymer Insulator	
4	400kV	Bareilly UP-Bareilly PG	2	D/C	14	POWERLINK	UPPTCL	POWERGRID	Twin Moose	Polymer Insulator	
5	400kV	Gorakhpur PG-Lucknow PG	1	D/C	246	POWERLINK	POWERGRID	POWERGRID	Twin Moose	Conventional	*Series compensated line (30%)
6	400kV	Gorakhpur PG-Lucknow PG	2	D/C	246	POWERLINK	POWERGRID	POWERGRID	Twin Moose	Conventional	
7	400kV	Meerut-Mandola	3	D/C	102	POWERLINK	POWERGRID	POWERGRID	Twin Moose	Conventional	LILO of Bareilly PG-Mandola-1&2 (241 Km) at
8	400kV	Meerut-Mandola	4	D/C	102	POWERLINK	POWERGRID	POWERGRID	Twin Moose	Conventional	
C. PKTSL											
1	400kV	Khetri-Sikar	1	D/C	78	PKTSL	PKTSL	POWERGRID	Twin HTLS	Not Available	
2	400kV	Khetri-Sikar	2	D/C	78	PKTSL	PKTSL	POWERGRID	Twin HTLS	Not Available	
D. Adani Transmission India Ltd.											
1	400kV	Mahindergarh (APL)-Bhiwani PG	1	D/C	50	ATIL	APL	POWERGRID	Twin Moose	Conventional	
2	400kV	Mahindergarh (APL)-Bhiwani PG	2	D/C	50	ATIL	APL	POWERGRID	Twin Moose	Conventional	
3	400kV	Mahindergarh (APL)-Bhiwani PG	3	D/C	56	ATIL	APL	POWERGRID	Twin Moose	Not Available	
4	400kV	Mahindergarh (APL)-Bhiwani PG	4	D/C	56	ATIL	APL	POWERGRID	Twin Moose	Not Available	
5	400kV	MahindergarhHVDC-Dhanonda	1	D/C	5	ATIL	APL	HVPNL	Quad Moose	Conventional	
6	400kV	MahindergarhHVDC-Dhanonda	2	D/C	5	ATIL	APL	HVPNL	Quad Moose	Conventional	
E. APCPL (Aravali Power Corporation Pvt Ltd.)											
1	400kV	Jhajjar (IGSTPS)-Mundka	1	D/C	66	APCPL	APCPL	DTL	Twin Moose	Conventional	
2	400kV	Jhajjar (IGSTPS)-Mundka	2	D/C	66	APCPL	APCPL	DTL	Twin Moose	Conventional	
F. PHTL (Powergrid Himachal Transmission Limited)											
1	400kV	Abdullapur-Kala Amb	1	D/C	39	PHTL	POWERGRID	PKATL	Quad Moose	Conventional	

2	400kV	Abdullapur-Kala Amb	2	D/C	39	PHTL	POWERGRID	PKATL	Quad Moose	Conventional	
3	400kV	Kala Amb- Wangtoo (HP)	1	D/C	174	PHTL	PKATL	HPPTCL	Quad Moose	Not Available	
4	400kV	Karcham Wangtoo - Wangtoo (HP)	1	D/C	1	PHTL	JSW	HPPTCL	Quad Moose	Not Available	
5	400kV	Karcham Wangtoo - Wangtoo (HP)	2	D/C	1	PHTL	JSW	HPPTCL	Quad Moose	Not Available	
6	400kV	Baspa-Karcham Wangtoo	1	D/C	22	PHTL	JPVL	JSW	Triple snowbird	Conventional	
7	400kV	Baspa-Karcham Wangtoo	2	D/C	22	PHTL	JPVL	JSW	Triple snowbird	Conventional	
8	400kV	Karcham Wangtoo-NJPC	1	D/C	34	PHTL	JSW	SJVNL	Triple snowbird	Conventional	
9	400kV	Karcham Wangtoo-NJPC	2	D/C	34	PHTL	JSW	SJVNL	Triple snowbird	Conventional	
10	400kV	Sorang-Wangtoo	1	S/C	21	PHTL	SORANG	HPPTCL	Quad Moose	Not Available	
11	400kV	Sorang-Kala Amb	1	S/C	160	PHTL	SORANG	PKATL	Quad Moose	Not Available	
G. PKTCL (Parbati-Koldam Transmission)											
1	400kV	Koldam-Ludhiana	1	D/C	151	PKTCL	NTPC	POWERGRID	Triple Snowbird	Not Available	
2	400kV	Koldam-Ludhiana	2	D/C	151	PKTCL	NTPC	POWERGRID	Triple Snowbird	Not Available	
3	400kV	Koldam-Banala	1	D/C	62	PKTCL	NTPC	POWERGRID	Quad Moose	Not Available	
4	400kV	Nallagarh-Banala	1	D/C	121	PKTCL	POWERGRID	POWERGRID	Quad Moose	Not Available	Powergrid owned 46.38km
5	400kV	Parbati-II- ParbatiPooling (Banala)	1	D/C	13	PKTCL	NHPC	POWERGRID	Quad Moose	Not Available	Some portion is of
6	400kV	Parbati-III- ParbatiPooling (Banala)	2	S/C	4	PKTCL	NHPC	POWERGRID	Quad Moose	Not Available	Powergrid
7	400kV	Parbati II- Sainj	1	D/C	1	PKTCL	NHPC	HPPCL	Quad Moose	Not Available	LILO of 400kV Parbati II-
8	400kV	Parbati III- Sainj	1	D/C	12	PKTCL	NHPC	HPPCL	Quad Moose	Not Available	Parbati III at Sainj
H. INDIGRID:NRSS-29 Transmission Company Limited											
1	400kV	Jalandhar-Samba	1	D/C	135	NRSS-29	POWERGRID	POWERGRID	Twin Moose	Not Available	
2	400kV	Jalandhar-Samba	2	D/C	135	NRSS-29	POWERGRID	POWERGRID	Twin Moose	Not Available	
3	400kV	Amargarh-Samba	1	D/C	286	NRSS-29	NRSS-29	POWERGRID	Twin Moose	Not Available	
4	400kV	Amargarh-Samba	2	D/C	286	NRSS-29	NRSS-29	POWERGRID	Twin Moose	Not Available	
I. Powergrid Unchahar Transmission Ltd.											
1	400kV	Fatehpur-Unchahar	1	D/C	54	PUTL	POWERGRID	NBPPL	Twin Moose	Not Available	
2	400kV	Fatehpur-Unchahar	2	D/C	54	PUTL	POWERGRID	NBPPL	Twin Moose	Not Available	
J. NRSSXXXI(B) (Sekura Energy)											
1	400kV	Amritsar-Malerkotla	1	D/C	149	NRSSXXXI(B)	POWERGRID	POWERGRID	Twin Moose	Not Available	
2	400kV	Amritsar-Malerkotla	2	D/C	149	NRSSXXXI(B)	POWERGRID	POWERGRID	Twin Moose	Not Available	
3	400kV	Kurukshetra-Malerkotla	1	D/C	139	NRSSXXXI(B)	POWERGRID	POWERGRID	Twin Moose	Not Available	
4	400kV	Kurukshetra-Malerkotla	2	D/C	139	NRSSXXXI(B)	POWERGRID	POWERGRID	Twin Moose	Not Available	
K. Gurgaon Palwal Transmission Ltd.											
1	400kV	Dhanoda-Neemrana	1	D/C	54	GPTL	HVPNL	POWERGRID	Twin HTLS	Not Available	
2	400kV	Dhanoda-Neemrana	2	D/C	54	GPTL	HVPNL	POWERGRID	Twin HTLS	Not Available	
3	400kV	Prithala-Kadarpur	1	D/C	29	GPTL	GPTL	GPTL	Twin HTLS	Not Available	
4	400kV	Prithala-Kadarpur	2	D/C	29	GPTL	GPTL	GPTL	Twin HTLS	Not Available	
5	400kV	Prithala(GPTL)-Aligarh(PG)	1	D/C	49	GPTL	GPTL	POWERGRID	Twin HTLS	Not Available	
6	400kV	Prithala(GPTL)-Aligarh(PG)	2	D/C	49	GPTL	GPTL	POWERGRID	Twin HTLS	Not Available	
7	400kV	Kadarpur-Sohna Road	1	D/C	10	GPTL	GPTL	GPTL	Twin HTLS	Not Available	
8	400kV	Kadarpur-Sohna Road	2	D/C	10	GPTL	GPTL	GPTL	Twin HTLS	Not Available	
L. FBTL											
1	400kV	AREPRL-Fatehgarh Pooling	1	D/C	1	FBTL	FBTL	FBTL	Quad moose	Not Available	
2	400kV	AREPRL-Fatehgarh Pooling	2	D/C	1	FBTL	FBTL	FBTL	Quad moose	Not Available	
3	400kV	Fatehgarh II-Fatehgarh Pooling	1	D/C	45	FBTL	POWERGRID	FBTL	Hexa Zebra+ Twin HTLS	Not Available	
4	400kV	Fatehgarh II-Fatehgarh Pooling	2	D/C	45	FBTL	POWERGRID	FBTL	Hexa Zebra+ Twin HTLS	Not Available	
RE Connected at ISTS Dedicated Lines											
A. RENEW											
1	400kV	Bikaner(PG) - Bikaner (Renew)	1	S/C	5	RENEW	POWERGRID	RENEW	Twin Moose	Not Available	

B. Avaada											
1	400kV	Bikaner(PG)-Avaada	1	S/C	14	AEPL	POWERGRID	AEPL	Twin Moose	Not Available	
C. APFTL											
1	400kV	Bikaner(PG)-APFTPL(RSS)	1	S/C	12	APFTPL	PGCIL	RSS	ACSR Twin Moose+AL 59	Not Available	
D. Azure											
1	400kV	Bikaner(PG)-Azure 43 PSS	1	S/C	9	Azure	POWERGRID	Azure 43	Twin Moose	Not Available	
2	400kV	Bikaner(RSS)-Azure 43 PSS	1	S/C	3	Azure	RSS	Azure 43	Twin Moose	Not Available	
E. RSRPL											
1	400kV	Bikaner(RENEW) - Renew Surya Ravi	1	S/C	13	RSRPL	RENEW	RSRPL	Twin Moose	Not Available	
F. NTPC											
1	400kV	Bhadla II - Kolayat	1	D/C	29	NTPC	POWERGRID	NTPC	Quad Moose	Not Available	
2	400kV	Kolayat - Kolayat_2	1	D/C	2	NTPC	NTPC	NTPC	Quad Moose	Not Available	
STATE LINES											
A. DTL											
1	400kV	Bamnauli-Tughlakabad	1	M/C	68	DTL	DTL	POWERGRID		Not Available	
2	400kV	Bamnauli-Tughlakabad	2	M/C	68	DTL	DTL	POWERGRID		Not Available	
3	400kV	Bamnoli-Jhatikara	1	D/C	12	DTL	DTL	POWERGRID	Quad bersimis	Polymer Insulator	
4	400kV	Bamnoli-Jhatikara	2	D/C	12	DTL	DTL	POWERGRID	Quad bersimis	Polymer Insulator	
5	400kV	Bawana-Mundka	1	D/C	18	DTL	DTL	DTL	Quad bersimis	Polymer Insulator	
6	400kV	Bawana-Mundka	2	D/C	18	DTL	DTL	DTL	Quad bersimis	Polymer Insulator	
7	400kV	Jhatikara-Mundka	1	D/C	17	DTL	POWERGRID	DTL	Quad bersimis	Polymer Insulator	
8	400kV	Jhatikara-Mundka	2	D/C	17	DTL	POWERGRID	DTL	Quad bersimis	Polymer Insulator	
B. HVPNL											
1	400kV	CLP Jhajjar -Dhanonda	1	D/C	20	HVPNL	CLP Jhajjar	HVPNL	Twin Moose	Conventional	
2	400kV	CLP Jhajjar -Dhanonda	2	D/C	20	HVPNL	CLP Jhajjar	HVPNL	Twin Moose	Conventional	
3	400kV	CLP Jhajjar- Kabulpur	1	D/C	35	JKTPL	CLP Jhajjar	HVPNL	Quad Moose	Conventional	
4	400kV	CLP Jhajjar- Kabulpur	2	D/C	35	JKTPL	CLP Jhajjar	HVPNL	Quad Moose	Conventional	
5	400kV	Deepalpur-Kabulpur	1	D/C	67	JKTPL	KT Jhajjar	HVPNL	Quad Moose	Conventional	
6	400kV	Deepalpur-Kabulpur	2	D/C	67	JKTPL	KT Jhajjar	HVPNL	Quad Moose	Conventional	
7	400kV	Dhanoda-Daultabad	1	D/C	73	HVPNL	HVPNL	HVPNL	Quad Moose	Conventional	
8	400kV	Dhanoda-Daultabad	2	D/C	73	HVPNL	HVPNL	HVPNL	Quad Moose	Conventional	
9	400kV	Gurgaon-Daultabad	1	D/C	21	HVPNL	POWERGRID	HVPNL	Quad Moose	Conventional	Six towers multi-circuit with Bamnauli-Ballabhgarh.
10	400kV	Gurgaon-Daultabad	2	D/C	21	HVPNL	POWERGRID	HVPNL	Quad Moose	Conventional	
11	400kV	Jhajjar-Daulatabad	1	D/C	64	HVPNL	APCPL	HVPNL	Twin Moose	Conventional	
12	400kV	Jhajjar-Daulatabad	2	D/C	64	HVPNL	APCPL	HVPNL	Twin Moose	Conventional	
13	400kV	Khedar-Fatehabad	1	D/C	40	HVPNL	HPGCL	POWERGRID	Twin Moose	Conventional	
14	400kV	Jind-Kirori	1	D/C	51	HVPNL	POWERGRID	HVPNL	Twin Moose	Not Available	
15	400kV	Jind-Kirori	2	D/C	51	HVPNL	POWERGRID	HVPNL	Twin Moose	Not Available	
16	400kV	Khedar-Kirori	1	D/C	6.2	HVPNL	HPGCL	HVPNL	Twin Moose	Conventional	
17	400kV	Khedar-Kirori	2	D/C	6	HVPNL	HPGCL	HVPNL	Twin Moose	Conventional	
18	400kV	Khedar-Nuhiawali	1	D/C	114	HVPNL	HPGCL	HVPNL	Twin Moose	Polymer Insulator	
19	400kV	Nuhiawali-Fatehabad	1	D/C	78	HVPNL	HVPNL	POWERGRID	Twin Moose	Antifog	
C. PDD (Jammu & Kashmir)											
1	400kV	Baglihar(stage 1)-Kishenpur	1	D/C	68	JK PDD	JKSPDCL	POWERGRID	Twin Moose	Conventional	
2	400kV	Baglihar(stage 1)-Kishenpur	2	D/C	68	JK PDD	JKSPDCL	POWERGRID	Twin Moose	Not Available	
D. PSTCL											
1	400kV	Behman Jassa- HMEL	1	D/C	17	PSTCL	PSTCL	PSTCL	Twin Moose	Not Available	
2	400kV	Behman Jassa- HMEL	2	D/C	17	PSTCL	PSTCL	PSTCL	Twin Moose	Not Available	

3	400kV	Behman Jassa- Moga	1	S/C	113	PSTCL	PSTCL	PSTCL	Twin Moose	Not Available	
4	400kV	Makhu-Amritsar	1	D/C	64	PSTCL	PSTCL	PSTCL	Twin Moose	Partial (10%)	
5	400kV	Makhu-Amritsar	2	D/C	64	PSTCL	PSTCL	PSTCL	Twin Moose	Partial (10%)	
6	400kV	Muktsar-Makhu	1	D/C	96	PSTCL	PSTCL	PSTCL	Twin Moose	Conventional	
7	400kV	Muktsar-Makhu	2	D/C	96	PSTCL	PSTCL	PSTCL	Twin Moose	Conventional	
8	400kV	Nakodar-Makhu	1	D/C	52	PSTCL	PSTCL	PSTCL	Twin Moose	Conventional	
9	400kV	Nakodar-Makhu	2	D/C	52	PSTCL	PSTCL	PSTCL	Twin Moose	Conventional	
10	400kV	Nakodar-Moga	1	S/C	78	PSTCL	PSPCL	POWERGRID	Twin Moose	Not Available	LILO of 400kV Talwandi sabo-Nakodar at Moga
11	400kV	Rajpura-Dhuri	1	D/C	86	PSTCL	PSTCL	PSTCL	Twin Moose	Conventional	Lilo of Rajpura th-Dhuri 1 at 400kV Rajpura
12	400kV	Rajpura TPS- Rajpura	1	D/C	9	PSTCL	PSPCL	PSTCL	Twin Moose	Conventional	
13	400kV	Rajpura-Dhuri	2	D/C	86	PSTCL	PSTCL	PSTCL	Twin Moose	Conventional	Lilo of Rajpura th-Dhuri 2 at 400kV Rajpura
14	400kV	Rajpura TPS- Rajpura	2	D/C	9	PSTCL	PSPCL	PSTCL	Twin Moose	Not Available	
15	400kV	Rajpura TPS-Nakodar	1	D/C	139	PSTCL	PSPCL	PSTCL	Twin Moose	Conventional	
16	400kV	Rajpura TPS-Nakodar	2	D/C	139	PSTCL	PSPCL	PSTCL	Twin Moose	Conventional	
17	400kV	Talwandi Saboo- Dhuri	1	D/C	175	PSTCL	PSPCL	PSTCL	Twin Moose	Partial (22%)	
18	400kV	Talwandi Saboo- Dhuri	2	D/C	175	PSTCL	PSPCL	PSTCL	Twin Moose	Partial (22%)	
19	400kV	Talwandi Saboo- Behman Jassa	1	D/C	20	PSTCL	PSPCL	PSTCL	Twin Moose	Not Available	
20	400kV	Talwandi Saboo- Nakodar	1	D/C	180	PSTCL	PSPCL	PSTCL	Twin Moose	Conventional	
21	400kV	Talwandi Saboo- Muktsar	1	D/C	100	PSTCL	PSPCL	PSTCL	Twin Moose	Conventional	
22	400kV	Talwandi Saboo- Muktsar	2	D/C	100	PSTCL	PSPCL	PSTCL	Twin Moose	Conventional	
E. PTCUL											
1	400kV	Alaknanda(GVK)-Srinagar(PTCUL)	1	D/C	14	PTCUL	GVKPIL	PTCUL	Twin Moose	Conventional	
2	400kV	Alaknanda(GVK)-Srinagar(PTCUL)	2	D/C	14	PTCUL	GVKPIL	PTCUL	Twin Moose	Conventional	
3	400kV	Muradabad-Kashipur	1	S/C	108	PTCUL	UPPTCL	PTCUL	Twin Moose	Conventional	
4	400kV	Rishikesh-Nehtaur	1	D/C	124	PTCUL	PTCUL	UPPTCL	Twin Moose	Not Available	LILO of 400kV Rishikesh-Kashipur (LILO portion
5	400kV	Nehtaur-Kashipur	2	D/C	80	PTCUL	UPPTCL	PTCUL	Twin Moose	Not Available	
6	400kV	Roorkee-Rishikesh	1	S/C	50	PTCUL	POWERGRID	PTCUL	Twin Moose	Not Available	
F. RRVPNL											
1	400kV	Ajmer-Bhilwara	1	D/C	160	RRVPNL	RRVPNL	RRVPNL	Twin Moose	Not Available	
2	400kV	Ajmer-Bhilwara	2	D/C	160	RRVPNL	RRVPNL	RRVPNL	Twin Moose	Not Available	
3	400kV	Akal-Barmer	1	S/C	124	RRVPNL	RRVPNL	RRVPNL	Twin Moose	Conventional	
4	400kV	Akal-Jodhpur	1	S/C	225	RRVPNL	RRVPNL	RRVPNL	Twin Moose	Conventional	
5	400kV	Akal-Ramgarh	1	D/C	99	RRVPNL	RRVPNL	RRVPNL	Twin Moose	Not Available	
6	400kV	Akal-Ramgarh	2	D/C	99	RRVPNL	RRVPNL	RRVPNL	Twin Moose	Not Available	
7	400kV	Anta-Chhabra	1	S/C	90	RRVPNL	RRVPNL	RVUNL	Quad Moose	Not Available	
8	400kV	Anta-Chhabra SC	1	D/C	89	RRVPNL	RRVPNL	RVUNL	Quad Moose	Not Available	
9	400kV	Anta-Chhabra SC	2	D/C	89	RRVPNL	RRVPNL	RVUNL	Quad Moose	Not Available	
10	400kV	Anta-Kalisindh	1	D/C	80	RRVPNL	RRVPNL	RVUNL	Quad Moose	Not Available	
11	400kV	Anta-Kalisindh	2	D/C	80	RRVPNL	RRVPNL	RVUNL	Quad Moose	Not Available	
12	400kV	Anta-Kawai	1	D/C	50	RRVPNL	RRVPNL	Kawai(Adani)	Quad Moose	Not Available	
13	400kV	Anta-Kawai	2	D/C	50	RRVPNL	RRVPNL	Kawai(Adani)	Quad Moose	Not Available	

14	400kV	Anta-Kota (PG)	1	S/C	91	RRVPNL	RRVPNL	POWERGRID	Twin Moose	Not Available	
15	400kV	Barmer-Bhinmal	1	D/C	144	RRVPNL	RRVPNL	POWERGRID	Twin Moose	Not Available	
16	400kV	Barmer-Bhinmal	2	D/C	144	RRVPNL	RRVPNL	POWERGRID	Twin Moose	Not Available	
17	400kV	Barmer-Jaisalmer-II (Bhaesada)	1	D/C	117	RRVPNL	RRVPNL	RRVPNL	Twin Moose	Not Available	
18	400kV	Barmer-Jaisalmer-II (Bhaesada)	2	D/C	117	RRVPNL	RRVPNL	RRVPNL	Twin Moose	Not Available	
19	400kV	Barmer-Rajwest	1	D/C	15	RRVPNL	RRVPNL	RAJWEST	Twin Moose	Conventional	
20	400kV	Bhadla-Jodhpur	1	D/C	106	RRVPNL	RRVPNL	RRVPNL	Twin Moose	Not Available	
21	400kV	Bhilwara-Chhabra	1	S/C	303	RRVPNL	RRVPNL	RVUNL	Twin Moose	Conventional	
22	400kV	Bhilwara-Chittorgarh(RRVPNL)	1	D/C	49	RRVPNL	RRVPNL	RRVPNL	Twin Moose	Not Available	
23	400kV	Bhilwara-Chittorgarh(RRVPNL)	2	D/C	49	RRVPNL	RRVPNL	RRVPNL	Twin Moose	Not Available	
24	400kV	Bikaner(PG)765-Bhadla(RRVPNL)	1	D/C	174	RRVPNL	POWERGRID	RRVPNL	Quad Moose	Not Available	
25	400kV	Bikaner(PG)765-Bikaner(RRVPNL)	1	D/C	33	RRVPNL	POWERGRID	RRVPNL	Quad Moose	Not Available	
26	400kV	Bikaner-Bhadla	1	D/C	189	RRVPNL	RRVPNL	RRVPNL	Quad Moose	Not Available	
27	400kV	Bikaner-Merta	1	S/C	172	RRVPNL	RRVPNL	RRVPNL	Twin Moose	Not Available	
28	400kV	Bikaner-Sikar(PG)	1	D/C	171	RRVPNL	RRVPNL	POWERGRID	Twin Moose	Not Available	
29	400kV	Bikaner-Sikar(PG)	2	D/C	171	RRVPNL	RRVPNL	POWERGRID	Twin Moose	Not Available	
30	400kV	Chhabra - Kawai SCTPS	1	S/C	45	RRVPNL	RVUNL	APRL	Twin Moose	Conventional	
31	400kV	Chhabra-Chhabra SC	1	D/C	2	RRVPNL	RRVPNL	RVUNL	Quad Moose	Not Available	
32	400kV	Chhabra-Chhabra SC	2	D/C	2	RRVPNL	RRVPNL	RVUNL	Quad Moose	Not Available	
33	400kV	Heerapura-Hindaun	1	S/C	192	RRVPNL	RRVPNL	RRVPNL	Twin Moose	Conventional	
34	400kV	Hindaun-Chhabra	1	S/C	305	RRVPNL	RRVPNL	RVUNL	Twin Moose	Conventional	
35	400kV	Kakani (Jodhpur New)-Jodhpur	2	S/C	102	RRVPNL	RRVPNL	RRVPNL	Twin Moose	Not Available	
36	400kV	Kankani (Jodhpur New)-Akal	1	D/C	223	RRVPNL	RRVPNL	RRVPNL	Quad Moose	Not Available	
37	400kV	Kankani(Jodhpur New)-Jaisalmer-II(Bhainsra)	1	D/C	177	RRVPNL	RRVPNL	RRVPNL	Quad Moose	Not Available	
38	400kV	Jaisalmer-II(Bhainsra)-Akal	1	D/C	61	RRVPNL	RRVPNL	RRVPNL	Quad Moose	Not Available	
39	400kV	Kankani (Jodhpur New)-Jodhpur	1	S/C	67	RRVPNL	RRVPNL	RRVPNL	Twin Moose	Not Available	
40	400kV	Kankani (Jodhpur New)-Merta	1	S/C	140	RRVPNL	RRVPNL	RRVPNL	Twin Moose	Not Available	
41	400kV	Merta-Bhadla	1	D/C	175	RRVPNL	RRVPNL	RRVPNL	Twin Moose	Not Available	
42	400kV	Merta-Heerapura	1	S/C	175	RRVPNL	RRVPNL	RRVPNL	Twin Moose	Conventional	
43	400kV	Merta-Ratangarh	1	S/C	173	RRVPNL	RRVPNL	RRVPNL	Twin Moose	Conventional	
44	400kV	Phagi-Ajmer(RRVPNL)	1	D/C	109	RRVPNL	RRVPNL	RRVPNL	Twin Moose	Not Available	
45	400kV	Phagi-Ajmer(RRVPNL)	2	D/C	109	RRVPNL	RRVPNL	RRVPNL	Twin Moose	Not Available	
46	400kV	Phagi-Heerapura	1	D/C	52	RRVPNL	RRVPNL	RRVPNL	Quad Moose	Not Available	
47	400kV	Phagi-Heerapura	2	D/C	52	RRVPNL	RRVPNL	RRVPNL	Quad Moose	Not Available	
48	400kV	Rajwest - Kankani (Jodhpur New)	1	S/C	209	RRVPNL	RRVPNL	RRVPNL	Twin Moose	Not Available	
49	400kV	Rajwest-Jodhpur	1	D/C	209	RRVPNL	RWPL	RRVPNL	Twin Moose	Conventional	
50	400kV	Ramgarh-Bhadla	1	D/C	160	RRVPNL	RRVPNL	RRVPNL	Twin Moose	Not Available	
51	400kV	Ramgarh-Bhadla	2	D/C	160	RRVPNL	RRVPNL	RRVPNL	Twin Moose	Not Available	

52	400kV	Suratgarh-Bikaner	1	S/C	146	RRVPNL	RVUNL	RRVPNL	Twin Moose	Conventional	
53	400kV	Suratgarh-Ratangarh	1	S/C	144	RRVPNL	RVUNL	RRVPNL	Twin Moose	Conventional	
54	400kV	Suratgarh-Ratangarh	2	S/C	144	RRVPNL	RVUNL	RRVPNL	Twin Moose	Conventional	
55	400kV	Suratgarh-Suratgarh SC	1	S/C	2	RRVPNL	RVUNL	RVUNL	Quad Moose	Not Available	
56	400kV	Suratgarh SC-Bikaner	1	D/C	140	RRVPNL	RVUNL	RRVPNL	Twin Moose	Not Available	
57	400kV	Suratgarh SC-Bikaner	2	D/C	140	RRVPNL	RVUNL	RRVPNL	Twin Moose	Not Available	
G. UPPTCL											
1	400kV	Agra (Fatehbad)-Agra South	1	D/C	70	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Not Available	
2	400kV	Agra (UP)-Agra(Fatehbad)	1	S/C	104	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Not Available	LILO of 400 kV Agra(UP)-Muradnagar(N) at Fatehabad(UP)
3	400kV	Agra UP-Unnao	1	S/C	279	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Partial (25%)	
4	400kV	Agra(Fatehbad)-Mathura	1	S/C	142	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Not Available	
5	400kV	Agra(Fatehbad)-Mathura	2	D/C	151	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Not Available	LILO of 400 kV Fatehabad(UP)-Muradnagar at Mathura
6	400kV	Alakhnanda-Vishnuprayag	1	D/C	109	UPPTCL	GVKPIL	JPVL	Twin Moose	Not Available	
7	400kV	Aligarh-Mainpuri	1	D/C	93	UPPTCL	UPPTCL	UPPTCL	Quad Moose	Not Available	
8	400kV	Aligarh-Mainpuri	2	D/C	93	UPPTCL	UPPTCL	UPPTCL	Quad Moose	Not Available	
9	400kV	Aligarh-Muradnagar	1	S/C	177	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Not Available	*Series Compensated line (40%). It would be shifted
10	400kV	Aligarh-Sikandrabad	1	D/C	95	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Not Available	
11	400kV	Aligarh-Harduaganj	1	S/C	40	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Not Available	
12	400kV	AnparaB-AnparaC	1	D/C	0.05	UPPTCL	UPRVUNL	LANCO	Quad Moose	Conventional	
13	400kV	AnparaB-AnparaC	2	D/C	0.05	UPPTCL	UPRVUNL	LANCO	Quad Moose	Conventional	
14	400kV	AnparaB-AnparaD	1	D/C	5	UPPTCL	UPRVUNL	UPPTCL	Twin Moose	Not Available	
15	400kV	AnparaB-AnparaD	2	D/C	5	UPPTCL	UPRVUNL	UPPTCL	Twin Moose	Not Available	
16	400kV	AnparaB-Mau	1	S/C	262	UPPTCL	UPRVUNL	UPPTCL	Twin Moose	Partial (13%)	
17	400kV	AnparaB-Obra B	1	S/C	40	UPPTCL	UPRVUNL	UPPTCL	Twin Moose	Partial	
18	400kV	AnparaB-Sarnath	1	D/C	158	UPPTCL	UPRVUNL	UPPTCL	Twin Moose	Partial	
19	400kV	AnparaB-Sarnath	2	D/C	158	UPPTCL	UPRVUNL	UPPTCL	Twin Moose	Conventional	
20	400kV	Ataur-Hapur	1	D/C	52	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Not Available	
21	400kV	Ataur-Hapur	2	D/C	52	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Not Available	
22	400kV	Ataur-Indirapuram	1	D/C	15	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Not Available	
23	400kV	Ataur-Indirapuram	2	D/C	15	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Not Available	
24	400kV	Azamgarh-Mau	1	S/C	48	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Partial (79%)	
25	400kV	Azamgarh-Tanda	1	D/C	153	UPPTCL	UPPTCL	NTPC	Twin Moose	Not Available	
26	400kV	Badaun-Sambhal	1	D/C	77	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Not Available	
27	400kV	Badaun-Sambhal	2	D/C	77	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Not Available	
28	400kV	Banda-Orai	1	D/C	108	UPPTCL	UPPTCL	UPPTCL	Quad Moose	Not Available	
29	400kV	Banda-Orai	2	D/C	108	UPPTCL	UPPTCL	UPPTCL	Quad Moose	Not Available	
30	400kV	Banda-Rewa road	1	D/C	177	UPPTCL	UPPTCL	UPPTCL	Quad Moose	Not Available	
31	400kV	Banda-Rewa road	2	D/C	177	UPPTCL	UPPTCL	UPPTCL	Quad Moose	Not Available	
32	400kV	Bara-Meja	1	D/C	32	UPPTCL	UPPTCL	MUNPL	Quad Moose	LILO of 400kV Bara-Rewa road D/C at Meja	
33	400kV	Bara-Meja	2	D/C	32	UPPTCL	UPPTCL	MUNPL	Quad Moose		
34	400kV	Bareilly UP-Unnao	1	D/C	271	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Partial (15%)	*Series Compensated line (45%)
35	400kV	Bareilly UP-Unnao	2	D/C	271	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Partial (15%)	*Series Compensated line (45%)
36	400kV	Gorakhpur UP-Azamgarh	1	S/C	90	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Partial (76%)	
37	400kV	Gr. Noida(765)-Sector 148	1	D/C	47	UPPTCL	UPPTCL	UPPTCL	Quad Moose	Not Available	
38	400kV	Gr. Noida(765)-Sector 148	2	D/C	47	UPPTCL	UPPTCL	UPPTCL	Quad Moose	Not Available	
39	400kV	Gr. Noida-Gr. Noida (765)	1	D/C	45	UPPTCL	UPPTCL	UPPTCL	Quad Moose	Not Available	

40	400kV	Gr. Noida-Gr. Noida (765)	2	D/C	45	UPPTCL	UPPTCL	UPPTCL	Quad Moose	Not Available	
41	400kV	Gr.Noida-Sikandrabad	1	D/C	17	UPPTCL	UPPTCL	UPPTCL	Quad Moose	Not Available	
42	400kV	Gr.Noida-Sikandrabad	2	D/C	17	UPPTCL	UPPTCL	UPPTCL	Quad Moose	Not Available	
43	400kV	Hapur-Dasna	1	D/C	14	UPPTCL	UPPTCL	UPPTCL	Quad Moose	Not Available	
44	400kV	Hapur-Dasna	2	D/C	14	UPPTCL	UPPTCL	UPPTCL	Quad Moose	Not Available	
45	400kV	Hapur-Moradabad	1	S/C	109	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Not Available	
46	400kV	Hapur-Muradnagar	1	S/C	28	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Not Available	
47	400kV	Harudaganj-Sikandarabad	1	S/C	115	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Not Available	
48	400kV	Mainpuri(UP)-Mainpuri(PG)	1	D/C	25	UPPTCL	UPPTCL	POWERGRID	Twin Moose	Not Available	LILO of 400kV Orai-Mainpuri(PG) at Mainpuri(UP)
49	400kV	Mainpuri(UP)-Mainpuri(PG)	2	D/C	26	UPPTCL	UPPTCL	POWERGRID	Twin Moose	Not Available	LILO of 400kV Paricha-Mainpuri(PG) at Mainpuri(UP)
50	400kV	Meja-Musauli	1	D/C	65	UPPTCL	MUNPL	UPPTCL	Quad Moose	Not Available	
51	400kV	Meja-Rewa road	1	D/C	45	UPPTCL	MUNPL	UPPTCL	Quad Moose	Not Available	
52	400kV	Muradnagar New- Mathura	1	D/C	246	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Not Available	LILO of 400 kV Fatehabad(UP)-Muradnagar at Mathura
53	400kV	Muradnagar-Ataur	2	D/C	18	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Not Available	
54	400kV	Musauli-Rewa road	1	D/C	34	UPPTCL	UPPTCL	UPPTCL	Quad Moose	Not Available	
55	400kV	Muzaffarnagar-Alakhnanda	1	D/C	189	UPPTCL	UPPTCL	GVKPIL	Twin Moose	Not Available	
56	400kV	Muzaffarnagar-Ataur	1	D/C	121	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Not Available	
57	400kV	Muzaffarnagar-Vishnuprayag	1	D/C	280	UPPTCL	UPPTCL	JPVL	Twin Moose	Conventional	
58	400kV	Noida Sec 148 - Noida Sec 123	1	D/C	20	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Not Available	
59	400kV	Noida Sec 148 - Noida Sec 123	2	D/C	20	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Not Available	
60	400kV	Noida Sec 148-Noida Sec 123	1	D/C	20	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Not Available	
61	400kV	Noida Sec 148-Noida Sec 123	2	D/C	20	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Not Available	
62	400kV	Obra-Rewa road	1	S/C	179	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Not Available	
63	400kV	Obra-Sultanpur	1	S/C	230	UPPTCL	UPRVUNL	UPPTCL	Twin Moose	Conventional	
64	400kV	Obra B - Obra C	1	S/C	1	UPPTCL	UPRVUNL	UPRVUNL	Twin Moose	Not Available	
65	400kV	Orai-Mainpuri(UP)	1	D/C	176	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Not Available	
66	400kV	Orai-Mainpuri(UP)	2	D/C	176	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Not Available	
67	400kV	Orai-Paricha	1	D/C	111	UPPTCL	UPPTCL	UPRVUNL	Twin Moose	Not Available	
68	400kV	Orai-Paricha	2	D/C	111	UPPTCL	UPPTCL	UPRVUNL	Twin Moose	Not Available	
69	400kV	Panki-Aligarh	1	S/C	285	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Partial (24%)	
70	400kV	Rewa road -Panki	1	S/C	210	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Not Available	LILO of Bara-Panki at 400kV Rewa Road
71	400kV	Roorkee-Muzaffarnagar	1	S/C	71	PTCUL	POWERGRID	UPPTCL	Twin Moose	Not Available	
72	400kV	Rosa-Badaun	1	D/C	85	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Not Available	
73	400kV	Rosa-Badaun	2	D/C	85	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Not Available	
74	400kV	Sarnath-Azamgarh	1	S/C	97	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Conventional	
75	400kV	Sultanpur-Lucknow PG	1	S/C	164	UPPTCL	UPPTCL	POWERGRID	Twin Moose	Conventional	
76	400kV	Sultanpur-Tanda	1	D/C	103	UPPTCL	UPPTCL	NTPC	Twin Moose	Not Available	
77	400kV	Tanda-Basti	1	D/C	44	UPPTCL	UPPTCL	UPPTCL	Quad Moose	Not Available	
78	400kV	Tanda-Basti	2	D/C	44	UPPTCL	UPPTCL	UPPTCL	Quad Moose	Not Available	
79	400kV	Unnao-Lucknow UP	1	S/C	39	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Partial (13%)	
80	400kV	Unnao-Panki	1	S/C	49	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Partial (41%)	
81	400kV	Firozabad-Jawaharpur	1	D/C	40	PJFTL	PJFTL	UPRVUNL	Quad Moose	Not Available	
82	400kV	Firozabad-Jawaharpur	2	D/C	40	PJFTL	PJFTL	UPRVUNL	Quad Moose	Not Available	

83	400kV	Agra South-Firozabad PJFTL	1	D/C	79	PJFTL	UPPTCL	PJFTL	Twin Moose	Not Available	
84	400kV	Agra(Fatehabad)-Firozabad PJFT	1	D/C	79	PJFTL	UPPTCL	PJFTL	Twin Moose	Not Available	
85	400kV	Varanasi-Jaunpur	1	D/C	73	UPPTCL	POWERGRID	UPPTCL	Twin Moose	Not Available	
86	400kV	Varanasi-Jaunpur	2	D/C	73	UPPTCL	POWERGRID	UPPTCL	Twin Moose	Not Available	
87	400kV	Obra_B-Obra_C	1	S/C	1	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Not Available	
88	400kV	Sambhal-Rampur	1	D/C	74	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Not Available	
89	400kV	Sambhal-Rampur	2	D/C	74	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Not Available	
90	400kV	Simbholi-Meerut_PMSTL	1	D/C	29	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Not Available	
91	400kV	Simbholi-Meerut_PMSTL	2	D/C	29	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Not Available	
92	400kV	Panki-Panki_TPS	1	S/C	1	UPPTCL	UPPTCL	UPPTCL	Twin Moose	Not Available	
H. HPPTCL											
1	400kV	Lahal-Chamba	1	D/C	35	HPPTCL	HPPTCL	POWERGRID	Twin Moose	Not Available	
2	400kV	Lahal-Chamba	2	D/C	35	HPPTCL	HPPTCL	POWERGRID	Twin Moose	Not Available	
I. NTPC JV											
1	400kV	Dadri-Loni (Harsh Vihar)	1	D/C	54	NTPC	NTPC	DTL	Twin Moose	Polymer	
2	400kV	Dadri-Loni (Harsh Vihar)	2	D/C	54	NTPC	NTPC	DTL	Twin Moose	Polymer	
J. MTSCL											
1	400kV	Ajmer-Deedwana	1	S/C	110	MTSCL	RRVPNL	MTSCL	Twin Moose	Not Available	
2	400kV	Bikaner-Deedwana	1	S/C	129	MTSCL	RRVPNL	MTSCL	Twin Moose	Conventional	
K. Aravali Transmission Service Company Ltd (ATSCL)											
1	400kV	Alwar-Hindaun	1	S/C	96	ATSCL	ATSL	RRVPNL	Twin Moose	Not Available	Partly owned by Aravali Transmission Services ILtd.
L. BBMB											
1	400kV	Dehar-Rajpura	1	S/C	129	BBMB	BBMB	PSTCL	Twin Morkulla+ LILO portion is of twin moose	Antifog	LILO of Dehar-Bhiwani at Rajpura
2	400kV	Bhiwani(BBMB)-Rajpura	1	S/C	213	BBMB	BBMB	PSTCL		Antifog	
3	400kV	Dehar-Panchkula	1	S/C	125	BBMB	BBMB	POWERGRID	Twin Morkulla+ LILO portion is of twin moose	Antifog	LILO of Dehar-Panipat at Panchkula
4	400kV	Panchkula-Panipat	1	S/C	155	BBMB	POWERGRID	BBMB		Antifog	
OTHER DEDICATED LINES											
A. THDC											
1	400kV	Aligarh-Khurja	1	D/C	35	THDC	POWERGRID	THDC	Twin Moose	Not Available	
2	400kV	Aligarh-Khurja	2	D/C	35	THDC	POWERGRID	THDC	Twin Moose	Not Available	
5. 400kV Transmission Line charged at 220kV											
STATE LINES											
A. RRVPNL											
1	400kV charged at 220kV	Dholpur-Hindaun	1	S/C	100	RRVPNL	RRVUNL	RRVPNL	Twin Moose	Conventional	
2	400kV charged at 220kV	Kota-KTPS	1	D/C	7	RRVPNL	POWERGRID	RRVUNL	Twin Moose	Conventional	
3	400kV charged at 220kV	Kota-KTPS	2	D/C	7	RRVPNL	POWERGRID	RRVUNL	Twin Moose	Conventional	

* - Fixed series capacitor (FSC) is owned by POWERGRID

Total No. of HVDC Lines	**10**
(including charged at 400kV)	**65**

National Load Despatch Centre
Import Capability of Punjab for December 2023

Issue Date: - Issue Time: 1600 Revision No. 0

Date	Time Period in IST (hrs)	Total Transfer Capability (TTC) (MW)	Reliability Margin (MW)	Available Transfer Capability (ATC) (MW)	Approved General Network Access (MW)	Margin Available for Temporary General Network Access(MW)	Changes in TTC w.r.t. Last Revision	Comments
1st December 2023 to 31st December 2023	00-24	9500	500	9000	5497	3503		https://www.punjabsldc.org/ATC_TTC.aspx
Limiting Constraints		N-1 contigency of 400/220KV ICTs at Rajpura, Ludhiana, Jalandhar Loading close to N-1 contingency limits of 400/220kV Patran, Malerkotla, Moga and Patiala ICTs 220 kV underlying network at Jalandhar, Ludhiana and Amritsar						

National Load Despatch Centre
Import Capability of Uttar Pradesh for December 2023

Issue Date: - Issue Time: 1600 Revision No. 0

Date	Time Period in IST (hrs)	Total Transfer Capability (TTC) (MW)	Reliability Margin (MW)	Available Transfer Capability (ATC) (MW)	Approved General Network Access (MW)	Margin Available for Temporary General Network Access(MW)	Changes in TTC w.r.t. Last Revision	Comments
1st December 2023 to 31st December 2023	00-24	16100	600	15500	10165	5335		https://www.upsldc.org/documents/20182/0/ttc_atc_24-11-16/4c79978e-35f2-4aef-8c0f-7f30d878dbde
Limiting Constraints	N-1 contingency of 400/220kV Azamgarh, Allahabad(PG), Gorakhpur (UP), Sarnath, Lucknow (PG) ICTs							

National Load Despatch Centre

Import Capability of Haryana for December 2023

Issue Date: - Issue Time: 1600 Revision No. 0

Date	Time Period in IST (hrs)	Total Transfer Capability (TTC) (MW)	Reliability Margin (MW)	Available Transfer Capability (ATC) (MW)	Approved General Network Access (MW)	Margin Available for Temporary General Network Access(MW)	Changes in TTC w.r.t. Last Revision	Comments
1st December 2023 to 31st December 2023	00-24	9100	250	8850	5418	3432		https://hvpn.org.in/#/atcttc
Limiting Constraints	N-1 contingency of 400/220kV ICTs at Deepalpur, Panipat(BBMB) and Kurukshetra(PG)							

National Load Despatch Centre
Import Capability of Rajasthan for December 2023

Issue Date: - Issue Time: 1600 Revision No. 0

Date	Time Period in IST (hrs)	Total Transfer Capability (TTC) (MW)	Reliability Margin (MW)	Available Transfer Capability (ATC) (MW)	Approved General Network Access (MW)	Margin Available for Temporary General Network Access(MW)	Changes in TTC w.r.t. Last Revision	Comments
1st December 2023 to 31st December 2023	00-24	7600	600	7000	5755	1245		https://sldc.rajasthan.gov.in/rrvpnl/scheduling/downloads
Limiting Constraints		N-1 contingency of 400/220kV Chittorgarh, Jodhpur, Bikaner, Ajmer, Merta, Hindaun and Bhinmal ICTs						

National Load Despatch Centre

Import Capability of Delhi for December 2023

Issue Date: - Issue Time: 1600 Revision No. 0

Date	Time Period in IST (hrs)	Total Transfer Capability (TTC) (MW)	Reliability Margin (MW)	Available Transfer Capability (ATC) (MW)	Approved General Network Access (MW)	Margin Available for Temporary General Network Access(MW)	Changes in TTC w.r.t. Last Revision	Comments
1st December 2023 to 31st December 2023	00-24	7300	300	7000	4810	2190		https://www.delhisldc.org/resources/atcttcreport.pdf
Limiting Constraints	N-1 contingency of 400/220kV Mundka, HarshVihar and Bawana (bus-split) ICTs.							

National Load Despatch Centre
Import Capability of HP for December 2023

Issue Date: - Issue Time: 1600 Revision No. 0

Date	Time Period in IST (hrs)	Total Transfer Capability (TTC) (MW)	Reliability Margin (MW)	Available Transfer Capability (ATC) (MW)	Approved General Network Access (MW)	Margin Available for Temporary General Network Access(MW)	Changes in TTC w.r.t. Last Revision	Comments
1st December 2023 to 31st December 2023	00-24	1400	100	1300	1130	170		https://hpsldc.com/mrm_category/ttc-atc-report/
Limiting Constraints		N-1 contingency of 220kV Hamirpur-Hamirpur D/C						

National Load Despatch Centre
Import Capability of Uttarakhand for December 2023

Issue Date: - Issue Time: 1600 Revision No. 0

Date	Time Period in IST (hrs)	Total Transfer Capability (TTC) (MW)	Reliability Margin (MW)	Available Transfer Capability (ATC) (MW)	Approved General Network Access (MW)	Margin Available for Temporary General Network Access(MW)	Changes in TTC w.r.t. Last Revision	Comments
1st December 2023 to 31st December 2023	00-24	1700	100	1600	1402	198		https://uksldc.in/ttc-atc
Limiting Constraints		N-1 contingency of 400/220kV Kashipur ICTs. High loading of 220kV Roorkee-Roorkee and 220kV CBGanj-Pantnagar lines						

National Load Despatch Centre
Import Capability of J&K for December 2023

Issue Date: - Issue Time: 1600 Revision No. 0

Date	Time Period in IST (hrs)	Total Transfer Capability (TTC) (MW)	Reliability Margin (MW)	Available Transfer Capability (ATC) (MW)	Approved General Network Access (MW)	Margin Available for Temporary General Network Access(MW)	Changes in TTC w.r.t. Last Revision	Comments
1st December 2023 to 31st December 2023	00-24	2900	100	2800	1977	823		
Limiting Constraints		N-1 contigency of 400/220KV ICTs at Amargarh 220 kV underlying network at Amargarh, Wagoora						

National Load Despatch Centre
Import Capability of Chandigarh for December 2023

Issue Date: - Issue Time: 1600 Revision No. 0

Date	Time Period in IST (hrs)	Total Transfer Capability (TTC) (MW)	Reliability Margin (MW)	Available Transfer Capability (ATC) (MW)	Approved General Network Access (MW)	Margin Available for Temporary General Network Access(MW)	Changes in TTC w.r.t. Last Revision	Comments
1st December 2023 to 31st December 2023	00-24	400	20	380	342	38		
Limiting Constraints		N-1 contigency of 220kV Nallagarh-Kishengarh						

Sr No	Element Name	Outage Date	Outage Time	Reason
1	220 KV Ballabhgarh-Charkhi Dadri (BB) Ckt-1	05-Oct-23	00:16	Phase to earth fault Y-N. As per PMU, Y-N fault occured, no auto-reclosing is observed.
		12-Oct-23	23:39	Phase to earth fault B-N. As per PMU, Y-N fault occured, no auto-reclosing is observed.
		28-Oct-23	03:56	Phase to earth fault B-N. As per PMU, B-N fault occured, no auto-reclosing is observed.
2	220 KV Debari(RS)-RAPS_A(NP) (RS) Ckt-1	01-Oct-23	12:10	Phase to earth fault B-N. As per PMU, no fault is observed.
		02-Oct-23	12:18	Phase to earth fault B-N. As per PMU, no fault is observed.
		02-Oct-23	12:57	Phase to earth fault B-N. As per PMU, no fault is observed.
3	220 KV Deoband(UP)-Saharanpur(PG) (UP) Ckt-2	07-Oct-23	02:17	Phase to earth fault R-N. As per PMU, R-N fault occured, no auto-reclosing is observed.
		08-Oct-23	21:55	Phase to earth fault R-N. As per PMU, R-N fault occured, no auto-reclosing is observed.
		14-Oct-23	03:59	Phase to earth fault R-N. As per PMU, R-N fault occured, no auto-reclosing is observed.
4	400 KV Bareilly-Unnao (UP) Ckt-1	10-Oct-23	19:58	Phase to earth fault R-N. As per PMU, R-N fault occurred with non-proper A/R operation at Bareilly end.
		12-Oct-23	13:50	Phase to earth fault Y-N. As per PMU, Y-N fault occurred with non-proper A/R operation at Bareilly end.
		12-Oct-23	16:13	Phase to earth fault R-N. As per PMU, R-N fault occurred with non-proper A/R operation at Bareilly end.
		20-Oct-23	19:58	Phase to earth fault Y-N. As per PMU, Y-N fault occurred with non-proper A/R operation at Bareilly end and successful A/R operation at Unnao end.

Grid Event summary for October 2023

S.No.	Category of Grid Disturbance (GD-I to GD-V)	Name of Elements (Tripped/Manually opened)	Affected Area	Owner/ Agency	Outage		Revival		Duration (hh:mm)	Event (As reported)	Energy Unserved due to Generation loss (MU)	Energy Unserved due to Load loss (MU)	Loss of generation / loss of load during the Grid Disturbance		% Loss of generation / loss of load w.r.t Antecedent Generation/Load in the Regional Grid during the Grid Disturbance		Antecedent Generation/Load in the Regional Grid		Fault Clearance time (in ms)
					Date	Time	Date	Time					Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)	
1	GD-1	1) 220 KV Kishenpur(PG)-Udhampur(PDD) (PG) Ckt-1 2) 220 KV Kishenpur(PG)-Udhampur(PDD) (PG) Ckt-2 3) 220 KV Sarna(PS)-Udhampur(PDD) (PDD) Ckt	Jammu & kashmir	PGCIL, PDD-JK	3-Oct-23	11:39	3-Oct-23	14:20	02:41	i) 220/132kV Udhampur(JK) has double main bus scheme at 220kV level. During antecedent condition, active power flow in 220 KV Kishenpur(PG)-Udhampur(PDD) (PG) Ckt-1 & 2 and 220 KV Sarna(PS)-Udhampur(PDD) (PDD) Ckt were 91MW, 91MW and 97MW respectively. ii) As reported, at 11:39 hrs, 220 KV Kishenpur(PG)-Udhampur(PDD) (PG) Ckt-1 tripped on Y-B phase to phase fault with fault current of Iy=Ib=~5.886kA and fault distance of 19.043km from Kishenpur(PG) end. iii) During the same time, 220 KV Kishenpur(PG)-Udhampur(PDD) (PG) Ckt-2 also tripped on Y-B phase to phase fault with fault current of Iy=Ib=~4.159kA and fault distance of 22.030km from Kishenpur(PG) end. Forest fire was observed at loc. no. S-6. iv) Due to tripping of , 220 KV Kishenpur(PG)-Udhampur(PDD) (PG) Ckt-1 & 2, 220 KV Sarna(PS)-Udhampur(PDD) (PDD) Ckt got overloaded and tripped. v) As per PMU at Kishenpur(PG), Y-B phase to phase fault is observed with delayed fault clearing time of 120ms. vi) As per SCADA, change in demand of approx. 90MW is observed in J&K control area.	0	0.2415	0	90	0.000	0.146	54859	61505	120
2	GI-2	1) 400/220 kV 315 MVA ICT 1 at Dehar(BB) 2) 165MW Unit-1 at Dehar(BB)	Himachal Pradesh	BBMB	4-Oct-23	19:30	5-Oct-23	18:25	22:55	i) As reported, at 19:30 hrs, terminator of joint conductor of Red phase GT of Unit No. 1 LA got snapped due to flash on string of disc insulators. ii) During the same time, 400/220 kV 315 MVA ICT 1 at Dehar(BB) tripped due to restricted earth fault (REF) protection operation. 165MW Unit-1 at Dehar(BB) also tripped at this time. (Exact reason yet to be shared) iii) As per PMU at Dehar(BB), R-B phase to phase fault is observed with fault clearing time of 80ms. iv) As per SCADA, change in generation of approx. 165MW is observed at Dehar(BBMB).	0	0	165	0	0.324	0.000	50874	62750	80
3	GD-1	1) 220kV Hissar_IA(Har)-Narwana ckt 2) 220kV Hissar(BB)-Hissar_IA(Har) ckt-1 3) 220kV Hissar(BB)-Hissar_IA(Har) ckt-2 4) 220kV Hissar_IA(Har)-Hissar(PG) ckt-1 5) 220kV Hissar_IA(Har)-Hissar(PG) ckt-2 7) 220/132kV 100MVA ICT-1 at Hissar_IA(Har)	Haryana	HVPNL, BBMB, PGCIL	5-Oct-23	09:28	5-Oct-23	10:00	00:32	i) During antecedent condition, 220kV Hissar_IA(Har)-Masudpur Ckt 1 & 2 and 220/132kV 100MVA ICT-1 at Hissar_IA(Har) were already in open condition. ii) As reported, at 09:28hrs, sparking was observed on the B-phase of 220 kV Bus Isolator of 220kV Hissar_IA(Har)-Hissar(PG) ckt-1 at Hissar_IA(Har) end. iii) As per DR at Hissar_IA(Har), Bus Bar differential protection operated at 220kV level of Hissar_IA(Har) which led to tripping of all the elements connected to both the buses. (Exact reason of tripping of both the buses yet to be shared) iv) Due to tripping of all the elements connected to both the buses, both 220kV Bus-1 & 2 at Hissar_IA(Har) and eventually the complete 220kV Hissar_IA(Har) S/s became dead. v) As per PMU at Hissar(PG), B-N phase to earth fault with fault clearing time of 80ms is observed. vi) As per SCADA, change in demand of approx. 90MW is observed in Haryana control area. But as reported by SLDC-Haryana, change in demand of approx. 300MW is observed in Haryana control area.	0	0.16	0	300	0.000	0.520	53017	57708	80
4	GD-1	1) 220 kV Ludhiana(PG)-Lalton Kalan(PS) (PSTCL) Ckt-1 2) 220 kV Ferozepur Road-Lalton Kalan(PS) Ckt 3) 220 kV Ludhiana(PG)-Lalton Kalan(PS) (PSTCL) Ckt-2 4) 220 kV Humbran-Lalton Kalan(PS) Ckt 5) 220 kV Dhandhari Kalan-Lalton Kalan(PS) Ckt	Punjab	PGCIL, PSTCL	7-Oct-23	08:37	7-Oct-23	10:10	01:33	i) During antecedent condition, 220 kV Ludhiana(PG)-Lalton Kalan(PS) (PSTCL) Ckt-2, 220 kV Humbran-Lalton Kalan(PS) Ckt and 220 kV Dhandhari Kalan-Lalton Kalan(PS) Ckt were connected to 220kV Bus-1 at Lalton Kalan(PS) and 220 kV Ludhiana(PG)-Lalton Kalan(PS) (PSTCL) Ckt-1 and 220 kV Ferozepur Road-Lalton Kalan(PS) Ckt were connected to 220kV Bus-2 at Lalton Kalan(PS). ii) As reported, at 08:37hrs, snapped conductor of 11kV Midland feeder comes in contact with 220kV Ferozepur Road R-Phase CVT causing damaging of bus post insulator and tripping of 220kV Bus-2 at Lalton Kalan(PS). iii) Further at 09:22hrs, during isolation of Bus-2 and further switchover of load to Bus-1, flashover occurred leading to tripping of 220 kV Ludhiana(PG)-Lalton Kalan(PS) (PSTCL) Ckt-2, 220 kV Humbran-Lalton Kalan(PS) Ckt and 220 kV Dhandhari Kalan-Lalton Kalan(PS) Ckt from Lalton Kalan(PS) end. iv) Due to this tripping, complete blackout occurred at 220/66kV Lalton Kalan(PS) S/s. v) As per PMU at Ludiana(PG), B-N phase to earth fault with delayed clearance of 360msec is observed. vi) As per SCADA, change in demand of approx. 155MW is observed in Punjab control area. But as reported by SLDC Punjab, change in demand of approx. 280MW is observed in Punjab control area.	0	0.434	0	280	0.000	0.501	51438	55849	360
5	GI-2	1) 400/132 kV 200 MVA ICT 3 at Nehtaur(UP) 2) 400/132 kV 200 MVA ICT 2 at Nehtaur(UP) 3) 400/132 kV 200 MVA ICT 1 at Nehtaur(UP) 4) 132kV Nehtaur- Bijnor Ckt 5) 132kV Nehtaur- Chandpur Ckt 6) 132kV Nehtaur- Morna Ckt 7) 132kV Nehtaur- Kiratpur Ckt 8) 132kV Nehtaur- Nagina Ckt-1 9) 132kV Nehtaur- Nagina Ckt-2 10) 132kV Nehtaur- Najibabad Ckt	Uttar Pradesh	UPPTCL	9-Oct-23	20:16	9-Oct-23	21:50	01:34	i) As reported, at 20:16hrs, 400kV B-Ph CT of main bay 410 of 400/132 kV 200 MVA ICT 3 at Nehtaur(UP) busted and caught fire and 400/132 kV 200 MVA ICT 3 at Nehtaur(UP) tripped on differential protection operation with B-phase fault current of 4.4kA. ii) At the same time, 400/132 kV 200 MVA ICT 2 at Nehtaur(UP) also tripped on differential protection operation with R-phase fault current of 7.11kA.(Exact reason yet to be shared) iii) Due to CT burst, the oil of CT got spread out on the cable trench and certain cables also got burnt and badly damaged. So in view of safety, 400/132 kV 200 MVA ICT 1 at Nehtaur(UP) was manually tripped at 20:30hrs due to fire attack on main cable trench. iv) After tripping of all three 400/132kV ICTs, all 7, 132kV lines tripped due to loss of supply. v) After fire quenching of CT & cables, ICT-1 was normalised charged successfully at 21:50 hrs on 09/10/2023. vi) As per PMU at Roorkee(PG), B-N phase to earth fault with delayed fault clearance time of 640ms followed by R-N phase to earth fault with fault clearance time of 80ms are observed. vii) As per SCADA, no change in demand is observed in UP control area. As reported by SLDC-UP, before tripping average load on ICTs was around 240MW, after tripping it was shifted to Nehtaur 220KV.	0	0	0	0	0.000	0.000	51481	60698	640
6	GI-1	1) 220KV Bus 2 at Pong(BB) 2) 220 KV Pong(BB)-Dasuya(PS) (BBMB) Ckt-2 3) 220 KV Jalandhar(PG)-Pong (BB) Ckt-2 4) 220 KV Jessore(HP)-Pong(BB) (PG) Ckt 5) 66 MW Pong HPS - UNIT 2 6) 66 MW Pong HPS - UNIT 6 7) 220/66KV 40MVA ICT-1 at Pong(BB)	Himachal Pradesh	BBMB	10-Oct-23	18:46	10-Oct-23	23:11	04:25	i) During antecedent condition, 66MW unit-1, 2 3, 5 & 6 were running and generating approx. 307 MW in total. Unit-1, 3 & 5, 220/66kV 40MVA Transformer and 220kV feeders to Bairasul, Jalandhar ckt-1 and Dasuya ckt-1 were connected at 220kV Bus 1 and Unit-2 & 6 & 220kV feeders to Jessore , Jalandhar ckt-2 and Dasuya ckt-2 were connected at 220kV Bus-2. ii) As reported, at 18:46 hrs, bus bar protection operated at 220kV Bus-2 at Pong(BBMB) and all the elements connected to Bus-2 got tripped and Bus-2 became dead. The jumper between 220kV Bus-2 and connecting isolator of B-ph of 220 KV Pong(BB)-Dasuya(PS) (BBMB) Ckt-2 was found broken. iii) As per SCADA SOE, 220/66kV 40MVA ICT-1 at Pong(BB) also tripped during the same time. (Exact reason yet to be shared) iv) As per PMU at Pong(BBMB), B-N phase to earth fault is observed with fault clearing time of 80 ms. v) As per SCADA, total generation loss of approx. 120MW is observed at Pong HEP(BBMB).	0	0	120	0	0.234	0.000	51254	60340	80
7	GI-2	1) 220 KV Akal(RS)-Jaisalmer(RS) Ckt 2) 400/220 kV 500 MVA ICT 1 at Akal(RS) 3) 400/220 kV 500 MVA ICT 2 at Akal(RS)	Rajasthan	RVPNL	10-Oct-23	10:21	10-Oct-23	11:32	01:11	i) 400/220kV Akal(RS) has one and half breaker scheme at 400kV level and double main transfer bus scheme at 220kV level. ii) As reported, at 10:23hrs, 220 KV Akal(RS)-Jaisalmer(RS) Ckt tripped on phase to earth fault (Y-N fault as per PMU at Bhadla(PG)). iii) At the same time, 400/220 kV 500 MVA ICT 1 & 2 at Akal(RS) also tripped. (Exact reason yet to be shared, but it is suspected that there is delay in CB opening due to which ICTs also got tripped. Also O/C protection settings of ICTs need to be shared.) iv) As per SCADA SOE, 220kV Akal(RS)-Barmer(RS) Ckt also tripped during the same time. (Exact reason yet to be shared) v) As per PMU at Bhadla(PG), Y-N phase to earth fault is observed with delayed fault clearance time of 720ms. vi) As per SCADA, change in demand of approx. 70MW is observed in Rajasthan control area. vii) As per SCADA, change in Rajasthan wind generation of approx. 110MW is observed.	0	0.083	110	70	0.251	0.116	43865	60246	720
8	GD-1	1) 765kV Koteshwar(PG)-Meerut(PG) Ckt-1 2) 765kV Koteshwar(PG)-Meerut(PG) Ckt-2 3) 400kV Koteshwar(PG)-Tehri(TH) (PG) Ckt-1 4) 400kV Koteshwar(PG)-Tehri(TH) (PG) Ckt-2 5) 400kV Koteshwar(PG)- Koteshwar (TH) (PG) Ckt-1 6) 400kV Koteshwar(PG)- Koteshwar (TH) (PG) Ckt-2 7) 100 MW Unit-1 at Koteshwar(TH)	Uttarakhand	PGCIL, THDC	12-Oct-23	15:36	12-Oct-23	16:28	00:52	i) 765/400kV Koteshwar(PG) has one and half breaker scheme at 765kV level and double main bus scheme at 400kV level. During antecedent condition, only 100MW Unit-1 at Koteshwar HEP was in running condition and was generating approx. 90MW and active power loading on 765kV Koteshwar(PG)-Meerut(PG) Ckt-1 & 2 was approx. 45MW each. ii) As reported, at 15:36hrs, "Protection operated in FSC" signal came at Meerut(PG) end which tripped group relays and sent DT to Koteshwar(PG). 765kV Koteshwar(PG)-Meerut(PG) Ckt-1 & 2 tripped due to DT received at Koteshwar(PG) end. iii) During the same time, 100MW Unit-1 at Koteshwar(TH) tripped on over-excitation due to loss of evacuation path. iv) CBs from both the ends of 400kV Koteshwar(PG)-Tehri(TH) (PG) Ckt-1 & 2 and 400kV Koteshwar(PG)- Koteshwar (TH) (PG) Ckt-1 & 2 opened due to safety purpose. v) Due to this tripping, complete blackout occurred at 765/400kV Koteshwar(PG) & 400kV Koteshwar(TH). vi) Although no generation was there at Tehri(TH) during the same time, but Tehri(TH) generation was affected from 16:00hrs to 17:14hrs. vii) As per PMU Meerut(PG), no fault is observed in the system. viii) As per SCADA, change in generation of approx. 90MW is observed at Koteshwar(TH).	0	0	90	0	0.175	0.000	51528	61412	NA
9	GD-1	1) 400 KV Uri_2(NH)-Uri_1(NH) (PG) Ckt 2) 400 KV Uri_2(NH)-Wagoora(PG) (PG) Ckt 3) 60 MW Unit-2 at Uri-2(NH) 4) 60 MW Unit-2 at Uri-3(NH)	Jammu and Kashmir	PGCIL, NHPC	14-Oct-23	04:23	14-Oct-23	06:32	02:09	i) During antecedent condition, 60 MW Unit-2 & 3 at Uri-2(NH) were running and generating approx. 36MW each and total MW generation of 72MW was evacuating through 400 KV Uri_2(NH)-Uri_1(NH) (PG) Ckt and 400 KV Uri_2(NH)-Wagoora(PG) (PG) Ckt. ii) As reported, at 04:23hrs, 400 KV Uri_2(NH)-Wagoora(PG) (PG) Ckt tripped on B-N phase to ground fault with fault current of approx. 1.89kA and fault distance of 11.87km from Wagoora(PG) end due to heavy wind and storm in the area. iii) As per DR, 400 KV Uri_2(NH)-Uri_1(NH) (PG) Ckt also tripped on B-N phase to ground fault at the same time with delayed fault clearance time of approx. 690ms and fault current of approx. 2.53kA from Uri-2(NH) end. Over-current protection operated at both Uri-1(NH) and Uri-2(NH) end as per DR. iv) Due to tripping of both the lines, 60 MW Unit-2 & 3 at Uri-2(NH) tripped on over-excitation due to loss of evacuation path. v) On this, complete blackout occurred at 400kV Uri-2(NH). vi) As per PMU at Wanpoh(PG), two consecutive B-N phase to ground fault is observed in the system with delayed fault clearance time of 720ms and 440ms respectively. vii) As per SCADA, generation loss of approx. 72MW is observed at Uri-2(NH).	0	0	72	0	0.180	0.000	39982	52071	720
10	GI-2	1) 220 KV Bhadla(PG) - Bus 1 2) 220 KV Bhadla(PG) - Bus 2 3) 220 KV Bhadla(PG) - Bus 3 4) 400/220 kV 500 MVA ICT 1 at Bhadla(PG) 5) 400/220 kV 500 MVA ICT 2 at Bhadla(PG) 6) 400/220 kV 500 MVA ICT 3 at Bhadla(PG) 7) 400/220 kV 500 MVA ICT 4 at Bhadla(PG) 8) 400/220 kV 500 MVA ICT 5 at Bhadla(PG) 9) 220 KV Bhadla(PG)-Saurya Urja Solar Ckt-1 10) 220 KV Bhadla(PG)-Saurya Urja Solar Ckt-2 11) 220 KV Bhadla(PG)-AREPRL Ckt-1 12) 220 KV Bhadla(PG)-AREPRL Ckt-2 13) 220 KV Bhadla(PG)-CSPJP Ckt 14) 220 KV Bhadla(PG)-Mahoba Solar Ckt 15) 220 KV Bhadla(PG)-ACME Ckt	Rajasthan	POWERGRID	16-Oct-23	02:26	16-Oct-23	06:42	04:16	i) 765/400/220kV Bhadla(PG) has one and half breaker scheme at 765 & 400kV side and double main bus scheme at 220kV side. 220kV level at Bhadla(PG) S/s is hybrid (Partly AIS+partly GIS) in nature. ii) As reported, at 02:26 hrs, Bus Bar Protection Operated at Bhadla (PG) Substation due to suspected malfunctioning of Gas Density relay. 220kV Bus-1,2&3 along with elements connected to them tripped during the event. iii) As per PMU at Bhadla(PG), no fault in system is observed. iv) POWERGRID has been communicated to share the exact details of event along with remedial action taken.	0	0	0	0	0.000	0.000	39913	49814	NA
11	GD-1	1) 220 KV TATA Noorsar SL_BKN PG (TPGEL)-Bikaner(PG) (TPGEL) Ckt	Rajasthan	TPGEL	16-Oct-23	12:32	16-Oct-23	20:58	08:26	i) Total generation of 220kV TPGEL & 220kV TPSL RE stations evacuates through 220 KV TATA Noorsar SL_BKN PG (TPGEL)-Bikaner(PG) (TPGEL) Ckt. During antecedent condition, total generation evacuating through TPGEL line was 325MW (220MW TPGEL and 105MW TPSL). ii) As reported, at 12:32hrs, 220 kV TATA Noorsar SL_BKN PG (TPGEL)-Bikaner(PG) (TPGEL) Ckt tripped on Y-B phase to phase fault. iii) As per PMU at Bikaner(PG), Y-B phase to phase fault which cleared within 80msec is observed. iv) Due to tripping of 220kV TPGEL line, total solar generation (325MW) evacuating through the line lost. v) As per PMU plots of voltage at RE stations of 220kV lines connected at different pooling stations, it is observed that during the fault phase voltage dropped to ~0.85pu at Bikaner(PG), 0.96pu at Bhadla2(PG), 0.93pu at Bhadla(PG), 0.91pu at Fatehgarh2(PG) and 0.91pu at AFSPS. vi) Total drop in RE generation during the event was approx. 700MW (as per SCADA) including 325MW RE generation at TPGEL & TPSL. Further, within 03 minutes of the occurrence of event, approx. 350MW RE generation recovered. vii) MVAr profile of STATCOM 1&2 connected at Bhadla2(PG) changed from ~65MVAr injection each to 170MVAr & 230MVAr injection respectively.	0	0	700	0	1.376	0.000	50859	52036	80
12	GD-1	1) 220 KV Adani RenewPark_SL_FGARH_FBTL (AREPRL)-AHEJ4L PSS 4 HB_FGRAH_FBTL (AHEJ4L) (AREPRL) Ckt	Rajasthan	AHEJ4L	16-Oct-23	14:54	16-Oct-23	16:43	01:49	i) Generation of 220kV AHEJ4L PSS IV RE stations evacuates through 220 KV Adani RenewPark_SL_FGARH_FBTL (AREPRL)-AHEJ4L PSS 4 HB_FGRAH_FBTL (AHEJ4L) (AREPRL) Ckt. During antecedent condition, AHE4L PSS IV R station was generating approx. 144MW. ii) As reported, at 14:54hrs, 220 KV Adani RenewPark_SL_FGARH_FBTL (AREPRL)-AHEJ4L PSS 4 HB_FGRAH_FBTL (AHEJ4L) (AREPRL) Ckt tripped on R-N phase to earth fault. iii) As per PMU & SCE data, R-N phase to earth fault with unsuccessful A/R operation at AFSPS end is observed. Line instantaneously tripped from AHEJ4L PSS IV end. iv) Due to tripping of 220kV AHEJ4L PSS IV line, RE (wind) generation (144MW) of the RE station lost due to loss of evacuation path. v) As per PMU plots of voltage at RE stations of 220kV lines connected at different pooling stations, voltage was above 0.9pu at RE station end. It was in the range of 0.95-0.98pu. No drop in solar generation connected at ISTS pooling station in Rajasthan RE complex is observed.	0	0	144	0	0.338	0.000	42560	48686	80
13	GI-2	1) 220kV Bhadla(PG)-ESUCRL(SB6GPL) ckt 2) 220kV Bhadla(PG)-TPREL ckt 3) 220kV Bhadla(PG)-MRPL ckt 4) 400/220kV 500MVA ICT-6 at Bhadla(PG) 5) 220kV Bhadla(PG) Bus-4	Rajasthan	POWERGRID	21-Oct-23	16:50	16-Oct-23	18:45	01:55	i) 765/400/220kV Bhadla(PG) has double main single breaker bus scheme at 220kV level, there are total six (06) buses. Parallel buses are separated bus bus coupler and adjacent busses are separated by bus ectionlisers. During antecedent condution, all bus coupler and sectionaliser were in closed condition. ii) As reported, at 16:50 hrs, R-N fault occurred on 220kV Bhadla(PG)-ESUCRL(SB6EPL) ckt. On this fault, line protection operated however, CB didn't open at Bhadla end. Further, as CB of ESUCRL(SB6EPL) ckt didn't open at Bhadla(PG) end, LBB of ESUCRL bay operated which resulted into tripping of all the elements connected to the 220kV Bus-4 i.e., 220kV circuits to TPREL, MRPL & ESUCRL RE station and 400/220kV 500MVA ICT-6 at Bhadla(PG). iii) Bus sectionalizer and bus coupler breaker also opened instantaneously and elements connected to other buses remained intact. iv) As per PMU at Bhadla(PG), R-N phase to earth fault with delayed clearance of approx. 280msec is observed. v) As per SCADA, change in ISTS solar generation of approx. 150MW is observed.	0	0	150	0	0.347	0.000	43166	49311	280
14	GD-1	1) 220 KV Auraiya(NT)-Agra2(UP) (PG) Ckt-1 2) 220 KV Auraiya(NT)-Agra2(UP) (PG) Ckt-2 3) 220KV Agra1(UP)-Agra2(UP) Ckt-1 4) 220kV Agra1(UP)-Agra2(UP) Ckt-2 5) 220KV Agra2(UP)-Kirawali Ckt 6) 220/132kV 160MVA ICT-1 at Agra2(UP) 7) 220/132kV 160MVA ICT-2 at Agra2(UP) 8) 220/132kV 100MVA ICT-3 at Agra2(UP) 9) 220/33kV 60MVA ICT-6 at Agra2(UP)	Uttar Pradesh	UPPTCL, NTPC	22-Oct-23	06:00	22-Oct-23	08:31	02:31	i) 220/132kV Sikandra (Agra2) (UP) S/s has double main transfer bus scheme at 220kV level. However, during antecedent condition, all the elements were connected to 220kV Bus-1 only. 220kV Bus-2 and transfer were not in service consition. ii) As reported, at 06:00 hrs, 220 KV Auraiya(NT)-Agra2(UP) (PG) Ckt-1&2 tripped. At the same time, bus bar protection of 220kV Bus-1 at 220KV Agra2(UP) operated and as all eleemnts at Agra2(UP) were connected to 220kV Bus-1 only, all 220kV element at Agra2(UP) tripped. Details related to exact location and nature of fault yet to be received from UP. iii) As per PMU at Agra(PG), B-N phase to earth fault with unsuccessful A/R operation is observed. As per SCADA SOE at NRLDC, it seems that A/R operation occurred in 220KV Agra1(UP)-Agra2(UP) ckt-1. UP has been communicated to share the DR/EL to ascertain the exact sequende of the event. iv) Due to tripping of 220kV Bus-1, supply to 132kV side of Sikandra (Agra2) (UP) also lost which resulted into total blackout of 220/132kV Sikandra (Agra2) (UP) S/s. v) As per SCADA, change in demand of approx. 100MW is observed in UP control area.	0	0.251	0	100	0.000	0.225	35812	44496	80

S.No.	Category of Grid Disturbance (GD-I to GD-V)	Name of Elements (Tripped/Manually opened)	Affected Area	Owner/ Agency	Outage		Revival		Duration (hh:mm)	Event (As reported)	Energy Unserved due to Generation loss (MU)	Energy Unserved due to Load loss (MU)	Loss of generation / loss of load during the Grid Disturbance		% Loss of generation / loss of load w.r.t Antecedent Generation/Load in the Regional Grid during the Grid Disturbance		Antecedent Generation/Load in the Regional Grid		Fault Clearance time (in ms)
					Date	Time	Date	Time					Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)	
15	GD-1	1) 220 KV Fatehgarh_II(PG)-AHEJ3L PSS HB_FGRAH_PG (AHEJ3L) (AHEJ3L) Ckt	Rajasthan	PGCIL, AHEJ3L	31-Oct-23	15:28	31-Oct-23	18:45	03:17	i) During antecedent condition, total generation of 220kV AHEJ3L was evacuating through 220 KV Fatehgarh_II(PG)-AHEJ3L PSS HB_FGRAH_PG (AHEJ3L) (AHEJ3L) Ckt which was carrying approx. 47MW. ii) As reported, at 15:28 hrs, 220 KV Fatehgarh_II(PG)-AHEJ3L PSS HB_FGRAH_PG (AHEJ3L) (AHEJ3L) Ckt tripped on earth fault due to high wind condition. iii) As per PMU plots of voltage at RE stations connected at 220kV or 400kV level of different pooling stations, it is observed that during the fault phase voltage dropped to ~0.95pu at Bikaner(PG), ~0.86pu at Bhadla2(PG), ~0.86pu at Bhadla(PG), ~0.59pu at Fatehgarh2(PG) and ~0.74pu at AFSPS. iv) At the same time, dip in RE generation is observed in some plants, e.g., ACME, Azure41, TPREL, Avaada RJHN, Avaada Sunce, RSWPL, AHEJ2L, Azure43, NTPC Kolayat, NTPC Nokhra etc. As per SCADA, total reduction in NR RE generation of approx. 560MW is observed. v) As per PMU at AHEJ2L(IP) (connected at 220kV level of Fatehgarh2(PG)), AHPPL(IP) (connected at 220kV level of Bhadla2(PG)) and Azure43(IP) (connected at 400kV level of Bikaner(PG)), R-Y phase to phase fault with fault clearing time of approx. 80ms is observed in the system. But as per PMU at AFSPS(IP) (connected at 220kV level of Fatehgarh1 pooling(IP)) and AREPRL(IP) ((connected at 220kV level of Bhadla(PG)), R-B phase to phase fault with fault clearing time of approx. 80ms is observed in the system. (Phase sequence issue is observed) vi) As per PMU at 220kV AHEJ3L, MW generation loss of approx. 47MW is observed at AHEJ3L.	0	0	47	0	0.131	0.000	35896	51145	80

S. No.	Name of Transmission Element Tripped	Owner/ Utility	Outage		Load Loss/ Gen. Loss	Brief Reason (As reported)	Category as per CEA Grid standards	# Fault Clearance Time (>100 ms for 400 kV and 160 ms for 220 kV)	*FIR Furnished (YES/NO)	DR/EL provided in 24 hrs (YES/NO)	Other Protection Issues and Non Compliance (inference from PMU, utility details)	Suggestive Remedial Measures	Remarks
			Date	Time									
1	400 KV Varanasi-Biharshariff (PG) Ckt-1	POWERGRID	2-Oct-23	19:38		Phase to earth fault Y-N	NA	NA	YES	YES			As per PMU & DR, Y-N phase to earth fault with unsuccessful A/R operation is observed.
2	400 KV Kankroli-Zerda (PG) Ckt-1	POWERGRID	22-Oct-23	09:50		Phase to earth fault R-N	NA	NA	YES	YES (After 24 hrs)			As per PMU & DR, R-N phase to earth fault with unsuccessful A/R operation is observed.
3	765 KV Phagi(RS)-Gwalior(PG) (PG) Ckt-1	POWERGRID	28-Oct-23	08:09		Relay maloperation	NA	NA	YES	YES (After 24 hrs)			As per PMU, no fault in system is observed and as per DR, DT received at Phagi end. Reason of DT receieved at Phagi end need to be reviewed.
4	765 KV Fatehpur-Sasaram (PG) Ckt-1	POWERGRID	28-Oct-23	23:53		Phase to earth fault R-N	NA	NA	YES	YES			As per PMU & DR, R-N phase to earth fault with unsuccessful A/R operation is observed.

 # Fault Clearance time has been computed using PMU Data from nearest node available and/or DR provided by respective utilities (*Annexure- II)***

****Yes, if written Preliminary report furnished by constituent(s)***

R-Y-B phase sequencing (Red, Yellow, Blue) is used in the list content.All information is as per Northern Region unless specified.

^^ tripping seems to be in order as per PMU data, reported information. However, further details may be awaited.

Reporting of Violation of Regulation for various issues for above tripping

1	Fault Clearance time(>100ms for 400kV and >160ms for 220kV)	1. CEA Grid Standard-3.e 2. CEA Transmission Planning Criteria
2	DR/EL Not provided in 24hrs	1. IEGC 5.2(r) 2. CEA Grid Standard 15.3
3	FIR Not Furnished	1. IEGC 5.9.6.a 2. CEA Grid Standard 12.2 (Applicable for SLDC, ALDC only)
4	Protection System Mal/Non Operation	1. CEA Technical Standard of Electrical Plants and Electric Lines: 43.4.A 2. CEA (Technical Standards for connectivity to the Grid) Regulation, 2007: Schedule Part 1. (6.1, 6.2, 6.3)
5	A/R non operation	1. CEA Technical Standard of Electrical Plants and Electric Lines: 43.4.C 2. CEA Technical Planning Criteria

Status of submission of FIR/DR/EL/Tripping Report on NR Tripping Portal

Time Period: 1st October 2023 - 31st October 2023

S. No.	Utility	Total No. of tripping	First Information Report (Not Received)		Disturbance Recorder (Not Received)	Disturbance Recorder (NA) as informed by utility	Disturbance Recorder (Not Received)	Event Logger (Not Received)	Event Logger (NA) as informed by utility	Event Logger (Not Received)	Tripping Report (Not Received)	Tripping Report (NA) as informed by utility	Tripping Report (Not Received)	Remark
			Value	%	Value		%	Value		%	Value		%	
1	ACME	1	1	100	1	0	100	1	0	100	1	0	100	DR, EL & Tripping report need to be submitted
2	ADANI	3	3	100	3	0	100	3	0	100	3	0	100	
3	AHEJ3L	1	1	100	1	0	100	1	0	100	1	0	100	
4	AHEJ4L	1	0	0	0	0	0	0	0	0	0	0	0	Details received
5	ANTA-NT	1	0	0	0	0	0	0	0	0	0	0	0	
6	AREPRL	1	0	0	0	0	0	0	0	0	0	0	0	
7	ASEJOL	1	1	100	1	0	100	1	0	100	1	0	100	DR, EL & Tripping report need to be submitted
8	AURAIYA-NT	3	0	0	0	0	0	2	0	67	2	0	67	
9	BBMB	44	10	23	10	12	31	10	20	42	10	5	26	
10	CHAMERA-III-NH	1	1	100	1	0	100	1	0	100	1	0	100	
11	CHAMERA-I-NH	1	0	0	0	0	0	0	0	0	0	0	0	Details received
12	CLEANSOLAR_JODHPUR	1	1	100	1	0	100	1	0	100	1	0	100	DR, EL & Tripping report need to be submitted
13	CPCC1	70	0	0	0	8	0	0	9	0	0	0	0	Details received
14	CPCC2	34	3	9	3	2	9	3	2	9	3	0	9	DR, EL & Tripping report need to be submitted
15	CPCC3	27	0	0	0	1	0	4	1	15	0	0	0	Details received
16	DHAULIGANGA-NH	2	0	0	0	1	0	0	1	0	0	1	0	
17	DULHASTI-NH	1	0	0	0	0	0	0	0	0	0	0	0	
18	EDEN (ERCPL)	1	0	0	0	0	0	0	0	0	0	0	0	
19	ESUCRL	2	2	100	2	0	100	2	0	100	2	0	100	DR, EL & Tripping report need to be submitted
20	FARIDABAD-NT	2	2	100	2	0	100	2	0	100	2	0	100	
21	INDIGRID	2	0	0	0	0	0	0	0	0	1	1	100	
22	KARCHAM	2	2	100	2	0	100	2	0	100	2	0	100	
23	KISHENGANGA-NH	1	1	100	1	0	100	1	0	100	1	0	100	
24	KOLDAM-NT	1	0	0	0	0	0	0	0	0	0	0	0	Details received
25	KOTESHWAR	1	1	100	1	0	100	1	0	100	1	0	100	DR, EL & Tripping report need to be submitted
26	MAHINDRA	1	1	100	1	0	100	1	0	100	1	0	100	
27	NAPP	3	0	0	0	0	0	0	0	0	0	0	0	Details received
28	RAMPUR	1	0	0	0	0	0	0	0	0	0	0	0	
29	RAPPA	7	0	0	7	0	100	7	0	100	5	0	71	

Status of submission of FIR/DR/EL/Tripping Report on NR Tripping Portal

Time Period: 1st October 2023 - 31st October 2023

S. No.	Utility	Total No. of tripping	First Information Report (Not Received)		Disturbance Recorder (Not Received)	Disturbance Recorder (NA) as informed by utility	Disturbance Recorder (Not Received)	Event Logger (Not Received)	Event Logger (NA) as informed by utility	Event Logger (Not Received)	Tripping Report (Not Received)	Tripping Report (NA) as informed by utility	Tripping Report (Not Received)	Remark
			Value	%	Value		%	Value		%	Value		%	
30	RAPPB	4	4	100	4	0	100	4	0	100	4	0	100	DR, EL & Tripping report need to be submitted
31	RENEW SURYARAVI (RSRPL)	2	2	100	2	0	100	2	0	100	2	0	100	
32	SALAL-NH	2	0	0	0	1	0	0	1	0	0	1	0	Details received
33	SAURYA	2	2	100	2	0	100	2	0	100	2	0	100	DR, EL & Tripping report need to be submitted
34	SEWA-2-NH	6	0	0	0	0	0	0	0	0	0	0	0	Details received
35	SHREE CEMENT	1	1	100	1	0	100	1	0	100	1	0	100	DR, EL & Tripping report need to be submitted
36	SLDC-DV	8	0	0	0	1	0	0	1	0	0	0	0	Details received
37	SLDC-HP	6	0	0	0	3	0	0	2	0	0	0	0	
38	SLDC-HR	27	4	15	8	7	40	8	6	38	5	0	19	DR, EL & Tripping report need to be submitted
39	SLDC-JK	17	1	6	17	0	100	17	17	0	17	0	100	
40	SLDC-PS	25	3	12	18	2	78	18	2	78	22	0	88	
41	SLDC-RS	57	11	19	15	8	31	15	8	31	31	1	55	
42	SLDC-UK	10	0	0	0	7	0	0	7	0	1	0	10	
43	SLDC-UP	118	11	9	12	13	11	12	18	12	12	6	11	
44	STERLITE	5	0	0	0	0	0	0	0	0	2	3	100	
45	TANAKPUR-NH	2	1	50	1	0	50	1	0	50	1	0	50	
46	TATAPOWER	1	1	100	1	0	100	1	0	100	1	0	100	
47	TEHRI	2	2	100	2	0	100	2	0	100	2	0	100	
48	TPGEL_SL	1	1	100	1	0	100	1	0	100	1	0	100	
49	URI-II-NH	2	2	100	1	0	50	1	0	50	2	0	100	
50	URI-I-NH	1	1	100	0	0	0	0	0	0	1	0	100	
Total in NR Region		**516**	**77**	**15**	**122**	**66**	**27**	**128**	**95**	**30**	**145**	**18**	**29**	

As per the IEGC provision under clause 37.2 (c), detailed tripping report along with DR & EL has to be furnished within 24 hrs of the occurrence of the event

S. No.	Name of the Generatng Station (Capacity in MW)	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/NRPC (Yes/ No)	Remarks (if any)	Tentative schedule for PSS tuning / re-tuning
1	**THDC**					
	TEHRI HPS(4 * 250)	15.12.2021 to 20.12.2021	15.12.2021 to 20.12.2021	Yes	(Report shared vide email dt.19.01.2019)	
	KOTESHWAR HPS(4 * 100)	17/03/2019 to 19/03/2019	17/03/2019 to 19/03/2019	Yes	(Report shared vide email dt.11.02.2021)	
2	**SJVNL**					
	NATHPA-JHAKRI HPS(Unit1 #250)	10.03.2020	-	No	Excitation system upgraded in 2020	
	NATHPA-JHAKRI HPS(Unit2 #250)	14.03.2013	-	No	The upgradation of old excitation system of Unit No.#2&4 will be carried out during Annual Plant Maintenance of FY 20222-23, therefore PSS tuning shall be carried out at the time of upgradation of unit. It is also submitted that step response test of other Units shall also be carried out during upgradation work of Unit # 2 &4 by the OEM, being a system and software specific job.	
	NATHPA-JHAKRI HPS(Unit3 #250)	03.03.2020	-	No	Excitation system upgraded in 2020	
	NATHPA-JHAKRI HPS(Unit4 #250)	14.03.2013	-	NO	The upgradation of old excitation system of Unit No.#2&4 will be carried out during Annual Plant Maintenance of FY 20222-23, therefore PSS tuning shall be carried out at the time of upgradation of unit. It is also submitted that step response test of other Units shall also be carried out during upgradation work of Unit # 2 &4 by the OEM, being a system and software specific job.	
	NATHPA-JHAKRI HPS(Unit5 #250)	14.05.2016	14.05.2016	NO	Excitation system upgraded in 2013	
	NATHPA-JHAKRI HPS(Unit6 #250)	14.05.2017	14.05.2017	NO	Excitation system upgraded in 2013	
	RAMPUR HEP(6 * 68.67)	29.11.2014	27.10.2020,10.02.20121	YES	PSS Response and Step Test response was checked in February, 2021 by Rampur HPS and report of the same was submitted to NRLDC. Now the work of PSS tuning and step response testing has been awarded to BHEL, Bengaluru. Testing shall be carried out in November, 2022.	
3	**HVPNL**					
	PANIPAT TPS(unit1# 250)	29.03.2016	29.03.2016	YES	--	
	PANIPAT TPS(unit2# 250)	15.01.2018	15.01.2018	YES	--	
	DCRTPP (YAMUNA NAGAR)(unit1#300)	19-12-2018	19-12-2018	YES	(Report attached)	
	DCRTPP (YAMUNA NAGAR)(unit1#300)	Will be carried out shortly				
	RGTPP(KHEDAR) (2*600)	5th to 6th July 2013	5th to 6th July 2013	Report attached. Previous record being looked into	No MW capacity addition after 2013 at RGTPP Khedar. No new line addition in vicinity of station	
	JHAJJAR(CLP) (2*660)	20-05-2017	20-05-2017	YES	--	
4	**NTPC**					
	Rihand (Unit1#500)	03-03-2017	03-03-2017	YES	Next test will be done during re-commissioning of unit after O/H	
	Rihand (Unit2#500)	02-07-2016	02-07-2016	YES	Next test will be done during re-commissioning of unit after O/H	
	Rihand (Unit3#500)	15-08-2015	15-08-2015	YES	Next test will be done during re-commissioning of unit after O/H	
	Rihand (Unit4#500)	25-05-2017	25-05-2017	YES	Next test will be done during re-commissioning of unit after O/H	
	Rihand (Unit4#500)	11-12-2014	11-12-2014	YES	Next test will be done during re-commissioning of unit after O/H	
	Rihand (Unit5#500)	11-12-2014	11-12-2014	YES	Next test will be done during re-commissioning of unit after O/H	
	SINGRAULI STPS(Unit1#200)	-	-	-	Not done in last three years	
	SINGRAULI STPS(Unit2#200)	-	-	-	Not done in last three years	
	SINGRAULI STPS(Unit3#200)	-	-	-	Not done in last three years	
	SINGRAULI STPS(Unit4#200)	-	-	-	Not done in last three years	
	SINGRAULI STPS(Unit5#200)	-	-	-	Not done in last three years	
	SINGRAULI STPS(Unit6#500)	02.05.2018	02.05.2018	NO	--	

	SINGRAULI STPS(Unit7#500)	15.07.2018	15.07.2018	NO	--	
	UNCHAHAR I(2 * 210)	29-03-2016	29-03-2016	YES	--	
	UNCHAHAR II TPS(unit1# 210)	13-07-2019	13-07-2019	YES	--	
	UNCHAHAR II TPS(unit2# 210)	10-08-2018	10-08-2018	YES	--	
	UNCHAHAR UNIT6#500	-	31.03.2017	YES	--	
	KOLDAM HPS(4 * 200)	01-07-2015	01-07-2015	YES	--	
	DADRI GPS(2 * 154.51) (ST- Steam Turbine)	-	18-11-2015	YES	Next test will be done during re-commissioning of unit after O/H	
	DADRI GPS(2 * 154.51) (GT- Steam Turbine)	2017-18	2017 & 2018	YES	Next test will be done during re-commissioning of unit after O/H	
	ANTA GPS GT-1 (88.71)(GT- Gas Turbine)	10-10-2021	10-10-2021	YES		
	ANTA GPS GT-2 (88.71)(GT- Gas Turbine)	10-10-2021	10-10-2021	YES		
	ANTA GPS GT-3 (88.71)(GT- Gas Turbine)	08-08-2014	08-08-2014	YES	Next test will be done when Station will get opprtunity to have shcedule to run on full load.	
	ANTA GPS(1 * 153.2)(ST- Steam Turbine)	08-08-2014	08-08-2014	YES	Next test will be done when Station will get opprtunity to have shcedule to run on full load.	
5	**Aravali Power Company Private Ltd**					
	ISTPP (JHAJJAR)(3 * 500)	-	25-08-2015	YES	--	
6	**NHPC**					
	CHAMERA HPS (3*180)	06-08-2020	27-12-2019	YES	--	
	CHAMERA II HPS(3 * 100)	11-10-2015	11-10-2015	NO	Replacement of Excitation system in two units	
	CHAMERA III HPS(Unit1#77)	29-10-2015	07-01-2012	YES	--	
	CHAMERA III HPS(Unit2,3#77)	29-10-2015	19-06-2012	YES	--	
	PARBATI III HEP (Unit1# 130)	21-01-2016	21-01-2016	YES	Have been done recetly. The report on PSS turning shall be submitted seperately.	
	DULHASTI HPS(Unit2#130)	21-01-2020	21-01-2020	YES	--	
	DULHASTI HPS(Unit1#130)	29-12-2019	29-12-2019	YES	--	
	URI HPS(Unit3# 120)	10-01-2021	10-01-2021	YES	--	
	URI HPS(Unit4# 120)	15-02-2021	15-02-2021	YES	--	
	URI HPS(Unit2# 120)	07-03-2016	07-03-2016	YES	--	
	URI-II HPS(4 * 60)	Mar-14	Mar-14		2021-22	
	SALAL HPS (Unit-3,4,5,6 # 115)	16-12-2014	16-12-2014	YES	--	
	KISHANGANGA(3 * 110)	18-05-20 18	18-05-20 18	YES	--	
	BAIRASIUL HPS(3 * 60)	30-07-2015	30-07-2016	YES	--	
	SEWA-II HPS(3 * 40)	09-07-2016	09-07-2016	YES	--	
	PARBATI III HEP(4 * 130)	16-12-2016	16-12-2016	YES	--	
	TANAKPUR HPS(Unit1# 31.42)	09-01-2015	09-01-2015	YES	--	
	TANAKPUR HPS(Unit2,3#31.4)	24-05-2014	24-05-2014	YES	--	
	DHAULIGANGA HPS(Unit1 ,2# 70)	04-05-2014	17-04-2018	YES	--	
	DHAULIGANGA HPS(Unit3,4# 70)	26-06-2014	17-04-2018	YES	--	
7	**PUNJAB**					
	RAJPURA(NPL) TPS(2 * 700)	22-04-2014	22-04-2014	YES	--	
8	**Rajasthan**					
	KAWAI TPS(Unt1# 660)	03-02-2023	03-02-2023	YES	--	
	KAWAI TPS(Unt2# 660)	03-02-2023	03-02-2023	YES	--	
	CHHABRA TPS(Unit 1#250)	28-02-2023	28-02-2023	NO	--	
	CHHABRA TPS(Unit 2,3,4#250)	28-02-2023	28-02-2023	NO	--	
	CHHABRA TPS(Unit5# 660)	10-02-2016	10-02-2016	YES	--	
	CHHABRA TPS(Unit6# 660)	7/28/2018	7/28/2018	YES	--	
	KALISINDH TPS(Unit1# 600)	03-02-2023	03-02-2023	YES	--	
	KALISINDH TPS(Unit2# 600)	03-02-2023	03-02-2023	YES	--	
	KOTA TPS(Unit1#110)	PSS tuning and step response test of Unit#1,2,3,4,6&7 conducted sucessfully during 02.03.22 to 04.03.22		YES		
	KOTA TPS(Unit2#110)				--	
	KOTA TPS(Unit3#195)				--	
	KOTA TPS(Unit4#195)				--	
	KOTA TPS(Unit6#110)				--	
	KOTA TPS(Unit7#110)				--	
	SURATGARH TPS (Unit5#250)	14-03-2022	14-03-2022	Yes	--	
	SURATGARH TPS (Unit2,4#250)	06-06-2022		Yes	--	
	SURATGARH TPS (Unit1,3,,6#250)	05.02.22 & 06.02.22		Yes	--	
	SURATGARH SSCTPS (Unit 7&8)	PSS tuning and step response test of Unit#7&8 were carried out on 28.11.20 & 30.03.21.				
	RAJWEST (IPP) LTPS(Unit1# 135)	26-04-2016	26-04-2016	No	--	
	RAJWEST (IPP) LTPS(Unit2# 135)	14-07-2016	14-07-2016	No	--	
	RAJWEST (IPP) LTPS(Unit3# 135)	03-01-2014	03-01-2014	No	--	
	RAJWEST (IPP) LTPS(Unit4# 135)	03-11-2015	03-11-2015	No	--	
	RAJWEST (IPP) LTPS(Unit5# 135)	21-09-2014	21-09-2014	No	--	
	RAJWEST (IPP) LTPS(Unit6# 135)	14-08-2014	14-08-2014	No	--	
	RAJWEST (IPP) LTPS(Unit7# 135)	20-02-2016	20-02-2016	No	--	
	RAJWEST (IPP) LTPS(Unit8# 135)	11-06-2014	11-06-2014	No		
9	**UTTAR PRADESH**					
	ANPARA-C TPS(Unit1# 600)	22-08-2015	22-08-2015	Yes	--	

	ANPARA-C TPS(Unit2# 600)	08-03-2016	08-03-2016	Yes	--	
	ROSA TPS(Unit1 #300)	05-10-2021	05-10-2021	Yes	--	
	ROSA TPS(Unit2# 300)	15-01-2022	15-01-2022	Yes	--	
	ROSA TPS(Unit3 # 300)	03-02-2017	03-02-2017	Yes	--	
	ROSA TPS(Unit4# 300)	05-10-2021	05-10-2021	Yes	--	
	Anpara-A (Unit1#210)	27.09.2021	27.09.2021	Yes	--	
	Anpara-A(Unit2#210)	27.09.2021	27.09.2021	Yes	--	
	Anpara-A(Unit3#210)	25.09.2020	25.09.2020	Yes	--	
	Anpara-B(Unit4#500)	07.12.2014	07.12.2014	Yes		
	Anpara-B (Unit5#500)	17.08.2014	Dec., 2019	Yes	--	
	Anpara-D(Unit6#500)	17.09.2022	17.09.2022	No	--	
	Anpara-D (Unit7#500)	17.09.2022	17.09.2022	No	--	
	Obra-B(Unit9#200)	19.09.2022	22.03.2016	Yes	Report enclosed.	
	Obra-B(Unit10#200)	19.09.2022	19.09.2022	Yes	Report enclosed.	
	Obra-B (Unit11#200)	19.09.2022	19.09.2022	Yes	Report enclosed.	
	Obra-B (Unit12#200)	19.09.2022	19.09.2022	-	PSS tuning and SRT scheduled in April, 2021.	
	Obra-B(Unit13#200)	Unit closed under R&M.		-	PSS tuning and SRT scheduled in April, 2021.	
	Parichha-B(Unit3#210)	08.01.2016	08.01.2016	Yes	--	
	Parichha-B (Unit4#210)	08.01.2016	08.01.2016	Yes	--	
	Parichha-C (Unit5#250)	08.02.2020	08.02.2020	No	--	
	Parichha-C(Unit3#250)	09.01.2016	09.01.2016	No	--	
	Harduaganj (Unit8#250)	20.08.2015	20.08.2015	No	--	
	Harduaganj (Unit3#250)	13.04.2016	13.04.2016	No	--	
	Harduaganj(Unit7#105)	16.07.2021	16.07.2021	yes	--	
	Harduaganj(Unit9#250)	16.07.2021	16.07.2021	yes	--	
	LALITPUR TPS(Unit1# 660)	23.02.2022	23.02.2022	yes	--	
	LALITPUR TPS(Unit2# 660)	30.03.2021	30.03.2021	yes	--	
	LALITPUR TPS(Unit3# 660)	15.01.2022	15.01.2022	yes	--	
	ALAKNANDA HEP(Unit1# 82.5)	12.072017	12.072017	No	--	
	ALAKNANDA HEP(Unit2# 82.5)	12.072017	12.072017	No	--	
	ALAKNANDA HEP(Unit3# 82.5)	12.072017	12.072017	No	--	
	ALAKNANDA HEP(Unit4# 82.5)	12.072017	12.072017	No	--	
	MEJA TPS(Unit1#660)	16.10.2018	05.09.2017	yes	--	
	MEJA TPS(Unit2#660)	16.01.2021	18.05.2020	yes	--	
	Bara Unit#1				Step test for PSS checking was not performed since commissioning by erstwhile owner as per information available. PSS tuning along with step test will be performed in next AOH (May 2022 or planned shutdown)	
	Bara Unit#2	01.02.2022	01.02.2022	Yes		
	Bara Unit#3				Step test for PSS checking was not performed since commissioning by erstwhile owner as per information available. PSS tuning along with step test will be performed in next AOH (May 2022 or planned shutdown)	
	Vishnuprayag Unit#1	06/02/2021	06/02/2021	Submitted in the prescribed format provided by NRLDC to SE (R&A)		
	Vishnuprayag Unit#2	06/04/2021	06/04/2021			
	Vishnuprayag Unit#3	06/04/2021	06/04/2021			
	Vishnuprayag Unit#4	05/02/2021	05/02/2021			
10	**BBMB**					
	BHAKRA HPS(Unit1#108)	--	--	No	PSS is not provided ,shall be provided in ongoing RM&U	
	BHAKRA HPS(Unit1#108)	24.07.2015	24.07.2015	No	--	
	BHAKRA HPS(Unit3#126)	--	--	No	PSS is not provided ,shall be provided in ongoing RM&U	
	BHAKRA HPS(Unit4#126)	--	--	No	--	
	BHAKRA HPS(Unit5#126)	--	--	No	--	
	BHAKRA HPS(Unit6#157)	--	--	No	The original Rusian excitation system is under replacement PO issued Hence,PSS not got tuned.	
	BHAKRA HPS(Unit7#157)	--	--	No	The original Rusian excitation system is under replacement PO issued Hence,PSS not got tuned.	
	BHAKRA HPS(Unit7#157)	--	--	No	The original Rusian excitation system is under replacement PO issued Hence,PSS not got tuned.	
	BHAKRA HPS(Unit7#157)	18.02.2016	18.02.2016	No	--	
	BHAKRA HPS(Unit7#157)	18.02.2017	18.02.2017	No	--	
	DEHAR HPS(Unit#1 165)	08.08.2017	08.08.2017	No	--	
	DEHAR HPS(Unit#2 165)	08.08.2018	08.08.2018	No	--	
	DEHAR HPS(Unit#3 165)	08.08.2019	08.08.2019	No	--	
	DEHAR HPS(Unit#4 165)	02.07.2017	02.07.2017	No	--	
	DEHAR HPS(Unit#5 165)	08.08.2019	08.08.2019	No	--	
	DEHAR HPS(Unit#6 165)	02.07.2017	02.07.2017	No	--	
	PONG HPS(6 * 66)	--	--	--	PSS not provided.RM&U agenda under considration.	