सत्यमेव जयते

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

सं: उ.क्षे.वि.स./प्रचालन/106/01/2022/2752-2793 दिनांक: 15.03.2022

विषय: प्रचालन समन्वय उप-समिति की 193वीं बैठक की कार्यसूची।
Subject: Agenda of 193rd OCC meeting.

प्रचालन समन्वय उप-समिति की **193वीं** बैठक का आयोजन वीडियो कॉन्फ्रेंसिंग के माध्यम से दिनांक **22.03.2022** 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।

193rd meeting of the Operation Co-ordination sub-committee will be conducted through Video Conferencing on **22.03.2022** 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.

15/03/2022

(सौमित्र मजूमदार)
अधीक्षण अभियंता (प्रचालन)

सेवा में : प्रचालन समन्वय उप समिति के सभी सदस्य।
To : All Members of OCC

1. Confirmation of Minutes

The minutes of the 192nd OCC meeting were issued vide letter of even number dated 07.03.2022.

Sub-committee may deliberate and kindly confirm the Minutes.

2. Review of Grid operations

2.1 Power Supply Position (Provisional) for February 2022

Anticipated Power Supply Position v/s Actual Power Supply Position (Provisional) of Northern Region during the month of February-2022 is as under:

State / UT	Req. / Avl.	Energy (MU)			Peak (MW)		
		Anticipated	Actual	% Variation	Anticipated	Actual	% Variation
CHANDIGARH	(Avl)	100	97	-3.1%	250	260	4.0%
	(Req)	120	97	-19.3%	240	260	8.3%
DELHI	(Avl)	3148	1873	-40.5%	5062	4985	-1.5%
	(Req)	1950	1873	-3.9%	4600	5024	9.2%
HARYANA	(Avl)	4470	3453	-22.8%	10920	7208	-34.0%
	(Req)	3730	3470	-7.0%	7900	7208	-8.8%
HIMACHAL PRADESH	(Avl)	873	937	7.2%	1825	1968	7.8%
	(Req)	888	944	6.3%	1810	1968	8.7%
J&K and LADAKH	(Avl)	950	1536	61.7%	3810	2826	-25.8%
	(Req)	1720	1666	-3.1%	2890	3076	6.4%
PUNJAB	(Avl)	4322	3533	-18.3%	7500	7104	-5.3%
	(Req)	4136	3536	-14.5%	7290	7104	-2.6%
RAJASTHAN	(Avl)	9352	7763	-17.0%	18950	15784	-16.7%
	(Req)	7700	7773	0.9%	15300	15784	3.2%
UTTAR PRADESH	(Avl)	8680	8602	-0.9%	18500	19088	3.2%
	(Req)	8260	8602	4.1%	18500	19088	3.2%
UTTARAKHAND	(Avl)	1084	1088	0.4%	2270	2379	4.8%
	(Req)	1092	1093	0.1%	2340	2379	1.7%
NORTHERN REGION	(Avl)	32979	28882	-12.4%	72300	55000	-23.9%
	(Req)	29596	29054	-1.8%	55800	55100	-1.3%

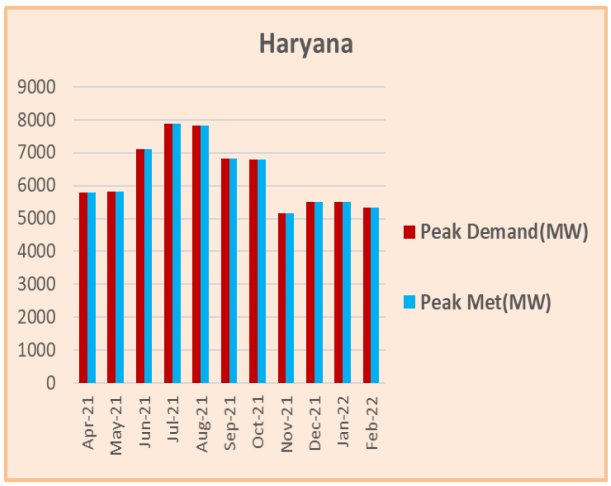
As per above, negative / significant variation (≥5%) in Actual Power Supply Position (Provisional) vis-à-vis Anticipated figures is observed for the month of February-2022 in terms of Energy Requirement for Chandigarh, Delhi, Haryana, HP, UTs of J&K and Ladakh, Punjab, and in terms of Peak Demand similar variation is noted for Chandigarh, Delhi, Haryana, HP, UTs of J&K and Ladakh, Punjab. These states/UTs are requested to submit reason for such variations so that the same can be deliberated in the meeting.

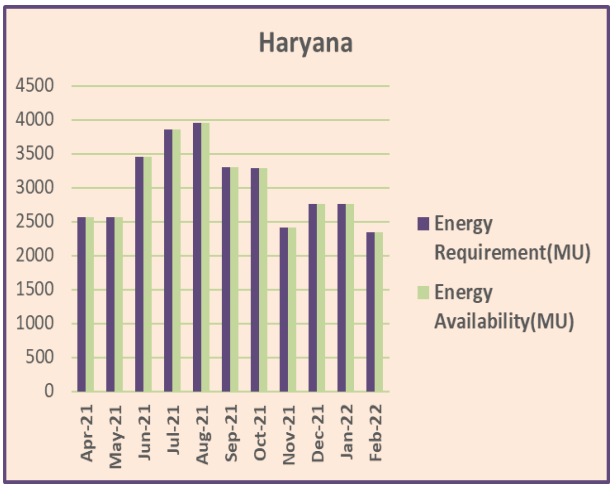
All SLDCs are requested to furnish provisional and revised power supply position in prescribed formats on NRPC website portal by 2nd and 15th day of the month

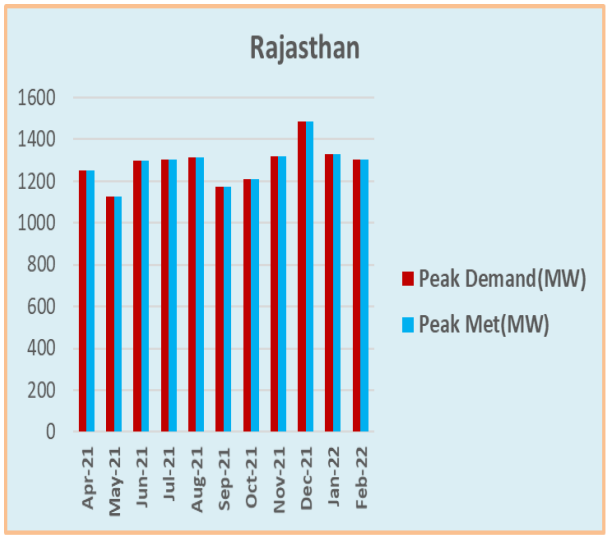
respectively for the compliance of Central Electricity Authority (Furnishing of Statistics, Returns and Information) Regulations, 2007.

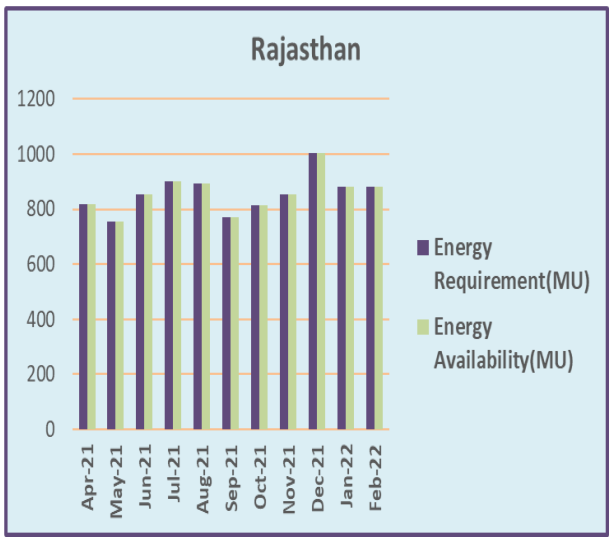
2.2 Power Supply Position of NCR

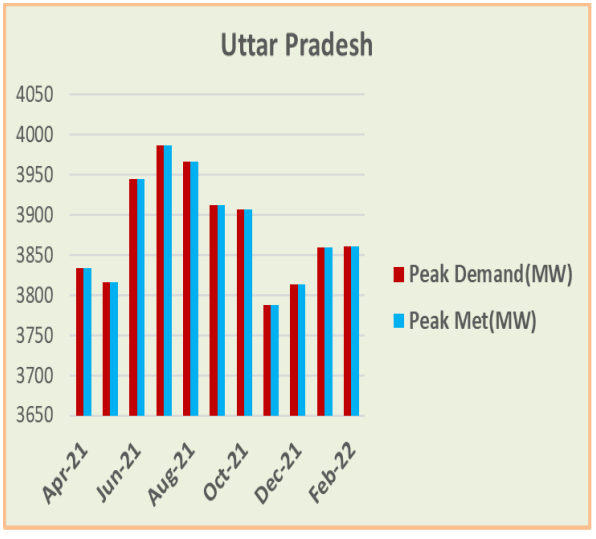
NCR Planning Board (NCRPB) is closely monitoring the power supply position of National Capital Region. Monthly power supply position for NCR till the month of February-2022 is available on NRPC website (http://164.100.60.165). Power supply position during the current financial year is shown as under:

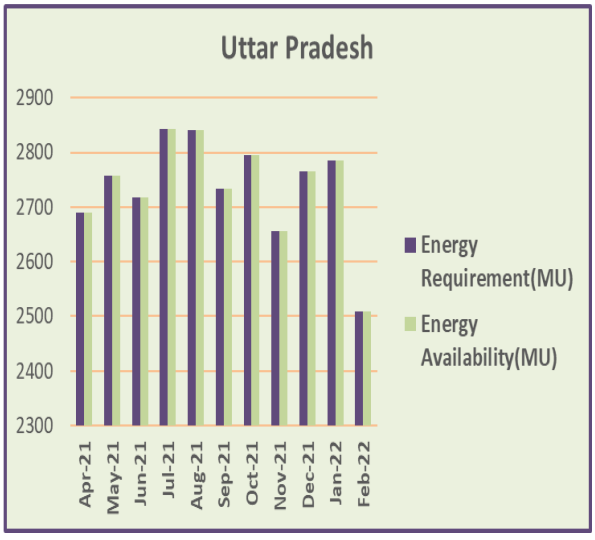


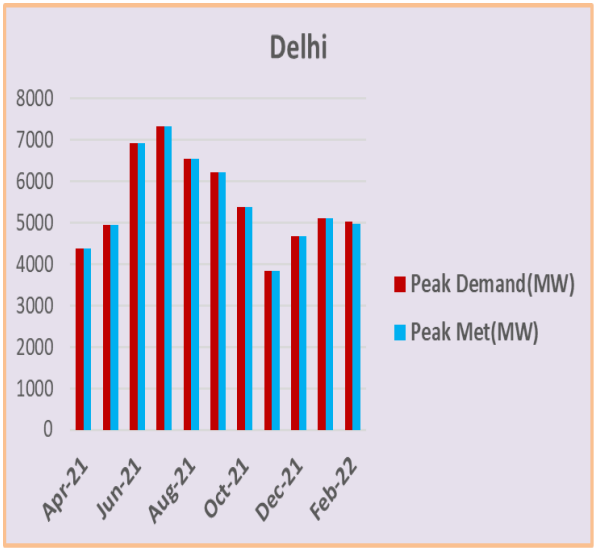


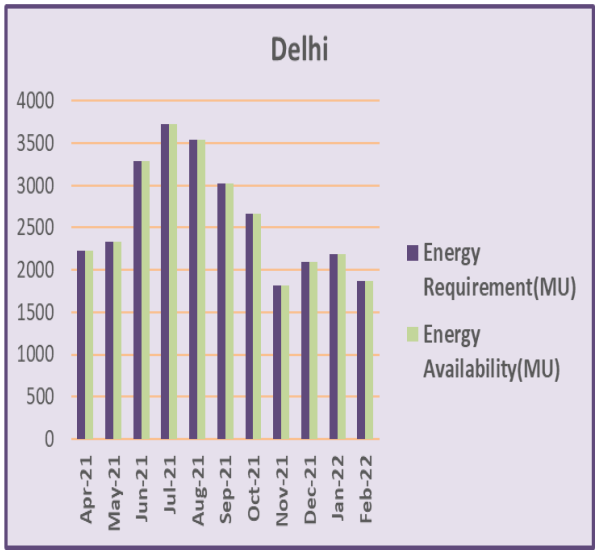












3. Maintenance Programme of Generating Units and Transmission Lines

3.1. Maintenance Programme for Generating Units

The meeting on proposed maintenance programme for Generating Units for the month of April-2022 is scheduled on 21-March-2022 via Video Conferencing.

3.2. Outage Programme for Transmission Elements

The meeting on proposed outage programme of Transmission elements for the month of April-2022 is scheduled on 21-March-2022 via Video conferencing.

4. Planning of Grid Operation

4.1. Anticipated Power Supply Position in Northern Region for April 2022

The Anticipated Power Supply Position in Northern Region for April 2022 is as under:

State / UT	Availability / Requirement	Revised Energy (MU)	Revised Peak (MW)
CHANDIGARH	Availability	120	360
	Requirement	100	290
	Surplus / Shortfall	20	70
	% Surplus / Shortfall	20.0%	24.1%
DELHI	Availability	2360	5890
	Requirement	2900	6100
	Surplus / Shortfall	-540	-210
	% Surplus / Shortfall	-18.6%	-3.4%
HARYANA	Availability	4750	10740
	Requirement	4175	9000
	Surplus / Shortfall	575	1740
	% Surplus / Shortfall	13.8%	19.3%
HIMACHAL PRADESH	Availability	920	1630
	Requirement	908	1635

State / UT	Availability / Requirement	Revised Energy	Revised Peak (MW)
	Surplus / Shortfall	12	-5
	% Surplus / Shortfall	1.4%	-0.3%
J&K and LADAKH	Availability	1280	3000
	Requirement	1830	3110
	Surplus / Shortfall	-550	-110
	% Surplus / Shortfall	-30.1%	-3.5%
PUNJAB	Availability	5140	10790
	Requirement	3840	8370
	Surplus / Shortfall	1300	2420
	% Surplus / Shortfall	33.9%	28.9%
RAJASTHAN	Availability	8480	18010
	Requirement	7760	12200
	Surplus / Shortfall	720	5810
	% Surplus / Shortfall	9.3%	47.6%
UTTAR PRADESH	Availability	12680	23970
	Requirement	11400	21500
	Surplus / Shortfall	1280	2470
	% Surplus / Shortfall	11.2%	11.5%
UTTARAKHAND	Availability	1077	1920
	Requirement	1098	1950
	Surplus / Shortfall	-21	-30
	% Surplus / Shortfall	-1.9%	-1.5%
NORTHERN REGION	Availability	36807	70300
	Requirement	34011	59100
	Surplus / Shortfall	2796	11200
	% Surplus / Shortfall	8.2%	19.0%

SLDCs are requested to update the anticipated power supply position of their respective state / UT for the month of April-2022 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. Submission of breakup of Energy Consumption by the states

5.1 The updated status on the submission of energy consumption breakup is presented below:

State / UT	From	To
DELHI	Apr-2018	Sep-2021
HARYANA	Apr-2018	Oct-2021
HIMACHAL PRADESH	Apr-2018	Dec-2021
PUNJAB	Apr-2018	Jul-2021
RAJASTHAN	Apr-2018	Nov-2021

State / UT	From	To
UTTAR PRADESH	Apr-2018	Jan-2022
UTTARAKHAND	Apr-2018	Sept-2021

All the remaining UTs viz., 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 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>						

6. System Study for Capacitor requirement in NR for the year 2019-20

6.1 In the 45th TCC/ 48th NRPC meeting, it was decided that the study report for 2019-20 along with the guidelines for finding the capacitor requirement at 11/33 kV level in NR would be submitted by CPRI. In the meeting, CPRI representative had stated that as there were diversified network configurations at the level of DISCOMs, the guidelines to be provided would be generalized and may also include some empirical formula along with examples which may guide the DISCOMs for finding out the capacitor requirement.

6.2 Based on the above deliberation, CPRI submitted the system study report (enclosed in the agenda of 177th OCC meeting) and which was circulated among all the SLDCs and STUs vide e-mail dated 02.11.2020.

6.3 In the 177th OCC meeting, representatives of Punjab, Rajasthan, Delhi and Haryana stated that the capacitors considered in the study were far less than already installed. In the meeting, it was decided that states shall first analyze the PSSE file considered by CPRI in its study and bring out the locations wherein capacitors are already installed in the network, but are not modelled along with their comments.

6.4 The list of bus-wise available MVAr and the additionally required MVAr computed in the CPRI report was shared separately by NRPC Sectt with SLDCs of Punjab, Haryana, Rajasthan, Delhi and Uttarakhand on 07.01.2021 with the request to provide available MVAr values in those buses. In 179thOCC meeting, it was decided that any submission of MVAr data / feedback from the states would be would be allowed till 22.01.2021 and thereafter CPRI would conduct the modelling and simulation work for the purpose of final capacitor study report. Accordingly, feedbacks received from Punjab, Rajasthan, Haryana and Delhi was forwarded to CPRI for carrying out study and submission of report.

6.5 CPRI has submitted the revised report on 24.02.2021 and thereafter same was shared with the constituent states. The recommended capacitor compensation, additionally required as per the report is 352MVAr. The report has brought out the additional requirement of 137MVar and 215MVar compensation for Punjab and J&K respectively. Moreover, empirical relationship for capacitor requirement against voltage profile at 11 kV, based on two configurations has been worked out in the report.

6.6 In the 45th TCC / 48th NRPC meeting, it was decided after the submission of report for 2019-20 and the guidelines, the same would be studied by the same Committee who had earlier recommended for guidelines and foreclosure of the contract. Based on Committee's recommendations, NRPC Sectt. can process the pending bills of Rs. 14 lakhs (Rs. 2 + 12 Lakhs), excluding taxes along with foreclosure of the contract. Accordingly, submitted report needs to be examined by the Committee.

6.7 In the 181st OCC meeting, the sub-group comprising of ten members was advised to study the CPRI report and submit its recommendation within two weeks.

6.8 NRPC Sectt. asked comments/observations on the CPRI report from all the states via e-mail. Comment from Delhi had been received. Rajasthan, HP, Punjab, Haryana had submitted NIL comment. Comment from rest of the members was not received.

6.9 In the 182nd OCC meeting, forum decided that a video-conferencing meeting may be held by members of sub-group to finalize the comments latest by 30th April, 2021 and compiled comments may be sent to CPRI for necessary correction in the report.

6.10 In the 183rd OCC, NRPC representative informed that the meeting of sub-group was held on 03.05.21 (in place of originally schedule meeting on 30.04.21, delayed as per request of some sub-group members due to health-related concerns). Representative from Rajasthan could not attend as she was suffering from covid-19 while Uttarakhand representative informed in the meeting that there is an acute shortage of available officers at this time and they will agree to the remarks made by NRLDC. Further, PSSE file was requested from CPRI as per request of all sub-group members for better understanding and the same was shared with them.

6.11 NRPC representative requested for any other comments on the CPRI report, if remaining, from any of the members. Sub-group committee member from Rajasthan stated that since the CPRI report is for the year 2019-20, old data needs to be collected and then values in the CPRI report would be checked. It was further intimated that around 2-3 days' time would be required for this task. Rajasthan representative was requested to send their observation/comments via e-mail to NRPC Sectt. at the earliest.

6.12 Forum decided that after receiving observations/comments from Rajasthan, the compiled observations/comments may be sent to CPRI so that necessary corrections may be done in the draft report.

6.13 In 184th OCC, forum was apprised that compiled comments have been mailed to CPRI vide email dated 28th May'21 with a request to submit the corrected report within two weeks' time. CPRI vide email dated 31st May'21 communicated that majority of comments are on the modeling of base case PSSE file. Since the file is given by NRPC and CPRI has not modeled it; so, they are not in position to make any comment on the accuracy & modeling of file. Forum decided that a reminder may be sent to CPRI for submission of corrected Report as two weeks has already passed.

6.14 In 185th OCC, NRPC representative intimated the forum that CPRI has submitted its point-wise reply on the observations of sub-group along with updated report on 28th June 2021.

6.15 MS, NRPC expressed concern over inordinate delay in finalizing the report. Forum decided that issues highlighted by the sub-group in the report and

clarifications/comments thereon of CPRI need to be converged at the earliest and thus a video-conferencing meeting may be held between the sub-group and CPRI for resolution of issues and enabling report finalization.

6.16 The meeting was held on 06.08.2021 at 11:00 a.m. under the chairmanship of MS, NRPC through Video Conferencing. It was attended by members of the sub-group (constituted for studying the CPRI report), CPRI representatives, and officials from NRPC Sectt & NRLDC.

6.17 In the meeting, comments of the sub-group on the latest version of CPRI report was deliberated in detail. After weighing the merits of the original & both revisions of the report, following were decided:

- First Report submitted by CPRI in September, 2020 shall be considered as the reference report. CPRI confirmed that the basecase of 11.07.2018 at 00:45 hrs. received from NRPC Sectt has been used for preparing September, 2020 report.
- Comments from all utilities and NRLDC on September 2020 report must be submitted to NRPC Sectt, latest by 24.08.2021.
- NRPC Sectt, after examination, shall share with CPRI the compiled comments of the utilities and NRLDC, latest by 31.08.2021.
- Thereafter, CPRI shall submit its reply on the compiled comments sent by NRPC Sectt, latest by 15.09.2021.

6.18 Base case file (11.07.2018 00:45 hrs) and CPRI September 2020 report has been e-mailed to all sub-group members on 10.08.2021 requesting to submit comments/observations thereon latest by 24.08.2021 as per decision of the meeting dtd. 06.08.2021.

6.19 In the 187th OCC, forum was apprised that although last date for submission of comments was 24.08.2021, NRPC Sectt. received comments from Himachal Pradesh, Punjab, Rajasthan, Delhi, and NRLDC vide mails dtd. 24.08.2021, 25.08.2021, 26.08.2021, 31.08.2021, and 03.09.2021 respectively. As the received comments were also on the base-case data, a meeting was held on 06.09.2021 among officers of NRPC Sectt, NRLDC and above four states for discussing comments before sending to CPRI. After detailed discussions, following were decided:

A. Himachal Pradesh:

a) It was apprised by NRLDC that generation data of micro IPPs has not been modelled by them in base-case due to their small quantity. Further, Capacitor at Baddi needs to be removed from base-case.

b) HP was requested to submit within 3 days data regarding (11.07.2018 00:45 HRS):

i. Generation break-up along with details of micro IPPs.

ii. Capacitors at 132 kV level.

iii. Nodes of major voltage profile mismatch

iv. Load factor of state (current scenario if data of past is not available)

c) It was decided that after getting above data from HP, base-case will be tuned

by NRLDC before sending to CPRI.

B. Punjab:

a) All switched reactors/capacitors to be converted into fixed & net shunt capacitor value in the base-case to be corrected as per Punjab's comment.

b) Punjab was requested to submit low voltage nodes (11.07.2018 00:45 HRS) within 3 days.

c) Based on data from Punjab, initial tuning to be done by NRLDC for Q values of generators. CPRI may be required to do further tuning.

C. Rajasthan:

a) Except low voltage points, power factor needs to be upgraded in the base-case.

b) Rajasthan representative confirmed that most of the capacitors were off during the time for which modelling is done, so lumped capacitor at 132kV needs to be deleted.

c) Rajasthan was requested to submit

i. List of bus-wise capacitors and their status (OFF/ON condition) on 11.07.2018 00:45 HRS.

ii. Voltage profile of generator buses.

D. Delhi:

a) Delhi was requested to submit voltage profile of generator buses.

6.20 It was decided that after receiving data from above four states, NRLDC will tune the basecase initially and will also ensure that regional generators shall not absorb reactive power in the base-case and then base case will be sent to CPRI along with compiled comments.

6.21 In the meeting, UP representative stated that they will send reply on mail of NRPC Sectt. dtd. 10.08.2021 for submission of their comments.

6.22 It was decided that data received at NRPC Sectt. may be sent to NRLDC for tuning of base-case.

6.23 NRLDC representative stated that base-case tuning may be completed by 30.09.2021.

6.24 CPRI vide e-mail dtd. 23.09.2021, requested to send comments at the earliest. NRPC Sectt. vide e-mail dtd. 23.09.2021 apprised the CPRI that as per decisions

6.25 of meeting dtd. 06.09.2021, tuning of base-case file is being done by NRLDC so

6.26 that no new issue arises in future.

6.27 CPRI vide e-mail dtd. 24.09.2021 has requested that any change in loading & generation profile will be a new base case and this will be a fresh study for new base case. It will require an extensive time and efforts. CPRI has requested to ensure that load/generation profile in tuned PSSE should be same as was given to CPRI for PSSE base 11.7.2018 at 00.45.

6.28 In view of CPRI's request, NRLDC was requested vide e-mail dtd. 24.09.2021 to halt tuning of base-case till further discussion.

6.29 A meeting was held between NRPC Sectt. and NRLDC on 04.10.2021, wherein it was decided that without incorporating corrective comments of states, the report is not acceptable w.r.t drawing any conclusion on requirement of capacitor. Accordingly, NRLDC was requested vide e-mail dtd. 08.10.2021 to complete tuning of base-case at the earliest.

6.30 In 188th OCC meeting, NRLDC representative informed that tuned base-case will be submitted by NRLDC by 28.10.2021. It was decided that the same will be sent to CPRI for necessary correction in report.

6.31 NRLDC vide e-mail dtd. 10.11.2021 submitted the tuned base-case to NRPC Sectt. mentioning that Basecase has been tuned considering the feedback/inputs received from states (Punjab, Delhi, Rajasthan, HP and UP) and considering NRLDC SCADA data of 11th July 2018.

6.32 In 189th OCC, NRPC representative apprised that tuned base-case along with comments of states will be sent to CPRI for necessary correction in the report.

6.33 In 190th OCC, NRPC representative informed that tuned base-case along with comments of states has been sent to CPRI vide mail dtd 30.11.2021 for correction in the report.

6.34 In 191st OCC, NRPC representative apprised the forum that a meeting was held between members of the sub-group (constituted for studying the CPRI report), CPRI representatives, and officials from NRPC Sectt & NRLDC.on 05.01.2022, wherein it was decided that CPRI shall tune the Qgen value taking help of NRLDC. Tuning may be done for some machines of Punjab (such as Talwandi Sabo), Uttarakhand (such as Shravanti), Himachal Pradesh, and Jammu. CPRI shall also tune Q_{gen} of Central Sector machines such as Salal, Rampur, Bhakra, Dehar etc. These Q_{gen} tunings shall be done in spirit to relieve machines from absorbing MVARs and to avoid over compensation in system due to recommended capacitors. CPRI has intimated 20th Jan'22 as target date for the activity.

6.35 CPRI vide mail dtd. 20.01.2022 intimated that tuning has been done as per decisions of meeting dtd. 05.01.2022 and requested NRLDC for tuning reactive power absorption of central generation in HP and JK. CPRI had submitted study results also in the same mail.

6.36 The study result was sent to NRLDC vide mail dtd 24.01.2022 for comments, if any.

6.37 NRLDC intimated vide mail dtd 03.02.2022 for requirement of tuning of following units

i. Himachal Pradesh: Baspa, Dulhasti, Jhakri, Koldam, Karcham

ii. Jammu & Kashmir: Baglihar, Salal, Uri-I,Uri-II

iii. ISGS: Dadri-C and Dadri NCR

NRLDC also suggested that after compensation, voltage at some of the nodes are exceeding 1.01 p.u. which need to avoid. Further, if in base-case, pre compensated voltage is less than 1.0 p.u, it should be ensure that after compensation it shouldn't exceed 1.01 p.u.

6.38 Comments of NRLDC was sent to CPRI vide mail dtd. 03.02.2022 for necessary action.

6.39 Reply from CPRI vide mail dtd. 04.02.2022 is attached at Annexure-A.0 of Agenda

of 192nd OCC. It is also highlighted that the tuned file has reached at a stage, where any further tuning in reactive power exchange from any one generator is resulting supply/absorption by nearby connected generating units.

6.40 CPRI has been instructed vide mail dtd. 05.02.2022 to prepare report and submit within a week's time.

6.41 NRPC Sectt. vide mail dated 02.03.2022 have shared the study report of CPRI, with states.

Sub-Committee may kindly note.

7. Automatic Demand Management System

7.1 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:

State/ Utility	Status
Punjab	**Scheme not implemented.** At SLDC level, remote tripping of 100 feeders at 66 kV is possible. At 11 kV feeder level, ADMS is to be implemented by Distribution Company.
Delhi	**Fully implemented** by TPDDL, BRPL and BYPL. NDMC implementation was scheduled to be completed by 31.03.2020 but got delayed due to some changes incorporated in the scheme.
Rajasthan	**Under implementation.** LoA placed on 12.12.2018 with an execution period of 18 months for ADMS at the level of 33 kV feeders at EHV Substation of RVPN under SCADA / EMS part of project. Supply is in progress. Work is under execution and likely to completed by June'2021. ADMS functionality at 11 kV feeders from 33/11 kV substation is under the jurisdiction of the DISCOMs.
UP	**Scheme implemented by NPCL only.** Remote operation of 50 feeders at 132 kV level being operated from SLDC. Further, the solution proposed by M/s Siemens was found to be non-economical and was not accepted by the management. Noida Power Company Ltd have implemented Intelligent Load Shedding (ILS) scheme, in compliance of IEGC requirements for automatic demand management.
Haryana	**Scheme not implemented.** More than 1700 feeders were tested from SLDC control room for remote operation. Regarding the implementation of ADMS at

State/ Utility	Status
	DISCOM level, the matter is being taken up with the DISCOMs.
HP	**Scheme not implemented.** 02 feeders could be operated from SLDC through manual intervention. Letter has been sent by HPSEB to HP-SLDC for making its operation automatic.

7.2 As decided in the 175th OCC meeting, the nominations for matter specific meeting has been received from HVPN, UHBVN/DHBVN, PSPCL, RVPN (SLDC & Automation), UPPTCL, KESCO (DISCOM-UP), NPCL (DISCOM-UP).

7.3 Meetings on ADMS implementation road map have been held with the officers of Haryana, Himachal Pradesh, Punjab and UP on 05.02.2021, 19.02.2021, 05.03.2021, and 14.07.2021 respectively. In these meetings, issues and apprehensions on ADMS were discussed along with vital aspects like addressing the commercial issues, basic architecture for scheme and funding possibilities for the scheme.

7.4 As per request of states for DPR of any state that has got PSDF support for ADMS, website link of PSDF Sectt. has been shared with Haryana, Himachal Pradesh, Punjab and Uttar Pradesh for accessing DPR. SLDCs were also requested to expedite the submission of pending nominations.

7.5 In-charge, NRLDC stated that as per IEGC, implementation of ADMS is mandatory. It helps in reducing DSM charges also. States must take it seriously.

7.6 MS, NRPC stated that non-implementation of ADMS by states is indistinguishably non-adherence to directions of CERC.

7.7 NRPC representative added that initial deadline for ADMS implementation was 1st January 2011 as per para 5.4.2 (d) of IEGC. Later, CERC has taken suo-motu cognizance of non-implementation of ADMS by states and given 31.06.2016 as deadline vide its order dtd. 31.12.2015 in petition no. 5/SM/2014. Implementation deadline given by the statutory and regulatory body need to complied by concerned SLDC / SEB / distribution licensee as per regulation no. 5.4.2 (a) & (b) of IEGC. Moreover, hand holding process for project proposal preparation in respect of four NR states has already been done by NRPC

7.8 Forum decided that NRLDC may file a report to CERC based on compiled status of ADMS implementation in states of Northern Region.

7.9 In 187th OCC meeting, NRLDC representative quoted the texts of CERC order dtd. 31.12.2015 in petition no. 5/SM/2014. He apprised the status of ADMS implementation till 2015. Further, he requested the states to update the status so that NRLDC may file petition in CERC on the basis of compiled status.

7.10 In the 188th OCC, NRLDC informed that it has not received comments from states in this matter. Accordingly, all SLDC/DISCOMs are requested to furnish the latest status of ADMS implementation in their respective control areas latest by 31st October 2021 to NRLDC. Status as received till 31.10.2021 would be reported to CERC by NRLDC.

7.11 In the 189th OCC, NRLDC informed that status of ADMS has been sent to CERC twice (Aug'16 and Sep'16) in the past. The same is recorded in MoM of 127th OCC also.

7.12 In 189th OCC, NRLDC representative informed that CERC will be apprised again within next 10 days about the latest status of ADMS as per the updated information available with them.

7.13 In 190th OCC, NRLDC representative informed that vide letter dated 09.12.2021 (enclosed as Annexure-A.I of 190th OCC Minutes), CERC has been apprised about the latest status of ADMS as per the updated information available with them.

***Members may kindly note*.**

8. 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.

9. NR Islanding scheme

9.1. Based on the decisions taken in the meeting taken by Hon'ble Minister of State (IC) for Power and New & Renewable Energy on 28.12.2020, Islanding Schemes for NR have been continuously reviewed/discussed in various forums.

9.2. In 187th OCC, it was decided that respective states would submit MIS report before every OCC meeting so that same may be discussed. It was also highlighted that MoP has agreed for PSDF funding for implementation of islanding schemes and states were requested to prepare and submit DPR for the same. Further, a sample DPR on implementation of Islanding scheme for PSDF funding has been already circulated vide email dated 07.10.2021 and requested to expedite the preparation of DPR.

9.3. Utilities were requested to refer and submit SOP for every Islanding scheme in their control area.

9.4. A meeting was also taken by Honorable Cabinet Minister (Power, New & Renewable Energy) on 07.10.2021 wherein emphasis was given on PSDF funding for Islanding schemes and DPR submission for the same. MoM has been issued and copy of the same was enclosed as Annexure-A.II of 189th OCC agenda.

9.5. In 189th OCC, NRPC representative highlighted no progress from states of Punjab, Uttarakhand, Himachal, J&K, Ladakh.

9.6. In the meeting, UP and Punjab representatives stated that they have sent the offer along with data to CPRI for study of Islanding Schemes. HP intimated that system study is under process at DISCOM end. Rajasthan SLDC assured the submission of RAPS SCADA display on the same day.

9.7. NRLDC submitted that they use PSSE software for system study but Rajasthan has submitted details of Islands in MI Power Software, therefore, they are exploring whether they can use that file.

9.8. MS, NRPC desired to know the reason for sending data to CPRI for system study. He stated that it may be done at state level itself.

9.9. UP representative stated that they are not able to perform dynamic system study as it involves parameters like rotor inertia, hunting, etc.

9.10. MS, NRPC expressed concern regarding apathy of states in implementation of Islanding Schemes. He stated that all SLDCs will intimate the names of Islands for which system study from CPRI is required along with justification for the same by 30th Nov, 2021. He also set timeline of 30th Nov, 2021 for Delhi to submit SOP data. He stated that communication may be sent to RAPS for submission of SOP data at the earliest.

9.11. In the 190th OCC, NRPC representative informed that SOP data in respect of Delhi and RAPS have been received.

9.12. UPSLDC vide email dated 01.12.2021 has submitted the names of islands for which system study from CPRI is required. UPSLDC has highlighted, *inter-alia*, that involvement of long length 765kV line and high number of buses necessitates them to go for system study by CPRI. It has mentioned that SLDC/STU has no expertise in such studies and before doing any investment on the project, proper study is must for successful implementation and operation of Islands.

9.13. HPSLDC vide letter dtd. 18.12.2021 has intimated that a meeting was held on 26.11.2021 between HPSLDC and HPSEBL wherein a team of officers from HPSLDC and HPSEBL has been formed to carry out transient study of all islands within a month.

9.14. In 190th OCC, UPSLDC representative informed that CPRI has asked for some additional details and technical commercial offer would be provided to them by CPRI by 15th Jan 22.

9.15. NRLDC representative informed that report received from Rajasthan regarding the Jodhpur-Barmer-Rajwest islanding scheme and Suratgarh islanding scheme is in order and Rajasthan SLDC can proceed ahead. Further, NRLDC submitted that they use PSSE software for system study but Rajasthan has submitted details of Islands in MI Power Software, therefore, they are not able to access the file.

9.16. Rajasthan SLDC representative informed that they have given the details in the hard copy of the load and generation to be considered for islanding scheme, and based on that have requested NRLDC to simulate it in PSSE software for validation. NRLDC representative agreed to the request of the Rajasthan SLDC.

9.17. Uttarakhand SLDC representative informed that hydro stations near Dehradun are peaking stations and the proposed Dehradun islanding scheme appears to be infeasible. NRPC representative informed that some schemes in NR have been proposed by considering Hydro stations and Dehradun islanding scheme was proposed by the state SLDC itself in view of all factors. Thus, Uttarakhand SLDC shall immediately conduct study on the proposed Islanding Scheme having Khodri & Chibro units and provide status on the feasibility of scheme with supporting data so that same may be communicated to the Ministry.

9.18. In 191st OCC, HPSLDC representative informed that they need further two weeks to submit the outcome of transient study of all islands.

9.19. Uttarakhand representative informed that major hydro stations e.g. Chibro, Khodri etc at Dehradun Region in Yamuna valley are non-must run and peaking stations. Therefore, it is technically not feasible to implement Dehradun as an islanding

scheme. However, nominations of nodal officers from various utilities (PTCUL, UJVN Ltd & UPCL) are being sought for the formation of internal committee for accessing the possibility of Dehradun as Islanding scheme and the report shall be submitted to NRPC Secretariat subsequently.

9.20. NRPC representative asked Uttarakhand to expedite the submission regarding the status on feasibility of the proposed Islanding scheme.

9.21. MS, NRPC stated that all constituents that have given their information about the planning of islanding scheme shall take up the work on top priority and submit the progress in time bound manner by submitting the updated MIS format every month.

9.22. NRLDC representative informed that Rajasthan SLDC is modelling data on PSSE software and it is expected to be completed within one week. Thereafter, NRLDC will submit its comments on the same. Rajasthan representative consented for the same.

9.23. UP and Punjab were asked to update the status of their study being done by CPRI. Both informed that there is no progress since last OCC and they are waiting for response from CPRI.

9.24. A meeting was convened by HPSLDC with officials of NRPC Sectt., NRLDC, HPSEBL, & HPPTCL on 11.02.2022 for apprising the status on implementation of Islanding scheme and MoM of the same is awaited. In the meeting, it was observed that system study work has been pending due to pre-occupation of the concerned resource. Therefore, it was decided that HPSLDC shall write letters to MDs of HPSEBL & HPPTCL for expediting the implementation and NRPC Sectt may be kept in copy so that the matter may be apprised to MoP in next review meeting. Further, it was decided to review the status in another meeting in the first week of March 22.

9.25. HPSLDC convened a meeting with the officials of NRPC Sectt., NRLDC, HPSEBL & HPPTCL on 04.03.2022 and presented the results of static and dynamic study of the islanding scheme in the HP control area.

9.26. A meeting was convened by UPSLDC with officials of NRPC Sectt., NRLDC & UPPTCL on 07.03.2022 to review progress of implementation of Unchahar and Agra Islanding schemes and MoM of the same is awaited.

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

Members may kindly deliberate.

10. Coal Supply Position of Thermal Plants in Northern Region

10.1. 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.

10.2. Accordingly, coal stock position of generating stations in northern region during current month (till 09th March 2022) is as follows:

Station	Capacity (MW)	PLF % (prev. months)	Normative Stock Reqd (Days)	Actual Stock (Days)
ANPARA C TPS	1200	83.25	17	7.7
ANPARA TPS	2630	86.72	17	18.2
BARKHERA TPS	90	8.76	26	11.6

Station	Capacity (MW)	PLF % (prev. months)	Normative Stock Reqd (Days)	Actual Stock (Days)
DADRI (NCTPP)	1820	41.60	26	10.4
GH TPS (LEH.MOH.)	920	17.54	26	20.7
GOINDWAL SAHIB TPP	540	38.58	26	4.5
HARDUAGANJ TPS	1265	4.10	26	10.9
INDIRA GANDHI STPP	1500	62.71	26	16.9
KAWAI TPS	1320	82.26	26	5.3
KHAMBARKHERA TPS	90	6.61	26	10.9
KOTA TPS	1240	77.65	26	**2.8**
KUNDARKI TPS	90	8.88	26	14.3
LALITPUR TPS	1980	47.88	26	7.3
MAHATMA GANDHI TPS	1320	70.32	26	16.6
MAQSOODPUR TPS	90	8.84	26	15.0
MEJA STPP	1320	67.87	26	21.3
OBRA TPS	1094	50.97	26	10.6
PANIPAT TPS	710	59.78	26	14.1
PARICHHA TPS	1140	43.76	26	**0.7**
PRAYAGRAJ TPP	1980	64.22	26	12.2
RAJIV GANDHI TPS	1200	37.54	26	14.0
RAJPURA TPP	1400	72.38	26	8.3
RIHAND STPS	3000	84.71	17	27.2
ROPAR TPS	840	16.54	26	25.1
ROSA TPP Ph-I	1200	62.87	26	5.6
SINGRAULI STPS	2000	78.92	17	19.0
SURATGARH TPS	1500	29.06	26	5.9
TALWANDI SABO TPP	1980	61.02	26	**1.1**
TANDA TPS	1760	44.41	26	13.4
UNCHAHAR TPS	1550	64.52	26	10.5
UTRAULA TPS	90	8.75	26	13.1
YAMUNA NAGAR TPS	600	75.41	26	10.6
CHHABRA-I PH-1 TPP	500	79.79	26	**0.1**
KALISINDH TPS	1200	78.69	26	**1.6**
SURATGARH STPS	1320	0.00	26	6.2
CHHABRA-I PH-2 TPP	500	39.38	26	4.9
CHHABRA-II TPP	1320	68.00	26	**2.4**

11. Renovation and up gradation of the protection system of substations of UJVN Ltd. under PSDF Scheme (Agenda by UJVNL)

11.1. UJVN Ltd. vide mail dated 11.03.2022 (Copy of the letter is attached as **Annexure-A.III**.) has intimated that they have submitted a DPR for renovation and up gradation of the protection system of 132kV & above substation under PSDF scheme to PSDF - NLDC secretariat through PUTCUL, nodal agency under PSDF scheme of Uttarakhand state vide mail dated 30.09.2021.

11.2. The PSDF-NLDC secretariat has now desired third party audit and clearance from NRPC prior to its approval under PSDF.

11.3. UJVNL has requested that Protection Audit team may be constituted for carrying out Third Party Protection Audit for 10 nos. of 132kV / 220kV S/s or Switchyards of UJVNL.

Members may kindly deliberate.

12. Water requirement by Jal Shakti Vibhag, Himachal Pradesh from Chamera-1 Dam (Agenda by NHPC)

12.1. NHPC has intimated vide letter dated 14.03.2022 that Jal Shakti Vibhag, Himachal Pradesh vide their letter dated 22/12/2021 (Copy of the letter is attached as **Annexure-A.IV**) informed that various Water Supply System (WSS) to the villages in Tehsil Dalhousie and Bhattiyat, Distt.: Chamba (HP) have been sanctioned by the competent authority for which the water has been proposed to be lifted from Channi Lahar, downstream of Village Parihar which is 2 KM upstream of Dam. The total quantity of water required on daily basis is 3.56 ML for the various habitations.

12.2. Due to lifting of water from Dam, there will be very minor energy loss (0.28 MU approx. per year) from Chamera-1 Power Station. As the energy loss is negligible in comparison to Generation from Chamera-1 Power Station in a year, it is suggested to allow the Jal Shakti Vibhag, HP, to lift said quantum of water from upstream of Chamera-1 Dam.

Members may kindly note.

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

13. NR Grid Highlights for February 2022

Maximum energy consumption of Northern Region was 1074.74 Mus on 02nd Feb'2022 and it was 1.32 % higher than Feb' 2021 (1060.73 MUs 02nd Feb'21)

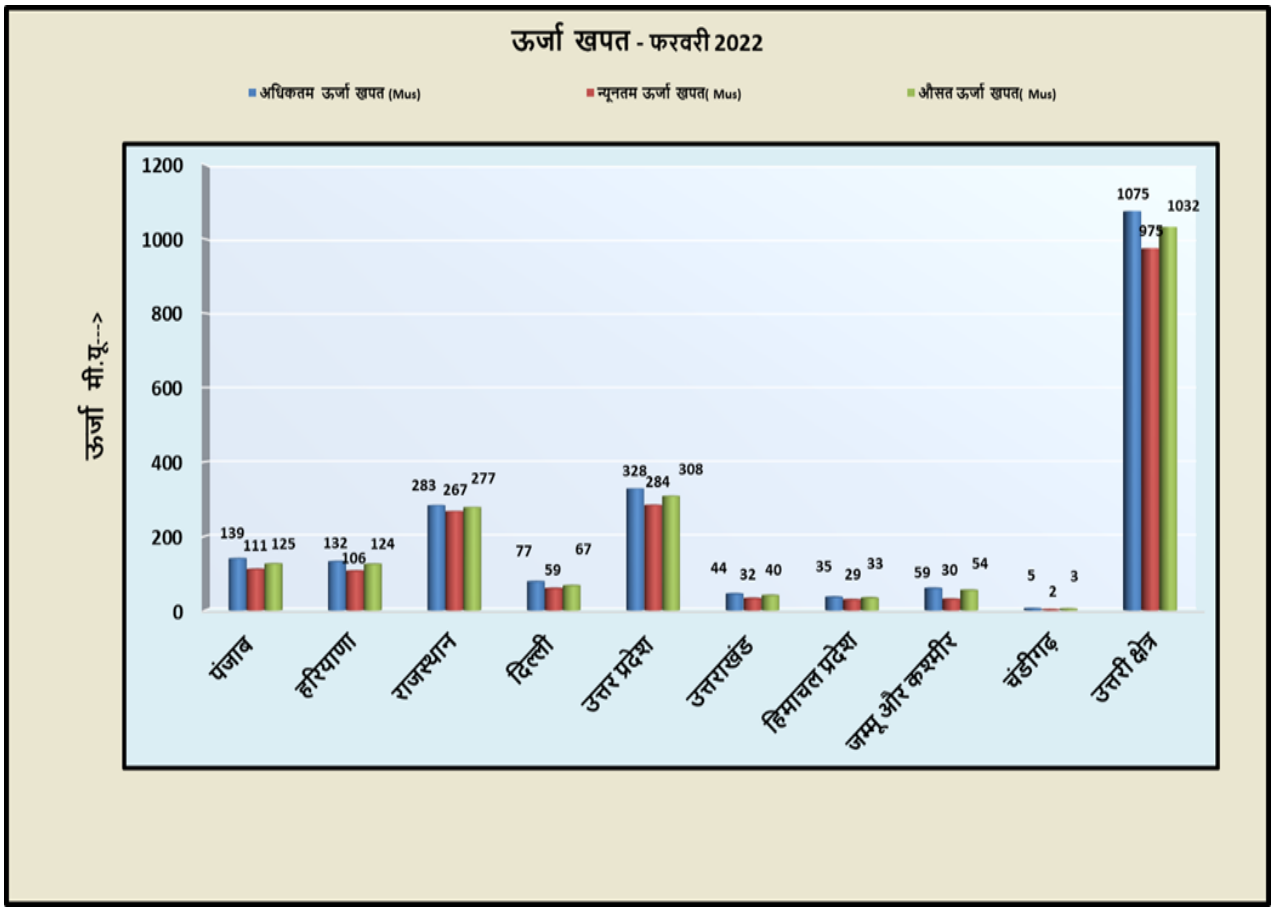
Average energy consumption per day of Northern Region was 1033 Mus and it was 2.89 % higher than Feb'21 (1004 Mus per day)

Maximum Demand met of Northern Region was 54996 MW on 04th Feb'22@ 11:00 hours (based on data submitted by constituents) as compared to 56379 MW met on 01st Feb'21 @ 10:00 hours

Northern Region all time high value recorded in February'22:

Max Demand Met	All Time High Record		Previous Record (upto Jan-22)	
	Value (MW)	Achieved on	Value (MW)	Achieved on
जम्मू और कश्मीर (UT) तथा लद्दाख़ (UT)	2826	03.02.2022 19:00 hrs	2787	30.01.2022 19:00 hrs

Solar Generation	All Time High Record		Previous Record (upto Jan-22)	
	Value (MU)	Achieved on	Value (MU)	Achieved on
	91.5	12.02.22	82.5	28.01.22



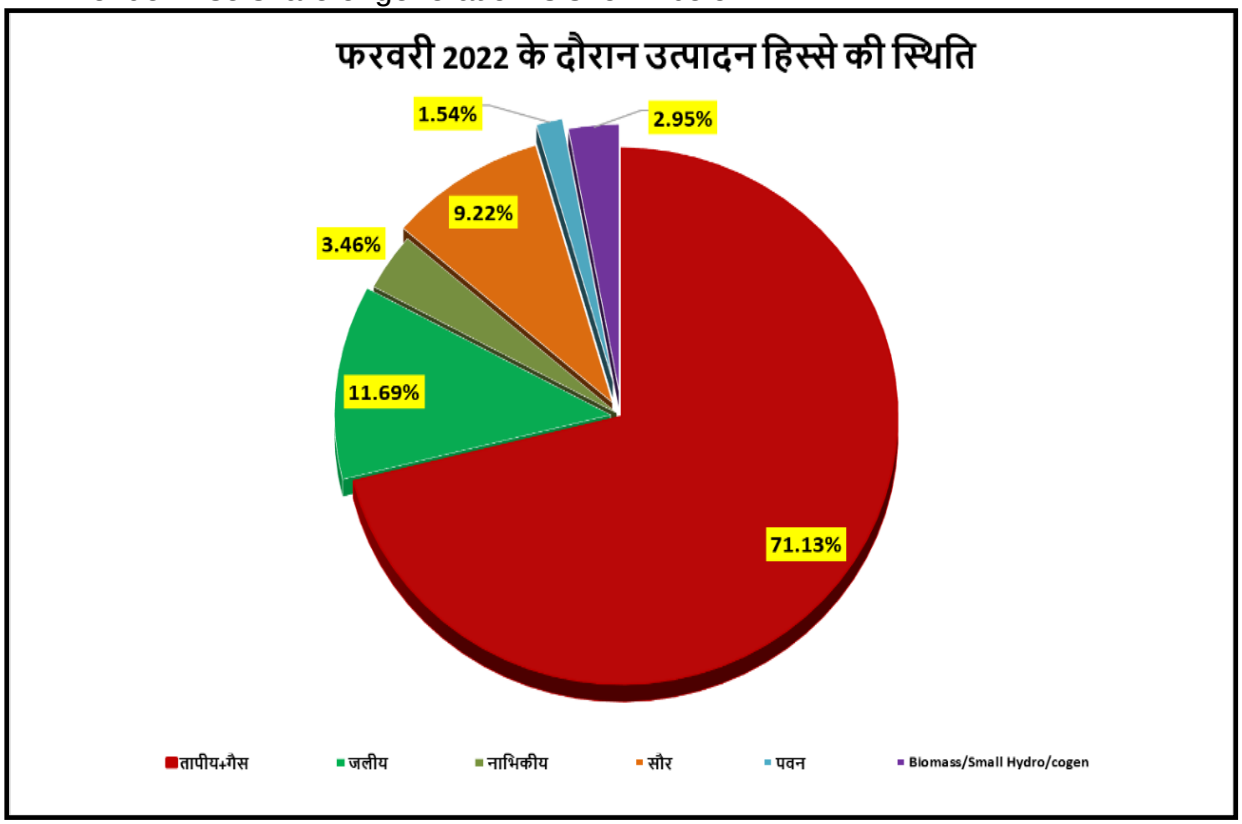
Comparison of Average Energy Consumption (MUs/Day) of NR States for Feb'21 vs Feb '22

क्षेत्र/राज्य	फरवरी- 2021	फरवरी-2022	% अंतर
चंडीगढ़	3.39	3.459	2.16
दिल्ली	63.84	66.501	4.17
हिमाचल प्रदेश	31.59	33.417	5.79
हरियाणा	132.66	124.274	-6.32
जम्मू और कश्मीर	51.21	54.862	7.13

पंजाब	128.96	125.081	-3.01
राजस्थान	264.12	277.316	5.00
उत्तराखंड	39.02	40.049	2.64
उत्तर प्रदेश	289.81	307.856	6.23
उत्तरी क्षेत्र	**1004.59**	**1032.817**	**2.81**

Generation Share

- Total average per day energy production by Northern region was 929.73 Mus in the month of Feb'22 in comparison to 803.55Mus in Feb'21.
- The fuel wise share of generation is shown below:



Frequency Data Comparison

Month	Avg. Freq. (Hz)	Max. Freq. (Hz)	Min. Freq. (Hz)	<49.90 (% time)	49.90 – 50.05 (% time)	>50.05 (% time)
Feb'22	50.00	50.26	49.54	6.0	76.8	17.2
Feb'21	50.00	50.31	49.60	6.9	76.4	16.7

In Feb'22, frequency remained within IEGC band for only 76.8 % of the time. Emergent contingency events during such times such as large generation outage, could result in further drop in frequency and therefore, over drawals below 49.90 Hz must be controlled quickly in order to keep system secure. All utilities are requested to follow all the measures described in subsequent agenda points.

14. Summer preparedness 2022

With the increase in temperature, demand of Northern Region starts increasing from March onwards every year. Summer of Northern region are typically hot and demand is also high during this time, therefore advance actions help in better grid operation. As per the forecasts issued by IMD for summer-2022, northern parts of India will soon have to embrace warm weather after experiencing prolonged winter days and active wet spells as a result of multiple western disturbances. Along with the country's northwest and northernmost regions, West and Central India are expected to see above-average daytime temperatures. As a result, states and territories such as Jammu and Kashmir, Ladakh, Himachal Pradesh and Rajasthan may experience more intense summer heat than normal.

Due to extreme weather conditions, high demand is observed during summer/monsoon months in Northern region. Along with high demand, high loadings of lines and transformers and low voltages especially at distribution level are big challenge to safe and secure grid operation. To overcome the commonly encountered challenges during summer months and ensuring smooth grid operation, following are few points which have been discussed on many occasions in previous OCC and TCC/ NRPC meetings and are required to be followed by all:

S. No.	Issues	Action plan	Action by
1	**Maintenance of reserves** During summer, in anticipation of increasing demand, adequate reserves shall be maintained. During summer, sudden outage of hydro units on silt or other major generation outage affects frequency/voltage, line loading, reliability and security of the corridor/control area/Generation complex etc. In events of sudden load crash, ISGS generators are being instructed to back down to 55% of their installed capacity. However, amongst states only UP state controlled generators are seen to be backing down upto 55%, which ensures that sufficient reserves are available to cater any variation in demand.	In such cases, apart from portfolio management based on proper forecast as discussed above, re-starting of units under reserve shutdown at state as well as Inter-state level through appropriate transactions is required. Moreover, display window showing reserve available in ISGS generators has been developed at NRLDC. SLDCs are also requested to arrange for such display window at their control centers so that system operators readily know quantum of reserve available and hence better real-time actions can be taken. Other states are also requested to take actions to ensure backing down of generators to 55% of their capacity in case of critical situations. This would ensure reserves in the system and also make us prepared for extreme situations.	NRLDC, SLDCs, Generators
2	**Furnishing of coal stock position** Advance information of coal stock of thermal plants ensures generating units availability and it is very important during high demand	It has been observed in past years that sudden information of outage of thermal units on coal unavailability poses challenges to meet high demand. It is therefore requested to	Generators, SLDCs

S. No.	Issues	Action plan	Action by
	season.	update & share coal stock position of thermal plants at least a week in advance as agreed earlier in TCC/NRPC meeting.	
3	**Portfolio Management, load staggering** As discussed in previous OCC meetings states such as UP, Rajasthan and Haryana continue to connect/ disconnect large quantum of load at hourly boundaries resulting in frequency spikes and instantaneous over voltages. This has also resulted in tripping of lines on overvoltage in recent past. In view of high/increasing demand & transmission constraints (if any) in importing the power or in case of any contingency in the system, states are requested to maximize their internal generation to avoid low frequency/low voltage operation or other related issues.	Apart from LTA/MTOA/STOA/Market arrangements based on forecast, other short term arrangements should also be planned for real time imbalances. For example, ensuring adequate margin while scheduling own thermal generation, units on bar, maintenance of reserves, technical minimum operation of thermal units in case of load crash, tie up with neighbor states or hydro rich states and utilization of real-time market etc. to bridge the load-generation gap in real time.	SLDCs
4	**Tower Strengthening and availability of ERS** There have been number of instances of tower collapse & damage in the past during thunder storms which resulted in constraints in supply power for extended duration of time. Number of tower collapse incidents occurred during last summer also in May/Jun 2020 & 2021 in which many EHV lines including 765kV lines were out on tower collapse.	All utilities are requested to ensure availability of Emergency Restoration System (ERS) for early restoration of supply. Each utility shall work on plan for tower repairing work before April. Extra precautions need to be taken care for important lines which have history of tripping during thunderstorm/ windstorm. ***Latest status regarding availability of ERS may be shared by all transmission utilities***	***STUs and POWERGRID***
5	**Reactive power management** Over the years during summer months, it has been observed that voltage profile during summer has improved. However, it is always essential to remain alert and take all necessary precautions to avoid any issues arising due to low voltages during summer months.	To maintain the voltage profile of Grid within IEGC band during summer, following known actions are suggested: i. Switching ON Capacitor/Switching OFF reactor as per system requirement ii. Tap Optimization at 400/220kV by NRLDC and 220/132kV by	NRLDC, SLDCs

S. No.	Issues	Action plan	Action by
		respective state control area based on scatter plots of ICTs, offline studies, NRPC RE account etc. iii. Dynamic reactive support from Generator as per their capability curve. iv. SCADA Displays for better visualization during real-time	
6	**Defense Mechanism** Several defense mechanism schemes have been recommended by various committees and advantages of such defense schemes have been discussed in many fora too. Majority of defense mechanism are to cover protection for under voltage, under frequency, rate of change of frequency, SPS for line/ICTs loading/generator complex evacuation etc. It is pertinent to mention here that SPS is only for operational defense and should not be considered as long term solution.	Till date it has been observed that performance of SPS is considerably low. Accurate operation of SPS is very essential and hence, mapping of SPS in SCADA is also being done. It is suggested that all state control area/Users shall ensure before start of summer that their protection and defense system are in working conditions and settings are as per the recommendations of NRPC. In addition, all states/user need to provide update for changes or modifications carried out if any.	Transmission utilities (STU/ISTS) and SLDCs
7	**Telemetry** It has been observed number of times, that telemetry of large nos of stations is affected during contingency, inclement weather, or in day to day switching operations etc.	All are requested to ensure the telemetry of all analog & digital points of all stations at respective control centers. Large number of telemetry issues are also encountered with newly commissioned elements.	J&K/ POWERGRID shall share the current status of data telemetry of J&K. Other SLDCs STUs

Due to unfavorable weather conditions during summer months, All India demand is on the higher side. On several days, it is observed that frequency is below the band for most of the time. In order to maintain the Grid security all SLDCs are requested to take proactive steps as follows:

- Ensure that ADMS is in service and expedite its implementation if not commissioned.
- Ensure healthiness and availability of AUFLS and df/dt load shedding.

- Ensure revival of intra-state generators under economic shutdown/RSD
- Ensure portfolio balancing through STOA/RTM market segments
- Ensure no under injection by the generators from schedule
- In case of inadequate margins in intrastate generators measures for emergency load regulation measures may be taken in interest of grid security.
- Pursue generators to expedite revival of thermal units under forced outage wherever feasible.

In this case, the list of radial feeders become very important. Utilities have been requested number of times to update list of radial feeders which can be opened on the directions of NRLDC to regulate the demand. List of such radial feeders has been provided by respective utilities and is part of 'Operating Procedure of Northern Region'. Latest list of radial feeders is also attached as **Annexure-B.I**. Following are the attributes for such feeders:

- Feeders shall be radial in nature
- They should usually have substantial load flow so that reduction of drawal can be prominently noticed on opening of such lines.

The opening of feeders is generally an extreme step which shall be required in case of threat to grid security and non adherence to RLDC instructions to manage overdrawl by SLDCs/ DISCOMs. In such a case, every utility needs to take actions to support RLDC by following their instructions including opening of feeders.

SLDCs are once again requested to review and share the list of the following:

- Intrastate 132kV feeders and 220/132 kV and 132kV / 33 kV transformers which supply load radially within the state and can be disconnected at the instruction of SLDC
- Tie lines which supply load radially within the state, which can be switched off from the substation belonging to a different entity, at the instruction of RLDC
- 400/220kV and 220/132kV ICTs at state boundary, which cater load radially and can be switched off from the substation belonging to ISTS or other entity

SLDCs are once again requested to verify that

- list of feeders are actually radial in nature and are likely to provide the expected relief
- such feeders are not part of any other scheme such as any SPS, UFR or df/dt actuated shedding

Utilities may also intimate in case no radial feeders are available to disconnect. In such a case, NRLDC along with constituent will study the grid connected feeders /ICTs for disconnection which has low impact in the NR Grid. For such states, it is requested to nominate one nodal officer from SLDC which shall coordinate with NRLDC and study about such feeders.

Telemetry is to be ensured for all such feeders for monitoring in real time by SLDC/ NRLDC. States are also advised to take remedial measures for minimizing sustained over drawal at low frequencies as per the IEGC.

Members may like to discuss.

15. Sharing of hourly Load shedding under different categories on NRLDC Reporting Software

As discussed in 189th OCC meeting, recently, Secretary, Ministry of Power, emphasized the importance of ensuring accuracy of the hourly load shedding (MW) and energy not met (MU) figures being received from various SLDCs on daily basis in respect of their own states, and classifying them under different heads like low availability, transmission constraints, financial constraints, planned maintenance of transmission / distribution system within state, etc.

Although SLDCs are uploading the hourly load shedding figures of the previous day on the web-based reporting software of NRLDC the next day, but reason for the shedding or unserved demand at any hour is not segregated into the possible different categories.

UP, Haryana, Rajasthan, Punjab, Uttarakhand and HP are providing reasons whereas some other states such as Delhi, J&K and Chandigarh are not furnishing the reasons for load shedding. In view of the above, it is once again requested to kindly classify the reason of shedding in the detail sheet of hourly load shedding, in the daily power supply report, before uploading it to the web-based reporting software on daily basis.

In 192 OCC meeting, Delhi, J&K and Chandigarh SLDC representative was not available for comments. NRLDC representative expressed concern and stated all SLDCs should immediately take necessary actions as the same is pending since long. As discussed in last OCC meeting, Delhi SLDC should communicate with DISCOMs to timely furnish the data as the same further needs to be shared with MoP. Delhi SLDC was also asked to share their communication to DISCOMs with POSOCO and MoP for taking further actions if DISCOMs are not ready to timely share the details as per the format.

Members may like to discuss.

Uploading of Daily Power Supply Position Report of J&K(UT) on NRLDC Reporting Software:

Regulation 5.5.1(b) of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010, regarding the preparation of periodic reports by NLDC/RLDC/SLDC states that

"A daily report covering the performance of the regional grid shall be prepared by each RLDC based on the inputs received from SLDCs/Users and shall be put on its website. This report shall also cover wind and solar power generation and injection into the grid."

In compliance with the above regulation, a daily power supply position report for Northern Region is being prepared by the Northern Regional Load Despatch Centre based on the inputs received from SLDCs/ Users of the Northern Region.

Presently the Power supply position in respect of J&K (UT) is received through email with a delay of 24 hrs to 72 hrs. Due to receipt of delayed input from J&K(UT), Northern Region Power supply position report is prepared considering ISTS end SCADA data of J&K(UT) and Ladakh (UT) as this report is time critical, and required to be submitted to NLDC by 06:00 Hrs every day. However, at a later date when the power supply position is actually received from J&K(UT) it is seen that there is a significant difference between the power supply position report prepared by NRLDC and J&K (UT). This issue was also communicated with SLDC Jammu vide NRLDC letter dated 20.10.2021 (**Annexure-B.II**)

Power supply position report is one of the key reports of the region and sanity and integrity of its data is of paramount importance. The report is also scrutinized by Hon'ble Minister of Power and New & Renewable Energy and based on it, many other reports are prepared and shared with MoP, CEA, NLDC and other power sector utilities.

In view of the above, it is requested to kindly ensure that the daily power supply report in respect of J&K(UT) and Ladakh (UT) is positively submitted to the web-based reporting software by 03:00 AM on daily basis.

Members may like to discuss.

16. TTC/ATC of state control areas for summer 2022

From last several OCC meetings, it has been discussed that most of the NR states except J&K, Ladakh and Chandigarh U/Ts are sharing basecase and ATC/TTC assessment with NRLDC. SLDCs are once again requested to go through the tentative ATC/TTC limits for April 2022 (**Annexure-B.III**) and provide comments. If no comments are received, these limits will be assumed confirmed and uploaded on NLDC website. SLDCs are also requested to upload these limits in their respective websites.

It is observed that some states are still not declaring the TTA/ATC for the import and export of power. OCC may advise all states to timely declare TTC/ATC for prospective months and revise the figures as per requirement. States are also requested to regularly provide update regarding the upcoming transmission elements which would improve import capability of respective state control area.

Punjab

Punjab is requested to provide update on the following works which are likely to enhance ATC/TTC of Punjab state control area:

- Augmentation of 1 No. 315 MVA ICT with 500 MVA ICT at Ludhiana by shifting of 500 MVA ICT lying spare at Malerkotla to Ludhiana *(to be updated).*
- Commissioning of new 500MVA ICT at Rajpura *(expected by May'2022)*.
- Augmentation of Kartarpur-Jalandhar PGCIL line with HTLS conductor to make 2 No. 315 MVA ICTs N-1 complaint at Nakodar.the loading of these ICTs to be controlled by shifting of Kartarpur load to Jalandhar PGCIL(presently running from Nakodar ICTs) (*expected by Apr'2022*).

As discussed in 191 OCC meeting, NRLDC representative stated that the period from June-Sep is associated with very high demand in Punjab state control area and Northern region. The import capability of state is also limited due to major transmission constraints such as 400/220kV ICTs at Rajpura, Nakodar, Ludhiana and several 220kV lines. At the time of this very high demand, it is easy to understand that maximum internal generation should be available to help in meeting demand safely. However, due to forced outage of generating units especially at Talwandi Saboo generating units, there is major issue in meeting demand in safe and secure manner. In 2021, there were numerous forced outages of Talwandi Saboo units (each 660MW capacity). Even in the lean season during Jan-Feb 2022, there have been numerous outage of Talwandi Saboo units including those due to coal shortage issues.

In 191 OCC meeting, Punjab SLDC was asked to take up the matter on top priority with TSPL and try and ensure maximum generation capacity availability during peak demand season. Punjab SLDC representative stated that the matter has been taken up on priority however problems are still persisting with TSPL units. NRLDC representative also highlighted that due to frequent outages of TalwandiSaboo units, frequent ATC/TTC revisions need to be carried out, moreover since the revisions only become effective after some time blocks, it leads to a situation when Punjab faces big challenge in safely meeting the demand without over drawing. To overcome these issues, along with ensuring availability of TalwandiSaboo units, other generating units should also be available along with sufficient fuel stock and it is also essential that Punjab takes necessary steps to enhance their ATC/TTC limits before paddy 2022

NRLDC representative stated that the communication from Punjab with TSPL should be shared with NRLDC/NRPC also. Punjab SLDC to share the revised ATC/TTC limits for summer/paddy 2022 along with anticipated generation scenario, basecase and reports with NRLDC at the earliest.

Punjab SLDC to provide update.

UP

SPS for Sohawal and Lucknow to be expedited.

In 191 OCC meeting, UP SLDC representative stated that :

- Exploring possibility of shifting SPS from Bareilly(UP) to Sohawal.
- Constraint at 400/220kV Lucknow(PG) is likely to be relieved with full commissioning of 400/220kV Jehta S/s.

In 192 OCC meeting, *UP SLDC informed the following:*

- *No progress on works for SPS of Sohawal(PG). NRPC and NRLDC expressed concern on the same.*
- *Mock-testing would be carried out in Anpara-Unnao complex.*

UP SLDC to share the revised ATC/TTC limits for summer/monsoon 2022 along with anticipated generation scenario, basecase and reports with NRLDC at the earliest.

UP SLDC to provide update.

Rajasthan

Rajasthan had shared ATC/TTC calculations with NRLDC on 22.10.2021. On 28.10.2021, NRLDC has shared their observations on basecase as well as simulation studies carried out by Rajasthan.

Rajasthan was requested to share the revised simulation studies with NRLDC alongwith details of bus-split, other operational changes in system. Rajasthan SLDC was asked to take up the matter for implementation of SPS at Jodhpur and other stations with STU and ensure loading below N-1 contingency limit at constrained 400/220kV ICTs.

Rajasthan SLDC had shared latest basecase & ATC/TTC assessment with NRLDC on 18.02.2022. Bus split has been done at 220kV Dholpur and Raps-C. NRLDC had shared their observations on 23.02.2022:

Following are few observations/comments on the basecase and simulation results shared:

- Loading of several 400/220kV ICTs is beyond their N-1 contingency limit (also observed in real-time and discussed in OCC meetings).
- Even for present TTC value of 6200MW, several 220kV lines are observed to be highly loaded such as 220kV Kushkher-Bhiwadi(PG), Kankr(PG)-Amberi, Chhabra-Kawai, Bharatpur-Agra(PG), Bhiwadi-Bhiwadi(PG), Sikar-Sikar(PG) D/C in All India basecase.
- In the basecase shared by Rajasthan, after outage of both 400/220kV Chittorgarh ICTs, list of 220kV and below voltage level highly loaded elements is attached. It can be seen that several transmission elements are loaded way beyond their thermal limits. Obviously, these elements would trip in real-time in case loadings cross these levels.
- It is requested to revise the study and modify load generation, network configuration as per real-time flows also so that practical loading are also observed in basecase and possibility of increasing ATC/TTC of Rajasthan control area may be explored.
- Basecase shared by Rajasthan did not have new ISTS Solar stations such as Fatehgarh-2, Bhadla-2 etc. Hence, it was requested to use the latest basecase (attached with mail).

Rajasthan SLDC to provide update.

Delhi

ATC is not being uploaded in website, only violation of ATC is being shown.

In 190th OCC meeting, Delhi SLDC representative stated that the limits would be reassessed for next summer season shortly with commissioning of 400/220kV Dwarka substation and accordingly revised ATC/TTC limits would be uploaded on website. NRLDC representative suggested that present ATC/TTC limits may be uploaded on SLDC website and with commissioning of 400/220kV Dwarka substation, revised ATC/TTC may be uploaded.

Delhi SLDC was asked to implement SPS at Mundka and Bamnoli to save supercritical loads under N-1 contingency of one ICT. Delhi representative stated SPS at Mundka would be implemented before next summer season.

Delhi representative was not present in 192 OCC meeting for comments.

Delhi SLDC to provide update on the implementation of SPS at 400/220kV Mundka and Bamnauli substations and also revival status of 400/220kV Mundka ICTs.

Delhi SLDC to share the revised ATC/TTC limits for summer/monsoon 2022 along with anticipated generation scenario, basecase and reports with NRLDC at the earliest.

Haryana

Haryana SLDC is once again requested to expedite implementation of SPS and ICT capacity augmentation at 400/220kV Deepalpur and Kurukshetra (PG) to enhance their ATC/TTC limits at the earliest***. Haryana SLDC informed SPS would be implemented at Deepalpur by Apr'2022. For Kurukshetra, they will take up the matter with POWERGRID.***

Haryana SLDC to share the revised ATC/TTC limits for summer/monsoon 2022 along with anticipated generation scenario, basecase and reports with NRLDC at the earliest.

HP

HP has started sharing its ATC assessment since last 3 months in consultation with NRLDC. It was discussed that mostly intrastate constraints were highlighted by HP and the studies were done for lesser import values. HP was advised to assess possible tie-line/ICT constraints with import close to real-time values. One to one meeting was organized on 03.12.2021 between NRLDC and HP SLDC officials to overcome the challenges being faced by SLDC in ATC/TTC assessment and other issues in PSSe.
ATC for summer 2022 may also be shared.

Uttarakhand

Uttarakhand has also shared its ATC assessment with NRLDC for winter 2021-22. ATC for summer 2022 may also be shared.

J&K

Not assessing its ATC. J&K representatives had intimated during 47th TCC and 49th NRPC meeting that they would be sharing ATC/TTC assessment with NRLDC from October 2021, however the same is still awaited. J&K and Ladakh U/Ts are once again requested to advise the concerned officers to evaluate their ATC/TTC limits in coordination with NRLDC and share latest assessment with NRLDC and NRPC after procurement of PSSe software.
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 and Delhi 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	**NA**
Rajasthan	https://sldc.rajasthan.gov.in/rrvpnl/scheduling/downloads
HP	https://hpsldc.com/mrm_category/ttc-atc-report/
Uttarakhand	http://uksldc.in/transfer-capability
J&K and Ladakh U/T	**NA**

Since from March onwards, demand of most of the NR states starts increasing, it is requested that the revised ATC/TTC limits for summer 2022 along with anticipated generation scenario may be shared with NRLDC at the earliest.

It is again requested that SLDCs may ensure that loading of ICTs and lines are below their N-1 contingency limits. While requisitioning power from various sources, states should take care to limit their scheduled drawl as well as actual drawl in real time within the Available Transfer Capability (ATC) limits assessed by SLDC and NRLDC.

Members may like to discuss.

17. Grid operation related issues

(i) Generation assessment for opening of bus coupler at Dadri TPS

400 kV bus at Dadri is split into two portions in order to contain the short circuit level. Split bus operation is not the desirable solution. It reduces reliability of the power station as a whole and also causes heavy loading of the connected lines & ICTs on one section and skewed power distribution. In addition, the section with lesser short circuit level experiences high voltage during off-peak periods, with no means for voltage control.

On one section (I):

• Thermal units of stage-I connected via 3*500MVA ICTs

• 400kV lines such as Panipat ckt1 and ckt 2, Muradnagar New and Harshvihar ckt1

On other section (II):

• Gas Plant units connected via 2*500MVA ICTs and thermal units of stage-II

• HVDC interconnectors

• 400kV lines such as Mandola ckt 1 and 2 having series line reactors at Mandola end

• 400kV lines such as Kaithal, Gr. Noida, Maharani bagh, Harshvihar ckt2

Almost similar results were observed in All India March 2022 peak basecase. Following are major observations:

- Since section-II is connected with Dadri gas, Dadri Stage-II and HVDC, it has much higher fault level than section-I.
- Generally when total generation at Dadri is greater than 500-600MW, 3-phase fault current is more than 40kA.
- To ensure limited fault current levels, it is suggested that bus sectionaliser at Dadri TPS may be opened when generation at Dadri generating station (including Stg. I, Stg.II and Gas) is higher than 500MW.
- Upon discussion and agreement in OCC meeting, same would be shared with NRLDC and Dadri control rooms and followed in real-time.

In 192 OCC meeting, MS NRPC enquired whether bus coupler needs to be closed/opened as per real-time condition. NRLDC representative informed that generally if more than one unit of 490MW is on bar, then bus coupler would be opened. **NTPC representative stated they would respond after consulting the generating station.** POWERGRID representative informed that commissioning of series reactors is planned only in Bhiwani(PG) in Delhi/NCR area to limit the fault current in Delhi ring.

NTPC to provide update.

(ii) Long outage of transmission elements/ generating units

Reasons and revival date for elements and generating units under long outage are being discussed regularly in OCC meetings. Any update on the status of these elements and generating units from last OCC meeting may be shared with the forum (**Annexure-B.IV**).

All utilities are requested to make it a practice to update status of elements under long outage in the NRLDC outage software portal. Utilities are requested to take necessary actions to revive elements which are under long outage.

Members may please discuss.

In some cases, it was observed that the shutdown was extended beyond the approved outage hours. Utilities are requested to provide the reasons for the same and avoid such instances in future.

Sr. N	Element Name	Purpose of shutdown	Shutdown taken by	Delayed charging (Hours)
1	765 KV BARA-MAINPURI (UP) CKT-2	Circuit Breaker maintenence , testing	SLDC-UP	06:49
2	765 KV KOTESHWAR-MEERUT (PG) CKT-2	for Annual maintenance work.	CPCC1	02:22
3	765 KV AGRA FATEHBAD(UP)-LALITPUR(LPG) (UP) CKT-1	Routine Maintenence of line like jumper nut bolt tightenng and other work. Testing of associated Line reactor and relays at Fatehabad end	SLDC-UP	01:43
4	765 KV AGRA FATEHBAD(UP)-LALITPUR(LPG) (UP) CKT-1	Routine Maintenence of line like jumper nut bolt tightenng and other work. Testing of associated Line reactor and relays at Fatehabad end	SLDC-UP	02:17
5	765 KV AGRA FATEHBAD(UP)-LALITPUR(LPG) (UP) CKT-1	Routine Maintenence of line like jumper nut bolt tightenng and other work. Testing of associated Line reactor and relays at Fatehabad end	SLDC-UP	02:14
6	765 KV VARANASI(PG)-VINDHYACHALPOOL(PG) (PVTSL) CKT-2	On Line CSD commisioning work.	CPCC3	02:47
7	400 KV LUCKNOW_1(PG)-LUCKNOW(UP) (PG) CKT-1	Transmission Line Diversion work due to construction of Outer Ring Road by NHAI.	CPCC3	04:26
8	400 KV SULTANPUR(UP)-LUCKNOW_1(PG) (PG) CKT-1	Transmission Line Diversion work due to construction of Outer Ring Road by NHAI.	CPCC3	04:27
9	400 KV LUCKNOW_1(PG)-BASTI(UP) (PG) CKT-1	Transmission Line Diversion work due to construction of Outer Ring Road by NHAI	CPCC3	74:19:00
10	400 KV ALLAHABAD-FATEHPUR (PG) CKT-2	for replacement of porcelain insulator string with CLRI in substation gantry tower as well as in Transmission line under Fatehpur	CPCC3	03:59
11	400 KV BAMNOLI(DV)-JHATIKARA(PG) (DTL) CKT-2	For connecting LILO Line with Ckt1 of 400KV D/C Bamnauli-Jhatikala Line	CPCC1	02:22

Sr. N	Element Name	Purpose of shutdown	Shutdo wn	Delaye d
12	400 KV BAMNOLI(DV)-JHATIKARA(PG) (DTL) CKT-2	For Line CVT Tan Delta Testing as per PMS Schedule.	CPCC1	01:53
13	400 KV SARNATH(UP)-VARANASI(PG) (PG) CKT-1	OVERHEAD CROSSING OF UNDERCONSTRUCTION 400 KV DC TWIN MOOSE VARANASI (PGCIL)-JAUNPUR LINE BETWEEN LOCATION NO 06 & 07	CPCC3	03:44
14	400 KV SARNATH(UP)-VARANASI(PG) (PG) CKT-2	OVERHEAD CROSSING OF UNDERCONSTRUCTION 400 KV DC TWIN MOOSE VARANASI (PGCIL)-JAUNPUR LINE BETWEEN LOCATION NO 06 & 07	CPCC3	03:44
15	400 KV ALWAR(ATIL)-HINDAUN(RS) (ATIL) CKT-1	for Annual maintenance of transmission line.	SLDC-RS	03:49

Information about new transmission elements/ generating units to be commissioned in next 45 days

In 176th OCC meeting, it was discussed that first time charging procedure is not being diligently followed by some entities. The documents are being submitted at the last minute and thereafter it is being urged to NRLDC to give the code for charging. In the meeting it was also requested that utilities should inform about elements expected for first time charging in the next one month in advance in OCC meeting. This information would be helpful in carrying out studies, SPS requirement/modification etc in time.

Utilities are also requested to make sure that list of 220kV and underlying intra-state lines and ICTs is readily available with them, so that the same can be shared with NRLDC/NRPC as and when required. This data is to be shared with NRLDC/NRPC for timely updation of Powermaps, PSSebasecase, Protection analysis etc.

In line with the above decisions, all utilities are requested to share the information about transmission elements/ generating units which are expected to be first time charged in the next 45 days.

Members may like to discuss.

(iii) Calculation of Drawal points based on SLDC end data

As discussed in the 6thTeST meeting all SLDCs shall maintain its own drawal calculation (alternate calculation based on the SLDC drawal points) for proper monitoring and SLDC also shall be responsible for calculation of its own drawl based on their drawal points at their respective feeders/ICTS. SLDC shall use its own calculated value of monitoring real-time drawal from the grid along with ISTS drawal to ensure the correctness and corrective measures shall be taken accordingly. UP and Delhi are using their end calculation as primary calculation for monitoring of drawal whereas Rajasthan is entirely dependent on STU data.

However, Punjab, Haryana, Jammu and Kashmir, Uttarakhand are dependent on RLDC end drawal values. All concerned are requested to please compute drawal

values at SLDC end also, so that same can be verified with NRLDC end value and any discrepancy can be rectified immediately.

In 188th OCC meeting, MS NRPC expressed concern and asked all the states which are only dependent on RLDC end data to take necessary actions and compute drawl values at SLDC end also. It was also suggested that the agenda be continued in OCC meeting till resolution of issue by all states.

In 189th OCC meeting, MS NRPC stated that NRLDC may request all SLDCs to confirm the status via email. Based on the feedback received, issue may be discussed in next OCC meeting.

Accordingly, an email was circulated to respective SLDCs on 10.12.2021. However, response from SLDCs is yet to be received.

In 190th OCC meeting, Punjab SLDC representative informed that data calculation from SLDC end data is complete and display for difference between the values from NRLDC end and Punjab SLDC end data is also available at SLDC control room. Punjab SLDC will share screen shot of display available at their control center with NRLDC.

Haryana SLDC representative stated that data from some stations such as 220kV Bawal is not available at SLDC. It was also informed that drawl data is being monitored from both NRLDC and HVPN end data. Data from 56 points out of 101 points of Haryana end data is telemetered while for remaining data they are using NRLDC end data only due to telemetry issues and other issues such as 220/66kV station being BBMB station, 66kV data is not available.

Uttarakhand SLDC representative stated that at 2-3 stations, RTU is faulty and replacement work is being carried out which would ensure availability of SLDC end data for drawl calculation. Till the replacement work, they are relying on NRLDC end data. NRLDC representative asked Uttarakhand to expedite replacement of faulty RTUs and ensure drawl data availability from SLDC end data also.

CGM(SO) NRLDC had stated that SLDCs should maintain separate lists of points from which both end or single end data is available and regularly monitor all these points. They should also take necessary actions for the points for which telemetry issues are observed.

SLDCs are requested to provide update on the agenda point.

Members may please discuss.

18. Frequent forced outages of transmission elements in the month of Feb'22:

The following transmission elements were frequently under forced outages during the month of **Feb'22**:

S. NO.	Element Name	No. of forced outages	Utility/SLDC
1	400 KV Suratgarh(RVUN)-Bikaner(RS) (RS) Ckt-1	4	Rajasthan
2	400 KV Wangto_GIS(HP)-Sorang(Greenko) (Greenko) Ckt-1	4	HP/Greenko
3	400/220 kV 315 MVA ICT 1 at	4	UP

S. NO.	Element Name	No. of forced outages	Utility/SLDC
	Gonda(UP)		
4	400 KV Bareilly-Unnao (UP) Ckt-1	3	UP
5	400 KV Dulhasti(NH)-Kishenpur(PG) (PG) Ckt-1	3	POWERGRID/NHPC
6	400 KV NewWanpoh-Wagoora (PG) Ckt-1	3	POWERGRID
7	220 KV Debari(RS)-RAPS_A(NP) (RS) Ckt-1	5	Rajasthan/NPCIL

The complete details are attached at **Annexure-B.V.** Frequent outages of such elements affect the reliability and security of the grid. Hence, utilities are requested to analyze the root cause of the trippings and share the remedial measures taken/being taken in this respect.

Members may like to discuss.

19. Multiple element tripping events in Northern region in the month of Feb'22:

A total of **14** grid events occurred in the month of Feb'22 of which **08** are of GD-1 category. The preliminary report of all the events have been issued from NRLDC. A list of all these events is attached at **Annexure-B.VI.**

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

Maximum Fault Duration observed is **1080ms** in the event of multiple element tripping at 220kV Jammu(Gladni) (JK) on 06-Feb-22 at 01:45hrs.)

Delayed clearance of fault (more than 100ms for 400kV and 160ms for 220kV system) observed in total **3** events out of **14** grid events occurred in the month. In 3 number of events, fault signature couldn't be captured from PMU data.

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.

20. Details of tripping of Inter-Regional lines from Northern Region for Feb'22:

A total of 4 inter-regional lines tripping occurred in the month of Feb'22. The list is attached at **Annexure-B.VII.** The status of receipt of preliminary reports, DR/EL within 24hrs of the event and fault clearing time as per PMU data has also been mentioned in the table. The non-receipt of DR/EL & preliminary report within 24hrs of the event from SLDCs / ISTS licensees / ISGSs is in violation of regulation 5.2(r) of

IEGC and regulation 15(3) of CEA Grid Standards. As per regulations, all the utilities shall furnish the DR/EL, flag details & preliminary report to RLDC/RPC within 24hrs of the event. They shall also furnish the detailed investigation report within 7 days of the event if fault clearance time is higher than that mandated by CEA (Grid Standard) Regulations.

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

21. Status of submission of DR/EL and tripping report of utilities for the month of Feb'22.

The status of receipt of DR/EL and tripping report of utilities for the month of Feb 2022 is attached at **Annexure-B.VIII**. It is to be noted that as per the IEGC provision under clause 5.2 (r), detailed tripping report along with DR & EL has to be furnished within 24 hrs of the occurrence of the event. However, it is evident from the submitted data that reporting status is not satisfactory and needs improvement. Also, it is observed that reporting status has been improved from CPCC1, CPCC 2, Haryana and Himachal Pradesh in Feb, 2022 compared to the previous month.

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

22. Frequency response characteristic:

Three FRC based event occurred in the month of **Feb-2022**. Description of the event is as given below:

S. No.	Event Date	Time (In hrs.)	Event Description	Starting Frequency (in Hz)	End Frequency (in Hz)	*Δf*
1	04-Feb-22	13:21hrs	On 04th February 2022 at 13:16 hrs, as reported, 765kV Fatehgarh2-Bhadla2 ckt-1 tripped on R-N phase to earth fault after unsuccessful A/R operation. At 13:22 Hrs, during charging of the line, sudden voltage rise led to the solar generation loss of approx. 1882MW (connected at Fatehgarh2). Hence, generation loss of 1882MW has been	50.04	49.92	-0.12

			considered for FRC calculation.			
2	11-Feb-22	11:45hrs	On 11th February 2022 at 11:45 hrs, as reported, event of multiple element tripping occurred at 765/400/220kV Fatehgarh2 (PG) due to over voltage. Solar generation loss of around 2286MW (connected at Fatehgarh2 (PG)) is observed. Hence, generation loss of 2286 MW has been considered for FRC calculation.	50.00	49.87	-0.13
2	30-Jan-22	12:38hrs	On 11th February 2022 at 12:38 hrs, as reported, event of multiple element tripping occurred at 765/400/220kV Fatehgarh2 (PG) due to over voltage. Solar generation loss of around 2807MW (connected at Fatehgarh2 (PG) & Bhadla (PG)) is observed. Hence, generation loss of 2807 MW has been considered for FRC calculation.	49.95	49.79	-0.16

Status of Data received till date:

Status of Field Data received of FRC of Grid event occurred at Fatehgarh2(PG) on 04.02.2022			
Data Received from		**Data Not Received from**	
Singrauli NTPC	Tehri HEP	HP	Rihand NTPC
Tanda TPS	Koteshwar HEP	UK	APCPL Jhajjar
Dadri TPS	Unchahar TPS	Punjab	Others
		BBMB	
		Rajasthan	
		Delhi	
		Haryana	

Status of Field Data received of FRC of Grid event occurred at Fatehgarh2(PG) at 11:45 Hrs on 11.02.2022			
Data Received from		Data Not Received from	
Singrauli NTPC	Tehri HEP	HP	Rihand NTPC
Kawai (Adani)	Rosa Reliance	UK	APCPL Jhajjar
Dadri TPS		Punjab	Unchahar TPS
		BBMB	Others
		Rajasthan	
		Delhi	
		Haryana	

Status of Field Data received of FRC of Grid event occurred at Fatehgarh2(PG) at 12:38 Hrs on 11.02.2022			
Data Received from		Data Not Received from	
Singrauli NTPC	Tehri HEP	HP	Rihand NTPC
Kawai (Adani)	Rosa Reliance	UK	APCPL Jhajjar
Dadri TPS		Punjab	Unchahar TPS
		BBMB	Others
		Rajasthan	
		Delhi	
		Haryana	

PFR as per generators field data:

Primary Frequency Response by Generators during Grid Event at Fatehgarh2(PG) on 04th Feb 2022:

Sr. No	Generating stations	FRC as per generator data (in %)	Response category/Remark
1	Dadri Stage-1 Unit-1	109%	Satisfactory PFR Response
2	Dadri Stage-1 Unit-2	103%	
3	Dadri Stage-1 Unit-3	141%	
4	Dadri Stage-1 Unit-4	104%	
5	Dadri Stage-2 Unit-1	115%	
6	Dadri Stage-2 Unit-2	70.4%	
7	Singrauli Unit-6	15.3%	Unsatisfactory PFR Response
8	Singrauli Unit-7	33.8%	
9	Koteshwar Unit-4	33.54%	Unsatisfactory PFR Response
10	Tanda Unit-1	8.91%	Unsatisfactory PFR Response
11	Tanda Unit-2	-1.14%	Poor Response
12	Unchahar Unit-1	-25.6%	Poor Response
13	Unchahar Unit-2	-3.7%	Poor Response
14	Unchahar Unit-3	17.34%	Unsatisfactory PFR Response
15	Unchahar Unit-4	31.81%	
16	Unchahar Unit-5	19.9%	
17	Unchahar Unit-6	56.43%	

Primary Frequency Response by Generators during Grid Event at Fatehgarh2(PG) at 11:45 Hrs on 11th Feb 2022:

Sr. No	Generating stations	FRC as per generator data (in %)	Response category/Remark
1	Dadri Stage-1 Unit-1	50%	Unsatisfactory PFR Response
2	Dadri Stage-1 Unit-2	11%	Unsatisfactory/Poor PFR Response
3	Dadri Stage-1 Unit-3	-32%	Poor PFR Response
4	Dadri Stage-1 Unit-4	47%	Unsatisfactory PFR Response
5	Dadri Stage-2 Unit-1	49%	Unsatisfactory PFR Response
6	Dadri Stage-2 Unit-2	14%	Unsatisfactory/Poor PFR Response
7	Singrauli Unit-6	27%	Unsatisfactory PFR Response
8	Singrauli Unit-7	35%	
9	Kawai (Adani) Unit-2	0%	Poor PFR Response (Early die out of response)
10	Rosa TPS Unit-1	-37%	Poor PFR Response
11	Rosa TPS Unit-2	-29%	
11	Rosa TPS Unit-3	-41%	
13	Rosa TPS Unit-4	-45%	
14	Tehri HEP Unit-3	32%	Unsatisfactory PFR Response

Primary Frequency Response by Generators during Grid Event at Fatehgarh2(PG) at 12:38 Hrs on 11th Feb 2022:

Sr. No	Generating stations	FRC as per generator data (in %)	Response category/Remark
1	Dadri Stage-1 Unit-1	0%	Unsatisfactory/Poor PFR Response
2	Dadri Stage-1 Unit-2	12.7%	
3	Dadri Stage-1 Unit-3	13%	
4	Dadri Stage-1 Unit-4	0%	
5	Dadri Stage-2 Unit-1	0%	
6	Dadri Stage-2 Unit-2	0%	
7	Singrauli Unit-6	51.48%	Unsatisfactory PFR Response
8	Singrauli Unit-7	48.32%	
9	Kawai (Adani) Unit-2	0%	Poor PFR Response (Early die out of response)
10	Rosa TPS Unit-1	31%	Unsatisfactory PFR Response
11	Rosa TPS Unit-2	20%	Unsatisfactory PFR Response
11	Rosa TPS Unit-3	3%	Poor PFR Response
13	Rosa TPS Unit-4	-25%	Poor PFR Response
14	Tehri HEP Unit-3	30%	Unsatisfactory PFR Response

In line with the decisions taken during various OCC meetings, the time and date of the FRC events were e-mailed to respective utilities***. Constituents may submit the FRC of their control areas for the above event and reason of poor response, if observed.***

Other utilities are also requested to kindly share the FRC calculations and further action taken at their end.

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

In last 12 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)

It may be noted that Tehri HEP conducted PSS tuning/ Step response test of their units and submitted report. Schedule has been received from Rajasthan and UP

Control area. However, no further updates have been received from other utilities till date.

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

In 192nd OCC meeting, Members were requested to update about their future plan for PSS tuning as there is no progress despite including this agenda in every OCC meeting and a separate meeting may be call for detail discussion on this matter.

Members may please discuss.

24. Mock black start exercises in NR:

As per Indian Electricity Grid Code (IEGC) clause 5.8(b) "Mock trial runs of the procedure for different sub-systems 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 winter months are lean hydro period and therefore appropriate time to carry out such exercises.

Therefore, the schedule of mock exercise dates for different hydro & Gas power station is proposed. The power stations may confirm and inform to all the concerned persons of control centre/ substations to facilitate the exercise.

The proposed schedule for the Mock Black start exercise is as follows:

Hydro Power Stations:

Date	**Revised Schedule date**	**Name of stations**	**Comment and Remarks**
26-Nov-21		* Uri-I, II HEP, Lower Jhelum HEP, Pampore GT's, Upper Sindh and Kishanganga.	Yet to be carried out. No information has been received from J&K about URI-I, Uri-II. Integration of Mock black start exercise in SCADA system at Kishanganga power station yet to be done by BHEL (OEM). BHEL is being pursued for its expedition. Hence the Mock exercise at Kishanganga shall be possible only after completion of above by OEM.
01-Dec-21	28-Dec-21	* Dhauliganga	Conducted successfully except a heavy jerk at Dhauliganga HEP is observed during synchronization at Bareilly end.
04-Dec-21	23-Dec-21	Bairasiul	To be carried out. As requested by HP SLDC.
08-Dec-21		*Sewa-2	Mock Black start exercise is not possible as Power Station is under complete shutdown due to HRT repair works..
10-Dec-21	During March	* N. Jhakri and Rampur	Yet to be carried out. As requested by Jhakri HEP & HP SLDC.

	2022		
15-Dec-21	29-Dec-21	Karcham and Baspa	Exercise unsuccessful due to tripping of Wangtoo-kala Amb line during island build up.
17-Dec-21	After Ist week of March, 2022	*Budhil	Yet to be carried out. As discussed with Budhil HEP the exercise is planned to be carried out after Ist week of March, 2022
22-Dec-21		Parbati-3 and Sainj	Yet to be carried out.
24-Dec-21		*Salal	Yet to be carried out. No information has been received from J&K for load management.
29-Dec-21	During March 2022	*Chamera-3	As requested by NHPC.
31-Dec-21	19th January, 2022	Koteshwar	Exercise carried out successfully.
05-Jan-22	After 25 Jan 2022.	Chamera-1 and Chamera-2	Considering the proposed complete s/d of CH-1 PS for HRT inspection w.e.f. 01st Dec. 2021, the mock black start exercise may be postponed and same may be scheduled after 25 Jan 2022.
08-Jan-22	Third week of January, 2022	Malana-2, AD Hydro and Phozal	Yet to be carried out.
12-Jan-22		Tehri	Exercise carried out successfully.
15-Jan-22	After 14 Feb 2022	Koldam	Yet to be carried out. As discussed with Punjab SLDC the exercise is planned to be carried out after 14th February, 2022 (due to election in Punjab).

* Mock Black start exercise not carried out during Year 2020-21.

Mock Black start procedure circulated during last exercise/ previous year may be used. The unit to be selected for black start, may preferably be different from the one tested during last year exercise. Also Constituents are requested to adhere to the finalized schedule of mock exercises during the current season.

Gas Power Stations:

Date	**Name of stations**	**Comment and Remarks**
19-Jan-22	Anta GPS	Exercise carried out successfully.
21-Jan-22	*Auraiya GPS	Yet to be carried out.
28-Jan-22	*Dadri GPS	Exercise carried out successfully.

As informed by Bawana GPS, it does not have black start capability.

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		Larji	3x42
6		Bhabha	3x40
7		Malana -I	2x43
8		Baspa	3x100
9	Punjab	Anandpur Sahib	4x33.5
10		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			
21		Srinagar (Alaknanda)	4x82.5
	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

During last winter, SLDCs had been requested to carry out mock drills in respect of intra-state generators and share their reports. However, the report of such exercises was not received except for Rihand Hydro in Uttar Pradesh. The information may please be shared by SLDCs and program for this year's mock black start exercises may please be apprised to NRLDC.

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 please discuss.

Follow up issues from previous OCC meetings

1	Down Stream network by State utilities from ISTS Station	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.	List of downstream networks is enclosed in **Annexure-A.I.I.**
2	Progress of installing new capacitors and repair of defective capacitors	Information regarding installation of new capacitors and repair of defective capacitors is to be submitted to NRPC Secretariat.	Data upto following months, received from various states / UTs: ◎ CHANDIGARH — Sep-2019 ◎ DELHI — Dec-2021 ◎ HARYANA — Aug-2021 ◎ HP — Jan-2022 ◎ J&K and LADAKH — Not Available ◎ PUNJAB — Aug-2021 ◎ RAJASTHAN — Feb-2022 ◎ UP — Nov-2021 ◎ UTTARAKHAND — Feb-2022 All States/UTs are requested to update status on monthly basis.
3	Healthiness of defence mechanism: Self-certification	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”.	Data upto following months, received from various states / UTs: ◎ CHANDIGARH — Not Available ◎ DELHI — Dec-2021 ◎ HARYANA — Dec-2021 ◎ HP — Feb-2022 ◎ J&K and LADAKH — Not Available ◎ PUNJAB — Mar-2021 ◎ RAJASTHAN — Dec-2021 ◎ UP — Dec-2021 ◎ UTTARAKHAND — Dec-2021 ◎ BBMB — Dec-2021 All States/UTs are requested to update status on monthly basis.
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.	Status of the information submission (month) from states / utilities is as under: ◎ HARYANA — Dec-2021 ◎ PUNJAB — Dec-2021 ◎ RAJASTHAN — Mar-2022 ◎ UP — Feb-2022 ◎ NTPC — Feb-2022

		Further, progress of FGD installation work on monthly basis is monitored in OCC meetings.	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	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.

6	Reactive compensation at 220 kV/ 400 kV level at 15 substations			
	State / Utility	Substation	Reactor	Status
i	POWERGRID	Kurukshetra	500 MVAr TCR	Anticipated commissioning: July 2022 (90% supplies received from GE and rest is expected by Feb'22)
ii	DTL	Peeragarhi	1x50 MVAr at 220 kV	PO awarded to M/s Kanohar Electricals Ltd. Drawings approved and under stage inspection (delay due to pending supply of reactor bushings). GIS Bay is already available.
iii	DTL	Harsh Vihar	2x50 MVAr at 220 kV	PO awarded to M/s Kanohar Electricals Ltd. Drawings approved and under stage inspection (delay due to pending supply of rector bushings). GIS Bay is already available.
iv	DTL	Mundka	1x125 MVAr at 400 kV & 1x25 MVAr at 220 kV	Bay work awarded to M/s. Ethos. Bay work is expected to be completed by Dec.21. Reactor part tender is dropped and at present same is under revision.
v	DTL	Bamnauli	2x25 MVAr at 220 kV	Bay work awarded to M/s. Ethos. Bay work is expected to be completed by Dec.21. Reactor part tender is dropped and at present same is under revision.
vi	DTL	Indraprastha	2x25 MVAr at 220 kV	Bay work awarded to M/s. Ethos. Bay work is expected to be completed by Dec.21. 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 – LOA issued on dated. 17.08.2021 and date of completion of project is 18 months from the date of LOA. 220kV Reactors - LOA issued on dated 19.07.2021 and date of completion of project is 18 months from the date of LOA.
ix	PUNJAB	Nakodar	1x25 MVAr at 220 kV	220kV Reactors - LOA issued on dated 19.07.2021 and date of completion of project is 18 months from the date of LOA
x	PTCUL	Kashipur	1x125 MVAR at 400 kV	Tender has been invited in first week of Jan'22.

xi	RAJASTHAN	Akal	1x25 MVAr	LOA placed on dt. 4.1.2021. Agreement signed on dt. 8.02.2021. Case for 2nd installment forwarded to NLDC, POSOCO on dt. 29.04.2021. Targeted to be completed by March 2022.
xii	RAJASTHAN	Bikaner	1x25 MVAr	LOA placed on dt. 4.1.2021. Agreement signed on dt. 8.02.2021. Case for 2nd installment forwarded to NLDC, POSOCO on dt. 29.04.2021. Targeted to be completed by March'2022.
xiii	RAJASTHAN	Suratgarh	1x25 MVAr	LOA placed on dt. 4.1.2021. Agreement signed on dt. 8.02.2021. Case for 2nd installment forwarded to NLDC, POSOCO on dt. 29.04.2021. Targeted to be completed by March 2022.
xiv	RAJASTHAN	Barmer & others	13x25 MVAr	Agreement signed on dt. 22.06.2020. Grant of Ist Installment received on dt.19.02.21. Technical bid opened on dt.22.10.2021 & Price bid opened on 10.01.22. Order likely to be placed in Feb' 2022.
xv	RAJASTHAN	Jodhpur	1x125 MVAr	Agreement signed on dt. 22.06.2020. Grant of Ist Installment received on dt.19.02.21. Technical bid opened on dt.22.10.2021 & Price bid opened on 10.01.22. Order likely to be placed in Feb' 2022.

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.	-	PDD, J&K to update the status.
2	400/220kV, 2x315 MVA New Wanpoh	Commissioned: 6 Total: 6	Utilized: 2 Unutilized: 4	• 220 kV New Wanpoh - Alusteng D/c Line	-	PDD, J&K to update the status.
				• 220 kV New Wanpoh - Mattan D/c Line	-	PDD, J&K to update the status.
3	400/220kV, 2x315 MVA Amargarh	Commissioned: 6 Total: 6	Utilized: 6 Unutilized: 2	• 220kV D/C line from 400/220kV Kunzar - 220/33kV Sheeri	-	PDD, J&K to update the status.
4	400/220kV, 2x500 MVA Kurukshetra (GIS)	Commissioned: 8 Total: 8	Utilized: 6 Unutilized: 2	• 220kV Bhadson (Kurukshetra) – Ramana Ramani D/c line	-	HVPNL to update the status.
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: 3 Unutilized: 3 (2 bays to be utilized shortly) Approved/Under Implementation:1	• 220 kV D/C Shahajahanpur (PG) - Gola line	-	UPPTCL to update the status.
				• LILO of Sitapur – Shahjahanpur 220 kV SC line at Shahjahanpur (PG) – under commissioning	21.02.2022	Updated in 192nd OCC by UPPTCL
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	Mar'22	Updated in 192nd 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: 4 Unutilized: 4	• LILO of 220 kV Sikar (220 kV GSS)-Dhod S/c line at Sikar (PG)	Mar'22	Forest Cleareance issue has been resolved as Updated in 192nd OCC by RRVPNL
				• Network to be planned for 2 bays.	-	RRVPNL to update the status.
9	Bhiwani 400/220kV S/s	Commissioned: 6 Total: 6	Utilized: 0 Unutilized: 6	• 220 kV D/C line Bhiwani (PG) – Bhiwani (HVPNL) line	-	Issue related to ROW as intimated in 192nd OCC.HVPNL to update the status.
				• 220 kV Bhiwani (PG) - Isherwal (HVPNL) D/c line.	-	Issue related to ROW as intimated in 192nd OCC.HVPNL to update the status.
				• 220 kV Bhiwani (PG) - Dadhibana (HVPNL) D/c line.	-	Issue related to ROW as intimated in 192nd OCC.HVPNL to update the status.
10	Jind 400/220kV S/s	Commissioned: 4 Approved:4 Total: 8	Utilized: 4 Unutilized: 0 Approved:4	• 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	-	HVPNL to update the status.
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	Jan'23	Updated in 192nd OCC by HPPTCL
				• Network to be planned for 4 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.	-	HVPNL to update the status.
				• 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	-	HVPNL to update the status.
14	400/220kV Sohna Road Sub-station	Commissioned: 8 Total: 8	Utilized: 0 Unutilized: 8	• LILO of both circuits of 220kV D/c Sector-69 - Roj Ka Meo line at 400kV Sohna Road	-	HVPNL to update the status.
				• LILO of both circuits of 220kV D/c Badshahpur-Sec77 line at 400kV Sohna Road	-	HVPNL to update the status.
15	400/220kV Prithla Sub-station	Commissioned: 8 Total: 8	Utilized: 0 Unutilized: 8	• LILO of both ckt of 220kV D/c Ranga Rajpur – Palwal line	-	HVPNL to update the status.
				• 220kV D/C for Sector78, Faridabad	-	HVPNL to update the status.

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: 2 Under Implementation:2	• LILO of both circuits of 220kV Samalkha - Mohana line at Sonepat		HVPNL to update the status.
				• Sonepat - HSIISC Rai 220kV D/c line	Jul'22	Updated in 192nd OCC
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)	Oct'22	In Tendering stage as updated in 192nd OCC by RVPNL.
18	400/220kV Kotputli Sub-station	Commissioned: 6 Total: 6	Utilized: 4 Unutilized: 2	• Kotputli - Pathreda 220kV D/c line	-	RVPNL to update the status.
19	400/220kV Jallandhar Sub-station	Commissioned: 10 Total: 10	Utilized: 8 Unutilized: 2	• Network to be planned for 2 bays	-	PSTCL to update the status.
20	400/220kV Roorkee Sub-station	Commissioned: 6 Total: 6	Utilized: 4 Unutilized: 2	• Roorkee (PG)-Pirankaliyar 220kV D/c line	-	PTCUL to update the status.
21	400/220kV Lucknow Sub-station	Commissioned: 8 Total: 8	Utilized: 4 Unutilized: 4	• Network to be planned for 4 bays	-	UPPTCL to update the status.
22	400/220kV Gorakhpur Sub-station	Commissioned: 6 Total: 6	Utilized: 4 Unutilized: 2	• Network to be planned for 2 bays	-	UPPTCL to update the status.
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 4 bays	-	UPPTCL to update the status.
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	Mar'22	Updated in 192nd 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	-	HVPNL to update the status.
				• Panchkula – Sector-32 220kV D/c line	-	HVPNL to update the status.
				• Panchkula – Raiwali 220kV D/c line	-	HVPNL to update the status.
				• Panchkula – Sadhaura 220kV D/c line: Sep'23	-	HVPNL to update the status.
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	-	PSTCL to update the status.
				• 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)	-	PSTCL to update the status.
27	400/220kV Bagpat S/s	Commissioned: 8 Total: 8	Utilized:6 Unutilized: 2	·• Bagpat - Modipuram 220kV D/c line	-	UPPTCL to update the status.
28	400/220kV Bahardurgarh S/s	Commissioned: 4 Total: 4	Utilized:2 Unutilized: 2	• Network to be planned for 2 bays.		HVPNL to update the status.
29	400/220kV Jaipur (South) S/s	Commissioned: 4 Total: 4	Utilized:6 Unutilized: 2	• Network to be planned for 2 bays.	-	RVPNL to update the status.
30	400/220kV Sohawal S/s	Commissioned: 8 Total: 8	Utilized: 2 Unutilized: 6	• Sohawal - Barabanki 220kV D/c line	-	UPPTCL to update the status.
				• Sohawal - New Tanda 220kV D/c line	-	UPPTCL to update the status.
				• Network to be planned for 2 bays	-	UPPTCL to update the status.
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 4 bays	-	HVPNL to update the status
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	-	UPPTCL to update the status

Sl. No.	Substation	Downstream network bays	Status of bays	Planned 220 kV system and Implementation status	Revised Target	Remarks
34	400/220kV, Wagoora	Commissioned: 10 Total: 10	Utilized: 6 Unutilized: 4	• Network to be planned for 4 bays	-	PDD, J&K to update the status.
35	400/220kV, Ludhiana	Commissioned: 9 Total: 9	Utilized: 8 Unutilized: 1	• Network to be planned for 1 bay	-	PSTCL to update the status
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	-	HPPTCL to update the status
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	-	UPPTCL to update the status
38	400/220kV, Patiala	Commissioned: 8 Total: 8	Utilized: 6 Unutilized: 2	• Network to be planned for 2 bays	-	PSTCL to update the status

2. Establishment of new 400/220kV substations in Northern Region:

Sl. No.	Name of Substation	MVA Capacity	Expected Schedule		Downstream connectivity by States
1	400/220kV Dwarka-I GIS (8 nos. of 220kV bays)	4x 500	Mar'22		DTL to update the status.
2	220/66kV Chandigarh GIS (8 nos. of 66kV bays)	2x 160	Apr'22		Chandigarh to update the status.
3	400/220kV Jauljivi GIS Out of these 8 nos. 220kV Line Bays, 4 nos. (Pithoragath-2, & Dhauliganga-2) would be used by the lines being constructed by POWERGRID and balance 4 nos. bays would be used by the lines being constructed by PTCUL.	2x315	Feb'22		〈 220kV Almora-Jauljibi line 〈 220kV Brammah-Jauljibi line PTCUL to update the status of lines.

FGD Status

Updated status of FGD related data submission

NTPC (25.02.2022)
MEJA Stage-I
RIHAND STPS
SINGRAULI STPS
TANDA Stage-I
TANDA Stage-II
UNCHAHAR TPS
UPRVUNL (15.02.2022)
ANPARA TPS
HARDUAGANJ TPS
OBRA TPS
PARICHHA TPS

PSPCL (20.12.2021)
GGSSTP, Ropar
GH TPS (LEH.MOH.)
RRVUNL (10.03.2022)
CHHABRA SCPP
CHHABRA TPP
KALISINDH TPS
KOTA TPS
SURATGARH SCTPS
SURATGARH TPS

Updated status of FGD related data submission

Lalitpur Power Gen. Co. Ltd. (15.02.2022)
Lalitpur TPS
Lanco Anpara Power Ltd. (15.02.2022)
ANPARA-C TPS

HGPCL (17.12.2021)
PANIPAT TPS
RAJIV GANDHI TPS
YAMUNA NAGAR TPS

Adani Power Ltd. (18.02.2022)
KAWAI TPS

Rosa Power Supply Company (15.02.2022)
Rosa TPP Phase-I
Prayagraj Power Generation Company Ltd. (15.02.2022)
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: 30-09-2022), INDIRA GANDHI STPP U#2 (Target: 30-09-2022), INDIRA GANDHI STPP U#3 (Target: 30-09-2022)
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: 30-04-2021), PANIPAT TPS U#7 (Target: 28-02-2021), PANIPAT TPS U#8 (Target: 31-12-2020), RAJIV GANDHI TPS U#1 (Target: 30-04-2022), RAJIV GANDHI TPS U#2 (Target: 28-02-2022), YAMUNA NAGAR TPS U#1 (Target: 31-12-2021), YAMUNA NAGAR TPS U#2 (Target: 31-10-2021)

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: 30-06-2022), RIHAND STPS U#1 (Target: 30-06-2024), RIHAND STPS U#2 (Target: 30-06-2024), RIHAND STPS U#3 (Target: 31-12-2023), RIHAND STPS U#4 (Target: 31-12-2023), RIHAND STPS U#5 (Target: 30-06-2023), RIHAND STPS U#6 (Target: 30-06-2023), SINGRAULI STPS U#1 (Target: 30-06-2024), SINGRAULI STPS U#2 (Target: 30-06-2024), SINGRAULI STPS U#3 (Target: 30-06-2024), SINGRAULI STPS U#4 (Target: 30-06-2024), SINGRAULI STPS U#5 (Target: 30-06-2024), SINGRAULI STPS U#6 (Target: 31-03-2023), SINGRAULI STPS U#7 (Target: 31-03-2023), UNCHAHAR TPS U#1 (Target: 31-12-2023), UNCHAHAR TPS U#2 (Target: 31-12-2023), UNCHAHAR TPS U#3 (Target: 30-06-2024), UNCHAHAR TPS U#4 (Target: 30-06-2024), UNCHAHAR TPS U#5 (Target: 30-06-2024), UNCHAHAR TPS U#6 (Target: 30-06-2022), MEJA Stage-I U#1 (Target: 31-12-2022), MEJA Stage-I U#2 (Target: 31-12-2022), TANDA Stage-I U#3 (Target:), TANDA Stage-I U#4 (Target:), TANDA Stage-II U#3 (Target: 31-12-2022), TANDA Stage-II U#4 (Target: 31-12-2022)

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: 31-12-2024), LALITPUR TPS U#2 (Target: 30-09-2024), LALITPUR TPS U#3 (Target: 30-06-2024)
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: 31-10-2024), PRAYAGRAJ TPP U#2 (Target: 31-10-2024), PRAYAGRAJ TPP U#3 (Target: 31-12-2024)
PSPCL	GH TPS (LEH.MOH.) U#1 (Target: 31-12-2024), GH TPS (LEH.MOH.) U#2 (Target: 31-12-2024), GH TPS (LEH.MOH.) U#3 (Target: 31-12-2024), GH TPS (LEH.MOH.) U#4 (Target: 31-12-2024), GGSSTP, Ropar U#3 (Target: 31-03-2022), GGSSTP, Ropar U#4 (Target: 31-05-2022), GGSSTP, Ropar U#5 (Target: 31-07-2022), GGSSTP, Ropar U#6 (Target: 30-09-2022)

Rosa Power Supply Company	ROSA TPP Ph-I U#1 (Target: 31-12-2024), ROSA TPP Ph-I U#2 (Target: 31-12-2024), ROSA TPP Ph-I U#3 (Target: 31-12-2024), ROSA TPP Ph-I U#4 (Target: 31-12-2024)
RRVUNL	KOTA TPS U#5 (Target: 31-12-2022), KOTA TPS U#6 (Target: 31-12-2022), KOTA TPS U#7 (Target: 31-12-2022), SURATGARH TPS U#1 (Target: 31-12-2024), SURATGARH TPS U#2 (Target: 31-12-2024), SURATGARH TPS U#3 (Target: 31-12-2024), SURATGARH TPS U#4 (Target: 31-12-2024), SURATGARH TPS U#5 (Target: 31-12-2024), SURATGARH TPS U#6 (Target: 31-12-2024), SURATGARH SCTPS U#7 (Target: 31-12-2024), SURATGARH SCTPS U#8 (Target: 31-12-2024), CHHABRA TPP U#1 (Target: 31-12-2024), CHHABRA TPP U#2 (Target: 31-12-2024), CHHABRA TPP U#3 (Target: 31-12-2024), CHHABRA TPP U#4 (Target: 31-12-2024), CHHABRA SCPP U#5 (Target: 31-12-2024), CHHABRA SCPP U#6 (Target: 31-12-2024), KALISINDH TPS U#1 (Target: 31-12-2024), KALISINDH TPS U#2 (Target: 31-12-2024)
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	Delhi IS	Delhi	Implemented	Yes (Sept - 2021)	No	Yes	List of officials in-charge and relays in Delhi IS submitted by DTL on 16.08.2021.
2	NAPS IS	UP	Implemented	Yes (08-10-2021)	Yes	Yes	-
3	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 (Required / Not Required)	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	UP has got offer from CPRI for study. The estimated time of study is 5 months from date of acceptance.		-		-	-	-	-	-	-	-	-
2	Agra IS	UP	Newly Proposed	UP has got offer from CPRI for study. The estimated time of study is 5 months from date of acceptance.		-		-	-	-	-	-	-	-	-
3	Jodhpur-Barmer-Rajwest IS	Rajasthan	Newly Proposed	Rajasthan has submitted base-case to NRLDC. NRLDC has asked some additional data from Rajasthan.	RVPN will propose to avail PSDF funding	-		-	-	-	-	-	-	-	-
4	Patiala-Nabha Power Rajpura IS	Punjab	Newly Proposed	Punjab has sent the offer to CPRI for study of Islanding Schemes.		-		-	-	-	-	-	-	-	-
5	Pathankot-RSD IS	Punjab	Newly Proposed	Punjab has sent the offer to CPRI for study of Islanding Schemes.		-		-	-	-	-	-	-	-	-
6	Talwandi Sabo IS	Punjab	Newly Proposed	Punjab has sent the offer to CPRI for study of Islanding Schemes.		-		-	-	-	-	-	-	-	-
7	Dehradun IS	Uttarakhand	Newly Proposed	Uttarakhand SLDC has informed in 192nd OCC that nomination of officers is pending from utilities for finalization of scheme.		-	-	-	-	-	-	-	-	-	-
8	Jammu-Salal IS	J &K	Under Discussion	-		-	-	-	-	-	-	-	-	-	-
9	Suratgarh IS	Rajasthan	Under Discussion	Rajasthan has submitted base-case to NRLDC. NRLDC has asked some additional data from Rajasthan.	RVPN will propose to avail PSDF funding	-		-	-	-	-	-	-	-	-
10	Chamba-Chamera IS	HP	Under Discussion	Transient study is being done at HP end.		-	-	-	-	-	-	-	-	-	-
11	Kangra-Chamba-Bairasuil IS	HP	Under Discussion	Transient study is being done at HP end.		-	-	-	-	-	-	-	-	-	-
12	Kullu-Dehar IS	HP	Under Discussion	HP has proposed Kullu-Manali-Mandi islanding scheme with Larji and Malana HEP and Shimla-Solan Islanding with Bhabha and other IPPs at Kotla. Fresh transient study with dynamic data is pending at HP end.		-	-	-	-	-	-	-	-	-	-
13	Butari-Jamsher-Verpal IS	Punjab	Under Discussion	-		-	-	-	-	-	-	-	-	-	-
14	Kargil-Ladakh IS	Ladakh	Under Discussion	-		-	-	-	-	-	-	-	-	-	-

Agenda for 193th OCC meeting of NRPC by UJVN Ltd.

Agenda: Renovation and Up gradation of the protection systems of Substations of UJVN Ltd. under PSDF Scheme.

Background:

- In accordance with MoP Communication dated 10th January 2014 and CERC (PSDF) regulation 2014, Ministry of Power, GoI operationalized funding scheme for various categories of projects including "Renovation and Modernization (R&M) of Transmission and Distribution system for relieving congestion".

- PTCUL is the designated nodal agency under PSDF scheme for Uttarakhand state. PTCUL has also availed this funding for their different projects. This scheme is also applicable to 132kV & above voltage level Substations of UJVN Ltd.

- UJVN Ltd has 10 nos. large Power Generating Stations with installed capacity of 1252 MW (approx.). Each generating station is further connected through 132 kV / 220 kV substation / switchyard. These Power Generating Stations meet out more than 1/3rd of total power demand of Uttarakhand state. The details of 132 kV / 220kV substations of UJVN Ltd are as follows.

  - 220 kV Substation at 304 MW Dharasu Power House, Uttarkashi.
  - 220 kV Substation at 90 MW Tiloth Power House, Uttarkashi.
  - 220 kV Substation at 240 MW Chibro Power House, Dakpather.
  - 220 kV Substation at 120 MW Khodri Power House, Dakpather.
  - 132 kV Substation at 51 MW Dhalipur Power House, Dakpather.
  - 132 kV Substation at 33.75 MW Dhakrani Power House, Dakpather.
  - 132 kV Substation at 30 MW Kulhal Power House, Dakpather.
  - 132 kV Substation at 144 MW Chilla Power House, Haridwar.
  - 132 kV Substation at 198 MW Ramganga Power House, Kalagarh.
  - 132 kV Substation at 41.4 MW Sharda Power House, Khatima.

In all the above switchyards/substations, certain equipments /components are more than 10 years old and need replacement. Protection system also need to be strengthened & enhanced. Total estimate amounting to Rs 48.05Cr (Rs. Forty Eight Crore Five Lac Only) has now been framed for carrying out above works.

- DPR amounting to Rs 48.05 Cr. (Rs. Forty Eight Crore Five Lac Only) for renovation & upgradation of protection system of 132 kV & above substation under PSDF scheme was earlier submitted to PSDF-NLDC secretariat through PTCUL, nodal agency under PSDF scheme for Uttarakhand state, vide email dated 30.09.2021.

- The PSDF-NLDC secretariat has now desired third party audit and clearance from NRPC prior to its approval under PSDF.

Proposal:

Considering above, for carrying out Third Party Protection Audit for 10 nos. 132 kV / 220 kV Substations/Switchyards of UJVN Ltd., it is proposed that Protection Audit Team may kindly be constituted.

Member may kindly deliberate and approve accordingly.

(Purushottam Singh)
Director(Operations)

10.3.22
(Sandeep Singhal)
Managing Director

CIN NO-L40101HR1975GOI032564

एनएचपीसी लिमिटेड
(भारत सरकार का उद्यम)
NHPC Limited
(A Govt. of India Enterprise)

ओ&एम विभाग / O&M Division
एनएचपीसी कार्यालय परिसर/ NHPC Office Complex
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Email-nhpcgmc@gmail.com
फोन: 0129-2271419/ फैक्स: 0129-2272413

NH/O&M/OCC/2022/ 40

14/03/2022

सदस्य सचिव,
एनआरपीसी,
18A, शहीद जीत सिंह मार्ग,
कटवारिया सराय,
नई दिल्ली

विषय : 193वीं ओसीसी बैठक (दिनांक 22 मार्च 2022 को प्रस्तावित) हेतु अजेंडा पॉइंट के संदर्भ में ।

महोदय,

उपरोक्त विषय के संबंध में, एनआरपीसी का पत्र संख्या उ.क्षे.सव./प्रचालन /01/106/2022/2607-2648 दिनांक 07.03.2022 का संदर्भ ग्रहण करें जिसके माध्यम से प्रस्तावित 93वीं ओसीसी बैठक का Schedule परिचालित किया गया । इस संबंध में, एनआरपीसी से अनुरोध किया जाता है कि, एनएचपीसी के तरफ से "**Sub: Water requirement by Jal Shakti Vibhag, Himachal Pradesh from Chamera-1 Dam**" पर एक अजेंडा पॉइंट उक्त बैठक में शामिल किया जाए। अजेंडा पॉइंट की विस्तृत जानकारी अनुलग्नक -1 में संलग्न है ।

धन्यवाद,

भवदीय ,

सूरज

(सूरज धीमान)
महाप्रबंधक (ओ&एम)

Annexure-I

193rd OCC MEETING OF NRPC: AGENDA (NHPC)

Sub.: Water requirement by Jal Shakti Vibhag, Himachal Pradesh from Chamera-1 Dam.

Jal Shakti Vibhag, Himachal Pradesh vide their letter dated 22/12/2021 (Copy attached) informed that various Water Supply System (WSS) to the villages in Tehsil Dalhousie and Bhattiyat, Distt.: Chamba (HP) have been sanctioned by the competent authority for which the water has been proposed to be lifted from Channi Lahar, downstream of Village Parihar which is 2 KM upstream of Dam. The total quantity of water required on daily basis is 3.56 ML for the various habitations.

Due to lifting of water from Dam, there will be very minor energy loss (0.28 MU approx. per year) from Chamera-1 Power Station. As the energy loss is negligible in comparison to Generation from Chamera-1 Power Station in a year, it is suggested to allow the Jal Shakti Vibhag, HP, to lift said quantum of water from upstream of Chamera-1 Dam.

This is for information to the beneficiaries of Chamera-1 Power Station.

XXXXXX

Annexure

FEEDERS FOR PHYSICAL REGULATION OF SUPPLY IN UTTAR PRADESH

Sl. No	Transmission element to be opened	Affected Area	Approx load relief (MW)	Remarks
1	220kV Meerut- Gajraula	Gajraula	100	Radial feeder, Alternate supply available from 220kV Sambhal, MW loading limited to 25MW.
2	220kV Baghpat (PG)-Baghpat (UP) D/C	Baghpat	60	Radial feeder, Alternate supply available from 132kV Source
3	220kV Allahabad (PG)-Jhusi	Jhusi	200	Radial feeder, Alternate supply available from 220kV Phoolpur
4	220kV Sohawal (PG)-Barabanki D/C	Barabanki	120	Radial feeder
5	220KV Mainpuri (PG)-Neemkarori D/C	Farrukhabad	120	--do--
6	220kV Gorakhpur (PG)-Gola D/C	Gorakhpur	80	--do--
7	132kV Balia (PG)- Bansdeeh	Balia	15	--do--
8	132kV Balia (PG)-Sikandrapur	Balia	30	--do--

FEEDERS FOR PHYSICAL REGULATION OF SUPPLY IN PUNJAB

S No.	Transmission element to be opened	Power supply interruption in	Approx Relief (MW)	Remarks
1	132 kV Jamalpur-Ghulal D/C	Ghulal	91	No alternate supply available
2	66 kV Jamalpur – Chandigarh Road,Ludhiana	Chandigarh Road, Ludhiana	37	These feeders are replacement of Jamalpur-Miliarganj D/C as reported by PSTCL by Memo No. 1162/T-257 dated 23-11-12. In review, it was found that df/dt and UFR was already installed on Jamalpur-Miliarganj D/C
	66 kV Jamalpur-Sherpur, Ludhiana	Sherpur, Ludhiana	13	
3	220/66 kV ICT1, 2 & 3 at Sangrur	Sangrur and adjoining areas	166	No alternate supply available
4	132 kV Amritsar-Naraingarh D/C	Amritsar and Adjoining areas	100	No alternate supply available
5	220 kV Jalandhar-Kanjli D/C	Kapoorthala	64	No alternate supply available

FEEDERS FOR PHYSICAL REGULATION OF SUPPLY IN JAMMU & KASHMIR

S No.	Transmission element to be opened	Power supply interruption in	Approx Relief (MW)	Remarks
1	220 kV Kishenpur-Udhampur D/C 220 kV Sarna-Udhampur	Udhampur	100-150	Limited alternate feed may be available from 132 kV. Generation at Chenani HEP may be affected.
2	220 kV Kishenpur-Barn D/C	Jammu	100	Limited alternate feed may be available from Jammu
3	220 kV Sarna-Hiranagar 220 kV Salal-Jammu D/C	Jammu & Hiranagar	300-400	Entire Jammu region could be affected. Alternate feed may be available from Barn and Udhampur. Generation at Sewa HEP may get affected
4	220 kV Wagoora-Ziankote D/C	Kashmir valley	200-300	Limited alternate feed may be available from Pampore. Generation at Lower Jhelum could get affected
5	220 kV Wagoora-Ziankote D/C 220 kV Wagoora-Pampore D/C 220 kV Kishenpur-Mir Bazar 220 kV Kishenpur-Ramban	Kashmir valley	400-500	Though Uri generation may be evacuated through 400 kV Wagoora-Kishenpur D/C but the security would be affected.

FEEDERS FOR PHYSICAL REGULATION OF SUPPLY IN RAJASTHAN

S No.	Transmission element to be opened	Power supply interruption in	Approx Relief (MW)	Remarks
1	220 kV Bhiwadi (PG)-Kushkhera 220 kV Neemrana (PG)-Kushkhera	Kushkhera and Kishangarh Bas	170	Limited alternate supply may be available. 220 kV Alwar-K. G. Bas-Kushkhera line may get overloaded
2	220 kV Neemrana (PG)-Neemrana 220 kV Bhiwadi (PG)-Neemrana	Neemrana	180	Limited alternate supply may be available from Kotputli & Behror.
3	220 kV Khelna (PG)-Manoharpur	Manoharpur	100	Limited alternate supply of Manoharpur may be available from Kotputli
4	220 kV Anta-Lalsot 220 kV Anta-Sawai Madhopur	Lalsot Sawaimadhopur	180	Limited alternate supply may be available from Dausa
5	220 kV Dadri-Khetri-I 220 kV Dadri-Khetri-II 220 kV Hissar-Chirawa	Khetri Chirawa	120	Limited alternate supply of Khetri and Chirawa may be available from other station

FEEDERS FOR PHYSICAL REGULATION OF SUPPLY IN HARYANA

S No.	Transmission element to be opened	Power supply interruption in	Approx Relief (MW)	Remarks
1	Feeders in Schedule A Panipat: a) 33kV Panipat-Swah(Chhajpur) b) 33kV Panipat-Untla c) 33kV Panipat-Israna d) 33kV Panipat-Narayana e) 33kV Panipat-Sanoli road	Panipat	150 (Approximately)	Radial Lines
2	Feeders in Schedule B Kurukshetra: a) 33kV Kurukshetra-Mathana b) 33kV Kurukshetra-Ajrana c) 33kV Kurukshetra-Kirmich	Kurukestra, Dhulkote,	150 (approximately)	Radial Lines
	d) 11kV Kurukshetra-Bahadurpura e) 11kV Kurukshetra-Pipli Dhulkote: a) 66kV Dhulkote-Ambala b) 66kV Dhulkote-Babyal			
3	132kV Kundli line emanating from Narela BBMB	Rai-Sonepat	55	No alternate supply to Kundli
4	220/132kV, 220/66 kV ICTs at BBMB stations such Hissar, Ch. Dadri, Kurukshetra, Jagadri. Dhulkote, can be opened. However, many 132kV, 66 kV and below feeder are covered under Schedule A & B			

FEEDERS FOR PHYSICAL REGULATION OF SUPPLY IN HIMACHAL PRADESH

S.No.	**Transmission element to be opened**	**Power supply interruption in**	**Approx. Relief (MW)**	**Remarks**
1	66kV Bhakra-Rakkar	Rakkar/Una	10-18	Details awaited
2	66kV Pong- Sansarpur	Sansarpur Terrace	2-5	Details awaited
3	220kV Dehar-Kangoo 132kV Dehar-Kangoo	Kunihar/Shimla	80-140	Limited alternate supply available from 132kV Hamirpur. 400/220kV Dehar ICT may be overloaded.
4	220kV Khodri-Majri 132kV Kulhal-Giri	Giri/Solan	80-140	Limited Alternate supply may be available from 132kV Kunihar. Essential load at Majri: Oxygen plant, administrative offices etc.
5	220kV Nallagarh-Nangal D/C	Nangal/Nallagarh/Baddi	180-315	Industrial load of Nangal may be affected.
6	66kV Pinjore-Parwanoo	Parwanoo	5-13	Alternate supply from Solan.

FEEDERS FOR PHYSICAL REGULATION OF SUPPLY IN UT CHANDIGARH

S No.	Transmission element to be opened	Power supply interruption in	Approx Relief (MW)	Remarks
1	220 kV Nalagarh-Kishengarh-D/C	Chandigarh	100-200	No alternate supply available
2	66 kV Mohali- Sector 39 D/C	Chandigarh	30-60	No alternate supply available
3	66 kV Mohali- Sector 56 Ckt-1	Chandigarh	20-50	No alternate supply available

FEEDERS FOR PHYSICAL REGULATION OF SUPPLY IN UTTARAKHAND

S No.	Transmission element to be opened	Power supply interruption in	Approx Relief (MW)	Remarks
1	220 kV Bareilly- Pantnagar	Pant Nagar/ Haldwani	200	Limited alternate supply may be available from 132 kV Kashipur to Haldwani
2	132 kV Nazibad-Kotdwar	Kotdwar	20-50	Generation of Chilla P/H may be interrupted
3	220/132 kV Sitarganj ICTs 132 kV Dohna-Sitarganj 132 kV Dohna -Kichha	Sitarganj, Kichha	50-100	Generation of Khatima will interrupt
4	400/220 kV Roorkee ICTs 220 kV Nara-Roorkee	Roorkee	100-200	Grid disturbance may occur due to overloading of 220kV Rishikesh-Sidkul & 240MVA ICT at 400kV Rishikesh

FEEDERS FOR PHYSICAL REGULATION OF SUPPLY IN BBMB PREMISES

SCHEDULE A LINES

1. PANIPAT	1) 132 KV PANIPAT - ISRANA
	2) 132 KV PANIPAT – KARNAL
	3) 132 KV PANIPAT – SAMALAKHA
	4) 132 KV PANIPAT – UNTLA
	5) 33 KV PANIPAT – SEWAH (CHHAJPUR)
	6) 33 KV PANIPAT – ISRANA
	7) 33 KV PANIPAT – SEC-29 (CHANDOLI)
	8) 33 KV PANIPAT – NARAYANA
	9) 33 KV PANIPAT – SANOLI ROAD
2. KURUKSHETRA	1) 132 KV KURUKSHETRA – PEHOWA
3. JAGADHARI	1) 66 KV SADHAURA- I
	2) 66 KV SADHAURA- II
4. HISSAR	1) 33 KV HISSAR TEXTILE MILLS

SCHEDULE B LINES

1. PANIPAT	1) 132 KV PANIPAT- SONEPAT
2. KURUKSHETRA	1) 33 KV KURUKSHETRA – MATHANA
	2) 33 KV KURUKSHETRA – AJRANA
	3) 33 KV KURUKSHETRA – KIRMICH
	4) 11 KV KURUKSHETRA – BAHADURPURA (HSEB)
	5) 11 KV KURUKSHETRA- PIPLI
3. CHULKOTE	1) 66 KV AMBALA- II
	2) 66 KV BABYAL
4. DELHI-NARELA	1) 11 KV NARELA- NANGAL KALAN
	2) 11 KV NARELA- KUNDLI
	3) 132KV BAHADURGARH (LINE PERMANENTLY EXCLUDED FROM SCHEDULE BE AS INTIMATED BY NRLDC ON DATED 19.09.2013)
	4) 132 KV SONEPAT

पावर सिस्टम ऑपरेशन कारपोरेशन लिमिटेड
(भारत सरकार का उद्यम)
POWER SYSTEM OPERATION CORPORATION LIMITED
(A Govt. of India Enterprise)

उत्तरी क्षेत्रीय भार प्रेशण केन्द्र / NORTHERN REGIONAL LOAD DESPATCH CENTRE
कार्यालय :18-ए, शहीद जीत सिंह सनसनवाल मार्ग, कटवारिया सराय, नई दिल्ली- 110016
OFFICE :18-A, Shaheed Jeet Singh Sansanwal Marg, Katwaria Sarai, New Delhi- 110016
CIN : U40105DL2009GOI188682, Website : www.nrldc.org, www.nrldc.in, Tel.: 011- 26519406, 26523869, Fax : 011- 26852747

Ref. No.: NRLDC /MIS/2020-21/01 दिनांक/Date :**20-10-2021**

To,

Chief Engineer (SLDC)
JKPCL, SLDC Building,
1st Floor Gladni Grid Station,
Narval Bala. Jammu-180 004

Sub: Uploading of Daily Power Supply Position Report of J&K(UT) on NRLDC Reporting Software

Sir,

You are kindly aware that regulation 5.5.1(b) of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010, regarding preparation of periodic reports by NLDC/RLDC/SLDC states that

"A daily report covering the performance of the regional grid shall be prepared by each RLDC based on the inputs received from SLDCs/Users and shall be put on its website. This report shall also cover wind and solar power generation and injection into the grid."

In compliance to the above regulation, a daily power supply position report for Northern Region is being prepared by the Northern Regional Load Despatch Centre based on the inputs received from SLDCs/ Users of the Northern Region.

Presently, all the SLDCs/Users (except J&K(UT) and Ladakh (UT)) of Northern Region are uploading their inputs (power supply position) on NRLDC reporting software by 3:00 AM for the previous day. However, power supply position in respect of J&K (UT) is received through email with a delay of 24 hrs to 72 hrs. Due to receipt of delayed input from J&K(UT), Northern Region Power supply position report is prepared considering ISTS end SCADA data of J&K(UT) and Ladakh (UT) as this report is time critical, and required to be submitted to NLDC by 06:00 Hrs every day. However, at a later date when the power supply position is actually received from J&K(UT) it is seen that there is significant difference between the power supply position report prepared by NRLDC and J&K (UT). Power supply position report is one of the key reports of the region and sanity and integrity of its data is of paramount importance. The report is also scrutinised by Hon'ble MOSP and based on it, many other reports are prepared and shared with MoP, CEA, NLDC and other power sector utilities.

पावर सिस्टम ऑपरेशन कारपोरेशन लिमिटेड
(भारत सरकार का उद्यम)
POWER SYSTEM OPERATION CORPORATION LIMITED
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कार्यालय :18-ए, शहीद जीत सिंह सनसनवाल मार्ग, कटवारिया सराय, नई दिल्ली- 110016
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CIN : U40105DL2009GOI188682, Website : www.nrldc.org, www.nrldc.in, Tel.: 011- 26519406, 26523869, Fax : 011- 26852747

In view of the above, it is requested to kindly ensure that the daily power supply report in respect of J&K(UT) and Ladakh (UT) is positively submitted to the web-based reporting software by 03:00 AM on daily basis. The link of the NRLDC reporting software is given below:

https://reporting.nrldc.in/posocoui/Account/Login

Your kind cooperation in this regard is earnestly solicited.

Thank You

Your faithfully

(Surajit Banerjee)
Chief general Manager (SO-II)
NRLDC, POSOCO

Copy to: 1 Chief General Manager(I/C), NRLDC, POSOCO-For kind information please
2 Member Secretary, NRPC-For kind information please

National Load Despatch Centre

Import Capability of Uttar Pradesh for April 2022

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)	Long Term Access (LTA)/ Medium Term Open Access (MTOA) (MW)	Margin Available for Short Term Open Access (STOA) (MW)	Changes in TTC w.r.t. Last Revision	Comments
1st April 2022 to 30th April 2022	00-24	13800	600	13200	8420	4780		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 Sohawal (PG), Gorakhpur (UP), Sarnath, Lucknow (PG) ICTs						

80% of LTA/MTOA/ISGS allocation capacity considered to account for machine outages

National Load Despatch Centre
Import Capability of Rajasthan for April 2022

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)	Long Term Access (LTA)/ Medium Term Open Access (MTOA) (MW)	Margin Available for Short Term Open Access (STOA) (MW)	Changes in TTC w.r.t. Last Revision	Comments
1st April 2022 to 30th April 2022	00-24	6200	300	5900	3400	2500		https://sldc.rajasthan.gov.in/rrvpnl/scheduling/downloads
Limiting Constraints		N-1 contingency of 400/220kV Chittorgarh, Jodhpur, Bikaner, Ajmer, Merta and Bhinmal ICTs						

80% of LTA/MTOA/ISGS allocation capacity considered to account for machine outages

National Load Despatch Centre
Import Capability of Haryana for April 2022

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)	Long Term Access (LTA)/ Medium Term Open Access (MTOA) (MW)	Margin Available for Short Term Open Access (STOA) (MW)	Changes in TTC w.r.t. Last Revision	Comments
1st April 2022 to 30th April 2022	00-24	8500	600	7900	3000	4900		https://hvpn.org.in/#/atcttc
Limiting Constraints		N-1 contingency of 400/220kV ICTs at Deepalpur and Kurukshetra(PG)						

80% of LTA/MTOA/ISGS allocation capacity considered to account for machine outages

National Load Despatch Centre
Import Capability of Delhi for April 2022

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)	Long Term Access (LTA)/ Medium Term Open Access (MTOA) (MW)	Margin Available for Short Term Open Access (STOA) (MW)	Changes in TTC w.r.t. Last Revision	Comments
1st April 2022 to 30th April 2022	00-24	6800	300	6500	4150	2350		
Limiting Constraints		N-1 contingency of 400/220kV Mundka and Bamnauli ICTs.						

80% of LTA/MTOA/ISGS allocation capacity considered to account for machine outages

National Load Despatch Centre
Import Capability of HP for April 2022

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)	Long Term Access (LTA)/ Medium Term Open Access (MTOA) (MW)	Margin Available for Short Term Open Access (STOA) (MW)	Changes in TTC w.r.t. Last Revision	Comments
1st April 2022 to 30th April 2022	00-24	1400	100	1300	1400	-100		https://hpsldc.com/mrm_category/ttc-atc-report/
Limiting Constraints		N-1 contingency of 400/220kV Nallagarh ICTs. High loading of 220kV Nallagarh-Upernangal D/C and 220kV Hamirpur-Hamirpur D/C						

80% of LTA/MTOA/ISGS allocation capacity considered to account for machine outages

National Load Despatch Centre
Import Capability of Uttarakhand for April 2022

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)	Long Term Access (LTA)/ Medium Term Open Access (MTOA) (MW)	Margin Available for Short Term Open Access (STOA) (MW)	Changes in TTC w.r.t. Last Revision	Comments
1st April 2022 to 30th April 2022	00-24	1600	100	1500	1020	480		http://uksldc.in/transfer-capability
Limiting Constraints		N-1 contingency of 400/220kV Kashipur ICTs. High loading of 220kV Roorkee-Roorkee and 220kV CBGanj-Pantnagar lines						

80% of LTA/MTOA/ISGS allocation capacity considered to account for machine outages

Long Duration Outage Report 15-03-2022

A. Details of Long Duration Transmission Elements Outage:-

S.No	Element Name	Type	Owner	Outage			Reason / Remarks
				Date	Time	Days	
1	400/220 kv 315 mva ict 1 at bhilwara(rs)	ICT	RRVPNL	12-05-2019	23:42	1029	oil leakage in transformer
2	400/220 kV 315 MVA ICT 2 at Mundka(DV)	ICT	DTL	20-09-2019	00:19	899	Due to fire in ICT
3	80 MVAR Bus Reactor No 1 at 400KV Nathpa Jhakri(SJ)	BR	SJVNL	17-10-2019	12:58	871	Flashover/Fault in 80MVAR Bus Reactor cleared by Bus Bar Protection.
4	400/220 kV 315 MVA ICT 1 at Muradnagar_1(UP)	ICT	UPPTCL	13-03-2020	02:46	724	Buccholz relay alarm and Local Breaker Backup protection operated. Tripped along with Hapur-Muradnagar line. Flags are not reset because of cable flashover.ICT to be replaced by 500MVA.
5	FSC(50%) of 400 KV Koteshwar-Meerut (PG) Ckt-1 & 2 at Meerut(PG)	FSC	POWERGRID	15-05-2020	17:47	660	Out since 15.05.2020 for capacitor measurement work, CEA clearance for FSC of both Koteshwar-Meerut ckt 1&2 have been given after charging of Koteshwar-Meerut-1 and 2 from 400kV to 765kV level, FSC is healthy and charging attempt has also been taken successfully but currently out due to low current. (FSC is under-utilized, loading of 765kV Koteshwar-Meerut-1 and 2 is shown in below, use of this FSC may be explored as out since long time.
6	400/220 kV 500 MVA ICT 2 at Noida Sec 148(UP)	ICT	UPPTCL	19-08-2020	08:12	565	ICT tripped on REF protection. Transformer caught fire and got damaged. Revival expected by March'2022
7	410 MAIN BAY - 400KV PHAGI-AJMER (RS) CKT-2 AND SELECT AT Ajmer(RS)	BAY	RRVPNL	09-12-2020	13:52	452	Emergency shutdown to attend SF6 gas leakage in CB.
8	40452B MAIN BAY - 400KV SURATGARH(RVUN)-RATANGARH(RS) (RS) CKT-1 AT Ratangarh(RS)	BAY	RRVPNL	25-12-2020	17:05	436	Emergency shutdown for refilling of SF6 gas in R-phase of Circuit Breaker. Later leakage found. Revival delayed due to non-availability of required spare parts.
9	400/220 kV 315 MVA ICT 2 at Bawana(DV)	ICT	DTL	30-03-2021	17:35	341	400kV side B-phase bushing blasted. Tripped on differential protection, REF protection. ICT catches fire and damaged.
10	400 KV Kadarpur (GPTL) - Bus 1	BUS	GPTL	17-04-2021	13:18	323	E/S/D taken due to abnormal humming sound observed from 400KV B-phase BUS-1 CVT at Kadarpur. Charging attempt failed on 10.03.2022 due to sparking in nearby compartment.
11	80 MVAR LR ON 400 KV KARCHAM WANGTOO(JSW)-WANGTO_GIS(HP) (HPPTCL) CKT-1 @KARCHAM WANGTOO(JSW)	LR	JSW	02-06-2021	02:26	278	annual maintenance
12	220 KV Sohawal(PG)-Gonda(UP) (UP) Ckt-1	Line	UPPTCL	12-08-2021	09:00	207	Emergency shutdown of line taken, as tower no. 34 is affected by flood.
13	220 KV Sohawal(PG)-Bahraich(UP) (UP) Ckt-1	Line	UPPTCL	12-08-2021	09:12	207	Emergency shutdown of line taken, as tower no. 34 is affected by flood.
14	402 TIE BAY - 400KV AKAL-JODHPUR (RS) CKT-1 AND 400KV AKAL(RS)-KANKANI(RS) (UNDEF) CKT-2 AT Akal(RS)	BAY	RRVPNL	17-08-2021	23:27	201	Y-Phase pole of Tie Breaker got stuck up when Line reactor was manually tripped.Due to Y-Phase pole stuck up of Tie Breaker of 400 kV Akal-Jodhpur Line (Dia-2), Y-Phase supply continued to 400 kV Line Reactor of 400 kV Akal-Jodhpur Line. As a reason of this 400 kV NGR (connected to 400 kV Jodhpur Line Reactor) got tripped on NGR Bucholtz Trip & NGR PRV Trip. Due to single phase supply at NGR it got too hot and smoke continued to coming out of NGR
15	410 MAIN BAY - 400 KV KALA AMB(PKTL)-WANGTO_GIS(HP) (HPPTCL) CKT-1 AT WANGTO (HP) (JPL)	BAY	JPL/PKATL	22-08-2021	11:10	197	For replacement of 410 CB and following test need to be carried out.1) Contact Resistance Measurement. 2) CB operating time characteristics.
16	50 MVAR Non-Switchable LR on Agra-Unnao (UP) Ckt-1 @Agra(UP)	LR	UPPTCL	28-10-2021	22:27	129	R and Y phase bushing damaged at Agra(UP).
17	220 KV AGRA(PG)-FEROZABAD(UP) (UP) CKT-1	Line	UPPTCL	27-11-2021	09:55	100	Jumpering work for making Lilo point of 220 kv Firozabad(400)-Agra(765) PG line at 220 kv Tundla. LILO line not charged due to PLCC issue at Tundla
18	63 MVAR Bus Reactor No 1 at 400KV Aligarh(UP)	BR	UPPTCL	29-11-2021	09:58	98	Hand-tripped due to heavy sparking on Y-phase clamp of Isolator of Bus Reactor.
19	400KV Bus 1 at Vishnuprayag(JP)	BUS	UPPTCL	02-12-2021	14:42	94	Bus bar protection operated at Vishnuprayag.
20	50 MVAR Bus Reactor No 1 at 400KV Moradabad(UP)	BR	UPPTCL	03-12-2021	22:22	93	R-phase bushing damaged.
21	400/220 kV 240 MVA ICT 3 at Moradabad(UP)	ICT	UPPTCL	13-12-2021	22:38	83	Due to high DGA values, Hydrogen gas is above permissible limit.
22	220/33 kV 125 MVA ICT 4 at Saurya Urja Solar(SU)	ICT	Saurya Urja	20-12-2021	20:15	76	ICT-4 tripped due to operation of of PRD, REF, Differential and Buchholz relay.
23	765 KV ANPARA_D-UNNAO (UP) CKT-1	Line	UPPTCL	08-02-2022	10:06	27	Shifting of Line Reactor from Anpara-D to Obra-C S/S (OCC 190)
24	400 KV 60 MVAR Filter Bank No B2Z11 at Vindhyachal-North(PG)	FILTER_BANK	POWERGRID	19-02-2022	12:48	15	for refurbishment work. CEA safety clearance pending.
25	220 KV Kishenpur(PG)-Ramban(PDD) (PDD) Ckt-1	Line	PDD JK	19-02-2022	21:45	15	Tower no. 170 collapsed.
26	220 KV Kishenpur(PG)-Mir Bazar(PDD) (PDD) Ckt-1	Line	PDD JK	19-02-2022	21:45	15	Tower no. 170 collapsed.
27	FSC of 400kV Aligarh-Muradnagar at Muradnagar*	FSC	UPPTCL	09-10-2015	0:00	2341	FSC is out since 09/10/2015 due to LILO of 400 kV Panki –Muradnagar at Aligarh.
28	FSC of Pampore-1 & Pampore-2 at Kishenpur*	FSC	POWERGRID	12/30/2012	0:00		FSC are out since 30/12/2012 due to LILO at Mirbazar (one ckt. of Kishenpur-Mirbazar has been LILOed at Ramban)
29	FSC of 400kV Kanpur-Ballabhgarh ckt-1 at Ballabhgarh (PG)	FSC	POWERGRID				FSC is out since 2017 due to equipment failure, FSC will be de-commissioned as it has become scrap, while FSC in 400kV Kanpur-Ballabhgarh ckt-2 & ckt-3 at Ballabhgarh (PG) is in service (as reported by Ballabgarh (PG)).

30	FSC of 400kV Lucknow Basti ckt-1 & 2 at Lucknow (PG)	FSC	POWERGRID				FSC is out since long time, after LILO of 400kV Lucknow-Gorakhpur Ckt-3&4 at Basti Sub-station, FSC has not been taken into service. use of this FSC may be explored as out since long time.
31	715 MAIN BAY - 765/400 KV 1500 MVA ICT 1 AT BHADLA_2 (PG) (POWERGRID)	BAY	POWERGRID	22-02-2022	03:02	21	Could not be charged while charging ICT-1 as (715) ICT 1 main bay breaker got stuck due to PD issue.
32	400 KV BALIA-PATNA (PG) CKT-3	Line	POWERGRID	20-02-2022	10:13	23	TAKEN BY ER De-stringing, erection and re stringing in between loc no 319 and 321 for NHAI diversion work
33	400 KV BALIA-PATNA (PG) CKT-4	Line	POWERGRID	20-02-2022	10:14	23	TAKEN BY ER ,De-stringing, erection and re stringing in between loc no 319 and 321 for NHAI diversion work
34	400KV Bus 3 at Gorakhpur(UP)	BUS	UPPTCL	21-02-2022	10:46	22	disc insulator of B phase 400 kv transfer Bus coupler damaged
35	400 KV Nathpa Jhakri(SJ)-Karcham Wangtoo(JSW) (HBPCL) Ckt-1	Line	JPL,HBPCL	23-01-2022	10:18	51	S/D taken as some strands of conductor are detached and needs urgent sleeving to avoid any tripping & generation loss. Due to CB mechanism failure at Karcham end, KWHEP is not be able to charge the line.

S.No	Element Name	Owner	Outage			Reason / Remarks
38	270 MW Goindwal(GVK) - UNIT 2	PSPCL	07-02-2022	11:17	36	Abnormal boiler sound
32	115 MW Salal HPS - UNIT 3	NHPC	12-01-2022	10:10	62	Annual Maintenance
40	60 MW Bairasiul HPS - UNIT 1	NHPC	10-02-2022	10:00	33	Annual maintenance
7	600 MW RGTPP(Khedar) - UNIT 2	HVPNL	02-03-2021	00:00	378	Capital Overhauling/turbine replacement
8	66 MW Pong HPS - UNIT 4	BBMB	28-07-2021	15:00	229	Draft tube leakage repairing
9	250 MW Chhabra TPS - UNIT 4	RRVPNL	09-09-2021	00:47	187	Due to ESP structure damage
25	100 MW Koteshwar HPS - UNIT 1	THDC	04-11-2021	22:58	130	due to fault in GT
42	30 MW Delhi Gas Turbines - UNIT 5	DTL	12-02-2022	21:04	30	due to tripping of associated STG at 20:00 hrs
36	660 MW Harduaganj_Ext - UNIT 1	UPPTCL	04-02-2022	16:17	38	due to tripping of auxiliries
24	35 MW Budhil HPS (IPP) - UNIT 1	Greenko Budhil	26-10-2021	17:00	139	Flooding of power house due to damage of Main Inlet Valve at Budhil.
30	200 MW Obra TPS - UNIT 13	UPPTCL	08-01-2022	06:36	66	High bearing vibration in turbine
29	104.6 MW Pragati Gas Turbines - UNIT 2	DTL/Pragati CCGT	26-12-2021	01:10	79	internal fault
37	50 MW Malana2 - UNIT 1	HPSEB,EVEREST	06-02-2022	16:29	36	No evacuation path due to tripping of 132kV Malana2-Chaur ckt 1&2 tripped
28	108 MW Bhakra HPS - UNIT 1	BBMB	15-12-2021	12:05	89	Renovation Modernization and upgradation of capacity to 126MW
41	34 MW Delhi Gas Turbines - UNIT 9	DTL	12-02-2022	20:00	30	STG Governor oil leakage
39	660 MW Meja TPS - UNIT 2	UPPTCL,NTPC	07-02-2022	18:59	35	Boiler tube leakage
34	200 MW Obra TPS - UNIT 11	UPPTCL	24-01-2022	13:40	49	Over hauling

Sr No	Element Name	Outage Date	Outage Time	Reason
1	400 KV Suratgarh(RVUN)-Bikaner(RS) (RS) Ckt-1	11-Feb-22	2:59	R-N fault, Zone-1, Fault current 2.38kA, Dist. 1.171km from Bikaner(RS) end. As per PMU, Y-N fault occured, no auto-reclosing observed.
		20-Feb-22	22:34	R-N fault, Zone-1, Fault current 3.846kA from Bikaner end. As per PMU, Y-N fault occured, no auto-reclosing observed.
		24-Feb-22	22:12	R-N Fault, Dist. 78.62km, Fault current 3.938kA from Bikaner end. As per PMU, No fault observed.
		24-Feb-22	23:03	B-N fault, Zone-1, Dist. 48.86km from Suratgarh(RVUN) end. As per PMU, Y-N fault occured, no auto-reclosing observed.
2	400 KV Wangto_GIS(HP)-Sorang(Greenko) (Greenko) Ckt-1	9-Feb-22	16:57	B-N fault. As per PMU, B-N fault occured, no auto-reclosing observed.
		10-Feb-22	15:41	B-N fault. As per PMU, B-N fault occured, no auto-reclosing observed.
		19-Feb-22	18:57	B-N fault. As per PMU, B-N fault and unsuccessful auto-reclosing observed.
		23-Feb-22	3:28	B-N fault. As per PMU, B-N fault occured, no auto-reclosing observed.
3	400/220 kV 315 MVA ICT 1 at Gonda(UP)	1-Feb-22	6:54	PRV-2 mal-operation by monkeys by pushing the PRV flange. As per PMU, No fault observed.
		3-Feb-22	15:04	Over Excitation. As per PMU, No fault observed.
		4-Feb-22	1:47	Over-fluxing. As per PMU, No fault observed.
		20-Feb-22	16:24	Over Excitation. As per PMU, No fault observed.
4	400 KV Bareilly-Unnao (UP) Ckt-1	15-Feb-22	0:47	R-N fault, Zone-1, Dist. 128.2km, Fault current 3.73kA from Unnao end. As per PMU, R-N fault occured, no auto-reclosing observed.
		17-Feb-22	19:55	B-N fault. As per PMU, B-N fault occured, no auto-reclosing observed.
		22-Feb-22	10:56	R-B fault. As per PMU, R-B fault is observed.
5	400 KV Dulhasti(NH)-Kishenpur(PG) (PG) Ckt-1	23-Feb-22	3:34	R-B fault. As per PMU, R-B fault is observed.
		25-Feb-22	17:29	DT received from Kishenpur due to PLCC mal-operation. As per PMU, No fault observed.
		26-Feb-22	15:03	Line tripped from Dulhasti end only due to DT recieve at Dulhasti end. As per PMU, No fault observed.
6	400 KV NewWanpoh-Wagoora (PG) Ckt-1	23-Feb-22	4:03	B-N fault. As per PMU, B-N fault and unsuccessful auto-reclosing observed.
		23-Feb-22	9:02	B-N fault. As per PMU, B-N fault occured, no auto-reclosing observed.
		23-Feb-22	9:53	B-N fault. As per PMU, B-N fault and unsuccessful auto-reclosing observed.
7	220 KV Debari(RS)-RAPS_A(NP) (RS) Ckt-1	4-Feb-22	5:50	R-N fault, Dist. 103.4km, Fault current 0.91kA from Debari end. As per PMU, No fault observed.
		11-Feb-22	3:03	Y-N fault, Dist. 138.0km, Fault current 0.72kA from Debari end. As per PMU, No fault observed.
		11-Feb-22	5:14	Y-N fault, Dist. 142.4km, Fault current 0.78kA from Debari end. As per PMU, Y-N fault occured, no auto-reclosing observed.
		11-Feb-22	20:09	Y-N fault, Dist. 139.4km, Fault current 0.73kA from Debari end. As per PMU, No fault observed.
		12-Feb-22	2:55	Y-N fault, Dist. 137.10km, Fault current 0.70kA from Debari end. As per PMU, Y-N fault occurred and delayed clearance of 680ms with no auto-reclosing observed.

Antecedent Generation/Load in the Regional Grid		Preliminary Report receipt status			DR/EL receipt status			Detailed Report receipt status		Fault Clearance time (in ms)	Antecedent Load (MW)	IR Exchange	Antecedent Generation (MW)
Antecedent Generation (MW)	Antecedent Load (MW)	within 24Hours	after 24Hours	Not Received	within 24Hours	after 24Hours	Not Received	Received	Not Received				
33362	40659	Y(PG) Y(NTPC) Y(DTL)			Y(PG) Y(NTPC)			Y(PG)	Y(NTPC)	80	40659	7297	33362
44058	49454		Y(PG)			Y(PG)		Y(PG)		80	49454	5396	44058
29671	33578	Y(NHPC)	Y(JK) Y(PG)			Y(PG)	Y(JK)		Y(JK) Y(PG)	1080	33578	3907	29671
44451	51480		Y(PG)			Y(PG)		Y(PG)		NA	51480	7029	44451

Antecedent Generation/Load in the Regional Grid		Preliminary Report receipt status			DR/EL receipt status			Detailed Report receipt status		Fault Clearance time (in ms)	Antecedent Load (MW)	IR Exchange	Antecedent Generation (MW)
Antecedent Generation (MW)	Antecedent Load (MW)	within 24Hours	after 24Hours	Not Received	within 24Hours	after 24Hours	Not Received	Received	Not Received				
44566	50804		Y(PG) Y(RENEW) Y(EDEN)	Y(FBTL)		Y(PG) Y(RENEW) Y(EDEN)	Y(FBTL)	Y(PG) Y(RENEW) Y(EDEN)	Y(FBTL)	NA	50804	6238	44566
43689	51249		Y(PG) Y(RENEW)	Y(FBTL)		Y(PG) Y(RENEW)	Y(FBTL)	Y(PG) Y(RENEW)	Y(FBTL)	NA	51249	7560	43689
44445	50682		Y(PG) Y(RENEW) Y(EDEN) Y(ADANI)	Y(FBTL) Y(MAHINDRA) Y(AZURE)		Y(PG) Y(RENEW) Y(EDEN) Y(ADANI)	Y(FBTL) Y(MAHINDRA) Y(AZURE)	Y(PG) Y(RENEW) Y(EDEN) Y(ADANI)	Y(FBTL) Y(MAHINDRA) Y(AZURE)	NA	50682	6237	44445

Antecedent Generation/Load in the Regional Grid		Preliminary Report receipt status			DR/EL receipt status			Detailed Report receipt status		Fault Clearance time (in ms)	Antecedent Load (MW)	IR Exchange	Antecedent Generation (MW)
Antecedent Generation (MW)	Antecedent Load (MW)	within 24Hours	after 24Hours	Not Received	within 24Hours	after 24Hours	Not Received	Received	Not Received				
29432	35413		Y(PG) Y(UP)			Y(PG)		Y(PG)		NA	35413	5981	29432
38630	45420	Y(PG)	Y(Pun)		Y(PG)		Y(Pun)	Y(PG)		800	45420	6790	38630
42410	44097		Y(PG)	Y(PKTSL)		Y(PG)	Y(PKTSL)	Y(PG)	Y(PKTSL)	80	44097	1687	42410
32081	41883		Y(PG) Y(JK)		Y(PG)		Y(JK)	Y(PG)	Y(JK)	80	41883	9802	32081

Antecedent Generation/Load in the Regional Grid		Preliminary Report receipt status			DR/EL receipt status			Detailed Report receipt status		Fault Clearance time (in ms)	Antecedent Load (MW)	IR Exchange	Antecedent Generation (MW)
Antecedent Generation (MW)	Antecedent Load (MW)	within 24Hours	after 24Hours	Not Received	within 24Hours	after 24Hours	Not Received	Received	Not Received				
45836	52795	Y(UP)		Y(PG)	Y(UP)		Y(PG)	Y(UP)		440	52795	6959	45836
45295	51217		Y(PG) Y(SAURYA)	Y(TPREL)		Y(SAURYA)	Y(TPREL)	Y(SAURYA)	Y(TPREL)	80	51217	5922	45295
32579	38231	Y(UP)			Y(UP)			Y(UP)	Y(PG)Y(SJVN)(JSW)	80	38231	5652	32579

Northern Regional inter regional lines tripping for February-22

Annexure-I

S. No.	Name of Transmission Element Tripped	Owner/ Utility	Outage		Load Loss/ Gen. Loss	Brief Reason (As reported)	Category as per CEA Grid standards	Restoration		# 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				Date	Time						
1	400 KV Gorakhpur(PG)-Motihari(BS) (PG) Ckt-2	POWERGRID	3-Feb-22	22:54	Nil	Y-N fault.	NA	4-Feb-22	0:27	NO	Yes(After 24Hrs)	Yes(After 24Hrs)			From PMU, Y-N fault is observed in the system and line tripped on persistent fault.
2	400 KV Gorakhpur(PG)-Muzaffarpur(PG) (POWERLINK) Ckt-1	POWERLINK	4-Feb-22	11:43	Nil	R-N fault.	NA	4-Feb-22	13:12	NO	Yes(After 24Hrs)	Yes(After 24Hrs)			From PMU, R-N fault is observed in the system and auto-reclosed successfully from Gorakhpur end.
3	400 KV Kankroli-Zerda (PG) Ckt-1	POWERGRID	21-Feb-22	19:03	Nil	Over-voltage protection operated at Zerda end. DT receive at Kankroli end.	NA	21-Feb-22	21:22	NO	Yes(After 24Hrs)	Yes(After 24Hrs)		Voltage and time grading of 400kV lines for Stage-I overvoltage tripping from Zerda station needs to be checked.	From PMU, No fault is observed in the system.
4	400 KV Varanasi-Biharshariff (PG) Ckt-2	POWERGRID	24-Feb-22	19:53	Nil	B-N fault.	NA	24-Feb-22	21:06	NO	NO	NO	Details of the tripping yet to be received.		From PMU, B-N fault is observed in the system and unsuccessful auto-reclosing 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

Annexure-B.VIII

S. No.	Utility	1st Feb 2022 - 28th Feb 2022											
		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)
			Value	%	Value		%	Value		%	Value		%
1	AHEJ3L	3	2	**67**	2	0	**67**	2	0	**67**	2	0	**67**
2	AP43L	2	2	**100**	2	0	**100**	2	0	**100**	2	0	**100**
3	APFOL	1	0	**0**	0	1	**0**	0	1	**0**	0	1	**0**
4	ASEPL	1	1	**100**	1	0	**100**	1	0	**100**	1	0	**100**
5	AURAIYA-NT	1	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
6	BAIRASUIL-NH	1	1	**100**	1	0	**100**	1	0	**100**	1	0	**100**
7	BBMB	9	3	**33**	3	4	**60**	3	5	**75**	3	0	**33**
8	CHAMERA-II-NH	1	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
9	CPCC1	60	15	**25**	17	8	**33**	22	6	**41**	16	3	**28**
10	CPCC2	67	5	**7**	7	9	**12**	6	8	**10**	27	0	**40**
11	CPCC3	37	19	**51**	20	1	**56**	20	1	**56**	20	1	**56**
12	DADRI-NT	2	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
13	DHAULIGANGA-NH	1	1	**100**	1	0	**100**	1	0	**100**	1	0	**100**
14	DULHASTI-NH	5	4	**80**	4	0	**80**	4	0	**80**	4	0	**80**
15	EDEN (ERCPL)	2	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
16	FBTL	3	3	**100**	3	0	**100**	3	0	**100**	3	0	**100**
17	KARCHAM	3	2	**67**	3	0	**100**	3	0	**100**	3	0	**100**
18	KISHENGANGA-NH	3	0	**0**	0	0	**0**	0	0	**0**	2	0	**67**
19	MAHINDRA	2	2	**100**	2	0	**100**	2	0	**100**	2	0	**100**
20	NJPC	2	1	**50**	1	0	**50**	1	0	**50**	2	0	**100**
21	PKTSL	1	1	**100**	1	0	**100**	1	0	**100**	1	0	**100**
22	RAILWAYS	1	1	**100**	1	0	**100**	1	0	**100**	1	0	**100**
23	RAPPA	7	4	**57**	7	0	**100**	7	0	**100**	7	0	**100**
24	RAPPB	1	1	**100**	1	0	**100**	1	0	**100**	1	0	**100**
25	RENEW SUN WAVES(RSWPL)	2	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
26	RIHAND-NT	3	3	**100**	3	0	**100**	3	0	**100**	3	0	**100**
27	RSEJ3PL	1	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
28	SALAL-NH	7	1	**14**	1	2	**20**	1	2	**20**	1	0	**14**
29	SAURYA	1	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
30	SEWA-2-NH	1	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
31	SINGRAULI-NT	3	0	**0**	1	0	**33**	1	0	**33**	1	0	**33**
32	SLDC-DV	8	4	**50**	4	4	**100**	4	4	**100**	5	0	**63**
33	SLDC-HP	11	0	**0**	0	7	**0**	0	7	**0**	0	0	**0**
34	SLDC-HR	2	0	**0**	0	1	**0**	0	1	**0**	1	0	**50**
35	SLDC-JK	16	0	**0**	16	0	**100**	16	0	**100**	16	0	**100**

36	SLDC-PS	26	8	**31**	11	10	**69**	11	10	**69**	26	0	**100**
37	SLDC-RS	36	0	**0**	7	0	**19**	7	0	**19**	10	0	**28**
38	SLDC-UK	7	5	**71**	5	0	**71**	7	0	**100**	5	0	**71**
39	SLDC-UP	98	23	**23**	28	9	**31**	27	10	**31**	25	1	**26**
40	SORANG	6	6	**100**	6	0	**100**	6	0	**100**	6	0	**100**
41	STERLITE	5	2	**40**	2	0	**40**	2	0	**40**	2	0	**40**
42	TANDA-NT	2	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
43	TATAPOWER	1	1	**100**	1	0	**100**	1	0	**100**	1	0	**100**
44	UNCHAHAR-NT	3	1	**33**	1	0	**33**	1	0	**33**	1	0	**33**
45	URI-II-NH	2	2	**100**	2	0	**100**	2	0	**100**	2	0	**100**
46	URI-I-NH	2	2	**100**	2	0	**100**	2	0	**100**	2	0	**100**