सत्यमेव जयते

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

सं. उक्षेविस/ वाणिज्यिक/ 209/ आर पी सी (64वीं)/2023/2911-2958 दिनाँक:16.03.2023

सेवा में / To,

उ.क्षे.वि.स. के सभी सदस्य (संलग्न सूचीनुसार)
Members of NRPC (As per List)

विषय: उत्तर क्षेत्रीय विद्युत समिति की 64वीं बैठक की कार्यसूची ।
Subject: Agenda for 64th meeting of Northern Regional Power Committee-reg

महोदय / महोदया,

उत्तर क्षेत्रीय विद्युत समिति की 64वीं बैठक दिनांक 24.03.2023 (11:00 AM) को धर्मशाला, हिमाचल प्रदेश में आयोजित की जाएगी । बैठक की कार्यसूची संलग्न है।
कृपया उपस्थिति सुनिश्चित करें।

The 64th meeting of Northern Regional Power Committee (NRPC) will be held on 24.03.2023 (11:00 AM) at Dharamshala, Himanchal Pradesh. Agenda for the same is attached.

It is requested to attend the same.

भवदीय
Yours faithfully,

(नरेश भंडारी) 16/3/23
(Naresh Bhandari)
सदस्य सचिव
Member Secretary

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List of NRPC Members (FY 22-23)

1. Chairperson, Northern Regional Power Committee & CMD, Delhi Transco Limited (DTL), Shakti Sadan, Kotla Marg, New Delhi-110002
2. MD, PTCUL, Dehradun-248001, (Fax- 0135-2764496)
3. MD, UPPTCL, Lucknow-226001, (Fax-0522-2287792)
4. CMD, RRVPNL, Jaipur-302005, (Fax -01412740168)
5. Member (GO&D), CEA, New Delhi, (Fax-011-26108834)
6. CMD, PSTCL, Patiala-147001, (Fax-0175-2307779)
7. Commissioner/Secretary, PDD, J&K, Jammu, (Fax-0191- 2545447/ 01942452352)
8. Managing Director, HVPN Ltd, Panchkula -134109 (Fax-0172-2560640)
9. Chairman, BBMB, Chandigarh-160019, (Fax-0172-2549857/2652820)
10. Chief Engineer, UT of Chandigarh, Chandigarh-160066, (Fax-0172-2637880)
11. Managing Director, DTL, New Delhi-110002, (Fax-011-23234640)
12. General Manager, SLDC, DTL, New Delhi-110002, (Fax-011-23221069)
13. Managing Director, IPGCL, New Delhi-110002, (Fax-011-23275039)
14. Chief Engineer (SO&C), SLDC, HVPNL, Panipat, (Fax-0172-2560622/2585266)
15. Managing Director, HPGCL, Panchkula-134109, (Fax-0172-5022400)
16. Representative of UHBVNL (Haryana Discom)
17. Managing Director, HPSEB Ltd, Shimla -171004 (Fax-0177-2658984)
18. Managing Director, HPPTC Ltd, Himfed Bhawan, Shimla-171005, (Fax-0177-2832384)
19. Managing Director, HPSLDC, HP State Load Despatch Authority, Totu, Shimla, (Fax-0177-2837649)
20. Managing Director, J&K State Power Dev. Corp., Srinagar, J&K, (Fax-0194-2500145)
21. Chairman and Managing Director, PSPCL, Patiala-147001, (Fax-0175-2213199)
22. Chief Engineer (LD), SLDC, Heerapur, Jaipur-302024, (Fax-0141-2740920)
23. CMD, RRVUNL, Jaipur-302005, (Fax-0141-2740633)
24. Representative of AVVNL (Rajasthan Discom)
25. Managing Director, SLDC, UPPTCL, Lucknow-226001, (Fax-0522-2287792)
26. Managing Director, UPRVUNL, Lucknow-226001, (Fax-0522-2288410)
27. Representative of DVVNL (UP Discom)
28. Managing Director, SLDC, PTCUL, Rishikesh, (Fax-0135-2451160)
29. Managing Director, UJVNL, Dehradun-248001, (Fax-0135-2763507)
30. Managing Director, UPCL, Dehradun-248001, (Fax-0135-2768867/2768895)
31. Director (Technical), NHPC, Faridabad-121003, (Fax-0129-2258025)
32. Director (Finance), NPCIL, Mumbai-400094, (Fax-022-25563350)
33. Director (Commercial), NTPC, New Delhi-110003, (Fax-011-24368417)
34. COO, CTUIL, Gurgaon-122001
35. CMD, SJVNL, New Delhi, (Fax-011-41659218/0177-2660011)
36. Executive Director (PSP & APP), THDC, Rishikesh-249201, (Fax-0135-2431519)
37. Director (Commercial), POSOCO, New Delhi-110016, (Fax-011-26560190)
38. ED, NRLDC, New Delhi-110016, (Fax-011-26853082)
39. CEO, Aravali Power Company Pvt. Ltd., NOIDA, (Fax-0120-2591936)
40. CEO, CLP Jhajjar Power Ltd., Haryana, (Fax-01251-270105)
41. Representative of Lanco Anpara Power Ltd., (Fax-124-4741024)
42. Station Director, Rosa Power Supply Company Ltd., (Fax-05842-300003)
43. Director and head regulatory and POWER Sale, KWHEP, JSW Energy Ltd., New Delhi (Fax- 48178740)
44. COO, Adani Power Rajasthan Ltd., Ahmedabad-380006 (Fax No- 07925557176)
45. COO, Talwandi Sabo Power Ltd. Distt: Mansa, Punjab-151302(Fax: 01659248083)
46. MD, Lalitpur Power Generation Company Ltd., Noida-201301(Fax: 01204045100/555, 2543939/40)
47. Representative of Tata Power trading company Ltd.
48. CEO, Nabha Power Limited, (Fax: 01762277251 / 01724646802)
49. Representative of Prayagraj Power Generation Co. Ltd.
50. CEO, MEJA Urja Nigam Ltd., New Delhi
51. Representative of Mahindra Susten Private Ltd., Mumbai (Member IPP<1000 MW)
52. Representative of Adani Transmission India Pvt. Ltd., Ahmedabad (private transmission licensee)
53. Representative of BSES Rajdhani Power Ltd. (Private Discom)

Special Invitee:

1. RE generators/Holding companies in Northern Region as per mail list.

Contents

उत्तरी क्षेत्रीय विद्युत समिति की 63वीं बैठक

63rd MEETING OF NORTHERN REGIONAL POWER COMMITTEE

Time & Date of NRPC meeting: 11:00 HRS; 24th March 2023

Venue: Dharamshala, Himachal Pradesh

AGENDA

A.1 Approval of MoM of 63rd NRPC meeting

A.1.1 Minutes of 63rd NRPC meeting (held on 24.02.2023) has been issued vide letter dtd. 14.03.2023. No comments have been received till the date.

Members may kindly approve.

A.2 Procedure for Shifting of Transmission Lines involving in work by other Infrastructure Developers (Agenda by NRPC Sectt.)

A.2.1 Central Electricity Authority (CEA) vide letter dtd. 10.03.2023 has intimated approved "Procedure for Shifting of Transmission Lines involving in work by other Infrastructure Developers" for compliance of all stakeholders.

A.2.2 CEA has mentioned that several infrastructure projects of National Highways Authority of India (NHAI), Indian Railways, Airports Authorities, Border Roads Organization (BRO), Irrigation Departments, etc. are going on in various parts of the Country and many times, construction/ development projects like roads, railways, airports, mines, flood banks / dam etc. come across existing / under construction transmission lines in their route alignment, leading to the need for shifting of such lines for construction of these projects. However, due to lack of coordination between the Infrastructure Developers and the transmission line owner, the safety of the transmission lines was sometime compromised during the construction and also construction of these infrastructure projects were delayed substantially.

A.2.3 To ensure smooth coordination between the infrastructure developing agencies and transmission licensees while developing infrastructure projects Ministry of Power vide its letter No. 34-3/18/2022-TRANS (MoP) dated 18th May, 2022 requested Central Electricity Authority (CEA) to prepare a consolidated Standard Operating Procedure for shifting of Transmission lines while developing infrastructure projects. Accordingly, CEA prepared a consolidated Standard Operating Procedure for shifting of Transmission lines after deliberations / discussion with various stakeholders, in various meetings and submitted to Ministry vide CEA's letter no. CEA-PS-1477/4/2022/PSETD Division dated 11.11.2022. Ministry of Power Vide its letter no. 34-3/18/2022-TRANS(MoP) dated

03.03.2023 conveyed approval of the Hon'ble Minister of Power and NRE for "Procedure for shifting of Transmission Lines involving in work by other Infrastructure Developers".

A.2.4 The procedure is attached herewith (**Annexure-I**) for compliance of all the stakeholder in addition to the existing regulatory provisions of Central Electricity Authority (CEA) and other Authorities such as Environment & Forest, Defence, Airport, NHAI, BRO, etc., to ensure smooth coordination between the infrastructure developing agencies and transmission licensees while developing infrastructure projects.

Members may kindly take note of the procedure.

A.3 Database of protection settings (Agenda by NRPC Sectt.)

A.3.1 As a follow up of one of the recommendations of Enquiry Committee headed by the Chairperson, CEA on grid disturbances that took place on 30th and 31st July 2012, Ministry of Power had constituted a 'Task Force on Power System Analysis under Contingencies' in December 2012. The Task Force had submitted its report in August 2013. In a meeting taken by Union Power Secretary on 11.03.2014, it was decided that the report be given wide circulation and its recommendations be implemented in a time bound manner.

A.3.2 Regarding database of protection settings, in the 44th Protection Sub-Committee (PSC) meeting (held on 12.04.2021), it was decided that the process of Web Based Protection setting database may be initiated parallel to collection of protection setting as majority of data for 400 kV and above Transmission lines, ICTs and Reactors had been collected. Accordingly, a committee for preparing comprehensive specifications for relay setting parameters for Web based database was constituted.

A.3.3 The 1st meeting of the committee was held on 10.02.2022 and 2nd meeting of the committee was held on 14.06.2022. In these meetings, committee has finalized scope of work which was deliberated and accepted in 45th PSC meeting (held on 24.06.2022). The following was decided in 45th PSC meeting:

a. A meeting with NIC to be scheduled for exploring the possibility and cost estimate for hosting of portal considering quantum of data.
b. Budgetary quotation/EOI to be requested from suitable vendors.

A.3.4 In 46th PSC meeting (held on 22.12.2022), it was highlighted that as per protection code in draft CERC (Indian Electricity Grid Code) Regulations, 2022 issued by CERC on 07.06.2022, additional responsibilities have been added for RPCs regarding protection setting approval and its database. Hence, it was highlighted that database work may be taken up further only after notification of final IEGC by Hon'ble CERC as scope of tender may vary as per requirement. Members agreed for the same.

A.3.5 In the 46th PSC meeting, Member Secretary (MS), NRPC suggested that till the time new IEGC is notified, we may decide on funding mode for the project and stated that POWERGRID may implement the project as they have expertise in various website development. The amount of project may be transferred to POWERGRID from NRPC Fund after approval in board meeting. It was decided that implementing agency and funding mode may be discussed in upcoming NRPC meeting.

A.3.6 In view of the above, implementing agency and funding mode may be deliberated for Web Based Protection setting database portal.

Members may kindly deliberate.

A.4 Regarding declaring 400/220/33KV ICT 2 at Ludhiana Substation as Regional Spare (Agenda by POWERGRID)

A.4.1 During 4th meeting of Northern Regional Power Committee (Transmission Planning) [NRPC(TP)] held on 05.10.2021 & 12.10.2021, it was agreed that 1x315MVA 400/220KV ICT at POWERGRID Ludhiana Substation to be augmented with 1x500MVA 400/220kv ICT. Further it was also agreed that the 315MVA ICT spared from Ludhiana Substation may be shifted to Bhinmal Substation for commissioning. The relevant extracts from 4th NRPC (TP) is attached herewith at **Annexure-II.**

A.4.2 During the 11th Consultation Meeting for Evolving Transmission Schemes in Northern Region held on 30.03.2022, it was further agreed that 1x315MVA 400/220kv ICT-1 to be replaced with 1x500MVA 400/220kV ICT at POWERGRID Ludhiana and the 315MVA ICT will be used as regional spare. The relevant extracts from 11th CMETS in NR is attached herewith at **Annexure-III.**

A.4.3 During 62nd NRPC meeting (held on 31.01.2023), it was decided that POWERGRID shall provide one 315 MVA transformer (earlier to be shifted to Bhinmal) from Ludhiana substation to DTL Mundka on returnable basis in view of request of DTL for preparation of G-20 meeting scheduled in Sept'2023. Copy of the same is attached herewith at **Annexure-IV.**

A.4.4 In view of above, POWERGRID has proposed that:

i) 400/220/33KV, 315 MVA ICT at Ludhiana removed in May 2022 which is being diverted to DTL Mundka (earlier to be shifted to Bhinmal) on returnable basis may be declared as regional spare.

ii) 400/220/33KV, 315MVA ICT which will be removed from Ludhiana in May 2023 after its augmentation to be diverted to Bhinmal substation (earlier to be declared as Regional spare).

Members may kindly deliberate.

A.5 Payment made by BRPL and BYPL under Force Majeure Clause (Agenda by SJVNL)

A.5.1 BRPL and BYPL vide Notice No. HOD(PMG)/BRPL/2021-22/911 dated 06.05.2021 and Notice No. BYPL/PMG/2021-22/2131 dated 06.05.2021 intimated SJVN that they had invoked Force Majeure under Power Purchase Agreement dated 27.03.2003.

A.5.2 SJVN had already cleared its stand to both BRPL and BYPL, that SJVN had not allowed any Force majure events to any of its benficiaries.

A.5.3 Further during COVID outbreak in 2020-2, Ministry of Power (MoP), GOI had asked every generator to pass on special covid rebate to all its DISCOMS for further passing on to end consumers.

A.5.4 SJVN had passed on special rebate to all of its beneficiaires in the month of June 2020.This Rebate was passed on to BRPL and BYPL as well.

A.5.5 Keeping in view of above, it was informed to BRPL and BYPL that all the payments made by BRPL and BYPL are considered as under normal payments and no relaxation whatsover is allowed as per force majure clause.

A.5.6 Therefore, it is requested to kindly advice BRPL and BYPL to make all the payments in future without invoking Force majeure clause.

Members may kindly deliberate.

A.6 Members of NRPC and Chairperson, NRPC for FY 2023-24 (Agenda by NRPC Sectt.)

A.6.1 As per MoP gazette resolution F. No. 23/21/2021-R&R dtd. 03.12.2021, one representative from following organizations are members of NRPC:

i. Central Generating Companies, CTU, NLDC, NRLDC
ii. State Generating Company, State Transmission Utility (STU), State Load Despatch Centre (SLDC)
iii. One of the State owned distribution companies as nominated by the State Government
iv. One distribution company by alphabetical rotation out of the private distribution companies functioning in the region.
v. A representative nominated by the administration of the Union Territory concerned out of the entities engaged in generation/ transmission/ distribution of electricity in the Union Territory.

vi. A representative each of every generating company (other than central generating companies or State Government owned generating companies) having more than 1000 MW installed capacity in the region.

vii. A representative of the generating companies having power plants in the region (not covered in (i) to (vi) above) by alphabetical rotation.

viii. A representative of one private transmission licensee, nominated by Central Government, operating the Inter State Transmission System, by alphabetical rotation out of such Transmission Licensee operating in the region.

ix. One member representing the electricity traders in the region by alphabetical rotation, which have trading volume of more than 500 million units during the previous financial year.

x. A representative each of every Nodal Agency appointed by the Government of India for coordinating cross-border power transactions with the countries having electrical inter-connection with the region

Accordingly, list of members proposed for FY 2023-24 is attached as **Annexure-V.**

A.6.2 CMD, DTL has been Chairperson for FY 2022-23, accordingly next chairperson may be from state of Haryana on alphabetical rotational basis.

Members may kindly deliberate.

A.7 Actions for improvement in grid operation (state-wise) (Agenda by NRLDC)

A.7.1 Most of the NR states recorded their maximum demand met and maximum energy consumption during the year 2022-23. State-wise maximum demand and energy consumption as per data available with NRLDC is shown below:

State	Maximum demand (in MW)	Date/ Time	Maximum energy consumption (MU)	Date
Punjab	14295	22.08.22 at 14:45	334.45	29.06.22
Haryana	12768	28.06.22 at 11:56	266.15	07.07.21
Rajasthan	17206	18.01.23 at 14:30	328.86	09.09.22
Delhi	7695	29.06.22 at 15:10	153.52	28.06.22
Uttar Pradesh	26589	09.09.22 at 21:39	547.360	19.08.22
Uttarakhand	2594	14.06.22 at 21:00	54.27	15.06.22
Himachal Pradesh	2071	06.01.23 at 09:45	37.0	06.01.23
J&K and Ladakh (UT)	3044	02.02.23 at 20:00	64.6	20.01.23

Chandigarh	426	08.07.21 at 15:00	8.41	08.07.21
Northern region	77006	28.06.22 at 11:50	1737.09	28.06.22

A.7.2 With the increase in temperature, demand of Northern Region starts increasing from March onwards every year. IMD (India Meteorological Department) has forecasted above normal heat during Apr-Jun months in upcoming summer months. The IMD has predicted normal to above normal minimum temperatures in most parts of the country, except for South Peninsular India, where normal to below normal minimum temperatures are on the cards. Summer of Northern region are typically hot and demand is also high during this time, therefore advance actions help in better grid operation.

A.7.3 There has been continuous growth over the years. This year already Northern region energy consumption has been higher by 15% & 8% in January & February respectively compared to previous year. With this growth, this year maximum demand met and energy consumption of Northern region is expected to break previous records.

A.7.4 During the upcoming high demand season, 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. SLDCs need to ensure this during real-time operation.

A.7.5 SLDCs need to make sure that loading of 220kV and below voltage level intrastate lines remain within safe limits during the high demand season.

A.7.6 State-wise actions that are required to avoid transmission related issues that were encountered during last high demand season and would help in meeting higher demand this year are listed below:

Punjab:

- ICT Capacity augmentation at Nakodar from 2*315MVA to 2*500MVA ICTs
- Expediting commissioning of 400kV Dhanansu Substation with connectivity both at 400kV and 220kV.
- ICT Capacity augmentation at 400/220kV Ludhiana(PG)
- Minimising outages of Talwandi Saboo thermal generating units
- Avoiding/ Minimising outages of generating units on coal shortage.
- Expediting ADMS implementation

Haryana:

- Plan to mitigate severe N-1 non-compliance issue at 400/220kV Deepalpur and Panipat(BBMB) during summer/monsoon 2023.

- Expediting commissioning of new 500MVA ICT at 400/220kV Kurukshetra (PG).
- Expediting revival of 400/220kV Bhiwani(BBMB) ICT under long outage.
- Reconductoring of 220kV Hisar (PG) - Hisar (IA) to be taken up for approval.
- Ensuring availability of Faridabad Gas generating station during high demand season.
- Avoiding too much dependence on exchange for power procurement and plan to meet the deficit as discussed in meeting held with NRPC, NRLDC on 10.03.2023.
- Expediting ADMS implementation.

Rajasthan:

- Improving the power factor and reducing the MVAr drawls in State substations at transmission as well as distribution level especially Western Rajasthan. After capacitor installation at low voltage level for improving voltage profile, as per the present load pattern and voltage profile of Rajasthan, it may be required that there has to be daily operation of capacitor banks for voltage control. It also needs to be duly considered.
- Expediting ICT augmentation at non-compliant 400/220kV RVPN substations such as Ajmer, Merta, Chittorgarh, Jodhpur, Bikaner, Hindaun, Bhilwara etc.
- Measures for severe low voltages in Hindaun & Alwar area and RE rich Western Rajasthan substations.
- For 01-Dec-2022 to 10-Mar-2023, every two days 3 Machine outages were reported in Rajasthan. Measures need to be taken to avoid such frequent machine outages and ensuring sufficient coal stock.
- Identifying sufficient number of radial feeders so as to control overdrawl in case of message from NRLDC (presently identified feeders have two sources).
- Expediting implementation of ADMS scheme

Uttar Pradesh:

- Although SPS implemented at number of 400/220kV substations such as Azamgarh, Obra, Sarnath, Nehtaur, Gorakhpur etc. Plan to enhance capacity may also be taken up as per forecasted load growth
- Commissioning of 400/220kV Jaunpur S/S & 400/220kV Sahupuri S/S along with underlying network to be expedited.
- Expediting revival of 765kV AnparaD – Obra – Unnao line out for more than one year now.
- Avoiding/ Minimising outages of generating units on coal shortage.

- Expediting revival of generating unit such as Anpara TPS Unit 3 & Unit 4 which are out since 05-01-2023 & 01-11-2022 for overhauling works.
- Expediting ADMS implementation

Delhi:

- After bus-split due to high fault level at Bawana, 2*315 MVA ICTs N-1 non-compliant. Additional ICT/ load shifting to other station to be planned. Delhi SLDC to make sure that essential loads such as hospitals, DMRC, other important loads have alternate supply available so as to avoid load loss in case of N-1 contingency. As requested in earlier OCC meetings, DTL to explore SPS implementation at Bawana (2 ICTs section)
- New ICT/ Capacity augmentation at 400/220kV Mundka to be planned by DTL. One ICT under prolonged outage may be revived. One ICT already being diverted from Ludhiana(PG).
- Implementation of ADMS scheme to be taken up with DISCOMS (manual actions required as per last intimation from Delhi side)

Uttarakhand:

- Although, SPS implemented at 400/220kV Kashipur, additional ICT to be commissioned as per anticipated load growth and to improve reliability.
- To manage high loading of 220kV CBGanj-Pantnagar and 220kV Roorkee-Roorkee lines, additional connectivity/ conductor upgradation to be planned by PTCUL
- Status of 400kV Landhora S/S to be furnished

Himachal Pradesh:

- New ICT/ Capacity augmentation to be proposed by HPPTCL/ PSTCL at 400/220kV Nallagarh. New lines or additional supply may be provided. CT ratio at Nallagarh end to be uprated for utilising full line capacity. POWERGRID informed work to be done under next shutdown of line. Update to be provided.

J&K and Ladakh U/T:

- Revival of 220kV Kishenpur-Mirbazar line out under tower collapse for more than one year now.
- Capacity augmentation at 400/220kV Amargarh to be expedited. As per latest discussion held in 16 CMETS held on 28.02.2023, new ICT to be implemented in next 21 months.

- Additional planned 220kV and low voltage lines to be expedited to manage drawl from Amargarh.
- Actions to manage severe low voltages in J&K control area. SVC at New Wanpoh being fully utilised (no margin for dynamic support) and outage of SVC leads to low voltage.
- Sharing of ATC/TTC assessment with NRLDC to be done. Training imparted to J&K SLDC officials by NRLDC in online mode on 20th & 21st Feb 2023 & 10th Mar 2023.

A.7.7 J&K has also procured PSSe software & NRLDC has imparted them training sessions in Feb-Mar 2023 in online mode. It is expected that shortly J&K would also be performing load flow studies and sharing their import capability assessments with NRLDC/ NRPC. It is appreciable that now all the NR states except J&K and Ladakh and Chandigarh U/Ts have started assessing import transfer capability of their control area and sharing with NRLDC/ NRPC.

A.7.8 Apart from above, following are some of the key actions that were agreed in last NRPC meeting for ensuring safe and secure grid operation during summer 2023:

- 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 neighbour states or hydro rich states and utilization of real-time market etc. to bridge the load-generation gap in real time.
- Regular monitoring of weather websites for weather forecast information and plan load generation balance accordingly. In case of forecasted thunderstorm or wind storm, generation may be timely backed down so as to avoid any under drawl, high frequency operation of the grid and wastage of precious fuel.
- In view of high/increasing demand & transmission constraints (if any) in importing the power or in case of any contingency in the system, states to maximize their internal generation to avoid low frequency/low voltage operation or other related issues.
- SLDCs to arrange for 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.
- Some states continue to connect/ disconnect large quantum of load at hourly boundaries resulting in frequency spikes and instantaneous over voltages. Such actions to be avoided especially during high demand season.

- States to take actions to ensure backing down of thermal generation as per latest regulations issued by CEA regarding thermal plants flexible operation.
- Utilities to update & share coal stock position of thermal plants at least a week in advance as agreed earlier in TCC/NRPC meeting, especially in case of anticipation of low coal stock.
- 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 to be submitted by all transmission utilities to NRPC/ NRLDC.
- Take all necessary precautions to avoid any issues arising due to low voltages during summer months.
- 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. It is also suggested to carry out mock testing exercise of important SPS in Northern region including under state control area.
- All utilities to ensure the telemetry of all analog & digital points of all stations at respective control centers.

A.7.9 Regarding feeders for physical regulation attached as Annexure of MoM of 203 OCC meeting, SLDCs to verify that

- list of feeders is 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
- Telemetry is to be ensured for all such feeders for monitoring in real time by SLDC/ NRLDC

Members may kindly deliberate.

A.8 RE related issues in Northern region (Agenda by NRLDC)

A.8.1 Presently around 11900MW of renewable generation has been connected in the ISTS network in Western Rajasthan. As deliberated in previous NRPC meetings, number of issues have been observed with increasing RE integration in Western Rajasthan. On many occasions, multiple element tripping including outage of renewable generation has also taken place.

A.8.2 All the past major generation loss events of Northern Region can be broadly classified in two categories as follows;

(i) Due to transient over voltage during switching operation, Non-desirable reduction in RE generation in Renewable Energy Zone (REZ) of NR. (5 nos. of events since Jan'22). (Past events, last occurred on 11th Feb'22).

(ii) In case of fault in the vicinity of RE complex, (10 nos. of events since Jan'22, last occurred on 15th Oct'22).

a. Reduction in RE generation due to dip in voltage. RE plants failed to recover 90% of pre-fault MW within 1sec of clearance of fault as specified in CEA Connectivity Standards.

b. After clearance of fault, as RE plants are not recovering its full MW in due time (slow active power ramp rate/ recovering only partial pre-fault MW), leading to over voltage.

c. Due to inadequate absorption of MVAR during high voltage and further reduction in generation due to probable inverters tripping leading to further high voltage and aggravating the situation.

A.8.3 Other major RE issues observed include observance of oscillations and low voltage in RE complex:

(i) Low frequency voltage oscillations in RE complex of NR.

(ii) Low voltage issues in RE pooling stations due to MVAr drawl/inadequate MVAr support by RE plants (During peak RE generation period).

A.8.4 Majority of the issues with regard to LVRT/ HVRT non-compliance of RE plants observed are listed below:

(i) Tests of sample inverter/WTG are carried out in a factory/lab environment to demonstrate the compliance of the equipment against specified CEA standards. Based on the results of these type characteristics tests, single unit simulation model is prepared which is then used to develop complete plant model. In the pre-commissioning phase, type test and simulation response are the only proof for LVRT & HVRT compliance.

Both unit level and plant simulation models submitted by the RE developers suggest LVRT/HVRT compliance of plants. However, the compliance is not being observed in real-time operation.

There is a major challenge to obtain the compliance study report of each inverter (owing to high population) and the inverters within a plant are susceptible to witness different voltages. This is main issue in deviation of plant behavior from simulation results. Performance during grid event is presently the only way to check LVRT/HVRT compliance at Point of Interconnection (PoI).

(ii) Inverters have been tested in lab for LVRT/HVRT compliances but, there is no provision for recording and archiving of data at inverter level in millisecond time interval, in the commissioned plants.

(iii) Inverter logs can only show the inverter mode of operation in case of tripping but not in case of fault-ride through.

(iv) CEA Regulations define the LVRT/HVRT setting philosophy at PoI. However, inverter terminal voltage decides the LVRT/HVRT mode of inverters. The Inverter terminal voltage remains slightly different than PoI voltage due to drop in internal collector system and cables.

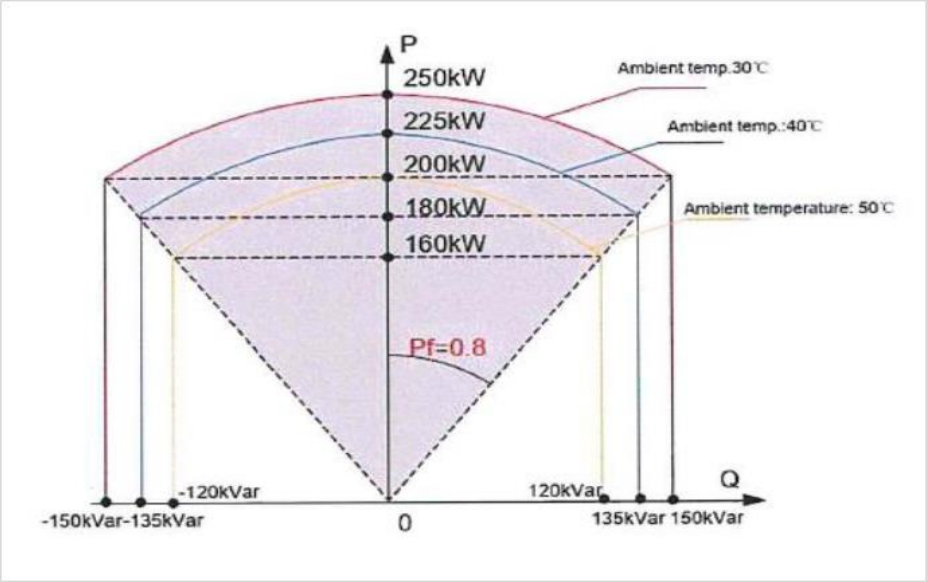
Once inverter senses VT (Inverter terminal voltage) < 0.9 pu, it goes into LVRT mode and PPC gets bypassed. After the fault gets cleared and inverter senses normal voltage at terminal, it will respond as per its previous set point (Set point is the command given by PPC) till the inverters do not get the next command from PPC.

(v) Communication time of PPC with inverters is usually 200~250 milliseconds, so inverter continues to respond as per previous command and if inverters were injecting MVAR at prefault condition it would continue to inject MVAR till it does not get the next command from PPC. However, in case inverters continue to inject MVAR, it might be possible that before going under the control of PPC, inverters would go in HVRT mode and the inverter gets tripped out on HVRT Stage-2 if voltage at inverter terminal exceeds the settings.

(vi) As overall execution time for PPC is around 1 second, so after 1 second of fault clearance the plant should get controlled by PPC. However, from PMU plots it has been observed that despite sustained high voltage for 2 to 4 seconds, RE plants are not absorbing MVAR. This voltage rise in RE complex leads to tripping of EHV lines on overvoltage, which further reduces evacuation path and more tripping of solar generators has been seen in past events.

A.8.5 Apart from above issues related to MVAr capability of RE plant especially at high ambient temperature are also being observed. As per CEA connectivity standards, RE plant shall have the capability to inject/absorb MVAR (reactive power) up to 33% of MW (active power generation)

A.8.6 In order to inject/absorb 33% reactive power (MVAR) along with delivering rated active power (MW), the MVA capacity of the RE plant shall be higher than the rated MW capacity of the plant i.e. MVA Capacity > MW Capacity. With rise in ambient temperature beyond a certain point, there is degradation in Inverter/WTG's rated MVA Capacity



A.8.7 RE Developers are designing their plants for low ambient temperature operation i.e. the plants have the margin to deliver/absorb reactive power at low ambient temperatures (<40°C) but become non-compliant at higher ambient temperatures (>50°C) as no margin is left. Temperatures dependent ratings are limiting active power and in such scenario obtaining reactive support may be difficult.

A.8.8 Moreover, as per discussions taken by NRLDC with RE developers, it emerged that there is lack of Coordination between multiple agencies involved i.e. RE Developer and Inverter /WTG /PPC OEMs at most of the RE plants. Further, lack of awareness observed among RE Developers about implemented protection and control settings at respective RE plants. Over-dependency on OEMs in this aspect has also been observed. Restricted access provided to RE Developers to download/modify the implemented inverter/WTG level settings (activity usually carried out by inverter/WTG OEM at present).

A.8.9 Northern regional Grid has been experiencing voltage oscillations during peak solar hours. Oscillations that are coming are of varied frequencies and magnitude. Oscillatory modes of frequency around 2.7 Hz (3-4 kV P-P at 765 kV Fateh2), 0.1 Hz (30-40 kV P-P at 765 kV Fateh2), 0.6 Hz (40-50 kV P-P at 765 kV Fateh2), Notch of 60-70 kV without any defined periodicity are being seen commonly.

A.8.10 Based on Short circuit ratio (grid strength) and remoteness of RE plants, control modes of few of the plants were changed and performance of RE plants and oscillations in the RE complex were observed. Changing control mode to Fixed reactive power injection has effectively damped oscillations in the solar complex to a great extent. This solution was resorted to at selected plants at various Pooling stations to mitigate the problem of oscillations. However, it brings other challenges such as that plant goes on injecting VARS irrespective of voltage and MW and once evening comes, the plant has to be

resorted back to voltage control to prevent overvoltage. Moreover, the performance of plant in case of nearby fault may not be as desired. Operating different plants in optimal control modes is being investigated at NRLDC end. However, other planned devices such as STATCOMs at Bhadla-II and Fatehgarh-II need to be commissioned at the earliest along with POD functionality.

A.8.11 Inverter Based Resources have operation very much different from conventional generation resources. To assess the possible reasons for such non-compliance by RE plants and issues being observed at RE plants, team of representatives from Grid India, CTUIL and CEA visited different RE plants in Western Rajasthan in first week of March 2023. The major findings of the committee are being compiled and would be shared with NRPC forum.

Members may kindly deliberate.

A.9 Integration of PMU installed under Smart Transmission Network & Asset Management System (STNAMS) (Agenda by NRLDC)

A.9.1 This is in reference to the discussion in 62nd NRPC Meeting held on 31.01.2023, where representative of RRVPNL informed that around 8 PMU out total 25 PMUs under STNAMS project has been commissioned and data of same is updating at RRVPNL STNAMS control centre. It was also informed that there is a provision to integrate new Phasor data concentrator (PDC) with existing PDC installed at Rajasthan SLDC.

A.9.2 During the meeting RRVPNL representative was requested to expedite the PMU data for better visibility of Rajasthan area as it is very important from grid operation point of view considering recent events in Renewable pocket.

A.9.3 In this regard NRLDC has also requested RRVPNL and SLDC to expedite the integration process vide letter NRLDC/SCADA/2023 dated 14.02.2023. (**Annexure – VI**)

A.9.4 Issue was discussed in 63rd NRPC meeting held on 24.02.2023, Representative from RRVPNL informed that STNAMS PDC will be integrated with Rajasthan SLDC PDC upon completion of Cyber Security compliances at STNAMS system. In view of the above it was requested that RRVPNL shall advise the concerned to take necessary actions so that integration of PMU data reporting at STNAMS control centre with Rajasthan SLDC PDC for onward transmission of data to NRLDC can be expedited.

RRVPNL may please update the status.

A.10 Inaccurate/non-availability of Voltage data from Critical 400/765kV Sub-stations from Rajasthan (Agenda by NRLDC)

A.10.1 Voltage telemetry from critical 400/765 kV Sub-stations from Rajasthan area is not-available or inaccurate. RRRVPN is requested to please take up for resolution of voltage telemetry from stations mentioned below at the earliest.

S.N.	Station	Remark
1.	Anta	400 Bus1 and 765KV Bus 2 Telemetry not available
2.	Babai	400 Bus1 Telemetry not available
3.	Bikaner	400 Bus1 Telemetry not available
4.	Heerapura	Telemetry not available
5.	Kankani	400 Bus2 Telemetry not available
6.	Suratgarh	Around 15 kV difference in Bus-1 & Bus-2 Voltage
7.	Alwar	400 Bus1 & Bus2 telemetry not available

A.10.2 Issue was also discussed in 63rd NRPC meeting on 24.02.2023 in which NRLDC informed that they have raised telemetry issues with Rajasthan SLDC vide letter dated 21.11.2022 but still there is negligible improvement in this regard. During the meeting Rajasthan SLDC confirmed that they take up with concerned for rectifications of the issue at the earliest.

Rajasthan SLDC may please update the status.

A.11 PTCUL Telemetry Issues (Agenda by NRLDC)

A.11.1 Following Telemetry issues from PTCUL are pending since long: -

a) Non-availability of Real-Time data from PTCUL

i. As per details submitted by PTCUL out of 58 Sub-Station/Generating Stations data from only 26 Sub-stations are integrated at SLDC. Also, many feeders are not integrated even at the locations where RTUs are installed. The same issue was also informed to PTCUL vide letter (Ref: - NRLDC/SL-II/2019-20) dated 05.03.2020.

ii. Issue was discussed in Special Meeting with PTCUL held in July 2020 and December 2020. Subsequently issue was discussed in 17th, 18th, 19th, 20th & 21st Test Meeting and 45th TCC-48th NRPC and 47th TCC-49th NRPC.

- During 47th TCC-49th NRPC dated 27.12.2021, representative from PTCUL informed that they are in the process of tendering of RTU and OPGW Installation work and informed that they would expedite the installation works, and is expected to be completed in 6 months. Further, representative from PTCUL informed that faulty CMRs/Transducers replacement work is in progress and same would be completed within 3 months. Matter was discussed in various NRPC and TeST Meetings.
- During 21st TesT Meeting held on 13.12.2022, representative from PTCUL informed that they are in process of tendering and RTU procurement and

OPGW installation will take at least 1 year. Further, PTCUL informed that they have started replacement of faulty MFTs/CMRs and process will be completed in 1-2 months

PTCUL may update the status.

b) Non-availability of Reliable / Redundant Communication System for PTCUL, SLDC

i. SLDC Uttarakhand is connected to NRLDC through radial network from Roorkee-Dehradun and all services like ICCP, PMU/PDC and VOIP are working on this. Any issue in link leads to outage of Voice and Data communication between SLDC Uttarakhand and NRLDC.

ii. Matter of reliable communication to NRLDC was also discussed in Special Meeting with PTCUL on 07th July 2020 conducted by NRPC, 45th TCC/48th NRPC Meeting dated 02.12.2020 where PTCUL/POWERGRID assured that reliable communication link would be available in 6 months.

iii. Issue was also discussed in 47th TCC/49th NRPC Meeting dated 27.12.2021, where PTCUL representative informed that they are in the process of tendering of RTU and OPGW Installation work and it is expected to be completed in 6 months.

iv. During 52nd NRPC dated 31.03.2022, PTCUL informed that they are on the verge of finalizing the OPGW project and order will be placed in one-month duration. He proposed that lease line may be used to connect NRLDC. Since Kashipur SLDC is already connected with Dehradun SLDC. Therefore, lease line from Dehradun to Kashipur SLDC may be used.

v. During 20th TeST Meeting dated 09.09.2022, PTCUL informed that they are in process of integrating redundant link and it shall be commissioned within one month. During 21st TesT Meeting held on 13.12.2022, Representative from PTCUL informed that interim arrangement for providing redundancy will be done within 1-2 months.

PTCUL/POWERGRID may update.

A.12 J&K Telemetry Issues (Agenda by NRLDC)

A.12.1 Reliability and accuracy of SCADA data and its associated communication system is essential for monitoring and coordinating operations of a large electricity grid. It helps in visualization and management of the critical grid element failure/grid incident in real time and minimizes the possibility of any untoward incidences/disturbances. Network applications in Energy management system (EMS) such as State Estimator (SE), Real Time Contingency Analysis (RTCA) also necessitate reliable and accurate real time

analog and digital data. Data communication has to be made through redundant and alternate path communication channel.

A.12.2 Real-Time data availability from Jammu and Kashmir is very poor. There is zero visibility of data in J&K stations. With poor monitoring of data, it is very difficult to monitor grid in efficient manner.

A.12.3 The matter has been discussed in various TCC and TeST meetings but there is no improvement of the same.

Brief details are as follows:

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

J&K may update the status.

A.13 PMU installation on all new Sub-stations (Agenda by NRLDC)

A.13.1 Central Electricity Authority (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2022 was notified on 23rd December 2022.

A.13.2 As per the standard *"Synchrophasor measurement using Phasor Measurement Units along with fibre optic connectivity, Global Positioning System Receiver and communication equipment shall be provided for monitoring the entire interconnected grid on real time basis at substations of 400 kV and above voltage level, switchyard of generating stations at 220 kV and above voltage level, Alternating Current side of converter bays of High Voltage Direct Current stations and pooling point of renewable energy generating stations of fifty megawatt and more and Battery Energy Storage System of fifty megawatt and more"*.

In this regard all concerned are requested to please consider installation of Phasor Measurement Units during first time charging of the Sub-stations/Generating Stations.

A.14 Undertaking by the Utility in respect of Compliance to Cyber Security requirement (Agenda by NRLDC)

A.14.1 It is seen that many cyber vulnerabilities and non-compliance of Cyber Security measures have been observed in many utilities. With a view to improve the Cyber Security posture, it is advised in the highest forums that the requirement shall be checked at the time of first time charging itself. In view of above undertaking has been prepared by CERT-GO. Undertaking is attached in **Annexure-VII**.

All utilities are requested to please submit this undertaking along with their FTC documents.

*****

सत्यमेव जयते

भारत सरकार / Government of India

विद्युत मंत्रालय / Ministry of Power

केन्द्रीय विद्युत प्राधिकरण/ Central Electricity Authority

विद्युत प्रणाली अभियांत्रिकी एवं प्रौद्योगिकी विकास प्रभाग

Power System Engineering & Technology Development Division

दिनांक /Date:10.03.2023

To,

As per the Attached List

विषय: Procedure for shifting of Transmission Lines involving works by other Infrastructure Developers-regarding

महोदय/महोदया,

Several infrastructure projects of National Highways Authority of India (NHAI), Indian Railways, Airports Authorities, Border Roads Organization (BRO), Irrigation Departments, etc. are going on in various parts of the Country and many times, construction/development projects like roads, railways, airports, mines, flood banks/dam etc. come across existing/under construction transmission lines in their route alignment, leading to the need for shifting of such lines for construction of these projects. However, due to lack of coordination between the Infrastructure Developers and the transmission line Owner, the safety of the transmission lines was sometime compromised during the construction and also construction of these infrastructure projects were delayed substantially.

To ensure smooth coordination between the infrastructure developing agencies and transmission licensees while developing infrastructure projects Ministry of Power vide its letter No. 34-3/18/2022-TRANS(MoP) dated 18th May, 2022 requested Central Electricity Authority (CEA) to prepare a consolidated Standard Operating Procedure for shifting of Transmission lines while developing infrastructure projects. Accordingly, CEA prepared a consolidated Standard Operating Procedure for shifting of Transmission lines after deliberations/discussion with

सेवा भवन, आर. के. पुरम-I, नई दिल्ली-110066 टेलीफैक्स: 011-26732304 ईमेल: ce-psetd@nic.in वेबसाइट:www.cea.nic.in
Sewa Bhawan, R.K Puram-I, New Delhi-110066 Telefax: 011-26732304 Email: ce-psetd@nic.in Website: www.cea.nic.in

I/26656/2023

various stakeholders, in various meetings and submitted to Ministry vide CEA's letter no. CEA-PS-1477/4/2022-PSETD Division dated 11.11.2022. Ministry of Power Vide its letter no. 34-3/18/2022-TRANS(MoP) dated 03.03.2023 conveyed approval of the Hon'ble Minister of Power and NRE for **"Procedure for Shifting of Transmission Lines involving in work by other Infrastructure Developers"**.

A copy of the approved document is attached herewith for compliance of all the stakeholders in addition to the existing regulatory provisions of Central Electricity Authority (CEA) and other Authorities such as Environment & Forest, Defence, Airport, NHAI, BRO, etc., to ensure smooth coordination between the infrastructure developing agencies and transmission licensees while developing infrastructure projects.

भवदीय,

10/03/2023

(भंवर सिंह मीना/ **Bhanwar Singh Meena)**

निदेशक/ **Director**

Copy to:

1. Joint Secretary (Trans), Ministry of Power, Shram Shakti Bhawan, New Delhi **(**Email: afzal_mdp@nic.in; transdesk-mop@nic.in **)**
2. PPS to Member (PS), CEA (Email: memberpscea@nic.in)
3. Chief Engineer, PSPM division (Email: ceapspm@gmail.com)
4. Chief Engineer, CEI division (Email: cea.eidivision@gmail.com **)**

F. No. 34-3/18/2022-TRANS (MoP)
भारत सरकार / Government of India
विद्युत मंत्रालय / Ministry of Power
(पारेषण प्रभाग / Transmission Division)
*****

श्रम शक्ति भवन, रफी मार्ग, नई दिल्ली- 110001
Shram Shakti Bhawan, Rafi Marg, New Delhi-110001

दिनांक: 03.03.2023

To,

Chairperson
Central Electricity Authority
Sewa Bhawan, R.K. Puram
New Delhi – 110 066

Subject: Procedure for Shifting of Transmission Lines involve in work by other Infrastructure Developers – regarding

Sir,

I am directed to refer to CEA's letter No. CEA-PS-14-77/4/2022-PSETD Division dated 11.11.2022, therein, sharing the Standard Operating Procedure (SOP) for shifting of Transmission lines by various infrastructure developers, and to say that SOP as approved by the Hon'ble Minister of Power and NRE is enclosed..

2. It is, therefore, requested to circulate the said SOP to all the States/UTs Government and all the concerned Ministries / Department.

3. This issues with approval of the Competent Authority.

Yours Sincerely,

Enclosure: As stated.

3/3/23.

(बिहारी लाल)
अवर सचिव, भारत सरकार,
टेलीफैक्स: 2332 5242
ई-मेल: transdesk-mop@nic.in

Standard Operating Procedure for shifting of Transmission line for other infrastructure projects

Several infrastructure projects of National Highways Authority of India (NHAI), Indian Railways, Airports Authorities, Border Roads Organization (BRO), Irrigation Departments, etc. are going on in various parts of the Country and many times, construction/development projects like roads, railways, airports, mines, flood banks/dam etc. come across existing/under construction transmission lines in their route alignment, leading to the need for shifting of such lines for construction of these projects. However, due to lack of coordination between the Infrastructure Developers and the transmission line Owner, the safety of the transmission lines was being often compromised during the construction and also construction of these infrastructure projects were delayed substantially. Therefore, in addition to the existing regulatory provisions of Central Electricity Authority (CEA) and other Authorities such as Environment & Forest, Defence, Airport, NHAI, BRO, etc.,the following Standard Operating Procedure (SOP) for shifting of Transmission lines needs to be observed while developing infrastructure projects.

STANDARD OPERATING PROCEDURE:

1. Subsequent to the erection of a transmission line (overhead line or underground cable),if any entity, including but not limited to BRO, NHAI, Indian Railways, Airports Authority, Irrigation Departments, etc.(hereinafter called Infrastructure Developer), proposes to carry out construction of road, railway track, airport, dam, flood bank, etc. or addition/alteration of existing infrastructure or similar type of work, whether permanent or temporary, which may affect the safety, reliability, availability, and clearances of the existing transmission lines or which may require shifting of whole or part of the transmission lines, such Infrastructure Developer or it's contractor employed to carry out such construction/addition/alteration, shall give intimation in writing to the Owner of the affected transmission line and to the Member (Power System), CEA and shall furnish therewith a detailed proposal including coordinates, scale drawing of the proposed work, finished level of Road/Rail, KMZ/KML file of the route etc.

2. Except for Projects of National Importance, all other requests for the diversion of transmission lines for other infrastructure projects shall be considered by the Owner of the transmission line, only if such diversion proposal for infrastructure projects serves wider public interest and is

recommended by the concerned State Government or the concerned Central Ministries. After getting the recommendations of the State Government or the concerned Central Ministry, such diversion proposal for ISTS lines, excluding Projects of National Importance, shall be taken up after approval by the Ministry of Power. For the Projects of National Importance, no such approval is required. Individual request for diversion shall not be considered.

3. On receipt of an intimation for the shifting of transmission line, the Owner of the transmission line shall examine the proposal for compliance of existing regulations and any other law for the time being in force, technical feasibility of the proposal, Right of Way (RoW) compliance and requirement of shifting or alteration of the transmission line and compensation required as per regulation, if any. The Owner shall carry out a joint survey with Infrastructure Developer to assess the ground conditions and collect relevant information. The Owner shall intimate its views/queries to the Infrastructure Developer, if any or its concurrence on the proposal within 30 days from the date of receipt of the proposal.

4. The Infrastructure Developer shall furnish clarificationsto the queries, if any,to the Owner of the affected transmission line within 15 days of receipt of queries/views.Any further communication, if any, among the parties in this regard shall be replied within 07 days from the receipt of the correspondence.

5. Both the parties will mutually decide whether the Owner of the transmission linewill carry out shifting/alteration of the transmission line or this responsibility will be taken up by the Infrastructure Developer.

6. If shifting or alteration work is executed by theInfrastructure Developer:

   (a) He shall submit the design documents and drawings relevant for the construction of transmission line to the Owner of the transmission line. The Owner shall examine/raise queries, if any, and provide its final approval of drawings within 3 Weeks from the date of receipt of documents.If required, the existing design documents and drawings available with the Owner may be provided to the Infrastructure Developer. No work of shifting of transmission line shall be executed before getting the final approval of drawings/documents by the Owner.

(b) All relevant cost incurred for shifting/alteration shall be borne by the Infrastructure Developer.

(c) The Infrastructure Developer shall be responsible for RoW compensation, forest clearances, wild life clearance etc.

(d) Both the parties may sign a Memorandum of Understanding (MoU) which will include mutually agreed terms and conditions.

(e) The Infrastructure Developer shallpay supervision charges, as specified in this SOP, to the Owner before commencement of work of shifting/altering the line.

(f) The Infrastructure Developer shall intimate the requirement of shutdown of existing transmission line for work of shifting or altering to the Owner of the transmission line for further necessary action in this regard. The shifting or alteration work shall be initiated only after the approval of RPC/SLDC.

7. If shifting or alteration work is executed by the Owner of the transmission line, the following provisions shall be followed:

(a) The Owner shall work out the cost implication of the shifting/alteration of the transmission line on the basis of the cost of material used after crediting the depreciated cost of the existing material which is being replaced and the wages of labour employed in effecting the shifting/alteration and intimate the same along with the time required for shifting/altering the transmission line to the Infrastructure Developer, within 30 days. The estimate may also include all statutory charges, supervision charges, amount for compensation of RoW/Forest Clearance/Wild life Clearance etc., as applicable.

(b) The Infrastructure Developer, shall deposit the amount of the estimated cost to the Owner, within30 days of the receipt of the cost estimate.

(c) If there is any dispute regarding the cost of alteration of the transmission line estimated by the Owner or the responsibility to pay such cost, the dispute may be referred to the Member (Power System), CEA which shall after hearing both parties decide upon the issue.

(d) Both the parties may sign an MoU which will include mutually agreed terms and conditions.

(e) The work of shifting/alteration shall be awarded through a tender, by the Owner and the price discovered through the tender and other charges as mentioned above shall be reimbursed by the Infrastructure Developer. In case the shifting project is of small size and/or the project is of urgent nature, and the Owner awards the

work on Rate Contract or cost plus basis, the reimbursement of cost of works, in such case, shall be as per actuals.

8. The Infrastructure Developer shall make a payment of supervision charges at the following rates to the Owner of the transmission line:

Infrastructure Project	**Shifting works by Infrastructure developers**	**Shifting works by the Owner**
Projects Under BharatmalaPariyojana	2.5%	Not Applicable
Other Infrastructure Projects	2.5%	15%

[Note:Supervision charges may be calculated as the percentage of estimated cost of material (after crediting the depreciated cost of the existing material) & wages (exclusive of GST) and then GST may be separately applied on the supervision charges.]

9. The shifting/alteration work shall normally be completed within 10 months from the date of first request of the infrastructure developer. In case the shifting project is of small size or the project is of urgent nature, a shorter time frame may be mutually decided between the Owner & the infrastructure developer.

10. The design, testing, construction and erection/laying of transmission line shall be in accordance with Central Electricity Authority (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, Central Electricity Authority (Measures Relating to Safety and ElectricSupply) Regulations and relevant Standards. In addition, the applicable Regulations/Guidelines/Procedures of other Authorities such as NHAI, BRO, Airport, Defense, Forest, etc., shall be followed.

11. It shall be ensured that the reliability and safety of the transmission line is not compromised during or after the diversion work.

12. No cutting of soil within ten meters from the tower structure of 110 kV and above voltagelevel shall be permitted without the written permission of the Owner of tower structure.For towers located on hill slope, extra precautions shall be taken to ensure that any cutting/excavation on that hill does not compromise the safety and integrity of the tower structure and if it is expected that the stability of hill may be compromised due to cutting/excavation work, even for distance beyond 10 m, the written

permission of the Owner of tower structure shall be taken before commencing any such activity.

13. Before commencement of work upon road, rail, airport, flood bank, dam etc.,Infrastaructure Developer shall ensure that the provisions of Regulations 58, 60, 61 and 76 of Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2010(as amended up to date)are not contravened either during or after the aforesaid construction.

14. The request for requirement of shutdown of existing transmission line for work of shifting or altering shall be submitted to the respective Regional Power Committee (RPC) or State Load Dispatch Center (SLDC), as applicable, well in advance by the Owner of the transmission line.

15. As per Ministry of Power's OM No. 34-311812022-Trans dated 03.08.2022, the RPC Secretariat shall provide deemed availability certificate for the shutdown period availed by transmission licensee (both RTM and TBCB) for shifting of their ISTS lines for all National Infrastructure Projects of NHAI, Railways, BRO etc., provided transmission customers are not affected by the shutdown of the line.All such applications for deemed availability shall be considered irrespective of date of application. However, deemed availability for past shifting of lines, where the diversion work has already been completed, shall not be considered

16. For the cases where deemed availability certificate for the shutdown period is not issued to transmission licensee for the shutdown period or part thereof, then in such cases, charges towards loss of availability due to such shutdowns shall be borne by Infrastructure Developer.

17. **Requirement for Overhead Transmission Lines Crossing of Road/highways :**

(a) At all road crossings, except National Highways, the towers/ poles shall be fitted with normal suspension or tension insulator strings depending on the type of towers. However, for all National Highways crossings, tension type towers/ poles with tension insulator stringsshall be used.
(b) A minimum of two sets of long rod insulators or two sets of disc insulator strings per phase per circuit shall be used.
(c) The crossing span shall not be more than 250 meters, unless higher span is permitted by NHAI.

(d) No joints in conductors or earth wire(s) shall be permitted, in crossing span.

(e) Theoverhead line crossing shall normally be at right angle as far as possible.

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8.1 Director (PSPA-I), CEA, stated that the proposal of LILO of 220 kV Sasaram(PG)-Sahupuri(UPPTCL) line at 220/132/33kV New Karamanasa GSS(BSPTCL) was discussed in 18th Meeting of Standing Committee on Power System Planning of Eastern Region held at Kolkata on 13th June 2016, wherein, New Karamanasa 220/132/33kV GSS (BSPTCL) along with the above LILO was approved. However, the proposal was to be ratified in the SCPSPNR/ NRPC (TP) meeting.

8.2 BSPTCL vide letter dated 18th March, 2021, informed that they are not getting shutdown approval from NLDC for carrying construction/commissioning activities of the above LILO.

8.3 UPPTCL vide letter dated 12.04.2021 has submitted following on the above LILO proposal at 220kV New Karamanasa GSS(BSPTCL)

(i) 220 kV Sasaram line is one of the primary source, feeding the 220 kV S/s Sahupuri, which in turn is suppling power to 220 kV Bhelupur (2x60 MVA), 220 kV Raja ka Talab (1x60+1x40 MVA) and a number of 132 kV S/s, as shown in SLD below. (Normally power drawl from this line is of the order of 100 to 150 MW).

(ii) In case of LILO of the subject line, Sahupuri will be connected to Karamanasa GSS of BSPTCL & drawl of ISTS power may be affected in certain loading conditions.

(iii) Further, 220 kV Sarnath — Sahupuri line is proposed to be LILOed at (under construction) 220 kV Bhadaura (Ghazipur) S/s and after construction of this LILO, 220 kV Sahupuri will be disconnected from 400 kV Sarnath and the connectivity will be from 220 kV Bhadaura.

(iv) Up-gradation of 220 kV Sahupuri to 400 kV level is planned and tentatively expected by February/March, 2022.

In view of above observations, UPPTCL has suggested that LILO of 220 kV Sasaram(PG)-Sahupuri(UPPTCL) line at 220 kV New Karamanasa GSS(BSPTCL) may be permitted after up-gradation of 220 kV Sahupuri to 400 kV level, so that power supply to Varanasi District can be maintained in reliable & uninterrupted manner.

8.4 UPPTCL further informed that UPPTCL has given consent to above proposal of BSPTCL subject to power drawl by BSPTCL to be restricted to 30 MW, till the time Sahupuri S/s is upgraded at 400 kV level.

8.5 Members noted the same.

9.0 Enhancement of ATC/TTC for Punjab due to unprecedented load growth of summer

9.1 Director (PSPA-I), CEA, stated that PSTCL vide letter dated 05.08.2021 has submitted that unrestricted demand of the state during the current paddy season has been intimated as 15500 MW by the distribution licensee i.e. PSPCL. However, Punjab has ability to meet about 13500 MW of load in solar hours with existing ATC limit of 6800 MW with full IPPs generation at 400/220/132 kV generating nodes. Therefore, in order to meet the state's demand, ATC limit is required to be increased to at least 9000 MW (for paddy season 2022). PSPCL has informed that no significant addition of generation within the State is likely in coming year. State of Punjab has to deal with peculiar load profile wherein demand is nearly two times during Paddy season of June-September than that in the rest of the year. Therefore, it would not be a viable option to enter into long/Medium term arrangements at the cost of surrendering power and paying fixed charges in the lean season apart from applicable transmission charges. Hence, to meet the increasing power demand, enhanced ATC/TTC is the only solution.

9.2 PSTCL has further mentioned that they have carried out load flow studies and has proposed following transmission works for enhancing ATC/TTC limits to 10,000/10,600 MW (considering 1000 MW annual load growth for FY 2022-23):-

(a) Transmission elements required at ISTS Sub-Stations.

Sl. No.	Sub-Station	Description of Works	Timeline for completion
1	400 kV PGCIL Ludhiana	Augmentation of 1x315 MVA, 400/220 kV ICT to 1x500 MVA.	May, 2022
2	400 kV PGCIL Patiala	Augmentation of 1x315 MVA, 400/220 kV ICT to 1x500 MVA.	May, 2023

(b) Transmission elements required in Intra State Sub-Stations of PSTCL:

Sl. No.	Sub-Station	Description of Works	Timeline for Completion
1	400 kV Dhanansu	Installation of addl. 1x500 MVA,	May, 2023
2	400 kV Dhanansu	LILO of 400 kV Nakodar-Kurukshetra line at 400 kV Dhanansu S/s.	May, 2023

In view of above, PSTCL has proposed augmentation of 1x315 MVA, 400/220 kV ICT to 1x500 MVA.at Ludhiana and Patiala.

9.3 PSTCL stated that as the demand in Ludhiana is expected to increase, therefore augmentation is much needed in Ludhiana S/s. Further, as there is a strict timeframe for this augmentation by May, 2022, therefore PSTCL requested POWERGRID to check if there is a possibility to divert any 500 MVA ICT to Ludhiana S/s.

9.4 POWERGRID stated that the 315 MVA ICTs at Ludhiana and Patiala S/s which are to be replaced by 500 MVA ICTS, can be kept as regional spare. In this regard, CTU suggested that there is requirement of 315 MVA ICT at Bhinmal, therefore ICT can be shifted to Bhinmal or kept as regional spare.

9.5 After deliberations, following was agreed:

(i) Augmentation of 1x315 MVA, 400/220 kV ICT to 1x 500 MVA at Ludhiana

(ii) The 315 MVA ICT spared from Ludhiana may be shifted to Bhinmal based on the residual life assessment or refurbishment (if required)

(iii) Augmentation of 1x315 MVA, 400/220 kV ICT to 1x 500 MVA at Patiala. The 315 MVA spared ICT at Patiala may be used as Regional spare.

10.0 Issue of requirement of reactors and FSCs installed at various locations in Northern Region:

Director (PSPA-I), CEA, stated that CTUIL had forwarded letters from POWERGRID intimating that they have been directed by CERC for the following:

(i) To check the further requirement of 80 MVAR line reactor installed at Kanpur end of 400 kV Kanpur- Fatehpur line (earlier Kanpur- Singrauli line)

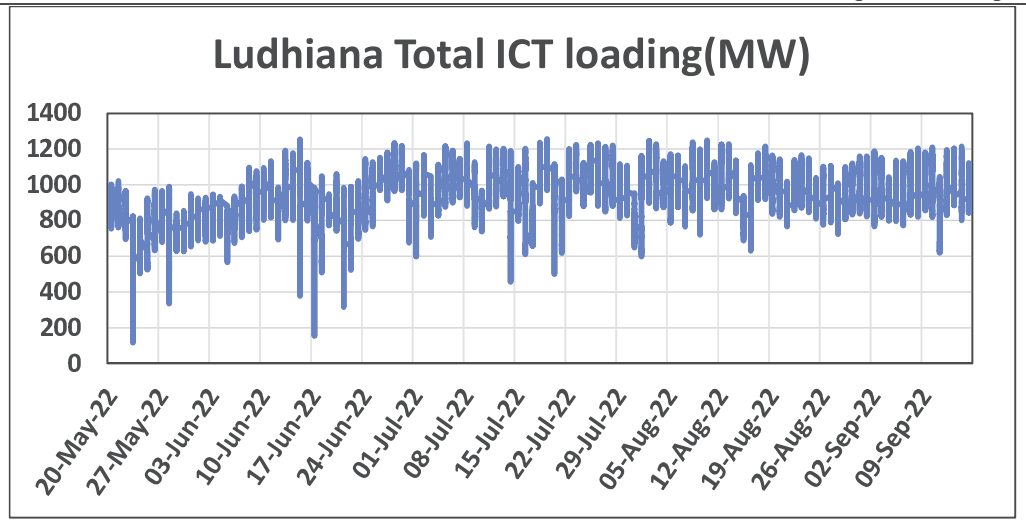

Figure-2 Loading of Ludhiana ICTs (1630MVA) (Source :POSOCO/NRLDC)

From the loading pattern, it emerged that the loading of ICTs at Ludhiana is consistently in the range of 1000-1200 MW in paddy season (Jun-Aug) with peak loading of 1257 MW against 1630MVA transformation capacity (~77% loading). Considering the load growth as indicated by PSTCL, outage of one 500 MVA ICT at Ludhiana, balance ICTs may become ' N-1' non-compliant in future. In the 198th OCC meeting held on 17.08.2022, NRLDC had also highlighted that the loading of 400/220kV ICTs at Ludhiana was close to N-1 limits.

POWERGRID vide mail 14.09.22 confirmed the feasibility to replace the existing 315 MVA ICT (1st or 3rd) at Ludhiana with a 500 MVA ICT. However, POWERGRID informed that currently ICT-1 tertiary is being used for auxiliary supply of SVC whereas ICT-3 tertiary is being used for station load at Ludhiana. During replacement any of the option of replacement of ICT-1 or ICT-3 needs to be explored. In case of replacement of ICT-1, any outage of SVC on account of auxiliary supply failure may be considered deemed available or 66kV cable may be considered for loading of tertiary of ICT-2 (500MVA) or ICT-3 (315MVA) for SVC auxiliary supply. POSOCO stated that deemed availability cases can be discussed in separate forum i.e. OCC/NRPC meetings. However in case 66kV cable is deployed, thereon be any issue in SVC auxiliary supply.

CTU enquired about the year of make for ICT-1 & 3. POWERGRID replied that ICT-1 is year 2008 make whereas ICT-3 is year 2010 make. CTU stated that as there is only 2 years difference in ICT make year, any one of the ICTs (1 or 3), which is more techno economically feasible may be selected for replacement with 500MVA ICT. POWERGRID stated that they will confirm the techno economically feasibility of both the ICTs. POWERGRID vide mail 10.10.22 informed that for Auxiliary supply arrangement for SVC during replacement of 315MVA ICT-1, it is proposed that 66kV Cable of approx. 250 Meter length may be considered from adjacent ICT-2 till ICT-1. CGM POWERGRID indicated that PSTCL desired schedule i.e. May'23 gives them only 7 months for ICT replacement, which is not sufficient and implementation timeframe should be at least 15 months. In the meeting, PSTCL was also requested to indicate their requirement well in advance so that TSP get adequate time for implementation.

Considering the unprecedented growth of load in Punjab and request of PSTCL, following ISTS scheme was agreed

- Replacement of 1x315 MVA (3rd) 400/220kV ICT (ICT-1) to 500 MVA at 400/220 kV Ludhiana (PG) S/s*

**along with 66kV cable for shifting auxiliary supply to SVC from ICT-1 to ICT-2*

It was decided that implementation timeframe shall be kept 15 months (from allocation of project), however POWERGRID may make best efforts for May'23 schedule and 315MVA ICT will be used as regional spare.

E. <u>Replacement of 1x250 MVA, 400/220 kV ICT to 500 MVA at 765/400/220 kV Moga S/s</u>

It was deliberated that at present the total transformation capacity of 765/400/220kV Moga S/s is 1565 MVA (1x250+1x315+2x500). PSTCL requested to replace the 250 MVA ICT at Moga S/s with 500 MVA ICT. As per data received from POSOCO/NRLDC, loading pattern of Moga ICTs (Nov'21 onwards) is as shown below:

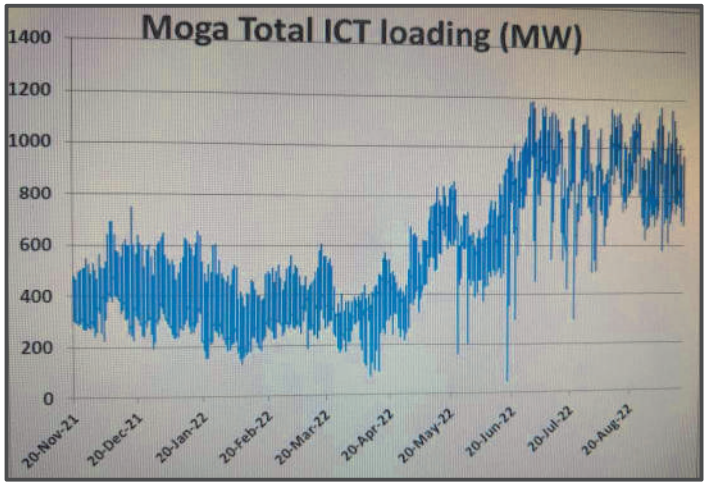

Figure 3 Loading of Moga ICT*s* (1565MVA) (Source : NRLDC/POSOCO)

From the loading pattern it emerged that the loading of ICTs at Moga is consistently in the range of 1000-1150 MW in paddy season (May'22 onwards) with peak loading of about 1200 MW against 1565MVA (~75% loading). Considering the load growth as indicated by PSTCL outage of one 500 MVA ICT at Moga, other ICTs may become ' N-1' non-compliant in future. In the 198th OCC meeting of NRPC held on 17.08.2022, NRLDC had also highlighted that the loading of 400/220kV ICT at Moga was close to N-1 limits.

POWERGRID vide mail 14.09.22 also confirmed the feasibility to replace the existing 250 MVA ICT at Moga with 500 MVA ICT. However, POWERGRID informed that 220kV CTs in 220kV ICT bay needs to be replaced due to low rating. Considering the unprecedented growth of load in Punjab & request of PSTCL, it was agreed to replace the 250 MVA ICT at 765/400/220kV Moga with a 500 MVA ICT. CGM, POWERGRID also proposed that given the age of 250MVA ICT (year 1994), same may be decapitalized.

PSTCL desired schedule i.e. May'23 for above replacement also. However as stated by POWERGRID during above deliberations. transformer implementation schedule should be minimum 15 month. Therefore, it was decided that implementation timeframe shall be 15 months (from allocation of project), however POWERGRID may make best efforts to May'23 schedule. Considering above, following ISTS scheme was agreed:

Annexure - IV

iii. New intermediate substation in between may also be proposed and the line length may be reduced as switching of 320km long inter-regional line may lead to issues in future.

CTU representative informed the following:

i. Outage of 765kV D/C line from Jalore-Mandsaur has not been studied as transmission system is being planned for N-1 contingency only and any additional transmission system would come with additional cost.

ii. In case of N-1 contingency, the angular difference is around 25 degrees which is under the stipulated planning criteria. As what mentioned by NRLDC i.e. when both lines trip is an N-1-1 contingency. This is a rare contingency and this too may occur during peak solar. He also informed forum regarding possibility of making LILO of line so as to reduce line length in future. He further informed that an additional corridor is being planned from Jalore. Therefore, in that condition, angular control will be much better in future.

Unquote

A.2 Requirement of 02 Nos. 500MVA, 400/220 kV and 02 Nos. 160 MVA 220/66 kV Power Transformer (agenda by PSETD Division, CEA)

A.2.1 EE (P& SS), NRPC apprised the forum that PSETD Division, CEA in its letter dated 23.01.2023 (**Annexure –I**) has referred the issue of DTL to NRPC Sectt. for requirement of 02 Nos. 500MVA, 400/220 kV and 02 Nos. 160 MVA 220/66 kV Power Transformer

A.2.2 He added that DTL in its letter No. F.DTL/Dir (O)/201/2022-23/F.03/216 dated 11.01.2023 had requested CEA to direct other State Transmission Utility (STUs) to provide 02 Nos. 500 MVA and 02 Nos. 160 MVA Transformers on returnable basis or cost-plus basis so that DTL may have spare Power Transformers in-hand to overcome any exigency during the period of G-20 events scheduled to be held in Delhi in the year 2023.

A.2.3 He apprised that PSETD Division, CEA has mentioned that DTL was well aware in advance about the hosting of G-20 Summit in the year 2023 by India and many related events including Summit to be held in the Capital City of Delhi. Therefore keeping in view, the importance of the said event, DTL may have taken the advance action for ensuring the availability of the spare transformers for the reliable power supply in the said event.

A.2.4 Also, PSETD Division, CEA had mentioned that CEA would explore and assess the availability of the spare transformers with constituent of Northern Region for making available to DTL. However, DTL has also to take the necessary action in this regard for

getting the spare transformers for ensuring the reliability of power supply during G-20 event.

A.2.5 DTL representative in the meeting highlighted that they have floated tender on multiple times for procurement of transformers but it could not be materialized due to covid-19 situation and price fluctuation due to the other global events. He intimated that they are already in process of shifting one 315 MVA transformer from Ballabgarh to Mundka and POWERGRID has agreed to it and target date for completion of cited activity is 15th April'23. Taking this into consideration there will be total 3 transformers in Mundka and it would be n-1 compliant. He further added that DTL is planning HTLS for Bamnuali, Najafgarh, Kanjawala and Bawana circuit then power flow will be from Bamnuali to Bawana and henceforth n-1 requirement will be met for two transformers at Bawana and it is expected to be completed by April'24.

A.2.6 DTL representative highlighted that they are doing procurement through short term tender basis for two 100MVA, two 160 MVA and two 500 MVA transformer and expected delivery schedule is 7 to 12 months. The same would be returned to the constituent of Northern Region from whom spare transformer is being arranged. With this there will be no bottleneck in the transmission constraint of DTL for reliable power supply during the hosting of G-20 summit.

A.2.7 POWERGRID stated that they have already given 2 nos of 315 MVA transformers each at Bawana and Mundka Sub-station of DTL. Additionally, another 315 MVA transformer is also being shifted to Mundka from Ballabhgarh by POWERGRID. He expressed that POWERGRID may hold 315 MVA transformer (to be shifted to Bhinmal) at Ludhiana for use of DTL G-20 meeting.

A.2.8 DTL requested that one 315 MVA transformer may be given at Mundka in place of holding it at Ludhiana as it may take time for transportation in case of requirement.

A.2.9 Forum decided that POWERGRID shall provide one 315 MVA transformer (earlier to be shifted to Bhinmal) from Ludhiana to Mundka in view of request of DTL for preparation of G-20 meeting scheduled in Sept' 2023.

A.2.10 In view of above, it has been noted by NRPC forum that there is very high dependency of DTL on POWERGRID in relation to transformation capacity. MS, NRPC mentioned that NRPC Sectt. may write a letter to CMD, DTL for taking necessary action to decrease dependency on POWERGRID.

A.3 Unchahar#6 (St-IV U#1) Flue Gas De-Sulphurisation (FGD) unit Performance Guarantee (PG) Test (agenda by NTPC)

NRPC Members for FY 2023-24		
S. No.	**NRPC Member**	**Category**
1	Member (GO&D), CEA	-
2	CTUIL	Central Transmission Utility
3	PGCIL	Central Government owned Transmission Company
4	NLDC	National Load Despatch Centre
5	NRLDC	Northern Regional Load Despatch Centre
6	NTPC	Central Generating Company
7	BBMB	Central Generating Company
8	THDC	Central Generating Company
9	SJVN	Central Generating Company
10	NHPC	Central Generating Company
11	NPCIL	Central Generating Company
12	Delhi SLDC	State Load Despatch Centre
13	Haryana SLDC	State Load Despatch Centre
14	Rajasthan SLDC	State Load Despatch Centre
15	UP SLDC	State Load Despatch Centre
16	UK SLDC	State Load Despatch Centre
17	Punjab SLDC	State Load Despatch Centre
18	HPSLDC	State Load Despatch Centre
19	DTL	State Transmission Utility
20	HVPNL	State Transmission Utility
21	RRVPNL	State Transmission Utility
22	UPPTCL	State Transmission Utility
23	PTCUL	State Transmission Utility
24	PSTCL	State Transmission Utility
25	HPPTCL	State Transmission Utility
26	IPGCL	State Generating Company
27	HPGCL	State Generating Company
28	RRVUNL	State Generating Company
29	UPRVUNL	State Generating Company
30	UJVNL	State Generating Company
31	HPPCL	State Generating Company
32	PSPCL	State Generating Company & State owned Distribution Company
33	NDMC	State owned Distribution Company
34	DHBVN	State owned Distribution Company
35	JVVNL	State owned Distribution Company
36	KESCO	State owned Distribution Company
37	UPCL	State owned Distribution Company
38	HPSEB	State owned Distribution Company
39	Aravali Power Company Pvt. Ltd	IPP having more than 1000 MW installed capacity
40	CLP Jhajjar Power Ltd.,	IPP having more than 1000 MW installed capacity
41	Talwandi Sabo Power Ltd.	IPP having more than 1000 MW installed capacity
42	Nabha Power Limited	IPP having more than 1000 MW installed capacity
43	Lanco Anpara Power Ltd	IPP having more than 1000 MW installed capacity
44	Rosa Power Supply Company Ltd	IPP having more than 1000 MW installed capacity
45	Lalitpur Power Generation Company Ltd	IPP having more than 1000 MW installed capacity
46	MEJA Urja Nigam Ltd.,	IPP having more than 1000 MW installed capacity
47	Adani Power Rajasthan Limited	IPP having more than 1000 MW installed capacity
48	JSW Energy Ltd. (KWHEP)	IPP having more than 1000 MW installed capacity
49	RENEW POWER	IPP having upto 1000 MW installed capacity
50	UT of J&K	To be nominated by administration of UT
51	UT of Ladakh	To be nominated by administration of UT
52	UT of Chandigarh	To be nominated by administration of UT
53	BYPL	Private Distribution Company in region
54	Bikaner Khetri Transmission Limited	Private transmission licensee
55	Adani Enterprises	Electricity Trader

ग्रिड-इंडिया GRID-INDIA
ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड
भारत सरकार का उद्यम
GRID CONTROLLER OF INDIA LIMITED
(A Government of India Enterprise)
[formerly Power System Operation Corporation Limited (POSOCO)]
उत्तर क्षेत्रीय भार प्रेषण 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.in, E-mail : nrldc@grid-india.in, Tel.: 011 26519406, 26523869, Fax: 011 26852747

Ref: - NRLDC/SCADA/ 2023/ **Date:-14.02.2023**

To,
Chief Engineer (PPM)
RRVPNL, Vidyut Bhawan,
Jaipur, Rajasthan- 302005

Sub: - Integration of PMU installed under Smart Transmission Network & Asset Management System (STNAMS)

Dear Sir,

This is in reference to the discussion in 62nd NRPC Meeting held on 31.01.2023, where representative of RRVPNL informed that around 8 PMU out total 25 PMUs under STNAMS project has been commissioned and data of same is updating at RRVPNL STNAMS control centre. It was also informed that there is a provision to integrate new Phasor data concentrator (PDC) with existing PDC installed at Rajasthan SLDC.

In may be noted that visibility of PMU data from Rajasthan area is very important from grid operation point of view considering recent events in Renewable pocket.

In view of the above it is requested to advise the concern to integrate the PMU data reporting at STNAMS control centre with Rajasthan SLDC PDC for onward transmission of data to NRLDC.

Your corporation is highly solicited.

Thanking You

Regards

R K Porwal
Executive Director, NRLDC

Copy to:-

1. CMD, RVPN , Jaipur Rajasthan
2. Chief Engineer , Rajasthan SLDC , Jaipur
3. Member Secretary, NRPC

FORMAT
< Name and Address of Utility>

Undertaking by the Utility in respect of Compliance to Cyber Security requirement
(to be submitted during First-Time Charging)

The following element is proposed to be charged on _____<date> tentatively around _____hours.

S no and Name of the element:

Details of CISO & Alternate CISO (Refer Article 2 of Guideline):

S/N	Name	Designation	Role (CISO / Alt-CISO)	Contact Number	E-mail

Details of Internet facing IPs on-boarded to CSK (Refer Article 5c-1 of Guideline):

S/N	Public IP Pool details with range / CIDR	Service Provider name

It is hereby certified that necessary Cyber Security measures and controls has been suitably implemented and shall be kept operational / practiced immediately as the element is charged and commissioned.

Further, certified that:

1. The concerned utility shall intimate / has already intimated their details regarding Cyber Security compliance, as required, with the concerned Sectoral CERT as prevailing guideline / practice.
2. The concerned utility / station has implemented the cyber security requirements and guidelines as provisioned in CEA (Cyber Security in Power Sector) Guidelines, 2021.
3. The Utility shall carry out necessary Vulnerability Assessment (as per periodicity provisioned in the CEA Guideline) of the complete IT / OT infrastructure associated with Data Acquisition, Control and all other related functions of the subject element through CERT-In empanelled third-party auditor. It is also certified that the open vulnerabilities reported through such VA Test shall be closed by the concerned utility within 1 month from date of vulnerability reported.

The undersigned also undertakes to co-ordinate with the concerned sectoral CERT and to abide by the requirement of CERT-In directions relating to information security practices dated 28.04.2022 (and Amendments thereof) and to report any Cyber incidence to the concerned agencies within the stipulated time.

Place:

Date: (**Name and Designation of the authorized person with official seal**)