सत्यमेव जयते

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

सं.उक्षेविस/वाणिज्यिक/209/ आरपीसी (49वीं)/2021/ 10880 - 10974
No. NRPC/Comml/209/ RPC (49th)/2021/

दिनाँक : 25 नवंबर, 2021
Dated: 25 November, 2021

सेवा में / To,

उ.क्षे.वि.स. के सभी सदस्य
Members of NRPC/TCC

विषय: उत्तर क्षेत्रीय विद्युत समिति की 49वीं तथा तकनीकी समंवय उप-समिति की 47वीं बैठक-कार्यवृत्त।
Sub: 49th meeting of NRPC and 47th meeting of TCC – Minutes.

महोदय / महोदया,

उत्तरी क्षेत्रीय विद्युत समिति की 49वीं बैठक दिनांक 27 सितम्बर, 2021 को तथा तकनीकी समंवय उप-समिति की 47वीं बैठक दिनांक 23 व 24 सितम्बर, 2021 को विडियो कॉन्फ्रेंसिंग के द्वारा आयोजित की गयी थी । इन बैठकों के कार्यवृत की प्रति आपकी सूचना व आवश्यक कार्यवाही हेतु इस पत्र के साथ संलग्न है।

The 49th meeting of NRPC was held on 27th September, 2021 and 47th meeting of TCC was held on 23rd and 24th September, 2021 via video-conferencing. A copy of the minutes of the meetings is enclosed herewith for your information and necessary action.

भवदीय/Yours faithfully,

न भंडारी

(नरेश भण्डारी) 25.11.21
(Naresh Bhandari)
सदस्य सचिव
Member Secretary

List of NRPC Members

1. Managing Director, PTCUL, Dehradun-248001, (Fax- 0135-2764496)
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28. Managing Director, UJVNL, Dehradun-248001, (Fax-0135-2763507)
29. Managing Director, UPCL, Dehradun-248001, (Fax-0135-2768867/2768895)
30. Director (Technical), NHPC, Faridabad-121003, (Fax-0129-2258025)
31. Director (Finance), NPCIL, Mumbai-400094, (Fax-022-25563350)
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33. Representative of CTUIL, Gurgaon-122001
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36. Director (Commercial), POSOCO, New Delhi-110016, (Fax-011-26560190)
37. ED, NRLDC, New Delhi-110016, (Fax-011-26853082)
38. CEO, Aravali Power Company Pvt. Ltd., NOIDA, (Fax-0120-2591936)
39. CEO, Jhajjar Power Ltd., Haryana, (Fax-01251-270105)
40. Representative of Lanco Anpara Power Ltd., (Fax-124-4741024)
41. Station Director, Rosa Power Supply Company Ltd., (Fax-05842-300003)
42. Director and head regulatory and POWER Sale, JSW Energy Ltd., New Delhi (Fax- 48178740)
43. COO, Adani Power Rajasthan Ltd., Ahmedabad-380006 (Fax No- 07925557176)
44. COO, Talwandi Sabo Power Ltd. Distt: Mansa, Punjab-151302(Fax: 01659248083)
45. MD, Lalitpur Power Generation Company Ltd., Noida-201301(Fax: 01204045100/555, 2543939/40)
46. Director (Commercial & Operations), PTC India Ltd., New Delhi (Fax- 01141659144,41659145)
47. CEO, Nabha Power Limited, (Fax: 01762277251 / 01724646802)
48. Representative of Prayagraj Power Generation Co. Ltd.
49. Representative of Greenko Budhil Hydro Power Private Limited (Member IPP<1000 MW)
50. Representative of TPDDL (Delhi Private Discom)

Special Invitee:

i. Member Secretary, WRPC, Mumbai-400 093.
ii. Member Secretary, SRPC, Bangalore-560 009
iii. Member Secretary, ERPC, Kolkata-700 033.
iv. Member Secretary, NERPC, Shillong-793 003.

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17. Chief Engineer, HPSLDC, HP State Load Despatch Authority, Totu, Shimla, (Fax-0177-2837649)
18. Development Commissioner Power, PDD, Jammu, J&K, (Fax-0191-2534284)
19. Managing Director, J&K State Power Dev. Corp., Srinagar, J&K, (Fax-0194- 2500145)
20. Director (Tech.), PSTCL, Patiala, (Fax-0175-2304017)
21. Director (Distribution), PSPCL, The Mall, Patiala, (Fax- 0175-2212069)
22. Chief Engineer (LD), SLDC, Heerapur, Jaipur-302024, (Fax-0141-2740920)
23. Director (Technical), RRVUNL, Jaipur-302005, (Fax-0141-2740633)
24. Representative of JVVNL (Rajasthan Discom)
25. Director SLDC, UP SLDC, Lucknow-226001, (Fax-0522-2287792)
26. Chief Engineer (TO), UPRVUNL, Lucknow-226001, (Fax-0522-2287861)
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36. GM, NLDC , New Delhi-110016, (Fax-011-26560190)
37. GM, NRLDC, New Delhi-110016, (Fax-011-26853082)
38. AGM (O&M), Aravali Power Company Pvt. Ltd., Jhajjar (Fax-01251-266265)
39. DGM (Commercial), Jhajjar Power Ltd., Haryana, (Fax-01251-270105)
40. WTD, Lanco Anpara Power Ltd., (Fax-124-4741024)
41. Addl. Vice President, Rosa PSCL , (Fax-05842-300003)
42. Director (Technical) JSW Energy Ltd., New Delhi (Fax: 48178740)
43. Station Head, Adani Power Rajasthan Ltd., Ahmedabad-380006 (Fax No- 079-25557176)
44. GM(Corporate Affairs), Talwandi Sabo Power Ltd. Distt: Mansa, Punjab-151302(Fax: 01659248083)
45. President, Lalitpur Power generation Company Ltd., Noida-201301(Fax: 0120-4045100/555, 2543939/40)
46. ED (Marketing), PTC India Ltd., New Delhi (Fax- 011-41659144,41659145)
47. Head (O&M), Nabha Power Limited, (Fax: 01762277251 / 01724646802)
48. Representative of Prayagraj Power Generation Co. Ltd.
49. Representative of Greenko Budhil Hydro Power Private Limited (Member IPP<1000 MW)
50. Representative of TPDDL (Delhi Private Discom)
51. CEO, Meja Urja Nigam (P) Limited, Prayagraj

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उत्तर क्षेत्रीय विद्युत समिति

NORTHERN REGIONAL POWER COMMITTEE

MINUTES
OF
47th MEETING OF TECHNICAL COORDINATION SUB-COMMITTEE
&
49th MEETING OF NORTHERN REGIONAL POWER COMMITTEE

Time & Date of TCC meeting: 11:00 Hrs. on 23.09.2021 and 24.09.2021

Time & Date of NRPC meeting: 11.00 Hrs. on 27.09.2021

Venue: Via Video Conferencing

Proceedings of 47th TCC Meeting

Shri Naresh Bhandari, MS, NRPC welcomed all the members of Technical Coordination Committee and other delegates to the 47th TCC meeting of NRPC held virtually through video-conferencing. He appreciated efforts of NRLDC and SLDCs for managing the grid within prescribed frequency range. He highlighted the need of better forecasting in current scenario. He muted an idea for creating a forecasting desk at LDC level.

Shri Anil Kumar, Director (Projects), PTCUL & Chairman, TCC welcomed the participants. He expressed profound gratitude in representing Uttarakhand in the TCC/NRPC meetings for the past few years and thanked for being chosen to chair this forum for FY 2021-22. He stated that several regulatory changes have taken place since the last meeting. CERC (Sharing of ISTS charges and losses) Regulations have been notified w.e.f. November 2020. Energy exchanges have been allowed to trade renewable energy under Green Term Ahead market. Recently CERC has also published Draft Regulations for Ancillary Services and Deviation Settlement Mechanism, which link these regulations more closely with power markets with better price discovery.

Further, Government of India has also circulated a discussion paper regarding Market Based Economic Dispatch which aims to establish “One Nation, One Grid, One Price”. All utilities should welcome these developments. Power Sector has bounced back after demand had initially plummeted after the Covid-19 crisis last year. India’s peak electricity demand recorded an all-time high of more than 200 GW this year in July. Also, in a reaffirmation of India’s push for green energy sources, solar and wind generation recorded an all-time high of more than 43 GW on 27th July this year.

These developments have come with their own sets of challenges. Due to coal crisis at the end of August, spot prices in the power exchange crossed Rs 20 in some time blocks as several plants were under shutdown.

This highlights the importance of coordinated planning and forums like NRPC where issues of all stakeholders can be discussed and bottlenecks resolved. Several operational and commercial issues will be discussed in today's meeting. He urged all participants to actively take part and educate the forum when agenda regarding their issues are discussed. Further, all decisions taken in this meeting should be strictly adhered to and all in the given timeline.

The last TCC/NRPC meetings were also held via video conferencing in September 2020. He expressed his hope that the Covid situation improves further, so that this forum will not have to wait another year to meet. Uttarakhand has to host the next TCC/ NRPC meeting and it would be pleasure for the state if those meetings can be held in FY 2021-22 only.

Proceedings of 49th NRPC Meeting

Shri Naresh Bhandari, MS, NRPC welcomed all the members of Northern Regional Power Committee and other delegates to the 49th NRPC meeting held virtually through video-conferencing. He informed the members of NRPC that very healthy deliberation was held during the two days of TCC meeting. The recommendations of TCC would now be placed for the approval of NRPC.

Shri Deepak Rawat, MD, PTCUL & Chairman, NRPC welcomed all the participants. He stressed that the power sector is pivotal for growth and is a determining factor for other sectors also. Use of IT has made it a very dynamic sector. He highlighted the role of NRPC as enumerated in resolution of RPCs and stressed on problem solving approach with co-ordination among various stakeholders.

Confirmation of Minutes (TCC and NRPC)

A.1 Minutes of 45th meeting of TCC/48th meeting of NRPC and Special (46th) TCC meeting

Minutes of 45th meeting of TCC held on 27th and 28th August, 2020 and 48th meeting of NRPC held on 02nd September, 2020 were circulated vide letter dated 20th November, 2020.

Minutes of Special (46th) meeting of TCC held on 15th June, 2021, were circulated vide letter dated 25th June, 2021.

Members were informed that no comments were received on Minutes of meetings mentioned above.

TCC and NRPC members confirmed the minutes.

B. OPERATIONAL ISSUES

B.1 System Study for Capacitor Requirement in NR for the year 2019-20

TCC Deliberations

B.1.1 TCC forum was apprised about the progress of the project and deliberations in different meetings held regarding the agenda. It was highlighted that inputs received from states was submitted to NRLDC on 21.09.2021 for tuning of base-case. NRLDC will tune the base case and will also ensure that regional generators shall not absorb reactive power in the base-case.

B.1.2 NRLDC intimated that base-case file after tuning can be submitted by 30th September, 2021. It was discussed that after receipt of tuned base-case file, same may be forwarded to CPRI along with comments of States.

B.1.3 MS, NRPC highlighted that NRPC approval regarding payment has already been taken in 48th NRPC meeting. The payment to CPRI for the study will be processed after the acceptance of report. It was stressed that efforts will be taken to complete the project at the earliest and support of all states was appreciated.

NRPC Deliberations

B.1.4 NRPC concurred with deliberation held in the TCC meeting.

B.2 NR Islanding Schemes

TCC Deliberations

B.2.1 TCC was apprised about the agenda and status of different islanding schemes. Further, deliberations of different islanding schemes was done which as followed:

B.2.2 **Punjab**: Punjab informed that all 3 schemes of Punjab are being finalized and will be submitted to CPRI for study within one month. Based on study results, PSDF will be approached for funding. Feeder wise details of the load for all islanding schemes will be submitted within 15 days.

B.2.3 Target date for implementation of 3 islanding schemes was intimated as 30th June, 2022.

B.2.4 TCC recommended proposal of Punjab SLDC to discontinue the Islanding scheme of GHTP Lehra Mohabat as there is only remote possibility of Island creation for GHTP due to less scheduling.

B.2.5 **UT of Ladakh**: NRLDC intimated that steady state study was carried out and shared in the meeting dt. 6th July 2021. For performing dynamic study, NHPC has been requested to share complete dynamic data of Nimoo Bazgo and Chutak plants. Further, it was also highlighted that dynamic study may be vetted from third party before implementation.

B.2.6 NHPC informed that dynamic data has been shared with NRLDC, except generic model information as it is awaited from BHEL.

B.2.7 **Himachal Pradesh:** HPSLDC informed that reliability studies of Islanding schemes are pending at HPSEBL end. HPSEBL informed that study outcome will be shared by 15th October, 2021. Further, BBMB raised concerns regarding Kullu – Dehar IS to be deliberated in separate meeting.

B.2.8 **Uttar Pradesh:** NAPS shall be nodal agency for all data regarding NAPS IS. In case of NAPS, data regarding healthiness of communication channel will be given by NRLDC and data regarding healthiness of communication of UFR/Islanding Relays will be given by NAPS on monthly basis. UPSLDC was requested to submit MIS report for Lucknow-Unchahar IS and Agra-Lalitput IS.

B.2.9 **Rajasthan:** Rajasthan intimated that proposal is under consideration of management which will be shared within a week. Rajasthan SLDC was requested to submit MIS report for Islanding schemes.

B.2.10 **Uttarakhand**: SLDC informed that all stakeholders for Dehradun Islanding schemes have been approached for appointing Nodal officers. Generators are not having must run status and RGMO/FGMO is also not available. Viability of scheme will be shared within a month.

B.2.11 **Delhi**: No representative was present during discussions.

B.2.12 All the states were requested to submit MIS report on monthly basis. The format has been circulated vide agenda of 187th OCC meeting.

NRPC Deliberations

B.2.13 NRPC concurred with deliberations held in the TCC meeting.

B.3 Revised Under Frequency Relay based automatic load shedding scheme

TCC Deliberations

B.3.1 TCC was informed that in the 10th NPC meeting, held on 09.04.2021, it has been decided that the AUFLS scheme (with 4 stages) viz. 49.4, 49.2, 49.0 & 48.8 Hz with existing quantum of load shedding shall be implemented in all the Regions. The quantum of load shedding would be reviewed based on the recommendation of the Sub-Committee to study the AUFLS scheme.

B.3.2 In compliance of NPC decision, NR states/constituents agreed to raise the AUFR settings by 0.2 Hz. It was also highlighted that quantum of load shedding at four stages can be worked out and implemented after the receipt of recommendation of Sub-Committee of NPC. It was also decided that Compliance of revised setting to be monitored in monthly OCC meetings.

NRPC Deliberations

B.3.3 NRPC concurred with deliberation held in the TCC meeting.

B.4 Deemed Availability for shifting of towers to facilitate construction of projects of national interest

TCC Deliberations

B.4.1 TCC was informed that Ministry of Power vide letter dt. 31.08.2021 to CERC requested to suitably modify the CERC (Terms and Conditions of Tariff) Regulations, 2019 so that RPC Sectt can issue deemed availability certificate for the shutdown period availed by transmission licensees for shifting of their

transmission lines in NHAI projects, provided that transmission customers are not affected by the shutdown of the line.

B.4.2 POWERGRID requested to issue Transmission availability certificates by considering deemed availability for the shutdown period availed by them for shifting of their transmission lines in NHAI projects as NHAI is not agreeing to reimburse the availability loss.

B.4.3 NRLDC, Punjab, U.P., and Rajasthan submitted that deemed availability for the shutdown period availed by transmission licensees for shifting of their transmission lines in NHAI projects may be provided, only after suitable amendment in the extant CERC (Terms and Conditions of Tariff) Regulations.

B.4.4 MS, NRPC opined that in view of NHAI projects of National importance, deemed availability for the shutdown period availed by transmission licensees for shifting of their transmission lines in NHAI projects may be allowed. He expressed that Provisional Transmission availability certification may be done till Commission takes final call on Tariff Regulations. Based on the decision of the Commission on the applicable Regulations, provisional certificate(s) may be later reviewed. It was also decided that issue will be discussed in the upcoming meeting of RPCs and CERC. Chairperson, TCC seconded the views of MS, NRPC.

NRPC Deliberations

B.4.5 NRPC concurred with deliberation held in the TCC meeting.

B.5 Review of SPS for Jhakri-Karcham complex

TCC Deliberations

B.5.1 TCC was informed that SPS in Karcham-Jhakri-Rampur complex was revised after the charging of Gumma (HP) substation for evacuation of Sawara Kuddu plant and with the proposed additional 100MW injection by Sorang in the complex. The modified SPS logic was discussed and approved in the 183rd OCC meeting.

B.5.2 Himachal Sorang Power Pvt Ltd vide letter dt. 26.08.2021 have intimated that they have implemented SPS at Sorang HEP as per the directions and proposed scheme of NRPC.

B.5.3 TCC recommended scheme for post facto approval of NRPC.

NRPC Deliberations

B.5.4 NRPC gave post facto approval to revise SPS in Karcham-Jhakri-Rampur complex.

B.6 Schemes agreed in 2nd Northern Regional Power Committee (Transmission Planning) meeting held on 01.09.2020

TCC Deliberations

Following schemes were deliberated in the TCC meeting which were agreed in 2nd Northern Regional Power Committee (Transmission Planning) meeting held on 01.09.2020:

B.6.1 **Implementation of 400/132kV transformer at Kishtwar Pooling Station (Agenda by CTU)**

B.6.1.1 CTU informed that 2x200MVA, 400/132kV ICT along with associated bays and 4 nos. of 132kV line bays (GIS) at Kishtwar Pooling Station (GIS) are to be implemented as a system strengthening scheme in matching timeframe of Kishtwar PS i.e. by 01.04.2025.

B.6.1.2 This ISTS system strengthening scheme is to be combined with "Transmission System for Evacuation of power from Pakaldul HEP in Chenab Valley HEPs-Connectivity System" for implementation purpose which has been already been agreed in 48th Northern Region Power Committee (NRPC) meeting held on 02.09.2020.

B.6.1.3 TCC recommended scheme as system strengthening scheme for approval of NRPC.

B.6.2 **Grant of 400kV bays to RE generators at Bhadla-II PS, Fatehgarh-II, & Fatehgarh-III (erstwhile Ramgarh-II) PS under ISTS (Agenda by CTU)**

B.6.2.1 Accordingly, 5 nos. of 400 kV bays (Bhadla II - 3 nos., Fatehgarh-II - 1 no. & Fathegarh-III - 1 no.) have been agreed for implementation under ISTS with following details:

Sr. No.	Application No.	PS	Applicant	400kV Bays	Connectivity Start Date as per Intimation
1	1200002340	Bhadla-II	NTPC Ltd.	1	01.09.2021
2	1200002401	Bhadla-II	Azure Power India Pvt. Ltd.	1	07.04.2021
3	1200002428	Bhadla-II	Adani Renewable Energy Holding Four Ltd. (Erstwhile Adani Green Energy Four Ltd.)	1	31.01.2022
4	1200002400	Fatehgarh-II	Azure Power India Pvt. Ltd.	1	07.04.2024
5	1200002402	Fatehgarh-III	Azure Power India Pvt. Ltd.	1	07.04.2025

B.6.2.1 It was also highlighted that establishment of pooling stations viz. Bhadla-II, Fatehgarh-II has been agreed as part of Transmission system for Solar Energy Zones in Rajasthan (8.9GW) under Phase-I, and Fatehgarh-III as part of strengthening scheme for evacuation of power from solar energy zones in Rajasthan (8.1 GW) under Phase-II in 45th & 46th NRPC meeting held on 08.06.19 & 24.09.19 respectively.

B.6.2.2 TCC recommended scheme for approval of NRPC.

B.6.3 **2 nos. of 765kV GIS line bays modules at Aligarh S/s (Agenda by CTU)**

B.6.3.1. CTU informed that transmission system strengthening scheme for evacuation of power from solar energy zones in Rajasthan (8.1 GW) under Phase-II was agreed in 46th NRPC meeting held on 24.09.2019 which included Sikar-II – Aligarh 765kV D/c line along with 765kV line bays & line reactors at each end.

B.6.3.2. However, 2 nos. of 765kV GIS line bay modules are already available at Aligarh S/s which have been agreed to be utilized for termination of Sikar-II – Aligarh 765kV D/c line. Hence, provision for 2 nos. of bays at Aligarh S/s has been deleted from the earlier scope.

B.6.3.3. TCC recommended scheme for approval of NRPC.

B.6.4 **Additional 80 MVAR, 765kV Spare Reactor at Bhadla-II S/s (Agenda by CTU)**

B.6.4.1. CTU informed that Fatehgarh II – Bhadla II 765kV D/C (2nd) line along with 2x240 MVAr switchable line Reactors at both ends has been envisaged without additional spare reactor under Transmission system strengthening scheme for evacuation of power from solar energy zones in Rajasthan (8.1 GW) under Phase-II which has already been agreed in 46th NRPC meeting held on 24.09.2019.

B.6.4.2. In order to avoid complex layout constraints, additional 1x80 MVAR, 765kV Spare Reactor at Bhadla-II S/s as strengthening scheme was agreed in the 2nd meeting of NRPCTP which can be utilized as spare reactor for 240 MVAR line reactors on each circuit of Bhadla-II – Sikar-II 765kV 2xD/c line at Bhadla-II end. It was suggested that 1x80 MVAR, 765kV Spare Reactor at Bhadla-II S/s may be taken up for implementation as strengthening scheme.

B.6.4.3. TCC recommended scheme as strengthening scheme for approval of NRPC.

B.6.5 **Additional 1x500 MVA, 400/220kV ICT (8th) at Bhadla Pooling Station (Agenda by CTU)**

B.6.5.1. CTU informed that 4x500MVA, 400/220kV ICTs are existing at Bhadla (PG) S/s. Further, 3 nos. of 500 MVA ICTs are under various stages of implementation.

B.6.5.2. It was highlighted that 3530MW LTA has already been granted to RE

developers at Bhadla (PG) S/s against the planned transformation capacity of 3500MVA. Hence, additional 1x500 MVA, 400/220kV ICT (8th) at Bhadla Pooling Station as strengthening scheme for meeting the n-1 criteria has been agreed in the 2nd meeting of NRPCTP.

B.6.5.3. TCC recommended scheme as strengthening scheme for approval of NRPC.

B.6.6 **1x80MVAr switchable Line reactor on each circuit at Khetri end of Bikaner-II – Khetri 400 kV 2xD/c Line**

B.6.6.1. CTU informed that Transmission system strengthening scheme for evacuation of power from solar energy zones in Rajasthan (8.1 GW) under Phase-II was agreed in 46th NRPC meeting held on 24.09.2019. The scheme also includes:

i. Establishment of 400/220 kV, 6x500 MVA Pooling Station at Bikaner–II PS with suitable bus sectionalisation at 400 kV and 220 kV level and with 400kV (2x125 MVAR) bus reactor

ii. Bikaner-II PS – Khetri 400 kV 2xD/c line (Twin HTLS* on M/c Tower)

iii. 1x80MVAr switchable Line reactor on each circuit at Khetri end of Bikaner-II – Khetri 400 kV 2xD/c Line

iv. 4 no. of 400 kV line bays at Khetri for Bikaner–II PS – Khetri 400kV 2xD/c line

v. Khetri- Bhiwadi 400 kV D/c line (Twin HTLS)

vi. 2 no. of 400 kV line bays at Khetri for Khetri - Bhiwadi 400kV D/c line

vii. 2 no. of 400 kV (GIS) line bays at Bhiwadi for Khetri- Bhiwadi 400 kV D/c line

viii. STATCOM at Bikaner–II S/s

B.6.6.2. However, due to space constraints at Khetri S/s, it was agreed in 2nd NRPCTP meeting that in place of 1x80MVAr switchable Line reactor on each circuit at Khetri end of Bikaner-II – Khetri 400 kV 2xD/c Line, 1x80MVAr fixed line reactors would be installed.

B.6.6.3. TCC recommended scheme for approval of NRPC.

NRPC Deliberations

B.6.7 NRPC approved above schemes which were deliberated in 2nd Northern Regional Power Committee (Transmission Planning) meeting held on 01.09.2020.

B.7 Schemes agreed in 3rd Northern Regional Power Committee (Transmission Planning) meeting held on 19.02.2021 (Agenda by CTU)

TCC Deliberations

Following schemes were deliberated in the TCC meeting which were agreed in 3rd Northern Regional Power Committee (Transmission Planning) meeting held on 19.02.2021:

B.7.1 **Transmission System requirement for additional 20GW REZ in Northern Region (Phase-III)**

B.7.1.1 TCC was apprised about Transmission System requirement for additional 20GW REZ in Northern Region (Phase-III) which was agreed in 3rd NRPC (TP) meeting held on 19.02.2021. Scheme details is in agenda.

B.7.1.2 It was highlighted that PSTCL has submitted comments on the studies carried out by CEA and CTU. Further, point wise reply was given by CTU on the comments of Punjab. Director (PSTCL) was satisfied with the above response of CTU with no further comments.

B.7.1.3 TCC recommended scheme for approval of NRPC.

B.7.2 **Creation of 400/220 kV, 2x315 MVA S/S at Siot (earlier Akhnoor/Rajouri) as ISTS (Agenda by CTU)**

B.7.2.1 CTU informed that proposal for creation of 400/220 kV, 2x315 MVA S/S at Siot (AIS) under ISTS as a system strengthening scheme has been agreed in 3rd NRPCTP meeting with timeline as March, 2024. The scheme is also posed to 5th NCT meeting for approval. The detailed scope is as given below:

- Establishment of 2x315 MVA, 400/220kV Siot S/ s with 1x125 MVAR, 420 kV bus reactor, 4 nos. of 400kV line bays and 6 nos. of 220kV line bays
- LILO of both circuits of 400 kV D/c Amargarh (Kunzer)- Samba line at 400/220 kV Siot S/s

B.7.2.2 It was also informed that steps to mitigate the issue of low voltages in J&K would be taken up by power department of J&K who will also complete their downstream network for drawl as per the timeline of establishment of Siot S/s i.e. Mar'24.

B.7.2.3 CTU further informed that in 5th NCT meeting held on 25.08.2021 & 02.09.21, (MoM awaited), 7X105MVA ICTs along with 1x80MVAr Bus Reactor (420kV) have been decided to be implemented instead of 2X315MVA & 1x125MVAr bus reactor due to transportation constraint in hilly terrain.

B.7.2.4 TCC recommended scheme as system strengthening scheme (subject to decision in the MoM of 5th NCT reg. single phase units of transformer & bus reactor) for approval of NRPC.

B.7.3 **Handing over of 400 kV D/c Khandukhal-Rampura line and 220 kV D/c Mori-Dehradun line of PTCUL under UITP scheme (deemed ISTS) to**

Central Sector (Agenda by CTU)

B.7.3.1 CTU informed that in the 3rd NRPC-TP meeting it was agreed to implement 400 kV D/c Khandukhal (Srinagar)-Rampura (Kashipur) line under central sector as an ISTS scheme with the matching time frame of commissioning of Vishnugad Pipalkoti HEP of THDC i.e June 2023 or Tapovan Vishnugad HEP of NTPC whichever is earlier. Further, implementation of 220 kV D/c Mori-Dehradun line may be considered in future under central sector with materialisation of projects other than Naitwar Mori in Yamuna basin.

B.7.3.2 PTCUL highlighted that project is to be implemented in TBCB mode and central sector is well equipped with TBCB project. Hence, project was handed over to central sector and not because of inability of PTCUL to achieve the targeted deadline. Hence, it was requested to consider the same and revise the language in the agenda.

B.7.3.3 It was informed that agenda has been put up for deliberation as per minutes of 3rd NRPCTP meeting held on 19.02.2021, hence PTCUL was advised to take up the issue in 4th NRPC (TP) meeting scheduled to be held in the 1st week of October.

B.7.3.4 After detailed deliberations, TCC recommended scheme for approval of NRPC.

B.7.4 **Transmission Scheme for evacuation of power from hydro projects in Yamuna Basin (Agenda by CTU)**

B.7.4.1 CTU informed that in 3rd NRPC-TP meeting, following alterative scheme was agreed for evacuation of power from Naitwar Mori hydro project (60 MW) of SJVN

I. Creation of 220kV Pooling station near Snail with LILO of both circuits of Snail–Hatkoti 220kV D/c line, 6 nos. of 220kV line bays, 50 MVAR bus reactor along with reactor bay.

II. SJVN to construct 220 kV Naitwar Mori to Hatkoti/Snail PS D/c line and the 220 kV Pooling Station near Snail S/S as a dedicated system.

B.7.4.2 TCC recommended scheme for approval of NRPC.

B.7.5 **Reconductoring of portion of Dulhasti-Kishtwar- Kishenpur 400 kV (Quad) S/c (Agenda by CTU)**

B.7.5.1 CTU informed that establishment of common pooling station at Kishtwar by LILO of one circuit of Kishenpur – Dulhasti 400kV D/c (Quad) line (Single Circuit Strung) as part of a comprehensive system for providing connectivity to Pakaldul (1000MW), Kiru (624 MW) and Kwar (540 MW) HEPs of CVPPL is ensviaged. It was further informed that Ratle HEP (690 MW) was planned to be developed in the downstream of Dulhasti HEP and it was agreed that

Dulhasti-Kishenpur D/c Quad (S/c strung) would be LILOed at Ratle HEP and 2nd quad circuit shall be strung from Kishenpur and terminated at Ratle matching with the commissioning of Ratle HEP

B.7.5.2 It was also agreed during 35th NR Standing Committee Meeting held on 03.11.2014 that as outlet beyond Dulhasti is Dulhasti-Kishenpur 400kV line is a single circuit line, the amount of power that can be exported/imported is limited. Hence, Dulhasti-Ratle section would be optimized to the extent possible. Further, bay rating at Dulhasti is 2000 A which is further reduced to 700/800A due to reduced capacity of XLPE/OIL cable for connection of line to GIS bus at Dulhasti end. Accordingly, Dulhasti-Kishenpur 400kV S/c line (Quad) was implemented with Twin Moose conductor till Ratle LILO point. Beyond Ratle LILO point, line was implemented with Quad Moose conductor. However, LTA & Connectivity application for Ratle HEP was revoked at later stage due to non-signing of requisite agreements

B.7.5.3 For connectivity of Pakaldul HEP (1000 MW), LILO of one circuit of Dulhasti - Kishenpur 400 kV line (quad) has been agreed at Kishtwar Pooling station. However, as location of proposed Kishtwar S/s is above Ratle location and towards Dulhasti, portion of DulhastiRatle LILO tap Point of Dulhasti - Kishenpur 400 kV line (approx. 13 kms) implemented through twin moose conductor, needs to be reconductored with Quad moose conductor. Accordingly, to cater to power transfer requirement from hydro projects (Pakaldul, Kiru & Kwar) including LTA of Pakaldul (1000 MW) HEP, , following was agreed in 3rd NRPC-TP meeting as system strengthening scheme:

- Reconductoring of Dulhasti-Ratle LILO tap Point of Dulhasti - Kishenpur 400kV line (approx. 13 kms) implemented through twin moose conductor with Quad moose conductor in matching time frame of Pakaldul HEP generation.
- Termination of 400kV Kishtwar- Kishenpur 400kV S/c (Quad) line (second ckt) [LTA system of Pakaldul HEP] in bus reactor bay (125 MAVAR) in view of unavailability of spare bay as well as space for new diameter in 400 kVswitchyard for Kishenpur substation and conversion of bus reactor to switchable line reactor at Kishenpur S/s.

B.7.5.4 TCC recommended scheme as system strengthening scheme for approval of NRPC.

B.7.6 Grant of 400kV & 220kV bays to RE generators at Fatehgarh-3 (erstwhile Ramgarh 2) PS under ISTS (Agenda by CTU)

B.7.6.1 CTU informed that at Fatehgarh –III PS 6 nos. of 220kV bays and 3 nos. of 400kV bays along with bus extension of 220 kV & 400kV bus as well as bus sectionalizer arrangement between both the levels i.e. 400 kV new section and 220 kV new section with under implementation section at Fatehgarh-3 PS is to be implemented under ISTS which was agreed in the 3rd NRPC-TP

meeting. The details are as follows:

S. No.	Applicant	Applications No.	Stage-II Connectivity Sought (MW)/Date	Connectivity Point	Agreed for grant*/Granted bays for providing Connectivity
1	Adani Green Energy Four Limited	1200002683	1500/ 30-06-2022	Fatehgarh-III	400kV-1 no. 220kV-2*nos. (*1 no. of 220kV bay is part of 7 nos. of 220kV bays, currently under bidding at Fatehgarh-III PS)
2	IB VOGT SOLAR SEVEN PRIVATE LIMITED	1200002700	300/ 05-04-2022	Fatehgarh-III	220kV-1 no.
3	ABC Renewable Energy Private Limited	1200002699	400/ 31-01-2022	Fatehgarh-III	220kV-1 no.
4	ReNew Surya Jyoti Private Limited	1200002746	210/ 31-03-2022	Fatehgarh-III	220kV-1 no. (This bay shall also be utilized for providing connectivity to ReNew Surya Pratap Private Limited Application No. 1200002778 - 210MW))
5	Azure Power India Pvt. Ltd.	1200002812	500/ 19-01-2024	Fatehgarh-III	400kV-1 no. (This bay shall also be utilized for providing connectivity to another Azure Power India Pvt. Ltd. (Application No. - 1200002813- 500MW))

S. No.	Applicant	Applications No.	Stage-II Connectivity Sought (MW)/Date	Connectivity Point	Agreed for grant*/Granted bays for providing Connectivity
6	Azure Power India Pvt. Ltd.	1200002814	500/ 19-01-2025	Fatehgarh-III	400kV-1 no. (This bay shall also be utilized for providing connectivity to another Azure Power India Pvt. Ltd. (Application No. - 1200002815-500MW))
7	XL Xergi Power Pvt. Ltd.	1200002847	400/ 31-05-2022	Fatehgarh-III	220kV-1 no.
8	Energizent Power Pvt Ltd	1200002907	125/31-08-22	Fatehgarh-III	220kV-1 no*.

B.7.6.2 After detailed deliberations, TCC recommended scheme for approval of NRPC.

B.7.7 **Establishment of 400/220kV Nange Pooling Station for proposed SJVN Hydro Power Plant Luhri Stage-I, II & Sunni Dam (Agenda by CTU)**

B.7.7.1 CTU informed that in the 3rd NRPC TP meeting, following transmission system for implementation with the time frame of Luhri-I HEP (April 2025) was agreed:

- Establishment of 7x105MVA (single phase units, 400/220kV Nange GIS Pooling Station (tentatively Identified near Luhri Stage-II HEP)
- Nange GIS Pooling Station – Koldam 400kV D/c line along with associated bays at both ends (GIS bays at Koldam)
- 125 MVAR Bus Reactor at Nange GIS PS.

B.7.7.2 The above transmission system would also be utilized for connectivity of Sunni Dam and Luhri-II HEPs of M/s SJVN.

B.7.7.3 TCC recommended scheme for approval of NRPC.

B.7.8 **1x500 MVA, 400/220 kV ICT augmentation (3rd) at Sohawal (PG). (Agenda by CTU)**

B.7.8.1 CTU informed that in the 3rd NRPC-TP meeting, UPPTCL intimated that 2x315 MVA ICTs at Sohawal(PG) have been observed to be ‘N1’ non-compliant under peak load conditions and requested for its augmentation.

Accordingly, 1x500 MVA, 400/220 kV ICT augmentation (3rd) at Sohawal (PG) was agreed under system strengthening. Also, UPPTCL has requested to implement the ICT at the earliest due to increase in load.

B.7.8.2 CTU further informed that UPPTCL vide letter 24.08.21 again requested that transformer augmentation work at Sohawal (PG) substation may be implemented on top priority to maintain reliable supply besides TTC enhancement perspective. Accordingly, augmentation of transformation capacity by1x500 MVA, 400/220 kV ICT augmentation (3rd) at Sohawal (PG) under system strengthening may be agreed.

B.7.8.3 TCC recommended scheme as system strengthening for approval of NRPC.

B.7.9 **One no. of 220kV Line bay at Chamera Pool for 2nd ckt stringing of 220kV Karian to Chamera transmission line (Agenda by CTU)**

B.7.9.1 CTU informed that 220/33 kV substation at Karian in Ravi Basin had been approved in 29th meeting of SCPSPNR held on 29.12.2010. Accordingly, 2 No. of 220 kV Bays were approved for termination of 220 kV D/C line from Karian at 400/220 kV, 2x315 MVA Chamera Pooling station of PGCIL at Rajera. Subsequently, in the 30th SCPSPNR meeting held on 19.12.2011, HPPTCL had informed that one bay would be required in first instance.

B.7.9.2 Subsequently, in order to strengthen the intra-state transmission system, HPPTCL has planned 2nd circuit stringing of 220 kV Karian to Chamera transmission line, for which 220kV bay is required to be implemented at Chamera Pool. Accordingly, in 3rd NRPC-TP meeting, following Transmission element was approved under ISTS:

- One no. of 220kV bay at Chamera Pool for 2nd circuit stringing of 220kV Karian to Chamera transmission line.

B.7.9.3 TCC recommended scheme for approval of NRPC.

B.7.10 **Addition of new ICT of 1X315 MVA at Amargarh s/s by March 2026 as approved in 3rd NRPCTP (Table Agenda by CTU)**

B.7.10.1 CTU informed that addition of new ICT of 1X315 MVA at Amargarh s/s by March 2026 has been approved in 3rd NRPCTP meeting held on 19.02.2021.

B.7.10.2 The scheme was also discussed in 5th NCT meeting held on 25.08.2021 & 02.09.2021 wherein considering transportation constraints due to difficult terrain, single phase units for transformers were agreed in place of three phase transformer at Amargarh S/s (MOM awaited).

B.7.10.3 TCC recommended scheme regarding addition of new ICT of 1x315MVA (3x105MVA, single phase units) at Amargarh S/s (subject to decision in the MoM of 5th NCT on single phase units for transformers) for approval of NRPC.

NRPC Deliberations

B.7.11 NRPC approved above schemes which were deliberated in 3rd Northern Regional Power Committee (Transmission Planning) meeting held on 19.02.2021.

B.8 Proposed Evacuation Plan (Transmission System) for Shahpur Kandi Power Project (SKPP). (*agenda by PSTCL)*

TCC Deliberations

B.8.1 Punjab informed that scheme is yet to be discussed in NRPC (TP) meeting and agenda regarding the same has been submitted for discussion in next NRPC (TP) meeting scheduled to be held on 5th October, 2021.

B.8.2 TCC recommended scheme (subject to the decision of minutes of upcoming NRPCTP meeting) for approval of NRPC.

NRPC Deliberations

B.8.3 NRPC approved the scheme (subject to the decision in upcoming NRPC-TP meeting).

B.9 Emergent enhancement of ATC/TTC for Punjab due to unprecedented load growth of summer (*agenda by PSTCL)*

TCC Deliberations

B.9.1 PSTCL informed that load flow studies have been carried out and it is proposed to plan Transmission Works for enhancing ATC/TTC limits to 10,000/10,600MW (considering 1000 MW annual load growth for FY 2022-23). It was also highlighted that general consumption in the state of Punjab has increased unprecedentedly so the works listed above need to be approved to meet the power supply demand of the state in the coming season.

B.9.2 It was again highlighted that scheme may be brought up for discussion in upcoming NRPC (TP) meeting and then may be included in NRPC meeting after approval by NRPC (TP) meeting.

B.9.3 POWERGRID highlighted that timeline for May, 2022 is very ambitious and unlikely to be achieved.

B.9.4 Punjab highlighted that SPS scheme can be implemented as an alternative; however, requested for expeditious augmentation at Ludhiana.

NRPC Deliberations

B.9.5 NRPC concurred with the decisions of TCC that scheme may be brought up for discussion in upcoming NRPC (TP) meeting and then may be included in NRPC meeting after approval by NRPC (TP) meeting.

B.10 Laying of 400 KV OPGW links on Transmission lines (*agenda by PSTCL*)

TCC Deliberations

B.10.1 PSTCL informed that they have requirement for erection of OPGW on 2 no. 400 kV Transmission lines totaling 149 Kms. approx. and proposed for execution of this requirement by PGCIL through inclusion of these links in Package-I(a) or any other suitable project of PGCIL. The concerned 400 kV

Lines are following-

i. 400 kV D/C line from 400kV S/s Muktsar to 400 kV S/s Makhu
ii. 400 kV D/C line from 400kV S/s Makhu to 400 kV S/s Nakodar

B.10.2 It was informed that matter was deliberated during 18th meeting of TeST subcommittee of NRPC recently held on 10-08-2021 wherein POWERGRID informed that links may be included under Reliable Communication Scheme whose deadline will be extended to June – 2022 and the tariff for the investment made is to be shared by PSTCL as per CERC notification.

B.10.3 TCC recommended scheme for approval of NRPC.

NRPC Deliberations

B.10.4 NRPC approved the scheme as per deliberations in TCC.

B.11 Incorporation of left out OPGW links of HPSEBL in ULDC Package (*Agenda by HPSEBL*)

TCC Deliberations

B.11.1 TCC was informed that in the 18th TeST sub-committee meeting of NRPC held on dated 10.08.2021, HPSEBL requested PGCIL to include following transmission line for laying of OPGW to establish connectivity as redundant path for data reporting at SLDC/ALDC control centre Shimla.

Sr. No.	Name of Link	Voltage Level	OPGW	Route Length (In KM)
1.	Bassi-Hamirpur (Anu)	132kV	24F OPGW	50

B.11.2 The TeST sub-committee of NRPC has approved inclusion of this line for laying OPGW under Reliable Communication Scheme and the tariff for the investment made is to be shared by HPSEBL as per CERC notification.

NRPC Deliberations

B.11.3 NRPC approved the scheme as per deliberations in TCC.

B.12 Revision of Technical specification of Power Transformer in HVPNL as per CEA standard specifications (*agenda by HVPNL*)

TCC Deliberations

B.12.1 HVPNL informed that Standard Specifications of Technical Parameters for Transformers and Reactors 66kV and above voltage Class has been approved by Ministry of Power and memorandum has also been issued by HVPNL for uniform implementation of availability of vendors for supply of Power transformers in the Northern constituent's states.

B.12.2 PSTCL informed that they will adopt one nation one spec for reactors and 400kV class transformers. Further, most of the Transformers in PSTCL are in parallel operation hence change in specification (especially impedance) might not suit PSTCL. It was informed that comments have been forwarded to CEA also.

B.12.3 It was highlighted that these specifications may be for new installations and its applicability for old installation needs to be investigated. Hence, it was advised that further issue may be taken up with CEA

NRPC Deliberations

B.12.4 NRPC concurred with the deliberations held in the TCC meeting.

B.13 Frequent opening of Lines due to High Voltage (*agenda by POWERGRID*)

TCC Deliberations

B.13.1 POWERGRID highlighted regarding frequent switching operations at higher voltage level (765 kV and 400 kV) causes stress on Circuit breakers and other equipment, leading to premature ageing of the equipment. It was also highlighted that IEGC provides mechanism for the control of VAR injection/drawl by regional entities as a method of voltage control. Hence, opening of high voltage lines may be used as last resort and adequate reactive power planning need to be ensured.

B.13.2 NRLDC highlighted that line opening is always last resort during lightly loaded conditions. The lightly loaded condition is generally observed in winter. Further, RE evacuating lines are also at higher voltage in night. Hence, line opening at higher voltage is being done without any option. It was requested that reactor compensation may be planned more effectively.

B.13.3 CTU informed that reactor compensation is being taken care while planning which needs to be commissioned at the earliest. Further, it was highlighted that capacitor and reactor compensation need to be planned simultaneously and capacitor switching at lower voltage level must be closely monitored which will help in maintaining voltage profile.

NRPC Deliberations

B.13.4 NRPC concurred with the deliberations held in the TCC meeting.

B.14 Non-Auto mode on 400 kV Banala-Amritsar for live line OPGW installation (*Agenda by POWERGRID*)

B.14.1 Agenda was withdrawn by POWERGRID.

B.15 Power supply position of Northern region (Agenda by NRLDC)

TCC Deliberations

B.15.1 NRLDC representative mentioned following with regard to Power supply position of 2020-21 winter:

- Frequency was within band for more than 75% of time
- NR demand met was in the range of 46-52 GW

- Energy consumption was in the range of 900-1061 MUs/day
- Rajasthan (14441 MW), Uttarakhand (2372 MW), Himachal Pradesh (1931MW) and Jammu & Kashmir (2680 MW) recorded all time maximum demand in winter.
- Himachal Pradesh (34.11 MU) and Jammu & Kashmir (55.30 MU) met new record of highest energy consumption in winter.

B.15.2 Major challenges faced during winter months were also deliberated along with the suggested remedial measures. Utilities were requested to follow these measures to ensure safe and secure grid operation during winter. These are described in detail as follows:

Load generation portfolio management/ Minimizing grid indiscipline:

1. Meticulous load forecasting
2. Staggering of large load connection/disconnection
3. Flexing of internal generation
4. Synchronization of units at hourly boundaries may be delayed till frequency stabilizes
5. Portfolio management in advance

High voltage management

1. Switching off capacitor
2. Ensuring healthiness and availability of Bus and line reactor
3. Generator MVAr absorption/support as per capability curve
4. Promoting synchronous condenser operation of generating units to the possible extent
5. Tap optimization
6. Reliability study for switching off the lines & voltage relief under line opening for voltage regulation
7. Reactor planning studies and expediting the reactor already planned
8. Review overflux setting of transformers to avoid any undesirable tripping

Tripping during dense fog

1. Locate fog prone tripping area, cleaning and washing of insulators
2. Preventive action plan to avoid any mal-operation
3. Check all defense mechanism i.e. SPS, UFR, df/dt, Protection setting etc.

B.15.3 NRLDC representative stated that on average nearly 50-60 lines are being opened on daily basis during winter months. Plot depicting lines opened in Q3 and Q4 of 2020-21 were also presented in the meeting. This depicted the rising trend in opening of EHV lines with onset of winters from October onwards. Further, to mitigate the high voltage issues DTL had planned 7 reactors in their control area but out of 7 only 2 reactors are installed yet. Delhi SLDC was requested to expedite the commissioning of reactor and to share status of their progress. The status could not be updated from Delhi side as no representative from Delhi was present in the meeting.

B.15.4 MS NRPC expressed concern that 7 reactors were planned in 2018 and only 2 are installed yet, this delay is not appreciable and if Delhi is not able to expedite it then Delhi may approach PGCIL and explore the possibility of awarding the work to PGCIL on Tariff based bidding as per CERC norms to expedite the reactors installing project in Delhi control area.

B.15.5 PSTCL representative stated that 175MVAR of reactors at 400kV Dhuri and 400kV Nakodar Sub stations are already planned and will be commissioned soon.

B.15.6 Incharge, NRLDC stated that lot of units are under shutdown in Punjab on merit order so Punjab may explore the possibility of staggering the load to mitigate the high voltage issues. Moreover, ICTs are generally kept out by Punjab to avoid tripping due to overflux. So, instead of all these actions Punjab should take necessary actions as discussed in OCC/TCC/ NRPC meetings to control high voltage in their control area.

B.15.7 NRLDC representative stated that units of Tehri and Pong are operating in synchronous condenser mode, other generators and IPPs should also explore the possibility to operate in synchronous condenser mode and absorb MVAR as per their capability. Chamera-II units have also been successfully tested for synchronous condenser mode of operation.

B.15.8 AD Hydro, Budhil, Singoli HEPs were requested to operate in synchronous condenser mode. HP representative that OEM has been called at Larji, after OEM visit they would update the status in OCC forum.

B.15.9 Representative from Punjab stated that there are issues in High pressure air compressor of machine in Ranjeet Sagar HEP and this would be resolved by the month of November 2021. Punjab also resolved to the point that it would be operating machines of Ranjeet Sagar HEP in synchronous condenser mode by the end of November'21. TCC appreciated the efforts of Punjab.

B.15.10 NRLDC representative suggested that possibilities of operating Old conventional units (Thermal plants) in synchronous condenser mode may be explored. Units of Lehramohhabat/Ropar/Bhatinda may be considered for trial operation in synchronous condenser mode. Representative from Punjab SLDC replied that they would carry out the study, explore the possibilities and will give the feedback accordingly.

B.15.11 Incharge NRLDC suggested to conduct separate meeting with IPPs and other generating stations to discuss possibility of operation as synchronous condenser. MS NRPC concurred with view of Incharge, NRLDC. It was decided that separate meeting would be called under NRPC Sectt. to discuss and explore possibility of operating more generating units as synchronous condenser.

B.15.12 NRLDC representative stated that Real-time Fog monitoring application has been developed collaboratively by NRLDC/POSOCO and ISRO and same application was used in NRLDC Control room in last winter on pilot basis that helped significantly on close monitoring of Fog and to take proactive actions by Control room executives. NRLDC stated that NRLDC will share the Fog

monitoring tool with all the SLDCs heads. Monitoring fog proactively and taking the necessary actions will eventually reduce the tripping due to dense fog. Incharge, NRLDC also highlighted the utility of this portal by system operators and suggested SLDCs also to utilize the tool proactively.

B.15.13 NRLDC representative stated that generators should absorb adequate MVAR to mitigate the high voltage issue during night hour of winter. SLDCs were also asked to advise state generators to absorb MVAR as per their capability and grid requirements. NRLDC representative also presented examples of reactive power performance monitoring and tap optimization exercise carried out by NRLDC during last winter. SLDCs were also requested to study and carry out necessary tap change exercise at lower voltage levels at least twice in a year.

B.15.14 MS NRPC stated that as synchronous mode of operation by generating units is not commercial and not linked to any financial gain/incentive for generators, hence it is hard to encourage all generators to operate in the synchronous mode. MS NRPC stated that NRPC will put this as agenda in coming CERC-NRPC meeting which is scheduled in Oct'2021, to initiate some commercial operation for synchronous condenser mode and to provide incentive for operation in synchronous condenser mode to ensure the smooth operation of grid during high voltage time.

B.15.15 In-charge NRLDC stated that POSOCO has already approached to CERC and submitted the report on Reactive power management and Voltage control ancillary services, recommending incentive if support is provided from generator side in grid operation during high voltage time. The report is also available at POSOCO website (https://posoco.in/wp-content/uploads/2021/08/Reactive_Power_VCAS_CERC_22Mar2021-002.pdf)

NRPC deliberations:

B.15.16 NRLDC representative presented the gist of discussions of TCC meeting to NRPC forum. NRPC appreciated the concerns raised by NRLDC and asked members to take necessary actions as discussed in detail in TCC meeting.

B.15.17 **Low voltages and N-1 non-compliance in Rajasthan control area**

TCC Deliberations

B.15.18 NRLDC representative presented the issues related to Rajasthan faced during winter 2020-21. It was highlighted that severe low voltages are observed in Hindaun and Alwar area. Moreover, N-1 non-compliance was also observed at 765/400kV ICTs at Phagi and 400/220kV Ajmer, Merta, Chittorgarh and Jodhpur ICTs.

B.15.19 Rajasthan STU representative stated that 765/400kV 1500MVA ICT-3 at 765kV Phagi will be commissioned by Nov'21. Rajasthan stated that ICTs at 400kV Chittorgarh, 400kV Merta and 400kV Jodhpur are already planned and sent for approval of 500MVA capacity at each S/s. Rajasthan stated that, to mitigate the low Voltage issue at 400kV Alwar, LILO of 400kV Agra-Sikar line at Alwar was proposed by Rajasthan. Rajasthan has already approached to

PGCIL and will raise the proposal in Standing committee meeting.

B.15.20 NRLDC representative suggested that till implementation of these schemes, if considerable generation at Dholpur GTPS would be running, the voltages at Hindaun and Alwar would not be that low. Rajasthan representative replied that as DISCOMs do not agree due to costly power and due to non-availability of cheap gas, Dholpur GTPS would not be running.

B.15.21 NRLDC representative presented the power supply position during summer/monsoon 2021. The new records during these months were also presented.

B.15.22 Incharge, NRLDC stated that Northern region has met maximum during this season with cooperation of all stakeholders. It was highlighted that some of the states are keeping internal generation under outage in spite of over drawl from the grid. It was suggested that all states shall try and maximize their internal generation and follow strict grid discipline. Any issues related to coal shortage should be immediately flagged and taken up with respective authorities.

B.15.23 The opening of feeders shall be required in case of threat to grid security and non-adherence to RLDC instructions to manage over drawl by SLDCs/ DISCOMs. SLDC/Transmission Licensee may be directed (As per Clause 5.4.2 of IEGC) to open these radial feeders on the direction of NRLDC/SLDCs. All SLDCs/ISTS licensees/STUs need to adhere to instructions of NRLDC/ SLDC as the case maybe. All efforts would be taken to open the lines on rotational basis.

B.15.24 NRLDC representative stated that constraints observed in assessment by Delhi SLDC were at, 400/220kV Bamnauli and Mundka ICTs. It was discussed that due to radial feeding of load from most of the stations, reliability is reduced and requirement of SPS may be explored by Delhi SLDC to avoid complete load loss as was seen in few events in July 2021. With SPS, loss of power supply to super critical loads such as DMRC may be avoided. DMRC feeders' telemetry to also be made available to Delhi SLDC and NRLDC control rooms.

NRPC deliberations

B.15.25 Incharge, NRLDC stated that states need to improve their load-generation balance during evening hours especially 17:45-18:30 hrs. Outage of 800/1000MW could lead to severe disturbance in grid during this interval. Hence, it is necessary that states strictly draw as per their respective schedules especially during evening time and try and match load-generation as much as possible.

B.15.26 **N-1 non-compliance at RE stations**

TCC Deliberations

B.15.27 It was discussed that subgroup has already been formed under CEA to discuss issues related to planning criteria including that for renewable generation and it would be covered by the subgroup. Meanwhile, sub-group formed at NRPC level as approved in 44th TCC and 47th NRPC meeting may also take up this

issue during their discussion.

B.15.28 POWERGRID representative stated that cost estimate for SPS at Bhadla(PG) has already been approved and tender was floated but no bids were received, therefore, tender will be floated again. Contract finalization is getting delayed as no response from the vendors were received. TCC expressed concern on the slow progress of work and asked POWERGRID to expedite the work.

B.15.29 POWERGRID representative stated that 6th ICT at Bhadla(PG) would be commissioned by 1st week of Sept'21 and 7th ICT would be commissioned in Oct'21. Rajasthan representative stated that SPS is under consideration at 400kV Bhadla(Raj) and no SPS is planned at 400kV Akal.

NRPC deliberations

NRPC noted the discussions of TCC.

B.16 Congestion management- Computation& Monitoring of ATC/TTC by State control area (Agenda by NRLDC)

TCC deliberations

B.16.1 State-wise import capability constraints were discussed in the meeting:

State	Available Transfer Capability (ATC) (MW) (TTC-RM)	Limiting Constraints	Discussion in TCC meeting
Punjab	**7300**	N-1 contingency of 400/220kV Rajpura, Nakodar, Moga and Ludhiana ICTs . Punjab SLDC stated that loading has slightly increased at 400/220kV Ludhiana after bus-split at Moga.	Punjab is assessing its ATC on regular basis in consultation with NRLDC and uploading it at its website. ATC/TTC of Punjab state control area was revised on several occasions in June and July 2021 due to outage of Talwandi Saboo generating units. SPS have been implemented at Rajpura and Nakodar.
UP	**13200**	N-1 contingency of 400/220kV Sohawal (PG), Gorakhpur (UP), Sarnath, Obra and Agra(PG) ICTs, 400/132kV Mau ICTs	UP is assessing its ATC on regular basis in counsulation with NRLDC and uploading it at its website.
Rajasthan	**5900**	N-1 contingency of 400/220kV Chittorgarh, Merta, Jodhpur ICTs, Bhilwara and Ajmer ICTs	Rajasthan is assessing its ATC and uploading at its website. NRLDC suggested Rajasthan for ICT augmentation/ SPS implementation at constrained stations. Rajasthan STU to expedite SPS implementation.
Haryana	**7900**	N-1 contingency of 400/220kV ICTs at Deepalpur,	Haryana is assessing its ATC on regular basis in consultation with NRLDC and uploading it at its website. NRLDC recommended ICT

		Kurukshetra(PG), Sonepat(PG), Panipat	augmentation/ SPS implementation at Deepalpur. Haryana STU to expedite SPS implementation.
Delhi	**6500**	N-1 contingency of 400/220kV Mundka and Bamnauli ICTs.	ATC is not being uploaded in website, only violation of ATC is being shown. Delhi to expedite implementation of SPS at Mundka and Bamnoli ICTs.
J&K and Ladakh	**1550**	N-1 contingency of 400/220kV Amargarh ICTs	Not assessing its ATC
HP	**1100**	N-1 contingency of 400/220kV Nallagarh ICTs and 220kV Nallagarh-Uperanangal D/C	HP started its ATC assesment from previous two months in consulation with NRLDC
Uttarakhand	**1500**	N-1 contingency of 400/220kV Dehradun and Kashipur ICTs	Not assessing its ATC

B.16.2 N-1 violations at these stations were presented in the meeting by NRLDC representative and asked states to ensure loading at these stations below their N-1 contingency limit.

B.16.3 Representative from Uttarakhand and J&K stated that they would be assessing and sharing ATC/TTC of respective control area from next month (Oct'21). Uttarakhand representative also stated they are already in touch with NRLDC officers and have also shared few changes in All India basecase.

B.16.4 Incharge, NRLDC highlighted importance of ATC/TTC assessment and asked all states to timely share the same with NRLDC and NRPC. All states were also asked to make sure that net power requested is within their ATC limits. SLDCs should also submit their feedback in this regard to STU to take necessary actions to increase their ATC/TTC limits.

NRPC deliberations

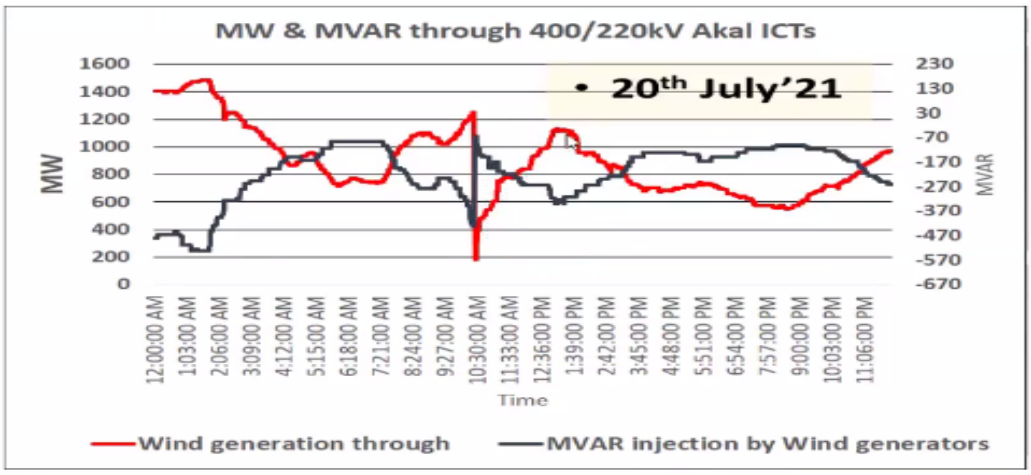
B.16.5 NRPC concurred the deliberations of TCC. NRPC asked Uttarakhand, J&K and Ladakh UTs to assess ATC/TTC limits of their control area and share with NRLDC/NRPC in Oct/Nov 2021.

B.17 Low Voltage Ride Through (LVRT) capability of Renewable generators (Agenda by NRLDC)

TCC deliberations

B.17.1 NRLDC representative presented few instances where it can be seen that possibly there was LVRT non-compliance by intra-state wind generators in Rajasthan. In event on 20th Jul 2021, it can be seen that wind plant is drawing MVAr from the grid. After the grid event at 10:30 a.m., it can be seen that there is delay in generation recovery at Akal end indicating non-compliance of LVRT. Rajasthan was asked to take up LVRT compliance at wind generating stations

in their control area.



B.17.2 Representative from Rajasthan stated that they had conducted meeting with Wind plant on 4th Aug'21 and found around 2500MVA wind capacity are LVRT non-compliant. Rajasthan SLDC was asked to take lead and prepare estimated cost of retrofitting.

B.17.3 MS NRPC stated that the wind generators commissioned before 2014 can't be obligated with regulation of 2014 but as LVRT compliance is very important for secure grid operation so cost of retrofitting for LVRT of those wind plants (before 2014) may be funded from PSDF.

B.17.4 I/C NRLDC stated that Rajasthan may approach to SERC/CERC or MNRE for green energy fund for funding the cost of retrofitting for LVRT compliance of these wind plants (before 2014). Rajasthan has not approached for PSDF funding even after discussion on the issue in last 2-3 meetings.

B.17.5 TCC deliberated that Rajasthan should prepare DPR on behalf of turbine developers for getting allocation from govt. funding. Based on request of Rajasthan, TCC may also request Member (GO &D), CEA and MoP for funding as there were no regulatory provisions for wind turbines installed earlier.

NRPC deliberations

B.17.6 MS NRPC enquired from Rajasthan representative regarding the actions already taken at their end. Rajasthan representative informed that they had raised the issue with developers, however the big challenge which remains is that the old turbines are not able to provide cost estimates for LVRT compliance.

B.17.7 MS NRPC stated that without proper cost estimates no action can be taken at TCC/NRPC level.

B.17.8 Incharge, NRLDC stated that till the time proper cost estimates are available, mapping of wind generators may be done as per their locations. If there is risk of losing 2.5GW LVRT non-compliant wind generators, then by other means such as protection settings etc. generation loss may be minimized by Rajasthan SLDC in coordination with NRLDC/ NRPC.

B.18 Issues related to Power System Operation of J&K/Ladakh (Agenda by NRLDC)

TCC deliberations

B.18.1 NRLDC representative presented following issues related to J&K U/T:

- Expediting commissioning of 2nd ckt of 220kV New Wanpoh-Mirbazar and restoration of 220kV Kishenpur-Ramban.
- 2X315 MVA ICTs have been commissioned at New Wanpoh, however till date only one out of the six bays have been utilised till date.
- As per the agreed quantum relief for NR, total target in respect of J&K for UFR and df/dt are 336 MW and 270 MW respectively. Confirmation on relief quantum is yet to be received from J & K.
- Expediting intra-state transmission projects in J&K under Prime Minister Development Package-2015
- N-1 non-compliance of Baglihar HEP stage-I & II (total 900 MW). Expediting the coupling of two buses of Baghlihar stage-1 & 2 to minimize the probability of generation loss (450 MW)
- One Main and transfer bus scheme instead of double main transfer (DMT) at major 220kv stations
- Mock black start exercises of URI-I & URI-II HEP, Lower Jhelum HEP is yet to be conducted.
- Need for establishment of SLDC Control Room (manned 24x7 by trained grid operators) in the UT of Ladakh
- Allocation of power from Central Generating Stations to Ladakh
- Adequate reactive compensation i.e. reactor & capacitors shall be planned
- Tree/vegetation cutting may be carried out before onset of winters to minimize tripping even in case of early snowfall
- Delayed clearance of fault captured in most of the grid events in UTJ&K/Ladakh control area.
- Availability of automatic DR (disturbance recorder) and station event logger needs to be ensured for all the 220 kV and above stations
- Data for monthly PoC case to calculate transmission losses and charges to be shared with NRLDC/NLDC

B.18.2 J&K U/T representative informed following:

- 95%-96% of the grid in J&K control area is having the facility of df/dt and UFR and within one month it would be operational after financial assistance was received from PSDF. NRLDC requested J&K to share the details with NRLDC/NRPC.
- 2nd ckt of 220kV New Wanpoh-Mirbazar would be commissioned within 20 days (2nd week of Oct'21) and restoration of 220kV Kishenpur-Ramban would be accomplished within 2 months (1st week of Nov'21).
- New stations are coming with double main and transfer schemes and for the stations where space is available, one bus would be added to one bus and transfer scheme. The cost for the same would be included in next year's capex budget.

- Mock Black start exercise of URI-I & URI-II HEP, Lower Jhelum HEP will be raised in internal meeting of J&K and details will be shared with NRLDC.
- Generally, tree cutting is done in November and April, however based on past events of snowfall in November, tree cutting would be done in October and April months.
- N-1 non-compliance of Baglihar HEP Stage-I & II and expediting coupling of two buses of Baglihar stage-1 & 2 would be taken up with J&K PDD (Generation dept.).
- Representative from J&K stated that JERC has been established at Jammu.

NRPC deliberations

B.18.3 NRPC concurred the deliberations of TCC. J&K representative was not available for comments on the remaining issues.

B.19 Frequent tripping of 2*3000MW 800kV HVDC Champa-Kurukshetra

TCC deliberations

B.19.1 NRLDC representative stated that HVDC Champa-Kurukshetra is an important 2*3000MW capacity link between NR and WR and its frequent tripping has been observed in each month due to one or another reason such as mal-operation/sensitive protection setting in the HVDC control either at Champa or at Kurukshetra end. HVDC link has been used to transfer up to 4500MW power from WR to NR and in future, utilization at rated capacity may be required on regular basis during high demand periods of NR. Frequent outage of this link during summer months/ peak demand period of Northern Region may adversely impact the reliability and security of the grid.

B.19.2 PGCIL representative stated that Shutdown of 800kV HVDC Champa-Kurukshetra is already applied in Oct'21 and most of the Control protection work/issue would be resolved after that. Upgradation of GE control protection software would resolve most of the issues.

B.19.3 TCC expressed concern on frequent tripping of Champa-Kurukshetra poles and asked POWERGRID to immediately take the corrective actions.

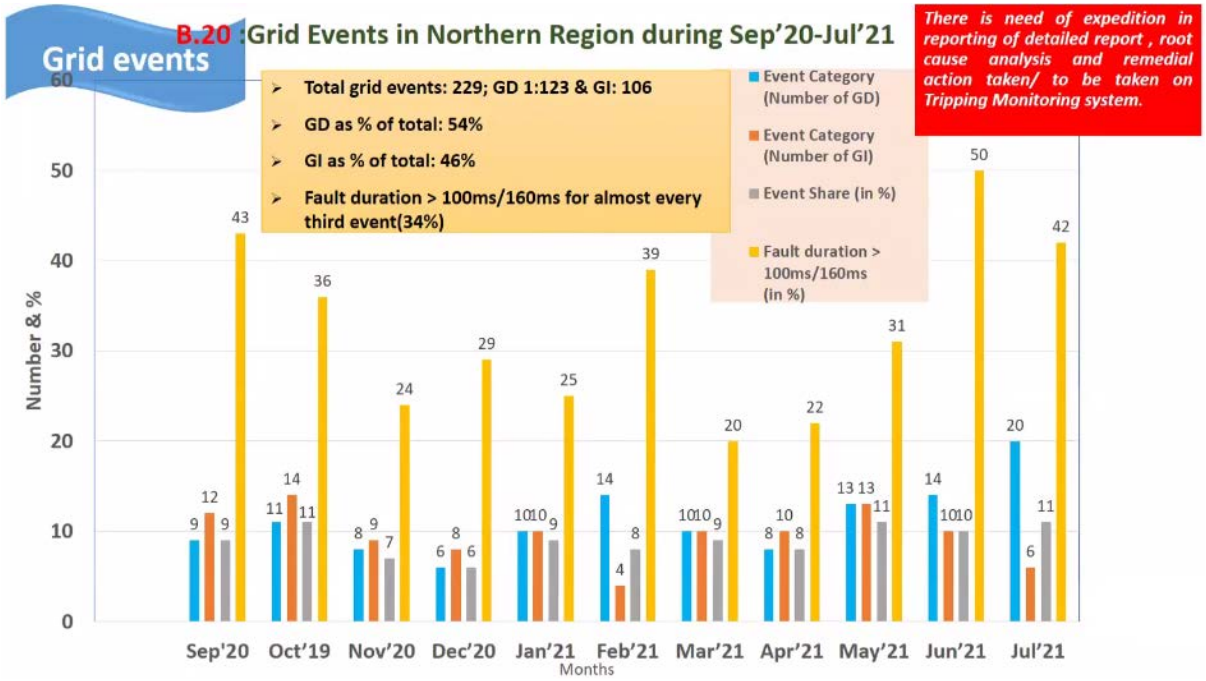
NRPC deliberations

B.19.4 MS NRPC asked POWERGRID to take the necessary actions and carry out software upgradation work as early as possible and highlighted the importance of Champa-Kurukshetra line for Northern region. NRPC forum expressed concern on frequent tripping of Champa-Kurukshetra poles and asked POWERGRID to immediately take the corrective actions.

B.20 Grid Events in Northern Region during Sep'20-Jul'21

TCC deliberations

B.20.1 NRLDC representative presented statistics related to grid events in Northern region.



B.20.2 TCC deliberated that NRLDC has successfully implemented the web portal for online submission of tripping related information. However, there is need to expedite reporting of detailed report, root cause analysis and remedial actions taken/ to be taken on Tripping monitoring system.

NRPC deliberations

B.20.3 NRPC concurred the deliberations of TCC and asked utilities to ensure timely submission of tripping related information at NRLDC tripping portal.

B.21 Frequent tripping in J&K control area

TCC deliberations

B.21.1 NRLDC representative stated almost in all grid events in J&K control area delayed clearance of fault is observed. There also seems to be issue of protection settings coordination at J&K substations which are not regularly discussed in OCC and PSC meetings due to absence of J&K representatives.

B.21.2 Representative from J&K stated that root cause analysis for various tripping is being done, a committee with PGCIL engineers have been made to analyse the issues, problem in Ziankote was identified and resolved. Momentarily tripping occurs due to wind storms, tilting of tall trees.

B.21.3 Representative from J&K stated that insulator failure at Amargarh and Wagoora was reported. He further added that Insulator replacement and conductor replacement to HTLS is planned for 220kV Wagoora-Ziankote line.

NRPC deliberations

B.21.4 NRPC concurred the deliberations of TCC and asked J&K to take necessary actions to minimise frequent tripping of transmission lines.

B.22 Summary of load crash events during Thunderstorm/Dust storm

TCC deliberations

B.22.1 It was deliberated that high frequency for considerable time was experienced in the grid during load crash events due to heavy under drawl by states. Large number of tripping incidents observed during these events. Several actions including warning/alert messages were issued to SLDC Control Centers. During 184th OCC meeting held in June 2021, NRLDC representative suggested that Standard Operating Procedure may be developed by SLDCs so that in case of such load crash events actions are taken in accordance with SOP

B.22.2 It was observed that during weather-initiated load throw off, some generating units under state control area are ramped down up to only 70- 75% of their capacity. It has been previously deliberated in several OCC/TCC/NRPC meetings that states shall ensure that generators are backed down up to 55% or 60% (if some design issue). SLDCs were also advised to approach SERC in this regard.

B.22.3 In TCC meeting, Punjab representative stated that continuous underdrawl is also because DISCOM consent is required before selling in real-time market. However, discussion is going on with PSPCL to minimise underdrawal during load crash by asking generators to back down and selling power in RTM.

B.22.4 PSPCL representative stated that bids were not cleared during selling power in real-time market and load of Punjab is heavily weather dependent during paddy season. These posed as challenges for managing underdrawl during load crash events.

B.22.5 MS NRPC advised Punjab to bid based on experience so that bids are cleared and deviations can be minimised and also asked Punjab to focus on load forecasting which would also help to manage their portfolio in a better manner. He also suggested that SLDCs should utilise real-time market better and may have separate REMC/ forecasting desk in their SLDCs to continuously monitor and suggest actions to control room operators.

B.22.6 TCC deliberated that Standard Operating Procedure may be developed by SLDCs so that in case of such load crash events actions are taken in accordance with SOP. With ever increasing RE penetration, forecasting and renewable energy resource management has become more challenging and should be taken up on priority by all SLDCs.

NRPC deliberations

B.22.7 NRPC concurred the deliberations of TCC and agreed that SOPs may be developed by SLDCs which would assist SLDCs for action in real-time.

B.23 Automatic Generation control (AGC) (Trial run of 24x7 continuous operation of Automatic Generation Control (AGC) from 20nd July 2021)

TCC deliberations

B.23.1 Trial run of 24x7 continuous operation of Automatic Generation Control (AGC) of identified regional entity generators has commenced from 20th July 2021. AGC will help in automatic and efficient frequency control. Depending upon ACE of each region, continuous signals for frequency control and / or area interchange control will be sent every few seconds from NLDC to different interstate generating stations situated pan India.

B.23.2 TCC noted the information.

NRPC deliberations

B.23.3 NRPC noted the information.

B.24 Important regulatory / regulatory related change

TCC deliberations

B.24.1 Following important regulatory changes were informed to the members:

- Sharing of transmission charges & losses regulation, 2020
- Pilot project on 5-minutes scheduling, metering and settlement in Tehri HEP w.e.f. 27/11/2020
- Implementation of Regulation 7(10)(b) as amended vide DSM Fifth Amendment Regulations

B.24.2 TCC noted the information.

NRPC deliberations

B.24.3 NRPC noted the information.

B.25 Performance of Grid connected RE plants

TCC deliberations

B.25.1 NRLDC representative presented the reactive power performance of solar plants commissioned at Bhadla and operation in different modes of operation (voltage control, p.f. control, Q control). Non-compliance of inverters at 50 deg Celsius was also highlighted. Following major issues encountered while registering RE plants were presented:

- Plants operating between +0.95 p.f. and -0.95 p.f., however, voltage not specified, so plants are absorbing MVAR even in case voltage <1 p.u.
- Some plants are complying with reactive power requirement at 40deg C but not complying at 50deg C.
- Need for capacitor installation at plant if reactive power capability not as per regulations
- Plant to operate in Voltage control mode, such that it generates / absorbs reactive power as required (some plants are already operating)

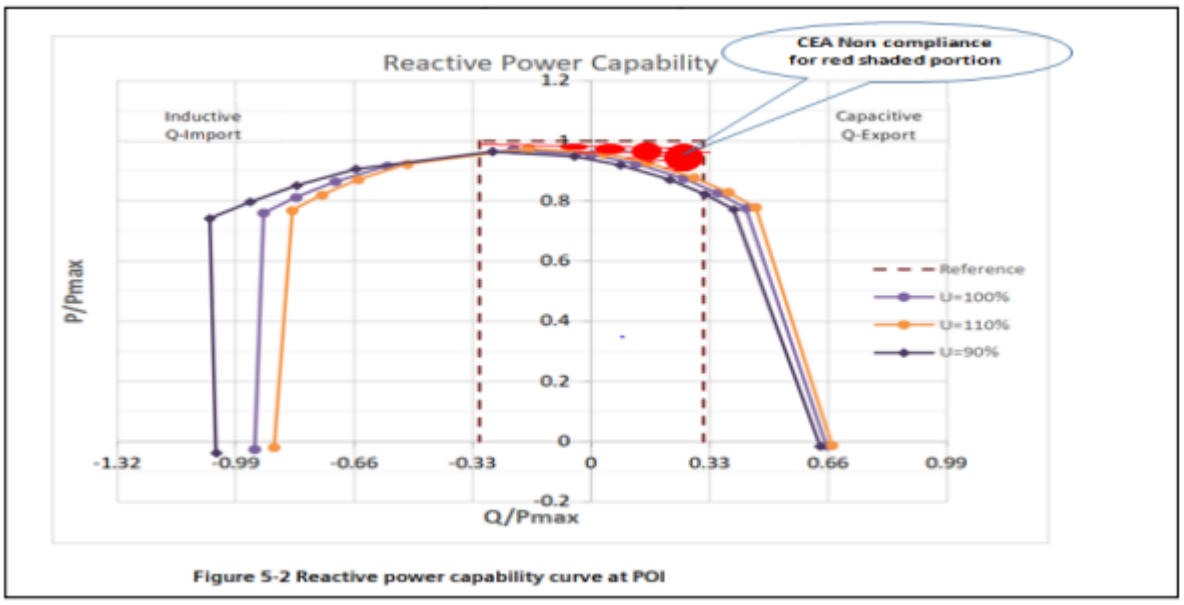


Figure 5-2 Reactive power capability curve at POI

B.25.2 CTU representative stated that a meeting was organised on 22nd Sept'21 with CEA and it was decided in meeting that there will be a working group, the group will submit the recommendations on RE compliances as per CEA standard for connectivity to the grid and issue necessary clarifications.

B.25.3 MS NRPC enquired if temperature is mentioned or not in CEA standard for connectivity to the grid 2007, Amendment 2013 & 2019 Regulations and it was deliberated that no specific temperature is mentioned as ambient temperature in case of RE.

B.25.4 NRLDC recommended that RE plants may be operated in voltage control mode to improve the voltage profile at ISTS POI. CTU suggested that it may also be recommended as a part of working group recommendations.

B.25.5 TCC suggested that working group constituted by Member (GO&D) is already working on the same and may come up with recommendations to resolve the issues. It was also suggested that sub-group constituted at NRPC level may also provide their recommendations to the sub-group.

NRPC deliberations

B.25.6 NRPC concurred the deliberations of TCC and suggested that sub-group constituted at NRPC level may provide their recommendations to the sub-group.

B.26 Important order on RE curtailment

TCC deliberations

B.26.1 NRLDC representative stated that in recent order of APTEL in petition APL 197 of 2019 NSEFI Vs TN, APTEL directed following in regards of RE curtailment:

I. For Future, any curtailment of Renewable Energy shall not be considered as meant for grid security if the backing down instruction were given under following conditions:

a. System Frequency is in the band of 49.90Hz-50.05Hz

b. Voltage level is between: 380kV to 420kV for 400kV systems & 198kV to 245kV for 220kV systems

c. No network over loading issues or transmission constraints

d. Margins are available for backing down from conventional energy sources

e. State is overdrawing from the grid or State is drawing from grid on short-term basis from Power Exchange or other sources simultaneously backing down power from intrastate conventional or non-conventional sources.

II. As a deterrent, the curtailment of Renewable Energy for the reasons other than grid security shall be compensated at PPA tariff in future. The compensation shall be based on the methodology adopted in the POSOCO report. POSOCO is directed to keep the report on its website.

III. The State Load Dispatch Centre (SLDC) shall submit a monthly report to the State Commission with detailed reasons for any backing down instructions issued to solar power plants.

IV. The above guiding factors stipulated by us would apply till such time the Forum of Regulators or the Central Government formulates guidelines in relation to curtailment of renewable energy.

B.26.2 TCC noted the information.

NRPC deliberations

B.26.3 NRPC noted the information.

B.27 Constitution of a Steering Committee to monitor and implementing a Pilot Project on Battery Energy Storage System (BESS) and other activities

TCC deliberations

B.27.1 NRLDC representative stated that Ministry of Power (MoP) decided to take up a Pilot Project on Battery Energy Storage System (BESS) for Hybrid usages like ancillary services, ramp up and ramp down, meeting peaking requirement, RE balancing needs, deferment of the transmission system and optimum utilization of the existing transmission systems etc. In this direction, MoP office order vide No.23/16/2020-R&R-(Part 1) dated 16th July 2021 formulated Steering Committee to monitor and implementing a Pilot Project on Battery Energy Storage System (BESS) and other activities.

B.27.2 Composition of steering committee and terms of reference were presented in the meeting.

B.27.3 TCC noted the information.

NRPC deliberations

B.27.4 NRPC noted the information.

B.28 Primary Frequency response test in Northern region

TCC deliberations

B.28.1 It was deliberated that M/s SOLVINA and SIEMENS were awarded the work of testing generator PFR. As on (27th Sep 2021), M/s Solvina has performed PFR testing of 30 units at 10 nos of plants in Northern region.

B.28.2 TCC noted the information.

NRPC deliberations

B.28.3 NRPC noted the information.

B.29 Facilitation of RE integration to Grid

TCC deliberations

B.29.1 NRLDC representative described the targets set by Govt. of India for renewable integration to the grid. Integration of large scale RE with grid is a challenging task. Hon'ble commission and CEA has come up with various provisions to facilitate the RE integration with grid ensuring safety and reliability of grid. In this direction, NLDC, POSOCO has also formulated a procedure for registration and first time charging of RE plants, for which they are required to submit requisite data details regarding simulation study. The procedure & other details for registration and first time charging is available on each RLDC website.

B.29.2 State/SLDCs were also requested to facilitate RE integration at intra-state system ensuring all the CEA/CERC/SERC compliances before final approval. SLDCs may also refer POSOCO procedure for RE registration and first time charging of RE plant.

B.29.3 With cooperation from all stakeholders, Northern region was able to commission the plants, which were planned to be added before 15th August 2021. Three (3) nos of RE stations comprising of 725 MW were commissioned and charged during 2nd to 15th August 2021. NRLDC would like to thank all stakeholders for their cooperation, which made sure that India was able to achieve 100GW renewable capacity (excluding large hydro) before 15th August 2021.

B.29.4 TCC noted the information.

NRPC deliberations

B.29.5 NRPC concurred the deliberations of TCC

B.30 Winter Preparedness 2021-22

TCC deliberations

B.30.1 The challenges faced during winter 2020-21 were highlighted in detail in agenda 15.

B.30.2 TCC advised all members to take actions as deliberated in agenda 15 to ensure smooth and secure grid operation during winter 2021-22.

NRPC deliberations

B.30.3 NRPC concurred the deliberations of TCC and asked all members to take actions as deliberated in agenda 15 to ensure smooth and secure grid operation during winter 2021-22.

B.31 PTCUL Telemetry Issues

TCC deliberations

Non-availability of Real-Time data from PTCUL

B.31.1 NRLDC representative stated following telemetry issues from PTCUL are pending since long:

- As per details submitted by PTCUL out of 51 Sub-Station/Generating Stations data from only 28 Sub-stations are integrated at SLDC.
- Matter regarding non-availability of telemetry has been taken up with PTCUL in various forums.
- During previous meetings Director (Operations) PTCUL informed that they are in process of award of tender for installation of RTUs and they will segregate RTU and OPGW work in the tender and give priority to RTU replacement.
- In addition to the above it is to inform that many feeders are not integrated even at the locations where RTUs are installed.

B.31.2 In TCC meeting, 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.

B.31.3 TCC expressed concern on the delay and asked PTCUL to expedite the work.

ICCP integration between PTCUL and Backup NRLDC

B.31.4 During SCADA upgradation at NRLDC Backup NRLDC at Kolkata was also established. As per system architecture all states shall be connected through ICCP to main and Backup NRLDC.

B.31.5 It was informed that PTCUL is still not connected to Backup NRLDC. It was requested to take up with OEM for ICCP integration with Backup NRLDC.

B.31.6 Further issue of ICCP integration of ICCP integration with Backup NRLDC was also discussed in 18th TeST Meeting and there was no update from PTCUL regarding the same. It may be noted that during operation of Backup Control centre, data of PTCUL is not available at Backup NRLDC

B.31.7 Representative from PTCUL informed that they would establish the ICCP communication with their SCADA upgrade project. The work is delayed due to delay in funding process. After detailed discussion it was agreed that PTCUL should establish the connection on priority basis. PTCUL agreed for the same

and confirmed the same would be completed at the earliest.

NRPC deliberations

B.31.8 NRPC concurred the deliberations of TCC and asked PTCUL to expedite the work.

B.32 Non-availability of Reliable / Redundant Communication System for PTCUL, SLDC

TCC deliberations

B.32.1 SLDC Uttarakhand is connected to NRLDC through radial network from Dehradun SLDC – Roorkee and all services like ICCP, PMU/PDC and VOIP are working on this. Any issue in this link leads to outage of Voice and Telemetry data communication between SLDC Uttarakhand and NRLDC.

B.32.2 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 where PTCUL/POWERGRID assured that reliable communication link would be available in 6 months.

B.32.3 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. POWERGRID mentioned that after completion of OPGW works by PTCUL on Majra (Dehradun SLDC) to Dehradun PG line, POWERGRID will immediately integrate the communication equipment and establish redundant communication route for Dehradun SLDC.

NRPC deliberations

B.32.4 NRPC concurred the deliberations of TCC and asked PTCUL to expedite the work.

B.33 J&K Telemetry Issues

TCC deliberations

B.33.1 NRLDC representative stated that real-Time data availability from Jammu and Kashmir is very poor. There is zero visibility of data from many J&K stations.

B.33.2 J&K representative informed that during last one month around 10 links out of total 77 has been established and they have the remaining amount in CAPEX for this financial year and would release complete payment to POWERGRID in some time.

B.33.3 POWERGRID informed that they would start pending work as and when payment is made by J&K. Further, they informed that even if communication link is established RTU data will not report to SLDC since CT/PT cables to RTU are removed at many locations.

B.33.4 TCC expressed concern on the slow progress of the work and asked POWERGRID and J&K to resolve the issues at the earliest to make the

telemetry available. Without proper telemetry, system operation will remain a big challenge.

B.33.5 J&K confirmed they will resolve the issues mutually with POWERGRID so that data starts reporting to SLDC/ NRLDC.

NRPC deliberations

B.33.6 NRPC concurred the deliberations of TCC and asked POWERGRID and J&K to resolve the issues at the earliest to make the telemetry available.

B.34 Non-Availability / Reliability of Telemetry

TCC deliberations

B.34.1 In order to have proper visualization and Situational awareness to control room operator for ensuring reliable grid operation, uninterrupted availability of telemetry is essential. It is essential to ensure 100% availability of the data from all the Sub-stations. However, it is seen that data is highly intermittent even for some of the 400kV/ 765kV Substations.

B.34.2 As per CERC communication regulation also it is required that data shall be available to control centre with dual channel and availability of data with redundant channel shall be 100%. However, even after deliberation in previous many meetings, matter is still pending.

B.34.3 In TCC meeting, all concerned confirmed that they will take up for rectification of telemetry issues and will arrange for improvement of telemetry at SLDC/RLDC.

NRPC deliberations

B.34.4 NRPC concurred the deliberations of TCC and asked all concerned to carry out rectification of telemetry issues.

B.35 Establishment of dedicated backup Control Centers for SLDC

TCC deliberations

B.35.1 In SCADA upgrade/replacement project under ULDC Phase-II concept of backup control centers was introduced. However, NRLDC /UPPTCL/Jammu and Kashmir has dedicated backup control centers. Whereas other SLDCs are backup of each other as given below:

S.No	Main SLDC	Backup
1.	Delhi	Rajasthan
2.	Rajasthan	Delhi
3.	Haryana	Himachal Pradesh
4.	Himachal Pradesh	Haryana

5.	BBMB	Punjab
6.	Punjab	BBMB

B.35.2 Database modelling of one SLDC has to be done by other SLDC, but due to dependency on other SLDC database, modelling work is delayed leading to non-synchronization of data between Main and backup Control centers. Keeping in view of the above constraints, it is essential that separate dedicated backup control centers should be established by these states.

B.35.3 MS NRPC opined that this is very critical and this philosophy will be discussed at TeST meeting in detail and will be put up in next TCC/NRPC meeting for approval. TCC agreed for the same.

NRPC deliberations

B.35.4 NRPC concurred the deliberations of TCC.

B.36 Regularization of newly added OPGW Links of PSTCL under Package 1(a) (Agenda by POWERGRID)

B.36.1 TCC was informed that 18th TeST sub-committee approved the addition of the OPGW links mentioned below under the Fibre Optics Communication System (Additional Requirement) scheme.

B.36.2 The following links to be regularized under package 1(a) scheme.

Sr. No	Name of links	Line length (Km)	Addition / deletion
1	220 kV Jamsher 220 - Jadla	67.326	Addition
2	LILO of 132 kV ASPH-I 132 Kv - ASPH II 132 at Anandpur Sahib 132	2.993	Addition
3	LILO portion of Jamsher 220-Jadla 220 at Goraya220	7.490	Addition
4	220 kV Jadla 220 - GGSSTP(RTP) 220	43.395	Addition
5	LILO of 220 kV Wadala Granthian 220 Kv - FC Churian 220 at Kotli Surat Mali 220	9.080	Addition
6	LILO of 220 kV FC Churian 220 - Civil Lines Asr 220 at Majitha	5.440	Addition
7	LILO of 220 kV Civil Lines Asr 220 - Khassa 220 at Chugawan 220	5.848	Addition
8	LILO of 220 kV Sultanpur 220 - Patti 220 at Chola Sahib 220 Kv	4.760	Addition
9	LILO of Talwandi Bhai- Ferozpur at Sadiq	23.605	Addition
10	LILO of 220 kV Ablowal 220 - Rajila 220 at Passiana	1.102	Addition
11	LILO of 220 kV Rajila 220 - Patran 220 at Kakrala	3.389	Addition
12	LILO of 220 kV Rajila 220 - Patran 220 at Patran	6	Addition

Sr. No	Name of links	Line length (Km)	Addition / deletion
13	LILO of 220 kV Patran 220 - Sunam 220 at Bangan 220	13	Addition
14	LILO of 220 kV sunam 220 - Mansa at Jhunir 220	33.585	Addition
15	LILO of 220 kV Mansa 220 - GHTP at Dhanoula	37.89	Addition
16	LILO Portion of GHTP 220 - Mansa at Talwandi Sabo	29.122	Addition
17	LILO Portion of GHTP 220 - Mansa at Mour	9.475	Addition
18	LILO of Muktsar 220 - Bathinda 220 at Malout 220	24.035	Addition
19	LILO of Muktsar 220 - Bathinda 220 at Badal 221	25.457	Addition
20	LILO of 220 kV Sahnewal 220 - GGSSTP LILO Point – Kohara 220	2.843	Addition
21	LILO of 220 kV Sahnewal 220 - GGSSTP at Gaunsgarh 220	16.685	Addition

Name of Link			New Length (in kms)	Voltage Level (in Kv)	Route Length (in kms)	Remarks
Link Name as per LOA	From	To				
Bilaspur 132 - Doraha 132 - Sahnewal 220	Bilaspur 132kV	Sahnewal 220kV	21	132	21	Modified, (Doraha deleted)
MPH-I-II-III-IV - Shri Har Gobindpur - Wadala Granthian 220	MPH-I-II-III-IV	Wadala Granthian 220kV	80	132	80	Modified, (Sri Har govindpur deleted)

B.36.3 It was also informed that these additional links, as requested by PSTCL, are being put up for post facto approval of NRPC for inclusion under Fibre Optic Communication Scheme (Additional Requirement) - Package 1(a) and most of the works have already been completed, and balance installation works/commissioning are also likely to be completed shortly.

B.36.4 TCC recommended scheme for approval of NRPC.

NRPC Deliberations

B.36.5 NRPC approved the scheme as per deliberations in TCC.

B.37 Implementation and funding of Unified Load Despatch and Communication (ULDC) Phase–III (SCADA/EMS upgradation Project) (Agenda by POWERGRID)

TCC Deliberations

B.37.1 TCC was apprised that as decided in the 18th TeST sub committee meeting, upgradation/replacement of existing SCADA/EMS system (ULDC Phase-III) for all SLDCs of Northern Region except Himachal Pradesh would be implemented by POWERGRID in Tariff mode. The Tariff for the same shall be recovered as per existing CERC regulations. The scheme shall become part of existing Commercial Agreement signed for ULDC Projects.

B.37.2 NRLDC will implement the project independently along with Himachal Pradesh (as per MoU signed between them) in CAPEX mode.

B.37.3 Representative from HVPNL mentioned that, this is very critical project for Grid operation and should be implemented in unified manner as done in earlier ULDC Phases (I & II) wherein SCADA/EMS System was implemented in all RLDCs and their SLDCs in integrated manner. He further referred CERC orders for implementation of the ULDC Projects in integrated manner for getting economy of scale and avoid integration issues at later stage.

B.37.4 MS, NRPC also urged POSOCO to become a member of the committee constituted by POWERGRID for finalization of technical specifications to ensure uniformity. However, NRLDC representative did not agree and mentioned that NRLDC would restrict itself within its own tender only.

B.37.5 TCC recommended scheme for the approval of NRPC.

NRPC Deliberations

B.37.6 NRPC approved the scheme as per deliberations in TCC.

B.38 Unreliable power evacuation from Lalitpur Power station (3x660 MW) (agenda by UPPTCL)

NRPC Deliberations

B.38.1 It was apprised that in 48th NRPC meeting, it was decided that a separate meeting may be held with participation from CTU, UPPTCL, POSOCO, Lalitpur TPS and CEA so as to come out with some alternative path for anchoring of LPGCL generation.

B.38.2 UPPTCL vide letter dt. 24.09.2021 has mentioned that desired meeting among the constituents has not been held. Resolution in 49th NRPC meeting may be taken for arranging the above meeting.

B.38.3 NRPC decided that UP may approach CEA's upcoming NRPCTP forum for the issue.

C. COMMERCIAL ISSUES

C.1 Default in payment of outstanding dues and surcharge by beneficiaries

TCC Deliberations

C.1.1 Representative of THDC informed that BRPL and BYPL have submitted a liquidation plan and have been making regular payments. Uttar Pradesh has also made some payments and their overdue amount is around 70 crores. J&K is the major defaulter with maximum outstanding dues.

C.1.2 Representative of J&K informed that loan has been sanctioned under Atmanirbhar Package Tranche-2, of which Rs 188 crore has been earmarked for making payments against bills raised by THDC. The same will be paid in the next 2-3 days. For the remaining amount, matter has been taken up with the finance department.

C.1.3 Representative of SJVNL requested J&K to liquidate their outstanding on priority as it is seriously affecting their cash flow and would also hamper the MOU targets assigned by MOP.

C.1.4 Representative of J&K assured that payment under Atmanirbhar Tranche-2 will be released in the next few days.

C.1.5 Representative of CTU enquired about the payment expected from J&K under the Atmanirbhar package against their dues. Representative of J&K informed that Rs 387.9 crore has been earmarked for payment against bills raised by CTU/POWERGRID. Regarding balance amount, matter has been taken up with the finance department.

C.1.6 Representative of Himachal Pradesh stated that they do not have any outstanding dues for CTU bills beyond 45 days. He was urged to reconcile the same with CTU.

C.1.7 Representative of PTC India informed that J&K has an outstanding of around Rs 770 crore for power supplied through PTC. Representative of J&K informed that payment of Rs 154 crore would be made in the next few days.

C.1.8 TCC urged all utilities to clear their outstanding dues at the earliest.

NRPC Deliberations

C.1.9 NRPC expressed concern over non-payment of dues by defaulting entities and advised all members to clear the dues on priority.

C.2 Opening of Letter of Credit

TCC Deliberations

C.2.1 TCC urged to open the LC as per CERC regulations.

NRPC Deliberations

C.2.2 NRPC noted the TCC deliberations.

C.3 Consent for purchase of Power (Agenda by SJVN)

TCC Deliberations

C.3.1 Representative of SJVN informed that they are executing works on a couple of hydro stations. He urged NR utilities to give consent for purchase of power from these projects. The details of the projects is as under.

C.3.2 Luhri Hydro Electric Project Stage-I (LHEP Stage-I), 210 MW on the river Satluj in the downstream of Rampur HPS in the state of Himachal Pradesh. It is a run–of- river with limited pondage type scheme and is designed to generate Annually 758.18 MUs in 90 % dependable year. Commissioning of the project is expected in May, 2025. The levelized tariff of the generated power is Rs 5.84 per Kwh, calculated based on the project completion cost.

C.3.3 Dhaulasidh Hydro Electric Project (DSHEP), 66 MW on the river Beas in district Hamirpur in the state of Himachal Pradesh. It is a run–of- river with limited pondage type scheme and is designed to generate Annually 303.86 MUs in 90 % dependable year. The Main Packages i.e. Civil & Hydro Mechanical packages has already been awarded and construction activities of the project has been started and the commissioning of the project is expected in June, 2026. The levelized tariff of the generated power is Rs 5.86 per Kwh, calculated based on the project completion cost.

C.3.4 Naitwar Mori Hydro Electric Power Project (NMHEP) (2X30 MW) on the river Tons (a tributary of river Yamuna) in district Uttarkashi in the state of Uttarakhand. It is a run–of- river type scheme and is designed to generate Annually 215.57 MUs in 90 % dependable year. It is commissioning of the project is expected in April, 2022.

C.3.5 He further informed that SJVN plans to offers 850 MW of Power to DISCOMS from the Solar Power Projects (PAN India) to be developed under CPSU Scheme Phase-II (Tranche-III) at the rate of Rs. 2.45/kWh. He urged interested utilities to give their consent for the same.

C.3.6 TCC urged all utilites to either indicate their willingness to purchase power so that PPA can be signed or indicate unwillingness so that the power can be offered to beneficiaries of other regions.

NRPC Deliberations

C.3.7 NRPC noted the TCC deliberations.

C.4 Proof of export for the purpose of giving input tax credit under GST for electricity export

TCC Deliberations

C.4.1 Representative of NRPC Sectt informed that a meeting was held under the chairmanship of Joint Secretary (Transmission), MoP on 06.08.2021 to discuss the proof of export for the purpose of giving input tax credit under GST for electricity export.

C.4.2 In line with the decision taken in the said meeting, all generators using imported fuel and exporting power outside the country may provide details mentioned at S.No.1 to 6 of Annexure II of the MoM of the MoP meeting (attached with Agenda note), by the last date of the month so that required format may be issued by NRPC Secretariat along with monthly REAs.

NRPC Deliberations

C.4.3 NRPC noted the TCC deliberations.

C.5 Diversion of 01 No. 250 MVA Transformer from Moga (POWERGRID) to Nawada (HVPNL) (Agenda by POWERGRID)

TCC Deliberations

C.5.1 Representative of POWERGRID informed that on the request of HVPN due to failure of one no. 400/20KV ICT at Nawada substation, POWERGRID diverted 1 no. 250MVA 400/200KV spare ICT from Moga substation to Nawada (HVPNL) substation in March'2016 as per deliberation held in NRPC. This ICT is in service since May'2016. The said 250MVA ICT (DOCO: 01.03.2000) was to be used as spare after its replacement.

C.5.2 For use by HVPNL at their Nawada substation, an amount of Rs. 4.11 Lakhs / month was worked out based on unclaimed depreciation of the said ICT as hiring charges.

C.5.3 As this ICT is in service at Nawada substation, POWERGRID has raised the hiring charges for this ICT w.e.f. 20/03/2016. Vide last Invoice dt. 03/07/2021 an amount for Rs. 3.078 Cr. upto 30th June'2021 is pending on M/s HVPNL. However, M/s HVPNL has not yet released any payment in this regard.

C.5.4 Chairman TCC stated that since this is a bilateral issue, the same may be resolved mutually between POWERGRID and HVPNL. A meeting in this regard may be held by the second week of October 2021. POWEGRID and HVPNL agreed for the same.

NRPC Deliberations

C.5.5 NRPC concurred with the TCC deliberations.

C.6 FSC Refurbishment at Kanpur Ballabhgarh 400 kV Line-1 (Agenda by POWERGRID)

TCC Deliberations

C.6.1 Representative of POWERGRID informed that electronic devices for Control and Protection installed in Fixed Series Compensator (FSCs) at Ballabhgarh are of old generation for which spares and service support is no more available. Lot of problems are being faced in Control & protection system, Bypass circuit breaker etc at Ballabhgarh and BHEL is not able to provide the spare and service support for this FSC due to obsolescence of technology.

C.6.2 Therefore, the refurbishment of BHEL make FSC was planned. Accordingly, POWERGRID has approached CERC during truing up petition of transmission tariff in respect of FSC at Ballabhgarh S/S for tariff block 2019-24. CERC directed POWERGRID to approach concerned RPC and CTU for reviewing the requirement of FSC.

C.6.3 As per the direction of CERC, POWERGRID approached CTU vide letter dated 06-07-2021. CEA, CTU and other stakeholders had a meeting on 03-08-2021 on the issue (Copy of MOM attached). After deliberations, following was agreed-

"There is no requirement of refurbishment of FSC at Kanpur-Ballabhgarh Line-1".

C.6.4 Representative of CTU informed that as noted in the MoM of the meeting held on 03.08.21, there was no requirement of the FSC in present load flow conditions. Hence FSC refurbishment for Kanpur-Ballabhgarh Line-1 was declined. He further informed that the matter will also be deliberated in upcoming 4th NRPC (TP) meeting.

C.6.5 Representative of POWERGRID informed that balance unrecovered Depreciation (up to 90%) for this FSC is about Rs. 2.0 Crores as on 31.03.2021. If the FSC in Line-1 is being de-capitalized due to no utility in present network condition, the balance unrecovered depreciation may be reimbursed.

TCC decided that POWERGRID may approach CERC based on the decision taken in the upcoming CEA's NRPCTP meeting regarding utility of the FSC

NRPC Deliberations

C.6.6 NRPC concurred with the TCC deliberations.

C.7 Utilization of FSC installed at Muradnagar substation (UPPTCL) in 400 kV Panki- Muradnagar line (UPPTCL) or feasibility of shifting at any other location (Agenda by POWERGRID)

TCC Deliberations

C.7.1 Representative of POWERGRID informed that Fixed Series Compensation (FSC) of 40% was installed by POWERGRID in 400 kV Panki (UPPTCL)-Muradnagar S/c Line (396 km Twin Moose) at Muradnagar station end and the same was commissioned on 01.02.2004.

C.7.2 Subsequently, LILO of Panki – Muradnagar line at Aligarh (UPPTCL) was approved in 26th SCPSPNR meeting held on 13th October 2008, as part of "Evacuation System for Parichha TPS Extn". The LILO was subsequently commissioned in October 2015 by UPPTCL. After LILO, the length of lines are as given below:

- Panki-Aligarh 400 kV S/c line (285 km)
- Aligarh-Muradnagar 400 kV S/c line (177 km) with FSC (due to reduction in line length the % compensation increases to 90%)

C.7.3 Based on the system condition, FSC was kept out of service by System Operator since Oct'15.

C.7.4 POWERGRID approached CERC with true up petition in respect of FSC at Muradnagar S/S for tariff block 2019-24. Since the FSC is out of service, CERC directed POWERGRID to approach concerned RPC and CTU for feasibility of shifting/using the FSC.

C.7.5 As per the direction of CERC, POWERGRID approached CTU vide letter dated 09-07-2021. CEA, CTU and other stakeholders had a meeting on 03-08-2021 on the issue (Copy attached). During the meeting, CTUIL stated that in case of shifting the FSC to any new location, short circuit level of new substation where

FSC would be shifted should match with design short circuit level of Panki /Muradnagar substation at the time of FSC planning and the length of line where the FSC would be shifted should approximately match with the original length of the line where FSC is to be installed. After deliberations, following was agreed:

i) FSC installed at Muradnagar substation (UPPTCL) in 400 kV Panki-Muradnagar line (UPPTCL) has no utilization in the present scenario. However, views of NRPC also need to be taken in this regard.

ii) POWERGRID to carry out cost benefit analysis, comparing the remaining life of the FSC alongwith the cost of shifting the FSC and installation of the same at any new location versus cost of installation of a new FSC at the new location. In case, relocation of the FSC is not feasible or is not found to be economically viable, POWERGRID is to approach CERC regarding tariff issues for remaining life of the asset.

C.7.6 Representative of CTU highlighted that cost benefit analysis (comparing the cost involved with shifting existing FSC: remaining life of FSC + cost of shifting the existing FSC & installing the same at any new location V/s cost of installation of a new FSC at the new location) is to be done by POWERGRID.

C.7.7 Representative of POWERGRID mentioned that cost of relocation would be much higher and may be equivalent to installation of new FSC, hence balance unrecovered depreciation, which works out to Rs. 4.66 Cr, may be reimbursed.

C.7.8 TCC advised POWERGRID to do the cost benefit analysis and present the same before upcoming CEA's NRPCTP. CTU may provide locations where FSC is required for this purpose. In case, relocation of the FSC is not feasible or is not found to be economically viable, POWERGRID may act as per upcoming CEA's NRPCTP meeting.

NRPC Deliberations

C.7.9 NRPC concurred with the TCC deliberations.

C.8 Status of Regulatory Accounts (Agenda by NRLDC)

TCC Deliberations

C.8.1 Representative of NRLDC informed that there is a long pending outstanding of J&K towards

Deviation Charges: Rs. 4994.24 Lakhs

Reactive Energy Charges: Rs. 1760.45 Lakhs

Congestion Charges: Rs. 1.73 Lakhs

C.8.2 He further stated that last payment against Deviation Charges &Reactive Energy Charges was received on 05-05-2021 and against congestion charges on 17.10.2020. He appraised that, these are statutory pool accounts and the payments to the receivable constituents/Ancillary service providers are getting delayed due to long pending outstanding by J&K.

C.8.3 Representative of J&K informed that, amount to the tune of Rs. 3.78 crore against Deviation Charges, Rs. 3.54 crore against Reactive Energy Charges and the total balance amount against congestion charges will be released by end of this week.

C.8.4 Representative of NRLDC, insisted JKPCL to release the balance outstanding by making regular payment in the pool accounts.

NRPC Deliberations

C.8.5 NRPC advised J&K to expedite the settlement of long pending outstanding so that payment to the receivable constituents may be settled without any further delay.

C.9 Reconciliation of Charges (Agenda by NRLDC)

TCC Deliberations

C.9.1 Representative of NRLDC stated that, reconciliation statement for the month of August 2021 regarding pool accounts has been uploaded in the portal on 13-09-2021. All Members of these Pool Accounts are requested to reconcile the statement on monthly basis through web portal.

C.9.2 He informed that out of 39 users of DSM pool account reconciliation from 7 users are pending. Defaulters in reconciliation of Deviation Charges are NFL, APCPL, J&K, Railways, Haryana, Delhi, & Punjab. Defaulters in reconciliation of Reactive Energy Charges are J&K, Delhi & Punjab.

C.9.3 Regarding STOA charges, NRLDC has sent the reconciliation statement of open access disbursement for the Quarter-1 of financial year 2021-22 on 27th July 2021. The applicants/STU/SLDCs were requested to verify /check the reconciliation statement & comment if any on the same by 16th August 2021.

C.9.4 Regarding NRLDC fee and charges, NRLDC vide letter dated 30/07/2021 has sent the reconciliation statements of NRLDC Fee and Charges for the quarter - 1, 2021-22 to all the users. The users were requested to send the duly signed and verified copy of reconciliation statement as a token of acceptance by 23-08-2021.

C.9.5 TCC advised all concerned utilities of pool accounts, STOA & NRLDC Fee & Charges to verify and sign the quarterly reconciliation statement within one week from the date of meeting to avoid any disputes in future else the statement stands deemed reconciled.

NRPC Deliberations

C.9.6 NRPC concurred with the TCC deliberations.

C.10 Status of NRLDC Fee & Charges (Agenda by NRLDC)

TCC Deliberations

C.10.1 Representative of NRLDC informed that only J&K and Delhi had outstanding dues towards NRLDC Fee & charges to the tune of Rs. 145.28 and Rs. 4.05 Lakhs respectively.

C.10.2 Representative of J&K Representative informed that, an amount to the tune of 44 Lakhs will be released by end of this week.

C.10.3 Representative of NRLDC insisted J&Kto settle the balance outstanding by making regular payments in the NRLDC Fees and Charges account.

C.10.4 Representative of Delhi SLDC stated that, matter for clearing the outstanding is taking up with NDMC through DERC. They further clarified that NDMC is also not paying the dues of other users.

C.10.5 TCC/NRPC advised J&K and Delhi to clear all the outstanding at the earliest.

NRPC Deliberations

C.10.6 NRPC noted the TCC deliberations.

C.11 Scheduling, accounting and other treatment of the legacy shared projects in Northern Region (Agenda by NRLDC)

TCC Deliberations

C.11.1 The matter could not be taken up in the TCC meeting due to technical issues. Chairman TCC stated that the matter may be deliberated in the 49th NRPC meeting directly.

NRPC Deliberations

C.11.2 Representative of NRLDC informed that the issue of scheduling, accounting and other treatment of legacy shared projects in Northern Region is a long pending issue and has been under discussion since the 40th CSC meeting held on 12th September 2019.

C.11.3 As per discussions held in the 45th TCC/48th NRPC meeting, where the issue was last deliberated, concerned states were supposed to hold bilateral meetings and submit their inputs to NRPC. In case of no observations/objections, treatment of Category 2, 3 and 4 projects would be done similar to Category 1 projects. However, states are yet to hold any bilateral meeting.

C.11.4 Representative of Himachal Pradesh informed that they have written to other states for the bilateral meeting, but the same could not be held due to COVID pandemic.

C.11.5 NRPC advised to all the concerned entities for holding bilateral meeting and submit their inputs to NRPC latest by 31/12/2021, so that the issue can be resolved by the next NRPC meeting.

C.12 STATUS of AMR Integration work (Agenda by NRLDC)

TCC Deliberations

C.12.1 Representative of NRLDC informed that, out of 380 Elster make meter from 40 locations, data of only 169 meter is received through AMR. NRLDC is not receiving any data from 19 Nos of meter location where Elster Meter Installed. He also emphasized to speed up the meter procurement to ensure timely new meter installation for the first time changing element.

C.12.2 Representative of POWERGRID stated that, integration of only L&T make meters is possible with existing AMR system in Northern Region. POWERGRID has tried integration of Elster make meter with AMR, however frequent failures have been reported in past subsequent to integration. Accordingly, the integration of Ester make meter is not being taken up. POWERGRID suggested replacement of

Elster make meters with AMR compatible meter, which may be taken up with CTU, and may be implemented after finalization of methodology / financial implication in this regard.

C.12.3 Further with respect to Secure & EDMI Meters, new meters do not support secure meter communication and needs to be developed.

C.12.4 He stated that integration of meters from GPRS (474 meters: L&T- 449 nos. & Elster - 25 nos.) to fiber network would be taken up after confirmation from utilities regarding laying of fiber cable from Kiosk to Control room (communication penal to metering room).

C.12.5 TCC urged to CTU/POWERGRID to resolve all the issue related to AMR integration and expedite the AMR integration work on priority.

NRPC Deliberations

C.12.6 NRPC noted the TCC deliberations.

C.13 Issues related with Interface Energy Meter/DCD (Agenda by NRLDC)

TCC Deliberations

C.13.1 Representative of NRLDC highlighted the status of Replacement/Rectification of IEM meters/DCD and shared the detail list with the members (attached with agenda note of the meeting).

C.13.2 Regarding status of procurement of DCD/meters CTU/POWERGRID confirmed that 260 no. of meters and 36 no. of DCDs are in procurement stage.

C.13.3 Representative of NRLDC informed that NRLDC has implemented a web-based portal (https://meterdata.nrldc.in/) for smooth meter data transfer to NRLDC from various locations where AMR is not implemented.

C.13.4 He requested all constituents to upload IEM data on web-based portal every week to NRLDC by Tuesday noon as per IEGC provision. Data received after Tuesday may delay in timely processing of meter data and energy accounting.

C.13.5 He informed that through this newly developed portal individual users need not to send the meter data through emails and they have to directly upload the meter data on the web portal itself. Now onwards sending data through email is discontinued. Nodal officers can monitor the status of uploading the data from locations pertaining to their control area and should expedite the data uploading in case the status appears “File Not Uploaded” for any location.

C.13.6 TCC advised CTU/POWERGRID to replace faulty meters as per list provide by NRLDC by 31.12.2021 and also speed up the meter/DCD procurement to ensure timely new meter installation for the first time changing element.

C.13.7 TCC further advised all users to share the details of nodal officers for metering related issues with NRDLC at the earliest and upload Interface Energy Meter data on web-based portal every week to NRLDC by Tuesday noon as per IEGC provision.

NRPC Deliberations

C.13.8 NRPC noted the TCC deliberations.

C.14 DSM billing issue for Punjab for the period 23.07.2021 to 07.08.2021

TCC Deliberations

C.14.1 The matter could not be taken up in the TCC meeting due to technical issues. Chairman TCC stated that the matter may be deliberated in the 49th NRPC meeting directly.

NRPC Deliberations

C.14.2 Representative of NRPC Sectt gave a detailed presentation explaining the agenda (Annexure 14.1). It was informed that a letter was received from Chief Engineer/PP&R, PSPCL on 03.09.2021 wherein it was informed that high UI/ Deviation charges (around 96 crores) have been imposed on PSPCL (DISCOM) due to erroneous data received from NRLDC end (Moga ICTs). PSPCL in its letter informed that NRLDC while carrying out changes in its SCADA on 23.07.2021, erroneously made some changes in the tag of Moga ICTs (400kV tag was changed to 765kV tag) which resulted in incorrect data display at NRLDC control room as well as at Punjab SLDC control room. The error persisted from 23.07.2021 to 07.08.2021, during which there was a difference of around 5-6% between the SCADA drawal data available at Punjab SLDC end and actual SEM based figure. Punjab scheduled its power based on the SCADA data, which was indicating under drawal (due to erroneous figures from Moga ICTs) whereas it was actually overdrawing heavily from the grid. This resulted in huge DSM penalties.

C.14.3 A special meeting in this regard was called on 08.09.2021 to discuss the issue. Based on the discussion held in the meeting. It was observed that there was underdrawal from the grid by Punjab on all days from 01.07.21 to 22.07.21. From 23.07.21 to 07.07.21 however, the pattern changed completely and Punjab resorted to overdrawal on most days. In terms of daily DSM charges, Punjab was receivable on most days between 01.07.21 to 22.07.21, whereas from 23.07.21 to 07.07.21, huge penalties were levied on Punjab on account of overdrawal, sometimes to the tune of 12-13 crore. This change in trend can be attributable to the erroneous NRLDC SCADA data being received by Punjab.

C.14.4 As per CERC (Communication System for inter-State transmission of electricity) Regulations, 2017, RLDC is the nodal agency responsible for monitoring, supervision and control of Power system of ISTS, ISGS, SLDCs and IPPs at RLDC end. The drawal data for all SLDCs of NR is being monitored through SCADA at NRLDC end as per these regulations. Punjab utilized this data for monitoring its drawal.

C.14.5 The regulations also stipulate that SLDC is responsible for monitoring supervision and control of power system in the intra-state network, distribution system and generating stations at SLDC end. In case Punjab was monitoring SCADA data of their downstream network as per these regulations, the error could have been identified much earlier than 15 days for which it persisted.

C.14.6 NRPC Secretariat issues statement for deviation based on CERC (DSM) Regulations as per data provided by NRLDC. Revised accounts are also issued in case of any error in the value of scheduled data or actual data provided by

NRLDC, or calculation error at NRPC end. However, in this particular case, schedule data, actual data and calculation by NRPC Secretariat based on these data is correct. Only SCADA data which was used by Punjab for scheduling in real time in incorrect, which has not been mentioned anywhere in the CERC DSM Regulations. The power to relax has also been vested with CERC as per these regulations.

C.14.7 Regarding possible solutions for resolution of this problem, it was informed that Punjab has actually consumed the energy that was overdrawn from the grid. Accounting for this energy needs to be done. Hence, complete waiver of DSM charges, as requested by Punjab may not be possible. The following 2 options may be explored:

Option 1: Punjab may be levied only base DSM charges for the period 23.07.21 to 07.08.21, whereas additional DSM and sustained DSM charges, which are additional penalties for non-adherence to grid discipline, may be exempted for the said period.

Option 2: The deviation done by the Punjab during the period may be bifurcated under 2 parts, Part 1 which is attributable to the erroneous SCADA data at Moga ICTs and Part 2 which is not attributable to the erroneous SCADA data. At present, energy drawn under both Part 1 and Part 2 is being treated as deviation, and all 3 deviation charges i.e. base DSM, additional DSM and sustained DSM are being levied on it. It is proposed that additional energy consumed by Punjab under Part 1, which is attributable of erroneous SCADA data, may be charged at either Area Clearing Price (ACP) or Average Power Purchase Cost (APPC). Only Part 2, which is not attributable to erroneous SCADA data may be treated as deviation and deviation charges may be levied on it accordingly.

Punjab showed preference for Option 1.

C.14.8 Member Secretary, NRPC opined that NRPC is already issuing revised DSM accounts if there has been any error schedule data or meter data provided by NRLDC or any calculation error at NRPC end. CERC is not being approached in such cases. In the present case as well, there was man made (by NRLDC) error in their SCADA data due to which this huge deviation took place. Hence, NRPC Secretariat may issue revised accounts.

C.14.9 Representative of Punjab stated that as explained in their letter, overdrawal by Punjab during the period 23.07.2021 to 07.08.2021 was on account of incorrect NRLDC SCADA data hence entire DSM charges for the said period may be waived off.

C.14.10 Chairperson, NRPC enquired about the measures taken to ensure that such errors do not take place in the future.

C.14.11 CGM (I/C) NRLDC stated that in NR, only Punjab and Haryana are totally dependent on NRLDC SCADA data. Other states of NR are also monitoring drawal through their downstream network. If Punjab would have done the same, as mandated in the regulations, the error could have been rectified much earlier. He further stated that Punjab should have suspected that something was amiss when they suddenly began to underdraw heavily after the erroneous NRLDC SCADA data was relayed, and instead of adding more load to the grid, they should have intimated NRLDC.

C.14.12 Member Secretary, NRPC expressed concern regarding the issue as along with commercial implications, error in NRLDC SCADA data is a serious issue in terms of grid security and could have led to some grid incident. Even, NRLDC shift staff could not detect this error and operated the grid with their erroneous SCADA for 15 days.

C.14.13 Regarding the use of NRLDC data by Punjab SLDC, Member Secretary, NRPC stated that NRLDC is the nodal agency for grid operations in the Northern region. All states treat the data being received from NRLDC as sacrosanct, hence there is nothing wrong with Punjab using that data to monitor its grid. He equated RLDCs & NLDC with Election Commission, where correct information is always expected. Moreover, CERC Communication Regulations provide that RLDC is responsible for monitoring of ISTS points, hence responsibility for ensuring adequate data from Moga ICT resides with NRLDC. He advised NRLDC to put in place robust internal systems, with proper checks and balances, so that such incidents do not take place in the future. He also advised Punjab SLDC to build its drawal calculation system at 220kV level as double check, and not rely 100% on NRLDC data so that errors like this one can be easily identified and rectified immediately. He stated that additional and sustained deviation charges are levied for indiscipline, but Punjab was disciplined before and after this period, and indiscipline of Punjab was due to erroneous NRLDC SCADA data. Therefore, additional and sustained deviation charges may be waived off.

C.14.14 Chairperson, TCC stated that as observed from the presentation, Punjab was disciplined in their drawal before and after the period for which NRLDC SCADA data was erroneous. Hence, huge penalty levied on Punjab for the said period seems unjustified. He proposed that charges for overdrawal for the period for which NRLDC SCADA data was erroneous may be levied at Average Power Purchase Cost (APPC).

C.14.15 Director (Market Operations), POSOCO stated that in since CERC has been vested with the power to relax or waive of DSM charges, the matter may be referred to CERC for taking a final call.

C.14.16 NRPC concluded that since Punjab was maintaining grid discipline before and after these two weeks, so huge DSM penalty during the period of erroneous NRLDC SCADA data should not be levied on Punjab. Hence additional deviation and sustained deviation charges for the period of erroneous NRLDC SCADA data may be waived off. NRPC Secretariat may also intimate CERC regarding the same once revised accounts are issued.

D. ITEMS FOR NRPC

D.1 Reimbursement of Expenditure of NRPC Sectt. for FY 2021-22 by the members of NRPC

D.1.1 Member Secretary, NRPC stated that keeping in view the budget estimates approved by GoI for the financial year 2021-22 through NRPC fund and balance amount available in the NRPC Fund, the per member contribution for the year 2021-22 is proposed to be Rs.10.0 lakh.

D.1.2 NRPC approved the proposal.

D.2 Reimbursement of Expenditure of NRPC Sectt. by the members of NRPC for the previous years

D.2.1 Member Secretary, NRPC stated that for reimbursing NRPC expenditure to GoI and meeting the expenditure for meetings at Secretariat and other expenditure as approved by Chairperson, NRPC, constituent members are to pay annual contribution as decided in NRPC meetings from time to-time. However, contribution from some members is pending, details of which were enclosed with the agenda note of the meeting.

D.2.2 NRPC urged all members to clear their outstanding dues at the earliest.

D.2.3 Representative of Bajaj Energy stated that since they were permanent member of NRPC for FY 2019-20 on account of their generating station Lalitpur Power, their membership as representative of generating company having installed capacity less than 1000 MW may not be considered and NRPC charges for the said period may be waived off.

D.2.4 Member Secretary, NRPC opined that Bajaj Energy should have raised this issue at the time when it was nominated for membership or during FY 2019-20, as some other generating company could have been nominated for membership then.

D.2.5 Chairperson, TCC stated that the request of Bajaj Energy is time barred and cannot be entertained now. Hence, they were requested to clear their dues for FY 2019-20 as well as past dues at the earliest.

D.2.6 To have timely payment, NRPC also decided to levy 1% simple interest per month on late payment. NRPC would issue demand letter by 01.10.21 and interest for current FY 2021-22 would be levied from 15.11.2021 onwards i.e. beyond 15.11.21, 1% interest upto 30.11.21 for November month, and so on. Payment made during month would also invite 1% interest.

D.3 Membership in NRPC for Rotational Members

D.3.1 The following rotational members were approved for the FY 2021- 22:

- Haryana: Dakshin Haryana Bijli Vitaran Nigam Ltd.
- Rajasthan: Jaipur Vidyut Vitran Nigam Ltd.
- Uttar Pradesh: Madhyanchal Vidyut Vitaran Nigam Ltd.
- Private Discom: Tata Power Delhi Distribution Limited
- Genco (<1000 MW): Greenko Budhil Hydro Power Private Limited

D.3.2 Further following permanent members have joined NRPC since the last meeting:

- Meja Urja Nigam Limited (Generating Company > 1000 MW)
- CTUIL (Designated as CTU by Government of India)

D.4 Verification of NRPC Fund Account

D.4.1 NRPC approved the statement of Internal and External Audit reports of NRPC Fund for the FY 2019-20 and FY 2020-21 as given in agenda.

D.5 Verification of Regional Board Fund

D.5.1 NRPC approved the statement of Internal and External Audit reports of Regional Board Fund (RBF) for the FY 2019-20 and FY 2020-21 as given in agenda.

D.6 HOSTING OF NEXT MEETINGS OF NRPC / TCC

D.6.1 Member Secretary, NRPC informed that the next meetings of TCC (48th) & NRPC(50th), which would be due in early next year are to be hosted by PTCUL. He hoped that COVID situation in the country will improve further by that time.

D.7 Improper operation & Accounting and delays in annual contribution from the constituent members

D.7.1 NRPC gave the post facto approval to the reply given by NRPC Secretariat for the audit para as given in the agenda note.

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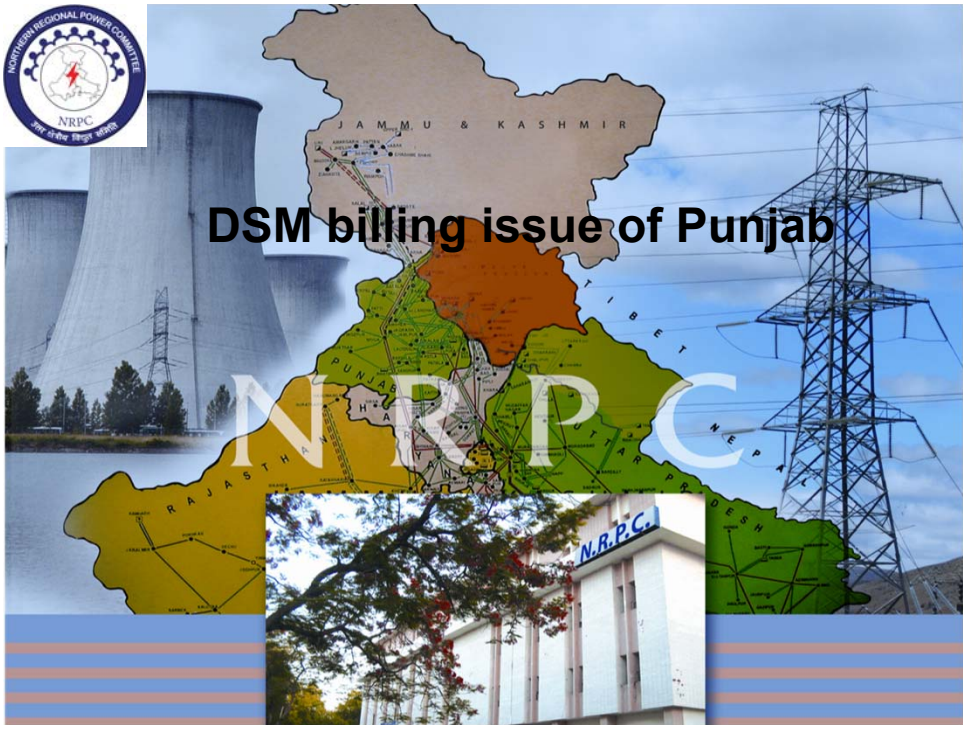


Background

- A letter was received from Chief Engineer/PP&R, PSPCL wherein it was informed that high Deviation charges (around 96 crores) have been imposed on Punjab due to erroneous data received from NRLDC end (Moga ICTs).
- It was informed that while carrying out changes in SCADA display at NRLDC end, some changes were made in the summation tag of drawl calculation by NRLDC, which resulted into incorrect display data at Punjab SLDC control room.

Background

- The error persisted from 23.07.2021 to 07.08.2021, wherein there was a difference of around 5-6% between the SCADA drawal available at Punjab SLDC end and actual SEM based figure.
- The following deviation charges were imposed on Punjab during the said period:

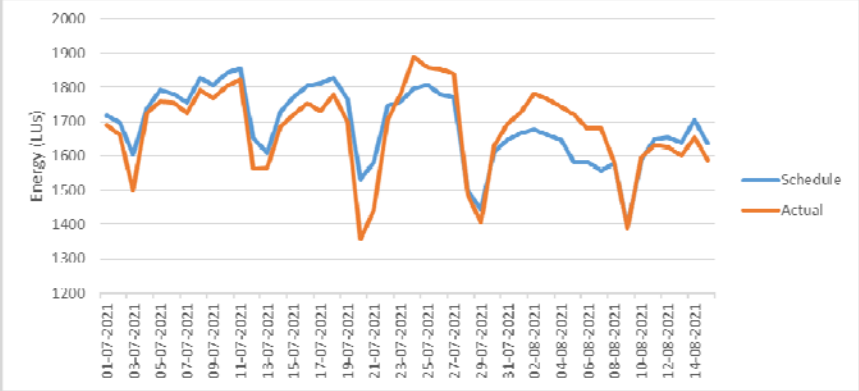
Sr. No.	Period	DSM Charges
1	23-07-2021 to 25-07-2021	Rs. 1640.89 Lakhs
2	26-07-2021 to 01-08-2021	Rs.1937.28 Lakhs
3	02-08-2021 to 08-08-2021	Rs. 6058.55 Lakhs
	Total	Rs.9636.72 Lakhs

CERC (Communication System for inter-State transmission of electricity) Regulations, 2017

- **Role of RLDCs:** (i) The Regional Load Despatch Centre shall be nodal agency for integration and supervision of Communication System of the **ISTS**, ISGS,**SLDCs** and IPPs at RLDC end for monitoring, supervision and control of Power System and adequate data availability in real time. (ii) The Regional Load Despatch Centre (RLDC) shall collect and furnish data related to Communication System of various users, CTU, RLDC, STU and SLDC to RPCs. (iii) RLDCs shall provide operational feedback to CTU.

- **Role of SLDCs:** (i) The State Load Despatch Centres shall be nodal agency for integration of Communication System in the **intra-State network**, distribution system and generating stations at SLDC end for monitoring, supervision and control of Power System and adequate data availability in real time. (ii) SLDC shall provide operational feedback to CTU and STU.

Deviation trends

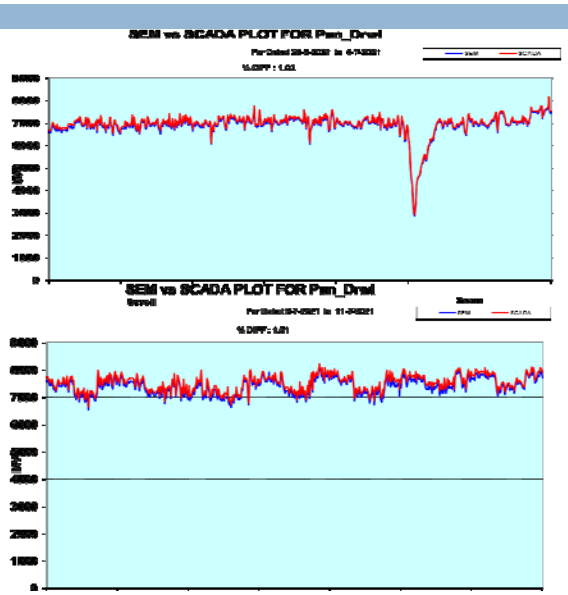


Deviation trends

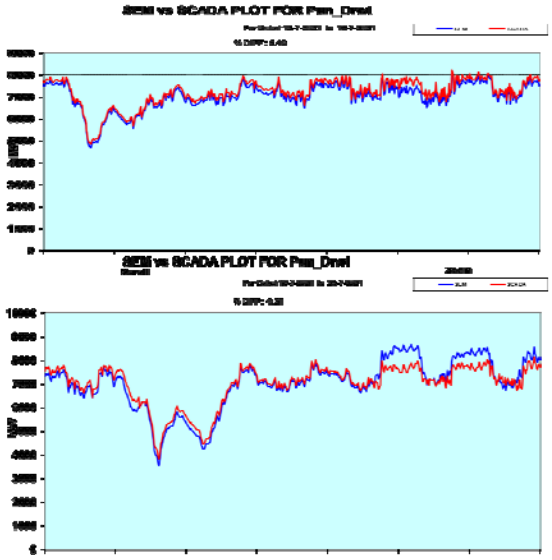
Date	Schedule	Actual	Deviation	DSM Charges
01-07-2021	1719	1691	-28	-27.2
02-07-2021	1698	1663	-35	-16.2
03-07-2021	1604	1500	-104	38.5
04-07-2021	1739	1725	-14	-10.7
05-07-2021	1792	1760	-32	-61.5
06-07-2021	1781	1757	-24	21.2
07-07-2021	1756	1725	-31	-35.8
08-07-2021	1829	1791	-37	-42.2
09-07-2021	1806	1769	-37	-47.8
10-07-2021	1843	1805	-38	-53.2
11-07-2021	1857	1823	-33	-60.4
12-07-2021	1653	1563	-90	-5.2
13-07-2021	1609	1566	-43	-25.8
14-07-2021	1728	1685	-44	-27.8
15-07-2021	1772	1721	-51	-38.0
16-07-2021	1806	1753	-52	-59.4
17-07-2021	1811	1730	-81	-26.8
18-07-2021	1827	1779	-48	-17.8
19-07-2021	1766	1700	-66	-10.6
20-07-2021	1531	1357	-174	23.7
21-07-2021	1580	1442	-139	-20.8
22-07-2021	1747	1706	-41	-19.6

Date	Schedule	Actual	Deviation	DSM Charges
23-07-2021	1759	1781	22	319.2
24-07-2021	1797	1890	92	944.0
25-07-2021	1808	1859	51	377.7
26-07-2021	1779	1854	75	498.0
27-07-2021	1772	1840	68	425.6
28-07-2021	1499	1486	-13	90.1
29-07-2021	1442	1405	-37	173.5
30-07-2021	1612	1628	16	185.3
31-07-2021	1647	1692	45	266.4
01-08-2021	1666	1728	62	298.5
02-08-2021	1677	1781	104	861.4
03-08-2021	1663	1766	103	937.4
04-08-2021	1647	1745	98	827.8
05-08-2021	1579	1721	142	1277.4
06-08-2021	1583	1680	96	872.8
07-08-2021	1559	1679	121	1264.8
08-08-2021	1579	1580	1	17.0
09-08-2021	1396	1389	-7	-3.2
10-08-2021	1588	1597	9	36.4
11-08-2021	1650	1631	-19	-5.5
12-08-2021	1653	1626	-28	-47.0
13-08-2021	1640	1602	-38	-55.8
14-08-2021	1704	1653	-51	-33.1
15-08-2021	1636	1589	-48	-53.2

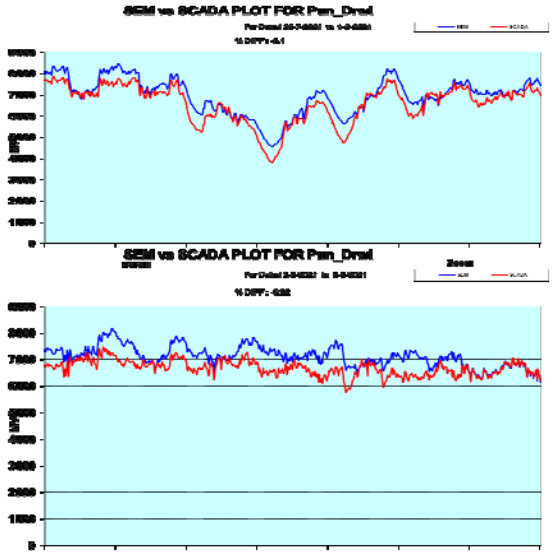
SCADA vs SEM plots



SCADA vs SEM plots



SCADA vs SEM plots



Deviation trends

Week	Date	Schedule (LU)	Actual (LU)	Base DSM (Rs Lakh)	Add DSM (Rs Lakh)	Sus DSM (Rs Lakh)	Sus Count	Adj DSM (Rs lakh)	Net DSM (Rs Lakh)
14	28.06 to 04.07	11800	11556	-210	145	35	33	2	-26
15	05.07 to 11.07	12663	12431	-436	58	95	43	3	-279
16	12.07 to 18.07	12205	11796	-456	35	214	72	5	-200
17	19.07 to 25.07	11988	11733	526	521	563	84	2	1613
18	26.07 to 01.08	11417	11634	936	477	520	78	3	1937
19	02.08 to 08.08	11286	11952	2570	1646	1841	81	0	6058
20	09.08 to 15.08	11268	11086	-335	27	144	47	3	-161

CERC DSM Regulations

- A statement of charges for deviations, including additional charges for deviation levied under these regulations shall be prepared by the Secretariat of the respective RPCs on weekly basis based on the data provided by the concerned RLDC(s)
- Deviation: Deviation in a time block for a buyer means its total actual drawal minus its total scheduled drawal.
- Actual drawal: Actual drawal in a time block means electricity drawn by a buyer, as the case may be, measured by the interface meter.
- SCADA data has not been mentioned anywhere in the DSM regulations, nor is it used in the calculation of DSM charges.

CERC DSM Regulations

- Revised DSM statements are issued by RPC Secretariat mainly on account of following 3 reasons:
- Revised schedule data provided by NRLDC
- Revised meter data provided by NRLDC
- Error in calculation at NRPC end
- Regulation 12 (Power to Relax) and Regulation 13 (Power to issue directions) are both vested with CERC
- *"Commission may by general or special order, for reasons to be recorded in writing, and after giving an opportunity of hearing to the parties likely to be affected by grant of relaxation, may relax any of the provisions of these regulations on its own motion or on an application made before it by an interested party"*

Possible Solutions:

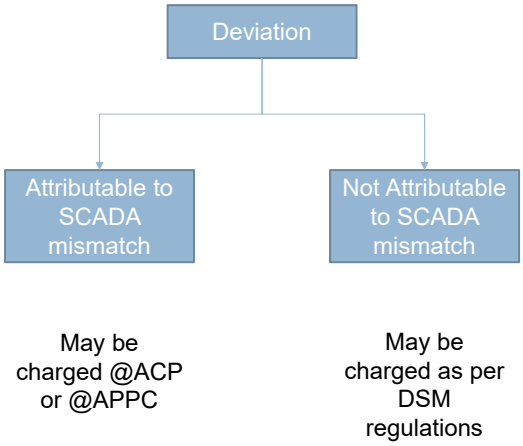
Option 1

- Additional Deviation and sustained deviation charges for the said period may be waived off by the Commission.

Sr. No.	Period	Base DSM	Add DSM	Sus DSM	Net DSM
1	23-07-21 to 25-07-21	734	**488**	**417**	1641
2	26-07-21 to 01-08-21	936	**477**	**520**	1937
3	02-08-21 to 08-08-21	2570	**1646**	**1841**	6058
	Total	4240	**2611**	**2778**	9636

Possible Solutions:

Option 2



Possible Solutions:

Option 2

- Suppose incorrect SCADA reading at Moga ICT = ‘x’
- SCADA reading after correcting tag = ‘y’
- Error due to incorrect SCADA reading (z)= y-x
- Power ‘z’ was overdrawn by Punjab on account of error in SCADA value, hence unintentional.
- At present, power ‘z’ is being treated as overdrawal and charges as per DSM regulations are being levied on it.
- Punjab may be levied charges @ ACP or @ APPC for Power ‘z’ since this overdrawal was unintentional.
- Deviation charges for Punjab may be recalculated after subtracting ‘z’ from the drawal of Punjab.

Special Meeting 08.09.21

- Member Secretary, NRPC expressed serious concern over erroneous data being received due to changes made by NRLDC in its SCADA system.
- Besides commercial implications, error in SCADA data at NRLDC end illusioned both Punjab SLDC as well as NRLDC who were unaware of quantum of power being drawn through Moga ICTs. Such a scenario could have led to serious grid incident.
- He advised NRLDC to put in place robust internal systems, with proper checks and balances, so that such incidents do not take place in the future.
- He also advised Punjab SLDC build its drawal calculation system at 220kV level as double check so that errors like this one can be easily identified and rectified immediately.

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- Regarding waiver of DSM charges, MS, NRPC stated that NRPC is already issuing revised DSM accounts if there has been any error schedule data or meter data provided by NRLDC or any calculation error at NRPC end. CERC is not being approached in such cases.
- In the present case as well, there was man made (by NRLDC) error in their SCADA data due to which this huge deviation took place. Hence, NRPC Secretariat may issue revised accounts.
- However, the matter may be placed before TCC/RPC to take a final view in this matter.

THANK YOU.!!!