सत्यमेव जयते

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

सं. उक्षेविस/ वाणिज्यिक/ 209/ आर पी सी (52वीं)/2022/ दिनाँक : 21 अप्रैल, 2022

सेवा में / To,

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

विषय: उत्तर क्षेत्रीय विद्युत समिति की 52वीं बैठक का कार्यवृत ।
Subject: 52nd meeting of Northern Regional Power Committee – MoM

महोदय / Sir,

उत्तर क्षेत्रीय विद्युत समिति की 52वीं बैठक दिनांक **31 मार्च, 2022** को **1200** बजे विडियो कोंफ्रेंसिंग के माध्यम से आयोजित की गयी थी । बैठक का कार्यवृत संलग्न है। यह उ.क्षे.वि.स. की वेबसाइट (http://164.100.60.165/) पर भी उपलब्ध है।

The 52nd meeting of Northern Regional Power Committee (NRPC) was held at **1200 Hrs** on **31st March, 2022** via video conferencing. MoM of the same is attached herewith. The same is also available on NRPC Sectt. website (http://164.100.60.165/).

भवदीय
Yours faithfully,

Naresh 21/4/22
(नरेश भंडारी)
(Naresh Bhandari)
सदस्य सचिव
Member Secretary

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52nd MEETING OF NORTHERN REGIONAL POWER COMMITTEE

Time & Date of NRPC meeting: 31st March'22

Venue: Video Conferencing

Minutes of Meeting

A.1 Approval of MoM of 51st NRPC meeting

A.1.1 Forum was apprised that Minutes of 51st NRPC meeting (held on 25.02.2022) was issued on 16.03.2022. Comment has been received from POWERGRID regarding point no C.4.8 and C.4.9 of MoM and they have requested change in MoM as quoted below:

Quote

In this regard, it may be mentioned that POWERGRID carried out assessment of around 220 transformers & reactors which have already crossed or were approaching the end of useful life (25 years from commissioning). After the internal assessment, a total of 82 equipment were identified for residual life assessment through CPRI, Bangalore. CPRI has done the detailed Residual Life Assessment Studies based on various diagnostic test parameter results available and has also recommended some additional detailed & advanced testing on case-to-case basis. Based on latest test results, CPRI has recommended for replacement of 39 POWERGRID equipment (7 transformers & 32 reactors) on pan-India basis. Out of these the following 06 equipment (Transformers – 2 & Reactors – 4) need replacement for Northern Region:

1. 02 nos 400/220kV 150MVA single-phase ICT units at Panipat (BBMB): The said units had already completed 36 years of service and were advised for replacement by CPRI based on the diagnostic test results.

2. 420kV 50MVAR Reactor at Kanpur, 420kV 50MVAR Reactor at Agra, 420kV 50 MVAR Reactor at Bareilly & 420kV 80 MVAR Reactor at Ballabgarh: The Reactor at Kanpur has completed 38 years, Reactors at Bareilly & Ballabgarh have completed 32 years & Reactor at Agra has completed 25 years of service. All these Reactors were advised for replacement by CPRI based on the diagnostic test results.

Unquote

A.1.2 BBMB representative apprised that ICTs at Panipat has already been replaced.

A.1.3 PGCIL representative confirmed that due to emergency, transformers have been replaced already. He requested for regularization of same by forum.

A.1.4 Forum decided that request for change in MoM may be allowed for proposals discussed in meeting. For new proposals i.e., ICTs at Panipat and reactors at

Agra and Ballabhgarh, POWERGRID was advised to put it as an agenda in upcoming NRPC meeting.

A.1.5 Forum approved the MoM with changes in para C.4.8 and C.4.9 as given below:

Quote

C.4.8 POWERGRID informed that reactors at other ends of both lines are healthy. He highlighted that a study was carried out to assess the condition of around 220 equipment (transformers & reactors), which have already crossed or were approaching the end of useful life (25 years from commissioning). After the internal assessment, 82 equipment were identified for residual life assessment through CPRI, Bangalore on pan India level. CPRI has recommended for replacement of 39 POWERGRID equipment (7 transformers & 32 reactors) on pan-India level. Out of these, 6 equipment (Transformers – 2 & Reactors – 4) need replacement in Northern Region. Therefore, 2 nos. of 50 MVAR reactors at Kanpur and Bareilly have been proposed for replacement.

C.4.9 Forum decided that POWERGRID may also submit its report on 6 equipment identified for replacement to NRPC Secretariat. MS, NRPC opined that substation which got commissioned 40 years back or so will need replacement of its equipment from time to time and therefore instead of bringing proposal in piecemeal manner, POWERGRID may prepare a comprehensive R, M & U proposals for such substations and possibilities of funding from PSDF may be explored.

Unquote

A.2 First Time Charging clearance after LILO of 400 kV Patna - Balia line 3 & 4 at Naubatpur, BGCL Substation (agenda by BGCL)

A.2.1 Forum was apprised that Bihar Grid Co. Ltd. (BGCL), has informed vide letter dt. 08.03.2022 that LILO of 400 kV D/C Quad (3&4) Patna-Balia transmission line at 400/200/132/33kV Naubatpur GIS S/s (Bihar) was approved under strengthening scheme of transmission system in the state of Bihar, phase IV, Part II of 12th plan. Accordingly, BSPTCL took approval in ER Standing Committee on Power System Planning. However, the matter was not taken up by BSPTCL in NR Standing Committee.

A.2.2 BGCL has taken up the work and now 400/200/132/33kV Naubatpur GIS S/s along with associated line is almost complete and likely to be charged shortly.

A.2.3 BGCL has requested for First Time Charging clearance after LILO of 400 kV Patna - Balia line 3 & 4 at Naubatpur, BGCL Substation.

A.2.4 NRLDC representative informed that charging has been done on 15.03.2022. He added that approval of both RPCs is required for any inter-regional line. The same may be followed by Bihar in future.

A.2.5 Forum approved the proposal of BGCL for regularization.

A.3 System Study for Capacitor requirement in NR for the year 2019-20

A.3.1 Forum was apprised that 33rd TCC/ 37th NRPC meeting approved that system

studies for capacitor requirement in NR shall be conducted for the year 2016-17 and 2017-18 and the expenditure for the same shall be met from NRPC Fund.

A.3.2 In 34th TCC/ 38th NRPC, forum was apprised that Letter of Award was issued to CPRI for carrying out the studies with consultancy charges of Rs. 20 Lakh plus Service tax after due approval from Chairperson, NRPC. However, due to delay in data submission by the utilities for the period of FY 2016-17, it was decided to conduct the studies for 2017-18 and 2018-19.

A.3.3 In 35th TCC/ 39th NRPC, forum was apprised that CPRI has submitted the report of the study for 2017-18.

A.3.4 In 37th TCC/ 40th NRPC, forum decided that due to involvement of huge exercise of data collection involving the DISCOMs, study will be conducted for 2019-20 in place of 2018-19 and that too in two stages:

a) One at 220/132 kV level

b) Subsequently, down to 11/33 kV level

Moreover, forum agreed for the additional charges which may be levied by CPRI for conducting the study to be paid from NRPC fund.

A.3.5 In 38th TCC and 41st NRPC, forum was apprised that CPRI has submitted their revised offer for the above said study and has quoted consultancy charges of Rs. 55,00,000/- for the study for 2019-20 in addition to Rs. 10,00,000/- bill raised by them for the study conducted for the period 2017-18. Forum advised NRPC Sectt. to negotiate the cost of study for 2018-19 with CPRI.

A.3.6 In 39th TCC/ 42nd NRPC, forum was apprised that after negotiation, CPRI has revised their Techno-Commercial offer to Rs. 32 Lakhs (excluding Taxes) for the study for 2019-20 including charges for the study conducted for the period 2017-18. Forum approved the cost.

A.3.7 In 45th TCC/ 48th NRPC meeting, forum decided that CPRI may be asked to submit the report for 2019-20 at 220/132 kV level along with the guidelines for finding the capacitor requirement at 11/33 kV level. In the meeting, CPRI representative stated that as there were diversified network configurations at the level of DISCOMs, the guidelines to be provided would be generalized and may also include some empirical formula along with examples which may guide the DISCOMs for finding out the capacitor requirement. It was also agreed that CPRI would only submit general guidelines and it would not be used as a permanent yardstick to measure the capacitor requirement of states. States would be free to use their own philosophy.

A.3.8 It was also decided that after the submission of report for 2019-20 and the guidelines, the same would be studied by same Committee, who had earlier recommended for guidelines and foreclosure of the contract. Based on Committee's recommendations, NRPC Sectt. can process the pending bills of Rs. 14 Lakh (Rs. 2 + 12 Lakh), excluding taxes along with foreclosure of the contract.

A.3.9 Based on the above deliberation, CPRI submitted the system study report (enclosed in the agenda of 177th OCC meeting) and which was circulated among all the SLDCs and STUs vide e-mail dated 02.11.2020.

A.3.10 In the 177th OCC meeting, representatives of Punjab, Rajasthan, Delhi and Haryana stated that the capacitors considered in the study were far less than

already installed. In the meeting, it was decided that states shall first analyze the PSSE file considered by CPRI in its study and bring out the locations wherein capacitors are already installed in the network, but are not modelled along with their comments.

A.3.11 The list of bus-wise available MVAr and the additionally required MVAr computed in the CPRI report was shared separately by NRPC Sectt with SLDCs of Punjab, Haryana, Rajasthan, Delhi and Uttarakhand on 07.01.2021 with the request to provide available MVAr values in those buses.

A.3.12 In 179th OCC meeting, it was decided that any submission of MVAr data / feedback from the states would be would be allowed till 22.01.2021 and thereafter CPRI would conduct the modelling and simulation work for the purpose of final capacitor study report. Accordingly, feedbacks received from Punjab, Rajasthan, Haryana and Delhi was forwarded to CPRI for carrying out study and submission of report.

A.3.13 CPRI submitted the revised report on 24.02.2021 and thereafter same was shared with the constituent states.

A.3.14 In the 181st OCC meeting, the sub-group comprising of ten members was advised to study the CPRI report and submit its recommendation within two weeks in line with decisions of 45th TCC/ 48th NRPC meeting.

A.3.15 NRPC Sectt. sought comments/observations on the CPRI report from all the states. On which, comment from Delhi was received and Rajasthan, HP, Punjab, Haryana submitted NIL comment.

A.3.16 In the 182nd OCC meeting, forum decided that a video-conferencing meeting may be held by members of sub-group to finalize the comments latest by 30th April, 2021 and compiled comments may be sent to CPRI for necessary correction in the report.

A.3.17 In the 183rd OCC, it was discussed that sub-group meeting was held on 03.05.2021 (in place of originally schedule meeting on 30.04.2021, delayed as per request of some sub-group members due to health-related issues). In the sub-group meeting, PSSE file was requested from CPRI for better understanding and the same was later shared. OCC forum decided that after receiving observations/comments from Rajasthan, the compiled observations/comments may be sent to CPRI so that necessary corrections may be done in the draft report.

A.3.18 In 184th OCC, forum was apprised that compiled comments had been submitted to CPRI on 28th May'21. CPRI vide email dated 31st May'21 communicated that majority of comments are on the modeling of base case PSSE file. Since the file is given by NRPC and CPRI has not modelled it; so, they are not in a position to make any comment on the accuracy & modeling of file. Forum decided that a reminder may be sent to CPRI for submission of corrected report as two weeks has already passed.

A.3.19 In 185th OCC, forum was intimated that CPRI has submitted its point-wise reply on the observations of sub-group along with updated report on 28th June 2021.

A.3.20 Forum decided that issues highlighted by the sub-group in the report and clarifications/comments thereon of CPRI need to be converged at the earliest and

thus a video-conferencing meeting may be held between the sub-group and CPRI for resolution of issues and enabling report finalization.

A.3.21 The meeting was held on 06.08.2021 under the chairmanship of MS, NRPC through Video Conferencing. It was attended by members of the sub-group (constituted for studying the CPRI report), CPRI representatives, and officials from NRPC Sectt & NRLDC.

A.3.22 In the meeting, comments of the sub-group on the latest version of CPRI report was deliberated in detail. After weighing the merits of the original & both revisions of the report, following were decided:

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

A.3.23 Base case file (11.07.2018 00:45 hrs) and CPRI's September 2020 report was e-mailed to all sub-group members on 10.08.2021 along with the request to submit comments/observations thereon latest by 24.08.2021 as per decision of the meeting dt. 06.08.2021.

A.3.24 In the 187th OCC, forum was apprised that although last date for submission of comments was 24.08.2021, NRPC Sectt. received comments from Himachal Pradesh, Punjab, Rajasthan, Delhi, and NRLDC vide mails dt. 24.08.2021, 25.08.2021, 26.08.2021, 31.08.2021, and 03.09.2021 respectively. As the received comments were also on the base-case data, a meeting was held on 06.09.2021 among officers of NRPC Sectt, NRLDC and above four states for discussing comments before sending it to CPRI. After detailed discussions, following were decided:

A. Himachal Pradesh:

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

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

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

ii. Capacitors at 132 kV level.

iii. Nodes of major voltage profile mismatch

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

c) It was decided that after getting above data from HP, base-case will be tuned by NRLDC before sending to CPRI.

B. Punjab:

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

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

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

C. Rajasthan:

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

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

c) Rajasthan was requested to submit

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

ii. Voltage profile of generator buses.

D. Delhi:

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

A.3.25 It was decided that after receiving data from above four states, NRLDC will tune the base-case initially and will also ensure that regional generators shall not absorb reactive power in the base-case and then base case will be sent to CPRI along with compiled comments.

A.3.26 In the meeting, UP representative stated that they will send reply on mail of NRPC Sectt. dt. 10.08.2021 for submission of their comments. It was also decided that data received at NRPC Sectt. may be sent to NRLDC for tuning of base-case. NRLDC representative stated that base-case tuning may be completed by 30.09.2021.

A.3.27 CPRI vide e-mail dtd. 24.09.2021 requested that any change in loading & generation profile will be a new base case and this will be a fresh study for new base case. It will require an extensive time and efforts. CPRI requested to ensure that load/generation profile in tuned PSSE should be same as was given to CPRI for PSSE base 11.07.2018 at 00.45.

A.3.28 In view of CPRI's request, NRLDC was requested vide e-mail dtd. 24.09.2021 to halt tuning of base-case till further discussion.

A.3.29 A meeting was held between NRPC Sectt. and NRLDC on 04.10.2021, wherein it was decided that without incorporating corrective comments of states, the report is not acceptable w.r.t drawing any conclusion on requirement of capacitor. Accordingly, NRLDC was requested vide e-mail dt. 08.10.2021 to complete tuning of base-case at the earliest.

A.3.30 In 188th OCC meeting, NRLDC representative informed that tuned base-case will be submitted by NRLDC by 28.10.2021. It was decided that the same will be sent to CPRI for necessary correction in report.

A.3.31 NRLDC vide e-mail dt. 10.11.2021 submitted the tuned base-case to NRPC Sectt. mentioning that Base-case has been tuned considering the feedback/inputs received from states (Punjab, Delhi, Rajasthan, HP and UP) and considering NRLDC SCADA data of 11th July 2018.

A.3.32 Tuned base case along with comments of states was sent to CPRI vide mail dt. 30.11.2021 for correction in the report.

A.3.33 In 191st OCC, NRPC representative apprised the forum that a meeting was held between members of the sub-group (constituted for studying the CPRI report), CPRI representatives, and officials from NRPC Sectt & NRLDC on 05.01.2022, wherein it was decided that CPRI shall tune the Q_{gen} value taking help of NRLDC. Tuning may be done for some machines of Punjab (such as Talwandi Sabo), Uttarakhand (such as Shravanti), Himachal Pradesh, and Jammu. CPRI shall also tune Q_{gen} of Central Sector machines such as Salal, Rampur, Bhakra, Dehar etc. These Q_{gen} tunings shall be done in spirit to relieve machines from absorbing MVARs and to avoid over compensation in system due to recommended capacitors. CPRI intimated 20th Jan'22 as target date for the completion of activity.

A.3.34 CPRI vide mail dt. 20.01.2022 intimated that tuning has been done as per decisions of meeting dt. 05.01.2022. CPRI submitted study results also in the same mail.

A.3.35 The study results were sent to NRLDC vide mail dt. 24.01.2022 for comments, if any.

A.3.36 NRLDC intimated vide mail dt. 03.02.2022 for requirement of tuning of following units:

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

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

iii. ISGS: Dadri-C and Dadri NCR

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

A.3.37 Comments of NRLDC was sent to CPRI on 03.02.2022 for necessary action.

A.3.38 CPRI vide mail dt. 04.02.2022 highlighted that the tuned file has reached at a stage, where any further tuning in reactive power exchange from any one generator is resulting supply/absorption by nearby connected generating units. However, tuning has been done to the maximum extent possible.

A.3.39 CPRI was instructed vide mail dt. 05.02.2022 to prepare report and submit within a week's time.

A.3.40 In 192nd OCC, NRPC representative apprised the forum that report has been received from CPRI vide mail dt. 14.02.2022. However, some grammatical and typographical error were observed in the report and CPRI has been requested to resolve the same. After resolution of same, report shall be shared with sub-group members tentatively in next week.

A.3.41 NRPC Sectt. vide mail dt. 02.03.2022 shared the final study report of CPRI, with

states.

A.3.42 In 193rd OCC meeting held on 22.03.2022, forum decided that agenda may be taken up in next NRPC meeting for payment to CPRI.

A.3.43 Forum was requested to approve the payment of Rs. 14 Lakh excluding GST to CPRI (as per deliberations in 48th NRPC meeting).

A.3.44 Forum approved the proposal for payment of Rs. 14 Lakh (excluding GST) to CPRI.

A.4 Non-inclusion of LTA quantum for calculation of transmission charges for UPPCL share in UCH Stage-II (132 MW), UCH Stage-III (66 MW) & ROSA Stage-II (300 MW) (Agenda by UPPCL)

A.4.1 Forum was apprised that UPPCL vide letter dt. 11.03.2022 has informed that the issued was raised regarding wrongful charging of transmission charges against LTA of certain generators being done by CTU to UPPCL for Unchahar Stage-I, Unchahar Stage-II, Unchahar Stage-III, NAPP, TANDA Stage-II, and ROSA Stage-II.

A.4.2 CTU vide letter dt. 08.02.2022 acknowledged the issue raised by UPPCL and partially accepted the claim of UPPCL. CTU has intimated that NLDC may exempt deemed LTA quantum of UP from the computation of monthly transmission charges w.e.f. 01.11.2020 for UP quantum of share from Unchahar Stage-I, NAPP, and TANDA Stage-II as evacuation of UP's share power from these generation projects was on Intra State Transmission System (UPPTCL).

A.4.3 However, the issue regarding Unchahar Stage-II, Unchahar Stage-III and ROSA Stage-II still remains un-resolved. Matter was discussed in 44th Commercial Sub-committee meeting, wherein CTU intimated that a letter shall be sent to UPPCL on the issue.

A.4.4 CTU vide letter dt. 07.02.2022 has refused the claims of UPPCL in respect of Unchahar Stage-II, Unchahar Stage-III and ROSA Stage-II as these generation projects were planned along with ISTS system.

A.4.5 UPPCL has highlighted that under previous CERC (sharing of Inter State Transmission Charges & Losses) Regulations 2010 regime, transmission charges were allocated based on usage of the transmission assets by the entities to draw their allocated power and were independent of LTA quantum. In the contrary the new sharing Regulation 2020, allocates the charges based on (LTA+MTOA) quantum irrespective of usage of ISTS assets. So, provisioning of LTA quantum with various DISCOM(s) needs a relook under new Regulations as any additional/ unwarranted inclusion of LTA quantum has undesirable effect on the concerned DISCOM.

A.4.6 Regulation 13(11) of Chapter 3 (SPECIFIC CASES) of CERC (Sharing of Intra State Transmission Charges & Losses) Regulation, 2020 may kindly be referred to:

'Where a generating station is connected to both ISTS and intra-state transmission system, only ISTS charges and losses shall be applicable on the quantum of Long-

term access and medium-term Open Access corresponding to capacity connected to ISTS'.

In this regard, it is to note that above clause mentions only ISTS charges & losses shall be applicable on the quantum of long-term access corresponding to capacity connected to ISTS. In above clause the word corresponding to capacity connected to ISTS is hereby being emphasized by UPPCL to lodge their claim.

A.4.7 It is to note that UCH-II, UCH-III and ROSA Stage-II are connected to both ISTS and Intra State Transmission system, but for evacuation of UPPCL share of generation in these 03 power stations no corresponding evacuation through ISTS lines is desired as Intra state transmission lines is sufficient for evacuation of UPPCL LTA share of these generators. It is to submit that the present ISTS lines of these generators is available for evacuation of power for other Inter-state shareholders of these generators. In such case UPPCL must not be billed & charged for transmission charges of such ISTS lines which are for evacuation of power for other state DISCOM(s).

A.4.8 Judgement order of CERC on petition no. 20 MP/2017 in matter of M/s Kanti Bijlee Utpadan Nigam Limited, New Delhi Vs CTU may be referred. In this the petitioner M/s Kanti Bijlee Utpadan Nigam Limited, New Delhi was seeking directions with regard to signing of the LTA agreement by the beneficiaries of the generating station of MGTS stage-II with the CTU along with issue of jurisdiction for schedule of the power from the generating station, non-applicability of PoC charges for the power scheduled to Bihar. In the subject matter the Hon'ble CERC have stated following:

"*55. Considering the suggestions of ERPC, we are of the view that while computing schedules of Bihar from MTPS Stage-II, ISTS Charge and losses shall not be applicable on schedules of Bihar."*

A.4.9 In view of above, UPPCL has requested that necessary instruction may kindly be issued for non-inclusion of LTA quantum for calculation of transmission charges for UPPCL share in case of UCH stage-II (132 MW), UCH stage-III (66MW) & ROSA stage-II (300 MW).

A.4.10 In the meeting, CTU representative stated that the request of UPPCL was considered as per methodology finalized in SR (Southern Region) Sub-Committee and reply letters were issued accordingly.

A.4.11 UP representative stressed that this is a case of change of law. Under previous CERC (sharing of Inter State Transmission Charges & Losses) Regulations 2010 regime, transmission charges were allocated based on usage of the transmission assets by the entities to draw their allocated power and were independent of LTA quantum. In contrary, the new Sharing Regulations 2020 allocates the charges based on (LTA+MTOA) quantum irrespective of usage of ISTS assets.

A.4.12 UP highlighted that intra state transmission lines are sufficient for evacuation of UPPCL LTA share. Moreover, in case of ROSA, the full share of power is being drawn by UPPCL and the ISTS system was initially developed for evacuation of power to Haryana DISCOM which later backed out to sign PPA/TSA with ROSA.

A.4.13 CTU clarified that at the time of planning, nowhere, it has been mentioned that no charges will be levied on UP. UP may approach CERC, if required.

A.4.14 MS, NRPC stated that CTU may visit NRPC Sectt. along with all relevant documents on the matter for discussion. Accordingly, the agenda may be taken in upcoming NRPC meetings.

A.5 OPGW installation on two nos. of existing lines which are to be LILOed at new Dausa substations under TBCB project (Agenda by CTUIL)

A.5.1. Forum was apprised that New Dausa substation is proposed to be established under TBCB project under the bidding '*Transmission system for evacuation of power from REZ in Rajasthan (20GW) under phase-III – Part-H*' by LILOing the following two existing lines:

a. 765kV D/c (2xS/c) Jaipur (Phagi) (RVPNL) – Gwalior line (312 kms.)

b. 400kV D/c Agra – Jaipur (South)(PG) line (254 kms.)

A.5.2. As OPGW is not available on the both of the above two nos. existing lines, CTUIL has proposed a scheme for OPGW installation by replacing one no. of earth wire on the following lines along with terminal equipment to provide data & voice connectivity of New Dausa S/s:

a. 765kV S/c Jaipur (Phagi) (RVPNL) – Gwalior line (312 kms.) (Ckt-1 is proposed)

b. 400kV D/c Agra – Jaipur (South)(PG) line (254 kms.)

A.5.3. In line with MoP office order no. 15/03/2017-Trans-Pt(1) dated 09.03.2022 regarding "Guidelines on Planning of Communication System for Inter-State Transmission System (ISTS)" as per clause-5 for Category (B) Communication Schemes/Packages proposed by CTUIL for upgradation /modification of existing ISTS Communication System shall be put up to RPCs for their views. RPCs to provide their views on the Scheme/Packages proposed by CTUIL within 45 days of receipt of the proposal from CTUIL.

A.5.4. Clause 5 of the Category (B) is stipulated below:

"Communication Schemes/Packages proposed by CTUIL for upgradation / modification of existing ISTS Communication System, standalone projects, adoption of new technologies shall be put up to RPC for their views. RPC to provide their views on the Scheme / Packages proposed by CTUIL within 45 days of receipt of the proposal from CTUIL."

A.5.5. In consideration of above, views of NRPC forum was solicited so that the scheme may be taken up for consideration in the NCT meeting along with the views of NRPC.

A.5.6. In the meeting, CTU representative stated that OPGW may be installed for both sides of LILO portion. Timeline will also match with TBCB project.

A.5.7. NRLDC representative stated that TeST committee has already decided that OPGW from Phagi to Dausa and Dausa to Jaipur (South) would suffice the purpose as Dausa will get connection to Jaipur (Phagi), Jaipur (South) and Beawar.

A.5.8. RVPN representative recommended that OPGW from Dausa to Gwalior and Dausa to Agra also shall be installed.

A.5.9. Forum overruled the TeST decision and decided that OPGW for full portion may be done simultaneously. Shorter portion i.e., Phagi – Dausa- Jaipur (South) may be installed first and longer portion may be done thereafter. Forum decided that this decision shall be subject to upcoming MoP guidelines in this regard.

A.6 Non-availability of Real-Time data from PTCUL

A.6.1. Forum was apprised that PTCUL telemetry issues were discussed in the 19th TeST committee meeting held on 07.03.2022. As per the agenda submitted by NRLDC, out of 51 Sub-Station/Generating Stations, data from only 28 Sub-stations are integrated at PTCUL SLDC. Also, many feeders are not integrated even at the locations where RTUs are installed.

A.6.2. The issue was discussed in Special Meeting with PTCUL held in July 2020 and December 2020. Subsequently issue was discussed in 17th and 18th Test Meeting and 45th TCC-48th NRPC and 47th TCC-49th NRPC meetings.

A.6.3. PTCUL is still not connected to Backup NRLDC and was requested to take up the matter with its OEM for ICCP integration with Backup NRLDC.

A.6.4. During 47th TCC - 49th NRPC 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/ Transducer replacement work is in progress and same would be completed within 3 months.

A.6.5. However, there has been negligible improvement in this regard. The response from the representative of PTCUL in the 19th TeST sub-committee meeting was also unsatisfactory.

A.6.6. In the meeting, NRLDC representative highlighted that the matter has been pursued with PTCUL since July'2020.

A.6.7. PTCUL representative informed that they are on the verge of finalizing the OPGW project and order will be placed in one-month duration. MoU has been signed with POWERGRID for SCADA upgradation. Tender has been floated for RTU. MFT replacement is being done and will be completed in two months.

A.7 Non-availability of Reliable/ Redundant Communication System for PTCUL, SLDC

A.7.1. Forum was apprised that SLDC Uttarakhand is connected to NRLDC through radial network from Roorkee-Dehradun and all services like ICCP, PMU/PDC and VOIP are working on this. Any issue in link leads to disruption of Voice and Data communication between SLDC Uttarakhand and NRLDC.

A.7.2. 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/ PGCIL assured that reliable communication link would be available in 6 months.

A.7.3. Issue was also discussed in 47th TCC/ 49th NRPC meeting where PTCUL representative informed that they are in the process of tendering of RTU and OPGW Installation work and it is expected to be completed in 6 months. PGCIL mentioned that after completion of OPGW works by PTCUL on Majra (Dehradun SLDC) to Dehradun PG line, PGCIL will immediately integrate the communication equipment and establish redundant communication route for Dehradun SLDC.

A.7.4. However, there has been negligible improvement in telemetry from PTCUL. The matter was discussed in the 19th TeST subcommittee meeting wherein the response from PTCUL representative was found to be unsatisfactory. Hence, matter has been referred to the NRPC meeting.

A.7.5. In the meeting, PTCUL representative informed that they are on the verge of finalizing the OPGW project and order will be placed in one-month duration. He proposed that lease line may be used to connect NRLDC. Since Kashipur SLDC is already connected with Dehradun SLDC. Therefore, lease line from Dehradun to Kashipur SLDC may be used.

A.7.6. NRLDC representative stated that proposal may be accepted.

A.7.7. Forum accepted the proposal.

A.8 Scheduling, accounting and other treatment of the legacy shared projects in Northern Region

A.8.1. Forum was apprised that at present there is different treatment regarding scheduling and accounting for different legacy transactions.

Sl. No.	Plant Name	State in which Plant is embedded	State whose entities have share in the plant	Share in %	Share in MW*	Transaction ID for Schedule in Inter-state	Category
1	Bawana	Delhi	Haryana	10	137	SH-07	Scheduled under proper Open Access (CTU) Including Tr. Charges Including RLDC Fee & Charges Schedule changes are done ex-ante as per the IEGC
	Bawana	Delhi	Punjab	10	137	SH-06	
	CLP-Jhajjar	Haryana	Delhi	10	124	LT-05	
2	Rihand hydro	UP	MP	13.75	41.25	LT-01	Considered under deemed LTA. (Without formal LTA/MTOA issuance
	Matatila	UP	MP	45	13.75	LT-02	

							by CTU) Tr. charges considered RLDC Fee & Charges not considered. Schedule changes are done ex-ante as per the IEGC
3	Vishnu Prayag	UP	Uttarakhand	12	60	SH-01	Considered under deemed LTA. (without formal LTA/MTOA issuance by CTU) Tr. Charges not considered RLDC Fee & Charges not considered. Schedule changes are done ex-ante as per the IEGC
	Alaknanda	UP	Uttarakhand	12	40	LT-38	
	Rajghat	MP	UP	25	11.25	LT-13	
4	Khara	UP	HP	20	14.4	SH-02	Considered under deemed LTA. (without formal LTA/MTOA issuance by CTU) Tr. Charges not considered RLDC Fee & Charges not considered. Schedule of these transactions are changed post-facto based on actual generation as per legacy.
	RSD	Punjab	HP		22	SH-04	
	Chibro	Uttarakhand	HP	25	60	SH-05	
	Khodri	Uttarakhand	HP	25	30		
	Dhalipur	Uttarakhand	HP	25	12.75		
	Dhakrani	Uttarakhand	HP	25	8.43		
	Kulhal	Uttarakhand	HP	20	6		

A.8.2. CERC Regulations are being completely followed only in case of Category-1 projects. The matter has been discussed in all CSC/TCC/NRPC meetings since the 40th CSC meeting held on 12.09.2019 with the proposal that all legacy projects should be treated similarly i.e.,

i. All these transactions wherein specific LTA has not been granted should either be considered under deemed LTA or specific LTA may be granted by the CTU.

ii. The transactions should be subjected to transmission charges as well as RLDC fee and charges.

iii. Revisions in schedules of these transactions should be done ex-ante as applicable to any other transactions under the respective category.

iv. Post-facto revisions of some of these transactions which are happening today should be stopped.

A.8.3. As per decision taken in the 43rd TCC/ 46th NRPC meeting, and reiterated in subsequent meetings, all utilities were urged to hold bilateral meetings and submit their observations/objections with regard to treatment of Category 2, 3 and 4 projects similar to Category 1 projects. However, no meeting has been held till date and no inputs have been received from any utility.

A.8.4. In view of above, the following is proposed:

i. Since the proposed GNA Regulations do away with the requirement of grant of LTA from particular stations, the issue of levy of transmission charges and RLDC fee & charges would be resolved for category 2, 3 and 4 projects. Hence, the same may be dropped from agenda.

ii. With reference to post-facto change in scheduled based on actual generation for projects under Category-4, it is proposed that this practice may be changed w.e.f. 01.04.2022.

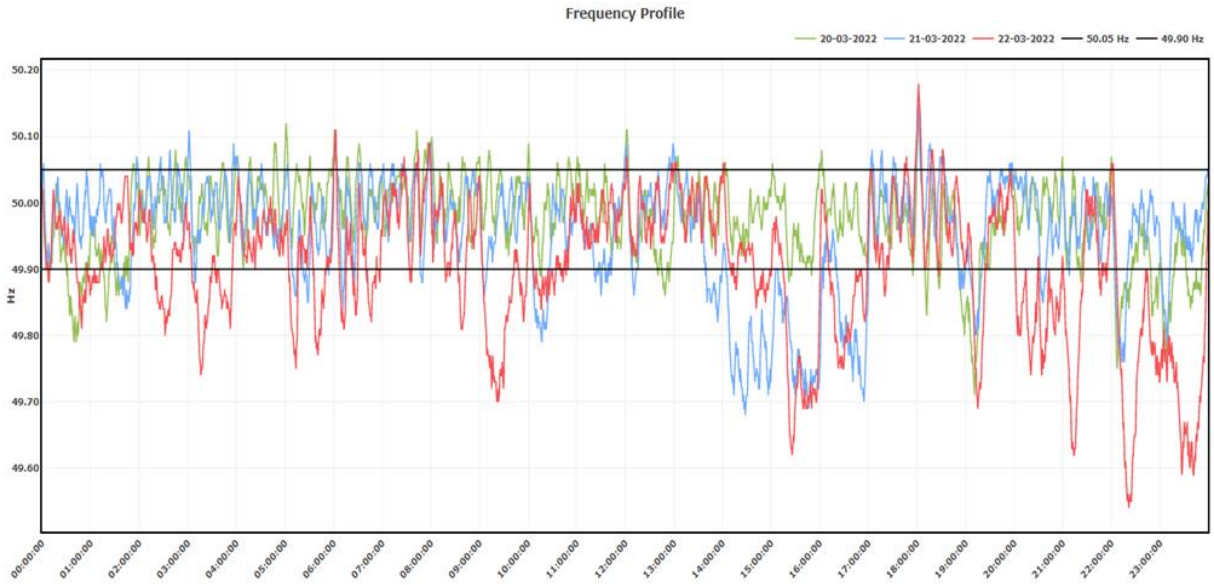
A.8.5. Representative of HP agreed to the proposal. He added that water release is determined day ahead, therefore day ahead scheduling for these projects is possible.

A.8.6. Representative of Uttarakhand agreed in principle that the practice of post-facto revisions for Category-4 projects should be stopped. However, he requested for some time to implement the plan.

A.8.7. The committee agreed with the request of Uttarakhand to postpone the implementation of stopping post-facto revision in schedule w.e.f. 01.04.2022. The new date for the switchover would be decided in upcoming NRPC meetings.

A.9 Low frequency operation of grid (agenda by NRLDC)

A.9.1 NRLDC representative stated that as deliberated in 193 OCC meeting, NR demand has been increasing and is likely to increase further in coming days and therefore keeping system parameters within operational band is extremely important. At all India level demand is expected to touch 206GW in April 2022 and may be even in range of 215GW during Jun-Sep months this year. NRLDC representative presented frequency profile for 20-03-2022 to 22-03-2022:



A.9.2 It was deliberated that frequency profile has sharply deteriorated in last 2-3 days. The frequency profile is very poor during the evening hours after solar generation is not available. The main reason for the above poor frequency profile is high over drawal by the some of the states including NR states such as J&K, HP, and Haryana. Frequency has remained outside the operation band for more than 25% of time for last few days and this percentage even crossed 44% on 22.03.2022. The Frequency Variation Index (FVI) which was generally in the range of .03 to .04 had gone upto 0.197. This is certainly an alarming situation.

A.9.3 Although hydro generation has started increasing, it is still much below the full generation capacity. It can be seen that the power prices in country have gone very high in view of high demand & congestion. Therefore, maximizing all the internal generation as well as load management is necessary for safe and secure operation of the Grid.

A.9.4 All the concerned were requested to strictly take actions and avoid over drawal from Grid for safe & secure operation of the Grid. Utilities were advised to take following measures:

a. Managing the demand portfolio and making prearrangements for procurement of power and ensuring portfolio balancing through STOA/RTM market segments

b. More units shall be kept on bar in order to meet the increased demand safely as well as maintaining reserves

c. Keeping sufficient coal stock and maintaining adequate reserves.

d. Restricting deviations from schedule and ensuring no under injection by the generators from schedule.

e. Advance action is required for bringing the units on bar to avoid situation such as encountered on 22nd March 2022.

f. Ensure that ADMS is in service and expedite its implementation if not commissioned.

g. Ensure healthiness and availability of AUFLS and df/dt load shedding.

h. In case of inadequate margins in intrastate generators measures for emergency load regulation measures may be taken in interest of grid security.

i. Pursue generators to expedite revival of thermal units under forced outage wherever feasible.

A.9.5 MS NRPC stated that SLDCs performance in grid management has improved over the years and they are also now regularly assessing their ATC/TTC limits. However, one aspect which still needs work is proper load forecasting and ensuring sufficient generation round the clock to ensure proper load-generation balance. It was also highlighted that states are sometimes hesitant to bring machines on bar and have over dependency on real-time market. If all states start depending on real-time market, states need to purchase costly power. They shall instead try and bring their own machines on bar.

A.9.6 States need to develop plan on how they shall manage load-generation balance in case one/two of their generating units are out and they are also not able to procure full power from real-time market. It is also essential that bottle necks in ensuring adequate coal-stocks should clearly be brought out to the highest level, so that necessary actions are taken by concerned authorities.

A.9.7 In this case, the list of radial feeders become very important. Utilities have been requested number of times in OCC meetings to update list of radial feeders which can be opened on the directions of NRLDC to regulate the demand. List of such radial feeders has been provided by respective utilities and is part of 'Operating Procedure of Northern Region'. Latest list of radial feeders is also attached as **Annexure-I**. Following are the attributes for such feeders:

a. Feeders shall be radial in nature

b. They should usually have substantial load flow so that reduction of drawal can be prominently noticed on opening of such lines.

c. such feeders are not part of any other scheme such as any SPS, UFR or df/dt actuated shedding

A.9.8 It was also highlighted that this year grid management in summer 2022 would be really challenging. During the month of May-August, ensuring safe and secure grid operation would be challenging. SLDCs should take necessary actions so that situation of opening of physical feeders for demand management does not arise. Therefore, advance actions need to be taken in this regard. All states also need to make sure that list of physical feeders available at control centers is correct.

A.9.9 The opening of feeders is generally an extreme step which shall be required in case of threat to grid security and non-adherence to RLDC instructions to manage overdrawl by SLDCs/ DISCOMs. SLDCs also need to initiate actions and should ensure opening of feeders for physical regulation in case of low frequency operation of the grid. In such a case, every utility also needs to take actions to support RLDC by following their instructions including opening of feeders.

A.9.10 SLDCs are once again requested to review and share the list of the following:

a. Intrastate 132kV feeders and 220/132 kV and 132kV / 33 kV transformers which supply load radially within the state and can be disconnected at the instruction of SLDC.

b. Tie lines which supply load radially within the state, which can be switched off from the substation belonging to a different entity, at the instruction of RLDC.

c. 400/220kV and 220/132kV ICTs at state boundary, which cater load radially and can be switched off from the substation belonging to ISTS or other entity.

A.9.11 Utilities may also intimate in case no radial feeders are available to disconnect. In such a case, NRLDC along with constituent will study the grid connected feeders /ICTs for disconnection which has low impact in the NR Grid. For such states, it is requested to nominate one nodal officer from SLDC which shall coordinate with NRLDC and study about such feeders.

A.9.12 Telemetry is to be ensured for all such feeders for monitoring in real time by SLDC/ NRLDC. States are also advised to take remedial measures for minimizing sustained over drawal at low frequencies as per the IEGC.

A.10 Power supply position of Delhi state control area (agenda by NRLDC)

A.10.1 Forum was apprised that demand of Delhi state has not shown any increasing trend in 2020 and 2021 due to lockdowns during summer seasons for last two years, therefore it is expected that this year demand of Delhi would be much higher (8200MW in Jul'2022 as per latest NRPC LGB which is 800MW higher than previous year).

A.10.2 NRLDC representative stated that during summer 2021, N-1 non-compliance issue was observed at 400/220kV Bamnauli and Mundka ICTs. With the commissioning of 400/220kV Dwarka S/s and underlying network, the loading of 400/220kV Bamnauli ICTs has reduced. DTL has planned to shift one 315MVA ICT from 400/220kV Bamnauli to 400/220kV Mundka as presently, there are only two 315MVA ICTs available at Mundka. Delhi SLDC representative had stated in 192 and 193 OCC meeting, they would also be shifting some load from Mundka to other stations such as Bamnauli.

A.10.3 During last year, even with three 315 MVA ICTs n-1 non-compliance was observed at Mundka, therefore NRLDC has been asking Delhi SLDC and DTL to implement SPS at 400/220kV since last several months. However, as per discussions held in last few OCC meetings, there has not been any progress in this regard. It is important to understand the simultaneous outage of 3*315MVA ICTs at Mundka leads to loss in Delhi state control area even impacting DMRC supply as observed last year.

A.10.4 Thus, it is of utmost importance that Delhi SLDC ensures n-1 non-compliance at all 400/220kV stations and DTL commissions SPS at 400/220kV Mundka as early as possible. Delhi SLDC needs to share the latest ATC/TTC assessment for summer 2022 along with updated basecase at the earliest.

A.10.5 However, no response was received from Delhi representative in the meeting.

A.10.6 MS NRPC expressed concern and stated that representative should attend meetings and the issue is all the more important due to upcoming summer months.

A.11 Ensuring sufficient Coal stock before Summer 2022 (agenda by NRLDC)

A.11.1 In the meeting, it was deliberated that it is important that maximum internal generation is available along with sufficient coal stocks so that difference between load and generation can be kept minimum. To sensitize all the constituents of NR about the issue of coal scarcity and its impact on load generation, the issue is being regularly discussed in OCC meetings of Northern region. Latest CEA coal stock position for NR generating stations as on 28.03.2022 was presented in the meeting.

A.11.2 Following generating stations in Northern region have critical stock (less than 10 days):

Yamuna Nagar TPS (7)	Chhabra-I Ph-1 TPP (0)	Tanda TPS (9)
Goindwal Sahib TPP (1)	Kota TPS (6)	Unchahar TPS (6)
Talwandi Sabo TPP (1)	Suratgarh TPS (7)	Anpara C TPS (8)
	KAWAI TPS (4)	ROSA TPP Ph-I (4)
	KALISINDH TPS (2)	PARICHHA TPS (1)
	SURATGARH STPS (7)	HARDUAGANJ TPS (6)
	CHHABRA-II TPP (6)	OBRA TPS (9)

A.11.3 HPGCL representative stated that they are even trying to procure from RCR mode (Rail cum road) and also imported coal as per CEA guidelines and the coal stock is likely to improve in coming days. Punjab representative stated that there is coal availability issue in Talwandi Saboo and Goindwal TPS generating stations. Rajasthan representative stated that on average 6-7 days coal stock is available in their state generating stations. However, necessary actions are being taken to build up coal stocks. After 1–2-month, production from captive mines would also be started. CIL is also helping in coal movement, however there is some logistics issue in availability of coal from SECL. Similar issue was also highlighted by Kawai representative. UP representative stated that supply to Parichha TPS has been increased and situation is likely to improve in coming days.

A.11.4 It was deliberated that sudden information of outage of thermal units on coal unavailability pose challenges to meet high demand. It was therefore requested to take necessary actions for maintaining sufficient coal stocks and update & share coal stock position of thermal plants timely as agreed earlier in TCC/NRPC meeting.

A.12 Maximising internal generation and ensuring adequate reserves (agenda by NRLDC)

A.12.1 In the meeting, it was deliberated that Hon'ble CERC vide its order dated 13th October 2015 in petition 11/SM/2015 mandated as under:

"Each region should maintain secondary reserves corresponding to the largest unit size in the region and ***tertiary reserves should be maintained in a de-centralized fashion by each state control area for at least 50% of the largest generating unit available in the state control area****. This would mean secondary reserves of 1000 MW in Southern region; 800 MW in Western regions; 800 MW in*

Northern region; 660 MW in Eastern region and 363MW in North-Eastern region (total approx. 3600 MW on an All India basis). Primary reserves of 4000 MW should be maintained on an All India basis considering 4000 MW generation outage as a credible contingency. The same should be provided by generating units in line with the IEGC provisions."

A.12.2 However, on number of occasions it is being observed that adequate reserves are not being ensured by states. In the event of outage of one unit, the state control area starts to overdraw from the grid and starts deteriorating the frequency profile.

A.12.3 Even in the month of March'2022, there have been numerous forced outages of generating units under state control area. It is imperative that such outages especially in the high demand season are minimised to ensure frequency remains within the range mentioned in IEGC. Regional outage summary as on 23.03.2022 is shown below:

Regional Generation Outage Summary (MW)						
Central Sector			State Sector			Regional Total Outage (MW)
Planned	Forced	Total (CS)	Planned	Forced	Total (SS)	
4373	386	4759	3716	8514	12229	16989

A.12.4 Details of forced unit outages in the month of March 2022 is attached as **Annexure-II**. It can be seen that there have been numerous forced outages especially in Rajasthan and UP state control areas. Moreover, unit outages on boiler tube leakage have also increased since last month.

A.12.5 All generating stations were advised to ensure sufficient coal stock and minimise forced unit outages in the high demand months of summer/monsoon in Northern region.

A.13 Proposed works in NRPC Sectt. (Agenda by NRPC Sectt.)

A.13.1 Forum was apprised that following services are proposed to be procured in FMS Outcome (Area based) bidding at GeM:

i. Front Desk Management (1 no.) - 5 days per week
ii. Electrical works (1 no.) - 6 days per week
iii. Regular work of Guest House (1 no.) - 6 days per week
iv. Gardening (1 no.) - 6 days per week
v. Plumbing (1 no.) - 6 days per week
vi. Visitor Management & Access Control (1 no.) - 6 days per week
vii. Cleaning staff (4 nos.) – 6 days per week

Estimated cost is around Rs.30 Lakh per annum. Minimum support price equivalent to minimum wages of Labour Ministry is being used.

A.13.2 One quarter (B-4) in NRPC colony has been allotted recently to one staff member of NRPC. Before physical possession of the quarter, works like repair, whitewash, etc. is required. The estimated expenditure on this account is around Rs 50,000/. It is proposed that this amount may be spent from NRPC fund.

A.13.3 Tendering on GeM for Hiring of Professionals for Application Development and Maintenance of web-based ABT software and related software at NRPC for a period of one year with estimated amount of Rs.7.80 Lakh is proposed.

A.13.4 Forum approved the above three proposals of NRPC Secretariat.

A.13.5 Further, MS, NRPC proposed that MS, NRPC may be given authority to spend Rs.1 Lakh at a time from NRPC Fund similar to other RPCs. Details of expenditure may be put up every month in NRPC meeting for information of forum.

A.13.6 Forum sanctioned the authority to MS, NRPC for expenditure of Rs.1 Lakh at a time.

Meeting ended with vote of thanks to the chair.

Annexure-I

Annexure

FEEDERS FOR PHYSICAL REGULATION OF SUPPLY IN UTTAR PRADESH

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

FEEDERS FOR PHYSICAL REGULATION OF SUPPLY IN PUNJAB

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

FEEDERS FOR PHYSICAL REGULATION OF SUPPLY IN JAMMU & KASHMIR

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

FEEDERS FOR PHYSICAL REGULATION OF SUPPLY IN RAJASTHAN

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

FEEDERS FOR PHYSICAL REGULATION OF SUPPLY IN HARYANA

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

FEEDERS FOR PHYSICAL REGULATION OF SUPPLY IN HIMACHAL PRADESH

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

FEEDERS FOR PHYSICAL REGULATION OF SUPPLY IN UT CHANDIGARH

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

FEEDERS FOR PHYSICAL REGULATION OF SUPPLY IN UTTARAKHAND

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

FEEDERS FOR PHYSICAL REGULATION OF SUPPLY IN BBMB PREMISES

SCHEDULE A LINES

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

SCHEDULE B LINES

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

Annexure-II

Generating Unit Outage Report from 01-03-2022 to 24-03-2022

Forced Outages

S.No	Station	Location	Owner	Unit No	Capacity MW	Reason(s)	Outage		xpected Revival Date
							Date	Time	
	Central Sector (CS)								
1	Pong HPS	PUNJAB	BBMB	4	66	Draft tube leakage repairing	28-07-2021	15:00	31-03-2022
2	Koteshwar HPS	UTTARAKHAND	THDC	1	100	due to fault in GT	04-11-2021	22:58	31-03-2022
3	Malana2	HP	HPSEB,EVEREST	1	50	No evacuation path due to tripping of 132kV Malana2-Chaur ckt 1&2 tripped	06-02-2022	16:29	-
4	Sewa-II HPS	J&K	NHPC	1	40	Differential protection operated	22-02-2022	16:00	-
5	Dadri GPS	UP	NTPC	1	130	liquid fuel pump tripped due to chocking of filters on high sludge	23-03-2022	20:18	-
	Sub Total (CS)				386				
	State Sector (SS)								
1	Pragati Gas Turbines	DELHI	DTL/Pragati CCGT	2	105	internal fault	26-12-2021	01:10	-
2	Delhi Gas Turbines		DTL	9	34	STG Governor oil leakage	12-02-2022	20:00	-
3	Delhi Gas Turbines		DTL	5	30	due to tripping of associated STG at 20:00 hrs	12-02-2022	21:04	-
4	Goindwal(GVK)	PUNJAB	PSPCL	2	270	Abnormal boiler sound(Coal shortage wef 15:27Hrs on12.02.2022)	07-02-2022	11:17	-
5	Talwandi Sabo TPS		PSTCL,PSPCL	3	660	Boiler tube leakage	22-03-2022	12:19	25-03-2022
6	Giral (IPP) LTPS	RAJASTHAN	RRVPNL	1	125	Unit was out on bed material leakage and it is likely to be scrapped.	11-07-2014	08:20	-
7	Giral (IPP) LTPS		RRVPNL	2	125	Unit was out on bed material leakage and it is likely to be scrapped.	27-01-2016	15:27	-
8	Chhabra TPS		RRVPNL	4	250	Due to ESP structure damage	09-09-2021	00:47	-
9	Kota TPS		RRVPNL	1	110	Boiler Problem	04-03-2022	13:07	-
10	Kota TPS		RRVPNL	5	210	Boiler/ESP/Turbine work as per SLDC-RS	13-03-2022	11:01	-
11	Suratgarh TPS		RRVPNL	6	250	IPP(C&I) problem as per SLDC-RS	13-03-2022	12:51	-
12	Kota TPS		RRVPNL	3	210	Abnormally high hydrogen consumption	13-03-2022	21:20	-
13	Suratgarh SCTPS		RRVPNL	7	660	Loss of all fuel	15-03-2022	01:32	-
14	Suratgarh TPS		RRVPNL	4	250	Steam leakage in boiler	22-03-2022	11:25	-
15	Suratgarh SCTPS		RRVPNL	8	660	DUE TO ABNORMAL SOUND IN CW - INLET DUCT	22-03-2022	12:57	26-03-2022
16	Chhabra SCTPS		RRVPNL	5	660	Boiler tube leakage	23-03-2022	15:02	26-03-2022
17	Rajwest (IPP) LTPS		RRVPNL	5	135	Bed Material Leakage	23-03-2022	17:42	-
18	Rajwest (IPP) LTPS		RRVPNL	7	135	Turbine Problem	23-03-2022	18:13	-
19	Rajwest (IPP) LTPS		RRVPNL	2	135	due to draining problem	23-03-2022	18:35	-
20	Obra TPS	UP	UPPTCL	13	200	High bearing vibration in turbine	08-01-2022	06:36	-
21	Meja TPS		UPPTCL,NTPC	2	660	Boiler tube leakage	07-02-2022	18:59	15-04-2022
22	Rosa TPS		UPPTCL	2	300	generator Hydrogen gas leakage	22-02-2022	05:34	-
23	Rosa TPS		UPPTCL	1	300	box up due to generator transformer issue	26-02-2022	16:40	-
24	Paricha TPS		UPPTCL	4	210	Due to condenser tube leakage	04-03-2022	20:43	-
25	Rosa TPS		UPPTCL	3	300	Turbine Bearing Heavy Oil Leakage	12-03-2022	11:59	-
26	Lalitpur TPS		UPPTCL,LPGCL	3	660	due to insufficient DM water in plant	16-03-2022	05:31	25-03-2022
27	Lalitpur TPS		UPPTCL,LPGCL	1	660	Insufficient DM water stock and DM water plant under forced outage	17-03-2022	03:28	-
28	Anpara TPS		UPPTCL	3	210	Boiler tube leakage	21-03-2022	11:14	-
	Sub Total (SS)				8514				
Total Forced Outage (CS+SS)					8900				

Generating Units Revived from 01-03-2022 to 24-03-2022 under forced outage

S.No	Station	Location	Owner	Unit No	Capacity MW	Reason(s)	Outage		Revival	
							Date	Time	Date	Time
	Central Sector (CS)									
1	ISTPP (Jhajjar)	HARYANA	APCPL	3	500	Tripped due to Flame Failure	13-03-2022	18:54	13-03-2022	22:08
2	Budhil HPS (IPP)	HP	Greenko Budhil	1	35	Flooding of power house due to damage of Main Inlet Valve at Budhil.	26-10-2021	17:00	22-03-2022	00:00
3	Budhil HPS (IPP)	HP	Greenko Budhil	2	35	MIV problem	25-02-2022	21:00	22-03-2022	00:00
4	Bairasiul HPS	HP	NHPC	2	60	Problem in VT Fuse	01-03-2022	18:15	02-03-2022	13:01
5	RAPS-A	RAJASTHAN	NPCIL	2	200	Bus bar protection operated	06-03-2022	17:18	11-03-2022	21:10

6	Tanda TPS	UP	NTPC	3	110	BMCC Bus fault(Issue in boiler)	12-03-2022	22:45	13-03-2022	08:20
7	Dadri-II TPS	DELHI		2	490	Due to hotspot in both main bay isolator 1889A & tie bay isolator 1789B.	03-03-2022	09:23	03-03-2022	15:04
8	Dadri-II TPS	DELHI		2	490	High turbine vibration	20-03-2022	00:30	20-03-2022	07:10
9	Singrauli STPS	UP		5	200	Boiler tube leakage	02-03-2022	06:55	04-03-2022	02:12
10	Singrauli STPS	UP		6	500	Boiler tube leakage	13-03-2022	03:04	14-03-2022	19:48
	State Sector (SS)									
1	Panipat TPS	HARYANA	HPGCL	6	210	Boiler tube leakage	03-03-2022	06:58	06-03-2022	05:27
2	Panipat TPS		HPGCL	7	250	Boiler tube leakage	06-03-2022	21:39	08-03-2022	23:59
3	Panipat TPS		HPGCL	6	210	Boiler tube leakage	14-03-2022	03:00	16-03-2022	03:18
4	Panipat TPS		HPGCL	8	250	Boiler tube leakage	19-03-2022	21:43	21-03-2022	14:56
5	DCRTPP (Yamuna Nagar)		HVPNL	2	300	Boiler tube leakage	21-03-2022	12:39	23-03-2022	05:04
6	RGTPP(Khedar)		HVPNL	1	600	Boiler tube leakage BTL	16-03-2022	03:17	22-03-2022	02:02
7	Rajpura(NPL) TPS	PUNJAB	PSTCL,PSPCL	2	700	DUE TO ABNORMAL SOUND IN BOILER	07-03-2022	09:32	09-03-2022	00:21
8	Guru Gobind Singh TPS (Ropar)		PSPCL	6	210	BTL	02-03-2022	23:45	16-03-2022	06:20
9	Guru Hargobind Singh TPS (Lehra Mo		PSPCL	3	250	Due to Raw Water non availability	10-03-2022	22:06	22-03-2022	21:57
10	Guru Gobind Singh TPS (Ropar)		PSPCL	6	210	Generator Protection due to UAT-6B fault.	16-03-2022	11:15	16-03-2022	14:20
11	Guru Gobind Singh TPS (Ropar)		PSPCL	3	210	Boiler tube leakage	25-02-2022	14:27	03-03-2022	16:42
12	Guru Gobind Singh TPS (Ropar)		PSPCL	4	210	Boiler tube leakage	19-03-2022	18:26	23-03-2022	03:08
13	Talwandi Sabo TPS		PSTCL,PSPCL	3	660	Coal Shortage	12-03-2022	22:03	21-03-2022	15:41
14	Suratgarh TPS	RAJASTHAN	RRVPNL	3	250	due to furnance pressure very high	20-03-2022	06:15	20-03-2022	11:08
15	Kalisindh TPS		RRVPNL	2	600	PA fan TRIPPED	20-03-2022	11:45	20-03-2022	16:18
16	Kalisindh TPS		RRVPNL	2	600	Air preheater problem	10-03-2022	08:12	10-03-2022	15:23
17	Suratgarh TPS		RRVPNL	3	250	All fuel loss.	15-03-2022	20:54	17-03-2022	22:33
18	Kawai TPS		RRVPNL,APL	2	660	APH-2 PA bellow leakage	11-03-2022	03:30	13-03-2022	07:53
19	Rajwest (IPP) LTPS		RRVPNL	4	135	BED MATERIAL LEAKAGE	28-02-2022	10:47	04-03-2022	04:24
20	Rajwest (IPP) LTPS		RRVPNL	5	135	Bed Material Leakage	04-03-2022	09:48	07-03-2022	22:02
21	Rajwest (IPP) LTPS		RRVPNL	3	135	BED MATERIAL LEAKAGE	20-03-2022	04:02	23-03-2022	02:54
22	Rajwest (IPP) LTPS		RRVPNL	4	135	DUE TO BED MATERIAL LEAKAGE	08-03-2022	05:20	12-03-2022	07:45
23	Rajwest (IPP) LTPS		RRVPNL	7	135	Due to heavy Bed material leakage.	08-03-2022	17:07	13-03-2022	22:02
24	Chhabra SCTPS		RRVPNL	5	660	Due to heavy leakage in integral bypass of MDBFP discharge MOV,	15-03-2022	17:32	16-03-2022	12:25
25	Suratgarh SCTPS		RRVPNL	8	660	Due to HWL-2 Control valve opened suddenly and load reduced sharply.	08-03-2022	12:29	09-03-2022	00:18
26	Suratgarh TPS		RRVPNL	2	250	Due to incomer trip.	28-02-2022	16:55	07-03-2022	00:50
27	Kota TPS		RRVPNL	4	210	DUE TO MAINTENANCE IN ESP FIELD WORK	07-03-2022	20:52	15-03-2022	03:56
28	Suratgarh TPS		RRVPNL	3	250	Due to problem in milling system	26-02-2022	20:22	07-03-2022	00:53
29	Suratgarh TPS		RRVPNL	6	250	Due to problem in milling system.	08-03-2022	06:32	09-03-2022	15:43
30	Suratgarh TPS		RRVPNL	5	250	Due to suspected boiler tube leakage.	08-03-2022	11:13	11-03-2022	07:02
31	Suratgarh SCTPS		RRVPNL	8	660	For analysis and to attend condenser problem and other defects/leakages in turbine ar	13-03-2022	22:23	22-03-2022	08:22
32	Suratgarh TPS		RRVPNL	6	250	furnace pressure high	07-03-2022	08:46	07-03-2022	17:47
33	Barsingsar (NLC)		RRVPNL	1	125	REFRACTORY FAILURE	28-02-2022	01:57	04-03-2022	10:31
34	Suratgarh TPS		RRVPNL	4	250	Steam Leakage in Boiler	12-03-2022	19:54	16-03-2022	03:52
35	Suratgarh TPS		RRVPNL	2	250	To check the LR beam of ESP as per SLDC-RS	13-03-2022	12:15	15-03-2022	22:35
36	Suratgarh SCTPS		RRVPNL	7	660	TRIPPED DUE TO ECO FLOW LOW	13-03-2022	09:11	13-03-2022	13:25
37	Suratgarh TPS		RRVPNL	6	250	tripped due to generator protection	07-03-2022	02:24	07-03-2022	07:01
38	Chhabra TPS		RRVPNL	3	250	Boiler tube leakage	06-03-2022	11:13	08-03-2022	03:40
39	Suratgarh SCTPS		RRVPNL	7	660	Boiler tube leakage Suspected boiler tube leakage	10-03-2022	17:29	13-03-2022	09:08
40	Kota TPS		RRVPNL	4	210	Generator Fault	17-03-2022	15:08	17-03-2022	18:17
41	Anpara-D TPS	UP	UPPTCL	1	500	Turbine drive boiler feed pump failure	08-03-2022	17:23	08-03-2022	22:45
42	Lalitpur TPS		UPPTCL,LPGCL	1	660	Abnormal behavior in seal oil system	24-02-2022	03:12	07-03-2022	16:15
43	Bara PPGCL TPS		UPPTCL,JPVL	2	660	Boiler master Fuel Trip	14-03-2022	18:19	17-03-2022	06:52
44	Harduaganj_Ext		UPPTCL	1	660	due to tripping of auxiliries	04-02-2022	16:17	19-03-2022	01:03
45	Anpara-D TPS		UPPTCL	1	500	For statutory requirement of boiler inspection.	01-03-2022	19:59	03-03-2022	05:14
46	Harduaganj-C TPS		UPPTCL	7	110	Low Drum Level	17-03-2022	22:46	18-03-2022	05:17
47	Harduaganj-C TPS		UPPTCL	7	110	Low Drum Level	18-03-2022	05:52	18-03-2022	08:17
48	Harduaganj-C TPS		UPPTCL	7	110	Low Drum Level	18-03-2022	08:56	19-03-2022	10:31
49	Harduaganj_Ext		UPPTCL	1	660	tripped due to economizer feed water flow low	19-03-2022	05:08	19-03-2022	13:54

50	Anpara-D TPS	UPPTCL	1	500	unit tripped due to SPS operation	11-03-2022	13:55	11-03-2022	19:19
51	Anpara TPS	UPPTCL	4	500	Boiler tube leakage	12-03-2022	02:12	16-03-2022	16:41
52	Anpara-C TPS	UPPTCL,LANCO	2	600	Boiler tube leakage	16-03-2022	00:00	18-03-2022	02:51
53	Anpara-C TPS	UPPTCL,LANCO	2	600	Boiler tube leakage	20-03-2022	04:42	23-03-2022	13:56