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 (50वीं)/2022/ 1776-1823 दिनाँक : 16 फ़रवरी, 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 50वीं बैठक का कार्यवृत ।
Subject: 50th meeting of Northern Regional Power Committee – MoM

महोदय / Sir,

उत्तर क्षेत्रीय विद्युत समिति की 50वीं बैठक दिनांक **28 जनवरी, 2022** को **1100** 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 50th meeting of Northern Regional Power Committee (NRPC) was held at **1100 Hrs** on **28th January, 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,

न. भंडारी

(नरेश भंडारी) 15/2/22
(Naresh Bhandari)
सदस्य सचिव
Member Secretary

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उत्तरी क्षेत्रीय विद्युत समिति की 50वीं बैठक

50th MEETING OF NORTHERN REGIONAL POWER COMMITTEE

Time & Date of NRPC meeting: 11.00 Hrs. on 28.01.2022

Venue: Video Conferencing

Minutes of Meeting

Member Secretary, NRPC welcomed the members and participants to the 50th NRPC meeting. He briefed the forum that RPC resolution has been amended vide notification dt. 06.12.2021 and as per clause 11 of the extant resolution, RPC meetings needs to be conducted at least once in a month. Moreover, clause 6 (3A) of the resolution mandates RPC to provide views on the ISTS planned by CTU within 45 days of receipt of proposal. He highlighted that there is need to amend the Conduct of Business Rules (CBR) of NRPC also. However, due to staff paucity, it could not be done this month. The same shall be proposed for approval of forum in next NRPC meeting.

Sh. Anil Kumar, MD, PTCUL and Chairman, NRPC welcomed the members to the 50th NRPC meeting and appreciated the manner in which past meetings of NRPC and its sub-committees were conducted and issues were settled in amicable environment. Chairman, NRPC appreciated the contribution of Member Secretary, NRPC Secretariat.

NRPC Sectt. representative gave a brief presentation on the amended RPC resolution dt. 03.12.2021 (copy of the presentation is enclosed at **Annexure-I**).

1. Additional staff required at NRPC Secretariat:

1.1 MS, NRPC stated that at present NRPC Sectt. is already facing acute staff crunch, and out of 3 nos. sanctioned SEs strength, only one SE is posted. He apprised the forum that due to additional responsibility of conducting NRPC meeting every month, there will be additional load on already stressed staff, and therefore there is a need to fill immediately the sanctioned strength and also increase the sanctioned post of NRPC Secretariat suitably.

1.2 As CEA is mandated to provide staff to NRPC Sectt., NRPC forum decided that MS, NRPC should immediately take up with CEA for deputing two additional SEs in NRPC urgently, besides filling other vacant posts in NRPC Sectt. Further, it was decided that CEA may also be requested for enhancement of sanctioned posts in NRPC Secretariat commensurate to increase in work load due to new NRPC Resolution issued by MoP on 03.12.2021.

2. Transmission system for evacuation of power from Kaza Solar Power Project (880 MW) to be developed by SJVN Limited (agenda by CTUIL)

2.1 CTUIL apprised the scheme as below:

A. Connectivity System for the Proposed Kaza Solar Park (880 MW)

- Establishment of 1x315 MVA (4x105 MVA single phase units including one spare) $, 400/132kV substation (GIS) at Kaza - under ISTS
- Kaza-Wangtoo (HPPTCL) 400 kV D/c (Quad) line along with the associated 400 kV bays at both ends (Line capacity shall be 2500 MVA per circuit at nominal voltage) - under ISTS
- 1x80 MVAR switchable line reactor on each circuit at Kaza end of Kaza Wangtoo 400 kV D/c line- under ISTS
- 125 MVAr (420kV) Bus Reactor at Kaza (1-Ph units)-under ISTS
- 132 kV line bays (9 Nos.) at Kaza PS for termination of lines from 7 pockets of solar projects of SJVNL- under applicant scope

$ In case of transportation constraints, 1x200 MVA ICT (4x66.67 MVA, 1-phase unit including one spare) shall be considered

Estimated Cost: Rs.1270 Cr.

B. Transfer of Power from Kaza Solar Park (880 MW)-under ISTS

- Augmentation with 2x315 MVA (6x105 MVA single phase units) # 400/132 kV ICT at Kaza PS
- Wangtoo (HPPTCL) - Panchkula (PG) 400 kV D/c (Twin HTLS*) Line along with 80 MVAr switchable line reactor at Panchkula end at each circuit-210 Km

 # In case of transportation constraints 4x200 MVA ICT (12x66.67 MVA, 1-phase unit) shall be considered

** with minimum capacity of 2100 MVA on each circuit at nominal voltage*

Estimated Cost: Rs.844 Cr.

C. **Future Scope at Kaza Pooling Station**

Space provision for:

- 5 nos. of 132 kV line bays for future projects
- 2 nos. of 400/132 kV Transformers

2.2 CTU representative stated that 132kV bays (9 nos)for solar projects interconnection at Kaza PS is in scope of SJVNL (applicant). Rest of the scheme is under ISTS.

2.3 DTL representative asked impact of tariff in this scheme.

2.4 CTU representative informed that Kaza transmission tariff can be approx. Rs.27 Cr. per month based on above cost estimate.

2.5 ED, NRLDC suggested that in view of probable high voltage issues in hydro pockets of Wangtoo area and space issues for placement of reactors at various substations in that area, additional bus reactors may be planned at Kaza PS.

2.6 CTU suggested that considering above aspects, 2x80 MVAR bus reactor may be finalized in place of 125 MVAR in the above scheme. However, this will slightly add (approx. Rs.20 Cr.) to above estimated cost.

2.7 MS, NRPC opined that proposed scheme with above modifications in bus reactors (2x80 MVAR in place of 1x125 MVAR) at Kaza PS is in-principally agreed however this being technical amendment, should also be referred to Consultation Meetings for Evolving Transmission Schemes in Northern Region (CMETS-NR) for stakeholder consultation. CTU informed that CMETS-NR is also being scheduled on 28/01/22 (Afternoon) and this matter shall also be discussed in that meeting.

2.8 In view of the above, it was decided that in case above modifications is also approved in the CMETS-NR, scheme with proposed modification shall also be considered approved in the NRPC meeting. Subsequently CTU also informed that CMETS-NR has approved above modification of 2x80 MVAR bus reactors at Kaza PS instead of earlier 1x125 MVAR in Transmission system for evacuation of power from Kaza Solar Power Project (880 MW).

2.9 Accordingly, composite Inter Transmission system for evacuation of power from Kaza Solar Power Project (880 MW) is approved as under:

a) Establishment of 3x315 MVA (10x105 MVA single phase units including one spare) [$] 400/132kV Kaza PS (GIS)

Future Scope at Kaza Pooling Station:

Space provision for:

i. 5 nos. of 132 kV line bays for future projects[#]
ii. 2 nos. of 400/132 kV Transformers

b) Kaza-Wangtoo (HPPTCL) 400 kV D/c (Quad) line along with the associated 400 kV bays at both ends (Line capacity shall be 2500 MVA per circuit at nominal voltage)

c) 1x80 MVAR switchable line reactor on each circuit at Kaza end of Kaza Wangtoo 400 kV D/c line

d) 2x80 MVAr (420kV) Bus Reactors at Kaza PS

e) Wangtoo (HPPTCL) - Panchkula (PG) 400 kV D/c (Twin HTLS*) Line along with 80 MVAr switchable line reactor at Panchkula end at each circuit-210 Km

$ In case of transportation constraints, 5x200 MVA ICTs (16x66.67 MVA, 1-phase unit including one spare unit) shall be considered

 # 132 kV line bays (9 Nos.) at Kaza PS for termination of lines from 7 pockets of solar projects of SJVNL shall be under applicant scope for implementation. Space provision to kept additionally for above 9 nos.bays.

** with minimum capacity of 2100 MVA on each circuit at nominal voltage*

Estimated Cost: Rs.2134 Cr.(to be confirmed with 2x80 MVAR)

MS, NRPC opined that in view of higher transmission cost of about Rs 2.5 Cr/MW for proposed scheme, CTU may take up with NCT for Govt. budgetary support/grant for the transmission scheme so as to rationalize transmission charges on the consumers.

3. Additional 400 kV ISTS interconnections at 400kV GSS Alwar (agenda by RRVPNL)

3.1 NRPC Sectt. representative apprised the agenda and concluded the proposal of RVPN for 24 km LILO of one circuit of 400 kV D/C Sikar-Agra line at 400 kV GSS Alwar (PPP).

3.2 He added that CEA vide letter dt. 25.01.2022 (**Annexure-II**) has intimated that RVPN's proposal has been examined and the proposal for providing additional interconnection to Alwar 400 kV substation by LILO of one circuit of 400 kV Sikar-Agra D/c line at Alwar S/s seems to be in order. The system would be implemented as **intra-state system by RVPN**.

3.3 RVPN representative contended that system should be implemented as an ISTS system as 400 kV D/C Sikar-Agra is an ISTS line. He apprised that approval has been taken from RVPN board for implementing the system under ISTS.

3.4 CTU representative stated that since Alwar GSS (PPP) is an intra-state sub-station, and LILO is proposed for voltage improvement of RVPN substation, therefore bays and LILO work both should be done by Rajasthan under Intra-state as being practiced in earlier cases.

3.5 MS, NRPC enquired about status of OPGW in 400 kV D/C Sikar-Agra line.

3.6 CTU representative informed that OPGW has not been provided in 400 kV D/C Sikar-Agra line. He stated that since Alwar 220 kV S/s is connected with OPGW to Alwar 400 kV S/s, there will be no need of OPGW in LILO portion. However, it may be done for redundancy purpose.

3.7 NLDC representative also stressed on redundancy of OPGW. MS, NRPC opined that RVPN may also confirm whether communication network redundancy is available in the existing network.

3.8 RVPN representative requested that since CEA has issued letter on 25.01.2022 and they have not got enough time to decide on the matterregarding scope under Intra state, therefore they will discuss it again with their board and shall submit it as an agenda in future NRPC meeting as well as revert on communication redundancy aspect.

3.9 Forum agreed for the same. MS, NRPC opined that all such proposals of intrastate nature involving ISTS may first be referred to technical consultation meeting of NR (CMETS-NR) and thereafter in NRPC, if required.

4. Enhancement of ATC/TTC for Punjab due to unprecedented load growth of summer (Agenda by PSTCL)

4.1 PSTCL informed that an agenda regarding enhancement of ATC/TTC limit for Punjab due to unprecedented load growth during summer was discussed in 49th NRPC meeting held on dated 27-09-2021. However, as per the minutes of 49th NRPC meeting, it was decided 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. Therefore, the agenda on the matter was put up and deliberated in 4th NRPC (TP) meeting held on dated 5.10.2021 and 12.10.2021. In the 4th NRPC (TP) meeting, following was agreed after deliberations: (i) Augmentation of 1X315 MVA, 400/220 kV ICT with 1X500 MVA at 400 kV substation Ludhiana. (ii) The 315 MVA ICT spared from Ludhiana may be shifted to Bhinmal based on the residual life assessment or refurbishment (if required). (iii). Augmentation of 1x315 MVA, 400/220 kV ICT to 1x 500 MVA at Patiala. The 315 MVA spared ICT at Patiala may be used as regional spare. However, the work of installation of Addl. 1x500 MVA and LILO of 400 KV Nakodar – Kurukurshetra line at 400 KV Dhanansu were not incorporated as agreed work in the 4th NRPC (TP) Minutes. It is also apprised in above context that PGCIL have been requested to utilize 500 MVA ICT lying spare at 400 KV Malerakotla. PGCIL has also started its activities to replace 315 MVA ICT with 500 MVA ICT by May 2022. In context to augmentation of 315 MVA ICT with 500 MVA at 400 KV Patiala (PGCIL). CTUIL suggested installation of additional 500 MVA ICT instead of replacement of 315 MVA ICT. PSTCL has already provided consent in this regard. To discuss the proposal for additional transmission elements at 400 kV Dhanansu substation, a special meeting was held on 18.11.2021 by CEA through video conferencing. After deliberations in the meeting, it was agreed as *'In view of the need of increasing the ATC/TTC limit for Punjab, proposal of PSTCL for installation of additional 500 MVA, 400/220 kV ICT at Dhanansu substation alongwith LILO of 400 kV Nakodar-Kurukshetra S/c line at 400 kV Dhanansu substation was agreed. The proposal of LILO of one Ckt. of 400 kV Rajpura (Thermal) - 400 kV Nakodar D/c line at 400 kV Dhanansu substation was agreed to be dropped. PSTCL, therefore, requested that the above said work at 400 kV Dhanansu may also be considered by NRPC for approval of the same".*

4.2 Forum approved above stated PSTCL proposal.

5. Requirement of 2 nos. of 220 kV bays at Amritsar (Agenda by PSTCL)

5.1 PSTCL informed that in 4th NRPC(TP) meeting held on dated 5/10/2021 & 12/10/2021, PSTCL put forth requirement of 2 No. of 220kV line bays at 400 KV PGCIL Amritsar to connect 220kV Patti and 220kV Rashiana substation to PGCIL Amritsar in order to reduce the loading on Amritsar –Verpal 220kV lines. After deliberations, it was agreed that PSTCL and Powergrid may discuss the matter mutually and accordingly, the requirement of 220 kV bays at 400 KV PGCIL Amritsar S/s may be put up in the next NRPC(TP) meeting. PGCIL vide its e-mail dated 13-10-2021 has intimated that 1 No. 220 KV bay is already available at 400kV PGCIL Amritsar and space for 3 No. 220 KV new bays is also available. Therefore, requirement of 2 No. 220 KV bays at 400 KV Amritsar (PGCIL) may be approved. One existing bay will be utilized for 220 KV Patti Sub-station (Paddy 2022) and one new bay needs to be erected by PGCIL at 400 KV Amritsar for 220 KV Rashiana before Paddy 2023.

5.2 Forum approved the proposal of using one existing bay for 220 KV Patti Sub-station (Paddy 2022) and one new bay to be erected by POWERGRID at 400 KV Amritsar for 220 KV Rashiana latest by May'23 (Paddy 2023) under ISTS.

5.3 Forum also opined that as per the MOP order, ISTS proposal costing less than or equal to Rs. 100 Crore will be approved by the CTU. As the cost shall be less

than Rs 100 Cr in such proposals, in future such proposals may be referred to CTU. CTU was also requested to take up this proposal further.

6. NR Transmission Schemes agreed in various consultative meetings for NRPC information (agenda by CTUIL for information only)

6.1 CTUIL apprised the following schemes **for information only:**

I) 400kV Khandukhal (Srinagar) - Rampura (Kashipur) D/c line

Sl. No	Scope of the Transmission Scheme	Capacity /km
1	400 kV D/c Khandukhal(Srinagar) - Rampura (Kashipur) line (Twin HTLS)	Length – 195 km
2	1x80MVAr switchable line reactor at Rampura (Kashipur) end on each circuit of Khandukhal (Srinagar) - Rampura (Kashipur) line	Switching equipment for 420 kV 80 MVAR switchable line reactor - 2 420 kV, 80 MVAr Switchable line reactor - 2
3	1 no. of 400 kV line bay at Rampura (Kashipur) S/s	400 kV line bay - 1
4	Upgradation of existing 400kV bays at Khandukhal (Srinagar)	Upgradation works for 400 kV line bays - 2
5	Upgradation of existing 1 no. of 400 kV diameter comprising line bay (Srinagar) and ICT bay along with associated Tie-bay at Rampura (Kashipur)	Upgradation works for 400 kV line bay - 1 Upgradation works for 400 kV ICT bay - 1 Upgradation of Tie bay - 1

Estimated Cost – Rs.800 Cr.

Note:

(i) ***Implementation Timeframe****: The timeline to be considered as matching timeframe of commissioning of Vishnugad Pipalkoti HEP of THDC or Tapovan Vishnugad HEP of NTPC, whichever is earlier.*

(ii) *The line lengths mentioned above are approximate as the exact length shall be obtained after the detailed survey*

(iii) *PTCUL to provide space for 1 no. of 400kV bay at Rampura (Kashipur) along with the space for switchable line reactors.*

II) Transmission system for evacuation of RE power from renewable energy parks in Leh (5 GW Leh - Kaithal transmission corridor)

Sl. No.	*Scope of the Transmission Scheme*	*Capacity /km*
1.	ISTS system for RE interconnection at Pang:	(i) 400kV PS-1 - Pang D/C (quad moose) line - 7 km (ii) 400kV PS-2 - Pang D/C (quad moose) line - 27 km (iii) 400kV PS-3 - Pang D/C (quad moose)

Sl. No.	***Scope of the Transmission Scheme***	***Capacity /km***
		line - 41 km *Note: 400kV GIS line bays (2 nos) each at PS-1, PS-2 & PS-3 is under RE developer scope*
2.	Battery Energy Storage System (1 GWh: 250MW x 4 hr) at Pang	(i) BESS of suitable size (1 GWh: 250MW x 4 hr) (ii) 220kV line bay (1 no.) for BESS (ISTS) interconnection at Pang
3.	HVDC System:	(i) Pooling point in Pang (Leh): ±350 kV, 2 nos. of 2500 MW HVDC terminal *Future provision: space for* • *400 kV line bays: 6 nos.* • *400/220 kV ICTs along with bays: 2 nos.* • *220 kV line bays : 4 nos* (ii) Pooling point in Kaithal (Haryana): ±350 kV, 2 nos. of 2500 MW HVDC terminal *Future provision: space for* • *765/400kV ICTs along with bays : 1 no.* • *765kV line bays along with switchable line reactor: 2 nos.* • *400kV line bays along with switchable line reactor: 4 nos.* • *400/220 kV ICTs along with bays: 2 nos.* • *220 kV line bay : 4 nos* (iii) 4 Nos. of 400 kV converter (VSC) bays at Pang (iv) 4 Nos. of 400 kV converter (VSC) bays at Kaithal (v) 2 Nos. of 400/220/33 kV, 315 MVA Transformers along with associated Bays at Pang (vi) 3 Nos. of 765/400/33 kV, 1500 MVA Transformers along with associated bays at Kaithal (vii) 2 nos. of 400 kV line bays at Kaithal (viii) 2 nos. of 765 kV line bays at Kaithal (ix) 6 nos. of 400 kV line bays at Pang for termination of lines from RE parks **DC GIS/ AIS** (i) DC GIS / AIS at Pang and DC AIS at Kaithal (ii) 4 nos. of transition stations with DC GIS/ AIS

Sl. No.	*Scope of the Transmission Scheme*	*Capacity /km*
		HVDC Line (OHL and UG Cable) (i) HVDC Line (OHL and UG Cable): 480 kms of ±350kV HVDC line between Pang & Kaithal PS (combination of 465 km overhead line (Quad) and 15 km underground cable)
4.	EHVAC System beyond Kaithal:	(i) Kaithal - Bahadurgarh (PG) 400 kV D/C Line (Twin HTLS*) - 170 km (ii) Kaithal - Modipuram (Meerut) (UPPTCL) 765 kV D/C Line along with 1x240MVAr switchable line reactor on each ckt at Kaithal end (along with 2 nos. switching equipment for 765kV, 240 MVAR Switchable line reactor)- 210 km (iii) Augmentation of 765/400 kV, 1500 MVA transformer of Bhiwani S/s (one section has 2x1000 MVA ICT wherein 1500 MVA augmentation will take place, whereas other has 1x1000 MVA ICT through series reactor) along with associated bays incl. 500 MVA spare transformer unit (1-Phase) (iv) 2 nos. of 400 kV line bays at Bahadurgarh (PG) (v) 2 nos. of 765 kV line bays at Modipuram (Merrut) (UPPTCL)
5.	ISTS system to provide reliable power supply to Ladakh:	(i) 220kV Pang – Leh (Phyang) (PG) S/c line (Deer conductor) (S/c line on D/c tower) along with 220kV line bay each at Pang & Leh (Phyang) for line termination- 151 km + 7 km underground cable

**with minimum capacity of 2100 MVA on each circuit at nominal voltage*

Estimated Cost – Rs 26967 Cr

i. UPPTCL to provide space for 2nos. of 765kV bays at Modipuram (Merrut) S/s

ii. POWERGRID to provide space for 2nos. of 400V bays at Bahadurgarh S/s

iii. The line lengths mentioned above are approximate as the exact length shall be obtained after the detailed survey

iv. Implementation Time-frame: 5 years from approval

MS, NRPC enquired about grant in this project. CTU informed that there is a provision of 40% central grant in this project.

III) Transmission System requirement for additional 20GW REZ in Northern Region (Phase-III) - Provision of spare ICT/Reactors and future space

S. No.	Approved in 3rd NRPC-TP Meeting held on 19.02.21	Corresponding Future Space and Spare ICTs/Reactors Unit (5th NCT)
1	Establishment of 5x500 MVA, 400/220 kV pooling station at Fatehgarh-4 along with 2x125 MVAr Bus Reactor	Future provisions: Space for • 400/220 kV ICTs along with bays: 2 nos. • 400 kV line bays along with switchable line reactor: 6 nos. • 400 kV Bus Reactor along with bays: 2 nos. • 400 kV Sectionalization bay: 1 no. • 220 kV line bays: 10 nos. • 220 kV sectionalization bay: 2 nos. 220kV bays for RE connectivity-4 nos.
2	Establishment of 2x1500 MVA 765/400kV & 10x500 MVA 400/220 kV pooling station at Bhadla-3 along with 2x330 MVAr (765kV) Bus Reactor & 2x125 MVAr (420kV) Bus Reactor	Future provisions: Space for • 765/400kV ICTs along with bays: 2nos. • 765kV line bay along with switchable line reactor: 4nos. • 765kV line bay: 4nos. • 765kV Bus Reactor along with bays: 2 nos. • 400/220 kV ICTs along with bays: 3 nos. • 400 kV line bays: 8 nos. • 400 kV line bays along with switchable line reactor: 4 nos. • 400kV Bus Reactor along with bays: 2 nos. • 400kV Sectionalization bay: 2 nos. • 220 kV line bays: 12 nos. • 220kV sectionalization bay: 2nos. 220kV bays for RE connectivity-5 nos. Spare ICTs/Reactors: • 500MVA, 765/400kV single phase ICT: 1 no (spare unit) • 110 MVAR, 765kV, 1-ph Reactor: 1 no. (spare unit)
3	Establishment of 3x1500 MVA 765/400kV & 2x500 MVA 400/220 kV pooling	Future provisions: Space for • 765/400kV ICTs along with bays: 2nos.

S. No.	Approved in 3rd NRPC-TP Meeting held on 19.02.21	Corresponding Future Space and Spare ICTs/Reactors Unit (5th NCT)
	station at Ramgarh along with 2x240 MVAr (765kV) Bus Reactor & 2x125 MVAr (420kV) Bus reactor	• 765kV line bay along with switchable line reactor: 2nos. • 765kV Bus Reactor along with bays: 2 nos. • 400/220 kV ICTs along with bays: 6 nos. • 400 kV line bays along with switchable line reactor: 4nos. • 400 kV line bays: 4 nos. • 400kV Bus Reactor along with bays: 2 nos. • 400kV Sectionalization bay: 3 nos. • 220 kV line bays: 8 nos. • 220kV sectionalisation bay: 2 nos. 400kV bays for RE connectivity-2 nos. 220kV bays for RE connectivity-4 nos. Spare ICTs/Reactors: • 500MVA, 765/400kVsingle phase ICT :1 no (spare unit) • 80MVAR, 765kV, 1-ph Reactor: 1(spare unit)
4	Establishment of 6x1500 MVA 765/400kV & 5x500 MVA 400/220 kV pooling station at Fatehgarh-3 (new section) (In addition to 4x500 MVA ICT proposed under Rajasthan SEZ Ph-II-of Section-1) along with 2x330 MVAr,765kV & 2x125 MVAr, 420kV Bus Reactors	Spare ICTs/Reactors • 500MVA, 765/400kV single phase ICT :1 no (spare unit) • 110MVAR, 765kV, 1-ph Reactor: 1 no. (spare unit) Future scope for Fatehgarh-3 (new section) is already agreed in 2nd NRPC-TP and 48th NRPC meeting as Part of Rajasthan SEZ Phase-II.
5	Establishment of 2x1500MVA 765/400kV Substation at suitable location near Beawar along with 2x330 MVAr 765kV Bus Reactor & 2x125 MVAr 420kV Bus Reactor	Future provisions: Space for • 765/400kV ICTs along with bays: 2 nos. • 765kV line bay along with switchable line reactor: 6nos. • 765kV Bus Reactor along with bays: 2 nos. • 400/220 kV ICTs along with bays: 2 nos. • 400 kV line bays along with switchable line reactor: 4 nos.

S. No.	Approved in 3rd NRPC-TP Meeting held on 19.02.21	Corresponding Future Space and Spare ICTs/Reactors Unit (5th NCT)
		• 400kV Bus Reactor along with bays: 1no. • 220 kV line bays: 4nos. Spare ICTs/Reactors: • 500MVA, 765/400kV single phase ICT :1 no (spare unit) • 110 MVAR, 765kV, 1-ph Reactor: 1 no. (spare unit)
6	Establishment of 2x1500 MVA 765/400kV substation at suitable location near Dausa along with 2x330 MVAr, 765 kV Bus Reactor & 2x125 MVAr, 420 kV bus Reactor	Future provisions: Space for • 765/400kV ICTs along with bays: 2 nos. • 765kV line bay along with switchable line reactor: 4nos. • 765kV Bus Reactor along with bays: 2 nos. • 400/220 kV ICTs along with bays: 2 nos. • 400 kV line bays along with switchable line reactor: 4 nos. • 400kV Bus Reactor along with bays: 1 no. • 220 kV line bays: 4nos. Spare ICTs/Reactors: • 500MVA, 765/400kV single phase ICT :1 no. (spare unit) • 110 MVAR, 765kV, 1-ph Reactor: 1no. (spare unit)
7	LILO of both circuits of Jaipur(Phagi)- Gwalior 765 kV D/c at Dausa along with 240 MVAr Switchable line reactor for each circuit at Dausa end of Dausa – Gwalior 765kV D/c line	• 80MVAR, 765kV, 1-ph Spare Reactor unit at Dausa end (shall also be used as spare reactor at Dausa end for 765kV Beawar – Dausa D/c line)
8	Establishment of 5x1500MVA, 765/400KV ICTs at Fatehpur (HVDC) along with 2x330MVAr (765kV) bus reactor	Future provisions: Space for • 765/400kV ICTs along with bays: 1 no. • 765kV line bay along with switchable line reactor: 4 nos. • 765kV Bus Reactor along with bays: 2 nos. • 400/220 kV ICTs along with bays: 4 nos.

S. No.	Approved in 3rd NRPC-TP Meeting held on 19.02.21	Corresponding Future Space and Spare ICTs/Reactors Unit (5th NCT)
		• 400 kV line bays along with switchable line reactor: 4 nos. • 400kV Bus Reactor along with bays: 1 no. • 220 kV line bays: 6 nos. Spare ICTs/Reactors: • 500MVA, 765/400kV single phase ICT :1 no. (spare unit) • 110 MVAR, 765kV, 1-ph Reactor: 1no. (spare unit)

6.2 Forum noted the same.

7. Utilisation of remaining 04 Nos. 220 kV Bays at 400/220 kV Substation Sherpur (Dehradun) (POWERGRID) and associated issues (agenda by PTCUL)

7.1 NRPC Sectt. representative apprised the agenda.

7.2 PTCUL representative stressed that six bays at Sherpur S/s were primarily planned to strengthen the grid and state should not have been forced to construct downstream networks when primary objective was grid strengthening.

7.3 NLDC representative mentioned that load on Sherpur S/s having two lines is around 200-250MW and it is in the verge of N-1 non-compliance when one line goes out. So, one or more lines may be planned by PTCUL. On this, representative of PTCUL submitted that 220kV line from Sherpur is double circuit Twin Zebra and thus 450MW can be drawn under N-1 condition. PTCUL submitted that cost of these 04 no. 220kV bays at Sherpur Substation should not be recovered from PTCUL. UPPTCL also endorsed PTCUL's view and stated that states should not be burdened with cost of unutilized bays.

7.4 UPPTCL representative highlighted that in many NR states, system was designed on normative basis but CERC is considering cost recovery from state transmission utility instead of recovering the same from PoC mechanism.

7.5 POWERGRID representative added that CERC has already given its order on the petition filed in this matter. However, PTCUL has filed a review petition in CERC. Therefore, the matter is sub-judice. MS, NRPC stated that since matter is under review at CERC, no decision can be taken by this forum.

7.6 Forum decided that PTCUL may wait for the outcome of their review petition.

8. Installation of reactive power solution on 144 No. 33/11 kV Sub-Stations (233 No. Power Transformers) in Uttarakhand by UPCL (agenda by UPCL)

8.1 NRPC Sectt. representative apprised the agenda.

8.2 UPCL representative added that they have been informed by PSDF Sectt. that recommendation of NRPC forum is required for grant of PSDF fund.

8.3 NRPC Sectt. representative informed that CPRI report for 'System Study for Capacitor requirement in NR for the year 2019-20' is under final stage at CPRI

end and CPRI is about to issue the same in next month. Although, the report is based on data for 2019, but CPRI would provide empirical formula for estimation of capacitor requirement at DISCOM level, which may be used proper assessment of capacitor requirement in Uttarakhand.

8.4 Confirming that there has been no communication from PSDF Sectt., MS, NRPC opined that instead of seeking comments from NRPC directly, UPCL may submit its DPR with NLDC who is Nodal agency for PSDF funded projects, and if they wish to seek any comments from NRPC then the same would be furnish at that time.

9. Construction of 220/132 kV, 2x100 MVA Substation at Paonta Sahib by D/C LILO of 220 kV Khodri-Mazri Line (agenda by HPPTCL)

9.1 NRPC Sectt. representative apprised the agenda.

9.2 HPPTCL representative added that 220 kV Khodri-Mazri Line is an inter-state line. Paonta Sahib shall be an intra-state S/s. SPS for this project shall be implemented by HPPTCL.

9.3 In 3rd NRPC-TP meeting, CEA requested HPPTCL to bilaterally discuss the issue with PTCUL; and recently the matter is consented by PTCUL vide letter dt. 20.01.22 stating that HP's drawal at proposed LILO would be max. 200MW, and SPS would be implemented by HPPTCL.

9.4 MS, NRPC opined that since HPPTCL proposal is of intrastate nature involving ISTS (220 kV Khodri-Mazri Line), therefore it may first be referred to technical consultation meeting of NR (CMETS-NR) and thereafter in NRPC, if required.

9.5 CTU was also advised to hold technical consultation meeting of NR (CMETS-NR) prior to NRPC meetings, and CMETS-NR meeting dates may be fixed in consultation with NRPC Sectt. for their participation.

Meeting ended with vote of thanks to the Chair.

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