



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 (67 वीं)/2023/

दिनांक: 21st, जुलाई, 2023

सेवा में / To,

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

विषय: उत्तर क्षेत्रीय विद्युत समिति की 67^{वीं} बैठक का कार्यवृत्त ।
Subject: 67th meeting of Northern Regional Power Committee – MoM

महोदय / Sir,

उत्तर क्षेत्रीय विद्युत समिति की 67^{वीं} बैठक दिनांक **30 जून, 2023** को **11:00** बजे विडियो कॉन्फ्रेंसिंग के माध्यम से आयोजित की गयी थी । बैठक का कार्यवृत्त संलग्न है। यह उ.क्षे.वि.स. की वेबसाइट (<http://164.100.60.165/>) पर भी उपलब्ध है ।

The 67th meeting of Northern Regional Power Committee (NRPC) was held at 11:00 Hrs. on 30th June, 2023 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,

Signed by Vijay Kumar
Singh

Date: 23-07-2023 10:48:31

Reason: Approved
(V. K. Singh)

सदस्य सचिव
Member Secretary

प्रतिलिपि: मोहम्मद शायिन, एमडी, एचवीपीएनएल एवं अध्यक्ष, एनआरपीसी (md@hvpn.org.in)

NRPC Members for FY 2023-24

S. No.	NRPC Member	Category	Nominated Member	E-mail
1	Member (GO&D), CEA	-	-	member.god.cea@gov.in
2	CTUIL	Central Transmission Utility	Chief Operating Officer	pcgarg@powergrid.in
3	PGCIL	Central Government owned Transmission Company	Director (Operations)	tyagir@powergrid.in
4	NLDC	National Load Despatch Centre	Executive Director	scsaxena@grid-india.in
5	NRLDC	Northern Regional Load Despatch	Executive Director	rk.porwal@grid-india.in
6	NTPC	Central Generating Company	Director (Finance)	jaikumar@ntpc.co.in
7	BBMB		Chairman	cman@bbmb.nic.in
8	THDC		ED (PSP&APP)	ljoshi@thdc.co.in
9	SJVN		CMD	sectt.cmd@sjvn.nic.in
10	NHPC		Director (Technical)	ykchaubey@nhpc.nic.in
11	NPCIL		Director (Finance)	df@npcil.co.in
12	Delhi SLDC	State Load Despatch Centre	General Manager	gmsldc@delhisldc.org
13	Haryana SLDC		Chief Engineer (SO&C)	cesocomm@hvpn.org.in
14	Rajasthan SLDC		Chief Engineer (LD)	ce.ld@rvpn.co.in
15	Uttar Pradesh SLDC		Director	directorsldc@upsldc.org
16	Uttarakhand SLDC		Chief Engineer	anupam_singh@ptcul.org
17	Punjab SLDC		Chief Engineer	ce-sldc@punjabsldc.org
18	Himachal Pradesh SLDC	Chief Engineer	cehpsldc@gmail.com	
19	DTL	State Transmission Utility	CMD	cmd@dtl.gov.in
20	HVPNL		Managing Director	md@hvpn.org.in
21	RRVNL		CMD	cmd.rvpn@rvpn.co.in
22	UPPTCL		Managing Director	md@upptcl.org
23	PTCUL		Managing Director	md@ptcul.org
24	PSTCL		CMD	cmd@pstcl.org
25	HPPTCL	State Generating Company	Managing Director	md.tcl@hpmail.in
26	IPGCL		Managing Director	md.ipgpp@nic.in
27	HPGCL		Managing Director	md@hpgcl.org.in
28	RRVUNL		CMD	cmd@rrvun.com
29	UPRVUNL		Managing Director	md@uprvunl.org
30	UJVNL		Managing Director	md@ujvnl.com
31	HPPCL	Managing Director	md@hppcl.in	
32	PSPCL	State Generating Company & State owned Distribution Company	CMD	cmd-pspcl@pspcl.in
33	DHBVN	State owned Distribution Company (alphabetical rotational basis/nominated by state govt.)	Director (Projects)	directorprojects@dhbvn.org.in
34	Jaipur Vidyut Vitran Nigam Ltd.		Managing Director	md@jvnl.org
35	Madhyanchal Vidyut Vitaran Nigam Ltd.		Managing Director	mdmvnl@gmail.com
36	UPCL		Managing Director	md@upcl.org
37	HPSEB		Managing Director	md@hpseb.in
38	Prayagraj Power Generation Co. Ltd.	IPP having more than 1000 MW installed capacity	Head (Commercial & Regulatory)	sanjay.bhargava@tatapower.com
39	Aravali Power Company Pvt. Ltd.		CEO	SRBODANKI@NTPC.CO.IN
40	CLP Jhajar Power Ltd.,		CEO	rajneesh.setia@apraava.com
41	Talwandi Sabo Power Ltd.		COO	Vibhav.Agarwal@vedanta.co.in
42	Nabha Power Limited		CEO	sk.narang@larsentoubro.com
43	Lanco Anpara Power Ltd		President	sudheer.kothapalli@lancogroup.com
44	Rosa Power Supply Company Ltd		Station Director	Hriday.tomar@relianceada.com
45	Lalitpur Power Generation Company Ltd		Managing Director	yksbankoti@bajajenergy.com
46	MEJA Urja Nigam Ltd.		CEO	hopmeja@ntpc.co.in
47	Adani Power Rajasthan Limited		COO, Thermal, O&M	jayadeb.nanda@adani.com
48	JSW Energy Ltd. (KWHEP)		Head Regulatory & Power Sales	jyotiprakash.panda@jsw.in
49	RENEW POWER	IPP having less than 1000 MW installed capacity (alphabetical rotational basis)	CEO	sumant@renew.com
50	UT of J&K	From each of the Union Territories in the region, a representative nominated by the administration of the Union Territory concerned out of the entities engaged in generation/ transmission/ distribution of electricity in the Union Territory.	Chief Engineer, JKPTCL	sojpd@gmail.com
51	UT of Ladakh		Chief Engineer, LPDD	cepladakh@gmail.com
52	UT of Chandigarh		Executive Engineer, EWEDC	elop2-chd@nic.in
53	BYPL	Private Distribution Company in region (alphabetical rotational basis)	CEO	Amarjeet.Sheoran@relianceada.com
54	Bikaner Khetri Transmission Limited	Private transmission licensee (nominated by central govt.)	Vice-President	nihar.raj@adani.com
55	Adani Enterprises	Electricity Trader (nominated by central govt.)	Head Power Sales & Trading	anshul.garg@adani.com
56	Ajmer Vidyut Vitran Nigam Ltd.	Special Invitee	Managing Director	md.avnl@rajasthan.gov.in

Special Invitees: RE Generators in NR (willing utilities may ask meeting link from NRPC Sectt.)

Contents

A.1	Approval of MoM of 66 th NRPC meeting.....	1
A.2	Transmission system strengthening for interconnection of Bhadla-III & Bikaner-III complex (agenda by CTUIL)	2
A.3	Punching rights for BSES Yamuna Power Limited (BYPL) in PUSHp Portal (agenda by BYPL)	3
A.4	Resource Adequacy (RA) studies for states in Northern Region (agenda by NRPC Sectt.)... 5	
A.5	First time charging (FTC) of 765kV Future bays, spare unit of 765 kV ICT & spare unit of 765 kV Bus Reactor due to discrepancies in standing committee approval for 765/400/220 kV GIS Meerut under PMSTL (agenda by POWERGRID)	6
A.6	Extension of AMC and Upgradation of Hot Line Speech Communication System implemented by M/s ORANGE (agenda by POWERGRID)	7
A.7	Nomenclature of ISTS RE pooling substations in Rajasthan (agenda by NRLDC)	8
A.8	Expediting transmission system for meeting higher demand during monsoon season (agenda by NRLDC).....	10
A.9	Indian Electricity Grid Code, 2023 (agenda by NRLDC).....	12
A.10	Requirement of standby meters on various element in BBMB control area feeders (agenda by NRLDC).....	13
A.11	Unavailability of software/OEM support for L&T (VINCOM software) and ELSTER (Pearl software) IEM meters (agenda by NRLDC).....	14
A.12	Providing redundant communication to 400kV Manesar Substation (agenda by CTUIL)..	15
A.13	Implementation of New SPS Scheme for 400KV Bikaner (PG)-Bikaner-2 (PG) (agenda by POWERGRID).....	16
A.14	Revision of Conduct of Business Rules (CoBR), 2022 of NRPC (agenda by NRPC Sectt.)	17
A.15	Waiver of penalty amount for delay in depositing contribution fee by UPPTCL (agenda by UPPTCL).....	17

उत्तरी क्षेत्रीय विद्युत समिति की 67^{वीं} बैठक**67th MEETING OF NORTHERN REGIONAL POWER COMMITTEE****Time & Date of meeting: 30th June 2023****Venue: Video-conferencing****Minutes of Meeting**

Member Secretary, NRPC welcomed the Chairperson, NRPC and MD, HVPN. Further, he welcomed participants from all power sector utilities of Northern Region connected in the meeting. He requested Chairperson, NRPC for opening remarks.

Chairperson, NRPC highlighted the need for arriving on consensus on agenda on the list and requested all utilities for active deliberation.

A.1 Approval of MoM of 66th NRPC meeting

A.1.1 EE (P), NRPC apprised that minutes of 66th NRPC meeting (held on 30.05.2023) has been issued vide letter dtd. 13.06.2023. Comments, received from POWERGRID on minutes were discussed and forum approved the MoM with inclusion of POWERGRID comments.

Decision of the Forum:

Forum approved the issued MoM with following amendment:

<i>Para No. of MoM Issued</i>	<i>Text as per MoM Issues</i>	<i>Amended Text</i>
<i>A.3.9 Bullet:1</i>	<i>For system strengthening/reliability, Forum agreed to the Replacement of existing 01 no. 100MVA 220/132kV ICT at Sitarganj with Regional Spare 160MVA 220/132kV ICT (having the provision of the LT Auxiliary Supply from the tertiary) and keeping the replaced 100 MVA</i>	<i>For system strengthening/reliability, Forum agreed to the Replacement of existing 01 no. 100MVA 220/132kV ICT at Sitarganj with Regional Spare 160MVA 220/132kV ICT (having the provision of the LT Auxiliary Supply from the tertiary) and keeping the replaced 100 MVA</i>

	<i>220/132 ICT as regional spare.</i>	<i>220/132 ICT as regional spare. The estimated expenditure of Rs 1.25Cr (excluding taxes) toward replacement of ICT and providing tertiary bay equipment can be booked under ADDCAP in existing project.</i>
<i>A.20.2</i>	<i>Accordingly, following additional scope may be included in the UNMS Project cost & AMC for NR UNMS scheme for amendment in the existing contracts: a. The BOQ of Workstation Console along with other associated software and hardware such as firewall, router, switch, furniture etc. b. Bandwidth connectivity & its recurring charges for CTUIL HQ Office.</i>	<i>Accordingly, following additional scope may be included in the UNMS Project: a. The BOQ of Workstation Console along with other associated software and hardware such as firewall, router, switch, furniture etc. through the amendment in the ongoing UNMS contract. b. Bandwidth connectivity & its recurring charges for CTUIL HQ Office under the O&M expenses of this project.</i>

A.2 Transmission system strengthening for interconnection of Bhadla-III & Bikaner-III complex (agenda by CTUIL)

- A.2.1 CTUIL apprised proposal of 765 kV Bhadla-III – Bikaner-III D/c line along with 240 MVAR switchable line reactor for each circuit at Bhadla-III end (~150 km) having estimated cost of **Rs. 1382 Cr.** Details are attached as **Annexure-I.**
- A.2.2 He highlighted that 765 kV Bhadla-III – Bikaner-III D/c tie interconnection shall provide following advantages:
- i. Optimal utilization of EHVAC transmission system beyond Bikaner-III PS while providing flexibility of power transfer from Bhadla/Bikaner RE clusters.

- ii. Additional evacuation requirement from future RE generation of 181.5 GW (Ph-1/2) RE potential at Ramgarh/Bhadla-III (2 GW).
- iii. Meeting evacuation requirement from Bhadla-III PS onwards for RE generators coming up in 2025-26.
- iv. Improves SCR in Bhadla-III complex including for LCC HVDC terminal at Bhadla.
- v. Tie connection will also increase resiliency of transmission corridor in both the complexes i.e. Bhadla & Bikaner.

A.2.3 He apprised that the scheme has been discussed and approved in 19th CMETS-NR meeting held on 30.05.2023.

A.2.4 It was also stated that new applications are coming in Bhadla complex. However, Bhadla- Fatehpur HVDC project is delayed by 2-3 months due to non-provision of Technical Requirements w.r.t HVDC system in the Standard Rfp/SBD.

A.2.5 Chief Engineer, GM Division, CEA enquired CTU for gain in SCR due to this proposed line.

A.2.6 CTU representative clarified that above interconnection will improve the SCR by about 0.6 at Bhadla-III and accordingly, SCR shall be about 2.8 at Bhadla-III PS. He added that 1-1.5 GW additional generation at Bhadla-III PS may also be evacuated through above proposed corridor.

A.2.7 EE (P), NRPC apprised that as per MoP office order dated 28.10.2021, for proposal of more than Rs. 500 Cr, CTU after consulting Regional Power Committee(s) [RPC(s)] shall submit the proposal for expansion of ISTS to the NCT for their consideration. Accordingly, CTU has put up this agenda for approval of forum.

Decision of the Forum:

Forum approved the proposal of CTU for 765 kV Bhadla-III – Bikaner-III D/c line along with 240 MVAR switchable line reactor for each circuit at Bhadla-III end (~150 km) having estimated cost of Rs. 1382 Cr.

A.3 Punching rights for BSES Yamuna Power Limited (BYPL) in PUSH P Portal (agenda by BYPL)

A.3.1 BYPL representative stated that as per existing modalities of PUSH P Portal, SLDC is nodal agency for Delhi state and has been entrusted to facilitate overall available power capacity in Delhi, if any. Presently, Delhi DISCOMs have been provided with

‘View only’ login rights of PUSHP portal; whereas Delhi SLDC being the Nodal Agency has access to punching rights i.e. Operational rights, PSM status and Accounting. Accordingly, in light of the above BYPL has already taken up the matter vide various communications as well as meetings in past since the DISCOMs has been deprived with the opportunity to access the said portal on day ahead / monthly /long term basis. Following are the actions taken by BYPL:

- i) Letter written to Delhi SLDC on dt 21.04.2023 to grant access to BYPL for PUSHP portal for further optimization of Power Purchase Cost.
- ii) Discussed in 28th Sub-Committee meeting of Delhi held on 24.04.2023; during the meeting, BYPL requested SLDC to take up with NPC (CEA) for issuance of separate login ID to the state DISCOMs of Delhi for accessing and punching the requirement in PUSHP portal. SLDC Delhi deliberated that DISCOMs will take up the matter with CEA for providing user ID and password for the access of PUSHP Portal with a copy to SLDC.
- iii) The above issue was further discussed in review meeting held on dt.12.05.2023 under the chairmanship of Director, NPC (CEA) along with Delhi SLDC regarding utilisation of PUSHP Portal.

NPC (CEA) intimated that SLDC being the Nodal Agency for the State or the State PPC, is authorized to coordinate with State DISCOMs for requisitioning their available surplus power on the portal for buying and selling power on behalf of DISCOMs.

It was further stated that the criteria are defined in the portal under the guidance of MoP to operate PUSHP portal in which SLDC / Power Purchasing Cell (PPC) shall be responsible to do the same for the State as a whole. The DISCOMs and the State GENCOs will not be having the power for punching in PUSHP portal.

A.3.2 BYPL representative requested that considering the Delhi’s issue where DISCOMs are directly scheduling power from CGS, Delhi DISCOMs may be granted access for punching at PUSHP portal.

A.3.3 MS, NRPC asked other states to share their view on requirement of BYPL in respect to NCT of Delhi.

A.3.4 UPSLDC stated that punching rights may be given to DISCOMs as they can take decisive action as per their requirement without any delay.

A.3.5 Forum decided that NRPC Sectt. may convene a meeting on the issue with all states of Northern Region.

Decision of the Forum:

NRPC Sectt. may convene a meeting on the issue of punching rights of DISCOMs with all states of Northern Region.

A.4 Resource Adequacy (RA) studies for states in Northern Region (agenda by NRPC Sectt.)

A.4.1 EE (P), NRPC apprised that CEA is carrying out state wise Resource Adequacy (RA) studies to ensure reliable supply of electricity to the consumers. In view of this, Chairperson, CEA vide DO letter dated 13th April, 2023 to the Principal Secretary (Energy) of states and UTs of Northern Region has requested to furnish requisite data in the prescribed format and designate a team of officers from the respective State/ UTs for data preparation to undertake RA studies.

A.4.2 Chief Engineer, IRP Division, CEA highlighted the status as below:

- UP, and Uttarakhand has submitted the data.
- Rajasthan: Data as well as contact person's details have been received.
- Punjab: Study has been conducted.
- Delhi: Contact person's details have been received.

A.4.3 Chief Engineer (IRP) highlighted that no information/reply has been received from the following states/ UT:

- i. Jammu & Kashmir
- ii. Himachal Pradesh
- iii. Haryana
- iv. Chandigarh

A.4.4 J&K representative stated that data shall be submitted to CEA within a week.

A.4.5 CE (SO), HPSEB stated that data shall be submitted to CEA within 10 days.

A.4.6 HVPN representative stated that they have collected data from generators and data from DISCOMs are pending. The same shall be collected and sent to CEA within a week.

A.4.7 MS, NRPC stressed that data is need for study to be done by CEA for benefit of states only. Any delay in data submission is not appreciated.

Decision of the Forum:

Forum requested states to submit data within a week to CEA and assist CEA in completion of study.

A.5 First time charging (FTC) of 765kV Future bays, spare unit of 765 kV ICT & spare unit of 765 kV Bus Reactor due to discrepancies in standing committee approval for 765/400/220 kV GIS Meerut under PMSTL (agenda by POWERGRID)

A.5.1 POWERGRID representative stated that 765/400/220kV Meerut GIS has been constructed by POWERGRID Meerut Simbhavali Transmission Limited (PMSTL) & following 765kV elements at 765/400/220kV GIS has been successfully commissioned:

- (i) 3x500 MVA, 765/400/33 kV ICT-1 (Bay 707)
- (ii) 3x500 MVA, 765/400/33 kV ICT-2 (Bay 704)
- (iii) 3x80 MVAR, 765 kV Bus Reactor (Bay 712)
- (iv) 765 kV Meerut-Hapur Line (Bay 710)
- (v) 765 kV Meerut-Gr. Noida Line (Bay 709)
- (vi) 765 kV Tie Bay 708 & 711
- (vii) 765 kV Bus-I & Bus-II

A.5.2 It is to mention here that FTC for following elements have not been issued by SLDC/UPPTCL stating that Standing committee approval for these future elements & associated bays is not in place:

- (i) Bay 701 (ICT-3 Future)
- (ii) Bay 702 (Tie Bay of ICT-3 Future and Future Line-2),
- (iii) Bay 703 (Future Line-2),
- (iv) Bay 705 (Tie Bay of ICT-2 and Future Line-I),
- (v) Bay 706 (Future Line-I), spare unit of 765 kV ICT,
- (vi) Spare unit of 765kV Bus Reactor

A.5.3 He also submitted that the scope of the project is mentioned in RFP documents. The same scope was mentioned in the letter dated 06 March 2019 from UPPTCL appointing PFCCCL as BPC inter-alia informing scope of project-Meerut Simbhavali prior to floating of TCB tender by the BPC (NIT for the Project was released on 17 June 2019). Furthermore, the same scope of work is contained in the TSA which is signed between TSP and LTTCs. The relevant pages of RFP document and a copy of aforementioned letter from UPPTCL are enclosed at **Annexure-II**.

A.5.4 Following documents has been submitted to SLDC wherein detailed scope of work including Future bays/elements is mentioned but SLDC as per remarks of NRLDC requires Standing committee approval:

- (i) Minutes of the 22nd meeting of the 13th plan period of “Transmission Work Approval Committee” constituted by U.P. Power Transmission Corporation Ltd convened on 09.01.2019 Issued through letter no. 3739 – Superintendent/T.P.E. P.S.M./13V. Scheme/TWC Dated: 14.01.2019.
- (ii) Section 68 permission vide Letter ref no. 1167/ 24-1-2019-450 /2019, dated 14.08.2019 from Chief Secretary, UP Govt for scheme agreed.
- (iii) Transmission Service Agreement of PMSTL.

Relevant documents quoted above are attached as **Annexure-II**.

A.5.5 POWERGRID requested for resolution of the issue so that FTCs for balance 765 kV Bays (701, 702, 703, 705, 706) and Spare Reactor unit can be issued by SLDC/NRLDC to complete scope of PMSTL as per TSA.

A.5.6 UPSLDC representative stated that POWERGRID may submit request to CEA for resolution of the issue.

A.5.7 ED, NRLDC stated that UPPTCL may write CEA as they have planned the project.

A.5.8 MS, NRPC stated that UPPTCL may write to Chief Engineer, PSPA Division, CEA for resolution of the issue.

Decision of the Forum:

UPPTCL may write to Chief Engineer, PSPA Division, CEA for resolution of the issue.

A.6 Extension of AMC and Upgradation of Hot Line Speech Communication System implemented by M/s ORANGE (agenda by POWERGRID)

A.6.1 POWERGRID representative stated that Hot Line Speech Communication System was implemented by POWERGRID in 2016 for PAN India basis wherein NLDC, RLDCs and all SLDCs are inter-connected through Alcatel Lucent make EPABX system, VOIP/Analog phones are also installed at power plants/sub-station/IPPs, etc over dedicated OPGW network of ULDC. This scheme was executed by M/s ORANGE with provision of AMC of 7 years as part of the contract and the same is expiring in July’ 2023.

A.6.2 Based on the discussions held in previous TeST meeting, offer was requested from M/s Alcatel Lucent (OEM), however they mentioned that PABX system which was installed in 2016, has older version i.e. 11.0, however at present 100.1 version is

running and all new hardware which is available in market, are compatible to new version only. Therefore, to continue with comprehensive AMC, we need to first upgrade/migrate the system with the latest software version then Alcatel through their authorized channel partners, can further support for minimum 5 years of AMC.

A.6.3 The issue was deliberated in 3rd meeting of CTU-ISTS communication system planning for Northern Region held on 17.02.2023, then the issue was further discussed in CTU communication planning meeting for Pan India held on 05.04.2023. A separate meeting was also convened with Alcatel Lucent on 27.04.2023 wherein CTU and Grid-India was also present. During meeting, M/s Alcatel Lucent reiterated that without upgradation of software and CPU card, continuous support for AMC is not possible as new cards (if required) will not be supported on older version of software. In case of fault, services may get hampered.

A.6.4 Further the issue was also deliberated in 22nd TeST sub-committee meeting of NRPC held on 24.05.2023 and following points were deliberated and agreed upon –

- i) Extension of AMC support by M/s. Orange for at least 2 years through POWERGRID.
- ii) Meantime, CTU shall plan upgradation and implementation of existing Hot line speech communication or new EPABX system.

POWERGRID proposed that financial implication (i.e. approx. Rs. 60 lacs per year) on account of AMC extension through M/s ORANGE for next two years shall be booked in ULDC O&M charges as per the CERC norms. All constituents present in the TEST meeting agreed on the same.

A.6.5 MS, NRPC stated that approval may be accorded as there is no option left. However, CTU shall plan upgradation and implementation of existing Hot line speech communication or new EPABX system timely.

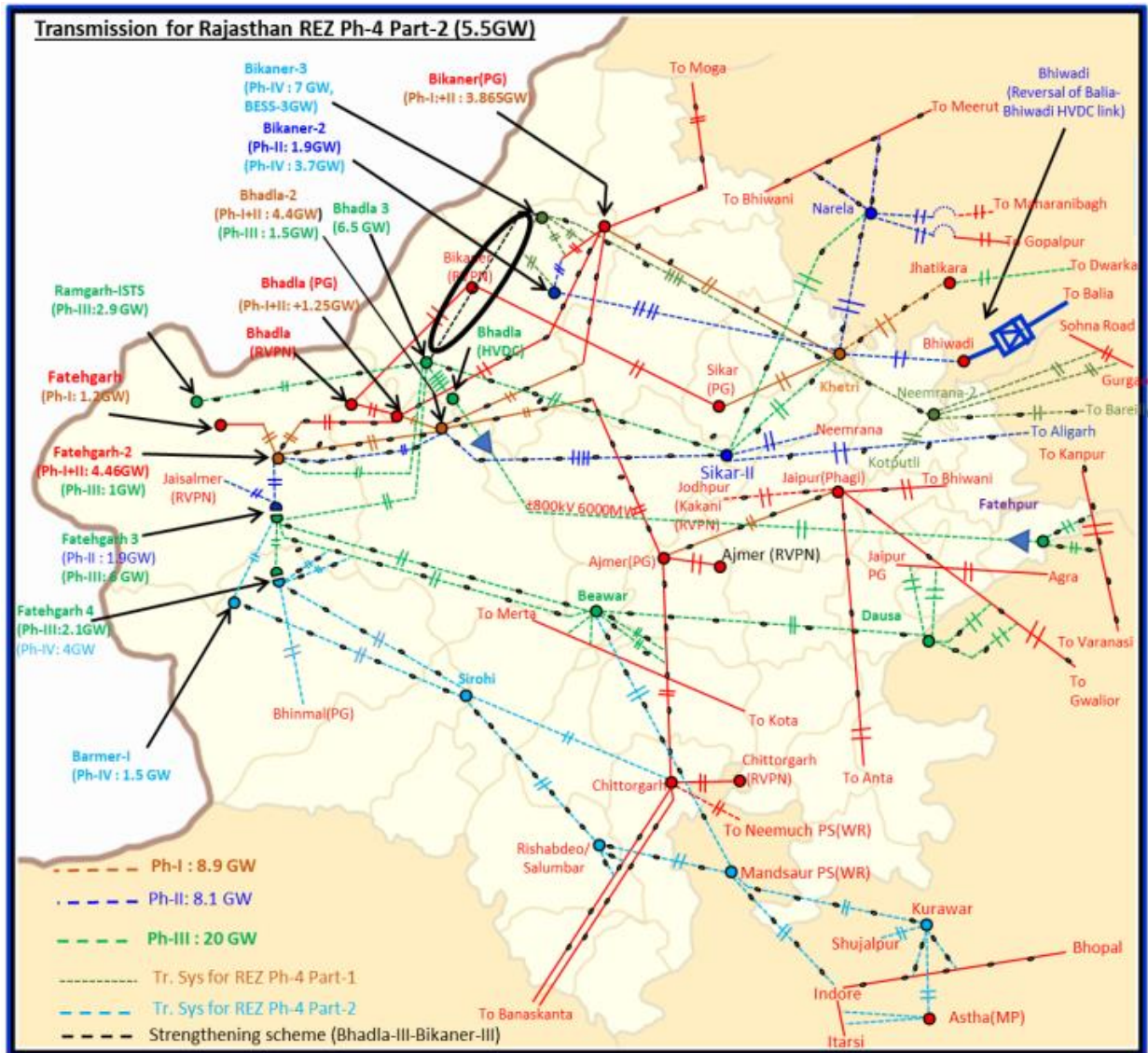
Decision of the Forum:

Forum approved the proposal of POWERGRID to book financial implication (i.e. approx. Rs. 60 Lac per year) in ULDC O&M charges as per the CERC norms for AMC extension through M/s ORANGE for next two years.

A.7 Nomenclature of ISTS RE pooling substations in Rajasthan (agenda by NRLDC)

A.7.1 NRLDC representative apprised that number of ISTS (Inter State Transmission System) connected RE (Renewable Energy) pooling substations are being commissioned in Western Rajasthan. For number of substations, it is being seen that nomenclature of

ISTS substations is alphanumeric, with name of nearby major city/town (e.g. Bhadla, Bikaner, Fatehgarh etc.) and number which is denoting the sequential number of the substation (1,2,3...). Future plan for transmission network and planned ISTS substations in the area is shown below showing different ISTS substations (having alphanumeric names) and transmission lines.



A.7.2 As number of substations are having similar names, it is not easy to distinguish between these substations. Also, number of interconnections are also planned between these substations which have to be operated in real-time frequently given the huge variations in RE generation and voltages in the complex even in single day.

A.7.3 For ease of operation and making sure that names of different substations are easily distinguished, it is suggested that different ISTS substations are named as per the

geographical name of the nearest location. Some of the common names of villages for already commissioned/ shortly anticipated substations are mentioned below:

Name of ISTS substation	Proposed Name (Name of nearest village)
Bhadla	Bhadla
Bhadla-2	Kansingh/ Bap
Bikaner-1	Jamsher
Bikaner-2	Jaimalsar
Fatehgarh-2	Devikot
Sikar-2	Pukiya
Bikaner-3	Lakhusar

- A.7.4 In future also, it is desirable that the nomenclature of ISTS pooling substations may be done in such a manner that these are unique and easily distinguishable. This will also help to avoid any kind of mis-communication in real-time operations.
- A.7.5 He highlighted that above was also requested by NRLDC in previous NRPC meetings and vide letters dated 15.06.2023 to POWERGRID and CTUIL.
- A.7.6 POWERGRID representative agreed to the above proposal of NRLDC, however he stated that the names of existing substations would be finalized separately.
- A.7.7 CTU mentioned that above table also includes substation under bidding i.e Bikaner-3 PS. At the stage of Bidding, the co-ordinates are tentative in nature and subject to change as per availability of land within boundary limit. Boundary limit is 3 km radius of above plot (3 km from any of the corner). Therefore S/s name can be firmed up only once TSP finalizes the S/s land for projects under bidding. CTU suggested that S/s name should be selected by TSP in such a way that these are unique and easy to distinguish to avoid miscommunication in real time operations. CTUIL representative agreed for the name change of existing station.

Decision of the Forum:

Forum accorded in-principal approval to proposal of NRLDC for change of names of existing stations. CTUIL/POWERGRID was also requested to adopt distinct nomenclature to avoid any kind of mis-communication in real-time operations.

- A.8 Expediting transmission system for meeting higher demand during monsoon season (agenda by NRLDC)**

A.8.1 NRLDC representative stated that the state-wise transmission constraints were discussed in detail in 64th NRPC (held on 24.03.2023) & 66th NRPC (held on 30.05.2023) wherein utilities were asked to take proactive steps to ensure that minimal transmission constraints are observed during the high demand season.

A.8.2 Based on discussions held in these meetings, a list of transmission system that was expected before monsoon 2023 was discussed in the meeting.

Status of the same are as below:

Commissioning of new elements for Haryana:

- 500MVA ICT at 400/220kV Kurukshetra
POWERGRID representative informed that ICT is expected to be charged by Aug'23.
- 220kV Sec 32 Panchkula and 220kV lines to Panchkula (PG)
- 220kV lines from Panchkula(PG) to Pinjore:
HVPN representative informed that both lines (Sec-32 Panchkula & Pinjore) are expected to be charged by 30.09.2023.

Commissioning of new elements for Punjab:

- 400/220kV Dhanansu S/s with lines at both 220kV & 400kV level
PSTCL representative informed that substation with one 500MVA ICT is expected by Sep'23.
- Proposal for capacity augmentation at 400/220kV Nalagarh
CTUIL representative informed that the project has been awarded to POWERGRID through RTM route. It is expected by Jun'25.

Commissioning of new elements for Delhi:

- 315MVA ICT replacement at Mundka
Delhi representative informed that it has been charged on 28.06.2023.

Commissioning of new elements for UP:

- 500MVA ICT at Sohawal(PG)
UP representative informed that it has been charged on 28.06.2023.

- A.8.3 Expediting planned transmission evacuation system for Jawaharpur TPS &Obra C TPS:** NRLDC representative apprised that 660MW generating units at both Jawaharpur TPS and Obra C TPS are under commissioning process and are expected to be in continuous operation from July'2023. The planned transmission system for these generating units is delayed and it has been discussed to evacuate generation from these units through present available transmission system. It is to be noted that the generation evacuation is not N-1 secure and SPS have also been proposed in these generating complexes. Therefore it is requested to expedite the planned transmission system for these generating stations as listed below:

Evacuation network of 2x660 MW Obra 'C' TPS (deliberated in 38th SCM dated 30.05.2016)

- 2x1000 MVA 765/400kV ICT at Obra C
- LILO of one ckt of 400kV DC Obra B-Obra C line at Jaunpur(400 kV)-190 km with Line Reactor of 63 MVAR for each ckt at Obra C end

Evacuation network of 2x660MW Jawaharpur Thermal Power Plant (deliberated in 38th SCM dated 30.05.2016)

- 765/400 kV, 2x1500 MVA ICT at Jawaharpur TPS
- 400/220 kV 2x500 MVA ICT at Jawaharpur TPS
- Jawaharpur TPS–Firozabad 400 kV D/C (Quad) line – 80 km
- LILO of one circuit of Fatehabad (Agra 765 kV)- Agra South 400kV D/C line at Firozabad -20km
- Creation of 220/132/33 kV UPPTCL S/S Kasganj(2x160+2x40 MVA)

- A.8.4** UPPTCL representative informed that the projects are being implemented through TBCB route and are slightly delayed. Status as shared by UPPCTL is attached as **Annexure-III.**

Decision of the Forum:

Forum noted the progress of the transmission system as intimated by utilities and requested to expedite the commissioning. UPPTCL was requested to expedite the delayed transmission system required for generation evacuation so as to avoid the dependency on SPS.

A.9 Indian Electricity Grid Code, 2023 (agenda by NRLDC)

A.9.1 NRLDC representative stated that Central Electricity Regulatory Commission (CERC) has notified the CERC (Indian Electricity Grid Code) Regulations, 2023. These regulations will apply to all users, state load dispatch centres (SLDCs), Renewable Energy Management Centres, Regional Load Dispatch Centres (RLDCs), National Load Dispatch Centre, central transmission utility, state transmission utilities, licensees, five regional power committees, settlement nodal agencies, qualified coordinating agencies and power exchanges to the extent applicable.

A.9.2 The grid code apart from the provisions relating to the role of various statutory bodies and organisations and functional linkages among them, contains extensive provisions pertaining to:

- reliability and adequacy of resources
- technical design criteria for connectivity to the grid including integration of new elements, trial operation and declaration of commercial operation of generating stations and inter-state transmission systems
- protection setting and performance monitoring of the protection systems including protection audit
- unit commitment, scheduling and despatch criteria for physical delivery of electricity
- integration of renewables
- ancillary services and reserves
- cyber security.

A.9.3 Chairman, NRPC expressed that more thrust needs to be put in by states in field of cyber security. He advised all utilities to go through the document thoroughly and prepare for actions required from each utility.

A.9.4 MS, NRPC suggested that deliberation is required on changes in new IEGC. He proposed that each state may be allotted a chapter of IEGC and presentation may be given by them.

Decision of the Forum:

Forum decided that NRPC Sectt. may plan a deliberation with all states and each SLDC may be asked to present one chapter of IEGC.

A.10 Requirement of standby meters on various element in BBMB control area feeders (agenda by NRLDC)

- A.10.1 NRLDC representative stated that they process received weekly IEM metering data which is being used for deviation settlement account by NRPC and weekly loss calculation by NLDC. In NR region, in few locations of BBMB, only one IEM meter is installed on some elements/feeders. In such locations the only installed meter is considered as main meter for accounting purpose. The lack of standby meters for these elements poses a problem when it comes to validating and substituting data in case the installed meter becomes faulty.
- A.10.2 Therefore, ensuring the accuracy of meter data is essential for authentic and reliable accounting. Having standby meter data greatly aids in verifying and validating meter data. Additionally, in the event of one end meter failure, data from the other end's meter is used as a substitute if one end meter data is considered as main meter for accounting purpose. A comprehensive list of meters in BBMB control area feeder, on which only a single meter is currently installed and utilized for accounting purposes, is submitted in **Annexure-IV**.
- A.10.3 Hence, for authentic and reliable accounting 38 nos. stand-by meters as detailed in Annexure-IV may be installed.
- A.10.4 MS, NRPC asked CTU regarding their plan for new meters.
- A.10.5 CTU representative stated that they will take up the matter with POWERGRID.

Decision of the Forum:

CTUIL agreed to install 38 no's standby meters on proposed locations in Annexure -IV within 4 months.

- A.11 Unavailability of software/OEM support for L&T (VINCOM software) and ELSTER (Pearl software) IEM meters (agenda by NRLDC)**
- A.11.1 NRLDC representative apprised that currently, in the NR region, there are a total of 2,700 meters installed by Powergrid/CTU with make of Secure, L&T, and Elster along with associated software provided by mentioned 3 vendors. Out of these, approximately 590 meters are of ELSTER make using PEARL software, and 58 meters are of L&T make using Vincom software (.dat format). NRLDC utilizes these software for processing meter data.
- A.11.2 However, Powergrid has informed NRLDC that maintenance and support for these two types of meters have been discontinued by Vendor Elster and L&T(VINCOM software) since long time. It has also been informed that Elster vendor is no longer available in market for manufacturing meters. Recently, several issues have arisen regarding the

software platforms when converting encrypted meter data files into a readable format i.e. (.npc format). The PEARL and VINCOM software gets stuck or becomes quite slow leading to conversion problem which causes delays in data processing which hampers other activities and may lead to delay in submission of processed data to NRPC for timely issuance of deviation account. Hence, it is needed to ensure software related availability and support services from vendor by POWERGRID/CTU.

- A.11.3 Powergrid/CTU may ensure software related services by vendor of Elster and L&T and in case no support service from vendor is available then to replace the identified meters (115 nos. Elster make meters and 31 of L&T make) on priority basis. A comprehensive list of these meters is provided in **Annexure-V**.
- A.11.4 POWERGRID representative stated that softwares deployed at NRLDC is under working condition but there are some bugs. The same has been addressed and now software is working fine.
- A.11.5 NRLDC representative stated that some time software runs properly but suddenly it gets hanged.

Decision of the Forum:

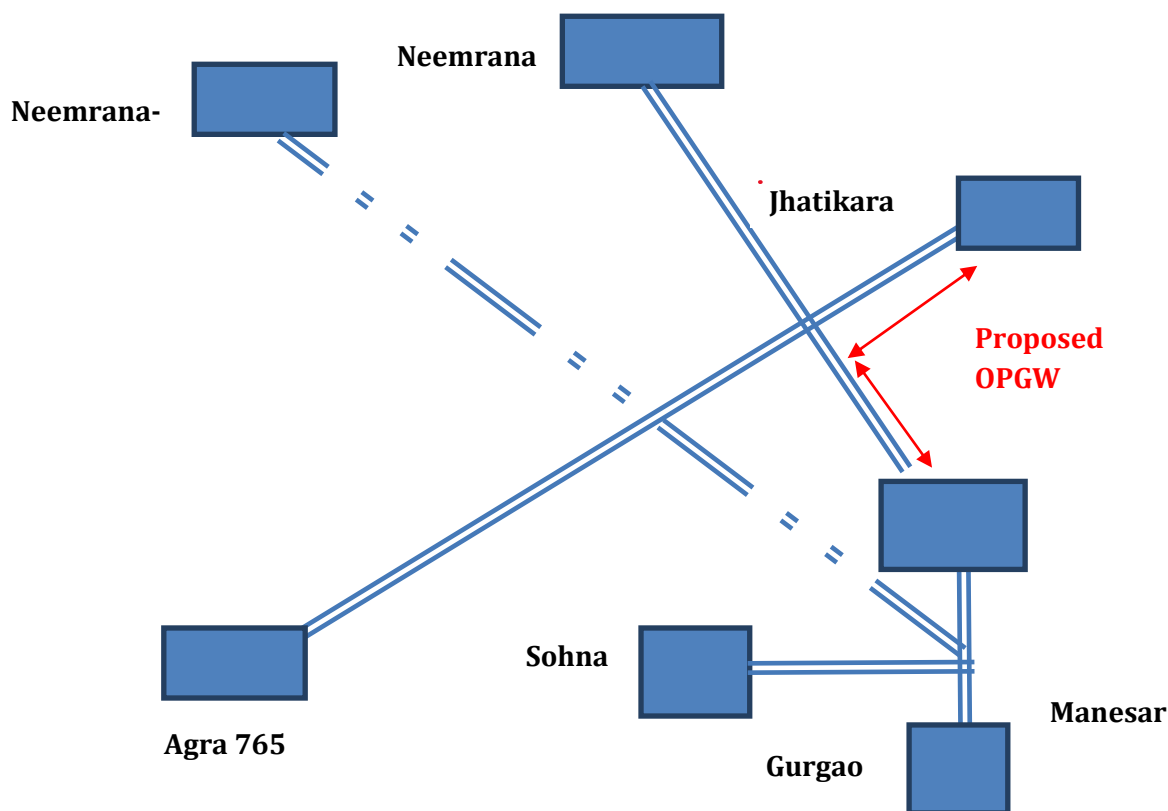
Forum agreed that a separate meeting may be conducted by CTU within a week along-with POWERGRID & NRLDC to address the issues flagged.

A.12 Providing redundant communication to 400kV Manesar Substation (agenda by CTUIL)

- A.12.1 CTU representative stated that presently 400kV Manesar sub-station is connected through ISTS communication network via following two (02) transmission lines:
 - (i) 400kV D/C Manesar-Neemrana.
 - (ii) 400kV D/C Manesar- Gurgaon.
- A.12.2 400kV D/C Manesar- Gurgaon line is LILoed at Sohna Sub-station and further proposed to be LILoed at Neemrana-II S/s under Rajasthan REZ Ph-IV (Part-B). Manesar-Neemrana link & Manesar-Sohna/ Gurgaon link is regularly being disrupted due to diversion works associated with highways being in close proximity.
- A.12.3 Manesar S/s is an important wideband node of Northern Region in view of WAMS PDC backup housed at Manesar. It is proposed that one more backup communication path may be planned to Manesar. Additional link may be created by laying OPGW from the crossing point of Neemrana – Manesar (2nd E/W peak of the line) & Agra-Jhatikara line upto Jhatikara & Manesar, which will be around 35 kms.

A.12.4 This agenda was also discussed in the 22nd NRPC TeST meeting (held on 24.05.2023) and the forum agreed on the proposal.

A.12.5 Details of proposed link is given below as below:



A.12.6 Accordingly following is proposed by CTU:

Scheme: Redundant communication to 400kV Manesar Substation

Scope: 35 kms. OPGW alongwith terminal equipment

Estimated Cost: Rs. 1.75 Crs.

Time Frame: 18 months from the date of allocation.

Implementing Agency: POWERGRID in RTM mode

A.12.7 CTU apprised that after RPC approval, this agenda shall be put up in the NCT for approval.

Decision of the Forum:

Forum approved the proposal of CTU for 35 kms. OPGW alongwith terminal equipment for redundant communication to 400kV Manesar Substation.

A.13 Implementation of New SPS Scheme for 400KV Bikaner (PG)-Bikaner-2 (PG) (agenda by POWERGRID)

- A.13.1 EE (P), NRPC apprised that in 208th OCC meeting (held on 20.06.2023), NRLDC was requested to submit POWERGRID the SPS logic that needs to be implemented in view of charging of 400kV Bikaner (PG)-Bikaner_2 (PG)-1 line on ERS.
- A.13.2 NRLDC representative highlighted that the current SPS scheme, which pertains to overloading of the 400kV Bikaner(PG)-Bikaner(RS) D/C line (interim arrangement), needs to be modified/shifted to prevent the loading of the 400kV Bikaner(PG)-Bikaner_2(PG)-1 (ERS) line from exceeding 1500 MW.
- A.13.3 He apprised the SPS logic as attached at **Annexure-VI**.
- A.13.4 He further highlighted that full availability of STATCOM 1&2 at Bhadla_2 is of utmost importance for safely evacuating ISGS RE power especially during the Shutdown period.

Decision of the Forum:

Forum approved the revised SPS scheme as attached as Annexure-VI.

A.14 Revision of Conduct of Business Rules (CoBR), 2022 of NRPC (agenda by NRPC Sectt.)

- A.14.1 EE (P), NRPC apprised that Conduct of Business Rules, 2022 was approved by forum in 51st NRPC meeting (held on 25.02.2022).
- A.14.2 Vigilance/CEA in its audit report has directed NRPC Sectt. vide letter dtd. 01.05.2023 to revise Conduct of Business Rules to add chapters regarding regulation of NRPC Fund and Regional Board Fund, its handling and maintenance.
- A.14.3 In view of above, chapter for operation of NRPC Fund has been added in CoBR. Some changes in existing NRPC Fund law has been proposed in view of SOP issued by CEA.
- A.14.4 Regarding Regional Board Fund, it is proposed to close it as no contribution is received from utilities and states. Currently, Regional Board Fund is maintained by taking some fund from NRPC Fund. The same is utilized for meeting expenses of meetings etc.

Decision of the Forum:

*Forum approved the draft CoBR proposed by NRPC Secretariat. Approved CoBR is attached as **Annexure-VII**. Forum also decided to close the Regional Board Fund as the meeting expenditure shall also be done from NRPC Fund directly.*

A.15 Waiver of penalty amount for delay in depositing contribution fee by UPPTCL (agenda by UPPTCL)

A.15.1 EE (P), NRPC apprised that UPPTCL vide letter dtd. 23.06.2023 has requested to waive off penalty amount of Rs. 10,000/- due to delay in deposition of contribution fee of NRPC. They have cited reason that due to implementation of ERP system, modalities for payment took time which caused delay in payment of contribution fee to NRPC.

Decision of the Forum:

Forum granted waiver to UPPTCL for penalty amount of Rs. 10,000/- for FY 2022-23 in view of technical problem faced by them due to implementation of ERP system.

Transmission system strengthening for interconnection of Bhadla-III & Bikaner-III complex

S. No.	Items	Details
1.	Name of Scheme	Transmission system strengthening for interconnection of Bhadla-III & Bikaner-III complex
2.	Scope of the scheme	<ul style="list-style-type: none"> 765 kV Bhadla-III – Bikaner-III D/c line along with 240 MVAr switchable line reactor for each circuit at Bhadla-III end (~150 km)
3.	Depiction of the scheme on Transmission Grid Map	Attached at Exhibit-I
4.	Upstream/downstream system associated with the scheme	<p>765/400/220kV Bhadla-III and Bikaner-III PS are under bidding as part of Rajasthan REZ Ph-III & Ph-IV scheme respectively. 765/400/220kV Bhadla-III PS is proposed to be interconnected with Ramgarh PS and Sikar-II S/s through 765kV D/c lines and Fatehgarh-III PS through 765kV D/c lines.</p> <p>765/400/220kV Bikaner-III PS is proposed to be interconnected with Neemrana-II S/s through 765kV 2xD/c lines and Bikaner-II PS and Bikaner (PG) through 400kV D/c lines.</p>
5.	Objective / Justification	<p>In 19th CMETS-NR meeting held on 30.05.23 Transmission system strengthening for interconnections of Bhadla-III & Bikaner-III complex was deliberated and agreed (Extract of Minutes of meeting enclosed in Annexure-I). The scheme comprises interconnection between Bhadla-III & Bikaner-III PS through 765kV D/c line.</p> <p>Comprehensive Transmission scheme for evacuation of power from Rajasthan REZ Ph-IV (Part-1) (Bikaner Complex) is under bidding for power transfer of 7.7GW incl. 4GW from Bikaner-III PS. The scheme comprises 765kV EHVAC corridor from Bikaner-III PS towards load centers of Delhi/UP. About 0.85 GW connectivity application granted/received at Bikaner-III PS (out of which few applications may be shifted at Bikaner-II PS to utilize vacated margin of about 0.675 GW at Bikaner-II PS in GNA). In view of that about 0.25GW RE applications will be available at Bikaner-III PS against 4GW RE evacuation capacity.</p> <p>St-II Connectivity for about 3 GW and LTA of about 1GW, against the potential of 6.5 GW (under Ph-III), was received/granted at Bhadla-III PS. Earlier, St-II Connectivity for about 2.75 GW RE and LTA of 2.6GW, against the potential of 2.9 GW (under Ph-III), was received/granted at Ramgarh PS. However, M/s Adani surrendered 2.1 GW connectivity/LTA at Ramgarh PS under GNA, considering above, power transfer requirement from Ramgarh will be 0.65 GW (2.75GW-2.1GW) in GNA regime.</p> <p>As part of Rajasthan REZ Ph-III (20GW) Transmission scheme, Bhadla-III & Ramgarh PS are being established for integration of 6.5GW & 2.9 GW RE potential respectively. Ramgarh PS is also being inter-connected with Bhadla-III for evacuation of RE power.</p>

S. No.	Items	Details
		<p>In order to facilitate evacuation of 9.4GW RE power from Ramgarh/Bhadla-III PS (6.5GW+2.9GW) from Bhadla-III onwards, 765kV Bhadla-III - Sikar-II D/c line with implementation schedule of Dec'24 (Tentative) [for about 2.9GW power transfer requirement] as well as 6GW HVDC corridor (\pm800kV Bhadla (HVDC) -Fatehpur(HVDC)) with implementation schedule of Dec'26 (42 months schedule) is being implemented as part of Ph-III scheme.</p> <p>As mentioned above, Connectivity for 3.65GW (0.65GW at Ramgarh + 3GW at Bhadla-III) is already granted/under process at Ramgarh/Bhadla-3 PS. In view of expected implementation schedule of HVDC system beyond Bhadla-3 (Dec'26), there is a need of additional corridor from Bhadla-3 onwards beyond 2.9GW RE potential of Ramgarh/Bhadla-3 PS.</p> <p>Further, at Bikaner-III PS, application for only 0.25 GW is left against 4 GW planned evacuation capacity. Since, more injection is anticipated than planned EHVAC capacity at Bhadla-III, in the requisite time frames (25-26), there is a need for optimal utilization of Bikaner-III corridor capacity by forming a high capacity tie interconnection between Bhadla-III & Bikaner-III PS.</p> <p>Accordingly, 765kV Bhadla-III - Bikaner-III D/c line is proposed to facilitate optimal utilization of EHVAC corridor beyond Bikaner-III PS for evacuation of RE generation including at Ramgarh/Bhadla-III PS.</p> <p>Further, as part of committee report "Transmission system for integration of over 500GW capacity by 2030" as well as MNRE/SECI inputs, a Comprehensive transmission plan for evacuation of 75GW RE potential from Rajasthan is evolved comprising 10 GW RE potential (Wind: 4 GW, Solar: 6 GW) along with 3GW BESS(net evacuation 5 GW) at Ramgarh in Jaisalmer complex by 2030. Out of 10 GW potential by 2030, in its Ph-I (by 2025) 3GW potential (Wind: 2GW, Solar: 1GW) was informed at Ramgarh. As part of above committee report, additional 3 GW RE injection at Ramgarh PS and 2GW RE injection at Bhadla-III/Bhadla-IV PS is envisaged beyond 2025 (Ph-II/III), which will utilize the planned HVDC corridor beyond Bhadla-3 as it will match implementation schedule of generation and transmission i.e. in 2026-27 timeframe.</p> <p>In the MOP meeting held on 01.05.23, it was deliberated that GIB committee clearance is still pending for 400kV Fatehgarh-II-Bhadla-III D/c line under Ph-III Part-B1 package and it was directed that process of delinking of 400kV Fatehgarh-II- Bhadla-III D/c line from Ph-III Part-B1 may be carried out at the earliest and a separate package. Therefore, in view of deferment of 400kV Fatehgarh-II- Bhadla-III D/c line which will also reduce the SCR at Bhadla-III PS/Bhadla HVDC (already at boarder line)., 765kV Bhadla-III PS - Bikaner-III PS D/c line shall also provide additional</p>

S. No.	Items	Details
		<p>advantage to improve short circuit strength in Bhadla-III complex including for LCC HVDC terminal at Bhadla.</p> <p>CTU stated that system studies were carried out under various scenarios considering 765 kV Bhadla-III – Bikaner-III D/c tie interconnection and study files were also circulated on 25.05.23. From the study results, it was observed that line loading with proposed strengthening is in order in normal as well as N-1 contingency condition. It is also observed that in Feb solar maximized scenario (revised case), loading of 400kV RAPS-Shujalpur D/c line is marginally higher (about 900MW) in N-1 contingency. Additionally loading of 765/400kV Bareilly ICT (2X1500MVA) is marginally higher in some scenarios (n-1:1550MW). The loading of the above line and ICT will be reviewed with progress of RE generation projects at Rajasthan and strengthening requirement will be identified later, if required. Further, short circuit level at Bikaner-III PS is also within limits (765kV-29.3kA ,400kV- 55kA, 220kV-24.3 kA) with proposed strengthening.</p> <p>It was stated that in view of the above considerations, 765 kV Bhadla-III – Bikaner-III D/c tie interconnection shall provide following advantages:</p> <ul style="list-style-type: none"> • Optimal utilization of EHVAC transmission system beyond Bikaner-III PS while providing flexibility of power transfer from Bhadla/Bikaner RE clusters • Additional evacuation requirement from future RE generation of 181.5 GW (Ph-1/2) RE potential at Ramgarh/Bhadla-III (2 GW) • Meeting evacuation requirement from Bhadla-III PS onwards for RE generators coming up in 2025-26 • Improves SCR in Bhadla-III complex including for LCC HVDC terminal at Bhadla • Tie connection will also increase resiliency of transmission corridor in both the complexes i.e. Bhadla & Bikaner <p>Grid-India stated that studies are in order and above proposal is agreeable to them. Further, Grid-India in the meeting as well as vide mail dated 31.05.23 suggested to review Wind Zones in Rajasthan RE Complex on priority and suggested measures for enhancing the resiliency of the transmission system.</p> <p>NLDC representative further informed that, in the study cases, a large quantum of power (~9200 MW) is getting evacuated from 765/400 kV Bikaner PG making it one of the most critical station in the complex. Pooling of such large quantum of power at a single station is not desirable from resiliency point of view as complete station outage may result in cascade tripping. He further requested CTUIL to explore alternatives paths with suitable network rearrangements so as to reduce large evacuation of power from a single station.</p> <p>CTUIL stated that RE pooling stations in western Rajasthan complex (Bikaner/Bhadla/Fatehgarh) are contagious to each other and power from above complexes shall flow towards load</p>

S. No.	Items	Details																				
		<p>centres of Northern & Western region mainly through following high capacity corridors</p> <ul style="list-style-type: none"> • For Punjab (765kV Moga) and Delhi/NCR (765kV Jhatikara, Narela, Gurgaon) load centres through 765kV Bikaner and Khetri & Neemrana-II (via Bikaner-III) • To UP load centres (Aligarh, Varanasi, Kanpur, Bareilly & Balia) through 765kV Bhadla-II/III (via 765kV Sikar-II), 400kV Bhiwadi (via 400kV Bikaner-II), Fatehpur HVDC (via Bhadla-III HVDC) & Neemrana-II (via Bikaner-III) • To Western Region load centres (765kV Gwalior & 765kV Mandsaur) through 765kV Beawar/Dausa (via Fatehgarh-III) & Sirohi/Rishabdeo (via Fatehgarh-IV/Barmer-I) <p>In view of integration of more than 50GW in ISTS system in western Rajasthan, most of RE pooling station i.e. Bikaner (PG) may be utilized for evacuation of about 7-9 GW RE generation (incl self RE generation of 4-6GW) towards load centers. To make the system more resilient, additional transmission system may be required which may increase the transmission system investment (up to 1.5 times) for evacuation of the RE power mainly through solar without BESS which is available only in day time. In view of this, detail deliberations are required on above matter on resilience of transmission system for RE vis-à-vis transmission system additional cost and optimal utilization of transmission system as above requirement is beyond transmission planning criteria.</p> <p>NLDC representative further highlighted that below mentioned lines are heavily loaded in the study case shared by CTUIL. The angular separation in the base case and under N-1 is also on the higher side. Same may also be addressed through suitable rearrangements as mentioned above.</p> <table border="1" data-bbox="691 1236 1476 1535"> <thead> <tr> <th data-bbox="691 1236 800 1377">S. No.</th> <th data-bbox="805 1236 1065 1377">Transmission Line</th> <th data-bbox="1070 1236 1187 1377">Loading (MW)</th> <th data-bbox="1192 1236 1341 1377">Angular Separation (Base Case)</th> <th data-bbox="1346 1236 1476 1377">Angular Separation (under N-1)</th> </tr> </thead> <tbody> <tr> <td data-bbox="691 1383 800 1430">1.</td> <td data-bbox="805 1383 1065 1430">765 kV Bhadla – III – Sikar D/C</td> <td data-bbox="1070 1383 1187 1430">2x1760</td> <td data-bbox="1192 1383 1341 1430">19 deg.</td> <td data-bbox="1346 1383 1476 1430">25 deg.</td> </tr> <tr> <td data-bbox="691 1436 800 1482">2.</td> <td data-bbox="805 1436 1065 1482">765 kV Bikaner – Moga D/C</td> <td data-bbox="1070 1436 1187 1482">2x1963</td> <td data-bbox="1192 1436 1341 1482">20 deg.</td> <td data-bbox="1346 1436 1476 1482">25 deg.</td> </tr> <tr> <td data-bbox="691 1488 800 1535">3.</td> <td data-bbox="805 1488 1065 1535">765 kV Bikaner-III – Neemrana 2xD/C</td> <td data-bbox="1070 1488 1187 1535">4x1868</td> <td data-bbox="1192 1488 1341 1535">15 deg.</td> <td data-bbox="1346 1488 1476 1535">19 deg.</td> </tr> </tbody> </table> <p>CTU stated that as per Transmission Planning Criteria, 2023, angular separation between adjacent buses under 'N-1' shall not exceed 30 degree. Further it is mentioned that in transmission planning efforts to be made that angular difference between adjacent buses may not exceed 20 degree in base case and 30 degree in N-1 contingency (except Inter regional and critical high capacity links). Additional transmission system/ rearrangements may be required to further reduce the angular difference between adjacent buses which may increase the transmission system investment.</p>	S. No.	Transmission Line	Loading (MW)	Angular Separation (Base Case)	Angular Separation (under N-1)	1.	765 kV Bhadla – III – Sikar D/C	2x1760	19 deg.	25 deg.	2.	765 kV Bikaner – Moga D/C	2x1963	20 deg.	25 deg.	3.	765 kV Bikaner-III – Neemrana 2xD/C	4x1868	15 deg.	19 deg.
S. No.	Transmission Line	Loading (MW)	Angular Separation (Base Case)	Angular Separation (under N-1)																		
1.	765 kV Bhadla – III – Sikar D/C	2x1760	19 deg.	25 deg.																		
2.	765 kV Bikaner – Moga D/C	2x1963	20 deg.	25 deg.																		
3.	765 kV Bikaner-III – Neemrana 2xD/C	4x1868	15 deg.	19 deg.																		

S. No.	Items	Details
		<p>Further, in the 8th CMETS-NR meeting held on 30.06.22, result of P-V, Q-V analysis for such highly loaded 765kV lines was depicted by CTU as part of minutes of above meeting. From the result it was observed that the system was stable under various contingencies.</p> <p>CEA & Grid-India also concurred on above proposal (scheme mentioned in S.No 2) and no comments were received from other stakeholders in 19th CMETS-NR meeting.</p>
6.	Estimated Cost	Rs. 1382 Cr.
7.	Need of phasing, if any	Not Applicable
8.	Implementation timeframe	24 months from allocation of project
9.	System Study for evolution of the proposal	<p>Studies discussed and agreed in following meeting</p> <ul style="list-style-type: none"> • 19th CMETS-NR meeting held on 30.05.23 (Minutes of meeting attached in Annexure-I) <p>Load flow results is attached at Exhibit-II</p>



सेंद्रल ट्रान्समिशन यूटिलिटी ऑफ इंडिया लिमिटेड

(पावर ग्रिड कॉर्पोरेशन ऑफ इंडिया लिमिटेड के स्वामित्व में)

(भारत सरकार का उद्यम)

CENTRAL TRANSMISSION UTILITY OF INDIA LTD.

(A wholly owned subsidiary of Power Grid Corporation of India Limited)

(A Government of India Enterprise)

Ref: CTU/N/00/CMETS_NR/19

Date: 09-06-2023

As per distribution list

Subject: 19th Consultation Meeting for Evolving Transmission Schemes in Northern Region-Minutes of Meeting

Dear Sir/Ma'am,

Please find enclosed the minutes of the 19th Consultation Meeting for Evolving Transmission Schemes in Northern Region held on 31st May, 2023 (Wednesday) through virtual mode.

The minutes are also available at CTU website (www.ctuil.in)

Thanking you,

Yours faithfully,

Kashish
09/06/23
(Kashish Bhambhani)
General Manager (CTU)

Distribution List:

Chief Engineer (PSP&A – I) Central Electricity Authority Sewa Bhawan, R.K.Puram, New Delhi-110 066	Member Secretary Northern Regional Power Committee 18A, Shaheed Jeet Singh Sansanwal Marg, Katwaria Sarai, New Delhi – 110 016
Director (Power System) Solar Energy Corporation of India Ltd. D-3, 1 st Floor, A wing, Religare Building, District Centre, Saket, New Delhi-110017	Director Ministry of New and Renewable Energy, Block 14, CGO Complex, Lodhi Road, New Delhi-110003
Director (SO) Grid Controller of India Limited (erstwhile Power System Operation Corporation Ltd.) 9 th Floor, IFCI Towers, 61, Nehru Place, New Delhi-110 016	Executive Director Northern Regional Load Despatch Centre 18-A, Qutab Institutional Area, Shaheed Jeet Singh Sansanwal Marg, Katwaria Sarai, New Delhi– 110 016
Director (P&C), HPPTCL, Headoffice, Himfed Bhawan, Panjari, Shimla-171005, Himachal Pradesh	Director(W&P) UP Power Transmission Company Ltd. Shakti Bhawan Extn, 3rd floor, 14, Ashok Marg, Lucknow-226 001
Director (Technical) Punjab State Transmission Corporation Ltd. Head Office, The Mall, Patiala 147001, Punjab	Director (Projects) Power Transmission Corporation of Uttarakhand Ltd. Vidyut Bhawan, Near ISBT Crossing, Saharanpur Road, Majra, Dehradun.
Development Commissioner (Power) Power Development Department Grid Substation Complex, Janipur, Jammu	Director (Technical) Rajasthan Rajya Vidyut Prasaran Nigam Ltd. Vidyut Bhawan, Jaipur, Rajasthan-302005.
Member (Power) Bhakra Beas Management Board Sector-19 B, Madhya Marg, Chandigarh - 160019	Superintending Engineer (Operation) Electricity Circle, 5 th Floor, UT Secretariat, Sector-9 D, Chandigarh - 161009
Director (Operations) Delhi Transco Ltd. Shakti Sadan, Kotla Road, New Delhi-110 002	Director (Technical) Haryana Vidyut Prasaran Nigam Ltd. Shakti Bhawan, Sector-6, Panchkula-134109, Haryana

Distribution List: Connectivity/GNA Applicants

<p>Shri Naveen Kumar Khandelwal Director BN Hybrid Power-1 Private Limited Unit 4A, 2nd Floor, Infinity Tower A, DLF Cyber City, Gurugram, Haryana-122002 Ph.: 9971050109, 9840945125 Email: naveen@brightnightpower.com sajay@brightnightpower.com</p>	<p>Shri Sumit Joge DGM Business Development Sprng Power Private Limited Sprng Pavana Urja Private Limited Sprng Akshaya Urja Private Limited Off A -001, Upper Ground, P-5, Pentgaon Tower, Magarpatta City Hadapsar, Pune Maharashtra – 411028 Ph.: 9545556456, 9545659577 Email: sumitjoge@sprngenergy.com poorvapitke@sprngenergy.com</p>
<p>Shri Mohit Jain Manager Renew Surya Vihaan Private Limited Renew.Hub, Commercial Block-1, Zone-6, Golf Course Road, DLF City Phase V, Gurugram Haryana-122009 Ph.: 9873462717, 9717196796 Email: mohit.jain@renew.com solarbidding.gm@renewpower.in</p>	<p>Shri Rajesh Sodhi Head Secretarial Acme Cleantech Solutions Private Limited Plot No. 152, Sector-44, Gurugram, Haryana 122002 Ph.: 9811633237, 8744060601 Email: rajesh.sodhi@acme.in yogesh@acme.in</p>
<p>Shri Angshuman Rudra Deputy General Manager Avaada Rjbikaner Private Limited C-11, Sector-65, Gautam Buddha Nagar, Noida Uttar Pradesh Ph.: 7835004673, 9818003951 Email: angshuman.rudra@avaada.com ashish.shukla@avaada.com</p>	<p>Shri Arzaan Dordi Chief Manager Serentica Renewables India Private Limited Serentica Renewables India 4 Private Limited 9th Floor, DLF Cyber Park, Tower B, Sector 20, Phase 3, Gurugram, Haryana – 122008 Ph.: 7428197178, 9650506854 Email: arzaan.dordi1@serenticaglobal.com saurav.bagchi@serenticaglobal.com</p>
<p>Shri Vishnu Khandelwal Manager Renewable Power Hindustan Zinc Limited Yashad Bhawan, Rajasthan Ph.: 9829030982, 9829796249 Email: vishnu.khandelwal@vedanta.co.in rajendra.pandwal@vedanta.co.in</p>	

the area, the LILO of the Karcham Wangtoo – Abdullapur 400 kV D/c was agreed to be carried out at Kala Amb and it was decided that 220 kV and 132 kV works shall be carried out by HPPTCL as per their requirement.

Accordingly, 400/220 kV, 2X315 MVA substation at Kala Amb was established by PKATL under ISTS (TBCB) along with 6 Nos. 220 kV bays as per HPPTCL requirement. HPPTCL is now executing following downstream Intrastate Transmission System by utilizing 4 No. 220 kV bays and the same shall be commissioned within next 3-4 months:

- a. 220 kV (Zebra) D/C line on M/C Towers from 400/220 kV Kala Amb Substation PKATL to 220/132/33 kV Andheri Substation of HPPTCL.
- b. 220/132/33 kV (220/132 kV, 200 MVA (Single Phase Transformer Bank) & 132/33 kV, 2X 31.5 MVA) Substation at Andheri by HPPTCL.
- c. 220 kV (Zebra) D/C line from 400/220 kV Kala Amb Substation of PKATL to 220/132/33 kV Giri Substation of HPSEBL. (Part of line from 400/220 kV Kala Amb PKATL till Devani is on M/C towers)

CTUIL inquired about the total drawl of power through 2 Nos. of 400/220 kV ICTs at Kala Amb. HPPTCL confirmed that about 240 MW of total power shall be drawn through above mentioned 220 kV downstream network, therefore, N-1 criterion shall be complied in this case.

NRLDC representative enquired whether there will be any injection from 220kV side to 400V side during high hydro season at 400/220kV Kala Amb substation given that 220kV line connectivity is planned to 220/132kV Giri substation. HPPTCL representative confirmed that they would be only drawing power as Giri generation would be consumed locally and there would not be a case of injection of power from 220 kV side to 400 kV side.

In view of above, the 220 kV downstream network being interconnected with Kala Amb 400/220 kV Substation as proposed by HPPTCL was noted.

ii. Transmission system strengthening for interconnections of Bhadla-III & Bikaner-III complex

It was deliberated that Comprehensive Transmission scheme for evacuation of power from Rajasthan REZ Ph-IV (Part-1) (Bikaner Complex) is under bidding for power transfer of 7.7GW incl. 4GW from Bikaner-III PS. The scheme comprises 765kV EHVAC corridor from Bikaner-III PS towards load centers of Delhi/UP. About 0.85 GW connectivity application granted/received at Bikaner-

III PS (out of which few applications may be shifted at Bikaner-II PS to utilize vacated margin of about 0.675 GW at Bikaner-II PS in GNA). In view of that about 0.25GW RE applications will be available at Bikaner-III PS against 4GW RE evacuation capacity.

St-II Connectivity for about 3 GW and LTA of about 1GW, against the potential of 6.5 GW (under Ph-III), was received/granted at Bhadla-III PS. Earlier, St-II Connectivity for about 2.75 GW RE and LTA of 2.6GW, against the potential of 2.9 GW (under Ph-III), was received/granted at Ramgarh PS. However, M/s Adani surrendered 2.1 GW connectivity/LTA at Ramgarh PS under GNA, considering above, power transfer requirement from Ramgarh will be 0.65 GW (2.75GW-2.1GW) in GNA regime.

As part of Rajasthan REZ Ph-III (20GW) Transmission scheme, Bhadla-III & Ramgarh PS are being established for integration of 6.5GW & 2.9 GW RE potential respectively. Ramgarh PS is also being inter-connected with Bhadla-III for evacuation of RE power. In order to facilitate evacuation of 9.4GW RE power from Ramgarh/Bhadla-III PS (6.5GW+2.9GW) from Bhadla-III onwards, 765kV Bhadla-III - Sikar-II D/c line with implementation schedule of Dec'24 (Tentative) [for about 2.9GW power transfer requirement] as well as 6GW HVDC corridor (± 800 kV Bhadla (HVDC) -Fatehpur(HVDC)) with implementation schedule of Dec'26 (42 months schedule) is being implemented as part of Ph-III scheme.

As mentioned above, Connectivity for 3.65GW (0.65GW at Ramgarh + 3GW at Bhadla-III) is already granted/under process at Ramgarh/Bhadla-3 PS. In view of expected implementation schedule of HVDC system beyond Bhadla-3 (Dec'26), there is a need of additional corridor from Bhadla-3 onwards beyond 2.9GW RE potential of Ramgarh/Bhadla-3 PS.

Further, at Bikaner-III PS, application for only 0.25 GW is left against 4 GW planned evacuation capacity. Since, more injection is anticipated than planned EHVAC capacity at Bhadla-III, in the requisite time frames (25-26), there is a need for optimal utilization of Bikaner-III corridor capacity by forming a high capacity tie interconnection between Bhadla-III & Bikaner-III PS.

Accordingly, 765kV Bhadla-III - Bikaner-III D/c line is proposed to facilitate optimal utilization of EHVAC corridor beyond Bikaner-III PS for evacuation of RE generation including at Ramgarh/Bhadla-III PS.

Further, as part of committee report "Transmission system for integration of over 500GW capacity by 2030" as well as MNRE/SECI inputs, a Comprehensive transmission plan for evacuation of 75GW RE potential from Rajasthan is evolved comprising 10 GW RE potential (Wind: 4 GW, Solar: 6 GW) along with 3GW BESS(net evacuation 5 GW) at Ramgarh in Jaisalmer complex by 2030. Out of 10 GW potential by 2030, in its Ph-I (by 2025) 3GW potential (Wind: 2GW, Solar: 1GW) was informed at Ramgarh. As part of

above committee report, additional 3 GW RE injection at Ramgarh PS and 2GW RE injection at Bhadla-III/Bhadla-IV PS is envisaged beyond 2025 (Ph-II/III), which will utilize the planned HVDC corridor beyond Bhadla-3 as it will match implementation schedule of generation and transmission i.e. in 2026-27 timeframe.

In the MOP meeting held on 01.05.23, it was deliberated that GIB committee clearance is still pending for 400kV Fatehgarh-II-Bhadla-III D/c line under Ph-III Part-B1 package as above line is emanating from Fatehgarh-II PS, which is falling under GIB core area and adversely impacting progress of other linked packages. Accordingly, it was directed that process of delinking of 400kV Fatehgarh-II- Bhadla-III D/c line from Ph-III Part-B1 may be carried out at the earliest and a separate package may be formed comprising this line. It is understood that RE developers are also facing challenges in getting DTL clearance from GIB committee at Fatehgarh-II PS. Deferment of 400kV Fatehgarh-II- Bhadla-III D/c line will also reduce the SCR at Bhadla-III PS/Bhadla HVDC which is already at boarder line. Therefore, 765kV Bhadla-III PS - Bikaner-III PS D/c line shall also provide additional advantage to improve short circuit strength in Bhadla-III complex including for LCC HVDC terminal at Bhadla.

Transmission system for evacuation of power from Rajasthan REZ Ph-IV (Part-3 :2 GW) (Ramgarh Complex) was deliberated in 17th CMETS-NR meeting held on 31.03.23 which included 765kV Ramgarh-Bhadla-III PS - Bikaner-III PS D/c Corridor. However considering connectivity surrendered at Ramgarh by M/s Adani (2100 MW) the proposal was reviewed as above.

CTU stated that system studies were carried out under various scenarios considering 765 kV Bhadla-III – Bikaner-III D/c tie interconnection and study files were also circulated on 25.05.23. From the study results, it was observed that line loading with proposed strengthening is in order in normal as well as N-1 contingency condition. It is also observed that in Feb solar maximized scenario (revised case), loading of 400kV RAPS-Shujalpur D/c line is marginally higher (about 900MW) in N-1 contingency. Additionally loading of 765/400kV Bareilly ICT (2X1500MVA) is marginally higher in some scenarios (n-1:1550MW). The loading of the above line and ICT will be reviewed with progress of RE generation projects at Rajasthan and strengthening requirement will be identified later, if required. Further, short circuit level at Bikaner-III PS is also within limits (765kV-29.3kA ,400kV- 55kA, 220kV- 24.3 kA) with proposed strengthening.

It was stated that in view of the above considerations, 765 kV Bhadla-III – Bikaner-III D/c tie interconnection shall provide following advantages:

- Optimal utilization of EHVAC transmission system beyond Bikaner-III PS while providing flexibility of power transfer from Bhadla/Bikaner RE clusters

- Additional evacuation requirement from future RE generation of 181.5 GW (Ph-1/2) RE potential at Ramgarh/Bhadla-III (2 GW)
- Meeting evacuation requirement from Bhadla-III PS onwards for same RE generators coming up in 2025-26
- Improves SCR in Bhadla-III complex including for LCC HVDC terminal at Bhadla
- Tie connection will also increase resiliency of transmission corridor in both the complexes i.e. Bhadla & Bikaner

Grid-India stated that studies are in order and above proposal is agreeable to them.

Further, Grid-India in the meeting as well as vide mail dated 31.05.23 informed that multiple transmission line tripping in a short duration have been observed in Rajasthan RE complex during inclement weather condition in recent days. Some of these lines tripped due to tower collapse/damage and are still under long outage. This has resulted in backing down of RE generation also to keep the line loadings within permissible limits in the depleted network. (List of lines under long outage due to tower collapse/damage in Rajasthan RE Complex is as under

- 400 KV Bhadla (RVPN) - Merta (out since 25.05.2023)
- 400 KV Bhadla (RVPN) - Jodhpur (out since 25.05.2023)
- 400 KV Jaisalmer - Barmer Ckt-1 (out since 30.05.2023)
- 400 KV Jaisalmer - Barmer Ckt-2 (out since 30.05.2023)
- 400 KV Bhadla (RVPN) - Bikaner (RVPN) Ckt-1 (out since 15.05.2023)
- 400 KV Bhadla (RVPN) - Bikaner (RVPN) Ckt-2 (out since 15.05.2023)
- 765 KV Phagi (RVPN) - Bhiwani (PG) Ckt-1 (out since 25.05.2023)
- 765 KV Bikaner - Khetri ckt 1 was out on 27.05.2023 due to crossarm damage

It was further mentioned that the tripping of multiple lines during inclement weather especially due to tower collapse/damage is a matter of serious concern and suggested following measures in order to avoid such incidents in future.

- Review of the Wind Zones in Rajasthan RE Complex on priority
- Enhancing resiliency of the transmission system through:
 - Planning of single ckt lines in place of double ckt lines in critical/high loading corridors
 - Applicability of N-2 reliability criteria or beyond may be considered on case to case basis in natural disaster/inclement weather prone areas. Historical data of multiple element outage in such areas and feedback of system operator may be referred in this regard while planning of the transmission system.

-
- It was agreed that input will be deliberated in a separate meeting and the final recommendations will be put up in subsequent NCT for approval.

It was agreed that input will be deliberated in a separate meeting and the final recommendations will be put up in subsequent NCT for approval. CTU stated that the matter regarding review of wind zone and resiliency of the transmission system was also deliberated in the 66th NRPC meeting wherein it was decided that a committee shall be formed to deliberate on issue & mitigating measures

NLDC representative further informed that, in the study cases, a large quantum of power (~**9200 MW**) is getting evacuated from 765/400 kV Bikaner PG making it one of the most critical station in the complex. Pooling of such large quantum of power at a single station is not desirable from resiliency point of view as complete station outage may result in cascade tripping. He further requested CTUIL to explore alternatives paths with suitable network rearrangements so as to reduce large evacuation of power from a single station.

CTUIL stated that RE pooling stations in western Rajasthan complex (Bikaner/Bhadla/Fatehgarh) are contagious to each other and power from above complexes shall flow towards load centres of Northern & Western region mainly through following high capacity corridors

- For Punjab (765kV Moga) and Delhi/NCR (765kV Jhatikara, Narela, Gurgaon) load centres through 765kV Bikaner and Khetri & Neemrana-II (via Bikaner-III)
- To UP load centres (Aligarh, Varanasi, Kanpur, Bareilly & Balia) through 765kV Bhadla-II/III (via 765kV Sikar-II), 400kV Bhiwadi (via 400kV Bikaner-II), Fatehpur HVDC (via Bhadla-III HVDC) & Neemrana-II (via Bikaner-III)
- To Western Region load centres (765kV Gwalior & 765kV Mandsaur) through 765kV Beawar/Dausa (via Fatehgarh-III) & Sirohi/Rishabdeo (via Fatehgarh-IV/Barmer-I)

In view of integration of more than 50GW in ISTS system in western Rajasthan, most of RE pooling station i.e. Bikaner (PG) may be utilized for evacuation of about 7-9 GW RE generation (incl self RE generation of 4-6GW) towards load centers. To make the system more resilient, additional transmission system may be required which may increase the transmission system investment (up to 1.5 times) for evacuation of the RE power mainly through solar without BESS which is available only in day time. In view of this, detail deliberations are required on above matter on resilience of transmission system for RE vis-à-vis transmission system additional cost and optimal utilization of transmission system as above requirement is beyond transmission planning criteria.

NLDC representative further highlighted that below mentioned lines are heavily loaded in the study case shared by CTUIL. The angular separation in the base case and under N-1 is also on the higher side. Same may also be addressed through suitable rearrangements as mentioned above.

S. No.	Transmission Line	Loading (MW)	Angular Separation (Base Case)	Angular Separation (under N-1)
1.	765 kV Bhadla – III – Sikar D/C	2x1760	19 deg.	25 deg.
2.	765 kV Bikaner – Moga D/C	2x1963	20 deg.	25 deg.
3.	765 kV Bikaner-III – Neemrana 2xD/C	4x1868	15 deg.	19 deg.

CTU stated that as per Transmission Planning Criteria, 2023, angular separation between adjacent buses under ‘N-1’ shall not exceed 30 degree. Further it is mentioned that in transmission planning efforts to be made that angular difference between adjacent buses may not exceed 20 degree in base case and 30 degree in N-1 contingency (except Inter regional and critical high capacity links). Additional transmission system/ rearrangements may be required to further reduce the angular difference between adjacent buses which may increase the transmission system investment.

Further, in the 8th CMETS-NR meeting held on 30.06.22, result of P-V, Q-V analysis for such highly loaded 765kV lines was depicted by CTU as part of minutes of above meeting. From the result it was observed that the system was stable under various contingencies.

- 765kV Bhadla-3-Sikar-2 D/C (350km)
- 765kV Sikar-2-Aligarh D/c (275km)
- 765kV Bikaner-Khetri D/c (240km)
- 765kV Bikaner-Moga D/c (366km)
- 765kV Khetri-Jhatikara D/c (146km)
- 765kV Bhadla-2-Sikar-2 D/c (310km)

CEA & Grid-India also concurred on above proposal and no comments were received from other stakeholders. In view of deliberation held in present CMETS-NR meeting, following ISTS Transmission scheme was agreed:

- 765 kV Bhadla-III – Bikaner-III D/c line along with 240 MVAr switchable line reactor for each circuit at Bhadla-III end (~150 km)

Estimated Cost : Rs 1382 Cr

Note : 765/400kV ICTs , 400/220kV ICTs and 220 kV line bays (for RE connectivity) at Bhadla-III shall be taken up separately based on RE development/applications at Bhadla-III PS

However, on the matter of resiliency of the transmission system raised by Grid-India, it was decided to have deliberation in a separate meeting after NRPC committee meeting as discussed above.

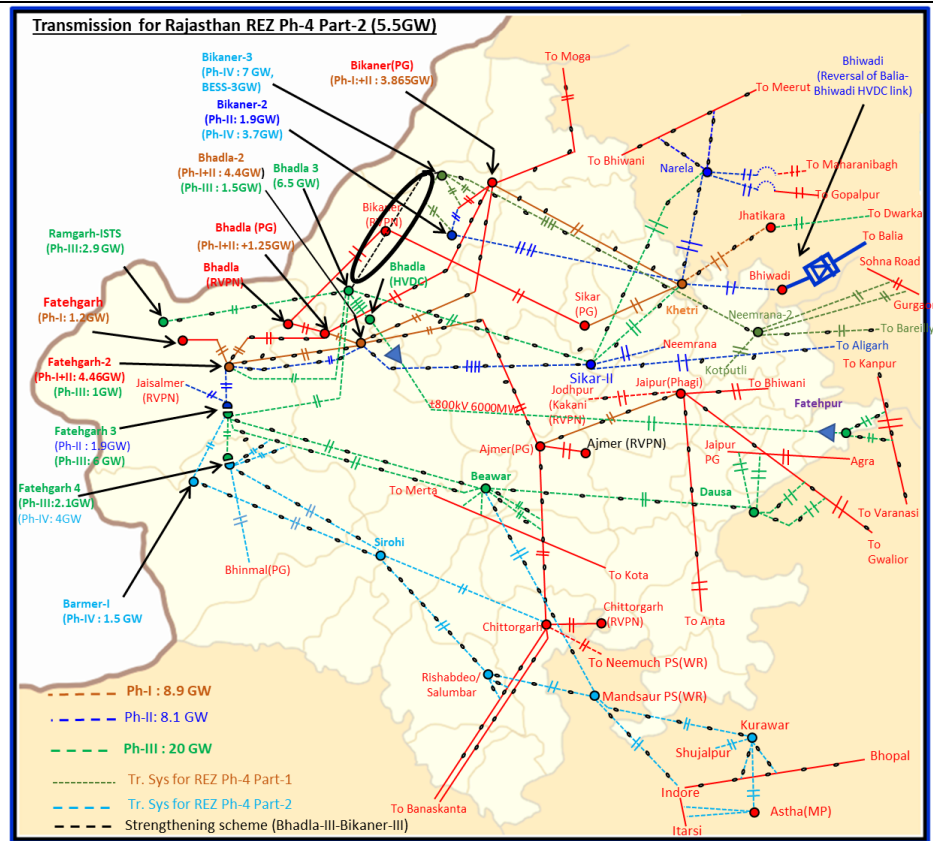


Fig 1: Transmission system strengthening for interconnection of Bhadla-III & Bikaner-III complex

List of Participants of 19th Consultation meeting for Evolving Transmission Schemes in NR held on 31.05.2023

CEA

Shri Nitin Deswal	Deputy Director
Shri Kanhaiya Singh Kushwaha	Assistant Director

SECI

Shri R.K.Agarwal	Consultant
------------------	------------

Grid India

Shri Alok kumar	GM
Shri Gaurav Malviya	Manager
Shri Priyam Jain	Manager
Shri Gaurab Dash	Assistant Manager

NRPC

Shri Rajat Dixit	AEE
Shri Santosh Kumar	SE

CTU

Shri Jasbir Singh	CGM (CTU)
Shri Kashish Bhambhani	GM (CTU)
Shri Sandeep Kumawat	DGM (CTU)
Smt. Ankita Singh	Ch. Manager (CTU)
Shri R Narendra Sathvik	Manager (CTU)
Shri Madhusudan Meena	Engineer (CTU)

HVPNL

Shri Sanjay Arora CE (PD&C)

HPPTCL

Shri Rajneesh Kumar GM (C&D)

Shri Harmanjeet Singh Assistant Engineer

LTA/Connectivity Applicants

Shri Ajay Kumar Pradhan	Acme Cleantech Solutions Private Limited
Shri Rajat Sangwan	Acme Cleantech Solutions Private Limited
Shri Yogesh Kumar Sanklecha	Acme Cleantech Solutions Private Limited
Shri Pradeep	Acme Cleantech Solutions Private Limited
Shri Angshuman Rudra	Avaada Rjbikaner Private Limited
Shri Ashish Shukla	Avaada Rjbikaner Private Limited
Shri Vineet Taneja	BN Hybrid Power-1 Private Limited
Shri Mohit Jain	ReNew Surya Vihaan Private Limited
Shri Arzaan Dordi	Serentica Renewables India Private Limited
Shri Vishnu Khandelwal	HZL
Smt Poorva Pitke	Sprng Power Private Limited
Shri Sumit Joge	Sprng Power Private Limited

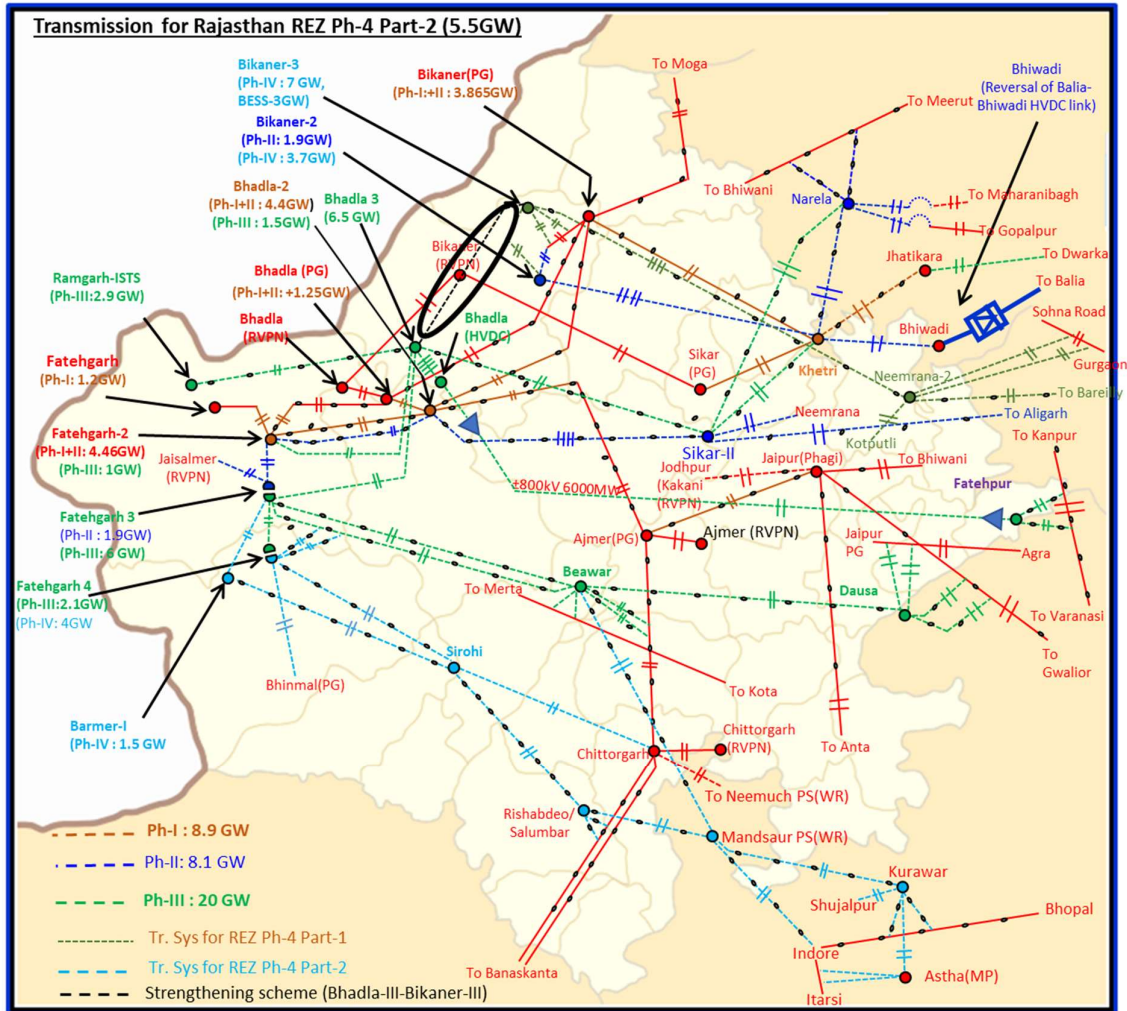


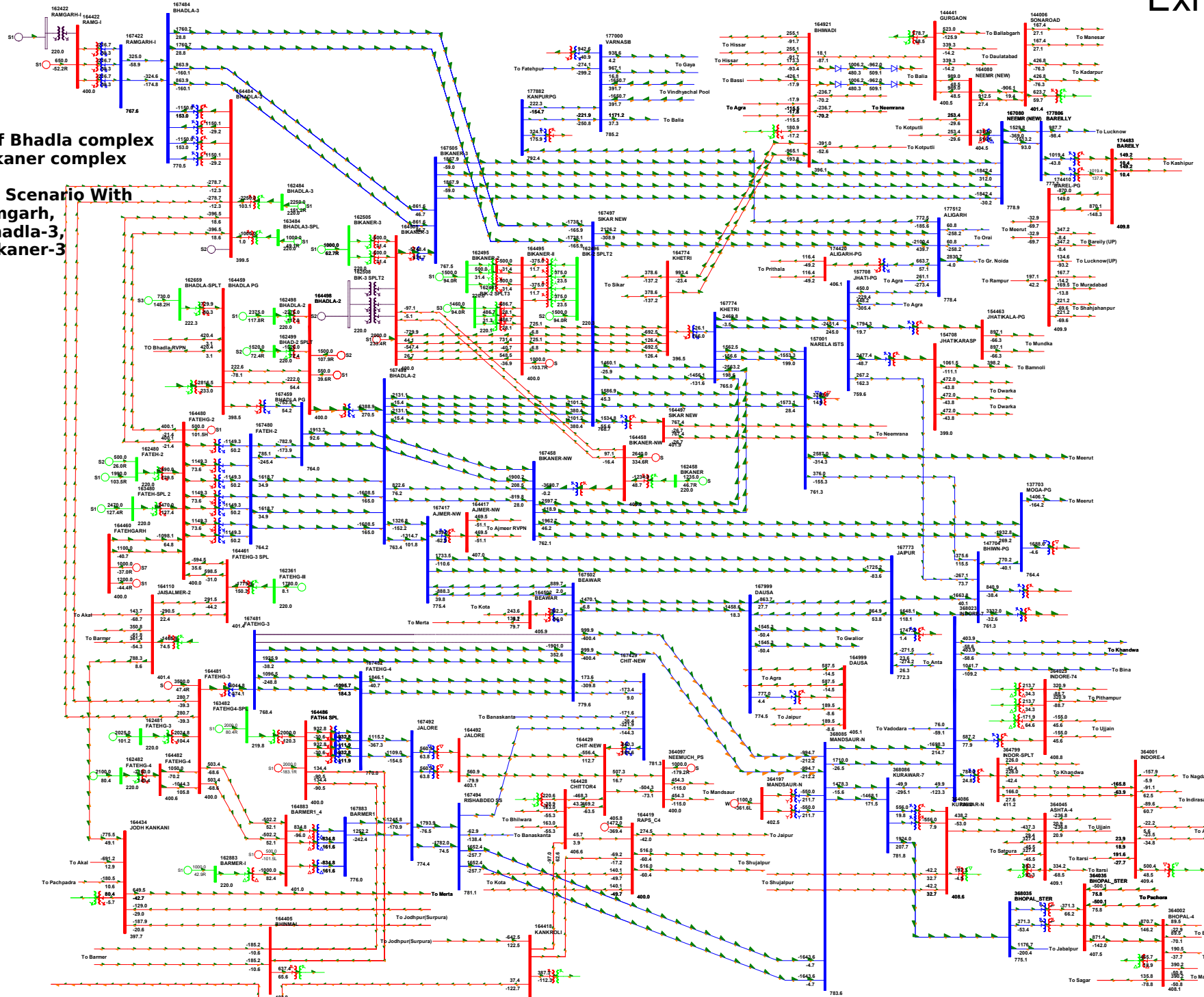
Fig 1: Transmission system strengthening for interconnection of Bhadla-III & Bikaner-III complex

Transmission system strengthening for interconnections of Bhadla-III & Bikaner-III complex

Exhibit-II

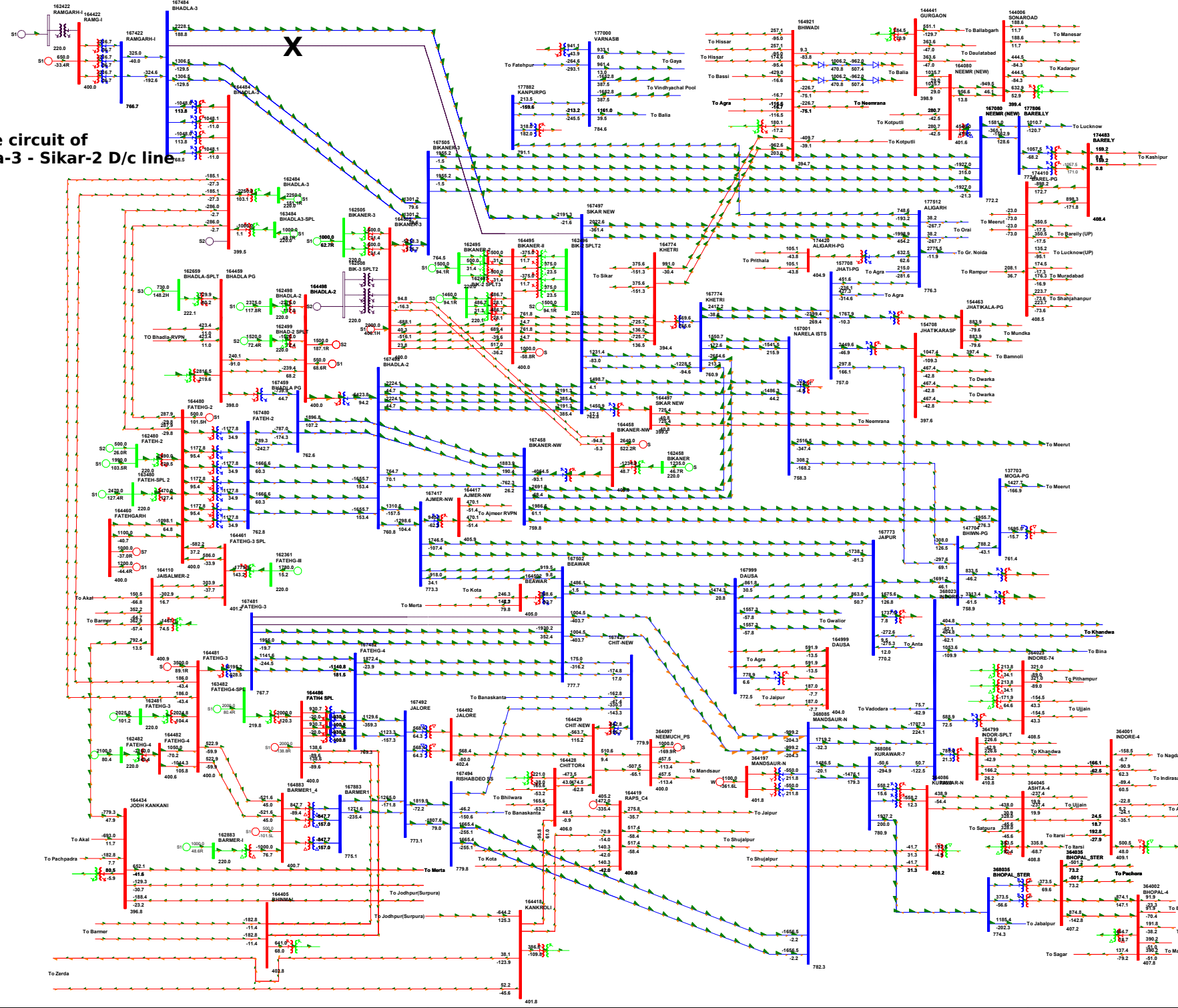
Development of Bhadla complex followed by Bikaner complex

June Solar Max Scenario With
650 MW at Ramgarh,
3250 MW at Bhadla-3,
3000 MW at Bikaner-3



Transmission system strengthening for interconnections of Bhadla-III & Bikaner-III complex

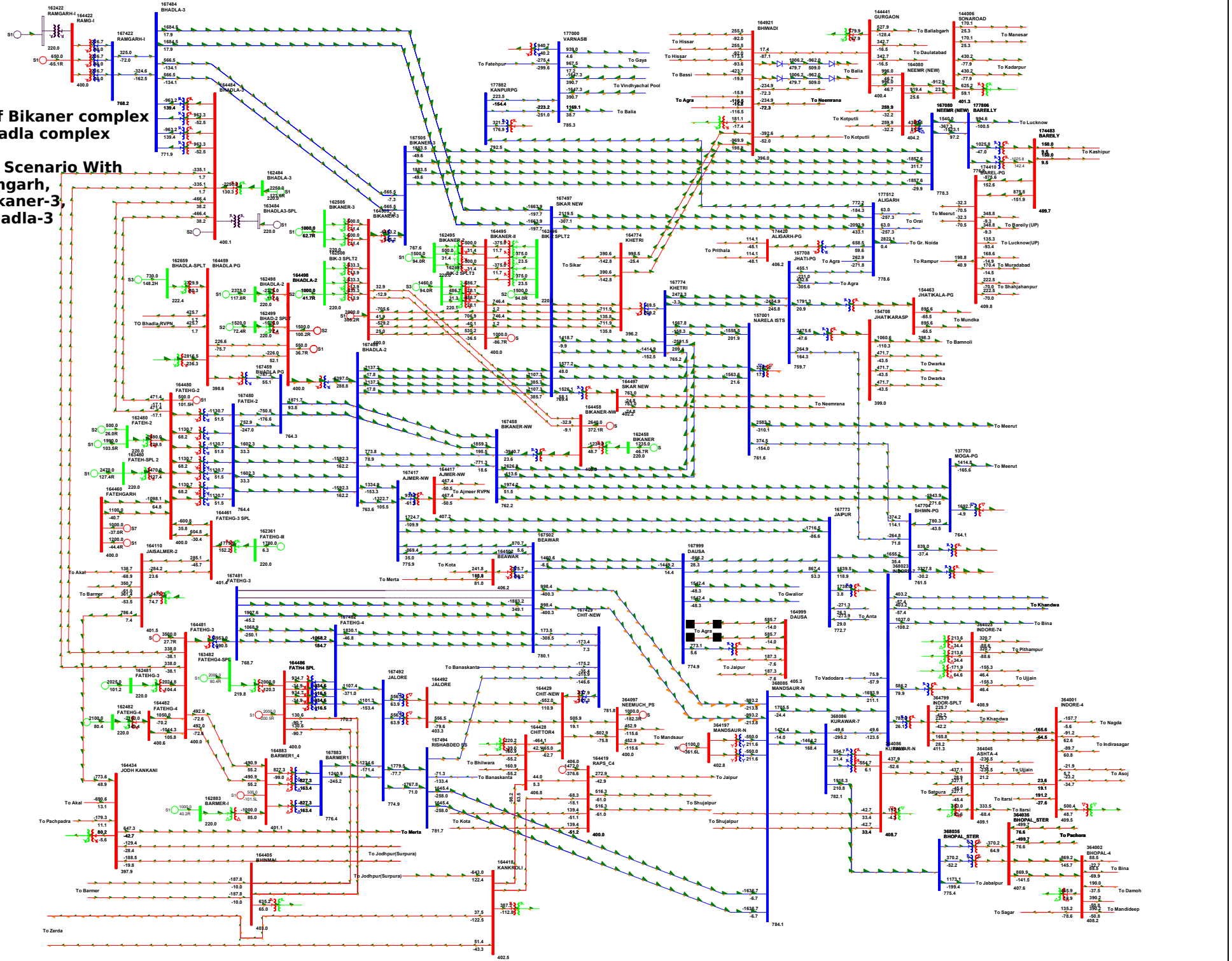
Outage of one circuit of 765 kV Bhadla-3 - Sikar-2 D/c line



Transmission system strengthening for interconnections of Bhadla-III & Bikaner-III complex

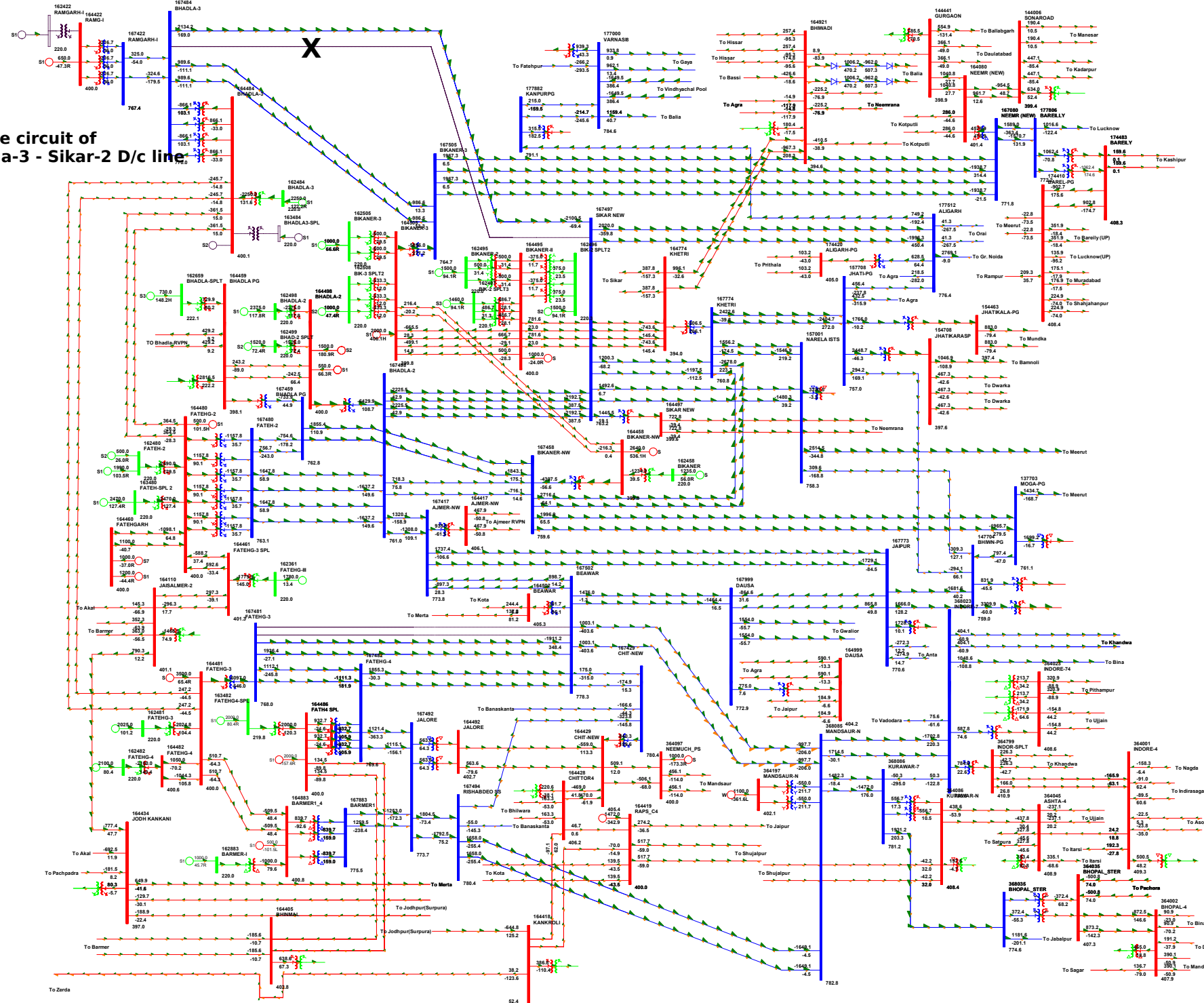
Development of Bikaner complex followed by Bhadla complex

June Solar Max Scenario With
650 MW at Ramgarh,
4000 MW at Bikaner-3,
2250 MW at Bhadla-3



Transmission system strengthening for interconnections of Bhadla-III & Bikaner-III complex

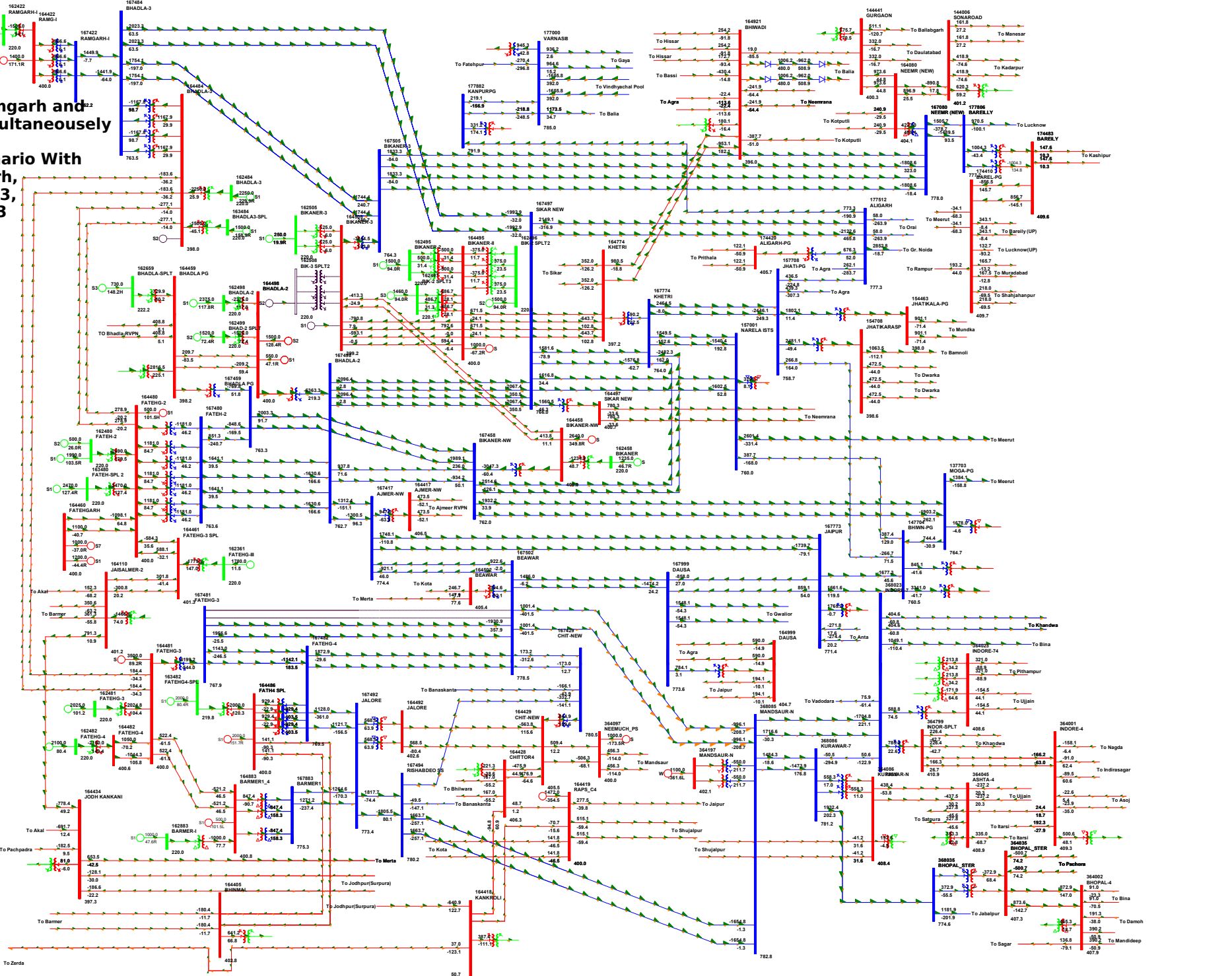
Outage of one circuit of
765 kV Bhadla-3 - Sikar-2 D/c line



Transmission system strengthening for interconnections of Bhadla-III & Bikaner-III complex

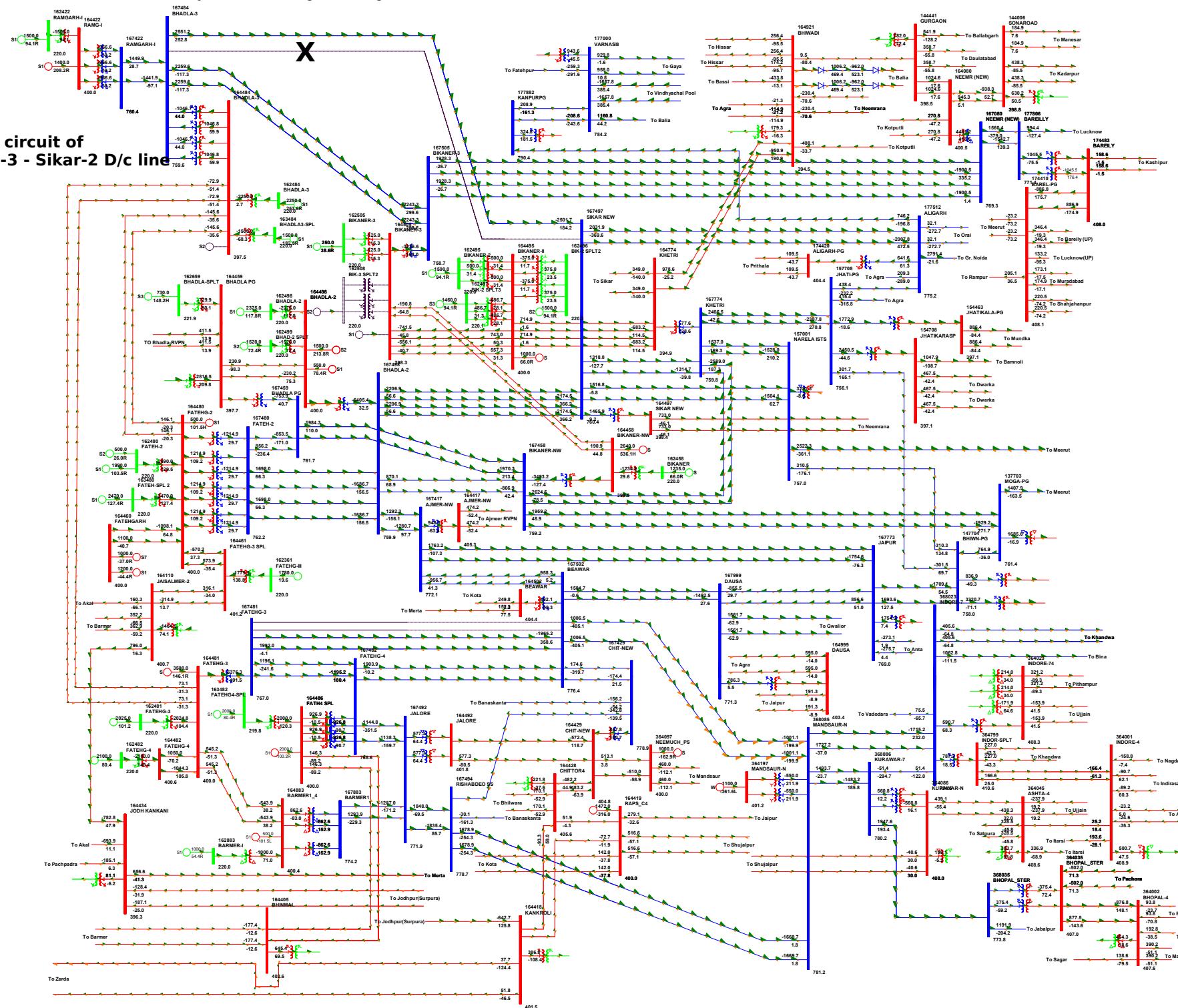
Development of Ramgarh and Bhadla complex simultaneously

**June Solar Max Scenario With
2900 MW at Ramgarh,
3750 MW at Bhadla-3,
250 MW at Bikaner-3**



Transmission system strengthening for interconnections of Bhadla-III & Bikaner-III complex

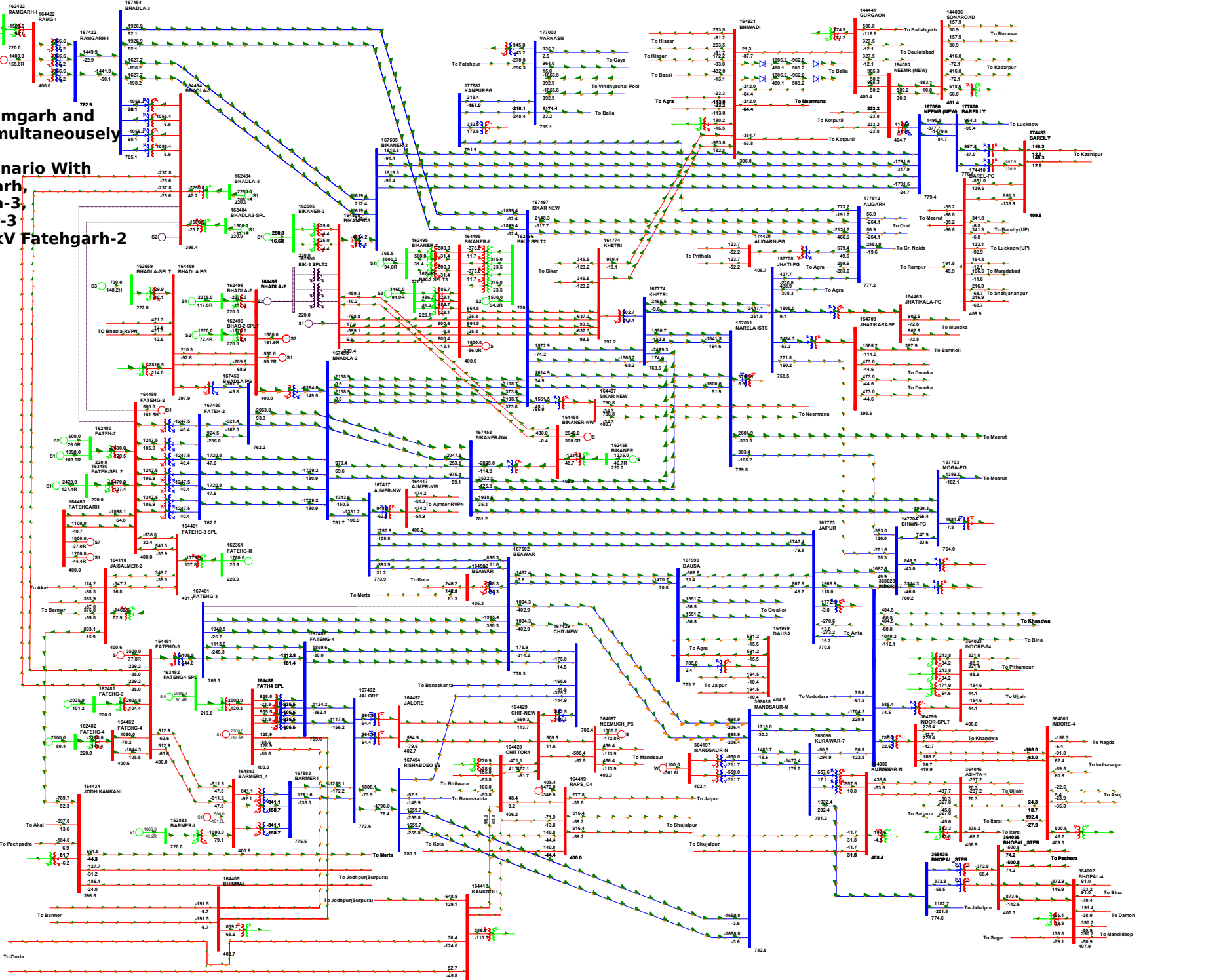
Outage of one circuit of 765 kV Bhadla-3 - Sikar-2 D/c line



Transmission system strengthening for interconnections of Bhadla-III & Bikaner-III complex

Development of Ramgarh and Bhadla complex simultaneously

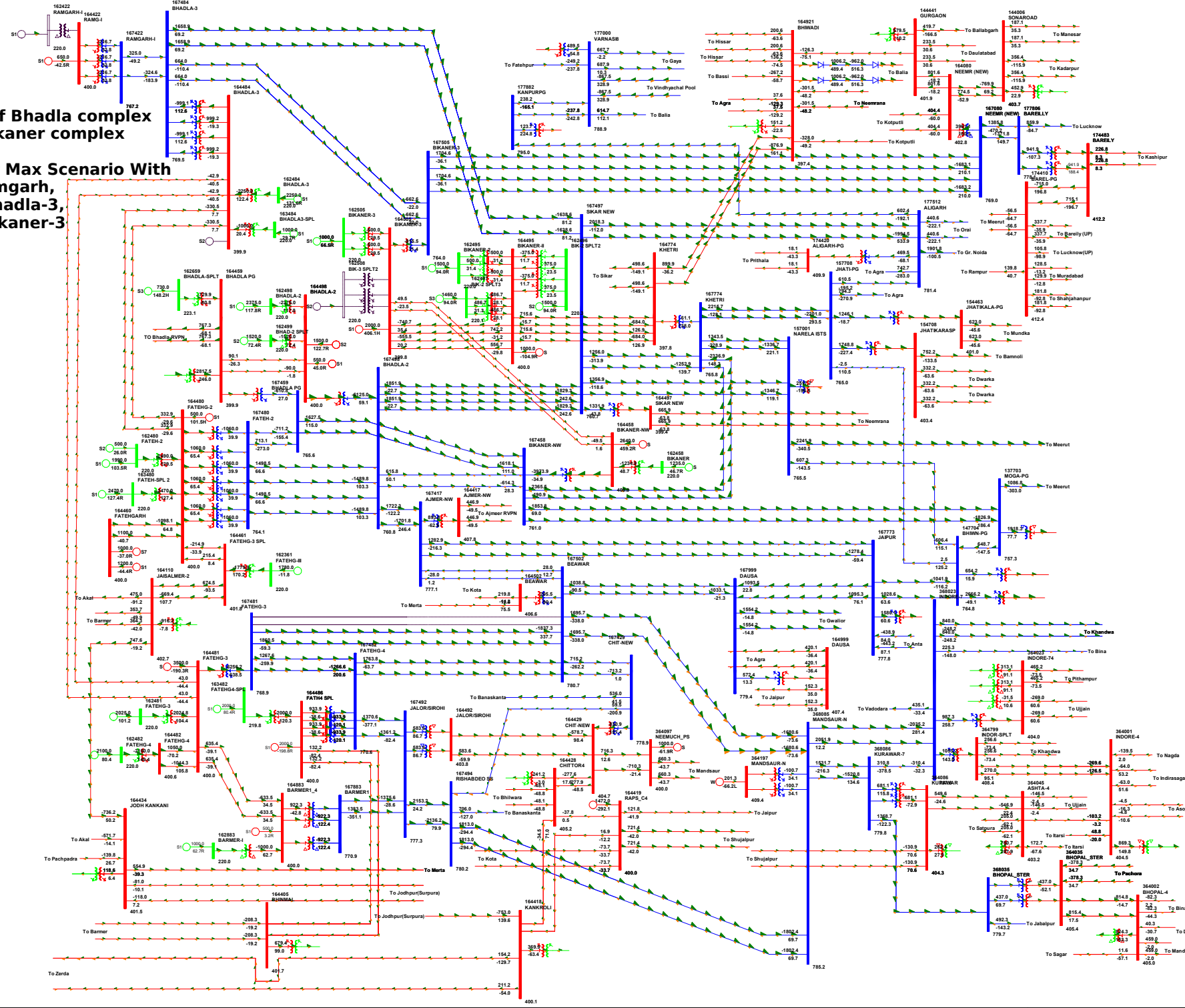
**June Solar Max Scenario With
2900 MW at Ramgarh,
3750 MW at Bhadla-3,
250 MW at Bikaner-3
Deferment of 400 kV Fatehgarh-2
Bhadla-3 D/c line**



Transmission system strengthening for interconnections of Bhadla-III & Bikaner-III complex

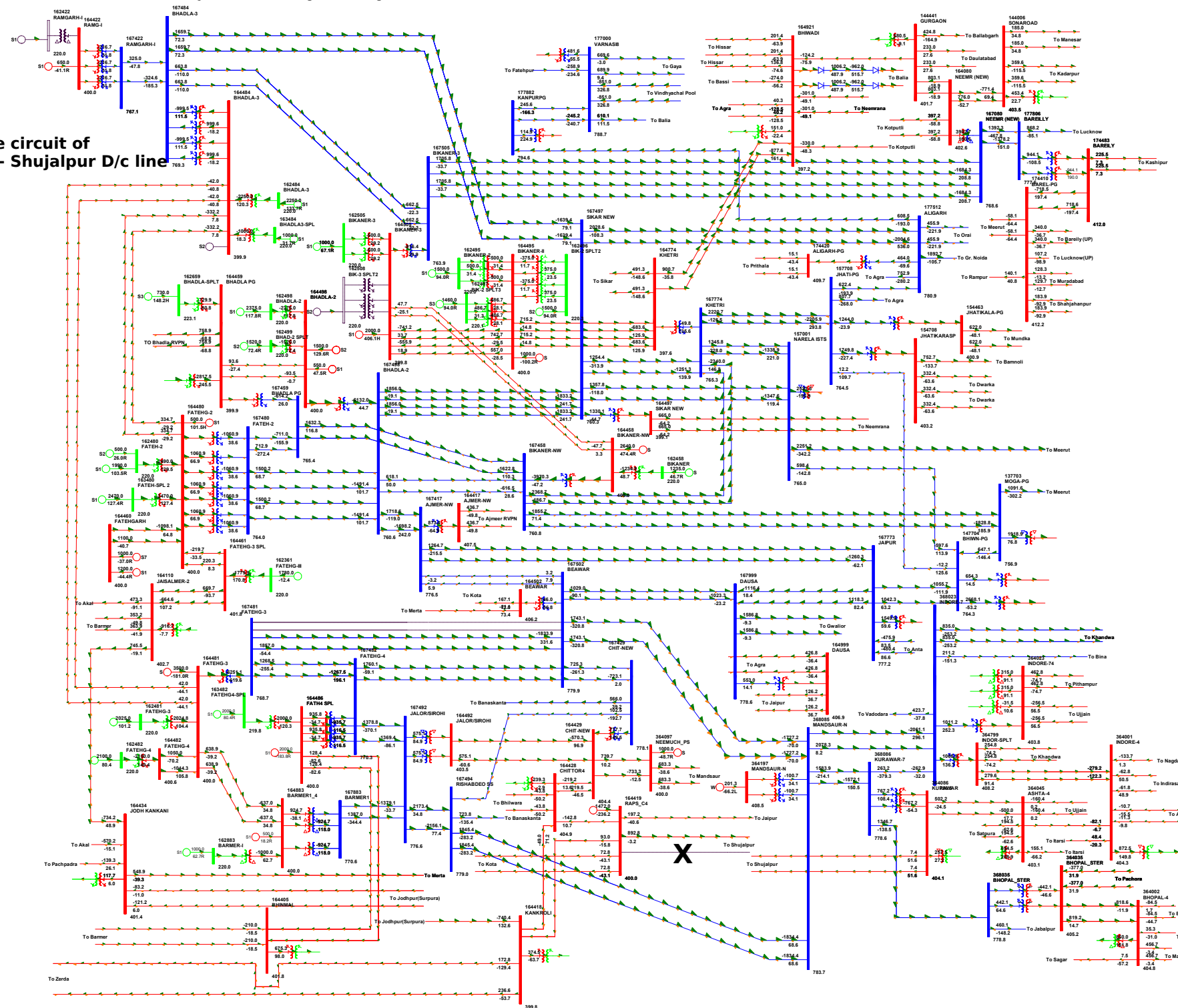
Development of Bhadla complex followed by Bikaner complex

February Solar Max Scenario With
650 MW at Ramgarh,
3250 MW at Bhadla-3,
3000 MW at Bikaner-3



Transmission system strengthening for interconnections of Bhadla-III & Bikaner-III complex

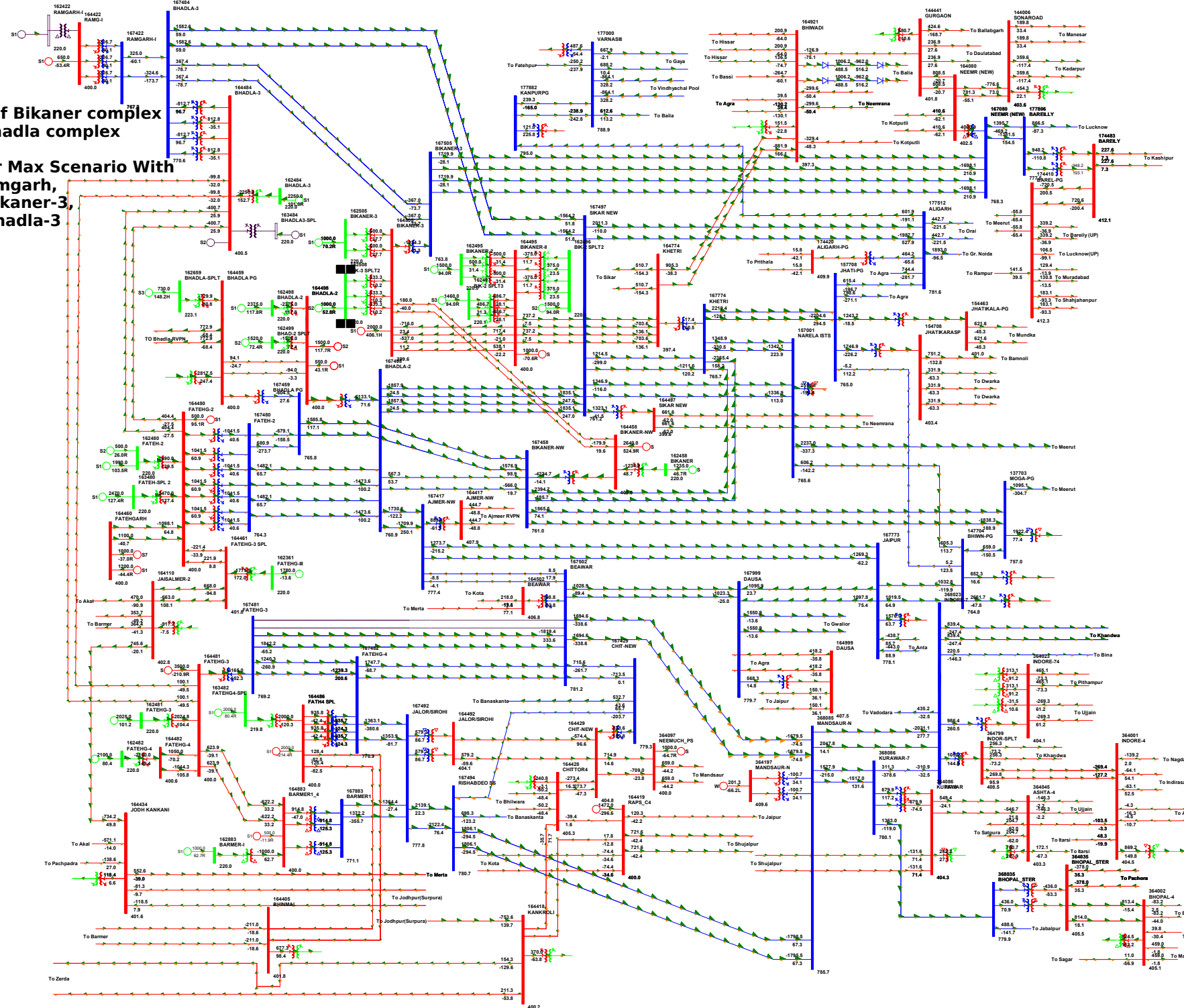
Outage of one circuit of 400 kV RAPS - Shujalpur D/c line



Transmission system strengthening for interconnections of Bhadla-III & Bikaner-III complex

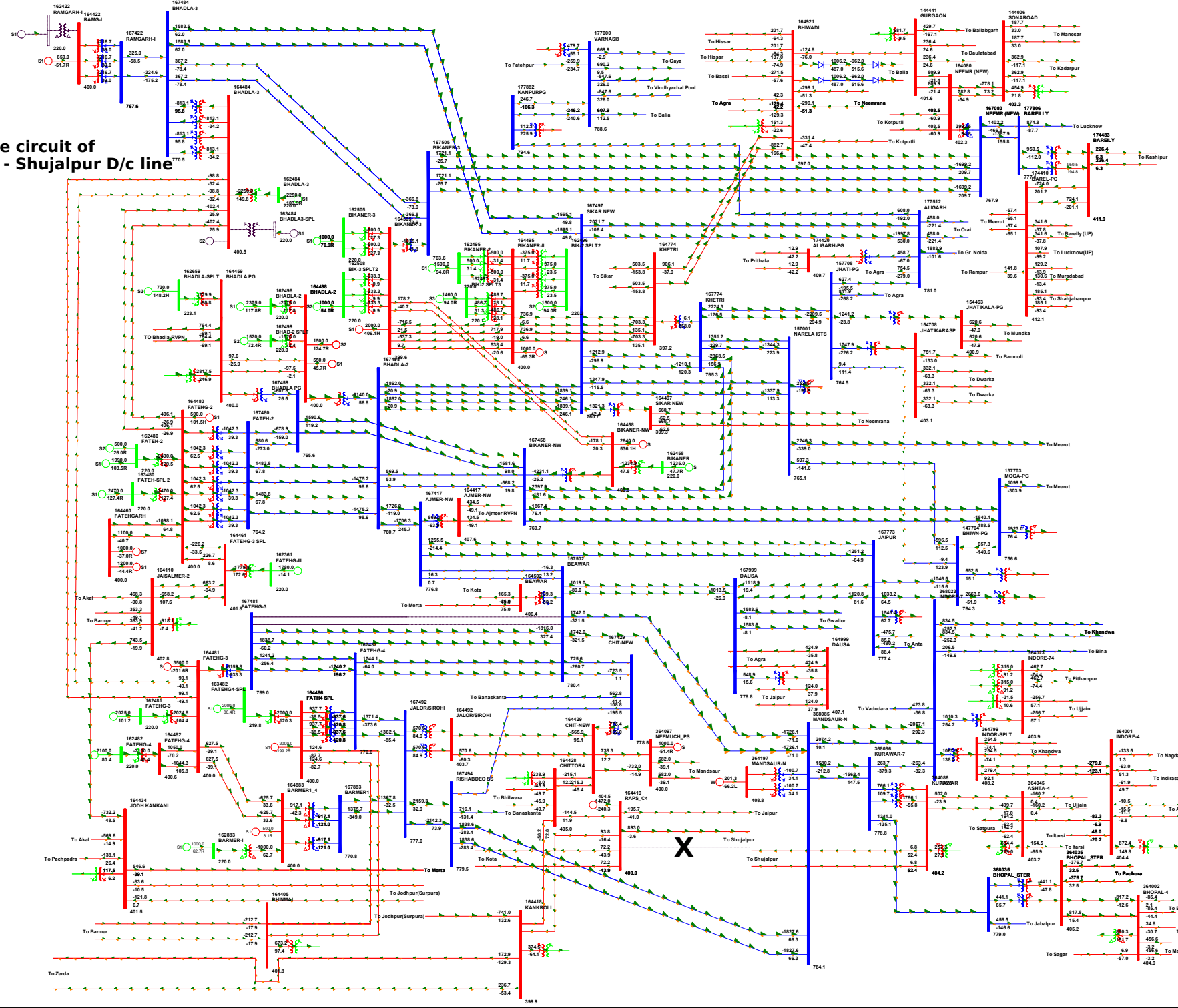
Development of Bikaner complex followed by Bhadla complex

February Solar Max Scenario With
650 MW at Ramgarh,
4000 MW at Bikaner-3,
2250 MW at Bhadla-3



Transmission system strengthening for interconnections of Bhadla-III & Bikaner-III complex

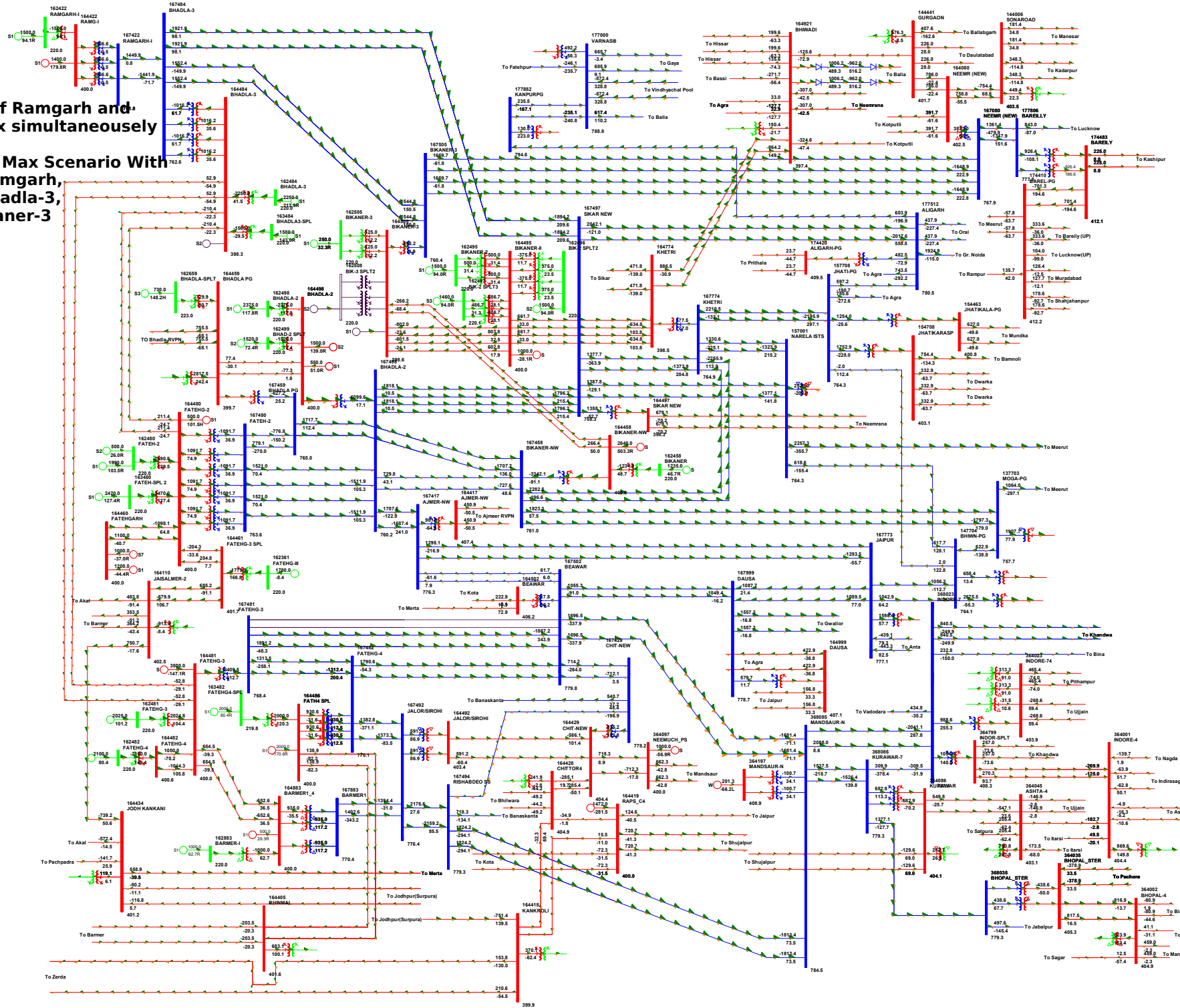
Outage of one circuit of 400 kV RAPS - Shujalpur D/c line



Transmission system strengthening for interconnections of Bhadla-III & Bikaner-III complex

Development of Ramgarh and Bhadla complex simultaneously

February Solar Max Scenario With
2900 MW at Ramgarh,
3750 MW at Bhadla-3,
250 MW at Bikaner-3



**REQUEST FOR PROPOSAL
DOCUMENT**

FOR

**SELECTION OF
TRANSMISSION SERVICE PROVIDER**

THROUGH TARIFF BASED COMPETITIVE BIDDING PROCESS

TO

ESTABLISH TRANSMISSION SYSTEM

FOR

“Construction of 765/400/220 kV GIS Substation, Meerut with associated lines and 400/220/132 kV GIS Substation, Simbhaoli with associated Transmission lines”

ISSUED BY



(A wholly owned subsidiary of Power Finance Corporation Ltd.)

PFC CONSULTING LIMITED

(A wholly owned subsidiary of Power Finance Corporation Ltd.)

Corporate Office:

9th Floor, A-Wing, Statesman House
Connaught Place, New Delhi – 110 001

June 17, 2019

1. INTRODUCTION

- 1.1 U.P Power Transmission Corporation Ltd. (UPPTCL) vide its letter no. 62/PS/DIR(W&P)/PTCL/Meerut&Simbhavali dated March 06, 2019 has notified PFC Consulting Limited as Bid Process Coordinator (BPC) for the purpose of selection of Bidder as Transmission Service Provider (TSP) to establish transmission system for “**Construction of 765/400/220 kV GIS Substation, Meerut with associated lines and 400/220/132 kV GIS Substation, Simbhaoli with associated Transmission lines**” through tariff based competitive bidding process.
- 1.2 The BPC now invites Bids for selection of Transmission Service Provider to establish the Transmission System as detailed below in the table for “**Construction of 765/400/220 kV GIS Substation, Meerut with associated lines and 400/220/132 kV GIS Substation, Simbhaoli with associated Transmission lines**”(hereinafter referred to as 'Project') on build, own, operate and maintain basis, and to provide transmission service on a long term basis to the Long Term Transmission Customers, as listed out in Annexure-1 of this RFP. The BPC reserves the right to add, delete or replace any Long Term Transmission Customer(s) to the list.

(A) 765/400/220kV GIS substation, Meerut with associated lines :-

Sl. No.	Name of the transmission element	Completion Target	Conductor per phase
1.	Construction of 765/400/220kV GIS substation (2x1500+2x500MVA),Meerut with following Bays :- (i) 765kV, 1500MVA ICT Bay - 02 nos. (ii) 765kV, 240MVAR Bus Reactor Bay - 01 no. (iii) 400kV, 1500MVA ICT Bay - 02 nos. (iv) 400kV, 500MVA ICT Bay - 02 nos. (v) 400kV, 80MVAR Bus Reactor Bay - 01 no. (vi) 220kV, 500MVA ICT Bay - 02 nos. (vii) 765kV Feeder Bay - 02 nos. (viii) 400kV Feeder Bay - 04 nos. (ix) 220kV Feeder Bay - 06 nos.	31.08.2021	
2.	Construction of following additional bays for future extension :- (i) 765kV Feeder Bay - 02 nos. (ii) 400kV Feeder Bay - 02 nos. (iii) 220kV Feeder Bay - 04 nos. (iv) 765kV T/F Bay - 01 no. (v) 400kV T/F Bay - 02 nos. (vi) 220kV T/F Bay - 01 no.		



3.	LILOf 765kV S/C Gr. Noida (765kV) – Hapur (765kV) (WUPPTCL) at 765kV substation, Meerut	31.08.2021	Quad BERSIMIS ACSR The transmission lines shall have to be designed for a maximum operating conductor temperature of 85 deg C for ACSR.
----	---	------------	---

B) 400/220/132kV GIS substation, Simbhaoli with associated lines:-

Sl. No.	Name of the transmission element	Completion Target	Conductor per phase
1.	Construction of 400/220/132kV GIS substation (2x500+2x200MVA), Simbhaoli with following Bays:- i. 400kV ICT Bay - 02 nos. ii. 400kV, 80MVAR Bus Reactor Bay - 01 no. iii. 220kV ICT Bay - 04 nos. iv. 132kV ICT Bay - 02 nos. v. 400kV Feeder Bay - 04 nos. vi. 220kV Feeder Bay - 02 nos. vii. 132kV Feeder Bay - 02 nos.	31.05.2021	
2.	Construction of following additional bays for future extension :- i. 400kV Feeder Bay - 02 nos. ii. 220kV Feeder Bay - 04 nos. iii. 132kV Feeder Bay - 04 nos. iv. 400kV T/F Bay - 01 no. v. 220kV T/F Bay - 02 nos. vi. 132kV T/F Bay - 01 no.		
3.	Simbhaoli (400kV) – Muradnagar-II (Ghaziabad) 400kV DC Line (Twin Moose)	31.05.2021	Twin Moose
4.	Simbhaoli (400kV) – Meerut (765kV) 400kV DC Line (Twin Moose)	31.08.2021	Twin Moose

Note:

- (1) *In case of any augmentation work in future at the substation/line being developed by the TSP, no supervision charges shall be payable to TSP.*
- (2) *Land of 765kV Meerut and 400kV Simbhaoli substation shall be arranged by the developer at its own cost, keeping following points in consideration:-*

	<p align="center">DIRECTOR (WORKS & PROJECT), U.P. POWER TRANSMISSION CORPORATION LTD. 7th Floor, Shakti Bhawan, 14-Ashok Marg, Lucknow-226 001. E-mail: director_project@upptcl.org</p>	
---	---	---

No. 62 /PS/DIR (W&P)/PTCL/ Meerut&Simbhavali

Dated: 26 March, 2019

M/s PFC Consulting Ltd.,
First Floor, "Urjanidhi",
1, Barakhamba Lane,
Connaught Place,
New Delhi-110001

Kind Attention : Sri Yogesh Juneja, CEO

Subject :- Letter of Intent (LOI) for providing services of Consultant & Bid Process Coordinator (BPC) for selection of Developer for implementation of Tariff Based Competitive Bidding for Construction of 765/400/220kV GIS Substation, Meerut with associated lines and 400/220/132kV GIS Substation, Simbhavali with associated Transmission Lines.

Your reference 1. Offer : 04/18-19/UPPTCL/BPC
2. Letter : 04/18-19/UPPTCL/BPC

Dated : 18.02.2019
Dated : 22.02.2019

Dear Sir,

In continuation of above mentioned references, a Letter of Intent is hereby placed on you for providing services as Consultant & Bid Process Coordinator (BPC) for selection of Transmission service provider through Tariff Based Competitive Bidding Process for the construction of following Transmission Package related with construction of 765/400/ 220kV GIS Substation, Meerut and 400/220/132kV GIS Substation, Simbhavali with associated Transmission Lines:

Package-2: Construction of 765/400/220kV GIS Substation, Meerut with associated lines and 400/220/132kV GIS Substation, Simbhavali with associated transmission lines.

Sl. No.	Items	Capacity / Length	Estimated Cost (Rs. Crores)
(A)	765/400/220kV GIS substation, Meerut with associated lines		
1.	Construction of 765/400/220kV GIS substation, Meerut (including 240MVAR Bus Reactor at 765kV and 80MVAR Bus Reactor at 400kV)	2x1500+2x500 MVA	507.53
2.	Construction of following additional Bay at S/S for future extension :		
(i)	765kV Feeder Bay	02 No.	(included in substation cost)
(ii)	400kV Feeder Bay	02 No.	
(iii)	220kV Feeder Bay	04 No.	
(iv)	765kV T/F Bay	01 No.	
(v)	400kV T/F Bay	02 No.	
(vi)	220kV T/F Bay	01 No.	

Handwritten signatures and initials at the bottom of the page.

3.	LILO of 765kV SC Gr. Noida (765kV) – Hapur (765kV) line (WUPPTCL) at 765kV substation, Meerut	45 Km.	231.30
Total-A			738.83
(B)	400/220/132kV GIS substation, Simbhavali with associated lines		
1.	Construction of 400/220/132kV GIS substation, Simbhavali (including 80MVAR Bus Reactor)	2x500+2x200 MVA	254.27
2.	Construction of following additional Bay at S/S for future extension :		
(i)	400kV Feeder Bay	02 No.	(included in substation cost)
(ii)	220kV Feeder Bay	04 No.	
(iii)	132kV Feeder Bay	04 No.	
(iv)	400kV T/F Bay	01 No.	
(v)	220kV T/F Bay	02 No.	
(vi)	132kV T/F Bay	01 No.	
3.	Simbhavali (400kV) – Muradnagar-II (Gaziabad) 400kV DC line (Twin Moose)	95 Km.	161.96
4.	Simbhavali (400kV) – Meerut (765kV) 400kV DC line (Twin Moose)	40 Km.	68.19
Total-B			484.42
Grand Total (A+B)			1223.25

BPC services includes formation of Special Purpose Vehicle (SPV), appointing BOD of SPV, maintaining accounts including audits, coordination with related Govt. Agencies, formulating of competitive bidding process, preparation of bidding documents including Transmission Service Agreement (TSA), inviting bids, conduct and to carry out evaluation of bids, getting approval of Govt. Agencies, award of work and other process till execution of TSA with selected developer, adoption of Tariff and issue of License as per description of services enclosed herewith in ANNEXURE-I. The Scope of Work shall include technical, financial and legal services for the entire duration of assignment for selection of Developer. The scope shall also include all such works which are not specifically mentioned in the description of services enclosed herewith in ANNEXURE-I but are required for selection of Developer for implementation of Tariff Based Competitive Bidding of Power Transmission Project. It shall also be the responsibility of the PFC Consulting Limited {hereinafter referred to as “Consultant & Bid Process Coordinator (BPC)”} to carry out such works without any extra cost. The terms and conditions are mentioned as below :

1.0 Contract Prices :

Sl. No.	Item	Lump Sum Amount
1. a)	To provide services as Consultant & Bid Process Coordinator for Package-2	0.45% of the project cost. Rs. 5.50 Crores

di

[Handwritten signatures]

NOTE :

- (i) The above price are FIRM till completion of assignment.
- (ii) The Lump-sum prices are inclusive of overhead/out of pocket expenses, travel, boarding, Lodging, visits to site, all taxes/ duties but exclusive of GST.
- (iii) GST shall be extra as per prevailing rates.
- (iv) Payments will be made by the successful bidder(s)

2.0 Work schedule :

The PFCCL shall provide his services as BPC to the satisfaction of UPPTCL/Govt. of UP till the signing of TSA with the successful bidder, adoption of Tariff & issue of Transmission License by UPERC to Developer. The activity wise break up is given as below :

Sl.No.	Particulars	Important Date (from date of LOI) issued vide letter no.
1.	Issue of NIT for RFQ through ICB	Zero Date
2.	Preparation, submission and opening of RFQ documents	45 days (from zero date)
3.	Submission of Evaluation Report and Recommendations on RFQ and issuance of RFP documents	15 days (60 days from zero date)
4.	Participation in Pre-Bid Conference for RFP, final clarification and issue of revised RFP	11 days (71 days from zero date)
5.	Submission of RFP (Technical and Price Bid)	60 days (131 days from zero date)
6.	Submission of Bid Evaluation Report and Recommendations based on RFP received from developers and issue of LOI to selected Developer	15 days (146 days from zero date)
7.	Signing of Share Purchase Agreement	15 days (161 days from zero date)
8.	Signing of TSA	-----Do-----
9.	Adoption of Tariff by Uttar Pradesh Electricity Regulatory Commission (UPERC)	As per the decision of UPERC
10.	Issue of Transmission License by Uttar Pradesh Electricity Regulatory Commission (UPERC)	-----Do-----

di - k d S

Note :

- (i) The PFCCL will submit fortnightly activity report indicating briefly main task carried out during the month under the review. They will also ensure briefing and submission of Position Papers on selected issues as requested from time to time. The dates mentioned against the above activities are indicative only and subject to change as required and to be confirmed later.

3.0 Terms & Conditions :

PFCCL shall extend the services to UPPTCL on the following terms and condition:

1. PFCCL shall incorporate special purpose vehicle for the identified transmission projects as its wholly owned subsidiary. The SPV shall be taken over by the successful bidder after issue of LOI and after paying the acquisition price to be determined by PFCCL towards purchase of the sale shares at par and for taking over all assets and liabilities of the SPV.
2. PFCCL shall charge acquisition price from successful bidder(s) consisting of all direct and indirect cost which Inter-alia shall include development expenses, survey charges, consultant charges, salaries & establishment expenses, interest, administrative expenses, NIT expenses, other incidental expenses and professional fee of 0.45% of the project cost. The acquisition price (professional fee and Cost incurred) payable by the successful bidder shall be subject to applicable goods & services tax.
3. All cost will be incurred by PFCCL from its own resources and allocated to SPV. The acquisition price including all costs as well as professional fee will be debited to the SPV by PFCCL and will be shown as liability payable to PFCCL in the books of SPV. The liability will be eventually discharge by the successful bidder on the date of takeover of SPV.
4. In case process of selection of developer is abandoned, for any reason whatever, all the expenses as detailed above (incurred/committed by PFCCL excluding professional fee) till such date of abandonment shall be paid/reimbursed by UPPTCL to PFCCL.
5. PFCCL can also monitor the progress of work after issue of LOI/Award to the successful developer as a separate consultancy assignment on terms and conditions to be agreed mutually.
6. All other matter which has not specifically been mentioned or provided for in scope of work or terms and conditions shall be decided mutually by both the parties.

4.0 Performance Guarantee :

A Bank Guarantee from scheduled Bank as per Performa enclosed in ANNEXURE-II for an amount equivalent to 10% of Contract Price is to be submitted with in fifteen days of Letter of Intent (LOI). The Bank Guarantee shall be valid upto completion period for consultancy assignment plus 6 months claim period thereafter in the Proforma enclosed.

dh

✓ *g*

PO

You are, therefore, requested to send your acceptance of above said LOI immediately. Further the performance Bank Guarantee (10% of Contract Price) may also be submitted to the undersigned so that the contract agreement may be signed by both parties within fifteen days of issue of this LOI.

Yours faithfully,



(Ravi Prakash Dubey)
Director (W&P)


Encl: As Above

No. /PS/DIR (W&P)/PTCL/ Meerut&Simbhavali

Dated: March, 2019

Copy forwarded to the following for information and necessary action:

1. Principal Secretary (Energy), Govt. of UP, Lucknow.
2. PS to Chairman, UPPTCL, 7th floor, Shakti Bhawan, Lucknow.
3. PS to MD, UPPTCL, 7th floor, Shakti Bhawan, Lucknow.
4. PS to MD, UPPCL, 7th floor, Shakti Bhawan, Lucknow.
5. Director (Commercial), UPPCL, 6th Floor Shakti Bhawan, Lucknow.
6. Director (Corporate Planning), UPPCL, 7th Floor Shakti Bhawan, Lucknow.
7. Director (Operation), UPPTCL, 11th Floor Shakti Bhawan, Lucknow.
8. Director (Commercial & Planning), UPPTCL, 5th Floor Shakti Bhawan, Lucknow.
9. Chief Engineer (CMUT), UPPTCL, 11th floor, Shakti Bhawan Extn., Lucknow.


(Ravi Prakash Dubey)
Director (W&P)

DESCRIPTION OF THE SERVICES OF CONSULTANT & BID PROCESS COORDINATOR

Objective

Uttar Pradesh Power Transmission Corporation Ltd. (UPPTCL) is facilitating the construction of 765/400/ 220kV GIS Substation, Meerut and 400/220/132kV GIS Substation, Simbhavali with associated Transmission Lines mentioned herein under through Tariff Based Competitive Bidding route.

The objective is to develop Transmission network through interested investors including private participants.

In order to ensure best possible response from prospective promoters, UPPTCL seeks to engage services of Consultant & Bid Process Coordinator (BPC) for formulating the competitive bidding process including preparation of all bidding documents, preparing evaluation of bids and other processes till selection of the developers and signing of TSA and Share Purchase Agreement.

The **scope of work** shall include providing technical, financial and legal services for the entire duration of the assignment for selection of developer.

The Consultant & Bid Process Coordinator (BPC) shall carry out the following tasks:

- (a) Analysis of applicable laws, regulations and other statutory provisions applicable to Public Private Participation (PPP) in Transmission projects and development of a conceptual framework for PPP in Transmission for Uttar Pradesh Power sector.
- (b) Defining and Drafting of technical specifications including Insulation parameters, type of conductors/length of lines and tower design (if available) for each transmission lines in line with the details furnished by UPPTCL.
- (c) The formation of project specific Special Purpose Vehicle (SPV) for the identified project under the Companies Act, 2013 as a wholly owned subsidiary company under PFC Consulting Limited and Managing day-to-day affairs of the Company (SPV) and ensure the compliance of the Companies Act and other statutes as applicable on proposed SPV till it is acquired by selected bidder, Eventually, this project specific subsidiary (SPV) shall be taken over by the successful bidder on payment of the Acquisition Price to PFCCCL.
- (d) Appointment of Board of Directors of the Shell Company (SPV).
- (e) Maintaining the financial accounts of the SPV and Company Secretarial records as per Companies Act including audit of accounts through statutory auditor duly appointed by CAG.
- (f) Coordination with all related Governmental Instrumentalities/Agencies such as Govt. of Uttar Pradesh, UPPTCL, UPERC etc.
- (g) Drafting of bidding documents for Technical, Financial/Legal Consultants, including bidding procedure, financial and technical specifications, formats etc. as may be considered appropriate for the project.
- (h) Inviting Bids, Evaluation and Award of work.
- (i) Drafting of project specific documents like Request for Qualification (RFQ), Request of Proposal (RFP), Transmission Services Agreement (TSA) based on guidelines/Standard Bidding Documents issued by Ministry of Power, Govt. of India.

Handwritten signatures and initials at the bottom of the page.

- (j) Seeking approval of UPERC in case any deviation is required to be made with reference to SBD.
- (k) Drafting of Project Specific Share Purchase Agreement.
- (l) To formulate/prepare and finalize bidding documents such as RFQ, RFP, TSA, SPA and other documents for the Transmission projects and presentation before various committees like ETF, BEC, UPERC etc. as and when desired by owner (UPPTCL).
- (m) Inviting Response to RFQ through Global Competitive Bidding route for short-listing of bidders, including release of advertisements in National/International Newspapers/Journals/Magazine etc. The bidding process will be in accordance with "Tariff Based Competitive Bidding Guidelines for Transmission Service" and "Guidelines for Encouraging Competition in Development of Transmission Projects" issued by Ministry of Power, Govt. of India.
- (n) Organizing and Participation, as required, in all meetings, pre-bid conference, interactions at different stages e.g. RFQ, RFP, LOI's, Contract Signing, transfer of Shell Company to successful bidder etc.
- (o) Preparing of replies/clarification to bidder's queries on the RFQ/RFP/TSA and any other documents.
- (p) Pre-signing of Transmission Service Agreement by the beneficiaries.
- (q) To prepare bid evaluation financial model to carry out analysis of Bids including sensitivity analysis and calculation of Bench Mark Prices etc.
- (r) Evaluation of the response to the RFQ/RFP against the criteria as also the detailed scrutiny of the financial, commercial and legal aspects of the Responses and the Bids submitted by prospective developers/bidder to ascertain the acceptability of the Bid/Bidder.
- (s) Presenting the evaluation of Responses/Bids before the Bid Evaluation Committee/Person(s) appointed by GoUP/UPPTCL for the purpose.
- (t) Filling of documents, various applications/petitions to Appropriate Regulatory Commission or any other relevant authority.
- (u) Interaction/Discussion with Empowered Committee, State Commission/ any other agency as intimated by GoUP/UPPTCL.
- (v) Making application and obtaining approval of Government of Uttar Pradesh for laying of overhead Transmission Lines under Section 68 of Electricity Act, 2003.
- (w) Initiate Process of seeking forest clearance, acquisition of land for location specific substations, if required.
- (x) Finalization of the acquisition price payable by the selected bidder to PFCCL for the acquisition of 100% of the equity share holding of SPV alongwith all its related assets and liabilities.
- (y) Preparation of petition for CERC/UPERC or any other legal forum and also assistance in the matters as and when required.
- (z) Rebidding may have to be done in some circumstances. No extra payment shall be admissible to consultant & BPC on account of this.
- (aa) Any other assistance required until award of the project or any work given by owner (UPPTCL) related to bidding processes or project.
- (bb) BPC should make themselves available for meetings or discussions as and when required by UPPTCL/GoUP.
- (cc) Representing UPPTCL before UPERC where UPPTCL is made Respondent/ Proforma Respondent relating to subject transmission projects for petitions filed by the selected bidder for grant of Transmission license/adoption of transmission charges etc.

OL

✓ ✓ ✓

FORM OF 10% PERFORMANCE BANK GUARANTEE

THIS DEED OF GUARANTEE made on day of

200..... By the..... (here in after called 'the Guarantor')
of the part IN FAVOUR of the U.P. Power Transmission Corporation Limited (hereinafter
called "the Purchaser") of the other part.

WHERE AS In accordance with the contract agreement dated
the..... day of 200..... (herein after called 'the Said Contract') entered in to
between the Purchaser & messrs..... a company
within the meaning of the Companies Act and having its registered office
at..... (hereinafter called 'the Contractor') agreed to supply to the
Purchaser the..... as provided in the said Contract.

AND WHEREAS the payment terms under the said contract provide that in
order to take 100% payment of the Contract value the Contractor shall furnish to the
Purchaser a Bank Guarantee in the sum of 10% value of each consignment dispatched
valid for.....

AND WHEREAS instead of furnishing separate guarantees as aforesaid the
contractor wishes to furnish one guarantee in the sum of 10% value of the Contract
valid for..... and reckoned from the date.....

NOW THIS DEED WITNESSES AS FOLLOWS

1. In consideration of the premises the Guarantor hereby undertakes that the Contractor shall duly supply the aforesaid material of the correct quantity and strictly in accordance with the said contract failing which the Guarantor shall pay to the Purchaser on demand such amount or amount as the Guarantor may be called upon to the maximum aggregate of Rs..... being 10% of the Contract value.
2. The Guarantor shall pay to the purchaser on demand the sum under Clause 1 above without demur and without requiring the purchaser to invoke any legal remedy that may be available to it to compel the Guarantor to pay the same or to compel such performance by the Contractor, provided that where the Guarantor considers the demand of the Purchaser unjustified, shall nevertheless pay the same through under protest to the Purchaser and shall not withhold payment on the account.
3. The guarantee shall come in to force from the date hereof and shall remain valid for
Calendar months from the date of the..... of the last consignment of goods dispatched
which date, of dispatched according to contract is the..... day
of.....
If, however, the period of the Contract is for any reason extended thereby extending the said
date, and upon such extension, if the Contractor fails to furnish a fresh or renewed Bank
Guarantee for the extended period, Guarantor shall pay to the Purchaser the said sum of
Rs..... or such lesser sum as the Purchaser may demand.
4. The guarantee herein contained shall not be affected by any change in the constitution of the Guarantor or the Contractor.
5. Any account settled between the Contractor and the Purchaser shall be conclusive evidence against the Guarantor of the amount due and shall not be questioned by the Guarantor.
6. The neglect or forbearance of the Purchaser in enforcement of payment of any monies the payment whereof is intended to be hereby secured or the giving of time by the Purchaser for the payment thereof shall in no way relieve the Guarantor of its liability under this deed.

del *do* *G* *to* _____



OFFICE OF THE DIRECTOR (WORKS & PROJECT),
U.P. POWER TRANSMISSION CORPORATION LTD.

कार्यालय निदेशक (कार्य एवं परियोजना)

उ० प्र० पावर ट्रांसमिशन कारपोरेशन लि०,

7th Floor, Shakti Bhawan,
14-Ashok Marg, Lucknow-226 001 (U.P.)

E-mail: director_project@upptcl.org

7 वां तल, शक्ति भवन,
14-अशोक मार्ग, लखनऊ- 226 001 (उ०प्र०)
pppcell.1401@gmail.com

No.: 181/PPP Cell/Rampur&Meerut/TBCB

Dated: 15 May, 2019

Subject: LTTC's share of energy from 765kV S/S Rampur & 400kV S/S Sambhal (with associated lines) and 765kV S/S Meerut & 400kV S/S Simbhavali with associated Transmission lines.

1. M/s RECTPCL,
ECE House, 3rd floor,
Annexe-II, 28-A, KG Marg,
New Delhi-110001.
2. M/s PFC Consulting Limited,
1st floor, Urjanidhi,
1, Bara Khamba Lane, Conaught Place,
New Delhi-110001.

Dear Sirs,

The LTTC's share of energy from 765kV S/S Rampur & 400kV S/S Sambhal (with associated lines) and 765kV S/S Meerut & 400kV S/S Simbhavali with associated Transmission lines to be constructed on TBCB shall be as below:

Sl. No.	DISCOMs	Energy Share (in percentage)
1.	Pashchimanchal Vidhut Vitran Nigam Ltd.	31%
2.	Purvanchal Vidhut Vitran Nigam Ltd.	25%
3.	Dashinanchal Vidhut Vitran Nigam Ltd.	21%
4.	Madhyanchal Vidhut Vitran Nigam Ltd.	20%
5.	KESCO	3%

This is for your information and necessary input for RFP Project Documents of above TBCB Projectss.

Thanking you,

Yours faithfully,

(Neeraj Swaroop)

Superintending Engineer, PPP Cell

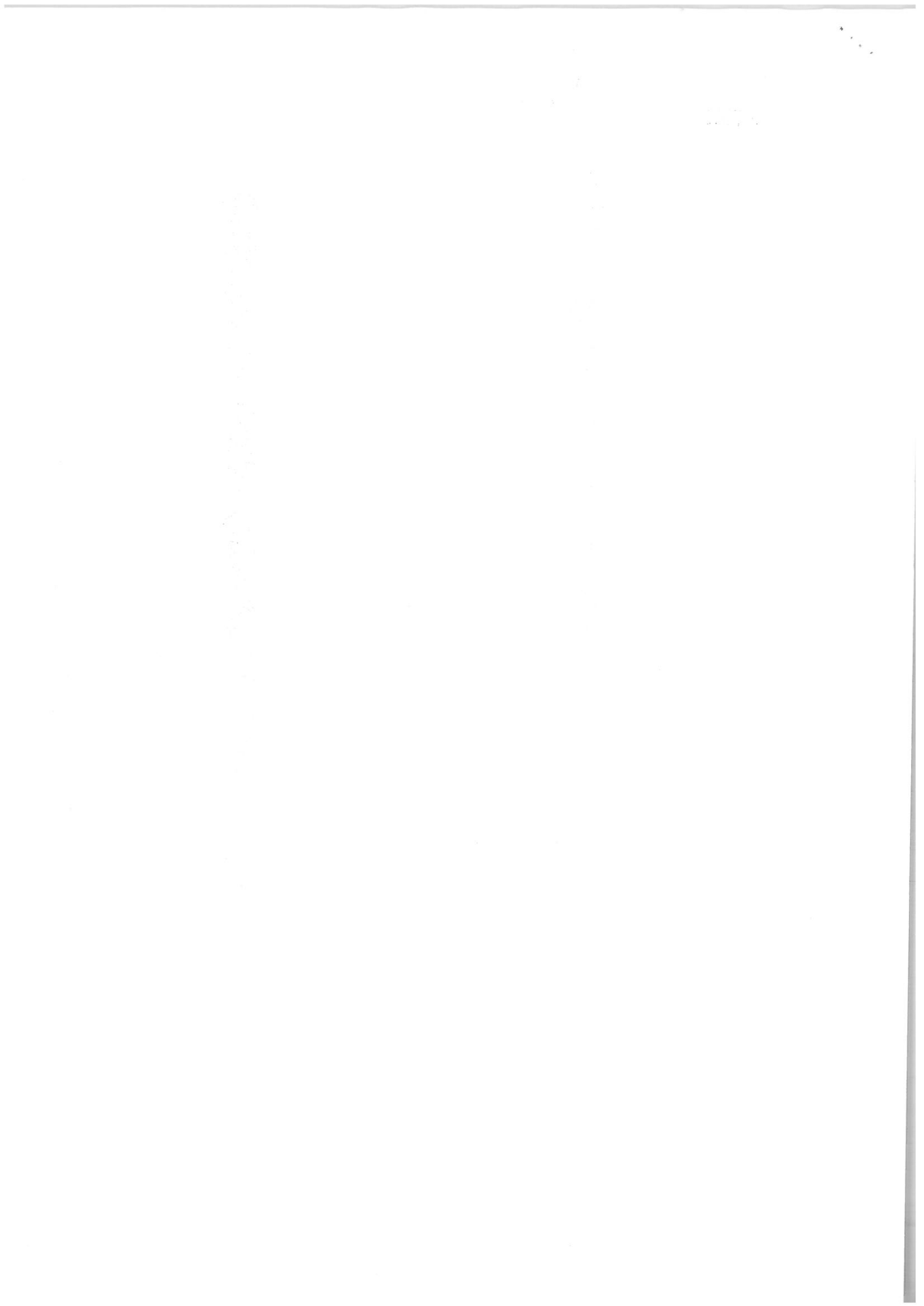
No.: /PPP Cell/Rampur&Meerut/TBCB of even date

Copy forwarded to the following for information :-

1. Director (W&P), UPPTCL, 7th floor, Shakti Bhawan, Lucknow.
2. Director (Commercial), UPPCL, 6th floor, Shakti Bhawan, Lucknow.
3. Chief Engineer (Commercial), UPPCL, 4th floor, Shakti Bhawan, Lucknow.

(Neeraj Swaroop)

Superintending Engineer, PPP Cell



TRANSMISSION SERVICE AGREEMENT

FOR

PROCUREMENT OF TRANSMISSION SERVICES

FOR

TRANSMISSION OF ELECTRICITY THROUGH
TARIFF BASED COMPETITIVE BIDDING

FOR

“Construction of 765/400/220 kV GIS Substation, Meerut with associated lines and 400/220/132 kV GIS Substation, Simbhaoli with associated Transmission lines”


BETWEEN

 Pashchimanchal Vidhut Vitran Nigam Limited


AND

Purvanchal Vidhut Vitran Nigam Limited 

AND

 Dashinanchal Vidhut Vitran Nigam Limited

AND

 Madhyanchal Vidhut Vitran Nigam Limited

AND

Kanpur Electricity Supply Co. Limited 

AND

Meerut-Simbhawali Transmission Limited 

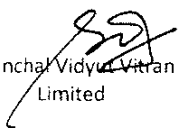
Schedule : 3


Scheduled COD

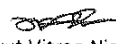
[Note: As referred to in the definition of "Element", "Scheduled COD", and in Articles 3.1.3 (c), 4.1 (b) and 4.3 (a) of this Agreement]

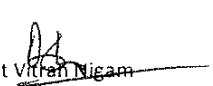
All Elements of the Project are required to be commissioned progressively as per the schedule given in the following table;


Sl. No.	Name of the Transmission Element	Scheduled COD from Effective Date	Percentage of Quoted Transmission Charges recoverable on Scheduled COD of the Element of the Project	Element(s) which are pre-required for declaring the commercial operation (COD) of the respective Element
A. 765/400/220kV GIS substation, Meerut with associated lines :-				
(1)	Construction of 765/400/220kV GIS substation, Meerut with following Bays :- (i) 765kV, 1500MVA ICT Bay - 02 nos. (ii) 765kV, 240MVAR Bus Reactor Bay - 01 no. (iii) 400kV, 1500MVA ICT Bay - 02 nos. (iv) 400kV, 500MVA ICT Bay - 02 nos. (v) 400kV, 80MVAR Bus Reactor Bay - 01 no. (vi) 220kV, 500MVA ICT Bay - 02 nos. (vii) 765kV Feeder Bay - 02 nos. (viii) 400kV Feeder Bay - 04 nos. (ix) 220kV Feeder Bay - 06 nos.	31.08.2021	41.49%	Elements at Sl. No. 1 & 3 shall be required simultaneously.



Pashchimanchal Vidyut Vitran Nigam
Limited


Madhyanchal Vidyut Vitran Nigam Limited



Purvanchal Vidyut Vitran Nigam
Limited



Dashinanchal Vidyut Vitran Nigam
Limited

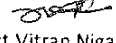

Kanpur Electricity Supply Co. Limited


Meerut-Simbhavali Transmission
Limited


(2)	Construction of following additional bays for future extension :- (i) 765kV Feeder Bay - 02 nos. (ii) 400kV Feeder Bay - 02 nos. (iii) 220kV Feeder Bay - 04 nos. (iv) 765kV T/F Bay - 01 no. (v) 400kV T/F Bay - 02 nos. (vi) 220kV T/F Bay - 01 no.			
(3)	LILO of 765kV S/C Gr. Noida (765kV) – Hapur (765kV) (WUPPTCL) at 765kV substation, Meerut		18.91%	
B. 400/220/132kV GIS substation, Simbhaoli with associated lines:-				
(1)	Construction of 400/220/132kV GIS substation, Simbhaoli with following Bays:- vii. 400kV ICT Bay - 02 nos. viii. 400kV, 80MVAR Bus Reactor Bay - 01 no. ix. 220kV ICT Bay - 04 nos. x. 132kV ICT Bay - 02 nos. xi. 400kV Feeder Bay - 04 nos. xii. 220kV Feeder Bay - 02 nos. xiii. 132kV Feeder Bay - 02 nos.	31.05.2021	20.79%	Elements at Sl. No. 1 & 3 shall be required simultaneously.



Pashchimanchal Vidyut Vitran Nigam Limited


Madhyanchal Vidyut Vitran Nigam Limited


Purvanchal Vidyut Vitran Nigam Limited


Dashinanchal Vidyut Vitran Nigam Limited


Kanpur Electricity Supply Co. Limited


Meerut-Simbhawali Transmission Limited

(2)	Construction of following additional bays for future extension :- vii. 400kV Feeder Bay - 02 nos. viii. 220kV Feeder Bay - 04 nos. ix. 132kV Feeder Bay - 04 nos. x. 400kV T/F Bay - 01 no. xi. 220kV T/F Bay - 02 nos. xii. 132kV T/F Bay - 01 no.			
(3)	Simbhaoli (400kV) – Muradnagar-II (Ghaziabad) 400kV DC Line (Twin Moose)		13.24%	
(4)	Simbhaoli (400kV) – Meerut (765kV) 400kV DC Line (Twin Moose)	31.08.2021	5.57%	

The payment of Transmission Charges for any Element irrespective of its successful commissioning on or before its Scheduled COD shall only be considered after successful commissioning of the Element(s) which are pre-required for declaring the commercial operation of such Element as mentioned in the above table.


Note:


(1) In case of any augmentation work in future at the substation/line being developed by the TSP, no supervision charges shall be payable to TSP.

(2) Land of 765kV Meerut and 400kV Simbhaoli substation shall be arranged by the developer at its own cost, keeping following points in consideration:-


- (d) Land for 765kV substation Meerut shall be procured in the vicinity of village Asifabad, Kila Parikshitgarh under Hastinapur Vidhan Sabha area.
- (e) Land for 400kV substation Simbhavli shall be procured in the vicinity of village Nawada Khurd Khadar under Garh Mukteshwar Vidhan Sabha area.


Pashchimanchal Vidyut Vitran Nigam
Limited


Madhyanchal Vidyut Vitran Nigam Limited


Purvanchal Vidyut Vitran Nigam
Limited


Dashinanchal Vidyut Vitran Nigam
Limited


Kanpur Electricity Supply Co. Limited


Meerut-Simbhawali Transmission
Limited

(f) Selection of land should be such that the variation in line lengths of different voltage level should not exceed $\pm 10\%$.


(3) The developer shall complete the substation in all respect with main bays including ICT's, PLCC & FOTE equipments.


(4) 765kv LILO Line shall be constructed as 2No.765kv single circuit lines.

However construction of future additional bays shall be in the scope of developer and shall complete the bays in all respect except ICT's and PLCC equipment.

Scheduled COD for overall Project : August 31, 2021.


Pashchimanchal Vidyut Vitran Nigam
Limited


Madhyanchal Vidyut Vitran Nigam Limited


Purvanchal Vidyut Vitran Nigam
Limited


Dashinanchal Vidyut Vitran Nigam
Limited


Kanpur Electricity Supply Co. Limited


Meerut-Simbhavali Transmission
Limited

U.P. Power Transmission Corporation Limited

उ०प्र० पावर ट्रांसमिशन कारपोरेशन लिमिटेड

(उत्तर प्रदेश सरकार का उपक्रम)



Office Of The
Superintending Engineer (TP&PSS)
6th Floor, Shakti Bhawan Extn.
14-AshokMarg Lucknow-226001
Email I.D. setppssn@gmail.com
Phone : 0522-4108994



कार्यालय:
अधीक्षण अभियन्ता(टी.पी.एवं पीएसएस)
छठा तल, शक्ति भवन विस्तार,
14, अशोक मार्ग, लखनऊ-226001
दूरभाष : 0522-4108994

पत्रांक : 3739-अधी०अभि०/टी०पी०एवं पी०एस०एस०/13वीं योजना/TWC

दिनांक : 14.01.2019

विषय : उ०प्र० पावर ट्रांसमिशन कारपोरेशन लि० द्वारा गठित "पारेषण कार्य अनुमोदन समिति" की दिनांक 09.01.2019 को आहूत 13वीं योजनाकाल की 22वीं बैठक सम्बन्धी कार्यवृत्त।

- 1- डा० सेंथिल पांडियन सी०, प्रबन्ध निदेशक, उ०प्र० पावर ट्रांसमिशन कारपोरेशन लि० एवं अध्यक्ष, समिति।
- 2- श्री रवि प्रकाश दुबे, निदेशक (कार्य एवं परियोजना), उ०प्र० पावर ट्रांसमिशन कारपोरेशन लि० एवं सदस्य, समिति।
- 3- श्री चन्द्र मोहन, निदेशक (ऑपरेशन), उ०प्र० पावर ट्रांसमिशन कारपोरेशन लि० एवं सदस्य, समिति।
- 4- श्री सरोज कुमार मिश्रा, निदेशक (वित्त), उ०प्र० पावर ट्रांसमिशन कारपोरेशन लि० एवं सदस्य, समिति।
- 5- श्री सुमन गुच्छ, निदेशक (वाणिज्य एवं नियोजन), उ०प्र० पावर ट्रांसमिशन कारपोरेशन लि०, 5वाँ तल, शक्ति भवन, लखनऊ।
- 6- मुख्य अभियन्ता (ऊर्जा प्रणाली), उ०प्र० पावर ट्रांसमिशन कारपोरेशन लि०, एवं स्थायी आमन्त्री, विभूति खण्ड-II, निकट मंत्री आवास, गोमती नगर, लखनऊ।
- 7- मुख्य अभियन्ता (पी०पी०एम०एम०), उ०प्र० राज्य विद्युत उत्पादन निगम लि० एवं स्थायी आमन्त्री, 7वाँ तल, शक्ति भवन विस्तार, लखनऊ।
- 8- मुख्य अभियन्ता(नियोजन), उ०प्र० पावर कारपोरेशन लि०, तृतीय तल, शक्ति भवन विस्तार, लखनऊ।

"पारेषण कार्य अनुमोदन समिति" की 13वीं योजनाकाल की दिनांक 09.01.2019 को आहूत 22वीं बैठक सम्बन्धी कार्यवृत्त संलग्न है। यह कार्यवृत्त उ०प्र०पा०ट्रा०का०लि० की बेवसाइट www.upptcl.org के ongoing transmission works लिंक पर भी उपलब्ध है।

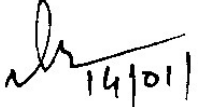
संलग्नक: यथोपरि।

(इम्तियाज अहमद)
अधीक्षण अभियन्ता (टी०पी० एवं पी०एस०एस०)
एवं सदस्य संयोजक

प्रतिलिपि :-

- 1- मुख्य अभियन्ता (पारेषण: दक्षिण-पूर्व), उ०प्र०पा०ट्रा०का०लि०, 57 जार्ज टाउन, इलाहाबाद।
- 2- मुख्य अभियन्ता (पारेषण : उत्तर-पूर्व), उ०प्र०पा०ट्रा०का०लि०, 132 के०वी० उपकेन्द्र, मोहददीपुर, गोरखपुर।
- 3- मुख्य अभियन्ता (पारेषण मध्य), उ०प्र०पा०ट्रा०का०लि०, पारेषण भवन, विभूति खण्ड, गोमतीनगर, लखनऊ।
- 4- मुख्य अभियन्ता (पारेषण पश्चिम), उ०प्र०पा०ट्रा०का०लि०, पारेषण भवन 130-डी,विक्टोरिया पार्क, मेरठ।
- 5- मुख्य अभियन्ता (पारेषण: दक्षिण-पश्चिम), उ०प्र०पा०ट्रा०का०लि०, निकट अमर उजाला प्रेस, ककरैथा रोड़, आगरा।
- 6- मुख्य अभियन्ता (पारेषण : दक्षिण-मध्य), उ०प्र०पा०ट्रा०का०लि०, 132 के०वी० उपकेन्द्र, हसारी, झांसी।
- 7- मुख्य अभियन्ता 765 के०वी०, उ०प्र०पा०ट्रा०का०लि०, 15वाँ तल शक्ति भवन विस्तार लखनऊ।
- 8- मुख्य अभियन्ता (जानपद पारेषण-1), उ०प्र०पा०ट्रा०का०लि०, 8/110 इन्दिरानगर, लखनऊ।
- 9- मुख्य अभियन्ता सी०एम०यू०(टी०), उ०प्र०पा०ट्रा०का०लि०, 11वाँ तल शक्ति भवन विस्तार लखनऊ।
- 10- मुख्य अभियन्ता (जानपद पारेषण-II), उ०प्र०पा०ट्रा०का०लि०, 9वाँ तल शक्ति भवन विस्तार, लखनऊ।
- 11- मुख्य अभियन्ता (डी० एण्ड पी०), उ०प्र०पा०ट्रा०का०लि०, 10वाँ तल, शक्ति भवन विस्तार, लखनऊ।
- 12- उप महाप्रबन्धक (पारेषण मुख्यालय) वित्त एवं भुगतान इकाई, उ०प्र०पा०ट्रा०का०लि०, प्रथम तल, शक्ति भवन विस्तार, लखनऊ।
- 13- श्री पंकज सक्सेना, अधिशासी अभियन्ता सम्बद्ध निदेशक (आपरेशन), के वेबसाइट पर अपलोड करने हेतु ।

संलग्नक: यथोपरि।


14/01/2019

(इम्तियाज अहमद)
अधीक्षण अभियन्ता (टीपी एवं पीएसएस)
एवं सदस्य संयोजक

उ०प्र०पा०ट्रां०का०लि० की "पारेषण कार्य अनुमोदन समिति" की दिनांक 09.01.2019 को सम्पन्न
13वीं योजनाकाल की 22वीं बैठक का कार्यवृत्त।

उपस्थिति :-

1. डा० सेंथिल पांडियन सी० : प्रबन्ध निदेशक, उ०प्र०पा०ट्रां०का०लि० एवं अध्यक्ष।
2. श्री सरोज कुमार मिश्रा : निदेशक (वित्त), उ०प्र०पा०ट्रां०का०लि० एवं सदस्य।
3. श्री चन्द्र मोहन : निदेशक (ऑपरेशन), उ०प्र०पा०ट्रां०का०लि० एवं सदस्य।
4. श्री रवि प्रकाश दुबे : निदेशक (कार्य एवं परियोजना), उ०प्र०पा०ट्रां०का०लि० एवं सदस्य।
5. श्री सुमन गुच्छ : निदेशक (वाणिज्य एवं नियोजन), उ०प्र०पा०ट्रां०का०लि० एवं सदस्य।
6. श्री इम्तियाज अहमद : अधीक्षण अभियन्ता (टी०पी० एवं पी०एस०एस०) एवं संयोजक सदस्य।

निदेशक (ऑपरेशन) एवं वितरण क्षेत्रों से प्राप्त पारेषण कार्यों के प्रस्तावों पर सम्यक विचारोपरान्त समिति ने निम्न निर्णय लिये :-

(क) नये कार्य :-

- 1- 765/400/220 के०वी०, 2X1500 +2X500 एम०वी०ए० उपकेन्द्र मेरठ (यू०पी०) का निर्माण कार्य (जी०आई०एस० पद्धति से):-

उत्तर प्रदेश के पश्चिमी क्षेत्र में मेरठ मण्डल एन०सी०आर० क्षेत्र के अन्तर्गत अवस्थित है। पश्चिमी क्षेत्र में बढ़ रही नगरीय एवं औद्योगिक विद्युत की मांग हेतु वर्तमान में स्थापित 400 के०वी०, 765 के०वी० की विद्युत प्रणाली क्षमता आगामी वर्षों में अपर्याप्त होगी। पोषकों की पूर्णभारिता को कम करने एवं निकट भविष्य में विभिन्न उत्पादन परियोजनाओं घाटमपुर, जवाहरपुर एवं ओबरा 'सी' तापीय परियोजनाओं से उत्पादित ऊर्जा को भार केन्द्र तक पहुंचाने के लिए 400, 765 के०वी० उपकेन्द्र नियोजित है। केन्द्रीय विद्युत प्राधिकरण की स्टैंडिंग कमेटी की 38वीं बैठक दिनांक 30.05.2016 द्वारा यू०पी०पी०टी०सी०एल० की 13वीं योजना के अन्तर्गत मेरठ जनपद में 765/400/220 के०वी० उपकेन्द्र मोदीपुरम(मेरठ) का निर्माण अनुमोदित है। उपकेन्द्र द्वारा मेरठ, हापुड़, अमरोहा, मुजफ्फरनगर एवं शामली आदि जनपदों को निर्बाध विद्युत आपूर्ति में सहायता मिलेगी। उपकेन्द्र निर्माण हेतु निर्माणकर्ता संस्था द्वारा भूमि कय की जायेगी। जनपद में सम्भावित भूमि के सर्वेक्षण अनुसार समिति ने उपकेन्द्र निर्माण कार्य निम्नानुसार अनुमोदित किया:-

- 765/400/220 के०वी०, 2X1500 +2X500 एम०वी०ए० उपकेन्द्र मेरठ(यू०पी०) का निर्माण कार्य जी०आई०एस० पद्धति से (240 एम०वी०ए०आर० बस रियेक्टर 765 के०वी० एवं 80 एम०वी०ए०आर 400 के०वी० पर)
- ग्रेटर नोयडा(765)-हापुड़(765) 765 के०वी० एस०सी० लाइन (WUPPTCL) का मेरठ उपकेन्द्र पर लीलो-45 किमी०
- मेरठ(765)यू०पी०-शामली 400 के०वी० डी०सी० लाइन-75 किमी०
- मेरठ(765)यू०पी०-सिम्भावली 400 के०वी० डी०सी० लाइन-40 किमी०
- मेरठ(765)यू०पी०-जानसठ 220 के०वी० डी०सी० लाइन(Moose)-45 किमी०
- मेरठ(765)यू०पी०-अमरोहा 220 के०वी० डी०सी० लाइन(Moose)-45 किमी०
- मेरठ(765)-ग्रेटर नोयडा(।।) 220 के०वी० डी०सी० (Moose) लाइन-50 किमी०

(ग्रेटर नोयडा क्षेत्र में निकट भविष्य में 220 के0वी0 उपकेन्द्र प्रस्तावित है व कुल कार्यों में लागत सम्मिलित नहीं है)

- 220 के0वी0 उपकेन्द्र जानसठ पर 220 के0वी0 हाइब्रिड 'बे'-2 अदद
- 220 के0वी0 उपकेन्द्र अमरोहा पर 220 के0वी0 हाइब्रिड 'बे'-2 अदद

उपकेन्द्र पर भविष्य में विस्तार हेतु अतिरिक्त प्राविधान :-

765 के0वी0 फीडर 'बे' 2-अदद, 765 के0वी0 ट्रान्सफार्मर 'बे' 1-अदद, 400 के0वी0 फीडर 'बे' 2-अदद, 400 के0वी0 ट्रान्सफार्मर 'बे' 2-अदद, 220 के0वी0 फीडर 'बे' 4-अदद एवं 220 के0वी0 ट्रान्सफार्मर 'बे' 1-अदद

अनुमानित व्यय रू0 955.25 करोड़

(भूमि चिन्हित न होने के कारण भूमि लागत सम्मिलित नहीं है)

2- 220/132/33 के0वी0, 2X160+2X63 एम0वी0ए0 उपकेन्द्र खतौली(मुजफ्फरनगर) का निर्माण कार्य (डबल मेन, ट्रांसफर):-

जनपद मुजफ्फरनगर में स्थित खतौली व आसपास क्षेत्र की विद्युत आपूर्ति 132 के0वी0 उपकेन्द्र खतौली से की जा रही है। इस क्षेत्र में 132 के0वी0 खतौली उपकेन्द्र एवं लाइनें पूर्ण भारित रहती हैं व भविष्य में तीव्र भार वृद्धि की सम्भावना है। उपकेन्द्र व लाइनों की अतिभारिता कम करने हेतु एवं गुणवत्तापूर्ण विद्युत आपूर्ति सुनिश्चित करने हेतु एक 220 के0वी0 उपकेन्द्र की आवश्यकता है। उपकेन्द्र निर्माण हेतु खतौली क्षेत्र में भूमि निजी भू-स्वामियों से भूमि उपलब्ध है व कय की जायेगी। अतः समिति ने उपकेन्द्र निर्माण कार्य निम्नानुसार अनुमोदित किया:-

- 220/132/33 के0वी0, 2X160+2X63 एम0वी0ए0, उपकेन्द्र खतौली(मुजफ्फरनगर) का निर्माण कार्य (डबल मेन, ट्रांसफर)
- मुजफ्फरनगर(400)-मोदीपुरम(220) 220 के0वी0 एस0सी0 लाइन का खतौली(220) उपकेन्द्र पर लीलो-01 किमी0
- मुजफ्फरनगर(400)-शामली(220) 220 के0वी0 एस0सी0 लाइन का खतौली(220) उपकेन्द्र पर लीलो-12 किमी0
- खतौली-पुरा 132 के0वी0 निर्माणाधीन एस0सी0 लाइन का खतौली(220) उपकेन्द्र पर लीलो-08 किमी0

उपकेन्द्र पर अतिरिक्त प्राविधान

220 के0वी0 फीडर 'बे'-2 अदद
220 के0वी0 परिवर्तक 'बे'-1 अदद
132 के0वी0 फीडर 'बे'-4 अदद
132 के0वी0 परिवर्तक 'बे'-2 अदद

अनुमानित व्यय रू0 71.33 करोड़

भूमि की लागत रू0 5.45 करोड़

कुल अनुमानित लागत रू0 76.78 करोड़

(ख) पूर्व अनुमोदित कार्यों में संशोधन का अनुमोदन :-

1- ओबरा 'सी' (2X660 मेगावाट) तापीय परियोजना के लिए स्टार्ट-अप पावर एवं आंशिक निकासी हेतु :-

पारेषण कार्य अनुमोदन समिति की दिनांक 27.07.2017 को आहूत 13वीं योजनाकाल की चतुर्थ बैठक में ओबरा 'सी' (2X660 मेगावाट) तापीय परियोजना के लिए ऊर्जा निकासी एवं स्टार्ट-अप पावर हेतु अनुमोदित किया गया था। ऊर्जा



निकासी हेतु 765, 400 के0वी0 लाइनों का मुख्यतः निर्माण टी0बी0सी0बी0 के माध्यम से कराया जा रहा है। परियोजना की प्रथम इकाई की COD दिसम्बर, 2020 एवं द्वितीय इकाई की जून, 2021 में सम्भावित है। परियोजना को स्टार्ट-अप पावर ओबरा'बी' परियोजना से लाइन निर्माण करके यू0पी0पी0टी0सी0एल0 द्वारा किया जाना अनुमोदित है। स्टार्ट-अप लाइनों के अनुमोदित निर्माण में आ रही कठिनाई, अधिक लागत एवं इकाई की COD एवं 765, 400 के0वी0 निकासी लाइनों के विभिन्न चरणों के निर्माण दृष्टिगत दिनांक 22.12.2018 को उच्च स्तरीय गठित समिति टीम द्वारा स्थानीय निरीक्षण किया गया। अतः समिति ने निम्नवत् अनुमोदित किया :-

समिति की 13वीं योजनाकाल की चतुर्थ बैठक दिनांक 27.07.2017 में अनुमोदित प्रस्ताव का विवरण	अनुमोदन हेतु संशोधित प्रस्ताव का विवरण
(i) अनपरा'डी'-उन्नाव 765 के0वी0 एस0 लाइन का ओबरा'सी' परियोजना पर लीलो-15 किमी0(अनपरा'डी' से शिफ्ट कर ओबरा'सी' परियोजना स्विचयार्ड में 765 के0वी0 330 MVAR Line Reactor UPRVUNL द्वारा स्थापित किया जायेगा)	यथावत (TBCB के माध्यम से)
(ii) ओबरा'सी'-जौनपुर 400 के0वी0 डी0सी0 लाइन-190 किमी0	ओबरा'बी'-ओबरा'सी' 400 के0वी0 डी0सी0 लाइन के एक सर्किट का जौनपुर 400 के0वी0 उपकेन्द्र पर लीलो- 190 किमी0 (TBCB अन्तर्गत 400 के0वी0 जौनपुर उपकेन्द्र से लीलो प्वाइंट तक)
(iii) ओबरा'सी'-जौनपुर 400 के0वी0 डी0सी0 लाइन के एक सर्किट का ओबरा'बी' परियोजना पर लीलो-08 किमी0	ओबरा 'बी'-ओबरा'सी' 400 के0वी0 डी0सी0 लाइन-1.5 किमी0 निर्माण निम्नानुसार कराया जायेगा (यू0पी0पी0टी0सी0एल0 द्वारा) :- <ul style="list-style-type: none"> ● वर्तमान में निष्प्रयोज्य 2 अदद 400 के0वी0 टावर शिफ्टिंग एवं नव निर्माण कार्य ● ओबरा 'ब'-रीवाँ रोड-सुल्तानपुर 400 के0वी0 डी0सी0 टावर पर - लाइन के दो टावर शिफ्टिंग एवं नव निर्माण कार्य ● 400 के0वी0 Dead End मोनोपोल- 1 अदद ● ऐश बेड के कारण टावरों के आवश्यक पाईल फाउण्डेशन कार्य
बिन्दु सं0 (i) & (ii) कार्य TBCB के माध्यम से सम्पन्न होंगे तथा बिन्दु सं0 (iii) पर UPPTCL द्वारा अनुमानित व्यय रू0 13.9 करोड़	अनुमानित व्यय रू0 14.68 करोड़ पूर्व अनुमानित व्यय रू0 13.9 करोड़ संशोधन उपरान्त अनुमानित व्यय रू0 0.78 करोड़

2- दुलहीपार(संतकबीरनगर)-गीडा 132 के0वी0 कनेक्टिविटी सम्बन्धी :-

दिनांक 31.07.2018 को सम्पन्न 13वीं योजनाकाल की 13वीं बैठक में दुलहीपार-गीडा 132 के0वी0 डी0सी0 लाइन अनुमोदित की गयी है। क्षेत्र से प्राप्त सूचनानुसार 132 के0वी0 उपकेन्द्र गीडा (गोरखपुर) पर 'बे' हेतु पर्याप्त स्थान उपलब्ध न होने के कारण लाइन कनेक्टिविटी में परिवर्तन की आवश्यकता है प्रस्ताव से खलीलाबाद एवं गीडा दोनों 132 के0वी0 उपकेन्द्रों का पोषण सुदृढ़ सम्भव हो सकने के दृष्टिगत समिति ने पुनरीक्षित प्रस्ताव का निम्नवत् अनुमोदित किया:-

समिति की 13वीं योजनाकाल की 13वीं बैठक दिनांक 31.07.2018 में अनुमोदित प्रस्ताव का विवरण	अनुमोदन हेतु संशोधित प्रस्ताव का विवरण
220/132/33 के0वी0, 2X160+2X40 एम0वी0ए0 उपकेन्द्र दुलहीपार(संतकबीरनगर) का निर्माण कार्य (डबल मैन,ट्रांसफर) :-	- यथावत -

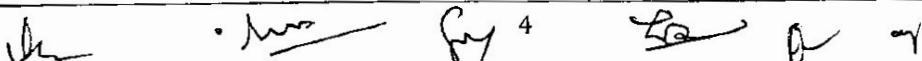


(i) 220/132/33 के0वी0, 2X160+2X40 एम0वी0ए0 उपकेन्द्र दुलहीपार (संतकबीरनगर) का निर्माण कार्य (डबल मेन, ट्रांसफर)	- यथावत -
(ii) भौखरी(बस्ती)400-दुलहीपार 220 के0वी0 डी0सी0 लाइन-60 किमी0(400 के0वी0 भौखरी (बस्ती) उपकेन्द्र के साथ पूर्व स्वीकृत हैं)	- यथावत -
(iii) गोरखपुर(पीजी)-बॉसी(सिद्धार्थनगर) 220 के0वी0 एस0सी0 लाइन का दुलहीपार उपकेन्द्र पर लीलो-15 किमी0	- यथावत -
(iv) आनन्दनगर(महाराजगंज) 220-दुलहीपार(संत कबीर नगर) 220 के0वी0 डी0सी0 लाइन (Moose conductor पर)-58 किमी0 (आनन्दनगर, महाराजगंज उपकेन्द्र के निर्माण सम्बन्धी पुनरीक्षित अनुमोदन के साथ आगणित की जायेगी)	- यथावत -
(v) मेहदावल (संत कबीर नगर)-बस्ती(220) 132 के0वी0 एस0सी0 लाइन का दुलहीपार उपकेन्द्र पर लीलो-10 किमी0	- यथावत -
(vi) दुलहीपार(220)-गीडा(गोरखपुर) 132 के0वी0 डी0सी0 लाइन-38 किमी0	(vi) खलीलाबाद-गीडा(गोरखपुर) 132 के0वी0 विद्यमान एस0सी0 लाइन का दुलहीपार उपकेन्द्र पर लीलो-38 किमी0
(vii) 132 के0वी0 गीडा उपकेन्द्र पर 132 के0वी0 'बे'-2 अदद (1 अदद सामान्य एवं 1 अदद हाइब्रिड)	आवश्यकता नहीं
अनुमानित व्यय रू0 113.89 करोड़	अनुमानित व्यय रू0 111.47 करोड़ पूर्व अनुमोदित व्यय रू0 113.89 करोड़ संशोधन उपरान्त अतिरिक्त व्यय (रू0 -2.42 करोड़)


3- सिम्भावली(400) -मोदीपुरम, मेरठ (765) 400 के0वी0 डी0सी0 लाइन (Twin Moose) के कनेक्टिविटी सम्बन्धी :-

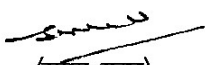
दिनांक 27.12.2018 को सम्पन्न 13वीं योजनाकाल की 20वीं बैठक में 400/220/132 के0वी0 सिम्भावली उपकेन्द्र GIS का निर्माण कार्य अनुमोदित है। समिति ने क्षेत्र से प्राप्त सूचनानुसार मेरठ (765) यू0पी0 उपकेन्द्र की सम्भावित भूमि सिम्भावली (400) उपकेन्द्र से दूरी कम होने के कारण अनुमोदित लाइन की दूरी में निम्नवत परिवर्तन अनुमोदित किया है :-

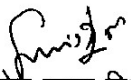
समिति की 13वीं योजनाकाल की 20वीं बैठक दिनांक 27.12.2018 में अनुमोदित प्रस्ताव का विवरण	अनुमोदन हेतु संशोधित प्रस्ताव का विवरण
(i) 400/220/132 के0वी0, 2X500, 2X200 एम0वी0ए0 उपकेन्द्र सिम्भावली (हापुड़) GIS का निर्माण कार्य (80 एम0वी0ए0आर0 बस रियेक्टर सहित)	- यथावत -

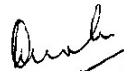


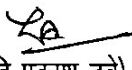
(ii) सिम्भावली (400)-मुरादनगर-11 (गाजियाबाद) 400 के0वी0 डी0सी0 लाइन (Twin Moose) -95 किमी0	-- यथावत --
(iii) सिम्भावली(400) -मोदीपुरम, मेरठ (765) 400 के0वी0 डी0सी0 लाइन (Twin Moose) - 70 किमी0	सिम्भावली(400) - मेरठ (765) यू0पी0 400 के0वी0 डी0सी0 लाइन (Twin Moose) - 40 किमी0
(iv) हापुड़ हाइब्रिड (220)-सिम्भावली (220) 220 के0वी0 विद्यमान एस0सी0 लाइन का सिम्भावली (400) पर लीलो - 30 किमी0	-- यथावत --
(v) गढ़मुक्तेश्वर - गजरौला 132 के0वी0 विद्यमान एस0सी0 लाइन का सिम्भावली (400) पर लीलो-08 किमी0	-- यथावत --
(vi) 400 के0वी0 मुरादनगर-11 (गाजियाबाद) उपकेन्द्र पर 400 के0वी0 'बे' - 2 अदद	-- यथावत --
GIS उपकेन्द्र पर अतिरिक्त निर्मित 'बे' (भविष्य में विस्तार कार्यों सम्बन्धी) :-	
<ul style="list-style-type: none"> • 400 के0वी0 ट्रान्सफार्मर 'बे' - 1 अदद • 220 के0वी0 ट्रान्सफार्मर 'बे' - 2 अदद • 132 के0वी0 ट्रान्सफार्मर 'बे' - 1 अदद • 400 के0वी0 फीडर 'बे' - 2 अदद • 220 के0वी0 फीडर 'बे' - 4 अदद • 132 के0वी0 फीडर 'बे' - 4 अदद 	-- यथावत --
अनुमानित व्यय रू0 572.72 करोड़ (भूमि सहित)	अनुमानित व्यय रू0 521.57 करोड़ पूर्व अनुमोदित व्यय रू0 572.72 करोड़ संशोधन उपरान्त अतिरिक्त व्यय(रू0 -51.15 करोड़)

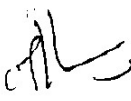

(इम्तियाज अहमद)
अधीक्षण अभियन्ता (टी0पी0 एवं पीएसएस)
एवं संयोजक सदस्य


(सुमन गुच्छ)
निदेशक (वाणिज्य एवं नियोजन)
एवं सदस्य


(सरोज कुमार मिश्रा)
निदेशक (वित्त)
एवं सदस्य


(चन्द्र मोहन)
निदेशक (आपरेशन)
एवं सदस्य


(रवि प्रकाश दुबे)
निदेशक (कार्य एवं परियोजना)
एवं सदस्य


(डा0 सेंथिल पांडियन सी0)
प्रबन्ध निदेशक, उ0प्र0पा0ट्रां0का0लि0
एवं अध्यक्ष



प्रेषक,
आलोक कुमार,
प्रमुख सचिव,
उ०प्र० शासन।

सेवा में,
प्रबन्ध निदेशक,
उ०प्र० पावर ट्रान्समिशन कारपोरेशन लि०,
शक्ति भवन, लखनऊ।

ऊर्जा अनुभाग-1

लखनऊ: दिनांक 14 अगस्त, 2019

विषय:- 765के०वी० जी०आई०एस० उपकेन्द्र मेरठ व 400के०वी० जी०आई०एस० उपकेन्द्र सिम्भौली का सम्बन्धित लाइनों सहित निर्माण टी०बी०सी०बी० पद्धति से कराये जाने हेतु विद्युत अधिनियम-2003 के सेक्शन-68 के तहत ओवर हेड लाइनों के निर्माण हेतु अनुमति प्रदान किये जाने के सम्बन्ध में।

महोदय,

उपर्युक्त विषयक अपने पत्र संख्या:-279/उ०प्र०पा०ट्रा०का०लि०/मेरठ/सिम्भौली/सेक्शन-68/टी०बी०सी०बी०, दिनांक 23.07.2019 का संदर्भ ग्रहण करें।

2-- इस सम्बन्ध में मुझे यह कहने का निदेश हुआ है कि प्रश्नगत प्रकरण में सम्यक विचारोपरान्त 765के०वी० जी०आई०एस० उपकेन्द्र मेरठ व 400के०वी० जी०आई०एस० उपकेन्द्र सिम्भौली का सम्बन्धित लाइनों सहित निर्माण टी०बी०सी०बी० पद्धति से कराये जाने हेतु विद्युत अधिनियम-2003 की धारा-68 की उपधारा-1 के अधीन निम्नलिखित कार्यों को सम्पादित कराये जाने हेतु "मेरठ सिम्भौली ट्रांसमिशन लिमिटेड" को अधिकृत किया जाता है:-

(अ) 765/400/220के०वी० जी०आई०एस० उपकेन्द्र, मेरठ सम्बन्धित लाइनों सहित :-

क्रम सं०	पारिषण अवयवों का विवरण
1.	765/400/220 के०वी० जी०आई०एस० उपकेन्द्र, मेरठ का निम्नलिखित 'बे' सहित निर्माण :-
(i)	765/400 के०वी०, 1500 एम०वी०ए० आई०सी०टी० 'बे' - 02 नग
(ii)	765 के०वी०, 240 एम०वी०ए०आर० बस रियेक्टर 'बे' - 01 नग
(iii)	400/220 के०वी०, 500 एम०वी०ए० आई०सी०टी० 'बे' - 02 नग
(iv)	400 के०वी०, 80 एम०वी०ए०आर० बस रियेक्टर 'बे' - 01 नग
(v)	765 के०वी० फिडर 'बे' - 02 नग
(vi)	400 के०वी० फिडर 'बे' - 04 नग
(vii)	220 के०वी० फिडर 'बे' - 06 नग
2.	भविष्य में विस्तार हेतु निम्नलिखित अतिरिक्त 'बे' का निर्माण :-
(i)	765 के०वी० फिडर 'बे' - 02 नग
(ii)	400 के०वी० फिडर 'बे' - 02 नग
(iii)	220 के०वी० फिडर 'बे' - 04 नग
(iv)	765 के०वी० ट्रांसफार्मर 'बे' - 01 नग
(v)	400 के०वी० ट्रांसफार्मर 'बे' - 02 नग
(vi)	220 के०वी० ट्रांसफार्मर 'बे' - 01 नग
3.	765 के०वी० उपकेन्द्र, मेरठ पर 765 के०वी० एकल पथ ग्रे० नोयडा (765 के०वी०) - हापुड (765 के०वी०) (डब्लू०यू०पी०पी०टी०सी०एस०) का सीला

(द) 400/220/132 के 0 वी 0 जी 0 आर 0 ए 0 एस 0 उपकेंद्र, सिम्भौली सम्बन्धित लाइनों सहित :-

क्रम सं०	पारिषण अवयवों का विवरण
1.	400/220/132 के 0 वी 0 जी 0 आर 0 ए 0 एस 0 उपकेंद्र, सिम्भौली का निम्नलिखित 'बे' सहित निर्माण :-
(i)	400/220 के 0 वी 0, 500 एम 0 वी 0 ए 0 आर 0 आई 0 सी 0 टी 0 'बे' - 02 नग
(ii)	400 के 0 वी 0, 80 एम 0 वी 0 ए 0 आर 0 नस रियेक्टर 'बे' - 01 नग
(iii)	220/132 के 0 वी 0, 200 एम 0 वी 0 ए 0 आर 0 आई 0 सी 0 टी 0 'बे' - 02 नग
(iv)	400 के 0 वी 0 फिडर 'बे' - 04 नग
(v)	220 के 0 वी 0 फिडर 'बे' - 02 नग
(vi)	132 के 0 वी 0 फिडर 'बे' - 02 नग
2.	भविष्य में विस्तार हेतु निम्नलिखित अतिरिक्त 'बे' का निर्माण :-
(i)	400 के 0 वी 0 फिडर 'बे' - 02 नग
(ii)	220 के 0 वी 0 फिडर 'बे' - 04 नग
(iii)	132 के 0 वी 0 फिडर 'बे' - 04 नग
(iv)	400 के 0 वी 0 ट्रांसफार्मर 'बे' - 01 नग
(v)	220 के 0 वी 0 ट्रांसफार्मर 'बे' - 02 नग
(vi)	132 के 0 वी 0 ट्रांसफार्मर 'बे' - 01 नग
3.	सिम्भौली (400 के 0 वी 0) -- मुरादनगर-- II (गाजियाबाद) 400 के 0 वी 0 द्विपथ लाइन (दिवन मूज)
4.	सिम्भौली (400 के 0 वी 0) -- मेरठ (765 के 0 वी 0) 400 के 0 वी 0 द्विपथ लाइन (दिवन मूज)



- 3- उपरोक्त अनुमोदन निम्नलिखित शर्तों एवं प्रतिबन्धों के अधीन होगा-
- (1) विद्युत अधिनियम 2003 जैसा कि समय समय पर संशोधित किया गया, के नियमों एवं विनियमों के अनुपालन सुनिश्चित किया जायेगा।
 - (2) ओवर हेड लाइनों के सम्बंध में भारतीय विद्युत नियमावली 1956, जब तक कि वह विद्युत अधिनियम, 2003 के अन्तर्गत बलाये गये नियमों से प्रतिस्थापित न कर दी जाय, के द्वारा अधिष्ठापित नियमों का अनुपालन भी सुनिश्चित किया जाय।
 - (3) 'मेरठ सिम्भौली ट्रांसमिशन लिमिटेड' द्वारा टी 0 एस 0 पी 0 के समस्त प्राविधानों का अनुपालन किया जायेगा और परियोजना का निर्माण कार्य परियोजना हेतु निर्धारित समयावधि तक पूर्ण किया जाय।
 - (4) शासन द्वारा परियोजना हेतु निर्धारित समयावधि पूर्ण होने से पूर्व एक माह की नोटिस देकर उपरोक्त अनुमोदन/अनुमति वापस लिया जा सकता है।
- 4- कृपया प्रकरण में तदनुसार अग्रेतर कार्यवाही सुनिश्चित करने का कष्ट करें।

भवदीय,

(आलोक कुमार)
(आलोक कुमार)
प्रमुख सचिव।



भारत सरकार / Government of India
विद्युत मंत्रालय / Ministry of Power
केन्द्रीय विद्युत प्राधिकरण / Central Electricity Authority
विद्युत प्रणाली योजना एवं परियोजना मूल्यांकन प्रभाग - I
Power System Planning & Project Appraisal Division-I
सेवा भवन, आर.के.पुरम, नई दिल्ली - 110066
Sewa Bhawan, R. K. Puram, New Delhi-110066



[ISO: 9001:2008]

No. 1/9/38th /PSP&PA-I-2016 /

Dated: 8th June, 2016

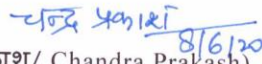
-As per list enclosed-

Subject: Minutes of 38th Standing Committee Meeting on Power System Planning of Northern Region held on 30th May, 2016, at NRPC, Katwaria Sarai, New Delhi.

महोदय/ महोदया
Sir/ Madam,

The Minutes of 38th Meeting of the Standing Committee on Power System Planning of Northern Region have been uploaded on the CEA website 'http://www.cea.nic.in/sppa_nr.html' for information and necessary action please.

आपका विश्वसी/ Yours faithfully,


(चन्द्र प्रकाश/ Chandra Prakash) 8/6/2016.
निदेशक/ Director

1. Member, Secretary, NRPC, 18-A Shajeed Jeet Singh Sansanwal Marg, Katwaria Sarai, New Delhi - 110016 (Fax-011-26865206)	2. Director (W &P) UPPTCL, Shakti Bhawan Extn,3rd floor, 14, Ashok Marg, Lucknow - 226 001 (Fax:0522-2287822)	3. Director (Projects) PTCUL, Urja Bhawan Campus, Kanawali Road Dehradun-248001. Uttarakhand Fax-0135-276431
4. Director (Technical), Punjab State Transmission Corporation Ltd. (PSTCL) Head Office The Mall Patiala -147001 Fax-0175-2304017	5. Member (Power) BBMB, Sectot-19 B Madhya Marg, Chandigarh-1 60019 (Fax-01 72-2549857)	6. Director (Operation) Delhi Transco Ltd. (DTL) Shakti Sadan, Kotla Marg, New Delhi-110002 (Fax-01123234640)
7. Director (Technical) RRVNL, Vidut Bhawan, Jaipur-302005. Fax:-0141-2740794	8. Director (Technical) HVPNL Shakti Bhawan, Sector-6 Panchkula-134109 Fax-0172-256060640	9. Director (Technical) HPSEB Ltd. Vidut Bhawan, Shimla -171004 Fax-0177-2813554
10. Managing Director, HPPTCL, Barowalias, Khalini Shimla-171002 Fax-0177-2623415	11. Chief Engineer (Operation) Ministry of Power, UT Secretariat, Sector-9 D Chandigarh -161009 Fax-0172-2637880	12. Development Commissioner (Power), Power Department, Grid Substation Complex, Janipur, Jammu, Fax: 191-2534284
13. Chief Engineer (Transmission) NPCIL, 9-S-30, Vikram Sarabhai Bhawan, Anushakti Nagar, Mumbai-400094 Fax-022-25993570	14. Director (T&RE) NHPC Office Complex, Sector-33, NHPC, Faridabad-121003 (Fax-0129-2256055)	15 Director (Projects) NTPC, NTPC Bhawan, Core 7, Scope Complex-6, Institutional Area, Lodhi Road. New Delhi (Fax-011-24361018)
16 Director (Technical) THDC Ltd. Pragatipuram, Bypass Road, Rishikesh-249201 Fax: 0135-2431519)	17 Director (Projects) POWERGRID Saudamini Plot no. 2, Sector - 29. Gurgaon-122 001 (Fax-0124-2571809)	18. CEO, POSOCO B-9, Qutab Institutional Area, Katwaria Sarai New Delhi – 110010 (Fax:2682747)
19. COO (CTU) POWERGRID, Saudamini, Plot no. 2, Sector -29, Gurgaon-122 001 (Fax-0124-2571809)		

**Minutes of 38th Standing Committee Meeting on Power System Planning of Northern Region
held on 30th May, 2016, at NRPC, Katwaria Sarai, New Delhi.**

List of the participants is enclosed at **Annexure I**.

Member (Power System), CEA welcomed the participants of the 38th Meeting of the Standing Committee on Power System Planning of Northern Region. He stated that this is a very important meeting for comprehensive planning of the Power System in northern region with overall perspective throughout the country. Meetings of all other regions are also scheduled to be conducted in the next month and the agreed transmission systems in all the regions would be taken in the Empowered Committee on Transmission for their time bound implementation.

Chief Engineer (PSP&PA-I), CEA while welcoming the participants stated that the agenda of the meeting is very lengthy thus the members are requested to be specific in deliberation and arrive at decision. He requested Director (PSP&PA-I), CEA to take up agenda items.

Director (PSP&PA-I), CEA requested the participants to discuss all the issues thread bare in holistic manner and arrive at a consensus decision on each issue so the transmission network creation and their utilisation is optimised.

1.0 Confirmation of the Minutes of the 37th meeting of the Standing Committee on Power System Planning of Northern region held on 20th January, 2016.

1.1 Director (PSP&PA-I), CEA stated that the minutes of 37th meeting of the Standing Committee on Power System Planning of Northern Region were issued vide CEA letter No. 1/9/37th SCM/2015-PSP&PA-I/162-181 dated 11th Feb, 2016.

1.2 He further stated that Powergrid vide their letter C/CTU/N/PLG dated 14.2.2016 had given the observations regarding the connectivity of Bilhaur TPS (NTPC) wherein Bilhaur –Kanpur 400kV D/C line has been mentioned instead of Bilhaur – Kanpur 400kV D/C Quad line.

Hence, point no 1.2.2.3 of the minutes is modified as follows:

Connectivity of Bilhaur TPS (NTPC):

- **Bilhaur –Kanpur 400 kV D/C (quad) line**

1.3 AGM, CTU stated that 1x125 MVAr Bus reactor at 400kV Bhadla (PS) which was agreed as part of Transmission system for Ultra Mega Solar Parks in Bhadla, Distt. Rajasthan was

inadvertently missed out from the transmission scheme's scope mentioned at Para 25.7 of the minutes of 37th SCM.

1.3.1 The following is added in Para 25.7 as item (vii) under the scope of the scheme Transmission system for Ultra Mega Solar Parks in Bhadla, Distt. Rajasthan:

(vii) 1x125 MVA Bus reactor at Bhadla Pooling Station (400kV)

1.3.2 Director (PSP&PA-I), CEA stated that M/s Adani Solar Park is constructing solar park at Bhadla with installed capacity of 500 MW. Out of this capacity, it is directly connecting with RRVPNL for 250 MW and for remaining 250 MW, LTA has been granted by CTU at Bhadla (Pg) w.e.f. March, 2017. As per the information received from Powergrid, the 400 kV voltage level at 765/400/200 kV Bhadla (Pg) is expected by December, 2017 and 765 kV voltage level at Bhadla (Pg) is expected by March, 2018, which would further feed power to Bikaner (765kV) and Moga (765kV). Accordingly, **till the time 765 kV network at Bhadla is not commissioned, the total power of 500 MW from Adani Solar Park shall be evacuated from Bhadla (RRVPN) directly.**

1.4 CE., UPPTCL stated that in the operational feedback under ICT constraints, single ICT has been mentioned at Gorakhpur Substation. However, there are two ICTs existing at this substation which needs to be mentioned. It was clarified that there are two ICTs of capacities of 315 MVA and 240 MVA.

1.5 As no other suggestion for the modification to the minutes of meeting has been received, the Minutes of the 37th Standing Committee Meeting on Power System Planning of Northern Region with the above modifications suggested by Powergrid and UPPTCL are, therefore, confirmed.

2.0 New WR- NR 765 kV Inter-regional corridor

2.1 Director (PSP&PA-I), CEA stated that in the 37th meeting of Standing Committee on Power System Planning of Northern Region, it was decided that a sub-committee comprising of CEA, UPPTCL and CTU shall be formed to discuss the scheme and evolve strengthening scheme for WR-NR transmission corridor. Thus studies were carried out by Powergrid in consultation with UPPTCL and CEA. UPPTCL proposed that in view of certain upcoming generation in Allahabad and adjoining area, it would be better to connect WR to 765 kV Varanasi (PG) substation instead of 765/400 kV Allahabad (New) s/stn. In this way, construction of a new 765/400kV substation at

Allahabad along with 400kV connectivity can be avoided. Further, the study was revised to 2019-2020 time frame anticipating that the process of award and completion of the project would take around four years. Considering the above inputs, Vindhyachal Pooling Station - Varanasi 765kV D/C line was agreed by the sub-committee to be implemented as 765 kV NR-WR Strengthening corridor. The corridor would provide strong connectivity of NR and WR and would facilitate flow of power under various contingencies of line outage, economic despatch of power market operation etc. The estimated cost of the system would be Rs. 1000 Crore.

2.2 Study results are enclosed at **Exhibit-1** to **Exhibit-4**.

- **Exhibit – 1:** Basecase
- **Exhibit – 2:** Basecase N-1, (1 ckt of 765kV Agra – Gwalior D/C line)
- **Exhibit – 3:** With Proposed System
- **Exhibit – 4:** With Proposed System N-1 (1 ckt of 765kV Agra – Gwalior D/C line)

2.3 GM, POSOCO opined that the load in western UP is more and Fatehpur could also be a location for WR- NR integration.

2.4 CE, UPPTCL stated that during the studies this option was also explored but connection at Varanasi is the better solution as this avoided creation of one new substation and would provide the power to eastern UP which is presently in deficit condition due to non- materialisation of generation in Eastern region. With this corridor, some of the overloaded lines in UP are also getting relieved.

2.5 AGM, CTU stated that in order to facilitate charging of the line and maintaining voltage within stipulated limits under various network operating conditions, a 330 MVAR line reactor in both circuits of Vindhyachal Pooling Station- Varanasi 765kV D/C line is proposed at Varanasi end as a part of Inter-Regional system strengthening scheme for NR.

2.6 After deliberations, the following system was agreed for **WR- NR 765kV Inter-regional corridor**:

1. 765 kV Vindhyanchal Pooling Station – Varanasi D/Cline
2. 330 MVAR line reactor in both lines at Varanasi end

3.0 Evacuation of New Generation Project in 13th Plan (2017-2022):

3.1 Director (PSP&PA-I), CEA stated that the proposal of UPPTCL on the transmission system for evacuation of power from 1x660 MW Panki Extension TPS, 1x660 MW Harduaganj Extn., 2x660 MW Obra “C” TPS and 2x660 MW Jawaharpur (Etah) TPS along with some 765 kV and 400kV Substations was discussed in the 37th SCSPNR, wherein it was agreed that a joint study would be carried out with UPPTCL, CEA and CTU and the study results would be taken up for discussions in the next SCSPNR.

3.2 He further stated that CEA carried out the studies for the transmission elements under the proposal and the proposed transmission network is generally in order. No overloading is observed on the existing as well as proposed transmission elements.

3.3 AGM, CTU stated that in the DPR submitted by UPPTCL, the generation projects namely Kotlibhel –IB, Singrauli –III, Gidarbha STPP have been considered but as per the present status these projects have been dropped.

3.4 Deputy Director (PSP&PA-I), CEA stated that while carrying out the studies by CEA these projects have not been considered. **The study file (.sav) has been uploaded on CEA website.**

3.5 AGM, CTU stated that bus reactors are not present at the proposed 765kV and 400kV substations. This needs to be incorporated. He further stated that the Modipuram is well connected with Bagpat, thus the proposed 400 kV D/C Modipuram- Bagpat line would not be required and this would also add to the short circuit levels. He also enquired about the impact on the short circuit level with addition of the proposed generations and transmission system.

3.6 CE, UPPTCL stated that this is only a contingency arrangement and in normal conditions this line would be a floating line.

3.7 AGM, POSOCO raised the concern about the downstream network for the proposed substations. CE, UPPTCL stated that the comprehensive planning has been done upto 33kV level till 13th Plan, which had also been submitted to CEA in the DPR for transmission system requirement for Uttar Pradesh Power System (to be funded by World Bank). A copy of the planned downstream network is attached at **Annexure-II**.

3.8 The issue of short circuit levels is a matter of concern and has been many times debated in the past. Accordingly, a detailed study on the short circuit would be presented in the next SCM and

would be a part of outcome of committee constituted to look into the high short circuit levels in Singrauli, Anpara generation complexes as well as other nodes in the northern region.

3.9 After detailed deliberations, the following transmission network proposed by UPPTCL was agreed:

3.9.1 Evacuation System for the following Generation Projects:

(A) **1x660 MW Panki Extension TPS Power (2020-21):** The evacuation system is as under:

- (i) Generation Transformer 21/400 kV
- (ii) Panki TPS – Panki 400 kV D/C line – 3km
- (iii) Bus Reactor at Panki TPS -125 MVAr

(B) **1x660 MW Harduaganj TPS (2019-20):** The evacuation system is as under:

- (i) G.T 21/400 kV at Harduaganj Extn.
- (ii) LILO of one ckt of Aligarh-Sikandrabad 400 kV D/C line (Isolux line) at Harduaganj TPS- 25 km.
- (iii) 400/220 kV, 2x315 MVA ICT at Harduaganj Extn.
- (iv) 220 kV Spare Bays – 2 nos
- (v) 80 MVAr bus Reactor at Harduaganj TPS.

It was observed that instead of 400/220 kV, 2x315 MVA ICT at Harduaganj Extn., capacity of 2x500 MVA may be considered.

(C) **2x660 MW Obra “C” TPS (2019-20):** The evacuation system is as under:

- (i) G.T. 21/765 kV at Obra “C”
- (ii) 2x1500 MVA 765/400 kV ICT at Obra “C”
- (iii) LILO of Anpara “D” – Unnao 765 kV S/C line at Obra “C” – 40 km.
- (iv) Obra “C” – Jaunpur 400 kV D/C line – 200 km.
- (v) LILO of one ckt of Obra C – Jaunpur 400 kV D/C line at Obra (Existing) – 15 km.
- (vi) Bus Reactor 330 MVAr, 765 kV at Obra “C”

(D) **2x660 MW Jawaharpur (Etah) TPS (2021-22):** The evacuation system is as under:

- (i) Evacuation at 765 kV with G.T. 21/765 kV
- (ii) LILO of Mainpuri – Greater Noida 765 kV S/C line at Jawaharpur TPS - 30 km
- (iii) 765/400 kV, 2x1500 MVA ICT at Jawaharpur TPS
- (iv) 400/220 kV, 2x500 ICT at Jawaharpur TPS
- (v) Creation of Firozabad 400/220/132 kV 2x500, 2x160 MVA substation

- (vi) Jawaharpur TPS – Firozabad 400 kV D/C line – 80 km
- (vii) Firozabad – Agra South 400 kV D/C– 40 km
- (viii) Etah – Jawaharpur TPS 220 kV D/C – 20 km
- (ix) Jawaharpur TPS – Sirsaganj 220 kV D/C – 40 km
- (x) 330 MVAR, 765 kV Bus Reactor at Jawaharpur TPS

It was observed that with LILO of Mainpuri – Greater Noida 765 kV S/C line at Jawaharpur TPS, the power flows from Mainpuri to Jawaharpur TPS switchyard and then to Greater Noida 765 kV.

3.9.2 New 765/400 kV substations:

(A) 765/400/220 kV substations at Modipuram (Meerut):

- (i) Construction of 765/400 kV, 2x1500 MVA; 2x500 MVA, 400/220 kV Modipuram (Meerut) S/S
- (ii) Hapur – G. Noida 765kV S/C line at Modipuram (Meerut) – 20 km
- (iii) Modipuram (765kV) – Simbholi 400 kV D/C line – 40 km
- (iv) Modipuram (765kV) – Shamli (400 kV) D/C– 60 km
- (v) Modipuram – Baghpat 400 kV D/C line – 60 km

(B) 765/400/220 kV S/s Moradabad:

- (i) Construction of 765/400 kV, 2x1500 MVA; 2x500 MVA, 400/220 kV substation at Moradabad.
- (ii) LILO of approved Ghatampur TPS – Hapur 765kV S/C line at Moradabad.
- (iii) Moradabad (765 kV) – Sambhal 400 kV D/C line – 50 km.
- (iv) Moradabad (765 kV) – Moradabad 400 kV D/C line – 25km
- (v) Creation of 400/220 kV, 2x500 MVA S/s Sambhal.

3.9.3 New 400/220 kV substations:

(A) 400/220/132 kV, 2x500MVA(400/220kV), 2x160 MVA(220/132kV) Firozabad:

- (i) Firozabad – Jawaharpur TPS 400 kV D/C line – 40 km
- (ii) Firozabad (400 kV) – Agra South 400 kV D/C line – 50 km
- (iii) Firozabad (400 kV) – Tundla 220 kV D/C line
- (iv) Firozabad (400kV) – Firozabad 220 kV D/C line

(B) 400/220 kV 2x315 MVA Badaun:

- (i) Construction of 2x315 MVA, 400/220 kV substation at Badaun
- (ii) Roza TPS – Badaun 400 kV D/C line - 90 km
- (iii) Badaun – Sambhal 400 kV D/C line – 50 km

It was observed that instead of 400/220 kV, 2x315 MVA ICT at Badaun, capacity of 2x500 MVA may be considered.

(C) 400/220 kV S/s Jaunpur:

- (i) Construction of 2x500 MVA, 400/220 kV substation at Jaunpur.
- (ii) Obra”C” – Jaunpur 400 kV D/C line – 200 km.
- (iii) Varanasi (765 kV) PGCIL – Jaunpur 400 kV D/C line – 60 km.
- (iv) Construction of 400 kV Bays at Varanasi (765 kV) PGCIL S/s – 2Nos

(D) 400/220/132 kV Rasra (Mau):

- (i) Construction of 2x500 MVA, 400/220 kV; 2X160 MVA, 220/132 kV substation at Rasra (Mau)
- (ii) LILO of one ckt of Balia – Mau 400 kV D/C line at Rasra – 15 km
- (iii) Balia (PGCIL) – Rasra 400 kV S/C line – 35 km

It was observed that for Rasra S/s LILO of one circuit of 400kV Balia – Mau 400 kV D/C line at Rasra would meet the present demand. The provision of Balia (PGCIL) – Rasra 400 kV D/C line in place of Balia (PGCIL) – Rasra 400 kV S/C line may be kept for future.

(E) 400/220/132 kV Simbholi:

- (i) Construction of 2x500 MVA, 400/220 kV; 2X160 MVA, 220/132 kV substation at Simbholi
- (ii) Modipuram (765 kV) – Simbholi 400 kV D/C line – 40 km
- (iii) Simbholi – Moradnagar –II 400 kV D/C line – 50 km

(F) 400/220/132 kV Sambhal:

- (i) Construction of 2x500 MVA, 400/220 kV; 2X160 MVA, 220/132 kV substation at Sambhal
- (ii) Badaun – Sambhal 400 kV D/C line – 90 km
- (iii) Moradabad – Sambhal 400 kV D/C line – 50 km

Note: Suitable Bus reactors may be installed at all the substations proposed by UPPTCL.

4.0 Overloading on Singrauli - Anpara 400kV S/C line

4.1 Director (PSP&PA-I), CEA stated that 400 kV Singrauli - Anpara S/C line often gets overloaded due to high generation in Rihand- Singrauli complex and also the short circuit level at Singrauli and Anpara is very high. In the 37th SCSPNR, it was decided that the studies would be carried out by putting series reactor of suitable size so as to reduce the short circuit levels. Short circuit studies had been carried out with a 12ohm series reactor on the Singrauli- Anpara 400kV S/C line and it was observed that the fault level at Singrauli and Anpara reduces to 35 kA and 39 kA from 41 kA and 44 kA, respectively.

4.2 Chief Engineer, UPPTCL stated that due to new generation addition at Anapara,D and Bara the loading of the line has been reduced but, the short circuit level at Singrauli and Anpara remains high which is a cause of concern. He further stated that the option of bus splitting could be explored to bring down the fault level in the area.

4.3 AGM, POSOCO stated that the present reduction in the loading of the line is only due to non-availability of 765kV network associated with these generations and once these transmission elements get commissioned, the Singrauli- Anpara 400kV S/C line would again be overloaded.

4.4 COO, CTU stated that NTPC and UPPTCL should seriously look into the matter of increased fault level. A series reactor of 14 ohm on the Singrauli - Anpara 400 kV S/C line could bring down the fault level.

4.5 Director (PSP&PA-I), CEA stated that there is only marginal reduction in the short circuit level after putting in series reactor, and hence the proposal of series reactor of 12 Ω (ohm) may be dropped.

4.6 After detailed deliberations, it was decided that a committee would be formed involving CEA, CTU, NTPC and UPPTCL to address issue of fault level/high loading and carry out detailed short circuit analysis and suggest remedial measures. This committee would carry out the short circuit analysis at all the nodes in the northern region.

Annexure-III

जवाहरपुर विद्युत उत्पादन निगम लि०
(उ०प्र० सरकार का एक उपक्रम)
Jawaharpur Vidyut Utpadan Nigam Ltd.
(A UP Govt. Undertaking)



कार्यालय परियोजना महाप्रबंधक
2X660 मे०वा० जवाहरपुर तापीय विद्युत परियोजना
OFFICE OF THE PROJECT MANAGER
2X660 JAWAHARPUR THERMAL POWER PROJECT
MALAWAN, ETAH-207001 (UP)

CIN: U40102UP2009SGC038142

JAWAHARPUR
VIDYUT UTPADAN NIGAM LIMITED

No. 642 / CE(PM)/JTPP/2X660MW

Date. 04-07-2023

Superintending Engineer (R&A)
Vibhuti Khand, UPSLDC
Lucknow (UP)

Kindly refer to Agenda point A.8.2 of 67th of OCC meeting of NRLDC held on 30.06.2023 at 11:00 hrs. The status of evacuation Network of 2X660MW Jawaharpur TPS is as below.

S No	Name of Transmission Element	Status	Proposed Date of Charging
01.	Jawaharpur to Gr Noida 765 kV line.	Charged on Dt. 10.04.2023	-----
02.	Jawaharpur to Mainpuri 765 kV line.	Charged on Dt. 10.04.2023	-----
03.	Bus reactor 765 kV.	-----	31.07.2023
04.	ICT-1 (765/400kV)-one bank	-----	15.11.2023
05.	Jawaharpur to Firozabad 400 kV line DC.	Charged on Dt. 03.09.2022	-----
03.	Bus reactor 400 kV	-----	15.08.2023
03.	ICT-3 (400/220kV)-one bank	-----	15.08.2023
04.	Jawaharpur to Kasganj 220 kV line.	Charged on Dt. 23.02.2021	-----
05.	Jawaharpur to Mainpuri 220 kV line.	Charged on Dt. 23.02.2021	-----

2x660 MW Jawaharpur TPS is under commissioning process and is expected to be on continue operation as below:

S No	Name of Unit	Status	Proposed Date of continuous operation
01.	Unit#1	Synchronized on 29.04.2023	15.08.2023

This is for your information & necessary action.

(Ajay Kumar)

General Manager (Project Manager)

Date. -07-2023

No. / CE(PM)/JTPP/2X660MW

Copy to following for information and necessary action:

1. Chief Engineer, PPMM, UPRVUNL, Vibhuti Khand , Lucknow
2. SE-V, PPMM, , UPRVUNL, Vibhuti Khand , Lucknow.
3. SE(EMCC-I),2X660MW, JTPS, Malawan, Etah.
4. EE(E&MCD-VIII.),2X660MW, JTPS, Malawan, Etah.

(Ajay Kumar)

General Manager (Project Manager)

कार्यालय मुख्य अभियन्ता (स)
2x660 मे०वा० ओबरा 'स' तापीय परियोजना
उ०प्र०रा०विद्युत उत्पादन निगम लि०
(उ प्र सरकार का उपक्रम)
पो० आ० : ओबरा 231219
जिला : सोनगढ़ (उ०प्र०)



OFFICE OF THE CHIEF ENGINEER 'C'
2x660 OBRA 'C' POWER PROJECT
U.P.R. VIDYUT UTPADAN NIGAM LTD.
(U.P. Govt. Undertaking)
P.O.: OBRA - 231219
DISTRICT: SONBHADRA (UP)

CIN:U40101UP 9805GC005065

No.: 43 /C.E.(Obra'C')/400 KV

Dated: 01/07/2023

Subject: - Regarding agenda point A.8.2 of 67th OCC meetings.

Superintending Engineer (R&A)
Vibhuti Khand, UPLDC
Lucknow (U.P.)

Kindly refer to agenda point A.8.2 of 67th of OCC meeting of NRLDC held on 30.06.2023 at 11:00Hrs.

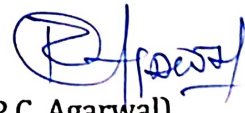
➤ The status of evacuation network of 2X660MW Obra'C' TPS is as below.

Sl No.	Name of transmission element	Status	Proposed date of charging
1.	765KV Obra'C'-Anpara'D'	Charged	--
2.	765KV Obra'C'-Unnao	Charged	--
3.	1000MVA ICT-I	--	15.10.2023
4.	1000MVA ICT-II	--	31.12.2023
5.	400KV Obra'C'-Obra'B'	Charged	--
6.	400KV Obra'C'-Jaunpur	--	15.07.2023
7.	400KV Obra'B'-Jaunpur	--	15.07.2023

➤ 2X660MW Obra C TPS are under commissioning process and are expected to be in continue operation as below.

Sl No.	Name of Unit	Status	Proposed date of continuous operation
1.	Unit#1	Synchronized on 23.04.2023	15.07.2023
2.	Unit#2	Under erection & commissioning	31.03.2024

This is for your information and necessary action.


(P.C. Agarwal)
Chief Engineer (C)

No. /C.E.(Obra"C")/400 KV/ of dated

Copy Forwarded to the following for information and necessary action-

1. C.G.M., Obra Thermal Power Station, Obra.
2. Chief Engineer, PPM, UPRVUNL, Vibhuti Khand, Lucknow.
3. S.E., E&MCC-IV, 2x660 MW, 'C' TPS, Obra.
4. EE, ECD-I, CTPS, Obra

(P.C. Agarwal)
Chief Engineer (C)

BBMB TO HARYANA		
SL NO	Feeder Name	End1
1	220kV Panipat(T)-1 at Panipat-BBMB	NS-1504-A
2	220kV Panipat(T)-3 at Panipat-BBMB	NR-3226-A
3	220kV Panipat(T)-2 at Panipat-BBMB	NP-7076-A
4	220kV Panipat(T)-4 at Panipat-BBMB	NP-7079-A
5	220/132kV T/F-1(220 kV) at Panipat-BBMB	NR-3294-A
6	220/132kV T/F-2(220 kV) at Panipat-BBMB	NP-6583-A
7	220/33kV T/F-1 (220 kV) at Panipat-BBMB	NR-3271-A
8	220/33kV T/F-2 (220 kV) at Panipat-BBMB	NP-1416-A
9	220kV Mahendargarh-1 at Charkhi Dadri-BBMB	NP-5466-A
10	220kV Mahendargarh-2 at Charkhi Dadri-BBMB	NP-3130-A
11	220kV Rewari at Charkhi Dadri-BBMB	NP-1145-A
12	220/132kV ICT-1(220kV) at Charkhi Dadri	NP-1156-A
13	220/132kV ICT-2(220kV) at Charkhi Dadri	NP-1155-A
14	220kV Palwal-1 at Samaypur-BBMB	NS-1056-A
15	220kV Palwal-2 at Samaypur-BBMB	NP-6606-A
16	220kV Badshapur-1 at Samaypur-BBMB	NP-8153-A
17	220kV Badshapur-2 at Samaypur-BBMB	NP-6683-A
18	220kV Faridabad GPS-1 at Samaypur-BBMB	NP-8199-A
19	220kV Faridabad GPS-2 at Samaypur-BBMB	NP-5051-A
20	220kV Palla-1 at Samaypur-BBMB	NP-6695-A
21	220kV Palla-2 at Samaypur-BBMB	NP-6824-A
BBMB TO PUNJAB		
1	220/132kV ICT-1 at JALANDHAR (BBMB)	NP-1651-A
2	220/132kV ICT-2 at JALANDHAR (BBMB)	WR-2151-A
3	220/132kV ICT-3 at JALANDHAR (BBMB)	NR-3231-A
4	220/132kV ICT-4 at JALANDHAR (BBMB)	NP-5462-A
5	220/66kV ICT-1 at JALANDHAR (BBMB)	NP-1815-A
6	220/66kV ICT-2 at JALANDHAR (BBMB)	NR-3305-A
7	220kV Mahilpur 1 at Bhakra Right Bank	NR-3384-A
8	220kV Mahilpur 2 at Bhakra Right Bank	NP-3088-A
9	220kV Butari -Jalandhar	NP-6977-A
10	220/66 kV ICT1 at Jamalpur BBMB	NP-7151-A
11	220/66 kV IC21 at Jamalpur BBMB	NP-7520-A
12	220/66 kV ICT3 at Jamalpur BBMB	NP-7153-A
13	220/132kV ICT1 at Jamalpur BBMB	NP-6572-A
14	220/132kV ICT2 at Jamalpur BBMB	NS-1552-A
15	220/132kV ICT3 at Jamalpur BBMB	NP-8591-A
16	220 kV Sangrur at Hissar 1	NS-1011-A
17	221 kV Sangrur at Hissar 2	NP-1331-A

ELSTER METER LIST			
S. NO.	METER.NO	CATEGORY	PLACE OF INSTALLATION OF SEM
1	NR-4679-B	M	11kV HVDC-1(aux) at HVDC Rihand POWERGRID_#HVDC Rihand POWERGRID
2	NR-4680-B	M	11kV HVDC-2(aux) at HVDC Rihand POWERGRID_#HVDC Rihand POWERGRID
3	NR-4681-B	M	11kV HVDC-3(aux) at HVDC Rihand III(from CPS Board)-POWERGRID_#HVDC Rihand POWERGRID
4	NR-4684-B	M	6.6kV HVDC-1(aux) at Dadri-HVDC(from thermal)
5	NR-4694-B	M	6.6kV HVDC-2(aux) at Dadri-HVDC(from Gas)
6	NR-4372-A	M	400 kV Basti-2 at Tanda Stage-2
7	NR-3465-A	M	400kV Banala (PG) at Parbati-II HPS
8	NR-3464-A	M	400kV Sainj HEP at Parbati-II HPS
9	NR-3292-A	M	220 kV Amargarh-1 at Kishenganga HEP
10	NR-3761-A	M	220kV side of 220/33 kV SUT-5(35 MVA) at RAPS-C
11	NR-3939-A	M	400 kV Jaipur(PG) at RAPP-7&8
12	NR-3384-A	M	220 kV Mahilpur-1 at Bhakra Right Bank
13	NR-3232-A	M	GT-2(220 kV) at Pong HPS
14	NR-3226-A	M	220kV Panipat(T)-3 at Panipat-BBMB
15	NR-3294-A	M	220/132kV T/F-1(220 kV) at Panipat-BBMB
16	NR-3271-A	M	220/33kV T/F-1 (220 kV) at Panipat-BBMB
17	NR-3305-A	M	220/66kV ICT-2 (220kV) at Jalandhar-BBMB
18	NR-4310-A	M	400/220 kV ICT-3(400 kV) at Fatehpur-PG
19	NR-3386-A	M	220kV UT Chandigarh-1 at Nalagarh-PG
20	NR-3210-A	M	220kV Chhaur at Nalagarh-PGCIL
21	NR-3484-A	M	ICT-2 315MVA (400 kV) at Panchkula-PG
22	NR-3433-A	M	ICT-3 500MVA (400 kV) at Panchkula-PG
23	NR-4570-A	M	ICT-1 (400 kV) at Sikar-PG
24	NR-3587-A	M	ICT-I (400 kV) at Tughlakabad-GIS-PG
25	NR-3652-A	M	ICT-II (400 kV) at Tughlakabad-GIS-PG
26	NR-3969-A	M	ICT-IV (400 kV) at Tughlakabad-GIS-PG
27	NR-3218-A	M	220 kV Kanjal-1 at Jalandhar-PG
28	NR-3216-A	M	220 kV Kanjal-2 at Jalandhar-PG
29	NR-3726-A	M	ICT-3 (400 kV) at Allahabad-PG
30	NR-4355-A	M	220 kV Railways(Naini)-I at Allahabad-PG
31	NR-4361-A	M	220 kV Railways(Naini)-II at Allahabad-PG
32	NR-4611-A	M	ICT-3(400 kV) 500MVA at Sohawal-PG
33	NR-4488-A	M	ICT-2 (400 kV) at Mainpuri-PG
34	NR-4492-A	M	ICT-1 (220 kV) at Mainpuri-PG
35	NR-4489-A	M	ICT-3 (400 kV) at Mainpuri-PG
36	NR-3278-A	M	ICT-4 (400 kV) at Amritsar-PG
37	NR-3274-A	M	ICT-1 (400 kV) at Kaithal-PG
38	NR-3272-A	M	ICT-2 (400 kV) at Kaithal-PG
39	NR-3301-A	M	ICT-3 (400 kV) at Kaithal-PG

40	NR-3383-A	M	ICT-1 (400 kV) at Banala PG
41	NR-3546-A	M	400/220 kV ICT-2 (400KV) at Kurukshetra PG(NR-3518-A replaced in Aug 2022)
42	NR-3507-A	M	Auxiliary Consumption(33 kV side) at Kurukshetra-HVDC
43	NR-3520-A	M	Auxiliary Consumption(33 kV side) at Kurukshetra-HVDC
44	NR-3488-A	M	ICT-1 (400 kV) at Samba-PG
45	NR-4519-A	M	ICT-2 (400 kV) at Dehradun-PG
46	NR-4582-A	M	400 KV Bikaner(RJ) ckt 2 at Bikaner-PG(Before tapping this was 400kV Bhadla(RJ) at Bikaner-PG)
47	NR-4578-A	M	220 kV AREPRL-1 at Bhadla-PG
48	NR-4517-A	M	220 kV AREPRL-2 at Bhadla-PG
49	NR-3979-A	M	220 kV Saurya Urja-1 at Bhadla-PG
50	NR-4455-A	M	220 kV Saurya Urja-2 at Bhadla-PG
51	NR-3586-A	M	220 kV Azure Thirty Four at 765/400/200 kV Bhadla-PG
52	NR-3696-A	M	220 kV ACME-Chittorgarh at 765/400/200 kV Bhadla-PG
53	NR-4496-A	M	400 kV ICT-1 at Prithala-Sterlite
54	NR-4600-A	M	400 kV ICT-2 at Prithala-Sterlite
55	NR-4601-A	M	400 kV ICT-1 at Sohna-Sterlite
56	NR-3764-A	M	400 kV ICT-2 at Sohna-Sterlite
57	NR-3503-A	M	220 kV side of ICT(220/33 kV) at Phojal-HEP
58	NR-3342-A	M	ICT-1 (400 kV) at Hamirpur-PG
59	NR-3514-A	M	400 KV Parbati-III at Sainj HEP
60	NR-3515-A	M	400 KV Parbati-II at Sainj HEP
61	NR-3530-A	M	220 kV Kishenganga-2 at Amargarh-PDD
62	NR-3320-A	M	400 kV Kishenpur-PG-3 at Baglihar
63	NR-3291-A	M	220 kV Drass at Alusteng
64	NR-3438-A	M	400 kV ICT-I at Patran-PTCL
65	NR-4702-B	M	Genr-1(11kV) at Chibro HPS-UPCL
66	NR-4704-B	M	Genr-2(11kV) at Chibro HPS-UPCL
67	NR-4415-A	M	400kV Allahabad-2 at Rihand-2 STPS_#Rihand STPS
68	NR-4616-A	M	400kV Fatehpur-I at Unchahar TPS
69	NR-3774-A	M	400kV Fatehpur-II at Unchahar TPS
70	NR-4363-A	M	ICT-1 (220 kV) at Tanda Stage-2
71	NR-4364-A	M	ICT-2 (220 kV) at Tanda Stage-2
72	NR-3797-A	M	400 kV Azamgarh at Tanda Stage-2
73	NR-4367-A	M	400 kV Sultanpur at Tanda Stage-2
74	NR-4362-A	M	400 kV Basti-1 at Tanda Stage-2
75	NR-3419-A	M	220kV Jammu-2 at Salal HPS
76	NR-3369-A	M	220kV Kishenpur-2 at Salal HPS
77	NR-3370-A	M	220kV Kishenpur-3 at Salal HPS
78	NR-3372-A	M	220kV Kishenpur-4 at Salal HPS

79	NR-3504-A	M	220 kV Amargarh-2 at Kishenganga HEP
80	NR-3938-A	M	ST-7A&B (220kV) at RAPPC
81	NR-3752-A	M	400 kV Bhadla-II at Bhadla-RRVNL
82	NR-3777-A	M	400/220 kV ICT-2(400 kV) at Fatehpur-PG
83	NR-3416-A	M	220kV HPSEB NANGAL-2 at Nalagarh-PG
84	NR-3204-A	M	220kV Ad-Hydro-1 at Nalagarh-PGCIL
85	NR-3909-A	M	ICT-2 (400 kV) at Mandola-PG
86	NR-4499-A	M	ICT-4 (400 kV) at Mandola-PG
87	NR-3482-A	M	ICT-1 315MVA (400 kV) at Panchkula-PG
88	NR-3759-A	M	ICT-3 (400 kV) at Sikar-PG
89	NR-3976-A	M	400 kV Ratangarh(RVPNL)-I at Sikar-PG
90	NR-3977-A	M	400 kV Ratangarh(RVPNL)-II at Sikar-PG
91	NR-3756-A	M	400 kV Bikaner(RVPNL)-I at Sikar-PG
92	NR-3340-A	M	400 kV Baglihar-2 at Kishenpur-PG
93	NR-4609-A	M	ICT-1(400 kV)315MVA at Sohawal-PG
94	NR-3846-A	M	ICT-2 (400 kV)500MVA at Bahadurgarh-PG
95	NR-3528-A	M	400/220 kV ICT-1 (400KV) at Kurukshetra PG
96	NR-3539-A	M	400kV AC SIDE OF Conv. Trf.of HVDC-Pole-III at Kurukshetra-HVDC
97	NR-3290-A	M	400kV AC SIDE OF Conv. Trf.of HVDC-Pole-IV at Kurukshetra-HVDC
98	NR-3704-A	M	33 kV ICT-1 at Aligarh-PG
99	NR-3809-A	M	220 kV TPREL Chhayan at 765/400/200 kV Bhadla-PG
100	NR-3212-A	M	400 kV ICT-1 at Amargarh-Sterlite
101	NR-3214-A	M	400 kV ICT-2 at Amargarh-Sterlite
102	NR-3765-A	M	400 kV ICT-1 at Kadarapur-Sterlite
103	NR-3770-A	M	400 kV ICT-2 at Kadarapur-Sterlite
104	NR-3931-A	M	400 kV Neemrana(PG)-1 at Dhanonda(HVPN)
105	NR-3826-A	M	400 kV Neemrana(PG)-2 at Dhanonda(HVPN)
106	NR-3491-A	M	400 kV Jhakri-I at Gumma-HPPTCL
107	NR-3268-A	M	400 kV Jhakri-II at Gumma-HPPTCL
108	NR-3341-A	M	ICT-2 (400 kV) at Hamirpur-PG
109	NR-3237-A	M	ICT-3 (400 kV) at Hamirpur-PG
110	NR-3396-A	M	400 KV Abdullapur-I at Kala Amb
111	NR-3399-A	M	400 KV Abdullapur-II at Kala Amb
112	NR-3531-A	M	220 kV Kishenganga-1 at Amargarh-PDD
113	NR-4703-B	M	Genr-3(11kV) at Chibro HPS-UPCL
114	NR-4700-B	M	Genr-4(11kV) at Chibro HPS-UPCL
115	NR-4705-B	M	Genr-1(11kV) at Khodri HPS-UPCL

VINCOM METER LIST			
S. NO.	METER.NO	CATEGORY	PLACE OF INSTALLATION OF SEM
1	NP-6702-A	S	GT#1(HV SIDE) AT SHREE CEMENT LTD
2	NP-6568-A	S	GT#2(HV SIDE) AT SHREE CEMENT LTD
3	NP-6128-A	M	400 kV Merta AT SHREE CEMENT LTD
4	NP-6129-A	C	400 kV Merta AT SHREE CEMENT LTD
5	NP-6130-A	M	400 kV Kota AT SHREE CEMENT LTD
6	NP-6131-A	C	400 kV Kota AT SHREE CEMENT LTD
7	NP-9969-A	S	GT-1 (400kV) at Tehri-THDC
8	NP-9958-A	S	GT-2 (400kV) at Tehri-THDC
9	NP-9962-A	S	GT-3 (400kV) at Tehri-THDC
10	NP-9905-A	S	GT-4 (400kV) at Tehri-THDC
11	NP-5029-A	M	220kV Hissar(BBMB) at Chirawa-RVNL
12	NP-6645-A	M	400kV Daultabad-I at Jhajaar - HVPNL
13	NP-6646-A	C	400kV Daultabad-I at Jhajaar - HVPNL
14	NP-6643-A	M	400kV Daultabad-II at Jhajaar - HVPNL
15	NP-6644-A	C	400kV Daultabad-II at Jhajaar - HVPNL
16	NP-6592-A	M	400kV Mundka-I at Jhajaar - HVPNL
17	NP-6593-A	M	400kV Mundka-II at Jhajaar - HVPNL
18	NP-6814-A	C	400kV Mundka-I at Jhajaar - HVPNL
19	NP-6813-A	C	400kV Mundka-II at Jhajaar - HVPNL
20	NP-6797-A	S	400kV GT-1 at Jhajaar
21	NP-6798-A	S	400kV GT-2 at Jhajaar
22	NP-6799-A	S	400kV GT-3 at Jhajaar
23	NP-6800-A	S	400/132kV ICT-I(400kV) at Jhajaar
24	NP-6801-A	S	400/132kV ICT-2(400kV) at Jhajaar
25	NP-8929-A	M	400kV Rihand-3 Feeder-1 at Vindhyachal-PG
26	NP-8948-A	M	400kV Rihand-3 Feeder-2 at Vindhyachal-PG
27	NP-2734-A	M	765Kv Varansi -1 at Vindhyachal-PG
28	NP-1428-A	S	66kV Dhulkote-1 at Sec-28 Chandigarh-BBMB
29	NP-1368-A	S	66kV Dhulkote-2 at Sec-28 Chandigarh-BBMB
30	NP-6693-A	M	400 kV Kankroli-PG at Jodhpur-RVNL
31	NP-1953-B	S	Genr-2 (11kV) at Salal HPS

SPS Scheme Modification requirement for Bikaner (PG)-Bikaner2(PG) Ckt1 on ERS operation

Proposed SPS Arrangement

CASE 1: In case of loading of 400kV Bikaner (PG)-Bikaner_2(PG)-1 (ERS) > 1500 MW and <1600 MW:

Stage-1 action (after 2 sec of triggering of CASE 1)

Tripping of RE Generation (550MW) [Renew Power line _Bay-415,414] connected at 400kV Bikaner (PG)

Stage -2 action (after 4 sec of triggering of CASE-1)

Tripping of RE Generations (787.5MW) (Thar Surya_Bay-203, Tata Green Power_Bay-204, SBSR_Bay-208) connected at 220kV Bikaner (PG)

CASE 2: In case of loading of 400kV Bikaner (PG)-Bikaner_2(PG)-1 (ERS) > 1600 MW:

Stage-1 action (after 1 sec of triggering of CASE 2)

Tripping of RE Generation (550MW) [Renew Power line _Bay-415,414] connected at 400kV Bikaner (PG)

Stage -2 action (along with Stage-1 of CASE 2)

Tripping of RE Generations (787.5MW) (Thar Surya_Bay-203, Tata Green Power_Bay-204, SBSR_Bay-208) connected at 220kV Bikaner (PG)

Current settings for implementation of above SPS Stages-

Considering peak load hours during 10:00hrs – 15:00hrs average voltage – 400kv & Power factor 1.

Current at 1500MW (stage-1 & stage-2 of case-1) = $(1500/1.732*400*1)$ Which is 2165Amp.

Current at 1600MW (Stage-1 & stage-2 of case-2) = $(1600/1.732*400*1)$ Which is 2310 Amp.

Settings for Overcurrent stage-1 (stage-1 of case-1)

I > 1 (current setting of 2165Amp with delay of 2sec)

Settings for Overcurrent stage-2 (stage-2 of case-1)

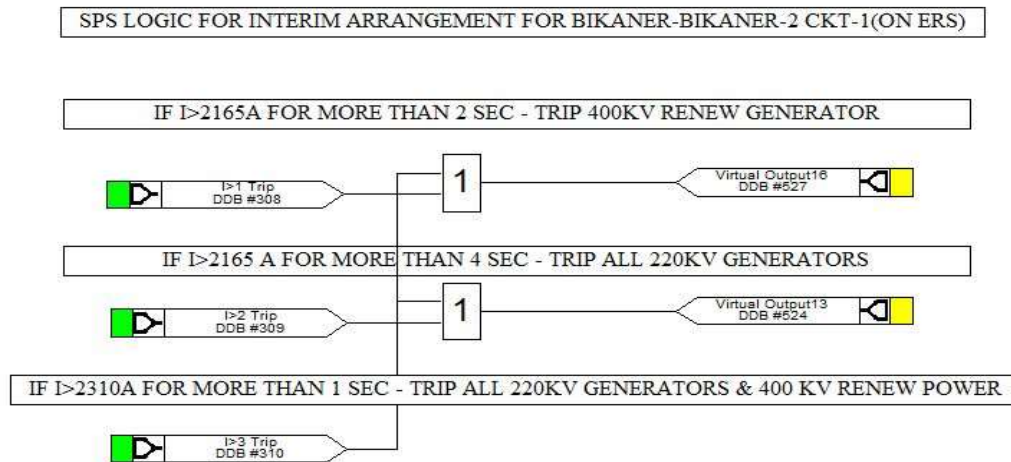
I > 2 (current setting of 2165Amp with delay of 4sec)

Settings for Overcurrent stage-3 (stage-1 & 2 of case-2)

I > 3 (current setting of 2310Amp with delay of 1sec)

Group 1		
GROUP 1 DISTANCE EL...		
GROUP 1 DISTANCE SC...		
GROUP 1 POWER-SWING		
GROUP 1 BACK UP I>		
I>1 Function	DT	35.01
I>1 Directional	Non Directional	35.02
I>1 Current Set	2160 A	35.04
I>1 Time delay	2.000 s	35.05
I>1 tReset	0 s	35.0A
I>2 Function	DT	35.0B
I>2 Directional	Non Directional	35.0C
I>2 Current Set	2160 A	35.0E
I>2 Time delay	4.000 s	35.0F
I>2 tReset	0 s	35.14
I>3 Status	Enabled	35.15
I>3 Current Set	2300 A	35.16
I>3 Time delay	1.000 s	35.17
I>4 Status	Enabled	35.18
I>4 Current Set	3000 A	35.19
I>4 Time delay	100.0 ms	35.1A

Proposed SPS Logic to be implemented-



In the above Logic, Virtual output16 of Main-1 (P444) relay of 400kv Bikaner-Bikaner2 ckt1 (412-21M1) is assigned for Tripping of 400kv Renew Power Line & Virtual output13 of the relay is assigned for tripping of 220kv Solar generators connected at Bikaner (PG).

Above modified SPS Scheme implemented & Tested during Shutdown of 400kv Bikaner-Bikaner (RVPNL) Ckt2, 400kv Renew Power Line & 220kv Solar generators Lines on dated 28.06.2023.

Testing for Stage-1 of Case-1

This stage-1 of Case-1 successfully implemented & tested for tripping of **400kv Renew Power (solar generator)**, if loading of 400kv Bikaner (PG)-Bikaner_2(PG)-1 (ERS) > 1500 MW and <1600 MW for more than 2 seconds.

DR & Events attached with name "STAGE-1"

Testing for Stage-2 of Case-1

This stage-2 of Case-1 successfully implemented & tested for tripping of **All 220KV solar generators connected at Bikaner (PG)**, if loading of 400kv Bikaner (PG)-Bikaner_2(PG)-1 (ERS) > 1500 MW and <1600 MW for more than 4 seconds.

DR & Events attached with name "STAGE-2"

Testing for Stage-1 & 2 of Case-2

This stage-1&2 of Case-2 successfully implemented & tested for tripping of **All 220KV solar generators connected at Bikaner (PG) Along with 400kv Renew Power**, if loading of 400kv Bikaner (PG)-Bikaner_2(PG)-1 (ERS) >1600 MW for more than 1 second.

DR & Events attached with name "STAGE-3"



**NORTHERN REGIONAL POWER COMMITTEE
KATWARIA SARAI, NEW DELHI**

**(CONDUCT OF BUSINESS)
Rules, 2023**

July, 2023

Contents

CHAPTER-I: GENERAL	1
1. Short title and commencement	1
2. Definitions	1
3. Functions of NRPC	2
4. Secretariat of NRPC	3
5. Furnishing of data / information to Secretariat of RPC	5
6. Chairperson of NRPC	5
7. Website of NRPC.....	5
CHAPTER-II: PROCEDURE FOR CONDUCTING NRPC MEETINGS.....	6
8. Place and date of NRPC Meeting.....	6
9. Periodicity of meetings.....	6
10. Notice for the Committee meetings and Agenda.....	6
11. Effect of Non-receipt of Notice of Meeting by a Member.....	6
12. Cancellation / re-scheduling of Meeting	7
13. Quorum of NRPC Meeting.....	7
14. Presiding Authority.....	7
15. Recording of the minutes.....	7
16. Confirmation of the Minutes.....	7
CHAPTER-III: SUB-COMMITTEES OF NRPC	8
17. Constitution of Sub-Committees of NRPC.....	8
18. Technical Co-Ordination Sub-Committee (TCC).....	8
19. Operation Co-Ordination Sub-Committee (OCC).....	9
20. Commercial Sub-Committee (CC):.....	10
21. Protection Sub-Committee (PC)	10
22. System Study Sub-Committee:	11
23. LGBR Sub-Committee	12
24. Telecommunication, Scada & Telemetry (TeST) Sub-Committee	12
CHAPTER-IV: PROCEDURE FOR CONDUCTING SUB-COMMITTEE MEETINGS OF NRPC	13
25. Conducting of Sub-Committee Meetings, issue of Notice, Agenda & its Minutes.....	13
CHAPTER-V: Operation of "NRPC-Fund"	14
26. NAME:.....	14
27. PURPOSE:	14
28. CONTRIBUTION:	14
29. OPERATION:.....	14
30. MAINTENANCE OF ACCOUNTS:	15
31. VERIFICATION OF ACCOUNTS:.....	15
CHAPTER-VI: REPORTS	16
32. REPORTS BY NRPC	16
CHAPTER-VII: MISCELLANEOUS	17
33. Saving of inherent Power of the NRPC	17

CHAPTER-I: GENERAL

1. Short title and commencement

- 15.1. Government of India, under the provision of Section 2, Subsection 55 of the Electricity Act 2003 vide resolution F.No. 23/21/2021-R&R dated 3rd December 2021 (copy enclosed) published in the Gazette of India has established the Northern Regional Power Committee herein after referred to as NRPC comprising of states of Delhi, Haryana, Himachal Pradesh, Punjab, Rajasthan, Uttaranchal and Uttar Pradesh and the Union Territories of Chandigarh, Jammu & Kashmir and Ladakh.
- 15.2. As per the clause-9 of the aforesaid resolution dated 3rd December 2021, the NRPC hereby makes the following rules which may be called "**The Northern Regional Power Committee (Conduct of Business) Rules, 2022**".
- 15.3. These rules shall come into force from the date of its approval by the NRPC and shall remain in force unless otherwise modified.

2. Definitions

2.1. In these Rules unless the context otherwise requires:

- (a) 'Act' means the Electricity Act, 2003.
- (b) 'Agenda' means the list of business proposed to be transacted at a meeting of the Committee or Sub-Committee.
- (c) 'Authority' means Central Electricity Authority.
- (d) 'Commercial Sub-Committee (CC)' means a sub-committee constituted by the Committee to consider commercial related issues.
- (e) 'Commission' means Central Electricity Regulatory Commission.
- (f) 'Committee' means the Northern Regional Power Committee constituted by the Central Government under Sub-Section (55) of Section 2 of the Electricity Act, 2003.
- (g) 'Government Resolution' means resolution No. 23/21/2021-R&R dated 3rd December 2021, notified by Government of India and amendment(s) thereon.
- (h) 'IEGC' means the Indian Electricity Grid Code, specified by Central Electricity Regulatory Commission.
- (i) LGBR Sub-Committee means a sub-committee constituted by the committee to -
- i. finalise annual outage plan of generating stations
 - ii. prepare anticipated power supply position for next fiscal and
 - iii. for periodic review of (i) & (ii).

- (j) 'Meeting' means a meeting of the committee / sub-committee convened by the Member Secretary, NRPC Secretariat or any member authorized to convene a meeting in the absence of the head of Secretariat.
 - (k) 'Member' means the member of the as per Resolution of the Government of India on establishment of NRPC dated 3rd December 2021 and as amended from time to time.
 - (l) 'NLDC' means National Load Despatch Centre.
 - (m) 'NRLDC' means Northern Regional Load Despatch Centre
 - (n) 'Operational Coordination Sub-Committee (OCC)' means a sub-committee constituted by the NRPC to consider all issues related to operation of the regional grid.
 - (o) 'Protection Sub-Committee (PC)' means a sub-committee constituted by the Committee to consider all power system protection related issues.
 - (p) 'Rule' means Northern Regional Power Committee (Conduct of Business) Rules 2022.
 - (q) 'SLDC' means State Load Despatch Centre.
 - (r) 'Sub-Committee' means the Sub-Committees constituted by NRPC to guide and assist it in conducting the functions assigned to it.
 - (s) 'System study Sub-Committee' means a sub-committee constituted by NRPC to carry out the Power System studies.
 - (t) 'Technical Coordination Sub-Committee (TCC)' means a sub-committee constituted by the NRPC to assist the NRPC on all technical, commercial and other matters.
 - (u) 'TeST Sub-Committee' means a sub-committee constituted by the NRPC to assist the NRPC on all Telecommunication, SCADA & Telemetry related issues.
 - (v) 'Year' means Financial Year.
- 2.2. The words and expressions used and not defined in these Rules shall be construed as having the same meaning as defined in the Act.
- 2.3. Reference to any Acts, Rules and Regulations shall include amendments or consolidation or re-enactment thereof.
- 3. Functions of NRPC**
- 3.1. The committee shall carry out following functions:
- 3.1.1 To undertake Regional Level operation analysis for improving grid performance.
 - 3.1.2 To facilitate inter-state/inter-regional transfer of power.
 - 3.1.3 To facilitate all functions of planning relating to inter-state/ intra-state transmission system with CTU/STU.

- 3.1.4 To provide views on the inter-state transmission system planned by CTU within 45 days of receipt of the proposal by the concerned NRPC. The views of NRPC will be considered by National Committee on Transmission for sending their recommendation to Ministry of Power for approval of new inter-state transmission system.
- 3.1.5 To coordinate planning & maintenance of generating machines of various generating companies of the region including those of inter-state generating companies supplying electricity to the Region on an annual basis and also to undertake review of maintenance programme on a monthly basis.
- 3.1.6 To undertake planning of outage of transmission system on a monthly basis.
- 3.1.7 To undertake operational planning studies including protection studies for stable operation of the grid.
- 3.1.8 To undertake planning for maintaining proper voltages through review of reactive compensation requirement through system study committee and monitoring of installed capacitors.
- 3.1.9 To evolve consensus on all issues relating to economy and efficiency in the operation of power system in the region.

4. Secretariat of NRPC

- 4.1. Secretariat, NRPC shall perform the following duties namely;
 - 4.1.1. Keep custody of records of proceedings of the Committee, sub-committees, task force and working groups of the NRPC.
 - 4.1.2. Prepare agenda for the Committee and Sub-Committee meetings.
 - 4.1.3. Prepare minutes of Committee and Sub-Committee meetings.
 - 4.1.4. Take follow-up action on the decision taken in the Committee & Sub-Committee meetings.
 - 4.1.5. Maintain archive of data and information pertaining to commercial accounts, operating parameters, protection system and communication system of the regional power system.
 - 4.1.6. Collect from constituent members or other offices, companies, firms or any other party as may be considered useful for the efficient discharge of functions of NRPC under the Resolution and place the information before the Committee and its sub-committees.
 - 4.1.7. Certification of open cycle generation carried out by central sector gas-based stations.
- 4.2. The duties and responsibility envisaged under Indian Electricity Grid Code (IEGC) Regulations made by CERC, NRPC Resolution and NRPC from time to time shall be carried out by the NRPC Secretariat.

4.3. In line with the provisions of IEGC the details of functions are given below:

- 4.3.1. The Member Secretary, NRPC shall investigate and endeavour to resolve the grievance regarding unfair practices, delays, discrimination, lack of information, supply of wrong information or any other matter related to open access in inter-state transmission system.
- 4.3.2. The Member Secretary, NRPC shall, for the purpose of payment of transmission charges/ capacity charges and incentives, certify:
 - (i) Availability of Regional AC system and outage hours of HVDC transmission system.
 - (ii) Availability and Plant Load Factor for ISGS.
- 4.3.3. Member Secretary, NRPC, shall verify and take up the matter regarding persistent non-compliance of IEGC with the defaulting agency for expeditious termination of the non-compliance. NRPC Secretariat shall maintain appropriate records of such violation.
- 4.3.4. NRPC Secretariat is to carry out periodic inspection of Under Frequency Relays installed by the constituents and investigate cases of non-operation of such relays at set frequency in actual system operation.
- 4.3.5. The NRPC Secretariat shall review on monthly basis the Annual outage plan prepared by CEA in consultation with all parties concerned.
- 4.3.6. The NRPC Secretariat shall be responsible for analyzing the outage schedule given by all Regional Constituents, preparing a draft annual outage schedule and finalization of the annual outage plan for the following financial year by 31st December of each year.
- 4.3.7. Any other responsibilities assigned by CERC/ CEA Regulations/ NRPC Resolution shall also be carried out by secretariat.

4.4. Human Resources

- 4.4.1. Officers and staff to man the Secretariat shall be provided by CEA. As and when CEA is unable to provide requisite number of Group "C" or "D" officials, the vacant posts shall be got outsourced through competitive bidding route for a period up to two (2) years or until CEA provides the manpower. Their remuneration shall be within the ambit of "Minimum Wages Act, 1948".
- 4.4.2. Member Secretary is also empowered to appoint personnel in case of shortage of staff at other levels on secondment basis.
- 4.4.3. For discharging the functions other than those assigned by the Resolution, NRPC may hire adequate number of persons, experts or consultants.
- 4.4.4. For the purpose of handling NRPC fund, Member Secretary shall appoint one nodal officer from the constituents of NRPC on secondment basis. In the absence of nodal officer from NRPC constituent, MS, NRPC can temporarily appoint one officer of NRPC Secretariat to handle NRPC fund.

4.5. Contribution towards NRPC Fund

- 4.5.1. An NRPC fund shall be maintained from contributions from members of NRPC for a particular year. A nodal officer shall be appointed as per clause 4.4.4. for the purpose of handling this fund.
- 4.5.2. The constituents shall deposit their contributions towards NRPC fund, based on the figures approved in the first NRPC meeting held in that financial year. The fund shall be utilized for reimbursement of budgetary allocation from Government of India, expenditure for conducting various meetings/training programs, expenditure for maintenance of NRPC Secretariat, hiring of additional staff/consultants, or any other expenditure as approved by the NRPC forum. Any surplus/ deficits of a particular year shall be adjusted in the subsequent financial year.
- 4.5.3. All the member constituents of NRPC except CEA, NLDC, NRLDC and CTU¹ shall equally share the expenditure of NRPC Secretariat.
- 4.5.4. Chairperson, NRPC shall appoint a committee of officers belonging to NRPC constituents, as well as external auditors to audit the NRPC fund during each year and reports for the same shall be placed before NRPC forum.

5. Furnishing of data / information to Secretariat of RPC

- 5.1. NRLDC and the constituents of the region shall make available all data / information required by the Secretariat to discharge its functions or to carry out any other responsibility / function assigned to it by the Authority / Commission / Committee. It shall also be responsibility of the constituents to ensure that any data though not specifically asked for by the Secretariat, but which may be required for the specific responsibility / function assigned to the Secretariat is also made available to the secretariat.
- 5.2. NRLDC shall provide to Member Secretary, NRPC a computer terminal to have a view of all the parameters in real time frame of Northern Regional grid system.

6. Chairperson of NRPC

The Chairperson of NRPC would be appointed as per 'Government Resolution'.

7. Website of NRPC

The NRPC shall have its own website which shall be maintained by NRPC Secretariat.

¹ To be finalized after consultation with CEA / MoP.

CHAPTER-II: PROCEDURE FOR CONDUCTING NRPC MEETINGS

8. Place and date of NRPC Meeting

- 8.1. The place and date of the meeting will be decided by Member Secretary, NRPC in consultation with Chairperson, NRPC. The meeting will generally be held within the region.
- 8.2. Meeting will be hosted by the member organizations as per the roster prepared by Member Secretary, NRPC in consultation with the members of the NRPC.
- 8.3. In case the situations are not conducive for physical meetings, the meetings will be conducted through Video Conferencing.

9. Periodicity of meetings

- 9.1. The Committee members shall **meet at least once in a month**, as per para-11 of "Resolution". However, the Committee may meet to discuss any issue as and when required in consultation with Chairperson, RPC.

10. Notice for the Committee meetings and Agenda

- 10.1. Notice for the Committee meetings shall be issued by Member Secretary, NRPC at least 3 weeks in advance in consultation with Chairperson, NRPC. In case of exigency or meeting through video conferencing, meetings required to be conducted to carry out urgent business, notice of one week is to be given.
- 10.2. The agenda points for the meeting shall be sent to the Member Secretary by the members at least 2 weeks in advance of the meeting. The member Secretary, NRPC shall finalize the agenda and circulate the same to all its members at least 1 week in advance and also be posted on the website.
- 10.3. Normally, NRPC shall meet to discuss the agenda related to transmission planning submitted by CTU on monthly basis. Discussions other than those related to transmission planning shall generally be put up after discussions in Technical Co-ordination Sub-Committee (TCC) which will be held as and when required.
- 10.4. Member Secretary, NRPC may also put any agenda involving urgent matters / policy issue directly before NRPC in consultation with Chairperson, NRPC.
- 10.5. Member Secretary, NRPC may convene a meeting on short notice on any urgent matter in consultation with Chairperson of the committee.
- 10.6. On receipt of specific request from a member too, Member Secretary, NRPC may convene a meeting in accordance with clause 10.5 above.

11. Effect of Non-receipt of Notice of Meeting by a Member

- 11.1. The non-receipt of notice by any member of NRPC or sub-committee shall not invalidate the proceeding of the meeting or any decision taken in the meeting.

12. Cancellation / re-scheduling of Meeting

- 12.1. If a meeting is required to be cancelled or rescheduled the same shall be intimated to the members at the earliest by e-mail and also posted in NRPC website immediately.

13. Quorum of NRPC Meeting

- 13.1. The Quorum of the meeting shall be at least 50% of its members.
- 13.2. All decision in the NRPC shall be taken by consensus.
- 13.3. The decisions / ratifications made by the Committee during the meeting with the above quorum shall be treated as final.
- 13.4. The decision of the NRPC arrived at for Operation of the Regional Grid and Scheduling and dispatch of electricity shall be followed by Northern Regional Load Despatch Centre (NRLDC) subject to the directions or regulations of the Commission.
- 13.5. Only members of NRPC and not more than two representatives of his organization shall participate in the Committee meeting. Other persons may attend the meeting by invitation / permission only. However, voting rights will be available only to the Members of NRPC.

14. Presiding Authority

- 14.1. The Chairperson, NRPC shall preside over the meeting of NRPC and conduct business. The Member Secretary, NRPC shall assist the Chairperson of NRPC in conducting the meeting. If the Chairperson is unable to be present at the meeting for any reason, the senior member of NRPC from the State utilities present in the meeting shall be requested by Member Secretary to preside over the meeting.
- 14.2. In the absence of Member Secretary, NRPC the next senior most officer of the NRPC Secretariat shall convene the meeting.

15. Recording of the minutes

- 15.1 The minutes of the meeting shall be finalized and circulated to all its members by the Members Secretary, NRPC within 15 working days from the date of the Committee Meeting. The minutes shall also be posted on the website of NRPC.
- 15.2 The discussions during the meeting shall be Audio recorded and the record shall be kept at the secretariat of NRPC till the confirmation of the minutes. The member organization hosting the meeting shall extend all facilities for audio recording of the proceedings of the meeting.

16. Confirmation of the Minutes

- 16.1 Minutes of the NRPC meeting shall be placed in the next meeting for confirmation. However, in case of urgency the minutes may be confirmed by circulation.

CHAPTER-III: SUB-COMMITTEES OF NRPC

17. Constitution of Sub-Committees of NRPC

- 17.1. Following Sub-Committees will be constituted by NRPC to guide and assist it in conducting the functions assigned to it:
- (a) Technical Co-Ordination Sub-Committee (TCC)
 - (b) Operation Co-Ordination Sub-Committee (OCC)
 - (c) Commercial Sub-Committee (CC)
 - (d) Protection Sub-Committee (PC)
 - (e) System Study Sub-Committee
 - (f) LGBR Sub-Committee
 - (g) Telecommunication, SCADA & Telemetry (TeST) Sub-Committee
- 17.2. NRPC or Member Secretary, NRPC or any Sub-Committee may constitute task force, core group for specific purpose from among the members and external experts to advice on any specific issue.

18. Technical Co-Ordination Sub-Committee (TCC)

18.1. Functions:

- 18.1.1. Technical Co-ordination Sub-Committee, shall consider all issues referred by the Operation Co-Ordination Sub-Committee, Commercial Sub-Committee, Protection Sub-Committee, System Study Sub-Committee, LGBR Sub-Committee and TeST Sub-Committee concerning operation of regional grid, commercial aspects, inter-state/ inter-regional transfer of power, grid stability etc. leading to economy and efficiency in the operation of power system in the region.
- 18.1.2. TCC shall implement the decisions of the NRPC and also provide guidance and assist NRPC in discharge of its functions and formulation of policy matters on regional grid operation, grid security, and commercial matters.

18.2. Composition of Technical Co-ordination Sub-Committee:

- 18.2.1. TCC shall be represented by the Technical Members of the NRPC constituents dealing with the Generation / transmission / Distribution and representative from Central Electricity Authority. The representation shall be at the level of Technical Heads in State Utilities, Executive Directors / Chief General Managers or equivalent in PSUs / Technical Heads of Distribution company / Traders / IPPs and Chief Engineer in CEA.
- 18.2.2. Chairperson, NRPC from their concerned State shall appoint the Chairperson of TCC. Chairperson, TCC shall be rotated every year from among the States in the same order as Chairperson of NRPC.

18.3. Meetings:

- 18.3.1. TCC shall meet as and when required, and put up its recommendations to the NRPC.
- 18.3.2. TCC shall meet separately also as and when needed to address urgent issues or specific issues, if any, concerning the operation of regional grid, security of the grid, commercial matters and other issues.
- 18.3.3. The Chairperson of the TCC shall preside over the meeting. In case Chairperson is unable to be present, Member Secretary, NRPC shall request a person among TCC members to preside over the meeting.
- 18.3.4. Member Secretary, NRPC shall assist Chairperson, TCC in conducting TCC Meeting.

19. Operation Co-Ordination Sub-Committee (OCC)

19.1. Functions:

Operation Co-ordination Committee(OCC) shall discuss all issues related to operation of the regional grid viz. estimating availability of power and energy from each power station and demand of each State for the current and next month; drawing up coordinated maintenance schedule for generating units and major transmission lines; reviewing operational discipline and its norms to be observed by constituents; reviewing the operation of Automatic Under-Frequency Relays; discussing system occurrences, if any, during the previous month and reviewing the status of implementation of the recommendations of the Inquiry Committees; monitoring / reviewing violation of provisions of IEGC related to grid operation; discussing / reviewing measures for ensuring economic grid operation including optimisation of energy transfer with other regions; examining possibility of optimising intra-regional energy exchanges; discussing optimisation of energy transfer with other regions; and any other matter referred by the TCC/NRPC.

19.2. Composition of Operation Co-Ordination Committee:

- 19.2.1. OCC shall be represented by the representatives of the constituent members of NRPC. The nominated representative shall be at the level of Chief Engineers in State Utilities/ General Manager in CPSEs or equivalent level conversant with operational issues.
- 19.2.2. Member Secretary, NRPC shall be Chairperson of the OCC and preside over the meetings. Superintending Engineer of secretariat shall be convener of the OCC.

19.3. Meetings:

The meeting will be held every month generally before 20th day of that month.

20. Commercial Sub-Committee (CC):

20.1. Functions:

Commercial Sub-Committee(CC) shall discuss all commercial related issues viz. energy accounting, schemes required for inclusion in the Bulk Power Supply Agreements, requirement of power from the new projects, installation of special energy meters and its cost sharing, etc., metering aspects, reviewing of the payments towards Regulatory accounts, issues related to transmission charges, commercial issues in inter-state and inter-regional exchange of power, issues concerning settlement of payments among constituents, if any, etc. and any other matter referred by the TCC/NRPC. Commercial Committee shall audit the Regional Energy Accounts and ~~U~~DSM, Reactive Energy and other Pool Accounts.

20.2. Composition of Commercial Sub-Committee (CC):

- 20.2.1. Commercial sub-committee shall be represented by the representatives of the constituent members of RPC.
- 20.2.2. The nominated representative shall be at the level of Chief Engineers in State Utilities/ General Manager in CPSEs or equivalent level conversant with commercial issues.
- 20.2.3. Member Secretary, NRPC shall be Chairperson of the CC and preside over the meetings. Superintending Engineer of secretariat shall be convener of the CC.

20.3. Meetings:

The meeting will be held quarterly or as and when required to address the issues of urgent nature.

21. Protection Sub-Committee (PC)

21.1. Functions:

Protection Sub-Committee (PC) shall discuss all power system protection related issues viz. analysis of system disturbances in the region, review of protective relaying schemes, relay co-ordination islanding schemes, automatic under frequency load shedding schemes, review of the implementation of recommendations made by the Inquiry Committee of the grid disturbance in the region concerning the above matters, etc. and any other matter referred by the TCC/NRPC.

21.2. Composition of Protection Sub-Committee:

- 21.2.1. Protection Sub-Committee shall be represented by constituent members of NRPC.
- 21.2.2. The nominated representative shall be at the level of Chief Engineers in State Utilities/ General Manager in CPSEs or equivalent level and concerns with power system protection / testing in the region.

21.2.3. Member Secretary, NRPC shall be Chairperson of the PC and preside over the meetings. Superintending Engineer of secretariat shall be convener of the PC.

21.3. Meetings:

The meeting will be held quarterly or as and when required to address the issues of urgent nature.

22. System Study Sub-Committee:

22.1. Functions:

System Study Sub-Committee shall carry out following system studies:

- i. Studies for assessment of the quantum of capacitors required in the region taking into account the expected additions in the generation and transmission systems and the low voltage conditions in the system.
- ii. Studies for review of reactive compensation requirement.
- iii. Operational load flow studies, as and when required, for peak conditions off peak conditions etc.
- iv. Short-circuit studies as and when required.
- v. Transient stability studies for major events like grid disturbances or other issues periodically or as and when requested by the constituent(s).
- vi. System studies related to transmission constraints.
- vii. Studies specific to high / low voltage conditions with specific reference to reactors or capacitors operation / requirement.
- viii. Identification of requirement of reactors as and when required
- ix. Co-relation of protection related issues from Studies as and when required.
- x. Any other technical study referred by the NRPC/TCC.

22.2. Composition Of System Study Sub-Committee:

22.2.1. System Study Sub-Committee shall be represented by constituent members of NRPC.

22.2.2. The nominated representative shall be at the level of Executive Engineers in State Utilities / Deputy General Manager in CPSEs or equivalent level and conversant with issues related to system studies in the region.

22.2.3. Member Secretary, NRPC shall be Chairperson of the SSC and preside over the meetings Superintending Engineer of secretariat shall be convener of this Sub-Committee.

22.3. Meetings:

As and when required, as decided by the convener.

23. LGBR Sub-Committee

23.1. Functions:

LGBR Sub-Committee shall carry out the following functions in accordance with the provisions of Indian Electricity Grid Code:

- i. Finalise annual outage plan of generating stations.
- ii. Prepare anticipated power supply position for the next fiscal year.
- iii. Periodic review of annual outage plan of generating stations and anticipated power supply position.

23.2. Composition of LGBR sub-committee:

- 23.2.1. LGBR Sub-Committee shall be represented by constituent members of NRPC.
- 23.2.2. The nominated representative shall be at the level of Chief Engineers in State Utilities/ General Manager in CPSEs or equivalent level and conversant with issues related to system studies in the region.
- 23.2.3. Member Secretary, NRPC shall be the Chairperson of the LGBR Sub-Committee and preside over the meetings. Superintending Engineer of secretariat shall be convener of the LGBR Sub-Committee.

23.3. Meetings:

Meetings will be held as and when required to be decided by the convener.

24. Telecommunication, Scada & Telemetry (TeST) Sub-Committee

24.1. Functions:

TeST Sub-Committee shall meet to deliberate upon Telecommunication, SCADA and Telemetry schemes of NR and issues thereon in accordance with the provisions of Indian Electricity Grid Code.

24.2. Composition of TeST Sub-Committee:

- 24.2.1. TeST Sub-Committee shall be represented by constituent members of NRPC.
- 24.2.2. The nominated representative shall be at the level of Chief Engineers of State Utilities/General Manager of CPSEs or equivalent level and conversant with Telecommunication, SCADA & Telemetry in the region.
- 24.2.3. Member Secretary, NRPC shall be Chairperson of the TeST Sub-Committee and preside over the meetings. Superintending Engineer of secretariat shall be convener of the TeST Sub-Committee.

24.3. Meetings:

The meeting will be held as and when required to be decided by the convenor.

CHAPTER-IV: PROCEDURE FOR CONDUCTING SUB-COMMITTEE MEETINGS OF NRPC

- 25. Conducting of Sub-Committee Meetings, issue of Notice, Agenda & its Minutes**
- 25.1. The notice for the above sub-committee meeting shall be issued at least 15 days before the date of meeting and agenda points one week before the meeting by the NRPC Secretariat. However, when the meeting is to be held through video conferencing, this period may be reduced to 10 days and 3 days respectively. The minutes of the meeting shall be finalized by Member Secretary and issued by NRPC Secretariat within 15 working days of the meeting.
 - 25.2. The decision of the Committee arrived at for Operation of the Regional Grid and other above functions shall be implemented by the Constituents. In case the Sub-committee recommends the matter to the TCC / NRPC, for further deliberation or decision, the same shall be referred by NRPC secretariat to TCC/ NRPC.
 - 25.3. The meetings will be conducted at the place and venue preferably located in the Region to be decided by Member Secretary, NRPC. In case the situations are not conducive for physical meetings, the meetings will be conducted through Video Conferencing.
 - 25.4. Meeting may be hosted by the member organizations as decided by Member Secretary, NRPC in consultation with the members of the sub-committee. All the arrangements required for conducting the meeting shall be made by the host member organisation.

CHAPTER-V: Operation of “NRPC-Fund”

26. NAME:

The name of the fund shall be “NRPC-Fund”. The fund is accumulated amount of contribution fee collected from constituent members of NRPC.

27. PURPOSE:

- i) The fund shall be utilized for meeting the reimbursement of the actual expenditure incurred (from budget provided by Central Electricity Authority) by the office of the NRPC Secretariat to the consolidated fund of Govt. of India/CEA through DDO, NRPC;
- ii) The fund shall be utilized for meeting the expenditure in the conduct of NRPC meetings, workshops, seminars etc.;
- iii) The fund shall be utilized to meet any other office expenditure considered necessary by Member Secretary, for efficient working of NRPC Sectt., with the approval of Chairman, NRPC;
- iv) The fund shall be used for meeting expenditure of NRPC Secretariat as per SOP issued by CEA.

28. CONTRIBUTION:

All the Members and rotational members except the following shall contribute equally on annual basis, which shall be decided every year in NRPC meeting based on review of actual expenditure of the previous year and estimated expenditure in current/next year:

- i) NLDC/NRLDC/SLDCs
- ii) Member (Go&D), CEA
- iii) MS, NRPC
- iv) Exempted by MoP

29. OPERATION:

The fund will be maintained with any Nationalized bank in the name of Northern Regional Power Committee (NRPC) and operate jointly by the nodal officer from the Constituent member along with two more signatory to be nominated with the approval of Member Secretary, NRPC on behalf of NRPC Members. The operation of account will be done under the administrative control / supervision of Member Secretary. All transaction from this account shall be through Cheque/NEFT/RTGS only.

30. MAINTENANCE OF ACCOUNTS:

The account of all the expenditure/receipts shall be maintained by the nodal officer (as per para 29 above) on behalf of NRPC Member. Such officer shall also maintain a cash book etc., where in details of all receipts and expenditure shall be recorded.

31. VERIFICATION OF ACCOUNTS:

The “NRPC – Fund” account for each financial year shall be audited as per SOP issued by CEA.

CHAPTER-VI: REPORTS

32. REPORTS BY NRPC

The following reports shall be prepared and furnished by NRPC secretariat:

S. No.	Name of the report	Periodicity
1	Monthly Progress Report Northern Regional Grid / Operational Data	Monthly
2	Annual Report of NRPC	Annual

CHAPTER-VII: MISCELLANEOUS

33. Saving of inherent Power of the NRPC

- 33.1 Nothing in these Rules shall bar the NRPC from adopting in conformity with the Act a procedure that is at variance with provisions of these Rules, if the NRPC in view of the special circumstances of a matter or class of matters deem it necessary or expedient to deal with such a matter or class of matters.
- 33.2 Nothing in these Rules shall expressly or by implication, bar the NRPC to deal with any mater or exercise any power under the Act for which no Rules have been framed and NRPC may deal with such matters, and functions in a manner it thinks fit.
