EASTERN REGIONAL POWER COMMITTEE

MINUTES OF 7TH MEETING OF STANDING COMMITTEE ON TRANSMISSION PLANNING FOR STATE SECTORS HELD ON 01.07.2019 (MONDAY) AT 11:00 HOURS AT ERPC, KOLKATA

List of participants is enclosed at **Annexure-A**.

1. Confirmation of minutes of 6th SSCM of ERPC held on 09.07.2018.

The minutes were circulated vide letter dated 12.07.2018 to all the constituents and also uploaded in ERPC website.

No comments have been received till date.

Members may confirm the minutes.

Deliberation in the meeting

Members confirmed the minutes.

New Transmission system proposals

1. Augmentation of transformation capacity at Muzaffarpur (POWERGRID) S/s – (Agenda by BSPTCL)

BSPTCL has informed that the load in Muzaffarpur area is growing very fast.

The load demand in Muzaffarpur & adjoining areas is largely fed by Muzaffarpur (PG) with transformation capacity of 1x500+2x315 MVA. During peak hours following loading is being observed:

Present scenario:

Sl. NO.	Lines	Maximum Load (MW)
1	Muzaffarpur (PG)-MTPS (D/C)	420
2	Muzaffarpur (PG)-Hazipur (D/C)	296
3	Muazaffarpur (PG)-Dhalkebar (Nepal) (400kV Transmission Line charged at 220kV)	150
	Total	**866**

Future scenario:

In future Amnor (Chappra) GSS(220/132/33 KV) will be connected to Muzaffarpur (PG) through 220 KV D/C lines as approved in 18th Standing Committee Meeting of CEA under 13th Plan. Further Amnor has been proposed to be connected to Digha (new) GSS (220/132/33 KV) at 220 KV level. BSPTCL has also proposed one 220/132/33 KV GSS at Garaul (Dist. Vaishali) under State Plan, approved in the Bihar cabinet, is getting source at 220 KV level with

D/C from Muzaffarpur(PG). Both proposed GSSs (Digha and Garaul) are likely to be commissioned in March-2020. In future the loading pattern on 220kV line will be as follows:-

Sl. NO.	Lines	Maximum Load (MW)
1	Muzaffarpur (PG)-MTPS (D/C)	80
2	Muzaffarpur (PG)-Hazipur (D/C)	250
3	Muzaffarpur (PG)-Amnor (BGCL) (D/C)	300
4	Muzaffarpur (PG)-Goraul (Proposed) (D/C)	200
	Total	**830**

In present scenario itself, Muzaffarpur (PG) is not able to fulfill N-1 criteria and in case of outage of any power transformer, the situation will be critical.

In view of above facts, it is proposed that, either replacement of 2x315 MVA transformers by 2x500 MVA or addition of one 500 MVA transformer of Muzaffarpur (PG) may be considered under N-1 scheme to ensure uninterrupted power to Muzaffarpur and adjoining areas in the event of outage of any transformer. Moreover, if the generation at Kanti (MTPS) reduces, the power supply position at Muzaffarpur 220kV level further aggravates under N- 1 of ICTs.

A meeting was held on 26.03.2019 at CEA, wherein Chief Engineer (PSPA-II) suggested that additional one no. of 500MVA ICT may be installed to meet the load under N-1 criteria. He informed that Muazaffarpur (PG)-Dhalkebar (Nepal) 400kV D/c line is being operated at 220kV and the power flow is around 240MW.

With regard to availability of space at Muzaffarpur S/s, CTU informed that space is available for new 400/220kV, 500MVA ICT. The 400kV ICT bay could be implemented as AIS, however, 220kV ICT bay needs to be implemented as GIS along with 220kV cable from ICT to GIS bay.

After deliberations, participants agreed for installation of new 400/220kV, 500MVA ICT at Muazaffarpur (PG) under ISTS.

Members may discuss.

Deliberation in the meeting

BSPTCL updated that maximum loading in 220kV Muzaffarpur (PG)-MTPS (D/C) would be 420 MW and the updated future loading pattern in 220kV lines at Muazaffarpur (PG)will be as follows:

Sl. NO.	Lines	Maximum Load (MW)
1	Muzaffarpur (PG)-MTPS (D/C)	420
2	Muzaffarpur (PG)-Hazipur (D/C)	250
3	Muzaffarpur (PG)-Amnor (BGCL) (D/C)	300
4	Muzaffarpur (PG)-Goraul (Proposed) (D/C)	200
	Total	**1170**

SSCM agreed for installation of new 400/220kV, 500MVA ICT at Muazaffarpur (PG) under ISTS to meet N-1 criterion at present and future loading pattern at Muazaffarpur (PG).

2. Additional 400kV connectivity at 400/220/132kV Saharsa (new) S/s being implemented under ERSS-XXI through TBCB – (Agenda by BSPTCL)

BSPTCL has informed that the present connectivity of upcoming 400/220/132 kV Saharsa (New) GSS at 400 kV level is LILO of Patna (PG) - Kishanganj (PG) 400 kV D/C line and this work is being done by POWERGRID under TBCB route.

They have further stated that the Saharsa (New) GSS has to be fed from two reliable sources, whereas one of the feed i.e. Patna (PG) - Saharsa (New) 400 kV D/c line is having river crossing and tower failure may occur during floods. Therefore, to improve the reliability at 400 kV level, it is proposed to provide an additional source by making LILO of Darbhanga (DMTCL) - Kishanganj (PG) 400 kV D/C line at 400 kV Saharsa (New) S/S.

A meeting was held on 26.03.2018 at CEA, wherein Chief Engineer (PSP&A- II), CEA, and representative of CTU stated that Kishanganj (PG) - Saharsa(New) 400 kV D/c line with Quad moose conductor can meet the load of Saharsa (New) S/S , in case of tower failure of Patna (PG) – Saharsa (New) 400kV D/c line. Under worst case scenario, i.e. with only one circuit of Kisanganj (PG) - Saharsa(New) 400 kV line (with quad moose), the load of Saharsa (New) S/S would be met in the present condition. Based on operational experience, the alternatives may be discussed.

It was opined that N-1 criteria can only be considered while planning, whereas tower failure in river crossing cannot be considered as a general case in the studies. However, representative of BSPTCL insisted that the 2nd 400kV LILO line i.e. LILO of Kishanganj – Darbhanga may be considered at Saharsa to improved power supply reliability, as the Kishanganj – Patna line during the last two monsoon seasons has suffered prolonged outage due to tower collapse at various locations during flood.

Members may discuss.

Deliberation in the meeting

BSPTCL explained that LILO of 400kV Kishanganj – Darbhanga D/c line at 400kV Saharsa would improve the reliability. BSPTCL added that line length of LILO portion would be 8 to 10 km only.

On query, BSPTCL informed that maximum loading at 400kV Saharsa would be around 700 MW.

SSCM opined that LILO of one circuit of 400kV Kishanganj – Darbhanga D/c line is sufficient to meet the demand at Saharsa. SSCM decided to consider LILO of one 400kV Kishanganj – Darbhanga D/c line at Saharsa instead of both circuits to improve the reliability during any outage of 400kV Kishangaj-Saharsa-Patna D/C line. LILO lines at Saharsa shall be connected to same dia so that 400kV Saharsa S/s can be bypassed during normal operating

conditions.

3. Establishment of Goraul 220/132/33kV S/s and construction of Muzaffarpur (POWERGRID) – Goraul 220kV D/c by BSPTCL as intra state scheme – (Agenda by BSPTCL)

BSPTCL has informed that 220/132/33kV GSS of capacity 2x160+3x50 MVA has been decided to be constructed near Goraul block in Vaishali district. At present, load of Vaishali district is about 300 MW and many more PSSs under different schemes of Central government and under state plan are proposed/under construction. Due to new PSSs, load of Vaishali district is going to increase very rapidly. The upcoming/under construction PSSs are very far away from the existing GSS. In some cases existing PSSs are also far away from existing GSS. Moreover, existing GSS is already saturated and further there is no scope of augmentation due to space constraint. Under 13th plan, load flow study was done considering the load at higher side. The above-

proposed GSS is required, to distribute the load uniformly in the existing-GSS also. In the present scenario, the connectivity of PSS with existing GSS are as follows:

Existing Scenario					
Sl. No.	**Name of GSS**	**Capacity of GSS**	**Name of 33/11 kV PSS**	**Capacity of PSS (MVA)**	**Distance between existing GSS to PSS**
1	Jandaha	90 MVA	Goraul	15	45 Kms.
			Jandaha	15	05 Kms.
			Mahua	20	32 Kms.
			Patepur	15	30 Kms.
			Chehrakalan	15	45 Kms.
			Mahnar	20	15 Kms.
			Patori (Samaastipur)	15	20 Kms.
			Total	**115**	
2	Vaishali	90 MVA	Vaishali	20	0 Kms.
			Lalganj	30	15 Kms.
			Dhanpura	20	26 Kms.
			Pateri Belsar	15	12 Kms.
			Bakhara	10	26 Kms.
			Paroo	20	19 Kms.
			Total	**115**	

Proposed Scenario					
Sl. No.	**Name of GSS**	**Capacity of GSS**	**Name of 33/11 kV PSS**	**Capacity of PSS (MVA)**	**Distance between existing GSS to PSS**
1	Goraul	150 MVA	Chehrakalan	15	10 Kms.
			Goraul	15	03 Kms.
			Ismailpur (Propsed)	10	05 Kms.
			Dabhaich (Propsed)	10	20 Kms.
			Mahudahchatur (Proposed)	10	15 Kms.
			Mahua	20	15 Kms.
			Total	**80**	

The above PSSs are distributed to existing + proposed GSSs as per their geographical position so that losses can be minimized. In addition to above, many more PSS are proposed, which will be connected with proposed / existing GSSs.

Connectivity:-

The connectivity of above Goraul, 220/132/33kV, 2x160MVA + 3x50MVA GSS at 220 kV and 132kV levels will be from:

(i) Muzaffarpur (PG) - Goraul 220 kV D/c (Zebra conductor)
(ii) Proposed GSS Tajpur to proposed GSS Goraul 220kV D/c (Zebra conductor).
(iii) LILO of D/c Vaishali - Muzaffarpur 132 kV tr. line at proposed GSS Goraul.
(iv) 132 KV D/C Mahanar GSS - Goraul proposed GSS

The proposed GSS is already approved in BSPTCL Board meeting & also in Bihar cabinet under state plan. The above would be implemented as intra-state scheme by BSPTCL

A meeting was held on 26.03.2019, wherein this proposal was discussed and agreed. With regard to availability of space at Muzaffarpur S/s, CTU informed that space is available for 2 no. 220kV GIS bays at Muzaffarpur for termination of Muzaffarpur-Goraul 220kV D/c line of BSPTCL.

Members may discuss.

Deliberation in the meeting

BSPTCL explained the proposal and informed that 220kV Goraul S/s would also be connected to 220kV Tajpur.

SSCM agreed to the BSPTCL proposal.

4. New 220kV and 132kV infrastructure in Bihar under intra-state project. (Agenda by BSPTCL)

BSPTCL has informed that, under 13th plan, system studies were done and three nos. of 400 KV & three nos. of 220 KV sub-station were identified to cater to the enhanced load demand of BSPTCL. At present under different schemes of Central Government and State plan, near about 350 numbers of PSSs are under construction. Moreover it has also been decided to segregate the agriculture feeder. Due to that, the load demand on existing GSSs of 132/33kV level is increasing very rapidly. In this regard, BSPTCL is implementing two new 132kV GSSs as mentioned below:

Sl. no	Substation Name	Voltage levels & transformation capacity	132kV lines (S/c or D/c or S/c on D/c; conductor type; length in km)	Expected 33kV load demand (in MW)
1	**Raghopur GSS**	132/33 KV (3x50 MVA)	1. 220 kV Laukhi – Raghopur D/C, ACSR Zebra(charged on 132 kV): 48 km (tentative) 2. 220 kV Supaul – Raghopur D/C, ACSR Zebra(charged on 132 kV): 52 km (tentative)	90
2	**Kerpa GSS**	132/33 KV (3x50 MVA)	1. 132 kV Dehri – Kerpa S/C, ACSR Panther: 24 km 2. 132 kV Banjari – Kerpa S/C, ACSR Panther: 20 km	25

To cater to the increasing load demand, BSPTCL has proposed following additional new substations. The new GSSs have been developed after considering all the planned and under construction GSSs in system study.

Sl. no	Substation Name	Voltage levels & transformation capacity	220kV lines (S/c or D/c or S/c on D/c; conductor type; length in km)	132kV lines (S/c or D/c or S/c on D/c; conductor type; length in km)	Expected 33kV load demand (in MW)
1	**Digha (New) GIS**	220/132/33 KV (2x200 + 2x80 MVA)	1. 220 kV Chapra(New) -Digha D/C, ACSR Zebra: 80 km	1. 132 kV Digha (New) – Digha (Old) D/C, XLPE Cable: 1 km 2. 132 kV Digha (New) – Board Colony D/C, XLPE Cable: 7 km	170
2	**Tajpur GSS**	220/132/33 KV (2x160 + 3x50 MVA)	1. 220 kV Tajpur – Goraul D/C, ACSR Zebra: 60 km	1. 132 kV Samastipur (Old) – Tajpur S/C, ACSR Panther: 25 km 2. 132 kV Dalsingsarai – Tajpur	50
3	**Thakurganj GSS**	220/132/33 KV (2x160 + 3x50 MVA)	1. 220 kV Kishanganj (New) – Thakurganj D/C,	1. 132 kV Thakurganj – Araria D/C, ACSR Panther: 80 km	40
4	**Asthawan GSS**	220/132/33 KV (2x160 + 3x50 MVA)	1. 220 kV Biharsarif-Asthawan D/C, ACSR Zebra: 20 km	1. 132 kV Asthawan – Rajgir S/C on D/C, ACSR Panther: 35 km 2. 132 kV Asthawan – Nalanda S/C	80
5	**Board Colony GIS**	132/33 KV (2x80 MVA)	-	1. 132 kV B Colony- Digha (New) D/C, XLPE Cable: 7 km	70
6	**Palasi**	132/33 KV (2x50 MVA)	-	1. 132 kV Forbisganj – Palasi S/C, ACSR Panther: 75 km 2. 132 kV Kishanganj – Palasi S/C,	50

A meeting was held on 26.03.2019 and after deliberations in the meeting, following was agreed as intra-state transmission scheme of BSPTCL.

Sl. no	Substation Name	Voltage levels & transformation capacity	220kV lines (S/c or D/c or S/c on D/c; conductor type; length in km)	132kV lines (S/c or D/c or S/c on D/c; conductor type; length in km)
1	**Digha (New) GIS**	220/132/33 KV (2x200 + 2x80 MVA)	1. 220 kV Chapra(New) -Digha D/C, ACSR Zebra: 80 km ***Note:*** *BSPTCL would explore the possibility of 2nd 220kV feed to Digha for reliable power supply.*	1. 132 kV Digha (New) – Digha (Old) D/C, XLPE Cable: 1 km 2. 132 kV Digha (New) – Board Colony D/C, XLPE Cable: 7 km

2	**Tajpur GSS**	220/132/33 KV (2x160 + 3x50 MVA)	1. 220 kV Tajpur – Goraul D/C, ACSR Zebra: 60 km 2. 220 kV Samastipur (New) – Tajpur D/C, ACSR Zebra: 20 km	1. 132 kV LILO of Samastipur (Old) – Dalsingsarai S/C line at Tajpur *[Samastipur (Old) – Tajpur S/C, ACSR Panther: 25 km & Dalsingsarai – Tajpur S/C, ACSR Panther: 27 km]* 2. 132 kV Sahapur Patori – Tajpur D/C, ACSR Panther: 40 km
3	**Thakurganj GSS**	220/132/33 KV (2x160 + 3x50 MVA)	1. 220 kV Kishanganj (New) – Thakurganj D/C, ACSR Zebra: 50 km	1. 132 kV Thakurganj – Araria D/C, ACSR Panther: 80 km
4	**Asthawan GSS**	220/132/33 KV (2x160 + 3x50 MVA)	1. 220 kV Biharsarif- Asthawan D/C, ACSR Zebra: 20 km 2. 220 kV Sheikhpura (BGCL) – Asthawan D/C, ACSR Zebra: 15 km	1. 132 kV Asthawan – Rajgir S/C on D/C, ACSR Panther: 35 km 2. 132 kV Asthawan – Nalanda S/C on D/C, ACSR Panther: 25 km 3. 132 kV Asthawan – Barh S/C on D/C, ACSR Panther: 32 km
5	**Board Colony GIS**	132/33 KV (2x80 MVA)	-	1. 132 kV B Colony- Digha (New) D/C, XLPE Cable: 7 km
6	**Palasi**	132/33 KV (2x50 MVA)	-	1. 132 kV LILO of Forbisganj – Kishanganj S/C line at Palasi *[Forbisganj – Palasi S/C, ACSR*

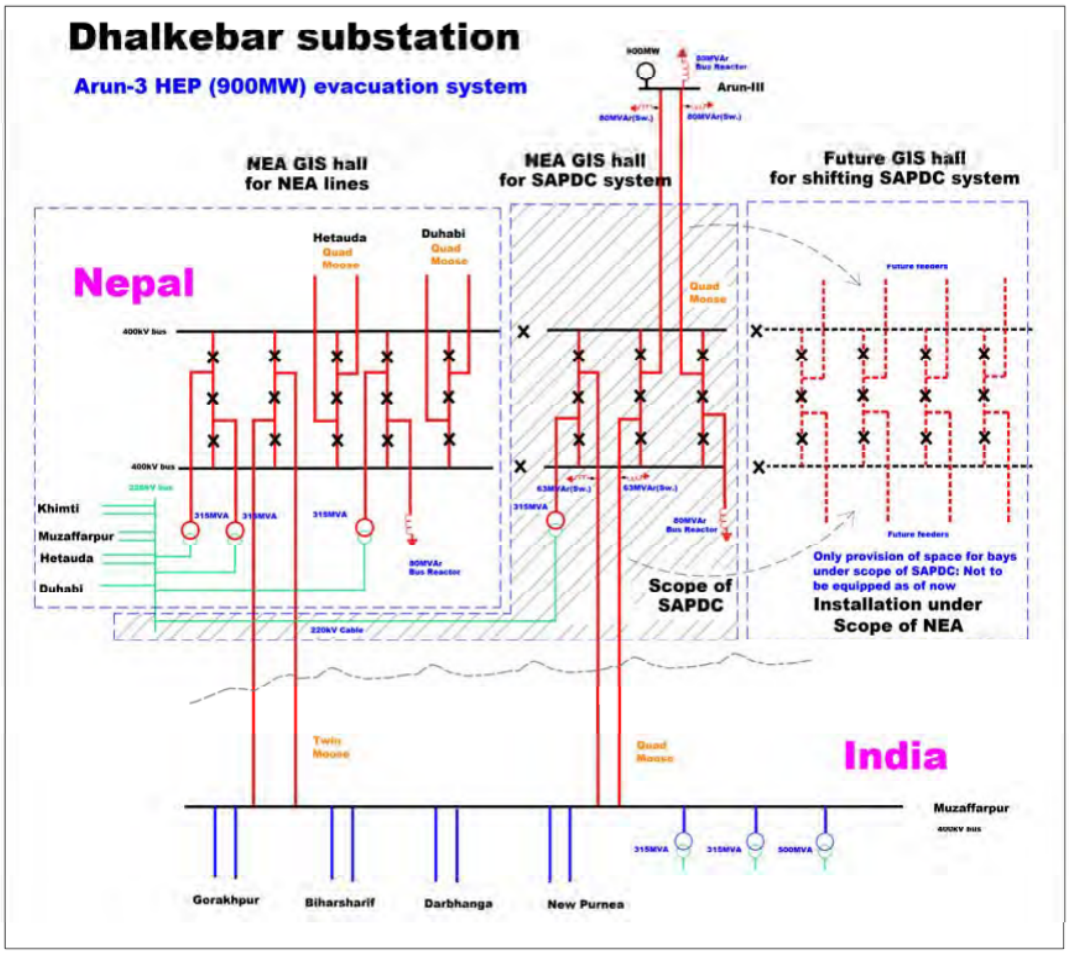
Members may discuss.

Deliberation in the meeting

SSCM agreed to the BSPTCL proposals.

5. Transmission system for power evacuation from Arun-3 (900MW) HEP, Nepal of M/s SAPDC

M/s SJVN Arun-3 Power Development Company Pvt. Ltd. (SAPDC) is establishing a 900MW HEP in Nepal. The power from the hydro project is proposed to be evacuated through Arun-3 – Dhalkebar (Nepal) – Muzaffarpur (POWERGRID) 400kV D/c (Quad) line. As per Power Development Agreement (PDA) signed by M/s SAPDC with Nepal, they have to build the Nepalese portion of above mentioned transmission system. In the 4th meeting of JSC/JWG held on 13th-14th Feb 2017, it was decided that Nepalese portion of the transmission system may be implemented by M/s SAPDC as per PDA. The Indian portion of the cross-border line may be built by an Indian entity. The schematic of final system is given below:



In the meeting held at MoP on 27-03-2018 under chairpersonship of JS (Trans) it was decided that generation project developer will be bearing the wheeling charges of the Indian portion of the transmission line till any other projects seeks utilisation of the line.

In view of the above, members may approve construction of Indian portion of Dhalkebar (Nepal) – Muzaffarpur (POWERGRID) 400kV D/c (Quad) line along with 2 no. 400kV line bays at Muzaffarpur (POWERGRID). The charges for the said scope would be completely borne by M/s SAPDC. The decision regarding implementing agency for Indian portion of the cross- border line would be taken in the meeting of ECT.

Deliberation in the meeting

Members noted.

6. LILO in Odisha portion of ISTS line for connecting M/s JSW Utkal Steel Ltd. – (Agenda by OPTCL)

OPTCL informed that JSW Utkal Steel Ltd. is setting up an integrated steel

plant of 13.2 MTPA capacity and 30 MTPA grinding and beneficiation plant along with 300 KM slurry pipe line to transport iron ore from Joda to Jagatshingpur(at Integrated steel plant) at Odisha. To operate their grinding unit at Joda they have applied for 75 MW power at 220 KV level. Based on their application, OPTCL has conducted system study and proposed two(2) alternative LILO arrangements of interstate line. The LILO can be made either on Joda-JSPL-Jamsedpur line (including replacing the existing conductor with HTLS conductor from Joda Grid to JSPL) or in Joda-Ramchandrapur line.

Members may discuss.

Deliberation in the meeting

SSCM opined that adding additional load of 75 MW of JSW steel at JSPL would increase the loading of 220kV Joda-JSPL S/c line which can be taken care by replacing the existing conductor with HTLS conductor. However, the total load would be shifted to DVC system, in case of tripping of 220kV Joda-JSPL S/c line. Similarly in the alternate proposal LILO of 220kV Joda-Ramchadrapur at JSW Steel, the load would be shifted to Ramchandrapur during tripping of 220kV Joda-JSW steel line.

SSCM advised OPTCL and JSW Steel to construct a dedicated 220kV substation at JSW steel and consider the following connectivity for reliable power supply:

- *220kV JSPL-JSW Steel*
- *LILO of 220kV Joda-Ramchadrapur at JSW Steel*

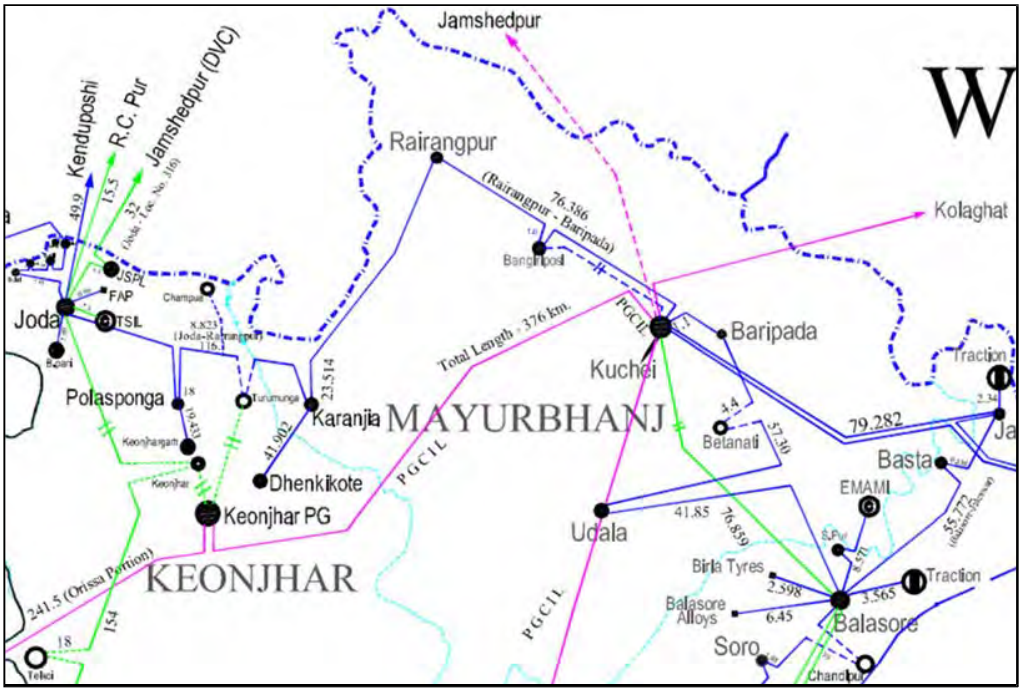
SSCM advised OPTCL to study the above proposal for different contingencies and place their views in 2nd ERSCT Meeting.

As an interim arrangement, SSCM agreed for JSW Steel connectivity with 220kV JSPL S/s with a SPS scheme to disconnect the JSW Steel load during tripping of 220kV Joda-JSPL S/c line so that the loading on Jamshedpur(DVC) would be within the safe limits.

SSCM advised DVC to study the impact of adding JSW Steel load at JSPL on DVC system during tripping of 220kV Joda-JSPL S/c line and place their views in 2nd ERSCT Meeting. It was decided that SPS would be designed based on the study results.

7. Implementation of one 132kV line bay at Baripada (POWERGRID) S/s by OPTCL – (Agenda by OPTCL)

OPTCL informed that OPTCL is having one no. of 132 kV Bay at Baripada (Kuchei). The Kuchei - Dhenkikote 132 kV S/C line is having LILO at Bangiriposi, Rairangpur and Karanjia. The loads of connected substation are Bangiriposi-8 MW, Rairangpur-28 MW, Karanjia-21 MW and Dhenkikote-10 MW. Thus the 132 kV S/C line is loaded up to 67 MW. In case of outage at Joda, the Polasponga load which is around 40 MW is catered through this line, causes breaching of thermal limit of the line. This matter was discussed during the 153rd OCC meeting held at Kolkata. In the meeting PGCIL informed that the space for the 132 Bay is available at Kuchei. Accordingly, OCC advised OPTCL to submit the proposal to CEA for discussion in the standing committee.



Hence, OPTCL has requested for allotment of a new 132 kV Bay at Kuchei to limit the line loading (Kuchei–Bangiriposi portion) as well as to meet the n-1 contingency. OPTCL plans to draw a new 132kV S/c line from Kuchei to Bangiriposi as intra-state scheme.

Nevertheless it may be noted that with commissioning of Keonjhar – Turumunga 220kV D/c line by OPTCL, the reliability of power supply scenario is the area would improve, as this will act as an alternate power source in case of outage at Joda.

Members may discuss

Deliberation in the meeting

SSCM agreed for new 132 kV Bay (Kuchei) at Baripada(PG).

8. Establishment of 400/132 kV GIS with 3x200 MVA ICTs by D/c LILO of HEL – Subhasgram (PG) 400 kV D/C line of CESC by WBSETCL.- (Agenda of WBSETCL)

Representative of WBSETCL has informed the following:

(i) South 24 Parganas district is, indeed, a complex district, stretching from the Metropolitan Kolkata to the remote riverine villages up to the mouth of Bay of Bengal. Population density in the district is very high.

(ii) The Sundarbans, the largest mangrove forests on earth, are spread over thirteen of the twenty-nine development blocks in the district. Due to its peculiar geographical location and the dictates of geography, the transmission network in this region was not well developed.

(iii) Present maximum demand in the district is around 1010 MVA which is met

from Subhasgram 400 kV sub-station of POWERGRID through Kasba 220 kV, Subhasgram 220 kV & Laxmikantapur 220 kV sub-stations. Installed capacity of Subhasgram 400 kV sub-station is 2x315+1x500 i.e. 1115 MVA (additional 2x315MVA i.e. 630MVA belongs to CESC). Again, Laxmikantapur 220 kV sub-station (maximum demand already recorded as 407 MVA) has only one 220 kV D/C incoming line from Subhasgram.

(iv) WBSETCL is constructing one 220 kV GIS at Baruipur and it will be connected with Subhasgram 400 kV sub-station by a 220 kV D/C line. The sub-station is expected to be commissioned by March 2020.

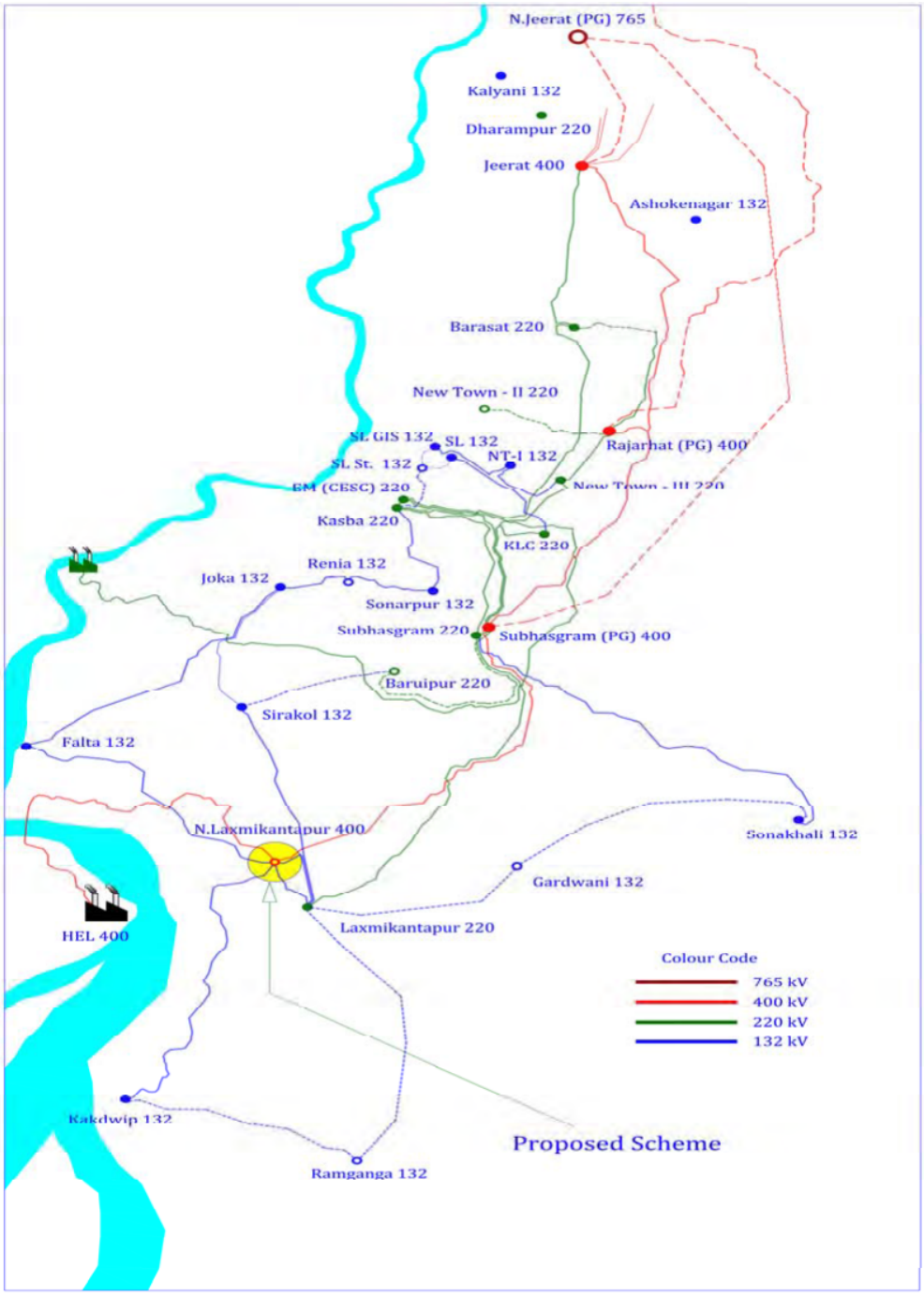
(v) Considering future load growth, another 400 kV sub-station in the district is urgently required for reliable power supply. In view of load demand of Laxmikantapur 220/132 kV ICTs, up-gradation of existing Laxmikantapur 220 kV sub-station to 400 kV GSS is ideal solution. But there is no available space for the up-gradation. WBSETCL is searching suitable land at nearby locations.

(vi) In this backdrop, it may be noted that CESC was allowed to construct 400 kV D/C line from HEL to Subhasgram (PG) 400 kV sub-station with installation of 2x315 MVA ICTs at Subhasgram and 220 kV D/C line from Subhasgram to EM 220 kV sub-station of CESC for evacuation of power from HEL. It was decided in the Standing Committee Meeting on Power System Planning in Eastern Region held on 14/09/2009 at Bhubaneswar.

(vii) The 400 kV D/C line passes through Laxmikantapur area in the southern part of 24 Paraganas (S) District. For development of transmission network in the southern part of the district, WBSETCL contemplated establishment of one 400/132 kV GIS near Laxmikantapur by D/C LILO of HEL – Subhasgram (PG) 400 kV D/C line.

(viii) With the existing network, power is flowing through 400 kV line over Laxmikantapur to Subhasgram and again it is returned back at Laxmikantapur through 220 kV D/C line from Subhasgram to meet the demand. The 400 kV D/C line of CESC passes over the proposed location of new 400 kV GIS. Existing Laxmikantapur – Kakdwip 132 kV D/C and Laxmikantapur – Falta 132 kV D/C lines would be LILOed at the proposed 400/132 kV GIS.

(ix) After development of the proposed network, existing transmission network would be utilised effectively. After meeting the demand of Laxmikantapur 220 kV sub-station, balance power will flow towards Subhasgram. Hence, transmission loss of the system will also be reduced and reliability of power supply will be improved.



(x) The project will be executed by WBSETCL at its own cost. Commercial issues, if any may be settled at appropriate forum.

Members may discuss.

Deliberation in the meeting

SSCM agreed to the WBSETCL proposal and advised to explore other 400kV connectivity with 400kV New Laxmikantpur to improve the reliability.

SSCM opined that since HEL is the owner of 400kV HEL-Subhasgram line, the views of CESC and HEL are also required in 2nd ERSCT Meeting. SSCM advised WBSETCL to interact with HEL and CESC for the same.

9. Modification of construction of 220 kV D/C Barjora-Burdwan line of DVC – Agenda by DVC

DVC has informed that as per approved 12th plan, the 220 kV GIS infrastructure at Burdwan substation was proposed to be fed from 220 kV Barjora substation (via Panagarh) and 220 kV Kharagpur substation. The proposal was to make a 220 kV D/C ring at lower valley viz. Jamshedpur-Gola- Mejia TPS- Barjora- Panagarh- Burdwan-Kharagpur-Mosabani with a view to provide reliable power supply (Mosabani & Jamshedpur to be connected through 400 kV D/C line).

As the 220 KV Barjora substation is radially connected from Mejia TPS by a 220 kV D/C line, the above proposal is less reliable. Further, on implementation of original proposal, power towards 132 kV lower valley link i.e., Burdwan- Belmuri- Howrah- Kolaghat- KGP- Mosabani- Jamshedpur will mostly be fed through 220 kV Mejia TPS- Barjora- Panagarh- Burdwan link causing over-loading of MTPS- Barjora line. Situation aggravated after unit after unit retirement of DTPS Unit-3 supplying power towards Burdwan through 132 kV D/C DTPS- Burdwan line. It is also mentioned that the original proposal could not be taken up due to postponement of other associated projects.

Considering the above & for more reliability and stability of grid as well as to feed 220 kV GIS at Burdwan substation, some minor modification evolved after lot of deliberations i.e., instead of connecting 220 kV Burdwan substation with 220 kV Barjora substation, it was proposed that 220 kV Burdwan substation would be connected to 220 kV Parulia substation of DVC with a future provision of D/C LILO at Panagarh.

Members may discuss.

Deliberation in the meeting

SSCM agreed to the DVC proposal.

10. Connectivity/LTA/Evacuation System for OPGC Ib TPS(2x660MW) in Odisha – Agenda by OPGC

Odisha Power Generation Corporation (OPGC) is constructing power project of 2x660MW (Ib Valley U-3 & 4), out of which Unit-3 would be connected to STU system through OPGC-Lapanga 400kV D/c line (with twin moose conductor of 85 deg. C rating) and Unit-4 would be connected to ISTS through OPGC-Sundargarh 400kV D/c ISTS line (with triple snowbird conductor, under TBCB route). As the connectivities are separate for the two units, i.e. U-3 with STU and U-4 with ISTS, the system has been planned with a bus sectionaliser in generation switchyard, which would be normally kept open.

OPGC had taken connectivity and LTA for 660 MW (Unit-4) based on target region (200 MW for Northern Region, 200 MW for Western Region and 200

MW for Southern region).

Subsequently, OPGC has voluntarily relinquished the LTA granted to them but connectivity agreement with CTU still exists.

OPGC has explained the following consequences, which are lead to the relinquishment. The coal linkage for the project was cancelled due to coal blocks deallocation. Therefore, OPGC was compelled to purchase the coal from the state owned mining company (OCPL- Odisha Coal Private Limited). Odisha government while providing coal linkage from OCPL, allocated total power of Unit 3 & 4 (1320MW) to GRIDCO, Odisha for a period of 25 years. As per PPA, OPGC has to deliver this power to GRIDCO at their switchyard.

OPGC requested CEA to approve the proposal of operating the system under common bus mode i.e. by closing the bus sectionaliser between Unit-3 (connected to STU) and Unit-4 (connected to ISTS) for reliable, efficient, secure & stable grid.

In this connection, a meeting was held in CEA on 26.03.2019, wherein following were concluded:

(a) The proposal of OPGC/GRIDCO regarding closing of bus sectionaliser between U-3 (connected to STU) and U-4 (connected to ISTS) is feasible, but with compromise in N-1 reliability.

(b) There is no constraint in evacuation of power from U-4 in the planned arrangement i.e. with sectionaliser kept as open.

(c) OPGC U-4 is connected with ISTS and they may seek Long term/Short term open access in the ISTS for scheduling their power to Odisha, as per their PPA.

(d) OPGC may approach CERC, if desired, for resolution of above technical/ commercial matters.

In response to the Minutes of meeting, BSPTCL vide their letter dated 21.05.2019 requested CEA that CEA should ensure that any change in the existing OPGC evacuation system arrangement should not financial burden BSPTCL.

Members may discuss.

Deliberation in the meeting

Members noted.

11. Connectivity of newly constructed 220/132/33 kV (2x150+2x50) MVA Grid Substation Giridih of JUSNL through LILO of 220 kV Giridih (DVC)-Koderma (DVC) Transmission Line - Agenda by JUSNL

Presently Power to Giridih District of Jharkhand is fed through DVC network and is not sufficient to meet demand of Giridih and nearby area. In order to meet the power requirement of Giridih, Jamua and Sariya, JUSNL has completed the construction work of 220/132/33 kV (2x150+2x50) MVA Grid Substation

Giridih (JUSNL), 132/33 kV GSS at Jamua and 132/33 kV GSS at Saria.

On the upstream, 220/132/33 kV Grid Substation Giridih(JUSNL) is to be connected to under-construction 220/132/33 kV GSS Jasidih through 220 KV D/C Giridih-Jasidih transmission line and 220/132/33 kV GSS Jasidih will be connected to existing 220/132 kV GSS at Dumka(Madanpur) through under construction 220 kV D/C Dumka-Jasidih Transmission line. As an alternate source to 220/132/33 kV GSS Jasidih, Jasidih will be connected to proposed 400/220 kV GSS (TBCB mode) at Jasidih through 220 kV D/C transmission line.

The details of the present status of the above plan are as follows:

Sr. No.	Transmission Element	Present Status
1	220/132/33 kV Giridih GSS	Ready for commissioning.
2	220/132/33 kV Jasidih GSS	Work is in progress and expected to be completed by May 2019.
3	220 kV D/C Giridih- Jasidih Transmission line	Work awarded but progress is slow and delayed due to delay in forest clearance.
4	220 kV D/C Dumka (Madanpur)-Jasidih Transmission line	Work awarded but progress is slow and delayed due to delay in forest clearance.
5	400/220 kV GSS Jasidih along with associated transmission line.	Under TBCB. Bidding process is going on. It will take approx. 3 years for completion.

Till completion of 400/220 kV GSS Jasidih along with associated line upto 220/132 kV GSS Jasidih (which are under TBCB Scheme), the 220/132/33 kV GSS Giridih will remain on only one source i.e. 220/132 kV GSS Dumka, which receives power though 220 kV D/C Dumka — Maithon(PG) transmission line. The availability of power at Dumka will not be sufficient to meet the demand of Giridih, Jamua and Saria GSS in addition to Dumka region.

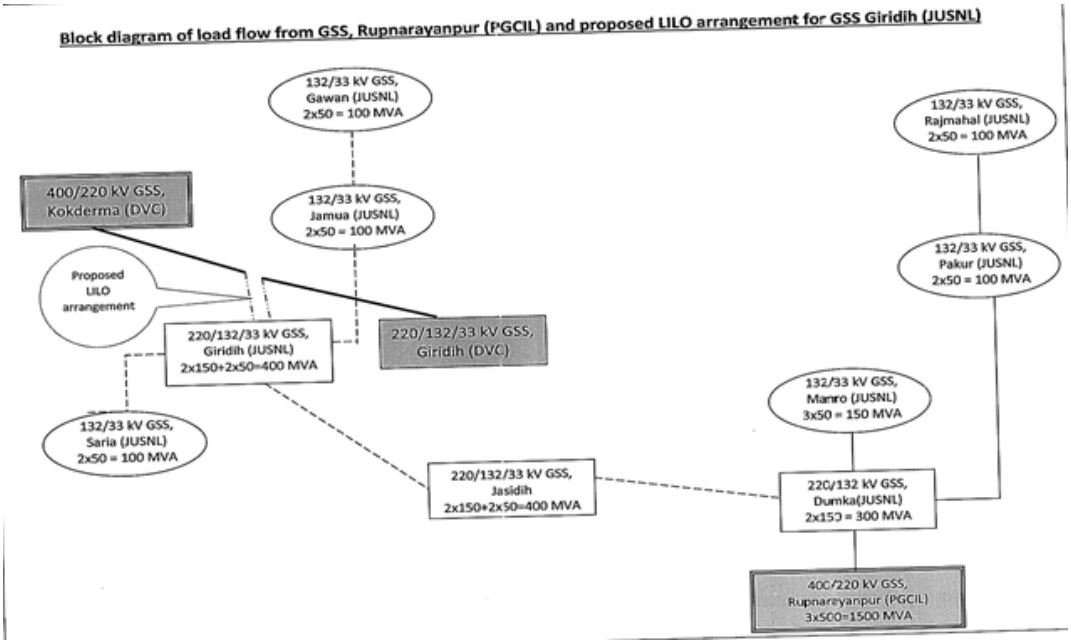
For early commissioning of 220/132/33 kV Grid Substation Giridih, JUSNL has explored one possibility and considered the same as the most suitable option of connectivity of Giridih GSS through LILO of 220 kV Giridih (DVC) — Koderma (DVC) Transmission Line at present (line diagram enclosed).

After completion of 220 kV D/C Giridih- Jasidih Transmission line and 220 kV D/C Dumka(Madanpur)- Jasidih Transmission line, this LILO will also act as

an alternate source to 220/132/33 kV GSS Giridih.

Preliminary survey work for the above proposal has been carried out and the route length from existing tower No. KG-317 has been identified having length
19.30 Km with no involvement of forest and railway crossing.

After completion of this proposed LILO, commissioning of newly constructed 220/132/33 kV (2x150+2x50) MVA Grid Substation Glridlh (JUSNL) can be done. Further after completion of downstream network of Giridih GSS, power may be extended to 132/33 kV GSS at Jamua and Saria of JUSNL and power crisis to Jamua, Tisri, Gawan, Deori, Rajdhanwar, Birni, Sariya, Bagodar, Pirtand, Dumri and nearby villages will be resolved.



Members may discuss.

Deliberation in the meeting

DVC explained that 220 kV Giridih (DVC)- Koderma (DVC) line was constructed to meet the DVC load and additional connectivity would increase the loading on 220kV network of DVC. DVC explained the constraints with the study results.

SSCM advised JUSNL to give a detailed proposal to ERPC, ERLDC and DVC including the nature of the proposed arrangement (interim or permanent arrangement), completion dates of their transmission lines & Substation and details of loading on respective substation and lines for next five years.

12. Operational feedback report of POSOCO

The latest operational feedback of Q4-FY 2018-19 of POSOCO has been reviewed wherein various operational constraints have been observed which need action by states. Only the issues which were still found to be persistent in future planning cases have been detailed below:

(i) **Durgapur (POWERGRID) – Parulia (DVC) 220kV D/c line**

"Parulia (Durgapur) is a major load centre in DVC control area. Since inception it is planned to be fed from internal generation of DVC embedded at 220kV and 132 kV level. However, with decommissioning of DVC units (at Bokaro and CTPS) and low generation from internal plants particularly at Mejia and Waria, the load of Parulia and nearby area is practically met through importing large quantum of power from Durgapur substation of PG through 220kV Durgapur(PG)-Parulia(DVC) D/C. This resulted in very high loading of above line and even crossed the N-1 security limit."

It has been observed that the line said line is critically loaded in future time-frame also. Accordingly, the subject line may be reconductored by DVC. Even POSOCO has suggested this as one of the corrective measure.

Members may discuss.

Deliberation in the meeting

DVC informed that LILO of 220kV Waria-Parulia at DSTPS would reduce the loading of 220kV Durgapur(PG)-Parulia(DVC). The LILO would be completed within a year.

DVC added that approximately 115 MW of power belongs to West Bengal load is being flowing through 220kV DSTPS-Waria line. DVC requested WBSETCL to control the loading of 220kV Bidhanagar-Waria line to minimize the power flowing through 220kV DSTPS-Waria line.

(ii) **High voltage at Angul and Sundargarh (Jharsuguda) substations at 765kV level**

In the operational feedback report it has been observed that cumulatively the Angul – Sundargarh (Jharsuguda) ckt-1, 3, and 4 were kept out of service for about 1380 hrs. (ckt-4: 751hrs. 38min.; ckt-3: 521hrs. 28min.; ckt-1: 104hrs. 45min.). Further, POWERGRID site officials have informed that due to persistent overvoltage of the order of 780kV and above (maximum being upto 795kV) at Angul S/s, two CTs, one Circuit Breaker, and isolator have been damaged.

The main Bay B-Phase CT of 765kV Angul-Sundergarh Ckt-4 blasted at 14:28hrs on 24/04/2019 at Angul substation. This blasting of the CT further damaged the main Circuit breaker and isolators. Earlier also the tie CB of the same line was blasted on 03/04/2019 at Angul substation. After commissioning of 765kV Angul-Sundergarh ckt-3 and ckt-4 the bus voltages at Angul and Sundargarh substations is quite high even after keeping all the line and bus reactors in service.

Accordingly, it is proposed to install 765kV, 1x330MVAr bus reactor at Angul (POWERGRID) S/s.

Members may discuss.

Deliberation in the meeting

ER constituents opined that 765kV network at Angul and Sundargarh substations was over envisaged at the time of planning. Since loading on these transmission lines is not significant, persistent over voltage is being observed at Angul and Sundargarh (Jharsuguda) substations.

It was opined that since the issue of over voltage is the result of improper system planning, the ER Utilities should not be burdened with the cost involved in installing 765kV, 1x330MVAr bus reactor at Angul (POWERGRID) S/s. The procurement should be done utilizing the fund available from PSDF.

ERLDC informed that 765kV Angul-Sundergarh lines are helping the grid while power is flowing from WR to ER.

13. Scheme for limiting of fault current level at 400kV level at Farakka generation switchyard

The three phase fault level at Farakka TPS (NTPC) at 400kV bus is found to be exceeding the designed short time current rating of equipment (i.e. 40kA). In the present time-frame, the fault level is observed to be about 53kA (assuming split is operational at Maithon, Biharsharif, Durgapur, and Kahalgaon). Moreover, the fault level of Farakka generation switchyard in 2022-23 time-frame is expected to be about 54.5kA.

The matter was discussed in a meeting held at CEA on 26-03-2019. In the meeting, CTU had proposed for splitting the 400kV Farakka bus using series reactor. With the proposed bus splitting arrangement and a series reactor of 12ohm between the bus sections, it was observed that maximum angular difference between the two sections is about 4-5 degrees. Representative of NTPC informed that auxiliary power supply for Farakka STPP is designed to derive station and backup power supply for plant auxiliaries from 400kV switchyard through 3 nos. Tie transformers (125MVA, 125MVA and 100MVA). Tie transformer#1 and 2 are fed from 400kV Bus#1 and Tie Transformer#3 is fed from 400kV bus#2. For Farakka STPP stage-1, 2 and 3, there is interconnection between the respective Tie transformers at 33kV, 11/6.6kV and 0.415kV levels. 2x100% / 3x50% redundant feeding configuration is provided at each load centre with two sources fed from different Tie transformers such that there is no loss of plant auxiliaries in case of outage of any one tie transformer. This provision has been kept by design in order to ensure reliability of supply to auxiliaries and avoid loss of generation on outage of Tie Transformer. In case of splitting the 400kV Farakka bus using series reactor arrangement, the phase angle difference between same voltage level buses would be more than 5 degree. Due to this, auxiliary power supply changeover may not take place or heavy circulating currents would flow, which may further trip some of the circuit breakers.

After system study, NTPC informed that even with 2.5 deg. angle between FSTPP split buses and around 50% loadings of the tie transformer, angular difference at 33kV level is more than 6 deg. which may result in blocking of

changeover considering equipment safety. It is also pertinent to highlight here that as per load flow studies with paralleling at 415Volts level, high recirculating currents are observed in the LT system during paralleling which lead to overloading of the transformer and subsequent tripping of the incoming LT transformer. Changeover from one source to second source is not possible under this condition.

In view of the above, it was decided that alternate solutions to limit fault current at Farakka would be studied.

Accordingly, in view non feasibility of either bus splitting of installation of series reactor at Farakka generation switchyard, following alternatives involving physically bypassing of 400kV D/c lines outside the generation switchyard have been studied:

(a) Bypassing Kahalgaon ckt-1 & ckt-2 and Durgapur D/c (about 250km)

(b) Bypassing Kahalgaon ckt-3 & ckt-4 and Durgapur D/c (about 250km)

(c) Bypassing Kahalgaon ckt-3 & ckt-4 and Sagardighi D/c (about 160km)

Case	Fault current at Farakka	Fault current at Sagardighi
(a)	44.16kA	41.85kA
(b)	41.76kA	41.13kA
(c)	43.16kA	41.64kA

From the above, it may be observed that alternative-(b) is the most suitable alternative as the 3-phase short circuit current reaches the lowest value. Only shortcoming of this alternative is Kahalgaon ckt-3 & ckt-4 lines (95km) are designed to operate till 85°C, whereas Durgapur lines (150km) are designed to operate till 75°C, which would result in underutilisation of Kahalgaon-Farakka section of resultant Kahalgaon-Durgapur line.

Nevertheless, it may be noted from above that with 41.76kA fault level, most of the Circuit Breakers (CB) at Farakka switchyard are expected to experience fault current less than 40kA as the contribution from each of elements is mostly greater than 1.76kA, except contribution from 3x200MW generators, 2x315MVA ICTs and a few transmission line.

Members may discuss.

Deliberation in the meeting

Members noted.

14. Modification in transmission system required for LTA from Darlipalli (2x800MW), NTPC

Following LTAs have been granted from Darlipalli (2x800MW) generation project of NTPC Ltd.:

(a) Applicant: NTPC Ltd.

LTA quantum: 793.25MW (Bihar-154.13MW; West Bengal-283.75MW; Jharkhand-102.11MW; Sikkim-15.29MW; Unallocated-237.98MW)

(b) Applicant: GRIDCO Ltd.

LTA quantum: 748MW (Odisha)

Following transmission system has been indicated as LTA system for above mentioned applicants:

(a) Darlipalli – Jharsuguda (Sundargarh) 765kV D/c line.

(b) Angul – Jharsuguda (Sundargarh) – Dharamjaygarh 765kV D/c (2nd) line.

(c) Jharsuguda (Sundargarh) – Raipur Pool 765kV D/c line.

(d) LILO of both circuits of Rourkela – Raigarh 400kV D/c (2nd line) at Jharsuguda (Sundargarh).

(e) Addition of 2x1500MVA, 765/400kV ICT at Jharsuguda (Sundargarh).

(f) Addition of 2x1500MVA, 765/400kV ICT at Angul.

(g) Split bus arrangement at 400kV and 765kV buses in Angul substation.

(h) Split bus arrangement at 400kV and 765kV buses in Jharsuguda (Sundargarh) substation.

The "Common Transmission System for Phase-2 generation projects in Odisha" was reviewed in the 19th meeting of Standing Committee on Power System Planning for ER held on 01-09-2017, wherein the elements mentioned at (f) and (g) above were deleted from scope of works. Accordingly, it is proposed to revise the transmission system for LTA from Darlipalli (2x800MW) generation project granted to above mentioned two no. of applicants. The revised transmission system for LTA would be:

(a) Darlipalli – Jharsuguda (Sundargarh) 765kV D/c line.

(b) Angul – Jharsuguda (Sundargarh) – Dharamjaygarh 765kV D/c (2nd) line.

(c) Jharsuguda (Sundargarh) – Raipur Pool 765kV D/c line.

(d) LILO of both circuits of Rourkela – Raigarh 400kV D/c (2nd line) at Jharsuguda (Sundargarh).

(e) Addition of 2x1500MVA, 765/400kV ICT at Jharsuguda (Sundargarh).

(f) Split bus arrangement at 400kV and 765kV buses in Jharsuguda (Sundargarh) substation.

Members may approve.

Deliberation in the meeting

Members noted.

15. Modification in transmission system associated with North Karanpura (3x660MW) generation project of NTPC

The evacuation system for North Karanpura (3x660MW) generation project of NTPC is under implementation through TBCB route by M/s NKTL (subsidiary of Adani). The scope of works inter alia includes construction of following two transmission lines:

(a) North Karanpura – Gaya 400kV D/c (Quad) line

(b) North Karanpura – Chandwa 400kV D/c (Quad) line

In a meeting held at CEA on 23-04-2019, wherein the status of above mentioned transmission system was reviewed and following was agreed.

i. Revised scope of the project:

   a. NKSTPP- Common point would be 13 km multi circuit 400kV line (quad moose conductor).

   b. Common point – Chandwa would be 25 km 400kV D/c line(quad moose conductor)..

   c. Common point – Gaya would be 98 km 400kV D/c line(quad moose conductor).

   d. New 400kV Dhanbad Substation.

   e. 1.2 km D/c LILO of Ranchi-Maithon 400kV D/c line.

ii. NKSTPP-Chandwa 400kV D/c line would be completed in 14 months, i.e. by June 2020 and NKSTPP-Gaya 400kV D/c line would be completed in 23 months, i.e. by March 2021. New 400kV Dhanbad S/s with 1.2 km D/c LILO of Ranchi-Maithon 400kV D/c line would be completed in about 18 months, i.e. by October 2020.

iii. Representative of NKTL agreed for the above time lines subject to getting forest clearance for NKSTPP-Chandwa 400kV D/c line within 200 days and for NKSTPP-Gaya 400kV D/c line within 300 days.

Members may discuss & agree the revised scope of NKTL.

Deliberation in the meeting

Members noted.

16. Advance intimation for alternate transmission system for Rammam-III (3X40MW) project – (Agenda by NTPC)

NTPC has informed that Rammam-III (3X40 MW) hydro project is being constructed on river Rammam in Darjeeling district of West Bengal. MOU in this regard was signed between NTPC and WBSEB. TEC for the project was granted by CEA on 12th Sep 2006 and revalidated on 1st Aug 2013. 73% of Power generated from the project has been allocated to WB and 12% to Sikkim by MOP on 31st Jan 2011, 15% of power is yet to be allocated.

As per terms and conditions of MOU, following transmission system was to be developed by WBSEB/WBSETCL.

(a) 132kV D/c Rammam III-New Jalpaiguri

(b) LILO of 132kV Rammam-II HEP- North Bengal University line at Rammam III.

Construction work for project has already started and first unit of project is scheduled to be synchronized by Dec 2021 and subsequent units by Jan and Feb 2022. In spite of regular follow up with WBSEB/ WBSETCL, construction work on associated transmission is yet to start.

In view of above, NTPC has requested for exploring alternate evacuation scheme for the project.

Members may discuss.

Deliberation in the meeting

WBSETCL informed that modalities for construction of the lines are needed to be discussed in detail with NTPC and agreement to be done.

17. Proposal for 132/33 kV sub-station at Nabinagar

BSPTCL has informed that, one 132/33 kV GSS of capacity 3x50 MVA has been decided to be constructed at Nabinagar, Dist. Aurangabad whose connectivity at 132 kV level has been proposed as LILO of 132kV Sonenagar - Rihanad ckt 1.

A meeting was held on 26.03.2019 at CEA, wherein it was decided that instead of said LILO, new 132/33kV S/s at Nabinagar may be feed radially from Nabinagar-II generation project (line length: about 15km) as requisite transformation capacity is available in the 400/132kV, 2x200MVA ICTs at the generation switchyard.

BSPTCL stated that the above would be implemented by BSPTCL as intra- state scheme.

Members may discuss.

Deliberation in the meeting

SSCM agreed to LILO of 132kV Sonenagar - Rihanad ckt 1 at 132kV Nabinagar.

NPGC representative was not available in the meeting.
BSPTCL informed that they are pursuing with NPGC for radial connection with Nabinagar II generation project.

18. Transmission system for power evacuation of Odisha Integrated Power Ltd. (Odisha UMPP-4000MW) for Connectivity and LTA applications – Agenda by POWERGRID

The 4000MW Connectivity and LTA applications for Odisha UMPP submitted by Odisha Integrated Power Ltd. (OIPL), wholly owned subsidiary of PFCCL, are pending since long (June'14) on account of non-firming of generation project implementation. In this regard, it is to mention that CERC vide Amendment dated 17-02-2016 has directed CTU not to hold any application in abeyance and process them within the timeline prescribed in Regulation 7 of the Connectivity Regulations.

In the 19th SCM of ER held on 01-09-2017, the following transmission system was finalized for Odisha-UMPP:

a) Split bus arrangement at Odisha UMPP (3x660MW in Section-A and 3x660MW in Section-B)

b) LILO of Sundargarh-A – Dharamjaygarh 765kV D/c line at Odisha UMPP-A

c) Odisha UMPP-B – Sundargarh-B 765kV D/c line

d) Ranchi (New) – Gaya 765kV D/c line

Note: It was also decided to provide OPGW connectivity to Odisha UMPP-A, 150km of OPGW (24 fibre) and associated communication equipment is to be installed on 765kV D/C Sundergarh-A – Dharamjaygarh line and respective terminal substations respectively by POWERGRID.

M/s OIPL in their Connectivity and LTA applications, had not clarified the unit size of the generation project and has left the decision of choosing unit size to the successful bidder. Subsequently, M/s OIPL vide email dated 13-03- 2018 informed the unit size as 5x800MW.

Further, M/s OIPL had also not submitted the Ministry of Power's allocation letter. M/s OIPL vide letter dated 17-11-2017 has provided a letter of MoP in which the tentative allocation agreed in the meetings held on 10-07-2006 and 19-09-2006 is mentioned.

M/s OIPL vide its email dated 17-05-2019 has informed that the start date of connectivity and LTA may be considered as Unit-1: 01-04-2025 and each subsequent unit at an interval of 6 months thereafter.

As the evacuation system was planned considering 6x660MW units with split bus arrangement at the UMPP bus (3x660MW in Section-A and 3x660MW in Section-B), revised studies for 2023-24 timeframe was carried out with 5x800MW capacity for Odisha UMPP and discussed in the 1st meeting of ERSCT. In meeting it was decided to review the transmission system proposed for Odisha UMPP by CEA, CTU, OPTCL and OIPL.

Accordingly, a meeting was held at CEA on 26-03-2019. No representative of M/s OIPL was present in the meeting. Revised system studies were carried out 2024 time-frame, with 5x800MW capacity for Odisha UMPP and without Ranchi-Gaya 765kV D/c line. It was observed that there are no constraints in power evacuation from Odisha UMPP. Accordingly, following evacuation

system is proposed for Odisha UMPP for grant of Connectivity and LTA:

Transmission System for Connectivity:

- Split bus arrangement at Odisha UMPP with 3x800MW in Section-A and 2x800MW in Section-B. For connectivity of 5x800MW, bus sectionaliser should be kept closed.
- Odisha UMPP-B – Sundargarh-B 765kV D/c line

Transmission System for LTA

- Split bus arrangement at Odisha UMPP with 3x800MW in Section-A and 2x800MW in Section-B. The bus sectionaliser should be kept normally open.
- Odisha UMPP-B – Sundargarh-B 765kV D/c line
- LILO of both circuits of Sundargarh-A – Dharamjaygarh 765kV D/c line at Odisha UMPP-A

Note:

(a) Generation voltage to be stepped-up to 765kV

(b) *Switchgears to be designed for short time current rating of 50kA (or higher) for 1sec*

Further, it is required to provide OPGW connectivity to Odisha UMPP-A. Accordingly, 150km of OPGW (24 fibre) and associated communication equipment is to be installed on 765kV D/C Sundergarh-A – Dharamjaygarh line and respective terminal substations.

M/s OIPL vide its email dated 17-05-2019 has informed that the start date of connectivity and LTA may be considered as Unit-1: 01-04-2025 and each subsequent unit at an interval of 6 months thereafter. Accordingly, as requested by M/s OIPL, it is proposed to grant Connectivity and LTA to M/s OIPL for its 4000MW (5x800MW) UMPP project at Bhedabahal, Odisha w.e.f 01-04-2025 (LTA for 25 years from 01-04-2025). Upon grant of Connectivity and LTA, OIPL/beneficiaries need to sign requisite agreements within specified timelines for taking up the evacuation system for implementation, failing which the Connectivity and LTA intimations shall be liable for closure/cancellation.

Members may discuss.

Deliberation in the meeting

Members noted.

19. New Transmission System Proposals: Additional Agenda by BSPTCL

Following 132/33 kV Grid Sub-Stations are being put up as BSPTCL agenda in 2nd ERSCT:

Bhore Barahchatti Daudnagar Barari Murliganj					
Sl. No.	**Name of GSS**	**Load (MW)**	**Voltage level**	**Connectivity**	**Type of conductor**
1	Barari (2*50 MVA)	40	132 kV	132 kV Sabour (New) - Barari transmission line DCDS	Panther
2	Daudnagar (2*50 MVA)	40	132 kV	LILO of 132 kV Sonenagar - Chandauti D/C	Panther
3	Barachatti (2*50 MVA)	50	132 kV	132 kV Chandauti (New) - Barachatti transmission line DCDS LILO of 132 kV Barhi - Rajgir S/C (L28)	Panther
4	Murliganj (2*50 MVA)	50	132	132 kV Murliganj - Raghopur transmission line DCDS 132 kV Murliganj - Uda Kishanganj transmission line DCDS	Panther
5	Bhore (2*50 MVA)	50	132 kV	132 kV Gaya (BGCL) - Bhore transmission line DCDS LILO of 132 kV Barhi - Nalanda S/C (L29) LILO of 132 kV Gaya (BGCL) - Bodhgaya S/C	Panther

Requirement & Proposal of new 132/33 KV GSS is based on following reasons:

I. Load growth in that area.
II. Existing source GSS are far from proposed PSS.
III. Due to large length of 33KV feeder, maintenance issue is arising.
IV. For new upcoming PSS there is no space in the existing GSS.
V. Segregation of Agriculture feeders

Deliberation in the meeting

BSPTCL informed that one line of 132 kV Barhi - Nalanda would be made LILO at Barachatti another line would be made LILO at Bhore. BSPTCL explained that Barachatti & Bhore S/s would be connected to other sources also therefore there will not be any loading on DVC system in case of tripping of LILO line. BSPTCL added that LILO would be falls under the Bihar portion of the 132 kV Barhi – Nalanda.

DVC informed that they will place their views in 2nd ERSCT Meeting.

SSCM agreed to the other proposals of BSPTCL.

During the concluding remarks of Member Secretary, ERPC, WBSETCL informed that planning and developments within the state network should be discussed for the benefit of other states.

SSCM appreciated the proposal and requested Member Secretary, ERPC to arrange a meeting with all the state utilities.

Member Secretary, ERPC agreed to arrange the meeting with all state utilities in August 2019.

Meeting ended with vote of thanks to the chair.

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Annexure-A

Participants in 7th SSCM Meeting

Venue: ERPC Conference Hall, Kolkata Time: 11:00 hrs Date: 01.07.2019 (Monday)

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18	Ajit Kr. Bhagat	Sr. Manager/ JUSNL	8340599939	"	
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"Coming together is a beginning, staying together is progress, and working together is success." –Henry Ford

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Venue: ERPC Conference Hall, Kolkata Time: 11:00 hrs Date: 01.07.2019 (Monday)

Sl No	Name	Designation/ Organization	Contact Number	Email	Signature
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