Agenda for 1st North Eastern Region Standing Committee meeting on Transmission (NERSCT) for planning of Transmission System

1. Minutes of 7th Standing Committee Meeting on Power System planning of North Eastern Region

1.1. The minutes of the 6th meeting of the Standing Committee on Power System Planning held on 17.05.2018 at Guwahati (Assam) were circulated vide CEA's letter no. I/1921/2018(15) dated 30.08.2018. No comments have been received.

For information of the members.

FOLLOW UP ISSUES

2. Establishment of Roing – Chapakhowa 132kV D/c and Tinsukia – Namsai 220kV D/c lines

2.1. The long 132kV network of Arunachal Pradesh viz. Ranganadi – Ziro – Daporijo – Along – Pasighat – Roing – Tezu – Namsai – Miao – Jairampur – Changlang – Khonsa – Deomail – Kathalguri is fed from Ranganadi & Pare HEPs at one end and Kathalguri at other end. Thus, in order to improve reliability of power supply in this long 132kV network, implementation of Roing (Arunachal Pradesh) – Chapakhowa (Assam) 132kV S/c line on D/c tower as ISTS for system strengthening in NER was approved in the 7th SCM of NER held on 17-05-2018.

2.2. Further, it was also agreed that requirement of AGBPP (Kathalguri) – Namsai 132kV link or other alternative proposal to be decided in the joint study meeting.

2.3. A joint study meeting was held among CEA, POWERGRID, POSOCO and NER states on 12-11-2018 at New Delhi. With regard to Roing – Chapakhowa 132kV line, it was observed that Chapakhowa is about 60km from Rupai (Assam) and about 30km from Roing (Arunachal Pradesh). Thus, power flow will generally be from Roing to Chapakhowa. Interconnection of 132kV substations in upper Assam (below Brahmputra) with neighbouring substations in Arunachal Pradesh will result in either very low power flow to Arunachal Pradesh or power flow is from Arunachal Pradesh to Assam.

2.4. In order to supply power to Arunachal Pradesh and improve system reliability, following alternative interconnections at higher voltage levels were studied:

- Tinsukia-Namsai 220kV D/c line **or**
- AGBPP (Kathalguri) – Namsai 220kV D/c line

2.5. From the study result, it was observed that in both the cases power in the range of about 25MW flows from Assam to Namsai. However, with both interconnections viz. Roing – Chapakhowa 132kV and Tinsukia/AGBPP (Kathalguri)– Namsai 220kV, the power flow from Assam to Namsai increases to about 45MW, while about 20MW flows back to Assam through Roing – Chapakhowa line. Thus, there is circulation of power between Assam and Arunachal Pradesh through the above two 132kV and 220kV ISTS interconnections.

2.6. Study results are enclosed at **Annex-IA & IB**. Members may discuss.

3. Reconductoring of Siliguri-Bongaigaon 400kV D/c Twin Moose line with Twin HTLS conductor

3.1. Presently the installed capacity of NER is about 4100MW (2300MW thermal and 1800MW hydro+RE) and peak demand is of the order of 3000MW. As per 19th EPS, the peak demand of NER is expected to be about 4500MW in 2021-22. Further, 500MW HVDC back-to-back at North Comilla (Bangladesh) is scheduled to be commissioned by Dec 2020. Thereby, the effective requirement of NER + Bangladesh (NER) would be about 5000MW in 2021-22 time-frame. Till 2021-22, new major generations expected in NER are Kameng (600MW), and Bongaigaon TPS (3rd unit of 250MW) resulting in total installed capacity of about 4950MW (2550 thermal and 2400 hydro+RE).

3.2. From above it may be observed that during peak demand and low hydro scenario in NER, there would be an import requirement on ER to NER corridor at least of about 1700-1800MW (80% thermal and 50% hydro during peak: as per planning criteria). To meet this demand there are two 400kV lines viz. New Siliguri – Bongaigaon 400kV D/c line & Alipurduar – Bongaigaon 400kV D/c (Quad) line and Alipurduar – Bongaigaon 220kV D/c line. The Siliguri – Bongaigaon line is designed to operate at maximum temp of 75°C, thus the thermal capacity of line would be about 875MVA per circuit (about 830MW at 0.95pf). Under N-1-1 of the quad moose line, loading on the remaining twin moose line would be close to/beyond thermal rating. Moreover, any further lower availability of generation in NER during low hydro scenario shall only aggravate the situation under N-1-1.

3.3. In the 7th SCM of NER held on 17-05-2018 it was decided to study the requirement of subject proposal in the joint system study with NER states.

3.4. In the joint system study held on 12-11-2018, it was observed that N-1-1 of Alipurduar – Bongaigaon/Bornagar 400kV D/c (Quad) line not only results in overloading of Siliguri – Bongaigaon 400kV D/c line, but also Alipurduar – Bongaigaon (one circuit via Agamoni-Assam S/s) 220kV D/c line (designed to operate at maximum temp of 75°C, thus the thermal capacity of line would be about 213MVA per circuit). Further, it was observed that on considering Bornagar – Parbotipur (Bangladesh) – Katihar cross-border interconnection, the

overloading on Siliguri – Bongaigaon subsides, however, 220kV line was still observed to be overloaded under said N-1-1. Accordingly, it was discussed that following strengthening works in the ER-NER inter-regional corridor may be considered:

(a) Siliguri – Bongaigaon line may be reconductored with Twin HTLS conductor (ampacity of single HTLS shall be 1596A, which is equivalent to Twin ACSR Moose conductor for 45ºC ambient and 85ºC maximum conductor temperature) along with requisite modifications in line bay equipment at both ends after commissioning of Bornagar – Parbotipur (Bangladesh) – Katihar 765kV D/c line (operated at 400kV) as per future requirement.

(b) In order to relieve critical/over loading on Alipurduar-Bongagaon 220kV section, Assam needs to LILO both circuit of Alipurduar – Bongaigaon 220kV D/c line at new substation at Agamoni 220/132kV, 2x160MVA. Bus split arrangement may made at both 220kV and 132kV levels at Agamoni S/s so that one section (with first 220/132kV, 160MVA ICT) is fed from Alipurduar (Gossaigaon 132kV may be fed from this section) and the other section (with second 220/132kV, 160MVA ICT) is fed from Bongaigaon (Gauripur 132kV may be fed from this section).

3.5. Members may discuss proposed system strengthening works.

4. LILO of Kahilipara – Umtru 132kV D/c line at Killing (Byrnihat) S/s of Meghalaya

4.1. In order to relieve high loading on ICTs at Sarusajai GSS of AEGCL, and also to increase the reliability of power supply in greater Guwahati & its adjoining areas, AEGCL had proposed LILO of Kahilipara - Umtru 132kV D/c lines at Killing GSS of MeECL in the 7th SCM of NER. In the meeting it was decided to study the proposal in the joint study meeting.

4.2. In the joint study meeting held on 12-11-2018, AEGCL informed that with commissioning of 220kV level at their Sonapur S/s, the power supply situation in Guwahati area has improved. Further, they had mentioned that due to commissioning of 220kV level at Sonapur, the Kahilipara – Umtru 132kV D/c line could be opened at times to avoid overloading. Moreover, Assam is establishing 400kV level at Sonapur S/s through LILO of Byrnihat – Silchar 400kV S/c line. It was observed that with commissioning of 400kV Sonapur S/s, the issue of overloading on Umtru – Kahilipara and Umtru – Sarusajai 132kV D/c lines subsides. Accordingly, it was agreed to drop the subject proposal.

4.3. Meghalaya during the joint study meeting mentioned that the Umtru – Kahilipara 132kV D/c line is very old, which was commissioned along with Umtru HEP in 1960s. Accordingly, they mentioned that the line needs strengthening at various locations and also proposed reconductoring of line. Keeping in view that the Umtru – Kahilipara and Umtru – Sarusajai 132kV D/c lines are inter-state lines

(owned by Assam and Meghalaya in respective territory) and serves power requirement of both Assam (Guwahati and surrounding areas) and Meghalaya, it was decided that Umtru – Kahilipara and Umtru – Sarusajai 132kV D/c lines may be reconductored with HTLS conductor by Assam and Meghalaya in respective territory along with required strengthening of bay equipment and towers.

4.4. Members may discuss the proposed system strengthening works by Assam and Meghalaya.

5. Implementation of 132kV line bay at Palatana generation switchyard

5.1. Palatana – Surajmaninagar 400kV D/c line (presently operating at 132 kV) has been commissioned as part of Palatana-Bongaigaon transmission system. At present, 2 nos. 132kV line bays are available at Palatana end. Palatana – Udaipur 132kV S/c line of Tripura has been terminated in one bay and one ckt. of Palatana – Surajmaninagar D/c line is terminated in the other bay. Other ckt. of Palatana – Surajmaninagar D/c line is yet to be connected at Palatana end.

5.2. In view of the above, in the 7th SCM of NER it was decided that Palatana – Udaipur 132kV S/c line shall be opened by Sept 2018 to enable termination of 2nd circuit of Palatana – Surajmaninagar line at Palatana end and accordingly NEPRC would take further action.

5.3. It may also be noted that after operation of Palatana – Surajmaninagar 400kV D/c line (presently operated at 132kV) at its rated voltage level, the vacant bays could be utilised by TSECL for termination of Udaipur or any other 132kV line.

5.4. NERPC and TSECL may update on the matter.

6. Alternative transmission line for evacuation of power from Tuirial HEP (60MW) of NEEPCO

6.1. Tuirial HEP with installed capacity of 60MW has been commissioned and 100% power is allocated to Mizoram. Accordingly, following transmission system was indicated for power evacuation from Tuirial HEP:

a) Tuirial-Kolasib 132kV S/C line (implemented by P&E Dept., Govt .of Mizoram)
b) Tuirial-Sihhmui 132kV D/c line (to be implemented by NEEPCO/ P&E Dept., Govt .of Mizoram)

6.2. In the 7th SCM of NER it was informed that power is being evacuated from Tuirial HEP by Tuirial-Kolasib 132kV S/C line. The representative of NEEPCO had informed that in the meeting held on 17-02-2017 between NEEPCO & Secretary, Power & Electricity Department, Govt. of Mizoram, it was decided to explore the possibility of LILO of Jiribam – Aizawl (Luangmual) 132kV S/C line at Tuirial HEP for reliable evacuation of power and the line would be constructed by Mizoram. Further, the representative of Mizoram had stated that LILO of Jiribam – Aizawl 132kV S/C line at Tuirial HEP is not feasible due to very difficult terrain and

Mizoram don't have fund to construct the 2nd ckt for evacuation of power from Turial HEP.

6.3. Accordingly, in the 7th meeting of SCPSPNER it was agreed that due to problems associated with LILO of Jiribam – Luangmual (Aizawl) 132kV line at Tuirial HEP, Mizoram and NEEPCO would jointly explore the possibility of 2nd connectivity for reliable evacuation of power from Tuirial HEP and the matter would be taken up for discussion in the next Standing Committee Meeting.

6.4. Power & Electricity Dept., Govt. of Mizoram and NEEPCO may update on the matter.

7. Handing over of Balipra-Khupi-Kimi 132kV S/c line along with 132kV substations

7.1. Balipara-Khupi-Kimi 132kV S/C transmission line and its associated substations were constructed by NEEPCO through POWERGRID on deposit work basis for drawing construction power for Kameng HEP in Ar. Pradesh.

7.2. In the 7th meeting of SCPSPNER, NEEPCO stated that NEEPCO Board have decided to hand over the asset to POWERGRID and have communicated POWERGRID vide their letter dated 28/07/2018. In the meeting it was agreed for handing over the assets mentioned above to Ar. Pradesh and modality of transfer may be decided in a separate meeting in CEA with POWERGRID, Ar. Pradesh and NEEPCO.

7.3. Accordingly, a meeting among CEA, POWERGRID, Arunachal Pradesh and NEEPCO was held at CEA on 10-10-2018 on the subject matter (minutes of meeting enclosed at **Annexure-II**). In the meeting it was decided that NEEPCO may hand over the transmission assets associated with Balipara-Khupi-Kimi 132kV S/c line mentioned below to DoP, Arunachal Pradesh on mutually agreed terms. DoP, Arunachal Pradesh agreed that upon handing over of the assets by NEEPCO, they would operate and maintain them in healthy condition so as to facilitate reliable power supply from Kameng HEP to 132kV systems in Khupi, Kimi, Bomdila, Tawang, Kalaktang and surrounding areas.

Sl. No.	Description
1	**Transmission Lines**: (i) Balipara- Khuppi 132 KV S/c or D/c line (68 km) (ii) Khuppi- Kimi (Kameng HEP) 132 KV S/c line (8 km)-(presently charged at 33kV)
2	**Extension works at 220KV/132 KV Sub Station at Balipara**: (i) 220 KV ICT Bay-1 no. (ii) 50MVA 220/132 KV Transformer-1 no. (iii) One 132 KV ICT Bay (iv) One 132 KV Bus Coupler Bay (v) One 132 KV Line bay for Khuppi -Balipara 132 kV S/c line
3	**132/33 KV Sub-Station at Khuppi**

	(i) 132 KV Switchyard: a) One 132 KV bay for Khuppi -Balipara 132 kV S/c line b) 132KV Transformer bay c) 132KV Bus transfer bay (under S/D) d) One 132KV bay (under S/D) for Khuppi –Kimi 33 kV line (ii) 33 KV switchyard: a) One 33KV line bay for Khuppi –Kimi 33 kV line b) One 33KV bay for Khuppi –Tenga 33 kV line c) 33KV bay for DoP (iii) Power transformers: a) 5MVA 132/33KV Transformers- 4 nos. (including one spare transformer unit) (iv) Distribution transformers: a) 630 KVA, 33/0.4 KV-2 nos. (One for S/S, One for NEEPCO colony at Khuppi) (v) 132/ 33 KV Sub-station Control Room with all control equipment, battery & batter chargers etc.
4	**Associated LT Distribution Systems** (i) Khuppi-Tenga 33 KV Line (5 km) (ii) Tenga-Bichom 33 KV Line (16 km) (iii) 33/11 KV Indoor S/S at Tenga (iv) 33/11 KV Indoor S/S at Bichom (v) Distribution Transformers a) 2.5 MVA, 33/11 KV Transformers- 4 nos. (2 at Tenga S/S +2 at Bichom S/s) b) 125 kVA 11/0.4 KV Transformer-2 nos. (One at Bichom S/S + One at Kimi 25 km Village)

7.4. Members may note.

8. Proposal of connection of Dikshi HEP (24MW) in West Kameng, Arunachal Pradesh

8.1. Dikshi HEP (24MW) located near Rupa of West Kameng District is being developed by M/s Devi Energies Pvt. Ltd. on BOOT basis and project is in advance stage of construction now. Govt. of Ar. Pradesh is actively considering signing of PPA with the developer. However, no transmission line either of the state or of any other entity exists in the proximity of this project to facilitate power evacuation.

8.2. Since, Dikshi HEP is on the verge of commissioning, it was proposed to connect Dikshi HEP with 132kV Balipara-Khupi line of NEEPCO through a LILO arrangement at a place called Nechipu, which is about 32km away from Dikshi HEP. In the 7th meeting of SCPSPNER, it was agreed to discuss the matter in a separate meeting in CEA along with Arunachal Pradesh, NEEPCO, CTU (POWERGRID) to decide about the power evacuation arrangement for Dikshi HEP (24MW

8.3. Accordingly, a meeting among CEA, POWERGRID, Arunachal Pradesh and NEEPCO was held at CEA on 10-10-2018 on the subject matter (minutes of meeting enclosed at **Annexure-II**). In the meeting following was decided :

(i) Power from Dikshi HEP (24MW) may be evacuated through below mentioned transmission system:

Transmission element

a) 132kV S/C Dikshi switchyard to Tenga switching station - 10.5 Kms

b) 132kV D/C Tenga switching station to Nechipu LILO connection (on Balipara-Khupi 132kV line) - 21.5 km

Substations

c) 132 kV Tenga switching station with 4 no. of bays (no capacitive device required)

(ii) Since, the license for transmission system for Dikshi HEP has already been issued by APSERC, the issue may be closed with provision of connectivity for Dikshi HEP through the transmission system mentioned above by the generating company.

8.4. Members may note.

9. Proposed scheme for relieving congestion in Agia substation of Assam – Agenda by Assam

9.1. In the 7th SCM of NER, the representative of AEGCL informed that load in 220kV substation at Agia has increased due to additional loading on Agia (Assam) - Mendipather (Meghalaya) 132kV line. Further, AEGCL has no tariff benefit due to PoC mechanism. AEGCL also stated that for reducing loading on lines connected with Agia (Assam) substation and enhancing the reliability of power supply in the western parts of Meghalaya, a 220kV substation either in West Garo Hills district or in the East Garo Hills district of Meghalaya is required. Accordingly, it was decided in the meeting that matter may be studied in the joint system study meeting.

9.2. During the joints study meeting held on 12-11-2018, it was observed that Agia S/s has 220/132kV, 100MVA+50MVA ICTs and there is only Agia-Mendipathar 132kV line (about 30km) to Meghalaya at Agia. Mendipathar is very close to Assam-Meghalaya border and is connected to Meghalaya system through 132kV line to Nangalbibra (about 80km). The western part of Meghalaya is fed from only two 132kV S/c lines, one from Agia (Assam) and other from Mawngap (Meghalaya). From the system studies, it has been observed that major portion of load of western part of Meghalaya is fed from Agia S/s. Meghalaya during the joint study meeting had informed that load in the western part of Meghalaya is expected to further increase due to Saubhagya and other distribution system schemes. Accordingly, in order to relieve loading on Agia – Mendipathar line and

improve reliability of power supply to western part of Meghalaya, it was discussed that a new 220kV substation may be planned in western part of Meghalaya.

9.3. The nearest 220kV S/s in Meghalaya from Nangalbibra would be at Mawngap and New Shillong, which are under implementation as part of NERPSIP scheme and are at distance of about 130-140km. The Mawngap and New Shillong are fed from Byrnihat 400/220kV S/s. Accordingly, following intra-state system strengthening in Meghalaya was suggested in the joint study meeting:

(a) Establishment of 220/132kV, 2x160MVA substation at Nangalbibra

(b) Mawngap-Nangalbibra 220kV D/c line

9.4. Members may discuss the intra-state system strengthening in Meghalaya.

10. Strengthening of southern part of NER Grid

10.1. In the 7th SCM of NER, NERPC had stated that major loads in Southern part of NER grid, which includes power systems of South Assam, Tripura (including radial load to Bangladesh), Mizoram & Manipur, are fed through 400/132kV substation at Silchar (POWERGRID) and about 36% of the installed generation capacity of NER (3732 MW) is present in southern part of NER Grid (Total: 1339MW; Palatana: 726MW; AGTPP: 130MW; Loktak: 105MW; Monarchak:101MW; Tuirial: 30MW; Tripura: 185MW, Mizoram: 52MW). Major upcoming corridors are planned or under operation/execution connects load centres in southern part of NER Grid like Silchar – Misa 400kV D/c, Silchar – Melriat 400kV D/c (to be operated at 132kV), Silchar – Palatana 400kV D/c, Silchar – Byrnihat – Bongaigaon 400kV S/c, Silchar – Azara – Bongaigaon 400kV S/c, Silchar – Imphal 400 kV D/c and Silchar – P.K.Bari 400kV D/c. In case of any major fault at 400/132kV Silchar substation, southern part of NER Grid will be severely affected. He proposed interconnection of substations at Imphal, Melriat and Palatana at 400kV level to avoid such situation. It was decided in the meeting that the proposal may be studied in the joint system study meeting.

10.2. During the joint study meeting held on 12-11-2018, it was discussed that as per CEA's Manual on Transmission Planning Criteria there is no mandate to plan additional system for outage of substation. Further, from system studies for 2021-22 time-frame following has been observed with outage of 400kV level at Silchar S/s:

(a) The installed capacity of generation project in Tripura is about 1100MW, which are mostly gas based. Power demand of Tripura in 2021-22 time-frame as per 19th EPS is expected to be about 390MW. Further, 500MW power is expected to be supplied from Tripura to Bangladesh. Thus, effective power requirement of Tripura is expected to be about 900MW under peak load condition. Assuming the 85% despatch (as per CEA's Manual on Transmission Planning Criteria) from Gas based generation project in Tripura,

it is expected that import-export requirement of Tripura with ISTS may be of the order of 80-100MW, which can be met through power exchange via 132kV Kumarghat (POWERGRID) S/s.

(b) As per 19th EPS, by 2021-22 power demand of Mizoram is expected to be about 170MW. Present demand is about 105MW. Other than Silchar – Melriat 400kV D/c line (operated at 132kV), Aizawl (POWERGRID) S/s in Mizoram is fed from three 132kV ISTS lines, which can cater to the power requirement of Mizoram under emergency situation.

(c) In regard to Manipur, it has been observed that with non-availability of Silchar – Imphal 400kV D/c line due to sudden outage of Silchar 400kV S/s, the power requirement of Manipur can be met through under construction Mariani – Kohima – Imphal 400kV D/c ISTS line and other existing 132kV ISTS lines.

(d) Some of the 132kV lines feeding to southern part of NER Grid may temporarily get critically loaded due to outage of 400kV level at Silchar S/s.

10.3. In view of the above, it was agreed in the joint study meeting that alternate 400kV system connecting Imphal, Melriat and Palatana may not be required. Nevertheless, it case of prolonged outage at Silchar 400kV level bus, the Silchar – PK Bari (about 130km) and Silchar – Imphal (about 170km) 400kV D/c lines could be bypassed at Silchar 400kV bus through tie breaker, as the two lines are terminated on opposite side of two adjacent diameter. This shall establish PK Bari – Imphal 400kV D/c interconnection. Moreover, in one of the circuits of Silchar – Imphal 400kV D/c line, there is an 80MVAr bus reactor on the other side of diameter. Thus, in case of any overvoltage issues in charging of the PK Bari – Imphal line, at least one circuit can be charged using the 80MVAr bus reactor as line reactor.

10.4. Members may discuss.

11. Additional connectivity for Ranganadi (405MW) and Kameng (600MW) HEPs in Arunachal Pradesh

11.1. In the 7th SCM of NER, NERPC had stated at present power from Ranganadi and Kameng HEPs are being evacuated / planned to be evacuated over one 400kV D/c line each connected with Biswanath Chariali and Balipara respectively. Being hilly terrain, outage of tower would bottle up the generation and hence additional connectivity for evacuation of generation from above HEPs may be planned. Accordingly, it was decided to study the matter in joint study meeting.

11.2. During the joint study meeting held on 12-11-2018, it was noted that as per Clause 6.4 (Criteria for generation radially connected with the grid) of CEA's Manual on Transmission Planning Criteria, for radial system only N-1 is to be considered as permanent fault and N-1-1 is to be considered as temporary fault. Further, it has been mentioned that if N-1-1 contingency of permanent nature results in disconnection of generation unit from grid, then the remaining grid shall

asymptotically reach a new steady state without losing synchronism after loss of generation.

11.3. Accordingly, the effect of outage of 400kV immediate evacuation lines of Ranganadi and Kameng HEPs was studied during the joint system study. It was observed that outage of Ranganadi – Biswanath Chariali (about 130km) 400kV D/c line, doesn't lead to any appreciable effects on EHV system in NER except some overloading of 132kV lines emanating from Ranganadi HEP depending upon load-generation scenario in Arunachal Pradesh and near-by areas in Assam. Similarly, outage of Kameng – Balipara (about 60km) 400kV D/c line doesn't lead to any appreciable effects on EHV system in NER.

11.4. Members may discuss.

12. Reconductoring of Dimapur-Imphal and Leimatak (Loktak)-Jiribam 132kV lines

12.1. In the 7th SCM of NER, Manipur had proposed reconductoring of Dimapur-Imphal and Leimatak (Loktak)-Jiribam 132kV ISTS transmission lines. Accordingly, it was decided to study requirement of the same in the joint study meeting.

12.2. During the joint study meeting held on 12-11-2018, it was observed that in 2021-22 time-frame major power import requirement of Manipur from ISTS is met through Silchar – Imphal and New Kohima – Imphal 400kV D/c lines. Moreover, commissioning of said 400kV lines considerably reduces loading on Dimapur-Imphal and Leimatak (Loktak)-Jiribam 132kV lines. Thus, it was decided that the said requirement may be studied after commissioning of both Silchar – Imphal and New Kohima – Imphal 400kV D/c lines.

12.3. Members may discuss.

13. Interconnection of 132 kV substation at Surajmaningar (TSECL) & 400 kV Surajmaningar (ISTS) and 132 kV substation at P.K. Bari (TSECL) & P.K. Bari (ISTS)

13.1. North Eastern Region Strengthening Scheme (NERSS) – II (Part-B) and V scheme is being implemented under TBCB by NER- II Transmission Limited. The transmission schemes inter-alia includes establishment of 400/132 kV sub-station at Surajmaninagar (ISTS), 400/132 kV substation at P. K. Bari and Surajmaninagar (ISTS)-P.K. Bari (ISTS) 400kV D/C line.

13.2. As agreed in 5th SCM of NER, for downstream connectivity i.e. Surajmaninagar (ISTS) – Surajmaninagar (TSECL) 132 kV D/C line & P. K. Bari (ISTS) – P. K. Bari (TSECL) 132kV D/c line are to be implemented by TSECL.

13.3. The Matter regarding construction of 132 kV D/c lines from Surajmaninagar (ISTS) to Surajmaninagar (TSECL) and P.K.Bari (ISTS) to P.K.Bari (TSECL) was discussed in CEA on 14.08.2018 (minutes of meeting enclosed at **Annexure-III).** It was decided that since the construction of 400 kV Substation Surajmaninagar

(ISTS) is linked with enhancement of export of power to Bangladesh, TSECL should facilitate in its commissioning.

13.4. TSECL may update on the matter and Member may discuss.

14. Utilization of spare 132kV bays available at 400/132kV Silchar Substation

14.1. In the 7th SCM of NER , Superintending Engineer, NERPC stated that operation of Silchar - Melriat 400kV D/C (presently operating at 132kV level – 400kV operation yet to be planned), Silchar- P.K. Bari 400kV D/C (presently operating at 132kV level) and Silchar - Imphal 400kV D/C (presently operating at 132kV level) lines at it is rated voltage (i.e. 400kV) would result in availability of 4 nos. of spare 132kV bays at Silchar S/s. In view of above NER constituents may plan for utilization of above bays. It was decided that the same would be discussed in joint study meeting.

14.2. During the joint study meeting held on 12-11-2018, AGM, AEGCL stated that uilization of 132kV spare bays at 400/132kV Silchar S/s will inform after discussion with senior officers in AEGCL.

14.3. AEGCL may update on the matter.

15. Enhancement of transformers capacity to 2x500 MVA instead of 2x315 MVA at the upcoming 400/220 kV S/s at Sonapur S/s- Agenda by Assam

15.1. The 5th SCM has already approved the 'Establishment of 2x315 MVA 400/220 kV Sonapur GSS in Eastern part of Guwahati' to be implemented by AEGCL as an intra-state scheme. This will mitigate the contingency of 400 kV Azara GSS through LILO of Silchar-Byrnihat 400 kV line. The CEA recommends vide its letter dated 15.10.2018 for enhancement of capacity to be installed from 2x315 MVA to 2x500 MVA against the aforesaid proposal as per their observations/comments made on the DPR. AEGCL requested the amended proposal of enhancing transformers capacity to 2x500 MVA as desired to be installed at the upcoming 400/220 kV Sonapur GSS.

15.2. Members may discuss.

16. Intra-state transmission system strengthening at various voltage levels in Assam – Agenda by Assam

16.1. As per the vision of Govt. of India "24x7 Power for all" and 13th Five Year Plan, AEGCL has submitted proposal for "Enhancement of Intra State Transmission System" where total 24 nos. of new substations and associated transmission lines, capacity augmentation of transformers (total capacity addition 769MVA), Re-conductoring by HTLS (total 186ckm), Bay extension (29 nos.), Conversion of one no. AIS to GIS (132/33KV Gohpur S/s) and Replacement of Existing Ground Wire of the transmission lines with OPGW (615km) is proposed.

16.2. The detailed proposal of Assam was studied during the joint system study meeting on 12-11-2018. Subsequently, the detailed scope of the work submitted

by AEGCL is placed at **Annexure-IV**. The comments/suggestion on the proposed transmission system of AEGCL are as follows:

(a) Ghungur 132/11kV: Due to 400kV operation of Silchar-PK Bari and Silchar-Imphal, it is expected that 4 no. 132kV line bays shall be vacant at Silchar (POWERGRID) 400/132kV S/s. Accordingly, it is proposed that Ghungur S/s may be connected through Ghungur – Silchar 132kV S/c line instead of Ghungur – Srikona 132kV S/c line. Moreover, it has been observed that Silchar – Srikona 132kV D/c line is overloaded under N-1 contingency. Connection of Ghungur to Silchar would avoid additional loading on already critically loaded Silchar-Srikona 132kV D/c line. Connectivity to ISTS point shall also improve reliability of power supply in the area.

(b) Rowta 220/132kV: It has been proposed to connect Rowta new substation to Rangia-Existing 220kV S/s. It is suggested that Rowta 220kV S/s may be connected to the proposed Rangia 400/220kV, 2x500MVA S/s (proposed under this scheme itself).

(c) Rangia 400/220kV:

(i) It has been proposed by AEGCL to establish Rangia through LILO of one circuit of Balipara – Bongaigaon 400kV D/c (Twin Moose) line. However, in the 7th SCM of NER it was agreed that Rangia S/s may be established through LILO of both circuits of Balipara – Bongaigaon 400kV D/c (Twin Moose) line. Thus, AEGCL may consider LILO of both circuits as agreed in the 7th SCM of NER.

(ii) Similarly, at 220kV level in the 7th SCM of NER, it was agreed that both circuit of Rangia – Amingaon 220kV D/c line may be LILOed at Rangia 400/220kV S/s. However, AEGCL has proposed LILO of one circuit of Rangia – Amingaon 220kV D/c line. Thus, AEGCL may consider LILO of both circuits as agreed in the 7th SCM of NER.

(iii) As mentioned above, Rowta 220kV may be connected to Rangia 400/220kV S/s instead of existing Rangia 220kV S/s.

16.3. Members may discuss.