भारत सरकार

Government of India

विद्युत मंत्रालय

Ministry of Power

केंद्रीय विद्युत प्राधिकरण

Central Electricity Authority

विद्युत प्रणाली योजना एवं मूल्यांकन प्रभाग-II

Power System Planning & Appraisal Division-II

सेवा मे / To,

संलग्न सूची के अनुसार

As per list enclosed

विषय : दक्षिण क्षेत्र विद्युत् समिति (परेक्षण योजना) की पहली बैठक की कार्यसूची।

Subject: 1st meeting of Southern Region Power Committee (Transmission Planning) (SRPCTP)- Agenda.

महोदय(Sir)/महोदया(Madam),

दक्षिण क्षेत्र विद्युत् समिति (परेक्षण योजना) की पहली बैठक 16 दिसम्बर, 2019 को हैदराबाद , में आयोजित की जाएगी। बैठक का कार्यसूची संलग्न है।

The 1st meeting of Southern Region Power Committee (Transmission Planning) (SRPCTP) is scheduled to be held on 16th December, 2019 at Hyderabad. Agenda of the meeting is enclosed herewith.

भवदीय/Yours faithfully,

09/12/2019

(प्रदीप जिंदल/ Pardeep Jindal)

मुख्य अभियंता/ Chief Engineer

Copy for kind information to:

1) PPS to Member PS, CEA

List of addressee:

1. The Member Secretary, Southern Regional Power Committee, 29, Race Course Cross Road, Bangalore 560 009. FAX : 080-22259343	2. Chief Operating Officer (CTU-Plg), Central Transmission Utility, Power Grid Corporation of India "Saudamini" Plot No. 2, Sector-29, Gurugram-122001 Tel. No. 0124-2571816 Fax No.0124-2571932
3. Director (System Operations), POSOCO B-9, Qutub Institutional Area, Katwaria Sarai, New Delhi-110016 Tel. No. 26852843 Fax No. 2626524525, 26536901	4. Managing Director Karnataka Power Transmission Corp. Ltd., Cauvery Bhawan, Bengaluru - 560 009. FAX : 080 -22228367
5.Chairman and Managing Director Transmission Corp. of Andhra Pradesh Ltd., (APTRANSCO) Gunadala, Eluru Road, Vijayawada, Andhra Pradesh	6. Chairman-cum-Managing Director Transmission Corp. of Telangana Ltd., (TSTRANSCO) Vidyut Soudha, Khairatabad Hyderabad – 500 082.
7. Chairman-cum-Managing Director Kerala State Electricity Board, Vidyuthi Bhawanam, Pattom, Thiruvananthapuram - 695 004. FAX : 0471-2444738	8. Managing Director Tamil Nadu Transmission Corporation Ltd (TANTRANSCO), 6th Floor, Eastern Wing, 800 Anna Salai, Chennai - 600002. FAX : 044-28516362
9. The Superintending Engineer –I, First Floor, Electricity Department, Gingy Salai, Puducherry – 605 001. Fax : 0413-2334277/2331556	10. Executive Engineer, Divisional Office, Lakshadweep Electricity Department, Kavaratti Island, UT of Lakshadweep
11. Chairman & Managing Director, NTPC Limited, NTPC Bhawan, SCOPE Complex, Institutional Area, Lodhi Road,New Delhi - 110003	12. Chairman & Managing Director, NHPC Limited, N.H.P.C. Office Complex, Sector-33, Faridabad - 121003 (Haryana)
13. Chairman, Solar Energy Corporation of India Limited, 1st Floor, D-3, A Wing, Prius Platinum Building, District Centre, Saket, New Delhi - 110017	

Agenda for 1st meeting of Southern Region Power Committee on Transmission Planning to be held on 16.12.2019 at Hyderabad

Date: 16.12.2019 **Time: 10:30 A.M.**

1.0 Minutes of 2nd Meeting of Southern Region Standing Committee on Transmission (SRSCT)

1.1 Minutes of 2nd Meeting of Southern Region Standing committee on Transmission (SRSCT) held on 10.06.2019 at Bengaluru, was circulated vide letter No. CEA-PS-12-14(12)/1/2018-PSPA –II/I/5982/2019 dated: 10.07.2019.

Based on observations of NLC India Ltd., CTU and TANTRANSCO, corrigendum was issued vide CEA's letter no CEA-PS-12-14(12)/1/2018-PSPA-II Division/I/6865/2019 dated 17.09.2019. (Annex-1.0).

The minutes of 2nd Meeting as circulated, along with corrigendum, may please be confirmed.

2.0 Constitution of five "Regional Power Committees (Transmission Planning)" (RPCTPs)

2.1 Ministry of Power vide letter no. 15/3/2017-Trans dated 04.11.2019 (Annex-2.0) reconstituted the existing five Regional Standing Committee on Transmission (RSCTs) by replacing the same with five new "Regional Power Committees (Transmission Planning) (RPCTPs)".

2.2 Southern Regional Power Committee (Transmission Planning) (SRPCTP) has been constituted having following composition, with immediate effect:

1.	Member Power System , Central Electricity Authority, CEA	Chairperson
2.	Chief Operating Officer, Central Transmission Utility POWERGRID	Member
3.	Director (System Operation), Power System Operation Corporation Ltd.	Member
4.	Heads of State Transmission Utilities (STUs) of Telangana, Andhra Pradesh , Karnataka, Kerala, Tamil Nadu, UT of Puducherry, UT of Lakshadweep #	Member
5.	Member Secretary of Southern Regional Power Committee	Member
6.	CMD/ MD/ Chairman of NTPC, NHPC and SECI	Members
7.	Chief Engineer (from Power System Wing), Central Electricity Authority*	Member Secretary

 # STUs to coordinate with their respective Distribution Companies (DISCOMs).
** To be nominated by Central Electricity Authority.*

2.3 Terms of Reference (TOR) of the Committee are to:

1) Carry out a quarterly review of the Transmission System in the region; assess the growth in generation capacity and the demand in various parts of the region; and

draw up proposals for strengthening inter- Regional transmission system. The transmission planning is required to keep in mind the areas where the generation is likely to grow and areas where load demand will grow so that the transmission system at any point of time is capable to meet the demand in every corner of the country and comply with the mandate under the Tariff Policy of developing transmission system ahead of the generation for ensuring smooth operation of the grid.

2) Assess the transmission system requirements in the near, medium and long term and draw up transmission schemes to meet these requirements. While doing this a perspective plan for the next 15-20 years may also be kept in mind and accordingly the requisite allowance/margin may be factored in the system during planning process.

3) Examine applications for connectivity and access and ensure that these are granted speedily, provided that the requisite fees/charges are paid.

4) Review the upstream and downstream network associated with transmission schemes.

5) Examine and evaluate the intra-state transmission proposals.

6) Review and facilitate the construction of the inter-regional grid strengthening schemes.

2.4 The RPCTPs shall take steps to ensure that the transmission capacity is capable of wheeling the electricity to different parts of the region and outside the region as per the demands of the market. They shall carry out the quarterly reviews and make recommendation for system strengthening and expansion keeping in mind the guidelines laid down by the Tariff Policy.

2.5 The RPCTPs will forward their review of the transmission systems and their recommendation for system expansion/ strengthening to the National Committee on Transmission (NCT) at the end of every quarter- by 15th July; 15th October; 15th January and 15th April. The NCT will examine the proposals and forward them to Government with their recommendations.

2.6 Accordingly, this is the 1st meeting of SRPC(TP). Members may please note.

Follow up issues of previous meetings of Standing Committee on Power System Planning for SR (SCPSPSR)/ Southern Region Standing Committee on Transmission (SRSCT)

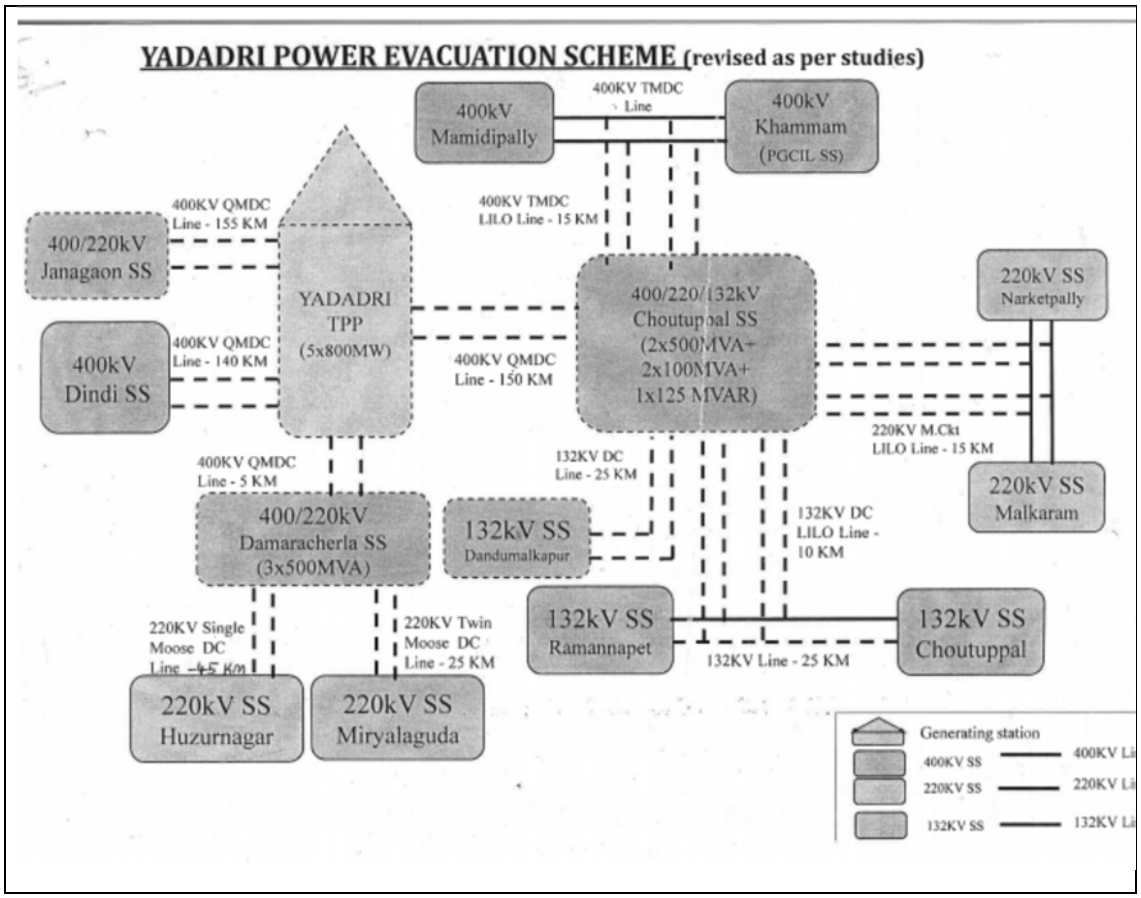
3.0 Revised proposal by TSTRANSCO for earlier approved transmission scheme of Yadadri (Damaracherla) TPP (5x800 MW)

3.1 Evacuation of power from Yadadri (Damaracherla) TPP (5x800 MW) was approved in 39th meeting of SCPSPSR.

3.2 In the 2nd meeting of SRSCT, TSTRANSCO had proposed revised transmission scheme for evacuation of power from Yadadri TPP (5x800 MW) and also to provide start up power to Yadadri TPP. The proposed revised scheme is as follows:

Approved Transmission Evacuation Scheme of Yadadri (Damaracherla) TPP (5x800 MW) as per minutes of meeting of 39th SCPSPSR	**Proposed Revised Transmission Evacuation Scheme of Yadadri TPP (5x800 MW)**
1) Proposed Damaracherla Switchyard to proposed 400/220/132 kV Choutuppal SS by Quad Moose DC Line 2) Proposed Damaracherla Switchyard to proposed 400/220 kV Dindi SS by Quad Moose DC Line 3) Proposed Damaracherla Switchyard to proposed 400/220 kV Maheshwaram (TSTRANSCO) SS by Quad Moose DC Line 4) Proposed Damaracherla Switchyard to proposed 400/220 kV Jangaon SS (Jangaon SS is included in the Manuguru and KTPS VII Evacuation Scheme) by Quad Moose DC Line 5) From Proposed 400/220/132 kV Choutuppal SS to Upcoming 220/33 kV Hayathnagar SS by Single Moose DC Line 6) From proposed 400/220/132 kV Dindi SS to Upcoming 220/33 kV Thimmajipet SS by Single Moose DC line 7) From proposed 400/220/132 kV Dindi SS to proposed 220/132 kV Nagarkurnool SS by Single Moose DC line 8) From proposed 400/220/132 kV Dindi SS to Existing 220/33 kV KM Pally SS by Single Moose DC line 9) 400/220kV Dindi SS with 3x500 MVA 10) 400/220/132 kV Choutuppal SS with 3x500MVA+2x100 MVA	1) Proposed Yadadri (Damaracherla) Switchyard to proposed 400/220/132 kV Choutuppal SS by Quad Moose DC Line – 150 km. 2) Proposed Yadadri (Damaracherla) Switchyard to 400/220 kV Dindi SS by Quad Moose DC Line – 140 km. 3) Proposed Yadadri (Damaracherla) Switchyard to proposed 400/220 kV Damaracherla SS by Quad Moose DC Line – 5 km. 4) Proposed Yadadri (Damaracherla) Switchyard to 400/220kV Jangaon SS by Quad Moose DC Line – 155 km. 5) Double circuit LILO of existing 400kV Khammam – Mamidpally TMDC Line to proposed 400/220/132kV Choutuppal SS – 15 km. 6) 220 kV TMDC line from proposed 400/220kV Damaracherla SS to 220/132kV Miryalaguda SS – 25 km. 7) 220 kV SMDC line from proposed 400/220kV Damaracherla SS to 220/132kV Huzurnagar SS – 45 km 8) Double Circuit LILO of existing 220 kV Narketpally – Malkaram DC line to proposed 400/220/132 kV Choutuppal SS on multi circuit towers – 15 km

Approved Transmission Evacuation Scheme of Yadadri (Damaracherla) TPP (5x800 MW) as per minutes of meeting of 39th SCPSPSR	**Proposed Revised Transmission Evacuation Scheme of Yadadri TPP (5x800 MW)**
11) 220/132kV Nagarkurnool SS with 2x100 MVA 12) 2x125 MVAR Bus Reactor at Damaracherla switchyard	9) 2nd circuit stringing on existing 132 kV Ramannapet-Choutuppal DC/SC line – 25 km 10) LILO of both circuits of 132 kV Ramannapet – Choutuppal DC line to proposed 400/220/132kV Choutuppal SS on multi circuit towers – 10 km. 11) 132 kV DC line from proposed 400/220/132 kV Choutuppal SS to Upcoming 132/33kV Dandumalkapur SS – 25 km. 12) 400/220 kV Damaracherla SS with 3x500MVA 13) 400/220/132 kV Choutuppal SS with 2x500 MVA+2x100 MVA 14) 2x125 MVAR Bus Reactor at Yadadri (Damaracherla) Switchyard 15) 1x125 MVAR Bus Reactor at proposed 400/220/132 kV Choutuppal SS (approved in 1st SRSCT meeting)



3.3 In the 2nd meeting of SRSCT, Chief Engineer (PSPA-II), CEA, had stated that that power is already being injecting towards Khammam from North Telangana, so LILO of existing 400 kV Khammam – Mamidipally D/c line may not facilitate in evacuation of power from Yadadri TPP and he advised that instead of the LILO, a direct link from Choutuppal SS to Maheshwaram shall facilitate in evacuation of power from Yadadri TPP and supply to the loads in Hyderabad. TSTRANSCO representative stated that based on field survey, there are RoW issues and direct transmission line from Choutuppal SS to Maheshwaram SS cannot be implemented. Further, first unit of 800 MW at Yadadri TPP is scheduled for commissioning by the year 2021.

3.4 In the 2nd SRSCT, it was decided that the revised proposal of TSTRANSCO may be discussed in a separate meeting between CEA, CTU and TSTRANSCO.

3.5 Accordingly, a joint study meeting was held on 21st & 22nd, November 2019. In the meeting, load flow studies were carried out with the revised proposal of transmission system of TSTRANSCO and from the system studies it was observed that the following transmission system is adequate for evacuation & supply of power from Yadadri TPP (5x800 MW).

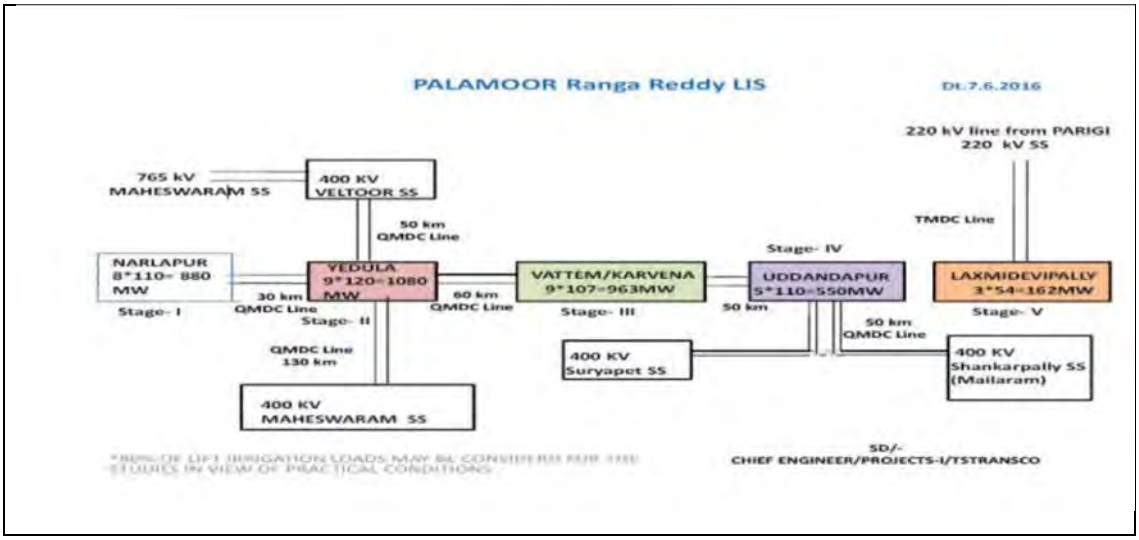
Approved Transmission Evacuation Scheme of Yadadri (Damaracherla) TPP (5x800 MW) as per minutes of meeting of 39th SCPSPSR	**Revised Transmission Scheme of Yadadri TPP (5x800 MW)**
1) Proposed Damaracherla Switchyard to proposed 400/220/132 kV Choutuppal SS by Quad Moose DC Line	1) Proposed Yadadri TPP Switchyard to proposed 400/220/132 kV Choutuppal SS by Quad Moose DC Line – 150 km
2) Proposed Damaracherla Switchyard to proposed 400/220 kV Dindi SS by Quad Moose DC Line	2) Proposed Yadadri TPP Switchyard to 400/220kV Dindi SS by Quad Moose DC Line – 140 km
3) Proposed Damaracherla Switchyard to proposed 400/220kV Maheshwaram (TSTRANSCO) SS by Quad Moose DC Line	
4) Proposed Damaracherla Switchyard to proposed 400/220kV Jangaon SS (Jangaon SS is included in the Manuguru and KTPS VII Evacuation Scheme) by Quad Moose DC Line	3) Proposed Yadadri TPP Switchyard to 400/220 kV Jangaon SS by Quad Moose DC Line – 155 km.
5) From Proposed 400/220/132kV Choutuppal SS to Upcoming 220/33kV Hayathnagar SS by Single Moose DC Line	-
6) 400/220/132kV Choutuppal SS with 3x500MVA+2x100 MVA	4) 400/220/132 kV Choutuppal SS with 2x500 MVA + 2x100 MVA transformers.
7) 2x125 MVAR Bus Reactor at Damaracherla switchyard	5) 2x125 MVAR Bus Reactor at Yadadri TPP Switchyard.
	6) Proposed Yadadri TPP Switchyard to proposed 400/220 kV Damaracherla SS by Quad Moose DC Line – 5 km.
	7) 400/220kV Damaracherla SS with 2x500MVA transformers.
	8) Double Circuit LILO of existing 400 kV Khammam – Mamidpally TMDC line to proposed 400/220/132kV Choutuppal SS – 15 km.
	9) 220 kV TMDC line from proposed 400/220 kV Damaracherla SS to 220/132 kV Miryalaguda SS – 25 km.
	10) 220 kV SMDC line from proposed 400/220 kV Damaracherla SS to 220/132 kV Huzurnagar SS – 45 km.
	11) Double Circuit LILO of existing 220kV Narketpally – Malkaram DC line to proposed 400/220/132kV Choutuppal SS – 15 km.

Approved Transmission Evacuation Scheme of Yadadri (Damaracherla) TPP (5x800 MW) as per minutes of meeting of 39th SCPSPSR	**Revised Transmission Scheme of Yadadri TPP (5x800 MW)**
	12) 2nd circuit stringing on existing 132 kV Ramannapet-Choutuppal DC/SC line - 25 km.
	13) LILO of both circuits of 132 kV Ramannapet – Choutuppal DC line to proposed 400/220/132kV Choutuppal SS on multi circuit towers - 10 km
	14) 132 kV DC line from proposed 400/220/132kV Choutuppal SS to Upcoming 132/33kV Dandumalkapur SS - 25 km.
	15) 1x125 MVAR Bus Reactor at proposed 400/220/132 kV Choutuppal SS. (approved in 1st SRSCT meeting)

Members may please discuss.

4.0 Revised proposal for Palamuru Rangareddy Lift Irrigation Scheme by TSTRANSCO.

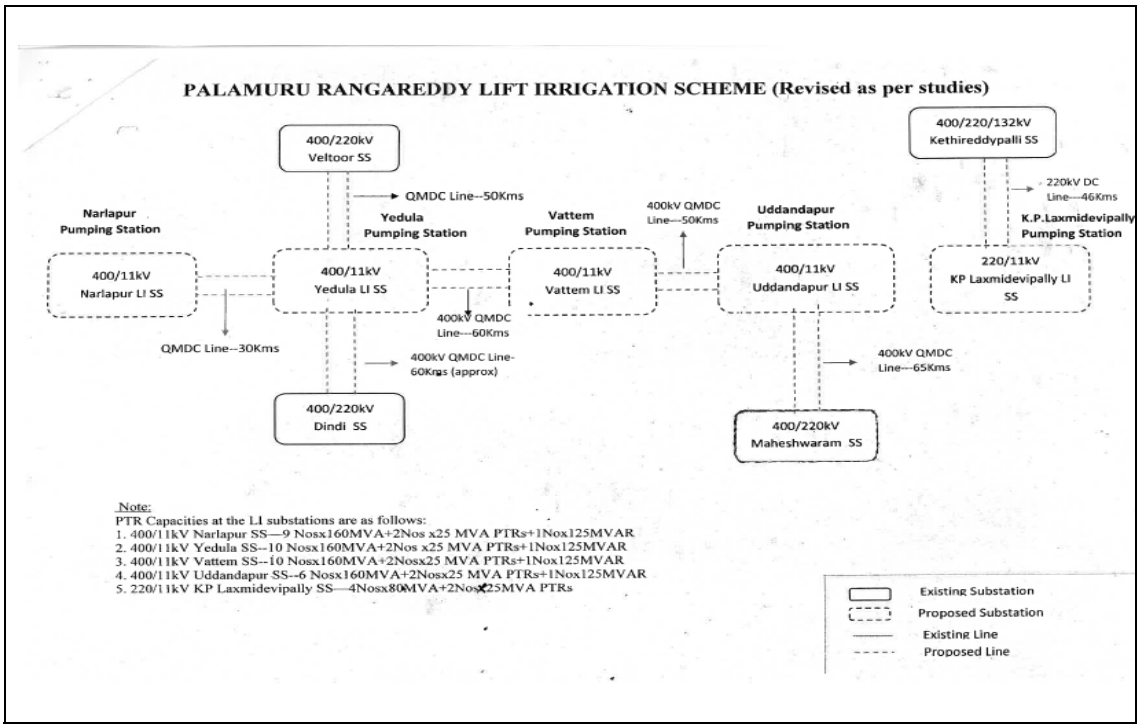
4.1 Transmission scheme for Palamuru Rangareddy Lift Irrigation schemes was approved in 40th SCPSPSR.



4.2 In the 2nd SRSCT, TSTRANSCO had proposed revised connectivity for Palamuru Rangareddy Lift Irrigation Scheme as follows:

Approved transmission scheme for Palamuru Rangareddy Lift Irrigation Scheme as per minutes of meeting of 40th SCPSPSR	**Revised transmission scheme for Palamuru Rangareddy Lift Irrigation Scheme**
1) 400kV Quad Moose DC line from Veltoor to proposed 400kV Yedula LI SS – 50kMs 2) 400kV Quad Moose DC line from proposed 400kV Yedula LI SS to proposed 400kV Narlapur LI SS – 30kMs 3) 400kV Quad Moose DC line from proposed 400kV Yedula LI SS to proposed 400kV Vattem/Karvena LI SS – 60kMs 4) 400kV Quad Moose DC line from Maheshwaram TSTransco SS to proposed 400kV Yedula LI SS – 130kMs 5) LILO of both circuits of 400kV Suryapet – Manikonda (Kethireddypalli) Quad Moose DC line to proposed 400kV Uddandapur LI SS – 50 km 6) 400kV Quad Moose DC line from proposed 400kV Vattem LI SS to proposed 400kV Uddandapur LI SS – 50 km 7) 220kV Twin Moose DC line from 220kV Parigi SS to KP Laxmidevipally LI SS – 20 km 8) 125MVAR Bus Reactor at Narlapur 400kV LI SS 9) 125MVAR Bus Reactor at Yedula 400kV LI SS 10) 125MVAR Bus Reactor at Vattem 400kV LI SS 11) 125MVAR Bus Reactor at Uddandapur 400kV LI SS	1) 400/11kV LI SS at Narlapur with 9x160MVA and 2x25MVA 400/11 kV PTRs 2) 400/11kV LI SS at Yedula with 10x160MVA and 2x25MVA 400/11 kV PTRs 3) 400/11kV LI SS at Vattem with 10x160 MVA and 2x25 MVA 400/11 kV PTRs 4) 400/11kV LI SS at Uddandapur with 6x160MVA and 2x25MVA 400/11kV PTRs 5) 220/11kV LI SS at KP Laxmidevipally with 4x80MVA and 2x25MVA 220/11 kV PTRs 6) 400kV QMDC line from 400 kV Veltoor SS to proposed 400 kV Yedula LI SS – 50 km 7) 400 kV QMDC line from proposed 400 kV Yedula LI SS to proposed 400 kV Narlapur LI SS – 30 km 8) 400kV QMDC line from proposed 400 kV Yedula LI SS to proposed 400 kV Vattem LI SS – 60 km 9) 400 kV QMDC line from proposed 400 kV Vattem LI SS to proposed 400 kV Uddandapur LI SS – 50 km 10) 400 kV QMDC line from 400 kV Maheshwaram (TS) SS to proposed 400 kV Uddandapur LI SS – 65 km 11) 400kV QMDC line from 400kV Dindi SS to 400kV Yedula LI SS – 60 km

Approved transmission scheme for Palamuru Rangareddy Lift Irrigation Scheme as per minutes of meeting of 40th SCPSPSR	**Revised transmission scheme for Palamuru Rangareddy Lift Irrigation Scheme**
	12) 220kV DC line from 400/220/132 kV Kethireddypalli (Manikonda) SS to proposed 220kV KP Laxmidevipally LI SS – 46 km 13) 125 MVAR Bus Reactor at Narlapur 400 kV LI SS 14) 125 MVAR Bus Reactor at Yedula 400 kV LI SS 15) 125MVAR Bus Reactor at Vattem 400 kV LI SS 16) 125MVAR Bus Reactor at Uddandapur 400 kV LI SS



4.3 It was decided in the 2nd SRSCT meeting that CEA, CTU and TSTRANSCO may jointly study and finalize the transmission scheme for Palamuru Rangareddy Lift Irrigation. The recommendations would be discussed in next meeting of Standing Committee.

4.4 Accordingly, the proposal was discussed in the Joint Study Meeting on 22-22 November, 2019. In the joint study meeting, Chief Engineer (PSPA-II), CEA, requested TSTRANSCO representatives to plan their transmission system after carrying out detailed field survey. Major revisions in already approved transmission schemes is not advisable.

4.5 The Load flow study was carried out and based on the load flow studies, the following revised transmission scheme was agreed for Palamuru Rangareddy Lift Irrigation Scheme:

Approved Palamuru Rangareddy Lift Irrigation Scheme as per minutes of meeting of 40th SCPSPSR	**Revised transmission scheme for Palamuru Rangareddy Lift Irrigation Scheme**
1) 400kV Quad Moose DC line from Veltoor to proposed 400kV Yedula LI SS – 50kMs	1) 400 kV QMDC line from 400 kV Veltoor SS to proposed 400kV Yedula LI SS – 50 km
2) 400kV Quad Moose DC line from proposed 400kV Yedula LI SS to proposed 400kV Narlapur LI SS – 30 km	2) 400 kV QMDC line from proposed 400kV Yedula LI SS to proposed 400kV Narlapur LI SS – 30 km
3) 400kV Quad Moose DC line from proposed 400kV Yedula LI SS to proposed 400kV Vattem/Karvena LI SS – 60kMs	3) 400 kV QMDC line from proposed 400kV Yedula LI SS to proposed 400kV Vattem LI SS – 60 km.
4) 400kV Quad Moose DC line from Maheshwaram TSTransco SS to proposed 400kV Yedula LI SS – 130kMs	-
5) LILO of both circuits of 400kV Suryapet – Manikonda (Kethireddypalli) Quad Moose DC line to proposed 400kV Uddandapur LI SS – 50kMs	-
6) 400kV Quad Moose DC line from proposed 400kV Vattem LI SS to proposed 400kV Uddandapur LI SS – 50kMs	4) 400 kV QMDC line from proposed 400kV Vattem LI SS to proposed 400kV Uddandapur LI SS – 50 km
7) 220kV Twin Moose DC line from 220kV Parigi SS to KP Laxmidevipally LI SS – 20 kMs	-
8) 125MVAR Bus Reactor at Narlapur 400kV LI SS	5) 125 MVAR Bus Reactor at Narlapur 400 kV LI SS
9) 125MVAR Bus Reactor at Yedula 400kV LI SS	6) 125 MVAR Bus Reactor at Yedula 400 kV LI SS

Approved Palamuru Rangareddy Lift Irrigation Scheme as per minutes of meeting of 40th SCPSPSR	**Revised transmission scheme for Palamuru Rangareddy Lift Irrigation Scheme**
10) 125MVAR Bus Reactor at Vattem 400kV LI SS	7) 125 MVAR Bus Reactor at Vattem 400 kV LI SS
11) 125MVAR Bus Reactor at Uddandapur 400kV LI SS	8) 125MVAR Bus Reactor at Uddandapur 400 kV LI SS
	9) 400/11 kV LI SS at Narlapur with 9x160MVA and 2x25 MVA, 400/11 kV PTRs
	10) 400/11 kV LI SS at Yedula with 10x160 MVA and 2x25 MVA 400/11 kV PTRs
	11) 400/11kV LI SS at Vattem with 10x160 MVA and 2x25 MVA, 400/11 kV PTRs
	12) 400/11kV LI SS at Uddandapur with 6x160 MVA and 2x25 MVA, 400/11 kV PTRs
	13) 220/11 kV LI SS at KP Laxmidevipally with 4x80 MVA and 2x25MVA, 220/11 kV PTRs
	14) 400 kV QMDC line from 400 kV Maheshwaram (TS) SS to proposed 400kV Uddandapur LI SS – 65 km
	15) 400 kV QMDC line from 400 kV Dindi SS to 400 kV Yedula LI SS – 60 km
	16) 220 kV DC line from 400/220/132 kV Kethireddypalli (Manikonda) SS to proposed 220kV KP Laxmidevipally LI SS – 46 km

Members may please discuss.

5.0 Permanent de-linking of existing 400 kV RTPS-BTPS-JSW-GUTTUR Twin Moose line between BTPS and JSW

5.1 In the joint meeting of Standing Committee on Power System Planning of SR and WR held on 26th December 2013, transmission system of KPTCL for evacuation of power from Yeramarus (2x800 MW) and Edlapur (1x800 MW) Thermal Power Plant, the following transmission scheme was approved:

i. Bellary 400 kV Pooling station near BTPS.

ii. Gulbarga 400/220 kV sub-station with 7x167 MVA (single phase) or 2x500 MVA.

iii. Yeramarus TPS-Gulbarga 400 kV D/C line with Quad Moose conductor.

iv. Establish 400 kV switching station at Chikkanayakanahalli (CN Halli) near Loop in Loop out (LILO) point of 400 kV Nelamangala-Talaguppa lines to Hassan.

v. LILO of both the Nelamangala-Talaguppa 400 kV lines to the proposed pooling station near CN Halli.

vi. Terminate 400 kV D/C line feeding 400/220 kV Hassan sub-station from Nelamangala-Talaguppa line at CN Halli 400 kV pooling station.

vii. Yeramarus TPS-BPS 400 kV D/C line with Quad Moose conductor.

viii. Bellary Pooling station -CN Halli 400 kV D/C line with Quad Moose conductor.

ix. Bellary Pooling station -New Madhugiri (Near Tumkur) 400 kV D/C line with quad moose conductor.

x. Bellary TPS-Bellary Pooling station 400 kV D/C line with Quad Moose conductor.

xi. De-link 400 kV S/C line running between RTPS-BTPS-JSW-Guttur with BTPS and JSW bus so as to retain direct connectivity between RTPS and Guttur.

xii. JSW TPS-BPS 400 kV D/C line with Quad Moose conductor.

5.2 It was also approved in the Joint Study Meeting held in December, 2013, that KPTCL would plan an additional 400 kV DC transmission line from JSW TPS or would configure the JSW-Bellary link in such a way that in case of contingency, the LILO of RTPS-Guttur line at JSW generating station, would be re-established. If there is any constraint/congestion in the system beyond Bellary Pooling Station or New Madhugiri S/S, then JSW or other generators connected to Bellary PS may have to be backed down.

5.3 Further, in the 39th Meeting of Standing Committee on Power System Planning of Southern Region held on 28th & 29th December 2015, the following changes were agreed:

i. BTPS-Guttur 400 kV Quad Moose DC line.

ii. Retain the LILO to BTPS only, from the existing 400 kV SC line running between 'RTPS-BTPS-JSW-Guttur'.

iii. BPS to BTPS 400 kV DC Quad Moose link may be dropped.

iv. JSW would be connected with Bellari Pooling station by additional two nos. 400 kV Quad DC line.

v. Switching station at 'Chikkanayakanahalli' (CN Halli) will be converted into a step down station with 2x500 MVA, 400/220 kV ICT's.

5.4 M/s JSW had requested for permanent de-linking of existing 400kV “RTPS-BTPS·JSW-Guttur” Twin Moose line between BTPS and JSW.

5.5 The issue of de-linking of 400 kV LILO portion of 400 kV “RTPS-BTPS-JSW-GUTTUR” Twin Moose line at JSW generating station was discussed in the 2nd meeting of SRSCT held on 10.06.2019. It was decided in the meeting that the issue would be discussed in a separate

meeting with KPTCL, JSW, SRLDC and CEA. The recommendations would be discussed in next meeting of SRSCT.

5.6 Accordingly, the matter was discussed in a meeting chaired by Chairperson/Member (Power System), CEA, with representatives from KPTCL, SRLDC, JSW, CEA and CTU (MoM enclosed at Annex-5.0). In the meeting, it was agreed by all that KPTCL may open the LILO subject to following conditions:

i. The LILO may be opened only after 1st June, 2020, i.e. after the annual peak demand period of Southern Region.

ii. KPTCL shall ensure that there would not be any constraints / congestion in the STU grid and conditions stipulated in the manual on transmission planning criteria are met, while giving NoC for injection of power (quantum in MW) to M/s JSW.

iii. KPTCL should expedite the works of upgradation of BTPS - Guttur 400 kV S/C line to 400 kV Quad D/C line. This was agreed in the 39th meeting of Standing Committee on Power System Planning of Southern Region held on 28-29 December, 2015. However, the work has been delayed and KPTCL must expedite the same. Further, KPTCL shall issue NoC for injection of power to JSW only after completion of upgradation works of BTPS - Guttur 400 kV line.

iv. The issue of NoC to the declared IPPs or CPP of JSW, as the case may be, would be in accordance with KERC regulations/orders.

Members may please discuss.

6.0 Modifications in 220 kV transmission system proposed by KPTCL at Yalwar (associated transmission lines of 400/220 kV Yalwar Substation.)

6.1 KPTCL's vide letter no. CEE (P&C)/SEE(Plg)/EE(PSS)KCO-97/7825/ 2019-20 dated: 09.08.2019 (Annex-6.0) had requested the following modifications in the associated 220 kV transmission system of 400/220 kV Yalwar S/S:

220 kV System (as per minutes of 2nd meeting of SRSCT):

i. LILO of both circuits of existing B. Bagewadi – Lingasugur 220 kV D/C line at Yalwar.

ii. LILO of both circuits of Bijapur- Sindagi 220 kV D/C line sub-station at Yalwar.

iii. B. Bagewadi -Yalwar 220 kV D/C line.

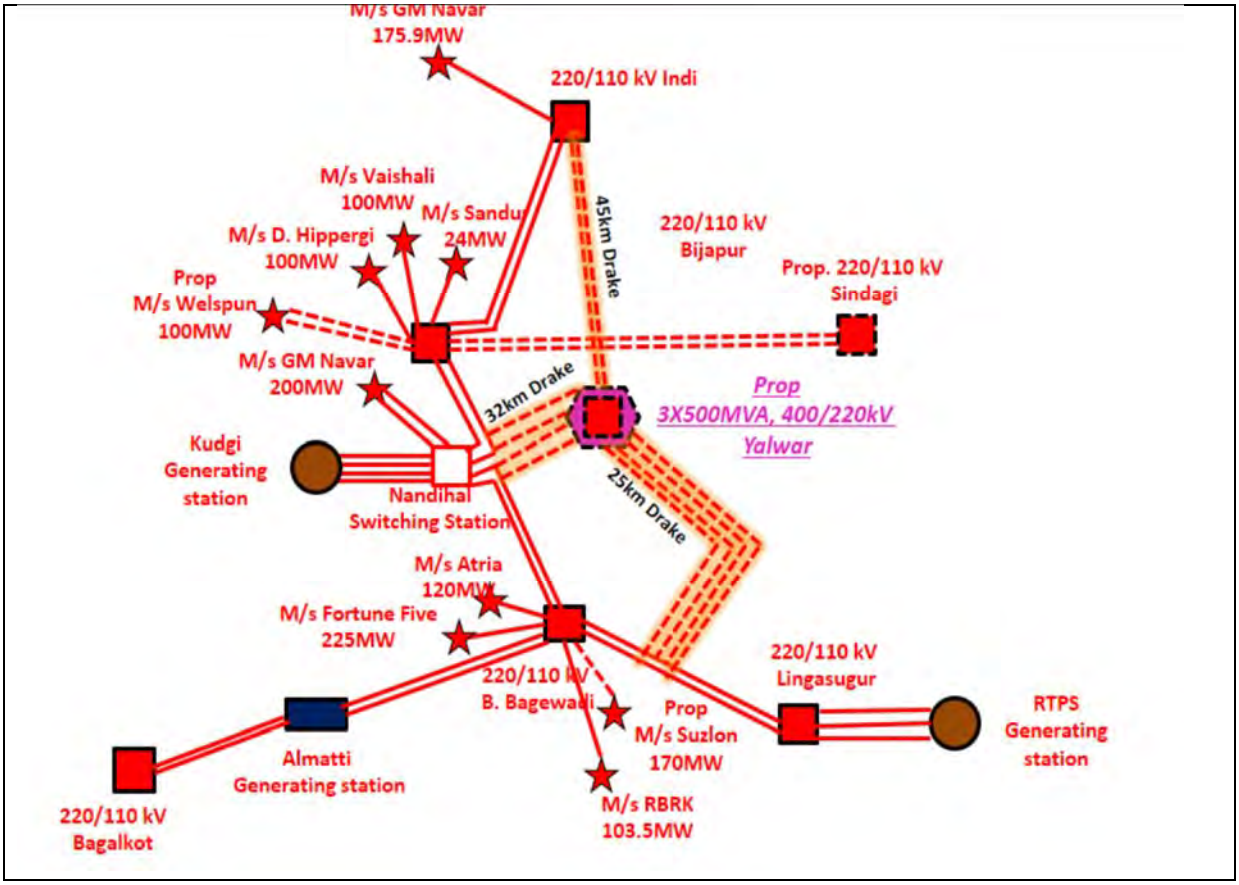
Modifications in 220 kV transmission system proposed by KPTCL (vide letter dated 09.08.2019):

i. DC LILO of existing B.Bagewadi – Lingasugur 220 kV DC line to the proposed 400 kV Yalwar sub-station.

ii. 220 kV DC line from proposed 400/220 kV Yalawar (Shivanagi) sub-station to 220 kV Indi substation.

iii. 220 kV multi-circuit line to the LILO point of 220 kV DC Basavana Bagewadi-Vijayapur line near 220 kV Nandihal switching station.

The transmission line at Sl. No. (i) was already agreed in the 2nd SRSCT meeting.



6.2 The issue was discussed in the joint study meeting. In the meeting Chief Engineer (PSPA-II), CEA, stated that with the proposed connectivity, there would be unequal loading between B. Bagewadi –Yalwar. As such KPTCL agreed to study alternate connectivity to solve this issue and send a detailed proposal to CEA in a weeks' time. The modified proposal would be discussed in the SRPC(TP) meeting.

Members may please discuss.

7.0 Power evacuation scheme by KPTCL for the proposed 2000 MW Sharavathy Pumped Storage Project

7.1 In the 2nd SRSCT meeting, KPTCL had proposed following transmission scheme (for evacuation of power from 2000 MW Sharavathy pumped storage project.

i. Construction of 400 kV MC line with Quad Moose conductor from proposed Sharavathy Pumped Storage Station to 400/220 kV Talaguppa sub-station by utilizing the existing 220 kV S 1, S2 or S3, S4 corridor with 4 Nos of 400 kV TBs at Talaguppa.

ii. Strengthening of 400 kV Talaguppa- proposed C.N.Halli D/c Twin Moose line by higher ampacity conductor (Twin Moose equivalent HTLS).

iii. Augmentation of existing 1x315 MVA (out of 3X315) transformers by 1x500 MVA, 400/220 kV transformers at Talaguppa.

iv. Strengthening of 220 kV Talaguppa- Sharavathy D/c line by higher ampacity conductor (Drake equivalent HTLS).

v. By utilizing the existing corridor of S1-S2 or S3-S4, replacing the S1-S2 & S3-S4 D/c lines with Drake conductor by 220 kV MC line between Sharavathy-Shimoga (S1, S2, S3, S4) with AAAC Moose conductor.

7.2 In the 2nd SRSCT meeting, it was decided that the transmission scheme proposed above, would be discussed and finalized at a later stage, based on the status of commissioning of Sharavathy Pumped Storage Plant.

7.3 During the Joint Study meeting, Chief Engineer (PSPA-II), CEA enquired about the commissioning schedule of the generation project. Towards this, KPTCL informed that they have not received the exact commissioning schedule of the project and requested to drop the proposal.

7.4 Accordingly, the proposal was dropped and it was decided that it would be taken-up later, once the commissioning schedule of the generation project is firmed up.

Members may please discuss.

8.0 Proposal for Grant of connectivity to NLC India Ltd for TPS-II 2nd Expansion (2x660 MW) in Cuddalore, Tamil Nadu and to control high short circuit fault level in Neyveli Generation complex.

8.1 In the 2nd SRSCT meeting**,** following transmission system was agreed for Grant of connectivity to NLC India Ltd for TPS-II 2nd Expansion (2x660 MW) in Cuddalore, Tamil Nadu and to control high short circuit fault level in Neyveli Generation complex:

Transmission System for providing connectivity to Neyveli TS-II 2nd Expn (2x660 MW)- under the scope of NLC India Ltd.:

i. Re-storing of Neyveli TS-II / Neyveli TS-I Expn – Trichy 400 kV D/c line through suitable arrangement of bypassing the LILOs at Nagapattinam and utilization of LILO sections for making Neyveli TPS-II 2nd Expn – Nagapattinam 400 Kv, 2xD/c lines along with the line bays at generation switchyard
ii. 2x125 MVAr bus reactors at generation switchyard (NLC TPS-II 2nd Expn)
iii. Generation Switchyard to be designed with 50 kA short circuit level.

Additional System Strengthening for control of short circuit levels in Neyveli generation complex and re-arrangement network configuration to control overloading of ICTs / 230kV lines from Neyveli generation complex:

i. Neyveli TS-II – Cuddalore 400 kV D/c (Quad) line – under the scope of TANGEDCO as agreed in 1st SRSCT.
ii. Manalmedu – Neyveli TPS-II 2nd Expn 400kV D/c (Quad) line (in place of Cuddalore – Manalmedu 400kV D/c line – agreed in 1st SRSCT) – under the scope of TANGEDCO

8.2 Subsequent to this, based on the observations of NLC vide their letter GM/PSE/TPS-II 2nd Expansion/Transmission lines/514/2019 dated 12.07.2019 (Annex-8.1), para 24.9 (i) of the minutes of meeting of 2nd SRSCT pertaining to "**Transmission System for providing connectivity to Neyveli TS-II 2nd Expn (2x660 MW)- under the scope of NLC India Ltd.",** was modified as below:

Original Para 24.9 (i) of the minutes	**Modified para 24.9 (i)**
(i) Re-storing of Neyveli TS-II /Neyveli TS-I Expn – Trichy 400 kV D/c line through suitable arrangement of bypassing the LILOs at Nagapattinam and utilization of LILO sections for making Neyveli TPS-II 2nd Expn – Nagapattinam 400 kV, 2xD/c lines along with the line bays at generation switchyard – under the scope of NLC India Ltd.	**(i) (a)** As already agreed in 42nd meeting of SCPSPSR**,** re-storing of Neyveli TS-II/Neyveli TS-I Expn - Trichy 400 kV D/c lines through suitable arrangement of bypassing the LILOs at Nagapattinam, would be **implemented under ISTS.** **(i)** (**b)** Utilization of LILO sections for making Neyveli TPS-II 2nd Expn – Nagapattinam 400 kV, 2xD/c lines along with the line bays at generation switchyard would be **implemented by NLC India Ltd.**

8.3 Further, as per observations of CTU vide letter dated 23.08.2019 (Annex-8.2), the "**Additional System Strengthening for control of short circuit levels in Neyveli generation complex and re-arrangement network configuration to control overloading of ICTs / 230 kV lines from Neyveli generation complex**" as mentioned in para 24.9 of the minutes of 2nd SRSCT was modified as follows:

i. Neyveli TS-II – Cuddalore 400 kV D/c (Quad) line – under the scope of TANGEDCO as agreed in 1st SRSCT.
ii. Manalmedu – Neyveli TPS-II 2nd Expn 400kV D/c (Quad) line (in place of Cuddalore – Manalmedu 400kV D/c line – agreed in 1st SRSCT) – under the scope of TANGEDCO.
iii. **Bypassing of one ckt. of Neyveli TS-II- Salem 400 kV D/c line of PGCIL and Neyveli TS-II- NNTPS 400 kV S/c line of PGCIL, to form NNTPS-Salem 400 kV S/c line (agreed in 42nd SCPSPSR)- as ISTS line.**

8.4 Further, NLC has also requested that the transmission scheme - "Utilization of LILO sections for making Neyveli TPS-II 2nd Expn – Nagapattinam 400 kV, 2xD/c lines" may also be executed under ISTS for ease of O&M activities of the lines, since the existing LILO portions to Nagapattinam is owned by PGCIL

Member may please discuss.

9.0 Overloading of 400 kV NP Kunta-Kolar S/C line

9.1 In the 2nd SRSCT meeting, representative of SRLDC had informed that due to Solar power evacuation at NP Kunta, there is very high flow (of the order of 800 MW) on NP Kunta – Kolar S/C line, and the 400 kV Urvakonda-Hindupur-NP Kunta D/C lines have to be kept open to mitigate the flow on NP Kunta – Kolar lines. Outage of this line increases the flow on 400 kV Gooty-Nelamangala / Somanahalli lines and also results in low voltages in Bengaluru area. In the meeting, representative of CTU stated that strengthening of 400 kV NP Kunta – Kolar line or additional NP Kunta – Hosur 400 kV D/C line may be explored. CTU further suggested that bypassing the LILO of Cuddapah – Kolar line at N.P.Kunta may resolve the overloading issue. It was decided that CEA, CTU and SRLDC may jointly study and resolve the issue.

9.2 In the Joint-Study on 21-22 November, 2019, representative of SRLDC informed that overloading of 400 kV NP Kunta-Kolar S/C line is observed during the high import scenario of Southern region during the months of February to April. During this time, Southern Region is importing power up to 9700 MW. CTU informed that presently the ATC of NEW Grid – SR Grid is 9500 MW and about 7800 MW of LTA & MTOA have been granted for import to SR beneficiaries.

9.3 Chief Engineer (PSPA-II), CEA advised that SRLDC may take into consideration all such constraints observed in the transmission system, if any, in the Southern Region and may accordingly declare margins for SToA.

9.4 Accordingly, the system studies were carried out with LILO at NP Kunta, wherein no constraints were observed keeping the import to Southern Region within the limits of ATC. Studies also indicated that with commissioning of Vemagiri- C. Peta 765kV D/C line, the loading on Kolar –N.P.Kunta – Cuddapah line is further eased.

9.5 Accordingly, it was decided that transmission strengthening/bypassing of the LILO is not required.

Members may please discuss.

10.0 Kudankulam Nuclear Power Plant- High Voltage issues

10.1 In the 2nd SRSCT meeting, SRPC informed that voltage at KKNPP bus are generally high during off - peak conditions. In addition to this, KKNPP U-II (1000 MW) is generating reactive power as high as 380 MVAR, resulting in further increase in voltage. One 80 MVAR bus reactor at 400 kV KKNPP is out of service since 14.12.2016. The present committed date of December 2019 (though postponed few times) of putting the reactor back in service needs to be ensured by KKNPP/NPCIL.

10.2 In the meeting it was decided that this issue needs to be discussed with NPCIL/KKNPP in a separate meeting. Accordingly, a meeting was held on 22.11.2019 in CEA with representatives

from SRPC, NPCIL, SRLDC, CTU and TANGEDCO (Minutes of meeting enclosed at Annex 10.0).

10.3 In the meeting, NPCIL representative informed that bushing of one of the reactor (80 MVAR) at Kudankulam had failed and the same was being imported from Russia, as it was originally supplied by Russia. The reactor is likely to be put back into service by March, 2020.

10.4 In the absence of sufficient bus reactors at Kudankulam Nuclear Power Plant and also due to proposed shut down of one generating unit at Kudankulam from 2nd week of December, 2019, the outgoing 400 kV lines would be lightly loaded and may result in high MVAr injection into the grid. NPCIL informed that each generating unit at Kudankulam can absorb upto 150 MVAr. Therefore, it was proposed that SRPC/SRLDC would carry out necessary simulation for the period of operation of only one unit operational at Kudankulam and accordingly, Kudankulam Nuclear Power Plant may have to absorb more MVAr. To limit MVAR injection from lightly loaded lines during the period of maintenance of one unit at Kudankulam, SRPC/SRLDC may also consider opening 1-2 outgoing circuits, after considering reliability aspects, and in consultation with NPCIL and other Stakeholders.

Members may please discuss

11.0 Proposal of TANTRANSCO for establishing a 230/110 kV SS at Vembakkam by LILO of 230 kV MAPS – Echur line

11.1 In 2nd SRSCT meeting, TANTRANSCO requested for establishing a 230/110 kV SS at Vembakkam by making LILO of 230 kV MAPS – Echur line. SRLDC representative opined that in place of LILO of MAPS-Arni line, LILO of Bhavini-Arni line should be done. It was decided in the 2nd SRSCT, that TANTRANSCO would resubmit the proposal along with relevant system studies, after incorporating the suggestion of SRLDC.

11.2 In joint study meeting on 21-22 November, 2019, TANTRANSCO requested to drop the proposal. Accordingly, the proposal was dropped on the request of TANTRANSCO.

Transmission Planning proposals by Andhra Pradesh

12.0 Augmentation of 4th 500 MVA ICT at existing 400/220 kV substation at Manubolu (Nellore)

12.1 In the 2nd SRSCT, SRLDC informed that 'n-1' condition is not satisfied on few occasions at 400/220 kV, 3x315 MVA ICT at Nellore S/S. APTRANSCO informed that they have planned 4th 500 MVA ICT at existing 400/220 kV substation at Manubolu (Nellore) to satisfy the 'n-1'

condition and work was already in progress and the ICT was expected to be commissioned shortly.

12.2 APTRANSCO vide their latter dated 14.06.2019 (Annex-12.0) has requested for ratification of 4th 500 MVA ICT at existing 400/220kV substation at Manubolu (Nellore).

12.3 The proposal was agreed in the joint study meeting and recommended for ratification in the SRPC(TP) meeting.

13.0 Augmentation of 4th 500 MVA ICT at existing 400/220 kV substation at Kalapka, Visakhapatnam District.

13.1 APTRANSCO vide letter dated 30.07.2019 (Annex-13.0) have informed that they have planned augmentation of ICT capacity from 3x315 MVA to 3x315MVA + 1x500 MVA at existing 400/220kV substation at Kalapka to overcome the ICT constraints and to satisfy 'n-1' condition.

13.2 APTRANSCO has requested for the approval of augmentation of 4th 500 MVA ICT at existing 400/220 kV substation at Kalapka.

13.3 This proposal was discussed in the joint study meeting and after detailed deliberation, it was recommended that 4th ICT at Kalpaka would be approved subject to the condition that adequate downstream network is ensured by APTRANSCO, matching with augmentation of transformation capacity at 400/220 kV level. Accordingly, additional 220 kV lines may be planned for meeting load requirements, if not planned already. The matter would be discussed in the meeting of SRPC(TP).

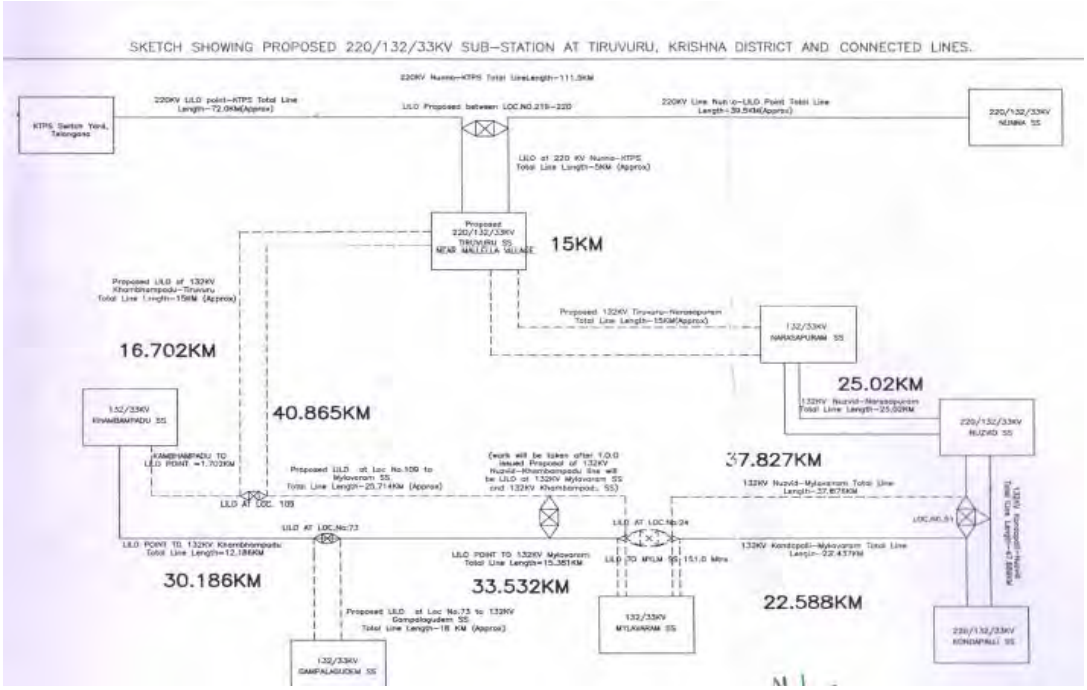
Members may please discuss.

14.0 Proposal for erection of 220/132/33 kV Tiruvuru SS. 132/33 kV, Mylavaram SS & 132/33 kV Gampalagudem SS and associated 220 kV & 132 kV transmission lines in Krishna district by APTRANSCO. Making LILO of 220 kV KTPS-Nunna ISTS line at Tiruvuru.

14.1 APTRANSCO vide letter dated 26.06.2019 (Annex-14.1) has proposed the following dedicated Transmission Scheme for erection of 220/132/33 kV Tiruvuru S/S, 132/33 kV Mylavaram S/S & 132/33 kV Gampalagudem S/S and associated 220 kV & 132 kV transmission lines in Krishna district.

i. Erection of 220/132/33 kV Tiruvuru S/S.
ii. Making 220 kV SC LILO (5 km approx.) of existing 220 kV KTPS- Nunna line at proposed 2201132/33 kV Tiruvuru S/S.
iii. Erection of 132 kV DC line (15 km approx.) from existing 132 kV Narasapuram to proposed 220/ 132/33 kV Tiruvuru S/S.
iv. Making 132 kV LILO (15 km approx.) of existing 132 kV Kambhampadu Nuzvidu line at proposed 2201132/33 kV Tiruvuru S/S.
v. Erection of 132/33 kV Mylavaram S/S.
vi. Making 132 kV LILO (0.151 km approx.) of 132 kV Nuzvidu- Kambhampadu SC line and 132 kV Kambhampadu- Kondapalli SC line at proposed 132/33 kV Mylavaram SS.
vii. Erection of 132/33 kV Gampalagudem SS.

viii. Making 132 kV SC LILO (18 km approx.) of existing 132 kV Kambhampadu - Kondapalli SC line at proposed 132/33 kV Gampalagudem SS.



14.2 The proposal involves making LILO of 220 kV KTPS-Nunna line, which is an inter-state line between Telangana & Andhra Pradesh. The proposal was discussed and agreed in the joint study meeting, subject to approval of TSTRANSCO and SRLDC, and recommended to SRPC(TP) for deliberations.

14.3 Subsequently, TSTRANSCO vide letter dated 21.11.2019 (Annex-14.2) informed that no specific constraints are observe in the TSTRANSCO network with the proposed LILO of 220 kV KTPS-Nunna line.

14.4 SRLDC vide email dated 03.12.2019 (Annex-14.3) informed that average flow on the line in October 2019 was 55 MW and maximum was 126 MW. LILO of 220kV KTPS-Nunna S/C line at 220/132/33 kV Tiruvuru SS may not be an issue regarding line loading.

Members may please deliberate.

Transmission Planning proposals by Telangana

15.0 Modifications in earlier approved Kaleshwaram Lift Irrigation scheme

15.1 Transmission system of Kaleshwaram Lift Irrigation scheme as approved in 40th /41st meeting of SCPSPSR, inter-alia includes establishment of 400 kV SS at Chandlapur, Medak District. As per minutes of 40th SCPSPSR, the capacity of motors to be installed at Chandlapur, Medak District, was 5x88.5 MW.

15.2 TSTRANSCO vide letter dated 05.08.2019 (Annex- 15.0), has informed that the capacity of motors at Chandlapur, Siddipet District (new district formation due to re organization of districts), have been changed from 5x88.5 MW to 4x134.8 MW. Construction of 400 kV Chandlapur SS and associated lines have been completed and commissioned on 06.05.2019, duly considering the revised motor/pump capacity. TSTRANSCO has requested for ratification of the same.

15.3 The proposal was agreed in the joint study meeting and it was decided to put up the same for ratification in the meeting of SRPC(TP).

Members may please discuss.

16.0 Sita Rama Lift Irrigation Scheme - Proposal for LILO of 220 kV KTPS (TS) - Lower Sileru (AP) I line at 220/11 kV, V.K. Ramavaram LI SS and also at 400/220 kV Asupaka SS for providing additional source

16.1 Transmission system for Sita Rama Lift Irrigation scheme was approved in 41st SCPSPSR with following connectivity (vide Sl. No. 42 of minutes of meeting):

i. 220 kV SS at Pump House - 1 (6x25 MW) at B.G: Kothur(V) Ashwapuram (M) in Bhadradri Kothagudem District

ii. 220/11 kV SS at Pump House - 2 (6x40 MW) at V.K. Ramavaram (V) Mulakalapally (M) in Bhadradri, Kothagudem District

iii. 400/220/11 kV SS (3x315 MVA) at Pump House 3 (5x40 MW+2x30 MW) Kamalapuram(V) Chandrugonda(M) in Bhadradri, Kothagudem District

iv. LILO of one circuit of KTPS - Manuguru 220 kV D/C Line to proposed Pump House -1 at B.G. Kothur (about 1 km).

v. LILO of KTPS V - Lower Sileru II 220 kV S/C Line to proposed Pump House -1 at B.G. Kothur (about length of 20 km).

vi. Julurupadu (400/220 kV S/S) - Pump House -3 (at Kamalapuram) 400 kV D/C line for a length of 50 km.

vii. Pump House -3 (at Kamalapuram) -Pump House -2 (at V.K. Ramavaram), 220 kV D/C line (with Single Moose) for length of about 25 km.

16.2 TSTRANSCO vide their letter dated 29.06.2019 (Annex-16.0) has proposed the following additional connectivites/modifications under Sita Rama Lift Irrigation Scheme to provide alternate source to 220/11 kV V.K. Ramavaram SS and 400/220/11 kV Kamalapuram SS.

i. 220 kV Twin Moose DC line from 400/220/11 kV Kamalapuram LI SS to 220/11 kV V.K. Ramavaram LI SS – 25 km (instead of earlier approved 220 kV Single Moose DC

line from 400/220/11 kV Kamalapuram LI SS to 220/11 kV V.K. Ramavaram LI SS – 25 km)

ii. LILO of 220 kV KTPS (TS) - Lower Sileru (AP)- I ISTS line at 220 kV V.K. Ramavaram LI SS and also at 400/220kV Asupaka SS

16.3 The proposal involves making LILO of 220 kV KTPS (TS) - Lower Sileru (AP)- I ISTS line. The proposal was agreed in the Joint Study meeting, subject to approval of APTRANSCO, SRLDC and SRPC.

Members may please discuss.

Transmission planning proposals by Karnataka

17.0 Bus reactor at 400/220 kV Jagalur substation

17.1 KPTCL vide letter dated 20.07.2019 (Annex-17.0) had informed that establishing 2x500 MVA, 400/220 kV GIS sub-station at Jagalur was approved in the 39th meeting of SCPSPSR. In the minutes of the meeting, the provision for bus reactor at 400/220 kV Jagalur SS was not mentioned. Further, in-house study had been carried out by KPTCL to check the necessity of providing bus reactors at 400 kV Jagalur substation. Based on the study results and as also specified in "Manual on Transmission Planning criteria" by CEA, provision for 2x80 MVAR bus reactors at 400 kV Jagalur SS was incorporated in the scheme by KPTCL.

17.2 In view of the above, the work of establishing 2x500 MVA, 400/220 kV GIS Substation at Jagalur along with 2x80 MVAR bus reactors was awarded on 29.07.2016.

17.3 Subsequently, in the 42nd SCPSPSR meeting, held on 27th April, 2018, CTU had suggested to install 2x125 MVAR bus reactor at Jagalur to control over-voltage. Representative of KPTCL had informed that 2x80 MVAR bus reactors were already under installation at Jagalur and the proposed 2x125 MVAR reactors may be dropped.

17.4 This issue was discussed in the Joint study meeting on 21-22 November, 2019, and in the meeting, KPTCL informed that the work of establishing 400/220 kV GIS Sub-station at Jagalur along with 2x80 MVAR bus reactors has been completed and the reactors are sufficient to maintain good voltage profile in the system.

17.5 KPTCL stated that in the reactive compensation studies carried out by CTU, 2x80 MVAr bus reactors had not been considered, and in the prevailing scenario, providing reactive power compensation at 400 kV Jagalur with 2x80 MVAR bus reactor may be sufficient to maintain good voltage profile and 2x125 MVAR reactors may be dropped.

17.6 After detailed deliberations, it was decided that since 2x80 MVAr bus reactors have already been installed, the 2x125 MVAr bus reactors proposed in 42nd SCPSPSR meeting may be dropped as of now. Further, it was decided additional bus reactor, if any, may be planned based on the future requirements.

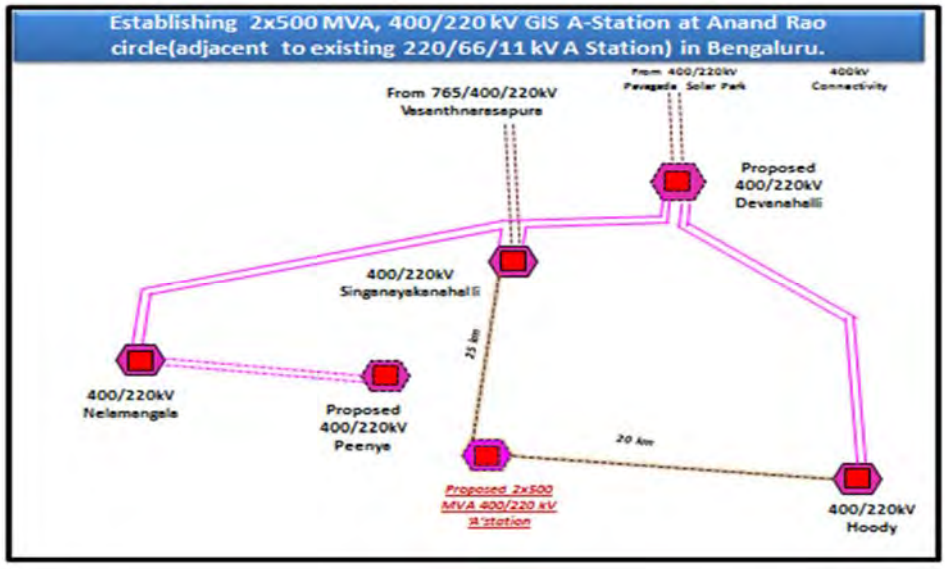
Members may please discuss.

18.0 Establishing 2x500 MVA, 400/220 kV GIS A-Station at Anand Rao circle (adjacent to existing 220/66/11 kV A Station) in Bengaluru

18.1 KPTCL vide letter dated 19.10.2019 (Annex-18.0) has proposed the establishment of 2x500 MVA, 400/220 kV GIS A-Station at Anand Rao circle (adjacent to existing 220/66/11 kV A Station) in Bengaluru with following connectivity:

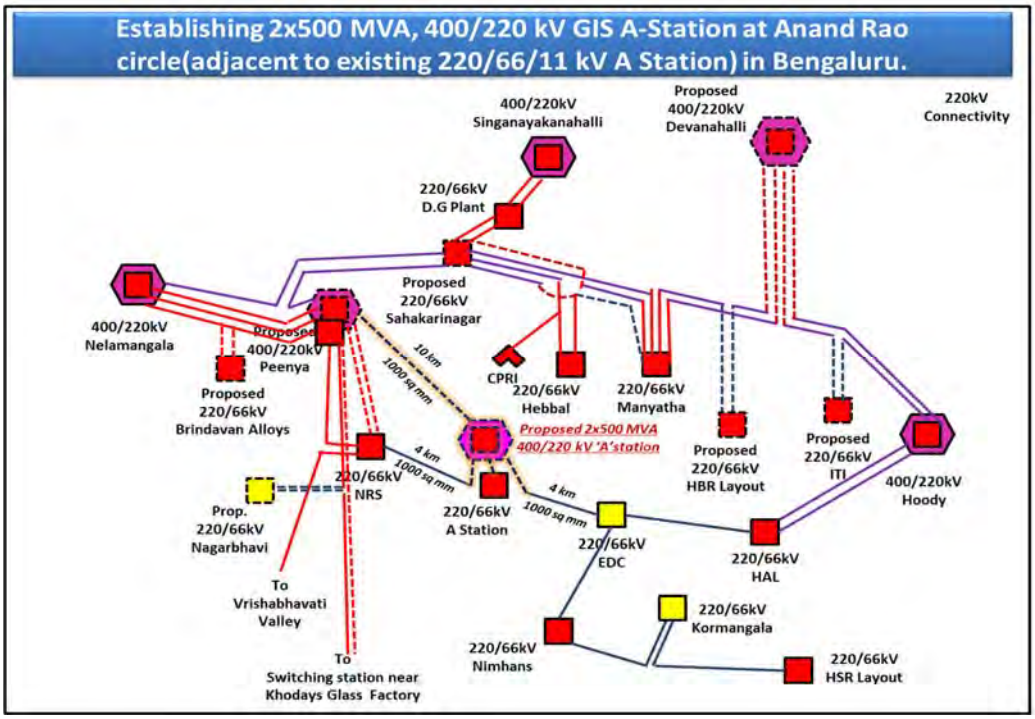
400 kV Connectivity:

i. 400 kV connectivity from 400/220 kV Singanayakanahalli PGCIL substation which is at a distance of 25 km from the proposed substation.
ii. 400 kV connectivity from 400/220 kV Hoody substation which is at a distance of about 20 km from the proposed substation.



220 kV connectivity:

i. The existing 220kV 'A' station will be connected to the 220 kV bus of proposed 400 kV 'A' station.
ii. The existing 220 kV UG cable between NRS and "A" station and existing 220 kV UG cable between EDC and "A" station will be terminated to 220 kV bus of 400 kV substation proposed at 'A' station.
iii. The proposed 220 kV UG cable between Peenya and "A" station (proposed in 400kV Peenya scheme) will be terminated to 220 kV bus of 400 kV substation proposed at 'A' station.



18.2 This issue was discussed in the joint study meeting. In the meeting, KPTCL further informed that looking into the severe ROW issues involved in the Bengaluru area, underground AC transmission cables of 400 kV and 220 kV levels shall be used for connectivity of the proposed substation. It was also informed that presently at 400 kV level, about 19 kms long UG AC cable is in operation in Saudi Arabia only. Representative of CTU opined that 25 km long AC cable at 400 kV level shall generate huge amount of reactive power and losses/temperature rise of the cable would also be very high. This may pose huge challenges in operation of the cable. KPTCL was requested to present operational experience of such long cable at 400 kV level along with suitable reactive compensation scheme for the cable.

18.3 After detailed deliberations, it was decided that KPTCL shall submit the detailed technical feasibility report of the proposal and the same would be discussed in the meeting of SRPC(TP).

Members may please discuss.

19.0 Additional works proposed under Intra-state transmission schemes under Green Energy Corridor Phase-2.

19.1 KPTCL vide their letter dated 19.10.2019 (enclosed at Annex 18.0) proposed additional works under Intra-state transmission schemes under Green Energy Corridor Phase-2.

A. Establishing 2x500 MVA 400/220 kV sub-station in Kushtagi Taluk, Koppal district.

<u>400 kV connectivity:</u>

i. 400 kV DC line with Quad Moose conductor from proposed 400 kV Yalwar substation.

ii. 400 kV DC line with Quad Moose conductor from proposed 400 kV Doni substation.
iii. Conversion of 400 kV Guttur-Doni line from SC to DC with Quad Moose conductor.
iv. 2x500 MVA 400/220 kV power transformers.
v. 2x125 MVAr bus reactors.

220 kV connectivity:

i. Existing 220 kV DC line with Drake conductor to be converted to High performance conductor from Kushtagi to 400 kV Kushtagi (Tavaregere).
ii. Existing 220 kV DC line from Lingasugur to 400 kV Kushtagi (Tavaregere).
iii. Existing 220 kV DC line from Sindhanur to 400 kV Kushtagi (Tavaregere).
iv. Existing 220 kV DC line from Lingapur to 400 kV Kushtagi (Tavaregere).

B. Establishing 2x100 MVA 220/110 kV substation at Yelburga, Koppal district

220 kV Connectivity

i. 220 kV DC line from 220/110 kV Kushtagi sub-station to proposed 220 kV Yelburga sub-station.
ii. Double circuit LILO of proposed 220 kV Doni - Ron DC line to proposed 220/110 kV Yelburga sub-station.
iii. 2x100 MVA, 220/110 kV transformers.

110 kV connectivity

i. 110 kV DC line from proposed 220 kV Yelburga substation to existing 110 kV Yelburga substation.
ii. 110 kV DC line from proposed 220 kV Yelburga substation to existing 110 kV Bevoor substation.

C. Establishing 2X100 MVA, 220/110kV substation at Santhpur, Bidar district

220 kV connectivity

i. 220 kV DC line from 220/110 kV Halbarga sub-station to proposed 220 kV Santhpur sub-station.
ii. 2x100 MVA, 220/66 kV transformers.

110 kV connectivity

i. 110 kV line from proposed 220/110 kV Santhpur substation to LILO existing 110 kV Santhpur -Janwad DC line.
ii. 110 kV line from proposed 220/110 kV Santhpur substation to LILO existing 110 kV Santhpur-Dongaragaon line.
iii. 110kV line from proposed 220/110 kV Santhpur substation to LILO existing 110 kV Halabarga-Santhpur line.

D. Establishing 2x100 MVA, 220/100 kV substation at Bharamsagara in Chitradurga district (66 kV connectivity given instead of 100 kV)

220 kV Connectivity

i. 220 kV DC line from proposed 400/220 kV Jagalur to proposed 220/66 kV Bharamsagara sub-station subject to availability of space at Jagalur or
ii. Double circuit LILO of 220 kV Chitradurga-Jagalur DC line to proposed 220 kV Bharamsagara S/S.
iii. 2x100 MVA, 220/66 kV transformers.

66 kV connectivity

i. 66 kV multi circuit line from proposed 220/66 kV Bharamasagara substation to LILO existing DC Davangere-Chitradurga line.
ii. *66kV SC line from proposed 220/66 kV Bharamasagara substation to link existing 66kV SC line between Jagalur and Bidarekere tap.
iii. *66kV SC line from proposed 220/66 kV Bharamasagara substation to 66/11kV Bidarekere substation.

(*The 66 kV Jagalur-Chitradurga SC line is made LILO to proposed 220 kV Bharamsagara sub-station.)

E. Providing Additional 100 MVA 220/110 kV transformer at 220/110 kV Lingasugur sub-station in Raichur District.

F. Providing Additional 100 MVA 220/66 kV transformer at 220/66 kV Thallak sub-station in Chitradurga District.

G. Strengthening of 220 kV D/C line between Gadag to Lingapura switching station by replacing existing Drake by equivalent HTLS conductor.

19.2 This proposal was discussed in the joint study meeting and KPTCL proposals were found to be generally in order. In the meeting, it was decided that KPTCL would present the study results in forthcoming meeting of SRPC(TP).

Members may please discuss.

20.0 Dynamic reactive support by utilizing STATCOMs at Hoody and Neelamangala.

20.1 KPTCL vide letter dated 19.10.2019 (enclosed at Annex 18.0) informed that the issue of low voltage in Karnataka sub-stations was discussed in the 36th SRPC meeting, wherein it was decided that in order to provide steady state as well as dynamic reactive support at the stations experiencing low voltages, installation of STATCOMs at one or two stations viz. Hoody, Somanahalli, Yelahanka, Mysore etc. may be explored.

20.2 In the Joint study meeting, it was decided to explore feasibility of both use of Solar Inverter and STATCOM for containing voltage within limits in the SR grid.

21.0 Providing alternate source to proposed 220/66 kV Pavagada sub-station (feeding from 220/66 kV Madhugiri S/S) by constructing new 220 kV DC line on DC tower with Drake conductor from existing 400/ 220 kV Kyathaganacherlu (PGCIL) station to proposed 220/ 66 kV Pavagada substation for a distance of 32 km in the new corridor.

21.1 KPTCL vide letter dated 19.10.2019 (enclosed at Annex 18.0) informed that at present, the 220/66 kV Pavagada sub-station is fed from 220 kV Madhugiri sub-station on D/C line. It is proposed to have 2nd source of power supply to 220 kV Pavagada sub-station by constructing new 220 kV D/C line from existing 400/220 kV Kyathaganacherlu (PGCIL - Pavagada Solar park) station to 220/66 kV Pavagada sub-station for a distance of 32 km with new 2 nos. 220 kV terminal bays at each Pavagada and Kyathaganacherlu (PGCIL- Pavagada Solar park).

21.2 In the Joint study meeting, CTU informed that after allocating of 8 nos. of 220 kV bays at Pavagada 400/220 kV pooling station to Solar Project developers, space for additional 8 nos. of 220 kV bays are available for allocation. Further Connectivity & LTA has been granted for 2050 MW to Solar Power Parks. The pooling station has been commissioned with 5x500 MVA transformation capacity and space for 1x500 MVA transformers is available for further augmentation as per future requirements. Accordingly, 2 nos. of 220 kV bays as Pavagada (POWERGRID) can be allocated to KPTCL. However, KTPCL shall ensure that it does not inject power into the Pavagada (POWERGRID) substation for evacuation of power from the STU network. In case KPTCL is planning to inject power, it shall apply for LTA for the same.

21.3 After detailed deliberations, it was decided that 2 nos. of 220 kV bays at Pavagada (POWERGRID) may be allocated to KPTCL, however KPTCL shall not inject any power into the ISTS grid.

Members may please discuss.

Transmission Planning Proposals by Tamil Nadu

22.0 Provision of additional 400/110 kV ICT (3rd unit of 200 MVA) at the existing 400/230-110 kV Kayathar substation and 400/230 kV & 400/110 kV ICTs provision for the ongoing 400/230-110 kV Thennampatty S/S

22.1 TANTRANSCO vide their letter dated 03.07.2019 (Annex-22.0) informed that the proposal of Kayathar 400/230-110 kV substation had been approved in the 29th Standing Committee on Power System Planning of Southern Region with 2x315 MVA 400/230 kV ICT, and 2x200 MVA 400/110 kV ICT.

22.2 TANTRANSCO further informed that the following 110 kV TANTRANSCO substations (wind energy generation pooled) as well as 10(1) wind farm substations are connected/proposed to be connected to Kayathar 400 kV substation at 110 kV level.

110 kV voltage level	Capacity (MW)
Ayyanaruthu	98
Keelaveeranam	51
Venkateshawarapuram)	100

Sundankurichi	118
Total	367

22.3 Further, RE injection of total about 1180 MW (wind) is existing/under-construction at Kanarpatty.

22.4 TANTRANSCO proposed additional 400/110 kV ICT (3rd unit of 200 MVA) at the existing 400/230-110 kV Kayathar substation

22.5 This issue was discussed in the joint study meeting. In the meeting, TANTRANSCO informed that in order to meet the "n-1" contingency condition, it is essential to enhance 400/110 kV ICT capacity from 2x200 MVA to 3x200 MVA at Kayathar 400/230-110 kV SS. The space for erection of 400/110 kV, 200 MVA ICT is available at Kayathar 400/230-110 kV SS.

22.6 CTU representative opined that Kayathar is a high wind zone and with additional ICT at Kayathar, injection from Kaythar into the ISTS grid will increase.

22.7 CTU representative stated that additional ICT at Kaythar may be agreed if TANTRANSCO will not give additional RE connectivity at Kaythar and Kanarpatti and this proposed additional ICT is only for satisfying 'n-1' contingency.

22.8 After further detailed study, the additional ICT proposed at Kaythar was agreed in the Joint Study meeting, provided no additional RE injection shall be allowed by TANTRANSCO at Kaythar/Kanarpatty, except the RE injections specified above. TANTRANSCO agreed for the same.

22.9 Regarding Thennampatty S/S, TANTRANSCO informed that in the 34th meeting of SCPSPSR, establishment of Thennampatty 400/230-110 kV SS was approved for evacuation of power from wind power projects coming up in Tamil Nadu. However, capacity of 400/230 kV and 400/110 kV ICTs was not mentioned. TANTRANSCO informed that 2x315 MVA 400/230 kV ICT and 2x200 MVA 400/110 kV ICTs are under installation and likely to be commissioned shortly. The scheme was agreed the Joint Study meeting and recommended to SRPC(TP) for deliberations/rectification.

Members may please discuss.

23.0 Enhancement of ICT capacity with additional 1x500 MVA, 400/230 kV ICT along with the existing 2x315 MVA, 400/230 kV ICTs at Sunguvarchatram 400/230-110 kV SS.

23.1 TANTRANSCO vide their letter dated 18.10.2019 (Annex-23.0) informed that Sunguvarchartram 400/230-110 substation has total transformation capacity of 1030 MVA with 2 nos. of 400/230kV, 315 MVA ICT and 2 nos 400/110kV,200 MVA ICTs. Presently, sustained peak load of the two 315 MVA ICTs is 64% of its full load capacity.

23.2 TANTRANSCO further informed that M/s. Rack Bank Data Centers Pvt. Ltd. has proposed to establish their company at SIPCOT Sriperumbudur Industrial Park with 192 MW (213 MVA) load in Phase-1 and 288 MW (320 MVA) load in Phase -2.

23.3 In the joint study meeting, TANTRANSCO requested to approve additional 1x500 MVA ICT at Sunguvarchatram 400/230-110 kV S/S, in order to accommodate all existing and future loads.

23.4 Based on study results, the additional 1x500 MVA ICT at Sunguvarchatram 400/230-110 kV S/S was agreed in the Joint Study meeting and recommended to SRPC(TP) for deliberations.

Members may please discuss.

24.0 Re-Conductoring of existing 110 kV D/C Theni-Sembatty feeder I & II and Theni-Periyar feeder I& II.

24.1 TANTRANSCO vide letter dated 19.09.2019 (Annex-24.0) has informed that the existing 110 kV D/C Theni-Sembatty feeder I & II and Theni-Periyar feeder I & II are having wolf and Lynx conductor respectively and are very old. Due to load growth in this area, new 110 kV substations are introduced in these feeders in order to mitigate the existing overloading conditions, the above said re-conductoring work needs to be expedited.

24.2 TANTRANSCO requested for approval of re-conductoring of existing 110 kV D/C Theni-Sembatty feeder I & II and Theni-Periyar feeder I& II.

24.3 In the joint study meeting, TANTRANSCO was advised to upgrade terminal equipments accordingly, and the proposal was agreed in the Joint Study meeting and recommended to SRPC(TP) for deliberations.

Members may please discuss.

25.0 Proposal by TANTRANSCO for construction of additional evacuation lines from Kudankulam U 3&4 (2x1000 MW) to the nearby TANTRANSCO's 400 kV Substations (also proposed by SRPC).

25.1 It was decided that additional transmission system beyond the six circuits (towards Tuticorin – PS and Tirunelveli) planned for Kudankulam, are not needed. However, if required, the evacuation system (including as proposed by TANTRANSCO) can be reviewed with the LTA application from NPCIL.

Transmission Planning Proposals by CTU:

26.0 System studies for identification of Transmission System for grant of Connectivity & LTA to NPCIL for expansion of Kaiga APP Unit-5&6 (2x700 MW)

26.1 CTU informed that NPCIL has submitted Connectivity and LTA applications in the month of June, 2019 for proposed expansion of Kaiga APP (U5,6) by 1400 MWe (2x700 MW) in Karwar, Karnataka.

26.2 Presently Kaiga APP – U 1 & 2 (2x220 MWe) is connected through 220 kV lines to Kadra & Kodasalli hydro generation stations and through 400/220 kV, 2x500 MVA ICTs to 400 kV switchyard of Kaiga APP – U 3 & 4 (2x220 MWe). Further, Kaiga generation complex is connected at 400 kV level through Kaiga – Narendra 400 kV D/c line (108 km) and Kaiga – Guttur (Davangere) 400 kV D/c line (163 km). Further, these two nos. of 400 kV D/c lines were planned for evacuation of 6 x 220 MWe (1320 MWe) total capacity of Kaiga Atomic Power Plant.

26.3 It was informed by CTU that while implementing the above transmission system for evacuation of power from Kaiga complex, forest clearance was obtained after assurance to environmentalists and Forest Department for not seeking additional forest clearance in future for laying new transmission lines. However, NPCIL has now enhanced the planned capacity of Unit-5 & 6 from 2x220 MWe to 2x700 MWe, thereby making the total capacity of the Kaiga complex to 2280 MWe. The existing 220 kV and 400 kV transmission lines are not adequate for evacuation of total capacity of 2280 MWe of the Kaiga generation complex.

26.4 The connectivity applications were discussed in the 35th Southern Region constituents meeting regarding Connectivity/LTA Applications in SR held on 29.08.2019, wherein it was decided that Joint Studies shall be carried out in consultation with CEA, POSOCO and STUs, for identification of Transmission System for grant of Connectivity and LTA to NPCIL for Kaiga APP U5,6 (2x700 MWe). Accordingly, the issue was discussed in the joint study meeting.

26.5 In the meeting, Chief Engineer (PSPA-II), CEA, stated that looking into the implementation issues in the forest area in the region, options may be explored for re-conductoring of existing transmission lines. Towards this, it was informed that re-conductoring of existing transmission lines shall require shut-down of each 400 kV D/c corridor at a time and in certain cases NPCIL may have to back down it existing generation at Kaiga complex as well. It was also brought out that the existing 400 kV generation switchyard may not be capable in handling the current carrying capacity along with Unit-5&6 and in such case entire 400 kV generation switchyard may be upgraded with 3150 A ratings and under such situation the existing generation may have to be backed down / shut down for a longer time period.

26.6 CTU further informed that Sirsi-Davangere section of Kaiga-Davangere 400 kV D/c line belongs to KPTCL and accordingly shall have to be implemented by KPTCL. Towards this, KPTCL representative informed that in case the line is upgraded they may require to upgrade the Davangere substation switchyard also as it very old and may not be capable of handling the increased current. KTPCL prime-facie was agreeable to the proposal of re-conductoring of the

transmission line, however, the final decision of KPTCL shall be intimated in the upcoming SRPC(TP), after discussion with the management.

26.7 NPCIL representative stated that they were very serious for development of Kaiga Unit-5&6 and shall update on the back down / shut down of the existing generating units as per the requirements. Further, NPCIL representative ensured that they would obtain necessary clearances from Forest Department for carrying out the work of re-conductoring of the transmission line for enabling evacuation of power from Kaiga APP U 5,6 (2x700 MWe), as the establishment of Kaiga U 5,6 (2x700 MW) would not be possible without re-conductoring of the transmission line.

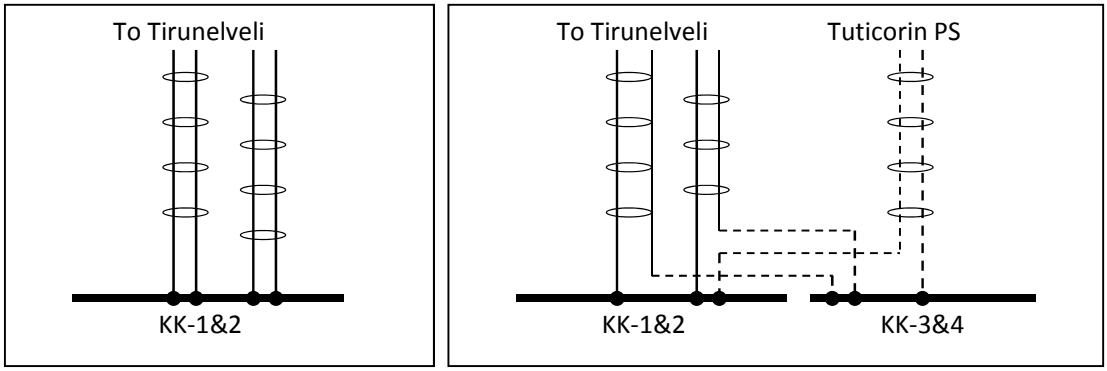
26.8 After detailed deliberations, it was decided that the transmission system for evacuation of power from Kaiga APP Unit-5&6 (2x700 MW) shall be discussed in the upcoming SRPC(TP).

Members may please discuss.

27.0 System studies for Identification of Transmission System for grant of Connectivity to NPCIL for expansion of Kudankulam NPP Unit-3 & 4 (2x1000 MW)

27.1 CTU informed that NPCIL had submitted connectivity application for proposed expansion of Kudankulam NPP Unit-3 & 4 (2x1000 MWe) in Tamil Nadu in the month of January, 2011. Kudankulam Unit-1 & 2 (2x1000 MW) are connected with ISTS network through Kudankulam – Tiruneveli 400 kV 2xD/c (quad) lines. The connectivity to the expansion of Kudankulam with Unit-3 & 4 (2x1000 MW) was proposed through bus extension of the Kudankulam Unit-1 & 2 generation switchyard in the 12th meeting of SR constituents regarding Connectivity/LTA Applications held on 08.06.2011. However, looking into the progress made by the generation developer, the proposal for connectivity was deferred.

27.2 The proposal for grant of Connectivity to Kudankulam Unit-3 & 4 was again discussed in subsequent meetings wherein NPCIL representative informed that the Kudankulam Unit-1 & 2 generation switchyard bus has been designed with 2000 A ratings and cannot handle continuous current from all the four generating units and therefore, Kudankulam Unit– 3 & 4 generation switchyard shall be kept independent from Kudankulam Unit-1&2 switchyard. Accordingly, the proposal was revised, which was discussed in the 15th meeting of Southern Region Constituents regarding LTA and Connectivity applications, held on 04.01.2013, wherein it was decided that the connectivity may be granted to KNPP Unit 3 & 4 through Kudankulam-II – Tuticorin pooling station 400 kV D/c (Quad) line with suitable re-arrangements at generation switchyards as per the schematic given below:



Existing Arrangement **Proposed Arrangement**

27.3 As per CEA's manual on Transmission Planning Criteria, two separate feeding arrangements are to be provided for Nuclear Power Stations. Subsequently, the proposal of connectivity to Kudankulam Unit 3 & 4 with suitable re-arrangement for reliability was further discussed in the 36th meeting of SCPSPSR, wherein it was decided that Tuticorin Pooling station – Tirunelveli section of the Tuticorin Pooling station - Kudankulam 400 kV Quad D/c line may be constructed ahead of Kudankulam U 3 & 4 and one of the existing Kudankulam – Tirunelveli 400 kV Quad D/c line may be connected to the same, making Kudankulam – Tuticorin Pooling station 400 kV Quad D/c line as an interim-arrangement for providing two termination points viz. Tirunelveli & Tuticorin Pooling station, for evacuation of power from Kudankulam U– 1 & 2.

27.4 The proposal for grant of Connectivity to Kudankulam Unit-3 & 4 was discussed again in the 37th SCPSPSR meeting held on 22.09.2014, wherein NPCIL opined that under outage of two towers of each circuit of Kudankulam – Tirunelveli D/c line, only one line shall be available for evacuation of entire power from Kudankulam Unit 3 & 4. Therefore, NPCIL requested to review the proposal of connectivity and provide additional transmission lines for safe evacuation of power from Kudankulam generation complex. After discussions, it was agreed that detailed studies shall be carried out looking into the progress & timeframe of commissioning of generation units for requirement of additional evacuation lines for Kudankulam U 3 & 4.

27.5 Due to uncertain timeframe of the generation project, the proposal for additional transmission lines for Kudankulam U-3 & 4 was deferred. Therefore, the Connectivity could not be granted.

27.6 CTU further informed that NPCIL vide letter dated 21.08.2019 and email dated 04.09.2019 & 06.09.2019 has conveyed that commissioning schedule of Kudankulam U 3&4 has been confirmed as October 2023 & April 2024 respectively. NPCIL is seeking connectivity for Unit-3&4 from March, 2023.

27.7 The transmission system for Kudankulam 3 & 4 was discussed in the 40th SCPSPSR meeting held on 19.11.2016, wherein TANTRANSCO had requested that additional evacuation lines towards TANTRANSCO substation be planned for KNPP U3 & 4. It was decided that

additional transmission system shall be planned after detailed studies upon receipt of LTA application for Kudankulam U 3 & 4. TANTRANSCO vide letter dated 24.09.2019 has again requested that additional evacuation may be provided form the Kudankulam NPP to TANTRANSCO substation for reliability of power supply to Tamil Nadu State.

27.8 The application for grant of connectivity to NPCIL for Kudankulam U 3&4 was discussed in the 36th Southern Region constituents meeting regarding Connectivity/LTA Applications in SR held on 24.09.2019, wherein it was decided that Joint Studies shall be carried out in consultation with CEA, POSOCO and STUs, for identification of Transmission System for grant of Connectivity to NPCIL for Kudankulam U-3,4 (2x1000 MWe).

27.9 SRLDC informed that unbalanced loading is observed in the 400 kV transmission lines to Tirunelveli and Tuticorin PS from Kudankulam NPP generation. In case of outage of one circuit of Kudankulam – Tirunelveli 400 kV D/c line, loading on other circuit crosses 1140 MW and in such conditions, the temperature of Quad connectors of most loaded line increases to more than 100 oC within 2 to 3 hrs. As per operating instructions, the line shall be taken out when the temperature reaches more than 100 oC. Due to this it is difficult to obtain shutdown of Kudankulam-Tirunelveli 400kV lines for more than 3 hours for maintenance or other purposes.

27.10 NPCIL stated that so far, 4 out of 12 connectors have been replaced with new aluminum connector in the Kudankulam switchyard. Remaining 8 connectors are to be replaced in a phased manner. Further the planed outage of one unit of Kudankulam NPP is being scheduled in the month of December, 2019, and the same time period shall be utilized for completing the balance works. It was also stated that POWERGID shall also utilized the referred time frame for requisite equipment upgradation/maintenance of the transmission line, if required.

27.11 With reference to aspect of unbalanced loading of transmission lines, CTU stated that the power flow on the transmission line is dynamic in nature and depends on different load generation scenarios which shall vary from case-to-case basis, depending on prevailing grid conditions.

27.12 Load flow studies were carried out with the above proposed transmission system in 2025-26 peak scenario time frame, wherein no constraints were observed in evacuation of power from Kudankulam Unit-3 & 4 with the proposed transmission system. However, NPCIL requested that additional transmission lines may also be planned for providing reliability for evacuation of power from Kudankulam Unit-3 & 4 (2x1000 MWe) in case of outage of entire Tirunelveli 400 kV substation. Towards this, CTU representative stated that even in case of such contingency, 2 nos. of Quad transmission lines to Tuticorin PS shall be sufficient for evacuation of power from Kudankulam NPP.

27.13 After detailed deliberations, it was decided that connectivity to Kudankulam Unit-3 & 4 may be granted with the above proposed transmission system. Prima-facie, additional transmission system beyond these six circuits is not needed. However, if required, the evacuation system

(including as proposed by TANTRANSCO) can be reviewed with the LTA application from NPCIL.

Members may please discuss.

28.0 Short Circuit studies and Over/Under Voltage studies for Southern Region

28.1 In the joint study meeting, it was decided that CTU would carry out the study and the same would be discussed in the forthcoming meeting of SRPC(TP).

29.0 Augmentation of Transformer capacity in Southern Region

29.1 In the joint study meeting, CTU representative informed that operational feedback provided by POSOCO has indicated number of incidents pertaining to observance of Over/Under Voltages in different part(s) of the grid under certain scenarios. POSOCO has also mentioned about the rising fault levels at the different substations. Further, keeping in view the operational feedback of POSOCO, requirement of transformer augmentation may be identified for 765 kV and 400 kV substations under ISTS as well as Intra-STS substations.

29.2 It was decided that CTU would carry out the study and the same would be discussed in the forthcoming meeting of SRPC(TP).

30.0 Allocation of 2 nos. of 230 kV bays at Pugalur (existing) to TANTRANSCO

30.1 CTU informed that TANTRANSCO vide letter dated 05.09.2019 has requested for allocation of 2 nos. of 220 kV bays at 400/230 kV Pugalur (existing) substation of POWERGRID. TANTRANSCO stated that the bays shall be utilized for termination of 230 kV lines to meet the load requirements at Pugalur (existing).

30.2 CTU informed that that upon revocation of connectivity to M/s Renew Power Ventures Private Limited, 2 Nos. of 230 kV bays at Pugalur (existing) are available and the same bays are reserved for allocation to TANTRANSCO, subject to ratification in the forthcoming SRPC(TP).

30.3 Accordingly, it was decided that the 2 nos. of 220 kV bays may be allocated to TANTRANSCO after ratification of the same in the upcoming SRPC(TP).

Members may please discuss.

31.0 Development of Common facilities at Tuticorin-II GIS S/s for RE integration

31.1 CTU vide their letter dated 31.07.2019 (Annex-31.0) informed that the Tuticorin-II GIS substation had been established with 2x500 MVA, 400/230kV transformers and initial provision for 5 nos. of 230kV line bays for termination of 230kV dedicated transmission lines from the RE generation projects in the vicinity. These 5 nos. of 230kV bays have already been commissioned and the power from RE generation projects is evacuated utilizing the ISTS network.

31.2 Further, the 3rd 500 MVA, 400/230 kV transformer, for facilitating evacuation and transfer of RE power beyond Tuticorin-II GIS substation was agreed in 42nd SCPSPSR held on 27.04.2018 and 34th SRPC meeting held on 11.08.2018. The 3rd transformer is under advanced stage of implementation for facilitating evacuation and transfer of RE power beyond Tuticorin-II GIS substation and is being integrated with the existing GIS bus.

31.3 Presently, 1500 MW of Connectivity and 1200 MW of LTA has been granted at Tuticorin-II GIS S/s. The details of the RE generation developers which were granted Connectivity & LTA are as below:

Sl. No.	RE generation developer	Connectivity granted	LTA granted	Bay No.	Present Status
1	M/s Mytra Energy (India) Pvt. Ltd.	300	250	222 & 223	Commissioned & LTA under operation
2	M/s Green Infra Renewable Energy Ltd.	249.9	249.9	205	
3	M/s Orange Sironj Wind Power Pvt. Ltd.	200	200	221	
4	M/s Betam Wind Energy Pvt. Ltd.	250.2	250.2	220	To be commissioned & LTA is effective from 31.07.2019
5	M/s Shapoorji Pallonji Infrastructure Capital Company Pvt. Ltd.	500	250	210 & 211 (Hybrid bays)	Yet to be connected. Start date of LTA : 25.10.2020
	Total	1500.1	1200.1		

Further Stage-I/II Connectivity applications for 150 MW alongwith LOA issued by SECI has been received from M/s GRT Jewellers in the month of October, 2019, and the same would be granted shortly.

31.4 The development of 230 kV substation switchyard was to be taken-up in parts and the investment in development of second part was deferred which was to be implemented with matching RE generation projects. Further RE generation developers faced lot of difficulties in interface of GIS module for connection with the existing 230 kV GIS bus. Looking into the difficulties, extension of 230 kV switchyard (extension beyond 05 nos. of GIS line bays and 03 nos. of ICT bays) has been transformed into outdoor hybrid switchyard (Bus bar AIS and line bay equipment GIS) so that the future bay extensions can be carried out smoothly through the outdoor hybrid GIS module(s).

31.5 Accordingly, for evacuation of power from RE generators connected at 230 kV Hybrid switchyard, extension of indoor GIS bus upto the outdoor AIS bus bar of Hybrid switchyard using GIB arrangement and necessary associated common infrastructure is required at Tuticorin-II GIS S/s.

31.6 After detailed deliberations, it was agreed that the extension of indoor GIS bus upto the gantry before bays no 210 to the outdoor AIS bus bar of 230kV Hybrid switchyard using GIB

arrangement and necessary associated common infrastructure works may be implemented under ISTS as part of associated works with augmentation of ICT-3 subject to consultation is forthcoming SRPC (TP).

Members may please discuss.

Transmission planning proposals by SRPC

32.0 Additional connectivity at 400 kV or 230 kV at NTPL, Tuticorin to enhance the reliability in power evacuation during contingent conditions.

32.1 SRPC vide letter dated 03.09.2019 (Annex-32.0) had requested to examine the additional connectivity at 400 kV or 230 kV at NTPL to enhance the reliability in evacuation of power during contingent conditions.

32.2 Further during the deliberations in the 159th OCC meeting (held on 15.10.2019), it was noted that the 230 kV connectivity at NTPL was part of evacuation scheme agreed in the 22nd and 24th SCPSPSR meetings held in 2006/2007. TANTRANSCO vide letter dated 10.10.2019 had referred the MOM of the 38th SCPSPSR meeting held on 07.05.2015 and stated that 230 kV connectivity from TANTRANSCO side was not part of ATS for NTPL power evacuation. Therefore, it needs clarification whether 230 kV connectivity from TANTRANSCO side at NTPL was part of ATS. This connectivity may be required to draw the auxiliary power / evacuation of power (upto the extent possible) during outage of both the D/C lines to Tuticorin PS.

32.3 Upon examination of the minutes of the 24th meeting of SCPSPSR, it was found that following transmission system had been agreed as the evacuation system for Tuticorin TPS JV (2x500 MW):

i) Tuticorin JV TPS – Madurai 400 kV D/c quad
ii) 2x315 MVA 400/220 kV ICT at Tuticorin TPS JV
iii) LILO of 2 nos. of 230 kV circuits at Tuticorin TPS JV

Accordingly, the referred 2 nos. of 230 kV circuits at Tuticorin TPS JV is a part of ATS.

32.4 TANTRANSCO stated that the referred 230 kV lines cannot be utilized for the evacuation of power from Tuticorin JV (2x500 MW) as the same leads to congestion in the downstream network. Towards this, it was decided that the referred 230 kV lines may be by-passed through suitable arrangement under normal operation to avoid congestion in downstream networks and the same may be utilized for drawl of start-up power whenever required. Further the proposal shall be put-up in the upcoming SRSCT for approval of the constituents.

Members may please discuss.

33.0 Delay in installation of 2x125 MVAR bus reactors at Kaiga Atomic Power Plant by NPCIL

33.1 Chairperson, SPRC vide letter dated 30.07.2019 (Annex-33.0) had informed that high voltage is being experienced due to delay in installation of bus reactors at Kaiga Atomic Power Plant by NPCIL. 2x125 MVAR bus reactors at Kaiga Atomic Power Plant were approved in the 37th meeting of Standing Committee on Power System Planning of Southern Region held on 31.07.2014. However, the reactors were yet to be installed by NPCIL, resulting in high voltage issues. Despite the issue being followed up in various forum of SRPC and assurance of NPCIL Management on expediting the commissioning of the reactors, it was noted with concern that the reactors were still in tendering stage.

33.2 A joint meeting with SRPC, NPCIL, SRLDC, CTU and KPTCL was held at CEA to discuss the issue. In the meeting NPCIL representative informed that tender had been floated for the work. Bids have been received and are under evaluation. The work is likely to be awarded by March, 2020 (Minutes of the meeting enclosed at Annex-10.0).

33.3 In the meeting, NPCIL was requested to expedite the work of installation of bus reactors at Kaiga.

Members may discuss.

Additional Agenda

34.0 Evacuation of power from Telangana Ph-I (2x800 MW) Power Project of NTPC – provision of adequate margin in transmission system for evacuation of 15% unallocated quota. (transmission system already agreed in 41st SCM as intra-state system)

34.1 CTU informed that NTPC vide letter dated 04.09.2019 had requested CTU to keep the margins in the ISTS Grid for evacuation and supply of 15% unallocated quota power from Telangana Ph-I TPS. CTU stated that the generation project is a State embedded generation and its transmission system is being implemented by TSTRANSCO. Therefore, to keep the margin for 15% unallocated quota from the generation project in ISTS Grid, NTPC may apply for LTA under the Connectivity Regulations, 2009.

34.2 TSTRANSCO stated that they are in discussions with NTPC for allocation of 100% power from the generation project and requested to drop the agenda.

34.3 It was agreed to drop the agenda as per the request of TSTRANSCO.

Members may please discuss.

35.0 Proposal for erection of 80 MVAR reactor at Podili 400 kV S/s.

35.1 APTRANSCO vide letter dated 19.11.2019 (Annex-35.0) has proposed for erection of 80 MVAR bus reactor at 400/200kV Podili S/S.

35.2 The proposal was discussed in the joint study meeting. In the meeting, CTU opined that considering increasing short circuit strength of all substation in SR, 125 MVAR reactors need to be installed in all upcoming substations, in place of 63/80 MVAR bus reactors. Reactor of 63/80 MVAR rating are inefficient in controlling the system voltages efficiently.

35.3 APTRANCO representative stated that they are now installing 125 MVAr at Hindupur instead of earlier agreed 80 MVA. The 80MVAR reactor procured for Hindupur, therefore is being shifted to Podili. Towards this, CTU representative stated that in the 1st SRSCT held on 07.09.2018, additional 125 MVAR reactor, in addition to the existing 80 MVAR reactor was agreed to be installed at Hindupur substation to control the high voltage.

35.4 After detailed deliberations APTRANSO was asked to clarify the same in forthcoming SRPC(TP).

Members may please discuss.

36.0 Proposal for erection of 132/33 kV S/s at T. Narasapuram (LILO of KV Kota-Ashwaropet 132 kV line at T. Narasapuram (ISTS line).

36.1 APTRANSCO vide their letter dated 19.11.2019 (Annex-36.0) has proposed erection of 132/33kV T.Narsapuram S/s with following connectivity:

i. Erection of 132/33kV T.Narsapuram S/S with 2x31.5 MVA PTRs.

ii. Making LILO of KV Kota (230/132kV) -Ashwaropet 132 kV S/C line at T.Narsapuram

iii. Making LILO of KV Kota (132/33 kV) -Ashwaropet 132 kV S/C line at T.Narsapuram

KV Kota-Ashwaropet 132 kV line is an inter-state line between A.P and Telangana.

36.2 In the joint study meeting, it was decided that the proposal would be discussed in the forthcoming SRPC(TP) meeting after approval of the same by TSTRANSCO, SRLDC and SRPC.

Members may please discuss.

37.0 Requirement of power at 400 kV level for MRPL (Mangalore Refinery & Petrochemicals Limited)

37.1 Establishment of 400/220 kV S/S by KPTCL at Asarpadavu along with associated transmission system for extending power supply to M/S MRPL was agreed in the 1st SRSCT meeting held on 07.09.2018. M/s MRPL vide letter dated 11.11.2019 (Annex- 37.0) has requested to expedite the works.

37.2 In the joint study meeting, KPTCL informed that land acquisition is in progress and the works for implementation of the substation at Arasapaduvu will be expedited.

37.3 It was opined that KPTCL shall inform the firm commissioning schedule of the referred works in the forthcoming meeting of SRPC(TP).

Members may please discuss.

38.0 Implementation of bays at Edayarpalayam 400/230/110 kV S/s of TANTRANSCO

38.1 CTU vide letter dated 14.08.2019 (Annex- 38.0) informed that progress of Edayarpalayam S/S has appeared quite slow, whereas Pugalur- Edayarpalayam and Udumalpet- Edayarpalayam 400 kV lines are scheduled for commissioning by February/March 2020.

38.2 In the joint study meeting, it was agreed to by-pass the Pugalur- Edayarpalayam 400 kV D/c lines and Udumalpet- Edayarpalayam 400 kV D/c lines outside Edayarpalayam substation so as to form Pugalur- Udumalpet 400 kV D/c lines, in case of non-availability of bays at Edayarpalayam 400/230/110 kV S/s of TANTRANSCO.

38.3 Further, TANTRANSCO was requested to expedite the implementation of bays at Edayarpalayam 400/230/110 kV S/S of TANTRANSCO.

Members may please discuss.

39.0 Establishment of 400/230-110kV S/S at Ulagam instead of at Vishwanathapuram

39.1 Establishment of 440/230-110 kV S/s at Vishwanathapuram was discussed and approved in 2nd SRSCT meeting held on 10.06.2019 with following connectivity:

i. Establishment of Vishwanathapuram 400/230/110 kV S/S with 2x500 MVA, 400/230 kV ICTs and 3x200 MVA, 400/110 kV ICTs.
ii. LILO of both circuits of Thiruvalam – Palavady 400 kV Quad Moose D/C line at Vishwanathapuram.
iii. 2x50 MVAr, 400 kV switchable line reactors at Vishwanathapuram for Vishwanathapuram –Thiruvalam 400 kV D/C line.
iv. 1x125 MVAr, 400 kV bus reactor at Vishwanathapuram.

230 KV connectivity:

i. 230kV S/C line to the existing Hosur 230 kV SS.
ii. 230kV D/C line to the proposed 230kV SS near Bagalur.
iii. 230kV S/C line to the proposed Kalukondapally 230 kV SS.

110 KV connectivity:

i. 110kV D/C line to Shoolagiri 110kV SS.
ii. 110kV S/C line to Uddanapally 230kV SS
iii. 110kV S/C line to proposed Alur 110kV SS.
iv. 110kV D/C line to proposed Hosur SEZ 110kV SS.
v. 110kV S/C line to proposed Vishwanathapuram 110kV SS.

39.2 TANTRANSCO has informed vide letter dated 16.11.2019 (Annex-39.0), that there may be some practical difficulties in erecting the 230 kV & 110 kV lines on the already identified land. Hence, alternate land was chosen at Ulagam village near Hosur so that the proposed 440/230-110 kV S/s can be connected with the 230 kV & 110 kV network as proposed. There is no change in 400 kV connectivity of 400/230-110 kV SS at Ulagam (LILO distance of Palavady-Thiruvalam 400 kV DC line getting reduced) but some modifications in the downstream network based on the field feasibility as detailed below:

Establishment of 400/230-110kV SS at Ulagam:

ICTs:

i. 2x 500 MVA, 400/230 kV ICTs
ii. 3x 200 MVA, 400/110 kV ICTs
iii. Provision of 1 x 125 MVAr Bus Reactor at Ulagam .
iv. Provision of 2 X 50 MVAr switchable line reactors Ulagam SS for Ulagam – Thiruvalam line.

400 kV connectivity:

i. LILO of 400 kV Thiruvalam – Palavady Quad Moose D/C line at the proposed Ulagam 400/ 230-110 kV SS.

230 kV connectivity:

i. 230 kV S/C line to the existing Gurubarapally 230 kV SS in Hosur taluk.
ii. 230 kV D/C line to the proposed 230kV SS at Nandhimangalam village near
iii. 230 kV D/C line to the proposed Kalukondapally 230 kV SS.

110 KV connectivity:

i. 110kV D/C line to the existing Nariganapuram 110kV SS.
ii. 110kV D/C line to the existing Bagalur 110kV SS.
iii. 110kV D/C line to the proposed Hosur SEZ 110kV SS.

39.3 The proposal of TANTRANSCO was agreed in the Joint Study meeting and recommended to SRPC(TP) for deliberations.

Members may please discuss.

40.0 Phase-II Solar & Wind Energy Zone Transmission schemes

40.1 SECI/MNRE identified Potential Solar Energy Zones (SEZ) and Wind Energy Zones (WEZ) in various districts of six RE rich states for 66.5 GW quantum. Subsequently, based on bidding timeline, SECI provided phasing details of prioritized SEZs (50,000 MW) and WEZs (16,500

MW) in two phases i.e. 2020 & 2021. The details of prioritized SEZs and WEZs in Southern region (totaling to 18,500 MW) are as under:

	Solar		Wind		Total
State/District	**Ph-1 (GW)**	**Ph-2 (GW)**	**Ph-1 (GW)**	**Ph-2 (GW)**	**(GW)**
	2020	**2021**	**2020**	**2021**	
Andhra Pradesh					
Kurnool	2.5		2	1	5.5
Ananthpuram		2.5			2.5
Karnataka					
Koppal			2.5		2.5
Gadag		2.5			2.5
Bidar		2.5			2.5
Tamil Nadu					
Karur			1.5	1	2.5
Tirunelvelli				0.5	0.5
Total	**2.5**	**7.5**	**6**	**2.5**	**18.5**

40.2 Out of the 18.5 GW of identified SEZs and WEZs in Southern Region, transmission system for evacuation of 8.5 GW of power from Phase-I and Phase-II Wind Energy Zone in Southern Region and additional 1.5 GW of Phase-I of Solar Energy Zone in Kurnool area, totaling to Renewable Energy Zone power of 10 GW, was agreed in 1st Southern Region Standing Committee on Transmission (SRSCT) held on 07.09.2018 and it was decided that the schemes would be taken-up for implementation as ISTS, consequent to grant of LTA by CTU. Details are given below:

a) Tirunelveli and Tuticorin Wind Energy Zone (Tamil Nadu) (500 MW):

(i) Addition of 1x500 MVA, 400/230kV ICTs (4th) at Tuticorin-II GIS sub-station.

***Operation of Tuticorin Pooling Station – Dharmapuri (Salem) 765kV D/C line (presently operating at 400kV) at its rated voltage. (i. e. 765kV) & 5th ICT (500 MVA) at Tuticorin-II PS would be reviewed for dispersal of more than 2000MW RE generation*

b) Karur / Tiruppur Wind Energy Zone (Tamil Nadu) (2500 MW):

(i) Establishment of 5x500 MVA, 400/230 kV Karur Pooling Station (at a location in between Karur Wind zone and Tiruppur wind zone)

(ii) LILO of both circuits of Pugalur – Pugalur (HVDC) 400 kV D/c line (with Quad Moose ACSR Conductor) at Karur PS

(iii)9 nos. of 230 kV line bays for interconnection of wind projects

(iv)2x125 MVAr, 400 kV Bus reactors at Karur PS

c) Koppal Wind Energy Zone (Karnataka) (2500 MW):

(i) Establishment of 5x500 MVA, 400/220 kV pooling station near Munirabad /suitable location in Koppal distt.

(ii) Pooling station (near Munirabad /suitable location in Koppal distt.) - Munirabad 400 kV D/c Line (with Quad Moose ACSR conductor)

(Based on the request of KPTCL, it was decided to drop this line in the 2nd meeting of SRSCT. The same would be taken up in ECT/NCT.)

(iii)Pooling station (near Munirabad /suitable location in Koppal distt.) - Narendra (New) 400 kV D/c Line (with Quad Moose ACSR conductor)

(iv) 9 Nos of 220 kV line bays for interconnection of wind projects

(v) 2x125 MVAr, 400 kV bus reactor at Pooling station (near Munirabad /suitable location in Koppal distt.)

(vi) Adequate space provision for future expansion

d) **Kurnool Wind Energy Zone (3000 MW) /Solar Energy Zone (AP) (1500 MW):**

(i) Establishment of 765/400/220 kV 3x1500 MVA, 9x500 MVA Pooling station at suitable location in Kurnool Distt. (Kurnool-III)

(ii) Kurnool-III Pooling station - Kurnool(new) 765 kV D/c Line

(iii) Kurnool –III PS-Maheshwaram(PG) 765 kV D/c Line

(iv) 220 kV line bays for interconnection of wind projects (15 nos.)

(v) 1x330 MVAr (765kV) & 1x125 MVAr (400 kV) bus reactor at Kurnool-III PS

(vi) 240 MVAr Switchable line reactors at both ends of Kurnool-III PS – Maheshwaram (PG) 765 kV D/c Line

The above transmission system was agreed as a broad master plan to serve integration of RE generation potential assessed in Tamil Nadu, Karnataka and Andhra Pradesh for the period up to 2021-22. This broad master plan would be implemented in stages for RE integration. The transformation capacity at various sub-stations and certain elements would be reviewed based on LTA applications.

40.3 In the 2nd SRSCT meeting, evacuation of power from Solar & Wind Energy zones in Andhra Pradesh and Karnataka in Southern for integration of Phase-II Solar Energy Zones was discussed and following transmission system was agreed:

Transmission scheme for Solar Energy Zone in Andhra Pradesh (3500 MW)

Ananthpuram (Ananthapur) SEZ (2500 MW) and Kurnool SEZ (Kurnool-1000 MW)

(i) Establishment of 400/220 kV, 7x500 MVA pooling station at suitable border location between Ananthpuram & Kurnool Distt

(ii) Ananthpuram PS-Kurnool-III PS 400 kV (High capacity equivalent to quad moose) D/c Line

(iii) Ananthpuram PS-Cuddapah 400 kV (High capacity equivalent to quad moose) D/c Line with suitable line reactors

(iv) 220 kV line bays for interconnection of wind/solar projects (12 nos.)

(v) 2x125 MVAr (400 kV) bus reactors at Ananthpuram PS

Transmission Scheme for Solar Energy Zone in Karnataka (5000 MW)

a) Gadag SEZ (2500 MW)

(i) Establishment of 400/220 kV, 5x500 MVA Gadag Pooling Station.

(ii) Gadag PS-Koppal PS 400 kV (high capacity equivalent to quad moose) D/C Line.

(iii) Gadag PS-Narendra (New) PS 400 kV (high capacity equivalent to quad moose) D/C Line.

(iv) 220 kV line bays for interconnection of solar projects (8 nos.)

(v) 1x125 MVAr (400 kV) bus reactor at Gadag PS.

(vi) Upgradation of Narendra (New) to its rated voltage of 765 kV level alongwith 2x1500 MVA transformer and 1x330 MVAr Bus Reactor.

(vii) Upgradation of Kolhapur (PG) to its rated voltage of 765 kV level alongwith 2x1500 MVA transformer and 1x330 MVAr Bus Reactor.

(viii) Upgradation/charging of Narendra new - Kolhapur (PG) 765 kV D/c line (initially charged at 400 kV) to its rated voltage of 765 kV along with 1x330 MVAr switchable Line Reactor on Kolhapur (PG) end of each circuit.

b) Bidar SEZ (2500 MW)

(i) Establishment of 765/400/220 kV, 3x1500 MVA, 5x500 MVA pooling station at suitable border location near Bidar.

(ii) Bidar PS – Maheshwaram (PG) 765 kV D/C line along with 1x240 MVAr switchable Line Reactor on Bidar PS end of each circuit.

(iii) 220 kV line bays for interconnection of solar projects (8 nos).

(iv) 1x240 MVAr (765 kV) & 1x125 MVAr (400 kV) bus reactor at Bidar PS.

40.4 Following "common transmission system strengthening in Southern Region for enabling evacuation and export of power from Solar & Wind Energy Zones in Southern Region" was also agreed by the Standing Committee:

(i) Upgradation of Tuticorin PS to its rated voltage of 765 kV level alongwith 2x1500 MVA transformer and 1x330 MVAr Bus Reactor.

(ii) Upgradation of Dharmapuri (Salem New) to its rated voltage of 765 kV level alongwith 2x1500 MVA transformer and 1x240 MVAr Bus Reactor.

(iii) Upgradation of Madhugiri (Tumkur) to its rated voltage of 765 kV level alongwith 2x1500 MVA transformer and 1x240 MVAr Bus Reactor.

(iv) Upgradation/charging of Tuticorin PS - Dharmapuri (Salem New) 765 kV D/c line (initially charged at 400 kV) to its rated voltage of 765 kV along with 1x330 MVAr switchable line reactor on both end of each circuit.

(v) Upgradation/charging of Dharmapuri (Salem New) - Madhugiri (Tumkur) 765 kV 2xS/c line (initially charged at 400 kV) to its rated voltage of 765 kV along with 1x330 MVAr switchable Line Reactor on Dharmapuri (Salem New) end of each circuit.

(vi) Upgradation/charging of Madhugiri (Tumkur) - Narendra New 765 kV D/c line (initially charged at 400 kV) to its rated voltage of 765 kV along with 1x330 MVAr switchable line reactor on both end of each circuit.

(vii) Conversion of 400 kV line reactors installed on 765 kV circuits/ lines (initially charged at 400 kV) mentioned at sl no. iv, v and vi into 400 kV bus Reactor with suitable arrangements at respective substations.

It was also decided that all-India studies would be conducted with the participation of CEA, CTU, POSOCO and concerned beneficiaries /STUs for evolution of additional (over and above the above proposed scheme) transmission scheme for export of power from Southern grid to rest of all-India grid. If required, a joint meeting of the RSCTs may also be convened.

40.5 Subsequently, TANGEDCO vide letter No. CFC /RC /SE /CERC /EE /AEE1 /F. SRSCT /D.241/ dated:31.07.2019 (Annex- 40.1), has inter-alia conveyed that:

"the transmission schemes should not be recorded as approved until a comprehensive All India Study as suggested by POSOCO representative is carried out with the participation of all the constituents."

40.6 APTRANSCO vide letter No. APPCC/CE/Comml./F.2nd SRCT/D.No. 110/19 dated 02.08.2019 (Annex- 40.2) has inter-alia conveyed that:

"from the load flow studies, it has been observed that the present High Capacity Transmission corridors built as part of ISTS are loaded to the extent of 33.33 % due to several reasons including back out of certain IPPs/MPPs sought LTA and abandoning the projects thereafter. The ISTS system appears to be overbuilt in the present condition in the Southern Region. CEA & CTU are requested to initiate measures to optimize the loading on those 765 kV lines & sub-stations, before proposing any other new line & substations for RE evacuation under Phase-II.

Seeking consensus for additional investment again, as part of evacuation of Wind Zone-II will tantamount to overburdening the DISCOM's and cannot be accepted."

40.7 The proposal of transmission system for integration of 18.5 GW REZs in Southern Region was discussed in the 36th SRPC meeting held on 12.07.2019, wherein constituents had further stressed upon for carrying out All-India system studies with participation from CEA, CTU, STUs, POSOCO etc.

40.8 Accordingly, discussions were held between CEA and CTU for preparing all-India Load-Generation balance to carry out system studies on all-India basis for planned RE capacity by 2022. The load-generation scenario on all-India basis has been developed for August-September 2021-22 (afternoon peak) timeframe and it was forwarded to Southern Region constituents for their observations / comments / suggestions vide email dated 19.11.2019.

40.9 In the joint study meeting held on 21-22 November, 2019, POSOCO representative and SR constituents requested for some more time to forward their comments/observations on the all-India load-generation scenario for RE integration.

40.10 CTU informed that they were open to carry out number of scenarios / studies on All-India basis as per the suggestions / observations of the constituents. However, it was requested that views/suggestions may be forwarded within a week time, so that the analysis and studies can be carried out for discussions in the forthcoming SRPC(TP) meeting.

40.11 After detailed deliberations, it was decided that observations/comments on the circulated LGB & All-India PSSE file may be submitted within 1 week for further analysis and evaluation of transmission scheme for discussions in the next SRPC(TP) meeting.

Members may please deliberate.

सत्यमेव जयते

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
केंद्रीय विद्युत प्राधिकरण
Central Electricity Authority
विद्युत प्रणाली योजना एवं मूल्यांकन प्रभाग -II
Power System Planning & Appraisal Division-II

सेवा मे / To,

संलग्न सूची के अनुसार
As per list enclosed

विषय: 2nd meeting of Southern Region Standing Committee on Transmission (SRSCT)-
Corrigendum to Minutes of the meeting

महोदय(Sir)/महोदया(Madam),

The minutes of 2nd meeting of Southern Region Standing Committee on Transmission (SRSCT) were issued vide letter No. CEA-PS-12-14(12)/1/2018-PSPA-II Division/I/5982/2019 dated 10.07.2019.

Based on the observations/comments received from the constituents, corrigendum to the minutes is enclosed at Appendix-I. It is also available at CEA's website (www.cea.nic.in).

This is issued with the approval of Member (Power System), CEA.

भवदीय/Yours faithfully,

Jindal 17/07/2019

(प्रदीप जिंदल/ Pardeep Jindal)
मुख्य अभियंता/ Chief Engineer

Address List:

1. The Member Secretary, Southern Regional Power Committee, 29, Race Course Cross Road, Bangalore 560 009. FAX : 080-22259343	2. Chief Operating Officer, Central Transmission Utility (CTU), Power Grid Corporation of India "Saudamini" Plot No. 2, Sector-29, Gurugram-122001 Tel. No. 0124-2571816 Fax No.0124-2571932
3. Director (System Operations), POSOCO B-9, Qutub Institutional Area, Katwaria Sarai, New Delhi-110016 Tel. No. 26852843 Fax No. 2626524525, 26536901	4. Managing Director Karnataka State Power Trans. Corp.Ltd., Cauvery Bhawan, Bangalore - 560 009. FAX : 080 -22228367
5.Chairman and Managing Director Transmission Corp. of Andhra Pradesh Ltd., (APTRANSCO) Gunadala, Eluru Rd, Vijayawada, Andhra Pradesh	6. Chairman-cum-Managing Director Transmission Corp. of Telangana Ltd., (TSTRANSCO) Vidyut Soudha, Khairatabad Hyderabad – 500 082.
7. Chairman-cum-Managing Director Kerala State Electricity Board, Vidyuthi Bhawanam, Pattom, Thiruvananthapuram - 695 004. FAX : 0471-2444738	8. Managing Director Tamil Nadu Transmission Corporation Ltd (TANTRANSCO), 6th Floor, Eastern Wing, 800 Anna Salai, Chennai - 600002. FAX : 044-28516362
9. The Superintending Engineer –I, First Floor, Electricity Department, Gingy Salai, Puducherry – 605 001. FAX : 0413-2334277/2331556	10. Executive Engineer Divisional Office Lakshadweep Electricity Department Kavaratti Island UT of Lakshadweep

Appendix- I

Corrigendum to Minutes of 2nd meeting of Southern Region Standing Committee on Transmission (SRSCT) held on 10th June, 2019 at Bengaluru

The minutes of 2nd meeting of Southern Region Standing Committee on Transmission (SRSCT) were issued vide our letter No. CEA-PS-12-14(12)/1/2018-PSPA-II Division/I/5982/2019 dated 10.07.2019. Subsequently, NLC India Ltd., CTU and TANTRANSCO have requested for corrigendum in some portion of the minutes as mentioned below:

1. Based on the observations of NLC vide their letter GM/PSE/TPS-II 2nd Expansion/Transmission lines/514/2019 dated 12.07.2019 (copy at Annex-I), para 24.9 (i) "**Transmission System for providing connectivity to Neyveli TS-II 2nd Expn (2x660 MW)- under the scope of NLC India Ltd.",** is being modified as below:

Original Para 24.9 (i) of the minutes	**Modified para 24.9 (i)**
(i) Re-storing of Neyveli TS-II /Neyveli TS-I Expn – Trichy 400 kV D/c line through suitable arrangement of bypassing the LILOs at Nagapattinam and utilization of LILO sections for making Neyveli TPS-II 2nd Expn – Nagapattinam 400 kV, 2xD/c lines along with the line bays at generation switchyard – under the scope of NLC India Ltd.	**(i) (a)** As already agreed in 42nd meeting of SCPSPSR**,** re-storing of Neyveli TS-II/Neyveli TS-I Expn - Trichy 400 kV D/c lines through suitable arrangement of bypassing the LILOs at Nagapattinam, would be **implemented under ISTS.** **(i) (b)**Utilization of LILO sections for making Neyveli TPS-II 2nd Expn – Nagapattinam 400 kV, 2xD/c lines along with the line bays at generation switchyard would be **implemented by NLC India Ltd.**

2. Further, as per observations of CTU vide letter dated 23.08.2019 (copy at Annex-II), the "**Additional System Strengthening for control of short circuit levels in Neyveli generation complex and re-arrangement network configuration to control overloading of ICTs / 230 kV lines from Neyveli generation complex**" as mentioned in para 24.9 of the minutes is **being modified as follows**:

i. Neyveli TS-II – Cuddalore 400 kV D/c (Quad) line – under the scope of TANGEDCO as agreed in 1st SRSCT.

ii. Manalmedu – Neyveli TPS-II 2nd Expn 400kV D/c (Quad) line (in place of Cuddalore – Manalmedu 400kV D/c line – agreed in 1st SRSCT) – under the scope of TANGEDCO.

iii**. Bypassing of one ckt. of Neyveli TS-II- Salem 400 kV D/c line of PGCIL and Neyveli TS-II- NNTPS 400 kV S/c line of PGCIL, to form NNTPS-Salem 400 kV S/c line (agreed in 42nd SCPSPSR)- as ISTS line.**

3. Based on observations of TANTRANSCO vide letter No. CE/Plg &R.C/ACE/SS/EE-II/AEE1/F.SRSCT-2/D.181/19 dated: 29.07.19 (copy at Annex-III), **following changes are being made in the minutes of 2nd SRSCT:**

a) In para 5.4 (i), "Establishment of Vishwanathapuram 400/230/110 kV S/S" is replaced by "**Establishment of Vishwanathapuram 400/230-110 kV S/S**".

b) In para 43.0, "SRLDC representative suggested that in place of LILO of MAPS-Echur line, LILO of MAPS-Arni line should be done" should be replaced by "**SRLDC representative suggested that in place of LILO of MAPS-Echur line, LILO of BHAVINI-Arni line should be done**".

c) In Para 45.3 (a), "LILO of one circuit of 400 kV Kayathar-Karaikudi DC line by erecting 25 km of DC line to Konthagai 400 kV SS" should be replaced by "**LILO of one circuit of 400 kV Kayathar-Karaikudi DC line by erecting 25 km of DC line to Alagarkoil 400 kV SS."**

d) In para 45.3 (b), "400 kV DC Link line from the proposed Virudhunagar 765/400 kV SS to Konthagai 400 kV SS" should be replaced by "**400 KV DC Link line from the proposed Virudhunagar 765/400 kV SS to Alagarkoil 400 kV SS."**

Annex-2.0

No.15/3/2017-Trans
Government of India
Ministry of Power
Shram Shakti Bhawan, Rafi Marg, New Delhi

Dated, the 4th November, 2019

OFFICE ORDER

Subject: Constitution of five "Regional Power Committees (Transmission Planning)" (RPCTPs) - reg.

In supersession of this Ministry's Office Orders of even number, dated 13.4.2018, constituting five Regional Standing Committees on Transmission (RSCTs) viz. Eastern Regional Standing Committee on Transmission (ERSCT), Western Regional Standing Committee on Transmission (WRSCT), Northern Regional Standing Committee on Transmission (NRSCT), Southern Regional Standing Committee on Transmission (SRSCT) and North Eastern Regional Standing Committee on Transmission (NERSCT), the undersigned is directed to state that in the light of the fact that the present transmission system is in the nature of One Nation- One Grid and the whole system as National System has to transport power seamlessly from one corner of the country to another corner of the country in the form of one single market, it has been decided to revise the existing five RSCTs by replacing the same with five new "Regional Power Committees (Transmission Planning) (RPCTPs)" with the following composition, with immediate effect:

Eastern Regional Power Committee (Transmission Planning) (ERPCTP):

1	Member(Power System), Central Electricity Authority (CEA)	Chairperson
2	Chief Operating Officer, Central Transmission Utility (POWERGRID)	Member
3	Director(System Operation), Power System Operation Corporation Ltd.	Member
4	Heads of State Transmission Utilities (STUs) of Bihar, Jharkhand, West Bengal, Odisha, Sikkim, UT of Andaman & Nicobar Islands #	Member
5	Member Secretary of Eastern Regional Power Committee	Member
6	CMD/ MD/ Chairman of NTPC, NHPC, SECI and DVC	Members
7	Chief Engineer(from Power System Wing), Central Electricity Authority *	Member Secretary

 # STUs to coordinate with their respective Distribution Companies (DISCOMs).
** To be nominated by the Central Electricity Authority.*

Western Regional Power Committee (Transmission Planning) (WRPCTP):

1	Member(Power System), Central Electricity Authority (CEA)	Chairperson
2	Chief Operating Officer, Central Transmission Utility (POWERGRID)	Member
3	Director(System Operation), Power System Operation Corporation Ltd.	Member
4	Heads of State Transmission Utilities (STUs) of Gujarat, Madhya Pradesh, Chhattisgarh, Maharashtra, Goa, UT of Daman & Diu, UT of Dadra & Nagar Haveli #	Member
5	Member Secretary of Western Regional Power Committee	Member
6	CMD/ MD/ Chairman of NTPC, NHPC and SECI	Members
7	Chief Engineer(from Power System Wing), Central Electricity Authority *	Member Secretary

 # STUs to coordinate with their respective Distribution Companies (DISCOMs).
** To be nominated by the Central Electricity Authority.*

Northern Regional Power Committee (Transmission Planning) (NRPCTP):

1	Member(Power System), Central Electricity Authority (CEA)	Chairperson
2	Chief Operating Officer, Central Transmission Utility (POWERGRID)	Member
3	Director(System Operation), Power System Operation Corporation Ltd.	Member
4	Heads of State Transmission Utilities (STUs) of UT of Jammu & Kashmir, UT of Ladakh, Himachal Pradesh, Punjab, Haryana, Rajasthan, Delhi, Uttar Pradesh, Uttarakhand, UT of Chandigarh #	Member
5	Member Secretary of Northern Regional Power Committee	Member
6	CMD/ MD/ Chairman of NTPC, NHPC and SECI	Members
7	Chief Engineer(from Power System Wing), Central Electricity Authority *	Member Secretary

 # STUs to coordinate with their respective Distribution Companies (DISCOMs).

** To be nominated by the Central Electricity Authority.*

Southern Regional Power Committee (Transmission Planning) (SRPCTP):

1	Member(Power System), Central Electricity Authority (CEA)	Chairperson
2	Chief Operating Officer, Central Transmission Utility (POWERGRID)	Member
3	Director(System Operation), Power System Operation Corporation Ltd.	Member
4	Heads of State Transmission Utilities (STUs) of Telangana, Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, UT of Puducherry, UT of Lakshadweep #	Member
5	Member Secretary of Southern Regional Power Committee	Member
6	CMD/ MD/ Chairman of NTPC, NHPC and SECI	Members
7	Chief Engineer(from Power System Wing), Central Electricity Authority *	Member Secretary

 # STUs to coordinate with their respective Distribution Companies (DISCOMs).

** To be nominated by the Central Electricity Authority.*

North Eastern Regional Power Committee (Transmission Planning) (NERPCTP):

1	Member(Power System), Central Electricity Authority (CEA)	Chairperson
2	Chief Operating Officer, Central Transmission Utility (POWERGRID)	Member
3	Director(System Operation), Power System Operation Corporation Ltd.	Member
4	Heads of State Transmission Utilities (STUs) of Assam, Meghalaya, Nagaland, Arunachal Pradesh, Tripura, Manipur, Mizoram #	Member
5	Member Secretary of North Eastern Regional Power Committee	Member
6	CMD/ MD/ Chairman of NTPC, NHPC, SECI and NEEPCO	Members
7	Chief Engineer(from Power System Wing), Central Electricity Authority *	Member Secretary

 # STUs to coordinate with their respective Distribution Companies (DISCOMs).

** To be nominated by the Central Electricity Authority.*

Annex-2.0

2. Terms of Reference (ToR) of the RPCTPs are to:

i. Carry out a quarterly review of the Transmission System in the region; assess the growth in generation capacity and the demand in various parts of the region; and draw up proposals for strengthening inter- Regional transmission system. The transmission planning is required to keep in mind the areas where the generation is likely to grow and areas where load demand will grow so that the transmission system at any point of time is capable to meet the demand in every corner of the country and comply with the mandate under the Tariff Policy of developing transmission system ahead of the generation for ensuring smooth operation of the grid.
ii. Assess the transmission system requirements in the near, medium and long term and draw up transmission schemes to meet these requirements. While doing this a perspective plan for the next 15-20 years may also be kept in mind and accordingly the requisite allowance/margin may be factored in the system during planning process.
iii. Examine applications for connectivity and access and ensure that these are granted speedily, provided that the requisite fees/charges are paid.
iv. Review the upstream and downstream network associated with transmission schemes.
v. Examine and evaluate the intra-state transmission proposals.
vi. Review and facilitate the construction of the inter-regional grid strengthening schemes.

3. The RPCTPs shall take steps to ensure that the transmission capacity is capable of wheeling the electricity to different parts of the region and outside the region as per the demands of the market. They shall carry out the quarterly reviews and make recommendation for system strengthening and expansion keeping in mind the guidelines laid down by the Tariff Policy.

4. The RPCTPs will forward their review of the transmission systems and their recommendation for system expansion/ strengthening to the National Committee on Transmission (NCT) at the end of every quarter- by 15th July; 15th October; 15th January and 15th April. The NCT will examine the proposals and forward them to Government with their recommendations.

5. This issues with the approval of the Hon'ble Minister of State (Independent Charge) for Power and New & Renewable Energy.

4/11/2019

(Bihari Lal)
Under Secretary to the Govt. of India
Telefax: 23325242
Email: transdesk-mop@nic.in

To

1. All members of the five RPCTPs.
2. Secretary, Ministry of New & Renewable Energy, Govt. of India.
3. Chairperson, CEA, New Delhi.
4. CMDs of all CPSUs under the Ministry of Power and Ministry of New and Renewable Energy, Govt. of India.
5. Heads of all autonomous bodies under the Ministry of Power, Govt. of India.
6. Finance/ Budget Section, Ministry of Power.
7. Power/ Energy Secretaries of all States/UTs.
8. Chief Executives of all State Transmission Utilities (STUs).

Copy to:

(i) PS to Hon'ble MoSP(IC)/ PPS to Secretary(Power)/ SS&FA/ AS(Trans)/ all Joint Secretaries/ EA/ Directors/ Dy. Secretaries, Ministry of Power.
(ii) Technical Director, NIC, M/o Power, for publishing this order on the website of M/o Power.

सत्यमेव जयते

भारत सरकार

Government of India

विद्युत मंत्रालय

Ministry of Power

केन्द्रीय विद्युत प्राधिकरण

Central Electricity Authority

विद्युत प्रणाली योजना एवं मूल्यांकन प्रभाग-II

Power System Planning & Appraisal Division-II

सेवा में / To,

संलग्न सूची के अनुसार

As per list enclosed

विषय/Subject: Permanent de-linking of 400 kV LILO portion of 'RTPS-BTPS-JSW-GUTTUR' Twin Moose line at JSW generating station- **Minutes of the meeting** .

महोदय(Sir)/महोदया(Madam),

A meeting was held at CEA on 22nd November, 2019, to discuss the issue of permanent de-linking of 400 kV LILO portion of 'RTPS-BTPS-JSW-GUTTUR' Twin Moose line at JSW generating station.

The minutes of the meeting are enclosed herewith.

भवदीय/Yours faithfully,

ईशान 03.12.2019

(ईशान शरण / Ishan Sharan)

निदेशक/ Director

I/8311/2019 File No.CEA-PS-12-14(12)/1/2018-PSPA-II Division-Part(1)

List of addressee:

1. The Member Secretary, Southern Regional Power Committee, 29, Race Course Cross Road, Bangalore 560 009. FAX : 080-22259343	2. COO, CTU Power Grid Corporation of India Ltd. "Saudamini", Plot No.2, Sector-29, Gurugram 122 001, Haryana. FAX : 95124-2571932
3. GM, SRLDC, 29, Race Course Cross Road, Bengaluru 560 009 FAX – 080-22268725	4. Mr. Satish Jindal, Head, Corporate and Regulatory Affairs, JSW Steel Ltd., NTH Complex, 4th Floor, A-2, Shaheed Jeet Singh Marg, Qutub Institutional Area, New Delhi -110067
5. The Director (Transmission), Karnataka Power Transmission Corporation Ltd.(KPTCL), Cauvery Bhawan, Bengaluru - 560 009. FAX : 080 -22228367	

I/8311/2019 File No.CEA-PS-12-14(12)/1/2018-PSPA-II Division-Part(1)

Minutes of meeting held on 22.11.2019 under the Chairmanship of Chairperson/Member (Power System), CEA, to discuss the issue of de-linking of 400 kV LILO portion of 400 kV "RTPS-BTPS-JSW-GUTTUR" Twin Moose line at JSW generating station

List of participants is at **Annex-I**.

1. The issue of de-linking of 400 kV LILO portion of 400 kV "RTPS-BTPS-JSW-GUTTUR" Twin Moose line at JSW generating station was discussed in the 2nd meeting of SRSCT held on 10.06.2019. It was decided in the meeting that the issue would be discussed in a separate meeting with KPTCL, JSW, SRLDC and CEA. The recommendations would be discussed in next meeting of SRSCT.
2. Accordingly, the matter was discussed in a meeting chaired by Chairperson/Member (Power System), CEA, with representatives from KPTCL, SRLDC, JSW, CEA and CTU.
3. In the meeting, representative of M/s JSW requested for de-linking of 400 kV LILO portion at JSW Generating station. He informed that M/s JSW is expanding its Steel plant (power plant and steel plant are at the same location), resulting in increase in electricity demand locally. So power may not be injected by JSW generating station in the grid. M/s JSW is not having LTA for injecting power in the grid. At present, M/s JSW is selling 300 MW power to Telangana under SToA. The PPA with Telangana is till March, 2020. He also informed that out of the total installed capacity of 1,690 MW (1x100 + 3x130 + 4x300 MW) at JSW generating station, 860 MW (2x300 MW (Unit 3&4) + 2x130 MW) is IPP and the remaining capacity is CPP.
4. KPTCL also informed that M/s JSW has not taken any LTA for injecting power in their grid and is injecting power in short term only.
5. Chief Engineer (PSPA-II), CEA, informed that studies were carried out in the Joint Study meeting along with CTU, SRLDC, KPTCL etc. The studies considered the de-linking of 400 kV LILO portion of 'RTPS-BTPS-JSW-GUTTUR' Twin Moose line at JSW generating station, with the following alternatives for present scenario as well as for March, 2024:
    - Case-I: No injection from JSW without Bellary Pooling station-CN Halli 400 kV D/C line.
    - Case-II: Generation of 860 MW (2x130 MW +2x300 MW units) considered at JSW, with the availability of Bellary Pooling station - CN Halli 400 kV D/C line.
    - Case–III: Generation of 860 MW (2x130 MW +2x300 MW units) considered at JSW, without Bellary Pooling station -CN Halli 400 kV D/C line.
6. He further informed that from the study results, no constraints were observed in Case-I & Case-II with the de-linking of LILO at JSW generating station. However, under Case-III, in-case BTPS – Guttur (Davangere) 400 kV S/c line is under maintenance and one circuit of BTPS-Hiriyur 400 kV D/c line goes out, generation at JSW has to be backed down.

7. SRPC opined that the LILO may be opened after 1st June, 2020, i.e. after the annual peak demand period of Southern Region.

8. After deliberations, it was agreed by all that KPTCL may open the LILO subject to following conditions:

   i. The LILO may be opened only after 1st June, 2020, i.e. after the annual peak demand period of Southern Region.

   ii. KPTCL shall ensure that there would not be any constraints / congestion in the STU grid and conditions stipulated in the manual on transmission planning criteria are met, while giving NoC for injection of power (quantum in MW) to M/s JSW.

   iii. KPTCL should expedite the works of upgradation of BTPS - Guttur 400 kV S/C line to 400 kV Quad D/C line. This was agreed in the 39th meeting of Standing Committee on Power System Planning of Southern Region held on 28-29 December, 2015. However, the work has been delayed and KPTCL must expedite the same. Further, KPTCL shall issue NoC for injection of power to JSW only after completion of upgradation works of BTPS - Guttur 400 kV line.

   iv. The issue of NoC to the declared IPPs or CPP of JSW, as the case may be, would be in accordance with KERC regulations/orders.

9. The above discussions would be put up in the forthcoming meeting of SRSCT/SRPCTP.

Annex-I

Sl. No.	Name	Designation	Organization
1.	P.S.Mhaske	Chairperson & Member (PS)- In chair	CEA
2.	Pardeep Jindal	Chief Engineer (PSPA-II)	CEA
3.	Ishan Sharan	Director (PSPA-II)	CEA
4.	Kanchan Chauhan	Asstt. Director (PSPA-II)	CEA
5.	A Balan	Member Secretary	SRPC
6.	Asit Singh	SE(O)	SRPC
7.	N.S. Malini	EE	SRPC
8.	Mukesh Khanna	CGM	POWERGRID
9.	Anil Kumar Meena	DGM(CTU-Plg)	POWERGRID
10.	Madhukar G.	Chief Manager	SRLDC, POSOCO
11.	Chethan. D.	EE-PSS	KPTCL
12.	Divya Prabha H.	AEE-PSS	KPTCL
13.	Swathi. S	AE-PSS	KPTCL
14.	Suryaprakash	Vice President	JSWEL
15.	Sanjeev Kumar	Sr. Manager	JSWEL

KARNATAKA POWER TRANSMISSION CORPORATION LIMITED

Telephone: 080-22210416
Fax : 080-22292204

Office of the
Chief Engineer Electy,.
Planning & Co-ordination,
Kaveri Bhavan, Bangalore-9

No. CEE (P&C)/SEE(Plg)/EE(PSS)KCO-97/7825/2019-20 930/-303 Date: 14 AUG 2019

The Member (Power systems),
Central Electricity Authority,
Sewa Bhavan, R.K.Puram,
New Delhi-110 066.

Sir,

Sub: Minutes of 2nd Southern Region Standing Committee on Transmission (SRSCT)-reg.

Ref: MOM of 2nd meeting of SRSCT dated: 10.07.2019.

*****

This has reference to the minutes of the meeting of 2nd Southern Region Standing Committee on Transmission (SRSCT) held on 10th June 2019; the following modifications are proposed in the proceedings.

Subject 2.1:

A. Establishment of 2x500 MVA, 400/220 kV sub-station at Yalwar, Bijapur District with the associated transmission lines.

Approved Scheme:

400 kV System:

i. Narendra (New) Kudgi-Yalwar 400 kV D/C line (with Quad Moose ACSR Conductor)
ii. Gulbarga- Yalwar 400 kV D/C line (with Quad Moose ACSR Conductor).
iii. 2x500 MVA, 400/220 kV ICTs at Yalwar.
iv. 2x125 MVAr bus reactors.

220 kV System:

i. LILO of both circuits of existing B. Bagewadi – Lingasugur 220 kV D/C line at Yalwar.
ii. LILO of both circuits of Bijapur- Sindagi 220 kV D/C line sub-station at Yalwar.
iii. B. Bagewadi -Yalwar 220 kV D/C line.

Modification in 220kV scheme:

- *220kV DC line from proposed 400/220kV Yalawar (Shivanagi) sub-station to 220kV Indi substation.*
- *220kV multi-circuit line to the LILO point of 220kV DC Basavana Bagewadi-Vijayapur line near 220kV Nandihal switching station.*

- *DC LILO of existing B.Bagewadi – Lingasugur 220 kV DC line to the proposed 400 kV sub-station.*

Subject 18.0: Permanent de-linking of existing 400 kV RTPS-BTPS-JSW-GUTTUR Twin Moose line between BTPS and JSW

During the 2nd SRSCT meeting it was decided, to take up the issue in a separate meeting with KPTCL, JSW, SRLDC and CEA and the recommendations would be discussed in next meeting of Standing Committee.

In this regard, KPTCL opines to conduct joint study with CEA, PGCIL and SRLDC considering the IPP and CPP generator details provided by M/s JSW (As decided in Joint study held on 1st & 2nd May 2019). KPTCL also concurs with the decision of 2nd SRSCT to discuss the issue in a separate meeting with KPTCL, JSW, SRLDC and CEA and finalize the same based on the Joint study results. Further, it is requested to place the subject for ratification in ensuing Standing Committee.

In this regard, KPTCL desires to incorporate the modifications in the minutes of the meeting of 2nd Southern Region Standing Committee on Transmission (SRSCT).

Yours faithfully

09/08/19

Chief Engineer Electy.,
(Planning & Co-ordination)

9/8 9/8 8/8/2019

Copy To:

1. C.O.O (CTU), PGCIL, Saudamini, Plot No.2, Sector 29, Gurgaon-122001.
2. E.A to Director (Transmission), KPTCL, Kaveri Bhavan, Bangalore to place it before The Director (Transmission).

o/c

एनएलसी इंडिया लिमिटेड/NLC India Limited
(पूर्व में नेयवेली लिग्नाइट कार्पोरेशन लिमिटेड/
(formerly Neyveli Lignite Corporation Limited)(भारत सरकार का 'नवरत्न'
उद्यम/ 'Navratna' Government of India Enterprise)
निगमित कार्यालय/Corporate Office, नेयवेली / Neyveli - 607801
तमिलनाडु/Tamil Nadu (भारत/INDIA)

Annex-8.1

महा प्रबंधक का कार्यालय
Office of the General Manager
विद्युत गृह अभियांत्रिकी
Power Station Engineering

दूरभाष/**Phone : 04142-252463, 253150**
फैक्स/**Fax : 04142-253861,252646**
ई-मेल/**E-mail : cgm.pse.co@nlcindia.com**

Lr. No. GM/PSE/TPS-II 2nd Expansion/ Transmission lines/ 514 /2019 Date: 12-07-2019

To
The Chief Engineer,
Power System Planning & Appraisal Division-II,
Central Electricity Authority,
Sewa Bhavan, R. K. Puram,
New Delhi-110 066.

Sir,

Sub: File No.CEA-PS-12-14(12)/1/2018-PSPA-II Division - Transmission system for connectivity to 2x660MW TPS-II 2nd Expansion & Rearrangement of transmission system for control of short circuit levels in Neyveli generation complex – reg.

Ref: 1.Minutes of 42 nd meeting of Standing Committee on Power System Planning Southern Region (SCPSPSR) held on 27-04-2018 at Erunakulam, Kerala
2. Minutes of 2nd meeting of Southern Region Standing Committee on Transmission (SRSCT) held on 10-06-2019 at Bengaluru

Please refer to the above minutes.

With reference to SRSCT minutes dated 10-06-2019, it was informed Under Clause **24.9** that *"After detailed deliberations, following transmission system was agreed by the Standing CommitteeTransmission System for providing connectivity to Neyveli TS-II 2nd Expn (2x660 MW) - under the scope of NLC India Ltd.*

i. Re-storing of Neyveli TS-II / Neyveli TS-I Expn – Trichy 400 kV D/c line through suitable arrangement of bypassing the LILOs at Nagapattinam and utilization of LILO sections for making Neyveli TPS-II 2nd Expn – Nagapattinam 400 KV, 2xD/c lines along with the line bays at generation switchyard

ii. 2x125 MVAr bus reactors at generation switchyard (NLC TPS-II 2nd Expn)

iii. Generation Switchyard to be designed with 50 kA short circuit level."

With reference to point (i) of above, the scope of restoration of Neyveli-TS-II/TS-I Expansion -Trichy 400KV line was not discussed in this 2nd SRSCT meeting held on 10/06/2019 whereas the same scope of work had been already agreed to be executed

as ISTS in the 42nd meeting held on 27/04/2018 at Ernakulum, Kerala vide clause 21.8 referred in Minutes of 42nd meeting of SCPSPSR. Hence the above restoration of NLC TS-II /TS-I Expn.- Trichy lines shall be executed as part of ISTS only.

Further, NLCIL is of the opinion that the balance portion of LILO for forming TS-II 2nd Expn - Nagapattinam PS (2xD/C 400 kV lines) may also have to be executed as ISTS for ease of O&M activities of these lines, since the existing LILO portions to Nagapattinam is owned by PGCIL. Hence it is requested to consider executing the entire scope of 2xD/C400 kV Lines of TS-II 2nd Expansion to Nagapattinam as Part of ISTS. Since Power is to be fed to Nagapattinam PS and Manalmedu SS(TAN TRANSCO), the metering points may cause energy accounting issues.

However, NLCIL shall take care of the following for TPSII second Expn Project.

i. 2x125 MVAr bus reactors at generation switchyard (NLC TPS-II 2nd Expn)

ii. Generation Switchyard shall be designed with 50 kA short circuit level.

Hence It is requested to amend the minutes of 2nd meeting of Southern Region Standing Committee on Transmission (SRSCT) held on 10-06-2019, at Bengaluru with respect to the above.

For NLC India Ltd,

General Manager
Power Station Engineering

Copy Submitted to Director/Power/NLCIL

Copy submitted to ED/ Commercial, NLCIL, Chennai

Copy to Chief General Manager/ CTU-Planning / PGCIL/ Gurgaon

Annex-8.2

पावर ग्रिड कारपोरेशन ऑफ इंडिया लिमिटेड
(भारत सरकार का उद्यम)
POWER GRID CORPORATION OF INDIA LIMITED
(A Government of India Enterprise)
पावरग्रिड

केन्द्रीय कार्यालयः "सौदामिनी" प्लॉट सं. 2, सैक्टर–29, गुडगाँव–122 001, (हरियाणा) दूरभाषः 0124-2571700-719, फैक्स : 0124-2571762,
"Saudamini" Plot No. 2, Sector-29, Gurgaon-122 001, (Haryana) Tel. : 0124-2571700-719, Fax : 0124-2571762, Web.: www.powergridindia.com

CIN : L40101DL1989GOI038121

Ref : C\CTU-Plg\S\03

Date: 23rd August, 2019

Shri Pradeep Jindal
Chief Engineer (PSP&A-II),
Central Electricity Authority,
Sewa Bhawan, R K Puram,
New Delhi - 110 066.

Subject: Corrigendum to minutes of the 2nd meeting of Southern Region Standing Committee on Transmission – reg.

Dear Sir,

This is with reference to the minutes of the 2nd meeting of Southern Region Standing Committee on Transmission issued on 10.07.2019. In this regard it is inform that minor modifications/corrections are required in the scheme, item no. 24 : "Proposal for Grant of connectivity to NLC India Ltd for TPS-II 2nd Expansion (2x660 MW) in Cuddalore, Tamil Nadu and to control high short circuit fault level in Neyveli Generation complex". The necessary modifications/corrections are mentioned at **Annexure-I**.

In this regard it is requested that necessary corrigendum may be issued.

Thanking you,

Yours faithfully,

23/8/19

(Mukesh Khanna)
Chief General Manager (CTU-Plg)

Encl: As above

Annex-8.2

Annexure -1

Proposed Modification / Correction in the Minutes of 2nd meeting of Southern Region Standing Committee on Transmission issued on 10.07.2019

24.0 Proposal for Grant of connectivity to NLC India Ltd for TPS-II 2nd Expansion (2x660 MW) in Cuddalore, Tamil Nadu and to control high short circuit fault level in Neyveli Generation complex.

24.6. CTU representative further stated that the fault levels at Neyveli generation complex have been assessed with the above alternatives and bypassing of one ckt. of Neyveli TS-II – Salem 400 kV D/c line and Neyveli TS-II – NNTPS 400 kV S/c line to form NNTPS – Salem 400 kV S/c line (agreed in 1st SRSCT meeting held on 07.09.2018) and it has been found that in both the alternatives the fault levels are within limits as per planning criteria.

24.9. After detailed deliberations, following transmission system was agreed by the Standing Committee:

Transmission System for providing connectivity to Neyveli TS-II 2nd Expn (2x660 MW) – under the scope of NLC India Ltd.:

i. Re-storing of Neyveli TS-II / Neyveli TS-I Expn – Trichy 400 kV D/c line through suitable arrangement of bypassing the LILOs at Nagapattinam and utilization of LILO sections for making Neyveli TPS-II 2nd Expn – Nagapattinam 400 kV, 2xD/c lines along with the line bays at generation switchyard
ii. 2x125 MVAr bus reactors at generation switchyard (NLC TPS-II 2nd Expn)
iii. Generation Switchyard to be designed with 50 kA short circuit level.

Additional System Strengthening for control of short circuit levels in Neyveli generation complex and re-arrangement network configuration to control overloading of ICTs / 230kV lines from Neyveli generation complex:

i. Neyveli TS-II – Cuddalore 400 kV D/c (Quad) line – under the scope of TANGEDCO as agreed in 1st SRSCT.
ii. Manalmedu – Neyveli TPS-II 2nd Expn 400kV D/c (Quad) line (in place of Cuddalore – Manalmedu 400kV D/c line – agreed in 1st SRSCT) – under the scope of TANGEDCO
iii. **Bypassing of one ckt. of Neyveli TS-II – Salem 400 kV D/c line and Neyveli TS-II – NNTPS 400 kV S/c line to form NNTPS – Salem 400 kV S/c line (agreed in 1st SRSCT meeting held on 07.09.2018)**

Bypass of the one ckt. of Neyveli TS-II – Salem 400 kV D/c line and Neyveli TS-II – NNTPS 400 kV S/c line to form NNTPS – Salem 400 kV S/c line to control the short circuit levels in Neyveli generation complex was discussed in 2nd SRSCT meeting held on 10.06.2019. However, the same is missed out in the final scope mentioned in the minutes.

सत्यमेव जयते

भारत सरकार

Government of India

विद्युत मंत्रालय

Ministry of Power

केन्द्रीय विद्युत प्राधिकरण

Central Electricity Authority

विद्युत प्रणाली योजना एवं मूल्यांकन प्रभाग-II

Power System Planning & Appraisal Division-II

सेवा में / To,

संलग्न सूची के अनुसार

As per list enclosed

विषय/Subject: Minutes of the Meeting hold to discuss the issue of delay in installation of bus reactors by NPCIL at Kaiga and Kudankulam NPP.

महोदय(Sir)/महोदया(Madam),

A meeting was held at CEA on 22nd November,2019 to discuss the following issues:

i. Delay in re-installation of the failed reactor by NPCIL at Kudankulam Nuclear Power Plant, leading to high voltage in the system.

ii. Delay in installation of 400 kV, 2x125 MVAR bus reactors at Kaiga (reactor already approved in 37th SCPSPSR held on 31.07.2014, but it is yet to be installed). Reactors not being in place is leading to high voltage issues.

iii. The minutes of the meeting are enclosed herewith.

भवदीय/Yours faithfully,

03.12.2019

(ईशान शरण / Ishan Sharan)

निदेशक/ Director

List of addressee:

1. The Member Secretary, Southern Regional Power Committee, 29, Race Course Cross Road, Bangalore 560 009. FAX : 080-22259343	2. COO, CTU Power Grid Corporation of India Ltd. "Saudamini", Plot No.2, Sector-29, Gurugram 122 001, Haryana. FAX : 95124-2571932
3. GM, SRLDC, 29, Race Course Cross Road, Bengaluru 560 009 FAX – 080-22268725	4. Director (Transmission), TANTRANSCO, 144, Anna Salai, Chennai - 600002. FAX: 044-28516362
5. Director (Transmission), Karnataka Power Transmission Corporation Ltd.(KPTCL), Cauvery Bhawan, Bengaluru - 560 009. FAX : 080 -22228367	6. Director (Operations) NPCIL,Mumbai Email: dschoudhary@npcil.co.in

Minutes of meeting held on 22.11.2019 under the Chairmanship of Chairperson/Member (Power System), CEA, to discuss the reasons for delay in installation of bus reactors by NPCIL at Kudankulam and Kaiga generating stations.

Member (PS)/Chairperson, CEA welcomed the participants from SRPC, NPCIL, SRLDC, CTU, KPTCL and TANGEDCO.

List of participants is at Annex I.

1. CE(PSPA-II), CEA informed that, in the 2nd meeting of SRSCT held on 10th June, 2019, issue of high voltage at Kudankulam generating station was raised by SRPC. One 80 MVAR reactor installed at Kudankulam had failed and was out of service since 14.12.2016. Despite assurances by NPCIL, the failed reactor had not been installed. This is resulting in high voltage scenario. In the 2nd SRSCT meeting it was decided that CEA would take up the matter with NPCIL.

   Subsequently, MD, KPTCL & Chairperson SPRC vide letter dated 30.07.2019 had informed that high voltage is being experienced due to delay in installation of bus reactors at Kaiga Atomic Power Plant by NPCIL. 2x125 MVAR bus reactors at Kaiga Atomic Power Plant were approved in the 37th meeting of Standing Committee on Power System Planning of Southern Region held on 31.07.2014. However, the reactors were yet to be installed by NPCIL, resulting in high voltage issues. Despite the issue being followed up in various forum of SRPC and assurance of NPCIL Management on expediting the commissioning of the reactors, it was noted with concern that the reactors were still in tendering stage.

2. **Regarding bus reactor at Kudankuman Nuclear Power Plant:**

2.1 NPCIL representative informed that bushing of one of the reactor (80 MVAR) at Kudankulam had failed and the same was being imported from Russia, as it was originally supplied by Russia. The reactor is likely to be put back into service by March, 2020.

2.2 In the absence of sufficient bus reactors and Kudankulam Nuclear Power Plant and also due to proposed shut down of one generating unit at Kudankulam from 2nd week of December, 2019, the outgoing 400 kV lines would be lightly loaded and result in high MVAr injection into the grid. NPCIL informed that each generating unit at Kudankulam can absorb upto 150 MVAr. Therefore, it was proposed that SRPC/SRLDC would carry out necessary simulation for the period of operation of only one unit operational at Kudankulam and accordingly, they me ask Kudankulam Nuclear Power Plant to absorb more MVAr. To limit MVAR injection from lightly loaded lines during the period of maintenance of one unit at Kudankulam, SRPC/SRLDC may also consider opening 1-2 outgoing circuits, after considering reliability aspects, and in consultation with NPCIL and other Stakeholders.

3. **Regarding bus reactors at Kaiga Atomic Power Plant:**

3.1 NPCIL representative informed that tender had been floated for the work. Bids have been received and are under evaluation. The work is likely to be awarded by March, 2020.

3.2 Member Secretary (SRPC) and CTU representative informed that these reactors were approved in the 37th meeting of SCPSPSR held in July, 2014. However, the reactors were still in tendering stage.

4. Chairperson/Member (Power System), CEA, requested NPCIL to expedite the work of installation of bus reactors at Kudankulam and Kaiga. He observed that there was long delay by NPCIL in installation of bus reactors at Kaiga and rectification of failed reactor at Kudankulam, which are useful and necessary for grid security and also for good performance of NPCIL generators. He also opined that such operational issues should be mostly dealt at SRPC level.

Annex-I

Sl. No.	Name	Designation	Organization
1.	P.S.Mhaske	Chairperson& Member (PS)-In chair	CEA
2.	Pardeep Jindal	Chief Engineer (PSPA-II)	CEA
3.	Ishan Sharan	Director(PSPA-II)	CEA
4.	Kanchan Chauhan	Asstt. Director(PSPA-II)	CEA
5.	A. Balan	Member Secretary	SRPC
6.	Asit Singh	SE(O)	SRPC
7.	M.S. Malini	EE(O)	SRPC
8.	Madhukar G.	GM	SRLDC
9.	Pradeep Reddy	Manager	SRLDC
10.	Sandeep Sarwat	ACE	NPCIL
11.	P.K. Mandal	SME(E)	NPCIL (KKNPP)
12.	Mukesh Khanna	CGM	CTU
13.	Anil Kumar Meena	DGM	CTU
14.	D. Ramchandran	Addl.CE	TANGEDCO
15.	T. Sumathi	Executive Engineer	TANGEDCO
16.	G. Ramesh Kumar	Asstt. Executive Engineer	TANGEDCO
17.	D. Narendran	Asstt. Engineer	TANGEDCO
18.	D. Chethan	EE, PSS	KPTCL
19.	S. Swathi	AE, PSS	KPTCL
20.	Divya Prabha H.	AEE, PSS	KPTCL

Annex-12.0

TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED

From:
Chief Engineer/IPC & Power Systems
APTRANSCO,
Vidyut Soudha, Gunadala,
Vijayawada – 520008

To
The Chief Engineer (PSP & A-II),
Central Electricity Authority,
Seva Bhavan, R.K.Puram,
NEW DELHI – 110 066

Lr. No. CE(IPC&PS)/SE(PS)/DE(SS&LTSS)/ADE-3/F.400 KVManubolu ICT /D. No. 16 /2019, Dt.14.06.2019.

Sir,

Sub: - APTRANSCO – Proposal for erection of Augmentation of 4th 500 MVA ICT at existing 400/220 kV substation at Manubolu (Nellore), Nellore district – Discussed in 2nd Meeting of Southern Region Standing Committee on Transmission (SRSCT) – Approval – Requested - Reg.

* * *

SRLDC has informed in the 2nd SRSCT agenda Item No. 35 i.e. ICT Constraints in Sl. No. 3, N-1 condition is not satisfied on few occasions at 400/220 kV, 3 x 315 MVA ICT at Nellore SS.

In this regard it is to inform that APTRANSCO has planned 4th 500 MVA ICT at existing 400/220 kV substation at Manubolu (Nellore), Nellore district to satisfy the N-1 condition. The work is in progress and expected to be commissioned by September 2019. The same was discussed and agreed for approval in the 2nd Meeting of Southern Region Standing Committee on Transmission (SRSCT) held on 10.06.2019 at Bengaluru.

It is requested to arrange to include the approval for erection of 4th 500 MVA ICT at existing 400/220 kV substation at Manubolu (Nellore), Nellore district in the Minutes of the 2nd Meeting of Southern Region Standing Committee on Transmission (SRSCT) held on 10.06.2019 at Bengaluru. The same is sent through e-mail also.

This is for favour of information and taking further necessary action please.

Yours faithfully,

Chief Engineer (IPC & Power Systems)

E:\ADE 2\2nd_SRSCT\Letter_SCM_Manubolu_4th500MVA_ICT_13062019.doc

Annex-13.0

TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED

From:
Chief Engineer/IPC & Power Systems
APTRANSCO,
Vidyut Soudha, Gunadala,
Vijayawada – 520008

To
The Chief Engineer (PSP & A-II),
Central Electricity Authority,
Seva Bhavan, R.K.Puram,
NEW DELHI – 110 066

Lr. No. CE(IPC&PS)/SE(PS)/DE(SS&LTSS)/ADE-3/F. Kalpaka ICT /D. No. 38 /2019, Dt. 30 .07.2019.

Sir,

Sub: - APTRANSCO – Proposal for Augmentation of 4th 500 MVA ICT at existing 400/220 kV substation at Kalpaka, Visakhapatnam district – Inclusion of item in the Agenda for discussion in the forthcoming 3rd Meeting of Southern Region Standing Committee on Transmission (SRSCT) – Requested - Reg.

* * *

It is to inform that APTRANSCO has accorded approval for Augmentation of ICT capacity from 3 x 315 MVA to 3 x 315 MVA + 1 x 500 MVA ICT at existing 400/220 kV substation at Kalpaka, Visakhapatnam District to overcome the ICT constraints and to satisfy N-1 condition. Also to meet the load demand and reliability power supply at the scheme area.

Hence, it is requested to arrange to include the above proposal as Agenda item for discussion in the forthcoming 3rd Meeting of Southern Region Standing Committee on Transmission (SRSCT) and arrange approval for the same at the earliest. The same will be sent through e-mail also.

Yours faithfully,

Chief Engineer (IPC & Power Systems)

Copy to:

Dr. Subir Sen, COO
PGCIL, 'Saudamini', Plot NO.2, Sector-29,
GURGAON - 122001, Haryana.

E:\ADE 2\Kalpaka_4th_ICT\Letter_SCM_4th_ICT_26072019.doc

Annex-14.1

TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED

From:
Chief Engineer/IPC & Power Systems
APTRANSCO,
Vidyut Soudha, Gunadala,
Vijayawada – 520008

To
The Chief Engineer (PSP & A-II),
Central Electricity Authority,
Seva Bhavan, R.K.Puram,
NEW DELHI – 110 066

Lr. No. CE(IPC&PS)/SE(PS)/DE(SS&LTSS)/ADE-3/F.220/132kV Tiruvuru /D. No. 18 /2019, Dt.26 .06.2019.

Sir,

Sub: - APTRANSCO – Proposal for erection of 220/132/33 kV Tiruvuru SS, 132/33 kV Mylavaram SS & 132/33 kV Gampalagudem SS and associated 220 kV & 132 kV Transmission Lines in Krishna district - Inclusion of Agenda Item for discussion in the forthcoming 3rd Meeting of Southern Region Standing Committee on Transmission (SRSCT) - Reg.

* * *

APTRANSCO approved the following dedicated Transmission Scheme for erection of 220/132/33 kV Tiruvuru SS, 132/33 kV Mylavaram SS & 132/33 kV Gampalagudem SS and associated 220 kV & 132 kV Transmission Lines in Krishna district.

i. Erection of 220/132/33 kV Tiruvuru SS.
ii. Making 220 kV SC LILO (5 KM approx.) of existing 220 kV KTPS – Nunna line at proposed 220/132/33 kV Tiruvuru SS.
iii. Erection of 132 kV DC line (15 KM approx.) of existing 132 kV Narasapuram to proposed 220/132/33 kV Tiruvuru SS.
iv. Making 132 kV LILO (15 KM approx.) of existing 132 kV Kambhampadu - Nuzvidu line at proposed 220/132/33 kV Tiruvuru SS.
v. Erection of 132/33 kV Mylavaram SS.
vi. Making 132 kV LILO (0.151 KM approx.) of 132 kV Nuzvidu – Kambhampadu SC line and 132 kV Kambhampadu – Kondapalli SC line at proposed 132/33kV Mylavaram SS.
vii. Erection of 132/33 kV Gampalagudem SS.
viii. Making 132 kV SC LILO (18 KM approx.) of existing 132 kV Kambhampadu - Kondapalli SC line at proposed 132/33 kV Gampalagudem SS.

In this regard it is to inform that making 220 kV Single Circuit LILO (5 KM approx.) of existing 220 kV KTPS – Nunna line at proposed 220/132/33 kV Tiruvuru SS is an ISTS line and needs the Standing Committee approval from CEA.

Hence, it is requested to include the above proposals in the Agenda Item for discussion in the forth coming 3rd Meeting of Southern Region Standing Committee on Transmission (SRSCT). The same is sent through e-mail also.

Yours faithfully,

Chief Engineer (IPC & Power Systems)

Copy to:

Dr. Subir Sen, COO
PGCIL, 'Saudamini', Plot NO.2, Sector-29,
GURGAON - 122001, Haryana.

E:\ADE 2\220 kV_Thiruvuru\Letter_SCM_220kV_Tiruvuru_21062019.doc

TRANSMISSION CORPORATION OF TELANGANA LIMITED

From
Chief Engineer/ Power Systems,
TSTRANSCO,
Vidyut Soudha,
Hyderabad, Telangana - 500082.

To
The Chief Engineer/ PS P&A-II,
Central Electricity Authority (CEA),
RK Puram, Sewa Bhavan,
New Delhi-110066.

Lr. No. CE(PS)/SE(PS)/DE(SS II)/ADE/AE/F. /D.No. 81 /19, Dt. 21/11/2019

Sir,

Sub: TSTRANSCO - Request of APTRANSCO for making Single Circuit LILO of existing 220kV KTPS - Nunna line (ISTS line) to the proposed 220/132/33kV Tiruvuru SS in A.P. - Regarding.

Ref: File No.CEA-PS-12-14(12)/1/2018/PSPA-II Division-Part(2) I/7704/2019, of CEA, dated:11-11-2019

*****

With reference to the letter cited above, it is to inform that no specific constraints are observed in TSTRANSCO network with the proposed LILO of 220kV KTPS - Nunna line (Inter-state line between Telangana and Andhrapradesh) at 220/132/33kV Tiruvuru SS (AP) of APTRANSCO.

21/11/19
CHIEFENGINEER
POWER SYSTEMS I/c

Subject: **RE: Request of APTRANSCO for LILO of 220 kV, KTPS – Nunna line (ISTS line)**
To: "cea-pspa2@gov.in" <cea-pspa2@gov.in>
Cc: S P Kumar (एस पी कुमार) <spkumar@posoco.in>

Date: 12/03/19 04:49 PM
From: Madhukar Goodelli (मधुकर गूदेल्ली) <madhukar@posoco.in>

Sir,
This point was discussed in Joint Study Meeting of SR held on 21st -22nd Nov'19.

No constraints were observed in LILO of 220 kV KTPS-Nunna S/C line at 220/132/33 kV Tiruvuru SS and same was agreed in the meeting.

In addition, the following data is for your information.

220kV KTPS-Nunna S/C line is 123.7km length Zebra conductor.

220kV KTPS-Nunna S/C line is one of the evacuation lines for KTPS-ABC stage.

Presently, the flow on this line is in the range of 30-50 MW and average flow during last month is 55MW and maximum is 126MW

LILO of 220kV KTPS-Nunna S/C line at 220/132/33 kV Tiruvuru SS may not be an issue regarding line loading.

Thanks,

Madhukar Goodelli
Chief Manager(SO-II)
SRLDC, POSOCO
Ph.9449599194

From: cea-pspa2@gov.in [mailto:cea-pspa2@gov.in]
Sent: 03 December 2019 15:54
To: S P Kumar (एस पी कुमार); Madhukar Goodelli (मधुकर गूदेल्ली)
Subject: Fwd: Request of APTRANSCO for LILO of 220 kV, KTPS – Nunna line (ISTS line)

Sir,
Please refer the trailing mail. Your inputs on the same are still awaited. Please expedite the same.

Regards

-------- Original Message --------
From: **"Chief Engineer (PSPA-II), CEA"** <cea-pspa2@gov.in>
Date: Nov 11, 2019 3:52:34 PM
Subject: Request of APTRANSCO for LILO of 220 kV, KTPS – Nunna line (ISTS line)
To: TSTRANSCO_Study group <de.studies2@tstransco.in>, dir.trans@tstransco.in, se.ps@tstransco.in, ce.ps@tstransco.in, MS_SRPC <mssrpc-ka@nic.in>, Superintendent Engineer <seoprnsrpc-ka@nic.in>, madhukar@posoco.in, POSOCO Dir(SO) Narasimhan <srnarasimhan@posoco.in>, COO CTU <subir@powergridindia.com>, PGCIL_mukesh Khanna <mkhanna@powergridindia.com>, CTU_anil meena <anilsehra@powergridindia.com>, spkumar@posoco.in
Cc: Chief Jindal <jindal_pardeep@yahoo.co.in>
Sir,

This is in reference to APTRANSCO's letter dated 26.06.2019 (copy attached), wherein they have requested for making Single Circuit LILO (5 km approx.) of existing 220 kV KTPS – Nunna line (ISTS line) to the proposed 220/132/33 kV Tiruvuru SS in AP. As this is an inter-state line between the states of Telangana and Andhra Pradesh, you are requested to kindly furnish your comments on the proposal of APTRANSCO, at the earliest.

TRANSMISSION CORPORATION OF TELANGANA LIMITED

From
Chief Engineer/ Power Systems,
TSTRANSCO,
Vidyut Soudha,
Hyderabad, Telangana – 500082.

To
The Chief Engineer/ PS P&A-II,
Central Electricity Authority (CEA),
RK Puram, Sewa Bhavan,
New Delhi-110066.

Lr. No. CE(PS)/SE(PS)/DE(SS II)/ADE/AE/F.Chandulapur /D.No. 46/19,
Dt. 05/08/2019

Sir,

Sub: TSTRANSCO – Modifications in earlier approved Kaleshwaram Lift Irrigation Scheme – Approval requested – Regarding.

Ref: CEA Lr. No. 51/4/(41st)/PSPA-II/2017/1569-82, Dated: 06-DEC-2017

*****

In the minutes of meeting of 41st SCPSPSR, erection of 400kV SS at Chandulapur SS, Medak Dist, Pkg-11 was accorded approval. However due to re-Engineering at Chandulapur Pump House, the I&CAD Department communicated the revised Pump ratings duly enhancing from 5 Nos X 88.5 MW = 442.5 MW to 4 Nos. X 134.8 MW = 539.20 MW.

Accordingly construction of 400kV Chandulapur SS and connected lines were completed and commissioned on 06.05.2019 duly considering the revised pump capacity of 4 Nos X 134.8 MW = 539.20 MW load at Chandulapur Pump House.

In view of the above, it is requested to approve and ratify the modifications done to earlier approval in the ensuing Southern Region Standing Committee on Transmission (SRSCT) as:

"Erection of 400kV SS at Chandulapur, Siddipet District (new district formation due to re organization of districts) (with 4x160 MVA PTRs + 2x25 MVA PTRs), Pkg-11 to extend power supply to Chandulapur Pump House (4x134.8MW = 539.20 MW load)"

Instead of

"Erection of 400kV SS at Chandulapur, Medak District, Pkg-11 to extend power supply to Chandulapur Pump House (5x88.5MW = 442.5 MW load)"

Chief Engineer/ Power Systems

Copy to:

1. Dr. Subir Sen/ COO/ CTU, Smart Grid, PGCIL Corporate Office, Saudamini, Plot No. 2, Sector 29, Near IFFCO Chowk, Gurgaon (Haryana) – 122001, INDIA
2. The General Manager/ SRLDC, 29, Race Course Cross Road, Bengaluru – 560009
3. Chief Engineer/ Lift Irrigation Schemes/TSTRANSCO/VS/ Hyderabad
4. Chief Engineer/ SLDC/ TSTRANSCO/ VS/ Hyderabad
5. SE(T) to Chairman and Managing Director/ TSTRANSCO/VS/Hyderabad
6. DE(T) to Director/ Projects/ TSTRANSCO/ VS/ Hyderabad
7. DE(T) to Director/ Transmission/ TSTRANSCO/ VS/ Hyderabad
8. ADE(T) to Director/ Lift Irrigation Schemes/ TSTRANSCO/ VS/ Hyderabad
9. AE(T) to Director/ Grid Operation/ TSTRANSCO/ VS/ Hyderabad

Annex-16.0

TRANSMISSION CORPORATION OF TELANGANA LIMITED

From
Chief Engineer/ Power Systems,
TSTRANSCO,
Vidyut Soudha,
Hyderabad, Telangana – 500082.

To
The Chief Engineer/ PS P&A-II,
Central Electricity Authority (CEA),
RK Puram, Sewa Bhavan,
New Delhi-110066.

Lr. No. CE(PS)/SE(PS)/DE(SS II)/ADE/AE/F. Sita Rama LIS /D.No. 37/19,
Dt. 29/06/2019

Sir,

Sub: TSTRANSCO – Sita Rama Lift Irrigation Scheme – Proposal for erection of LILO of 220kV KTPS (TS) – Lower Sileru (AP) I line at 220/11kV V.K. Ramavaram LI SS and also at 400/220kV Asupaka SS for providing additional source – Approval requested – Regarding.

Ref: CEA Lr. No. 51/4/(41st)/PSPA-II/2017/1569-82, Dated: 06-DEC-2017

*****

It is to inform that, Sita Rama Lift Irrigation scheme was approved in 41st SCPSPSR with following connectivities (vide Sl. No. 42 of minutes of meeting):

i. 220/11kV SS at Pump House – 1 (6x25 MW) at B.G. Kothur(V) Ashwapuram (M) in Bhadradri Kothagudem District

ii. 220/11 kV SS at Pump House – 2 (6x40 MW) at V.K. Ramavaram (V) Mulakalapally (M) in Bhadradri Kothagudem District

iii. 400/220/11kV SS (3x315 MVA) at Pump House 3 (5x40 MW+2x30 MW) Kamalapuram(V) Chandrugonda(M) in Bhadradri Kothagudem District

iv. LILO of one circuit of KTPS – Manuguru 220 kV D/C Line to Proposed Pump House -1 at B.G. Kothur (about 1 km).

v. LILO of KTPS V – Lower Sileru II 220 kV S/C Line to Proposed Pump House -1 at B.G. Kothur (about length of 20 km).

vi. Julurupadu (400/220kV S/S) - Pump House -3 (at Kamalapuram) 400kV D/C line for a length of 50 km.

vii. Pump House -3 (at Kamalapuram) -Pump House -2 (at V.K. Ramavaram) 220kV D/C line (with Single Moose) for length about 25km.

Now, TSTRANSCO has proposed the following additional connectivites/modifications under Sita Rama Lift Irrigation Scheme to provide alternate source to 220/11kV V.K.Ramavaram SS and 400/220/11kV Kamalapuram SS.

i. 220kV Twin Moose DC line from 400/220/11kV Kamalapuram LI SS to 220/11kV V.K. Ramavaram LI SS – 25kM **(instead of earlier approved 220kV Single Moose DC line from 400/220/11kV Kamalapuram LI SS to 220/11kV V.K. Ramavaram LI SS – 25kM)**

ii. LILO of 220kV KTPS (TS) – Lower Sileru (AP) - I line at 220kV V.K. Ramavaram LI SS and also at 400/220kV Asupaka SS.

The load flow studies duly incorporating the above proposals along with study results are herewith furnished.

In view of the above, it is requested to include the above proposals in the agenda of Southern Region Standing Committee on Transmission (SRSCT).

Encl: 1. PSSE converged case through email
2. Study Results

Chief Engineer/ Power Systems

Copy to:

1. Dr. Subir Sen/ COO/ CTU, Smart Grid, PGCIL Corporate Office, Saudamini, Plot No. 2, Sector 29, Near IFFCO Chowk, Gurgaon (Haryana) – 122001, INDIA
2. The General Manager/ SRLDC, 29, Race Course Cross Road, Bengaluru – 560009
3. Chief Engineer/ 400kV/ TSTRANSCO/ Vidyut Soudha/ Hyderabad
4. SE(T) to Chairman and Managing Director/ TSTRANSCO
5. DE(T) to Director/ Projects
6. DE(T) to Director/ Transmission
7. ADE(T) to Director/ Lift Irrigation Schemes
8. AE(T) to Director/ Grid Operation

Annex-17.0

KARNATAKA POWER TRANSMISSION CORPORATION LIMITED

Telephone: 080-22210416
Fax : 080-22292204

Office of the
Chief Engineer Electy,.
Planning & Co-ordination,
Kaveri Bhavan, Bangalore-9

No. CEE (P&C)/SEE(Plg)/EE(PSS-S)/KCO-97/7825/2019-20 **Date: July '2019**

7867-71

20 JUL 2019

The Member (Power System)
Central Electricity Authority
Sewa Bhavan, R.K.Puram,
New Delhi-110 066.

Sub: Bus reactor at 400/220kv Jagalur substation-reg.

Ref: 1. MOM of 39th meeting of Standing Committee on Power system planning of Southern region held on 28th & 29th Dec 2015.

2. MOM of 42nd meeting of Standing Committee on Power system planning of Southern region held on 27.04.2018.

3. 1st meeting of Southern Regional Standing Committee on Transmission (SRSCT) held on 07.09.2018

The proposal for establishing 2 x 500 MVA, 400/220 kV GIS Sub-station at Jagalur in Jagalur Taluk, Davanagere District was approved in the 39th meeting of Standing Committee on Power system planning of Southern region held on 28th & 29th Dec 2015 with the following scheme:

- Establishing 2 x 500 MVA, 400/220 kV GIS Sub-station at Jagalur in Jagalur Taluk, Davanagere District.
- Construction of 400kV Multi circuit Quad Moose ACSR line for a length of 40kms from proposed 400/220kV Jagalur substation to LILO the proposed BTPS-CNHalli DC line.
- Construction of 220kV Drake ACSR line for a length of 40kms from proposed 400/220kV Jagalur substation to 220/66kV Thallak substation.
- Construction of 220kV Drake ACSR line for a length of 50kms from proposed 400/220kV Jagalur substation to proposed 220/66/11kV Kudligi substation.
- Construction of 4 Nos of 220kV line terminal bays (2 Nos each at 220/66kV Thallak and prop 220/66/11kV Kudligi substations).
- Construction of 220kV DC line for a route length of 50kms from Jagalur to Chitradurga.

It may be noted that, in the minutes of the meeting cited under reference 1, the provision for bus reactor at 400/220kV Jagalur was not mentioned. Further, in-house

study was conducted to check the necessity of providing bus reactor at 400kV Jagalur substation. Based on the study results and also as specified in Manual on Transmission Planning criteria by CEA, provision for 2X80MVAR at 400kv Jagalur was incorporated in the scheme.

In view of the above, the work of establishing 2 x 500 MVA, 400/220 kV GIS Sub-station at Jagalur in Jagalur Taluk, Davanagere District along with 2X80MVAR bus reactor was awarded on 29.07.2016.

Subsequently, during 42nd meeting of Standing Committee on Power system planning of Southern region held on 27.04.2018, KPTCL stated that the proposed bus reactor at Jagalur is already installed and the same may be dropped.

The work of establishing 400/220 kV GIS Sub-station at Jagalur along with 2X80MVAR bus reactor is now completed. It may be observed that, in the prevailing scenario, providing reactive power compensation at 400kV Jagalur with 2X80MVAR bus reactor may be sufficient to maintain good voltage profile. However, requirement of providing additional bus recator, if necessary, at 400kV Jagalur may be decided concurrent realities and reactive power studies.

Yours faithfully

20/7/19

Chief Engineer Electy.,
(Planning & Co-ordination)

Copy to:

1. Member, Secretary, Southern Regional Power Committee, 29, Race Course Cross Road, Bangalore-9.
2. Executive Director, Southern Regional Load Dispatch Centre, 29, Race Course Cross Road, Bangalore-9.
3. Chief Operating Officer, Central Transmission Utility (CTU), Power Grid Corporation of India, "Saudamini" Plot No. 2, Sector-29, Gurugram-122001
4. EA to D(T)- To place before Director (Transmission), KPTCL for kind information

KARNATAKA POWER TRANSMISSION CORPORATION LIMITED

Telephone: 080-22210416
Fax : 080-22292204

Office of the
Chief Engineer Electy,.
Planning & Co-ordination,
Kaveri Bhavan, Bangalore-9

No. CEE (P&C)/SEE(Plg)/EEE(PSS-S)/KCO-97/7825/2019-20 **Date:** 13074-79 09 OCT 2019

The Member (Power systems),
Central Electricity Authority,
Sewa Bhavan, R.K.Puram,
New Delhi-110 066.

Sub: Intra-state proposals for network strengthening of Karnataka - reg.

****

Adverting to above subject, the following intra-state transmission schemes of KPTCL are proposed for conducting Joint studies with CEA and CTU for finalization of scheme and to obtain approval of Southern Region Standing Committee on Transmission.

i. ***Establishing 2x500 MVA, 400/220 kV GIS A-Station at Anand Rao circle (adjacent to existing 220/66/11 kV A Station) in Bengaluru.[Figure 1 & 1(a)]***

Proposed Scheme: 400kV Connectivity

- 400kV connectivity from 400/220kV Singanayakanahalli PGCIL substation which is at a distance of 25km from proposed substation.
- 400kV connectivity from 400/220kV Hoody substation which is at a distance of about 20km from proposed substation.

220kV connectivity:

- The existing 220kV 'A' station will be connected to the 220kV bus of proposed 400kV 'A' station.
- The existing 220kV UG cable between NRS and A station and existing 220kV UG cable between EDC and A station will be terminated to 220kV bus of 400kV substation proposed at 'A' station.
- The proposed 220kV UG cable between Peenya and A station (proposed in 400kV Peenya scheme) will be terminated to 220kV bus of 400kV substation proposed at 'A' station.

No-686/PSPA-II/31/10/2019

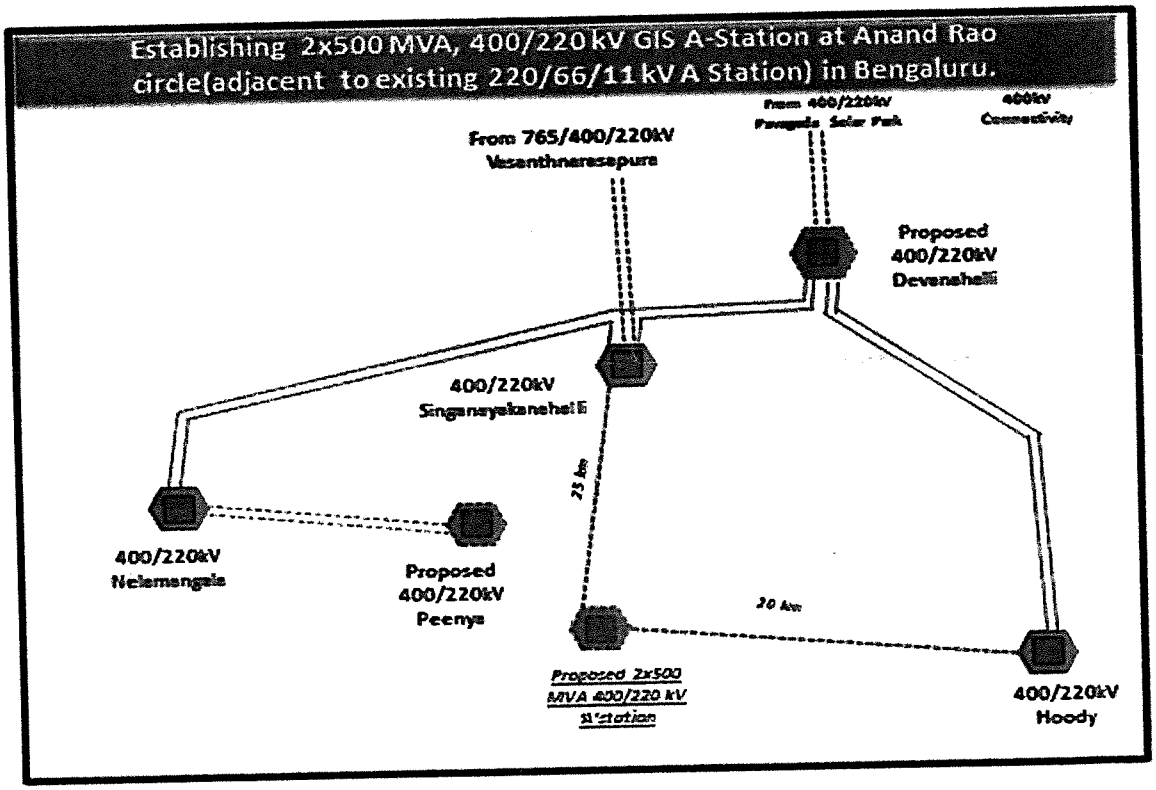


Figure 1:

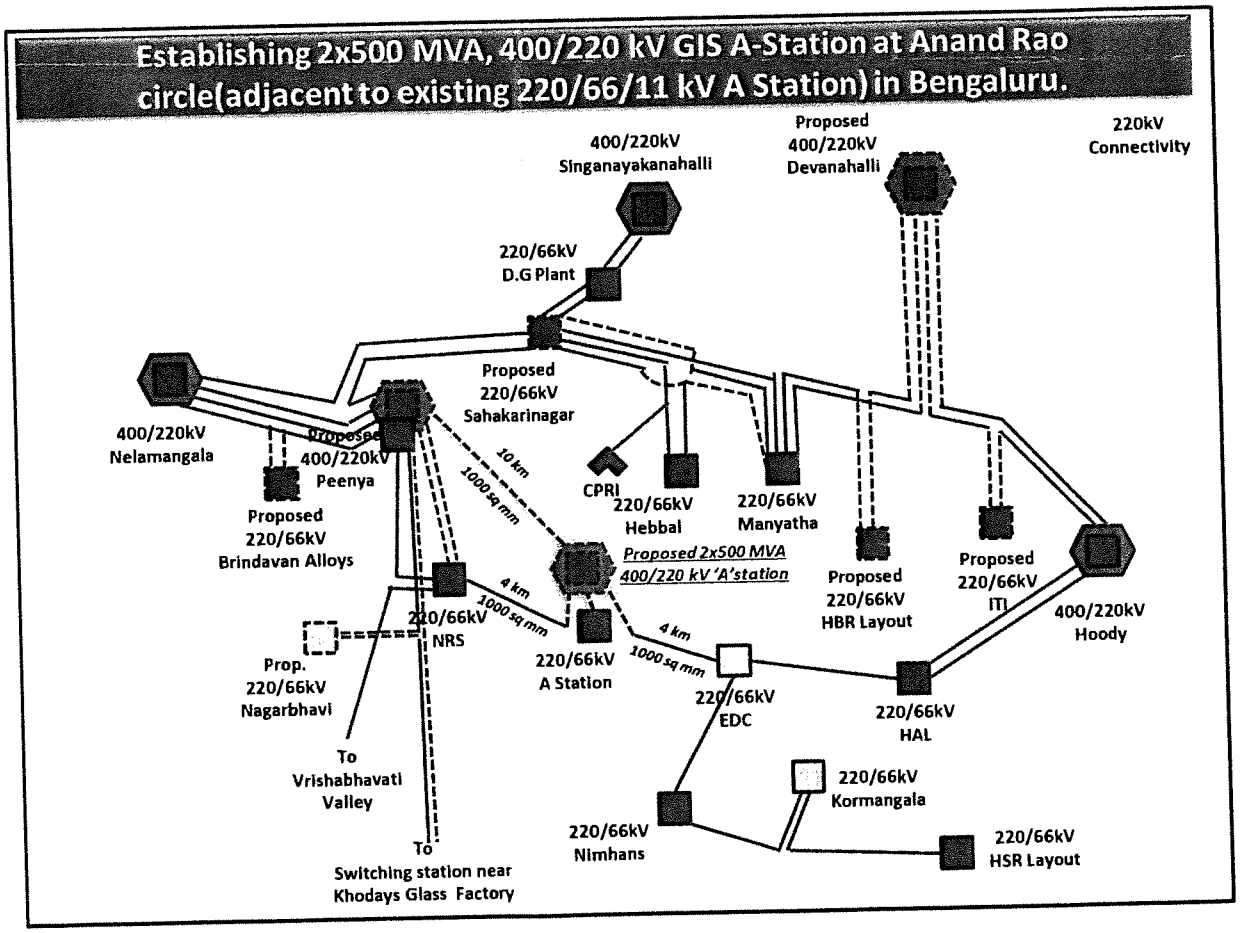


Figure 1(a)

ii. Additional works proposed under Intra-state transmission schemes proposed under Green Energy Corridor Phase-II.

a. Establishing 2X500MVA 400/220kV sub-station in Kushtagi taluk, Koppal district. .[Figure 2 & 2(a)]

Proposed Scheme: 400kV Connectivity

- 400 kV DC line with Quad Moose conductor from proposed 400 kV Yalwar substation.
- 400 kV DC line with Quad Moose conductor from proposed 400 kV Doni substation.
- Conversion of 400kV kV Guttur-Doni line from SC to DC with Quad Moose Conductor.
- 2 X 500 MVA 400/220 kV power transformers.
- 2 X 125 Mvar bus reactors.

220 kV connectivity:

- Existing 220kV DC line with Drake conductor to be converted to High performance conductor from Kushtagi to 400kV Kushtagi (Tavaregere).
- Existing 220kV DC line from Lingasugur to 400kV Kushtagi (Tavaregere).
- Existing 220kV DC line from Sindhanur to 400kV Kushtagi (Tavaregere).
- Existing 220kV DC line from Lingapur to 400kV Kushtagi (Tavaregere).

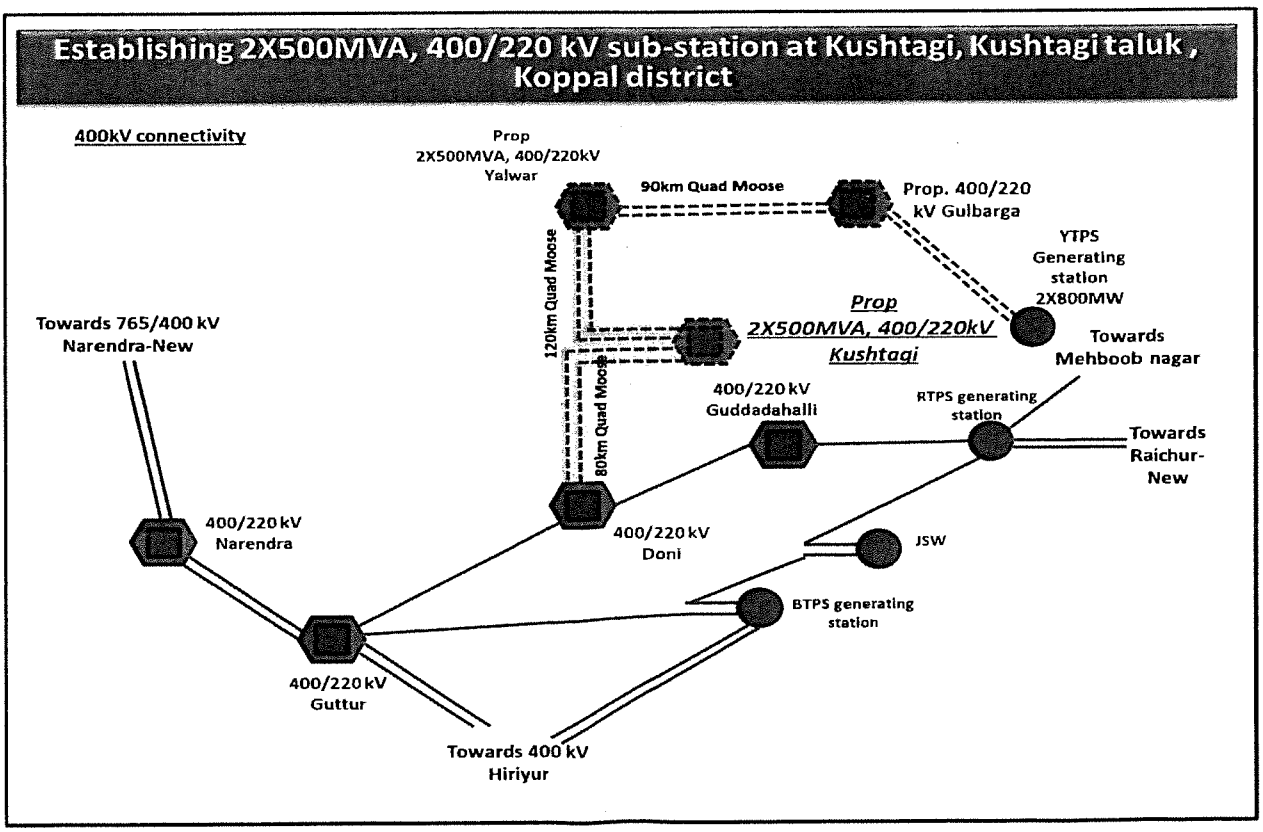


Figure 2

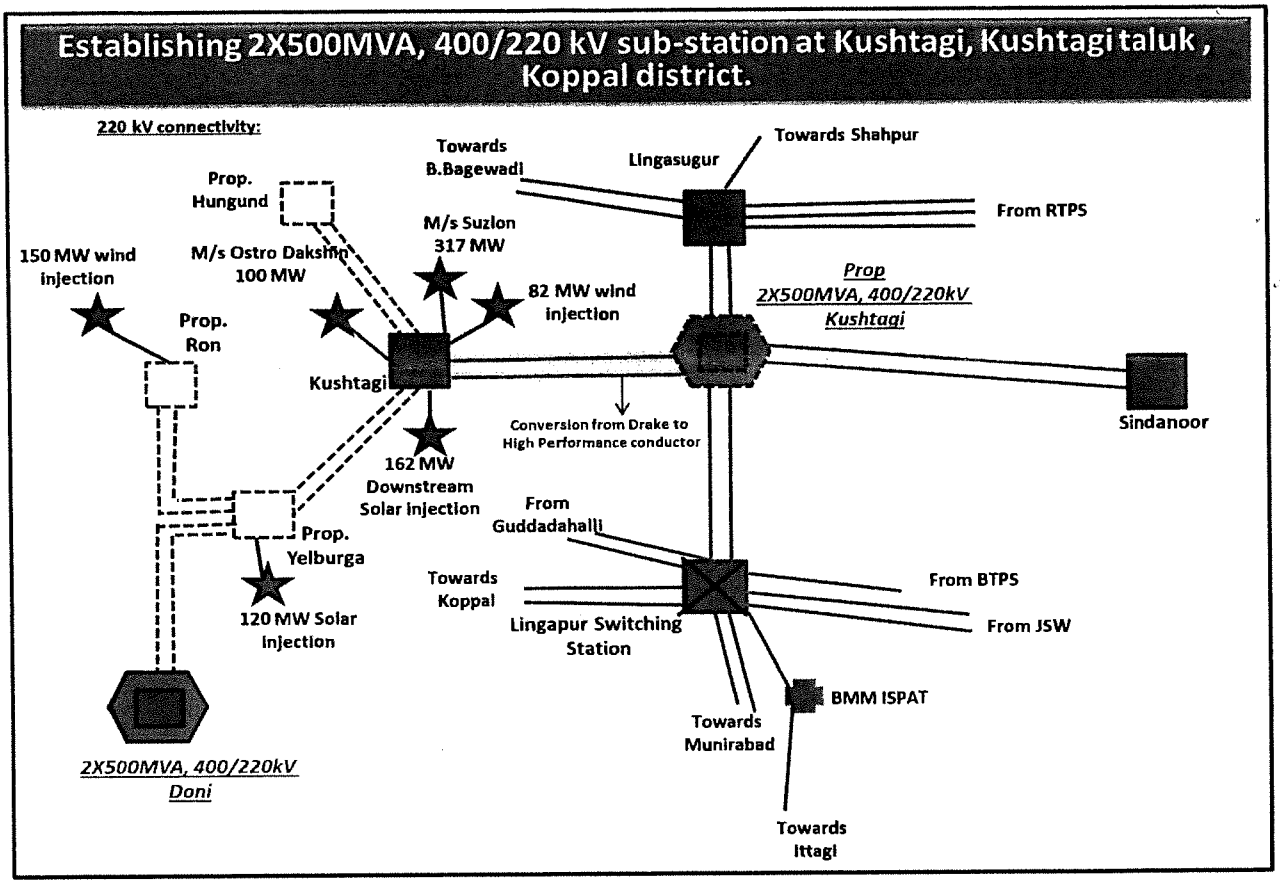


Figure 2(a)

b. Establishing 2X100 MVA, 220/110kV substation at Yelburga in Yelburga Taluk, Koppal district. [Figure 3]

Proposed Scheme: 220kV Connectivity

- 220kV DC line from 220/110 kV Kushtagi sub-station to proposed 220 kV Yelburga sub-station.
- Double circuit LILO of proposed 220kV Doni - Ron DC line to proposed 220/110 kV Yelburga sub-station.
- 2 X 100 MVA, 220/110 kV transformers.

110 kV connectivity

- 110kV DC line from proposed 220kV Yelburga substation to existing 110kV Yelburga substation.
- 110kV DC line from proposed 220kV Yelburga substation to existing 110kV Bevoor substation.

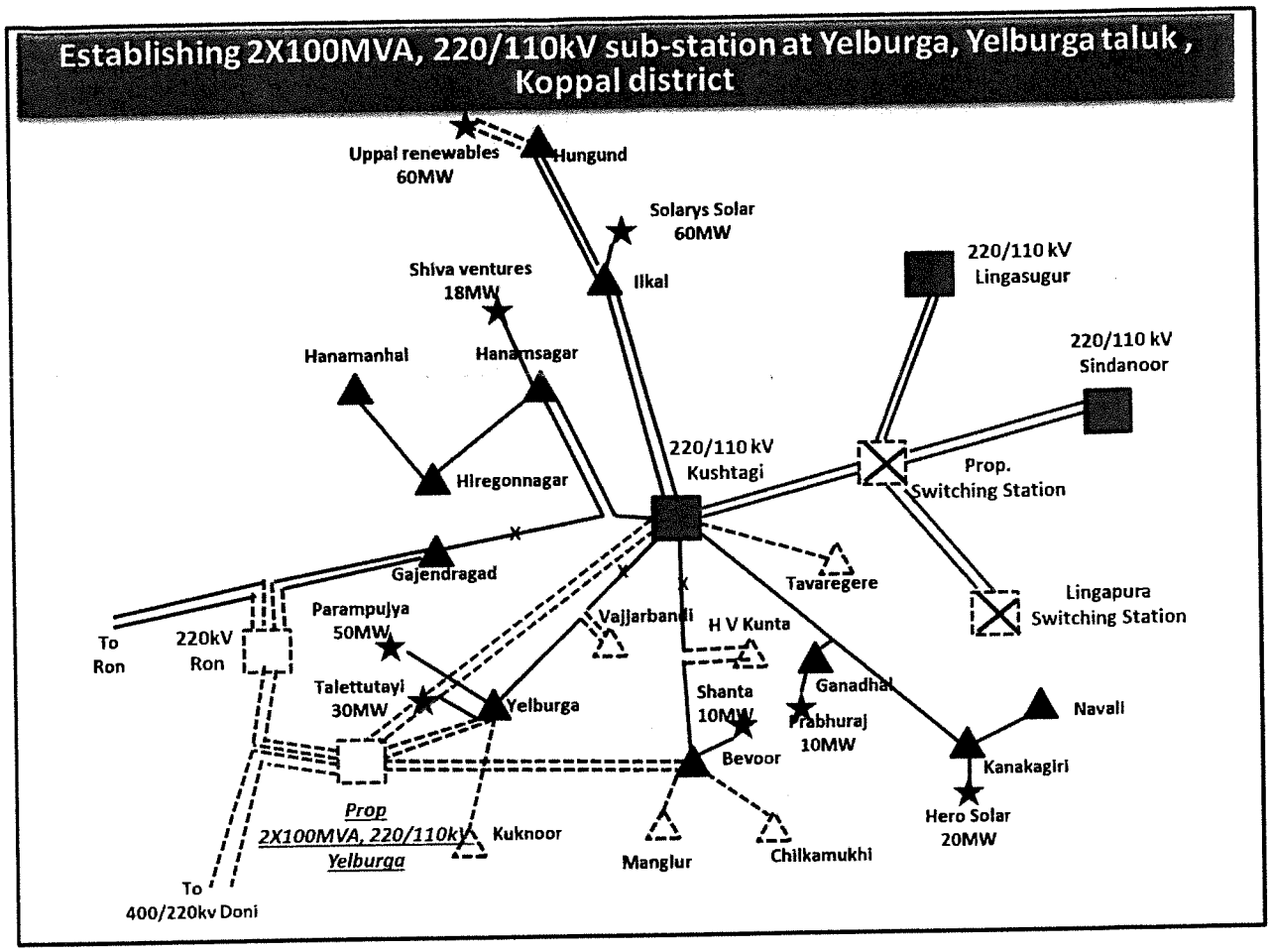


Figure 3

c. ***Establishing 2X100 MVA, 220/110kV substation at Santhpur in Aurad Taluk, Bidar district.[Figure 4]***

Proposed Scheme: 220kV Connectivity

- 220kV DC line from 220/110 kV Halbarga sub-station to proposed 220 kV Santhpur sub-station.
- 2 X 100 MVA, 220/66 kV transformers.

110 kV connectivity:

- 110kV line from proposed 220/110kV Santhpur substation to LILO existing 110kV Santhpur –Janwad DC line.
- 110kV line from proposed 220/110kv Santhpur substation to LILO existing 110kV Santhpur-Dongaragaon line.
- 110kV line from proposed 220/110kv Santhpur substation to LILO existing 110kV Halabarga-Santhpur line.

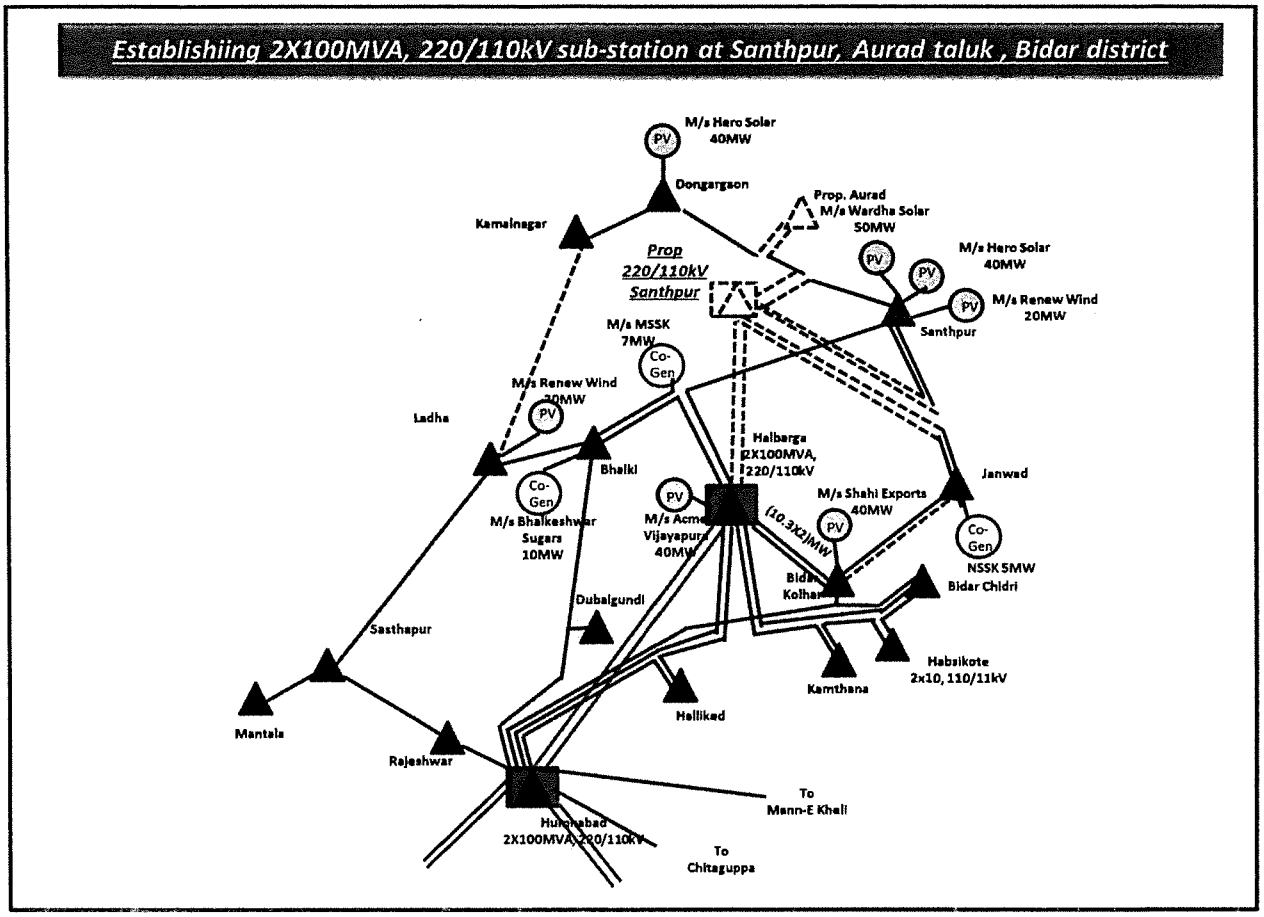


Figure 4

d. <u>Establishing 2X100 MVA, 220/110kV substation at Bharamsagara in Chitradurga district.[Figure 5]</u>

<u>Proposed Scheme: 220kV Connectivity</u>

- 220 kV DC line from proposed 400/220 kV Jagalur to proposed 220/66kV Bharamsagara sub-station subject to availability of space at Jagalur or Double circuit LILO of 220 kV Chitradurga-Jagalur DC line to proposed 220kV Bharamsagara s/s.
- 2 X 100 MVA, 220/66 kV transformers.

<u>66 kV connectivity:</u>

- 66kV multi circuit line from proposed 220/66 kV Bharamasagara substation to LILO existing DC Davangere-Chitradurga line.
- *66kV SC line from proposed 220/66 kV Bharamasagara substation to link existing 66kV SC line between Jagalur and Bidarekere tap.
- *66kV SC line from proposed 220/66 kV Bharamasagara substation to 66/11kV Bidarekere substation.

*The 66 kV Jagalur-Chitradurga SC line is made LILO to proposed 220 kV Bharamsagara sub-station.

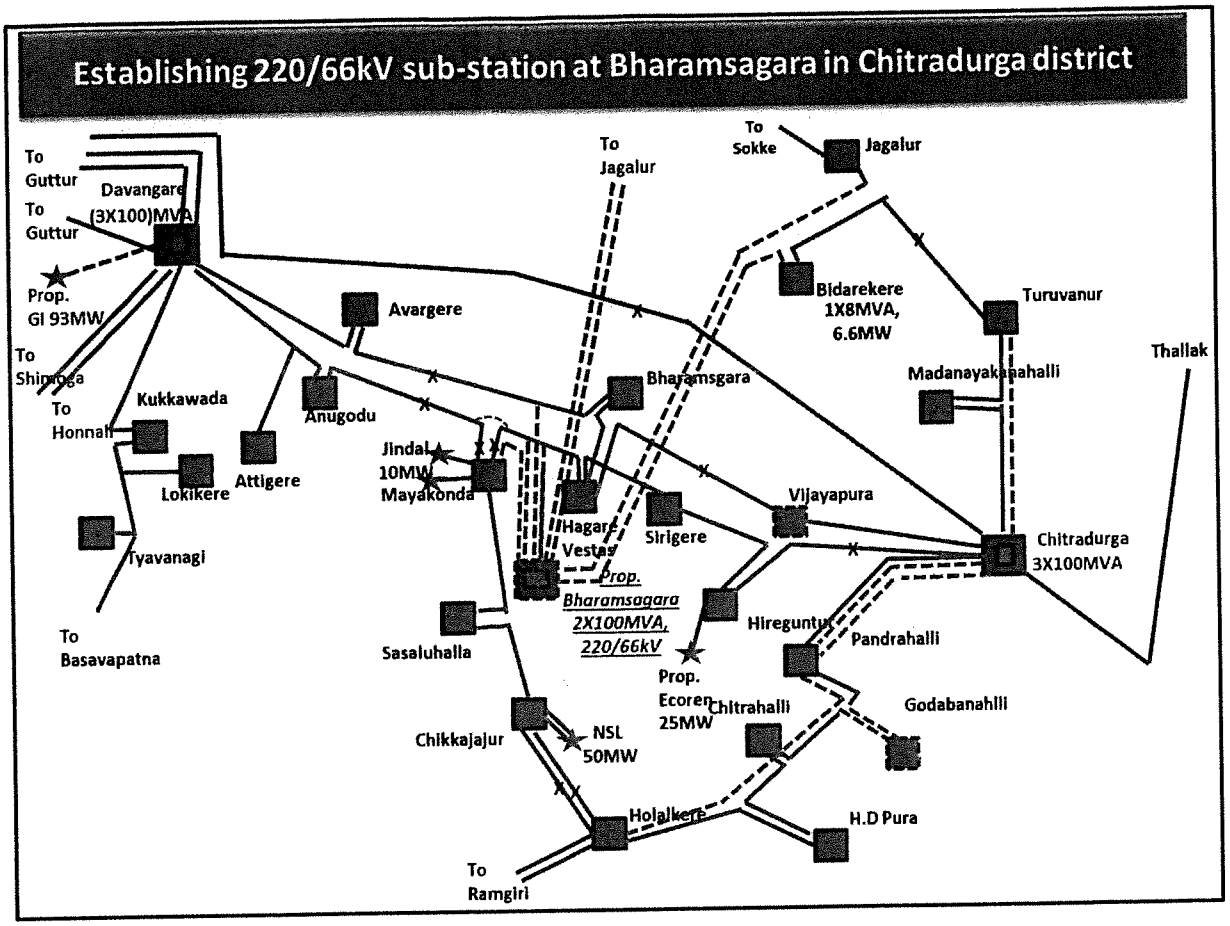


Figure 5

e. ***Providing Additional 100 MVA, 220/110 kV transformer at 220/110 kV Lingasugur sub-station in Raichur District.***

f. ***Providing Additional 100 MVA, 220/66 kV transformer at 220/66 kV Thallak sub-station in Chitradurga District.***

g. ***Strengthening of 220 kV D/C line between Gadag to Lingapura switching station by replacing existing Drake by equivalent HTLS conductor.***

iii. ***Dynamic reactive support by utilizing STATCOMs at Hoody and Nelamagala (Para 22.8 of minutes of 36th SRPC meeting held at Chennai on 12th July 2019)***

NLDC vide letter dated 25th April 2019 (available on NLDC website) had proposed following actions in long term planning to attend the low voltage scenario as part of Operational Feedback for the quarter January– March 2019, in respect of SR. The issue was discussed in the 36th SRPC meeting held at Chennai on 12th July 2019. Further, it was deliberated that in order to provide steady state as well as dynamic reactive support at Karnataka stations experiencing low voltages, the commissioning of STATCOM may be studied at one or two stations

e.g. Hoody, Somanahalli, Yelahanka , Mysore etc. The STATCOM are expected to be commissioned at Hyderabad, Udumalpet and Trichy stations in SR.

In this regard, CTU had informed that they were planning to undertake STATCOM study for SR, specifically for KPTCL.

iv. ***Providing alternate source to proposed 220/66 kV Pavagada sub-station (Feeding from 220/66 kV Madhugiri s/s) by constructing new 220 kV DC line on DC tower with Drake conductor from existing 400/220 kV Kyathaganacherlu (PGCIL) station to proposed 220/66 kV Pavagada sub-station for a distance of 32 km in the new corridor.***

At present, the 220/66 kV Pavagada sub-station is fed from 220 kV Madhugiri sub-station on DC line with Drake conductor on DC tower. It is proposed to have 2nd source of power supply to 220 kV Pavagada sub-station by constructing new 220 kV DC line from existing 400/220 kV Kyathaganacherlu (PGCIL - Pavagada Solar park) station to 220/66 kV Pavagada sub-station for a distance of 32 km with new 2 nos 220 kV terminal bays at each Pavagada and Kyathaganacherlu (PGCIL - Pavagada Solar park).

In light of above, it is requested to arrange to conduct necessary Joint studies so as to finalise the transmission schemes for the said projects in view of placing it before the ensuing Southern Region Standing Committee on Transmission for discussion and approval.

Yours faithfully

Chief Engineer Electy., 17/10/19
(Planning & Co-ordination)

Copy to:

1. The Director(SP&PA), Central Electricity Authority, Sewa Bhavan, RK Puram, New Delhi-110066.
2. The Chief Engineer (SP&PA), Central Electricity Authority, Sewa Bhavan, RK Puram, New Delhi-110066.
3. C.O.O (CTU), PGCIL, Saudamini, Plot No.2, Sector 29, Gurgaon-122001.
4. E.A to Director (Transmission), KPTCL, Kaveri Bhavan, Bangalore to place it before The Director (Transmission).
5. P.S to The Chairperson, CEA, to place it before The Chairperson, CEA.

Annex-22.0

TAMILNADU TRANSMISSION CORPORATION LTD.
(Subsidiary of TNEB Ltd.)

From

Shri. T.Senthilvelan, B.E.,
Director/Transmission Projects,
TANTRANSCO,
144, Anna Salai,
Chennai -2.

To

The Member (Power System),
Central Electricity Authority,
Sewa Bhavan, R.K.Puram,
New Delhi 110 066.

Lr.No.CE/Plg.&R.C/SE/SS/EE2/AEE2/F.SRSCT /D.159 /19 dt.03 .07.19

Sir,

Sub: TANTRANSCO –Provision of additional 400/110kV ICT (3rd unit of 200 MVA) at the existing 400/230-110kV Kayathar substation and 400/230 kV & 400/110 kV ICTs provision for the ongoing 400/230-110kV Thennampatty SS - Approval requested - Reg.

*****

The proposal of Kayathar 400/230-110 kV substation had been approved in the 29th Standing Committee on Power System Planning of Southern Region with 2x315 MVA 400/230 kV ICT, and 2x200 MVA 400/110 kV ICT .

2.0 Now, the following 110 kV TANTRANSCO substations (wind energy generation pooled) as well as 10(1) wind farm substations are connected/proposed to be connected to Kayathar 400kV substation at 110kV level.

110 kV voltage level	Capacity (MW)
Ayyanaruthu	98
Keelaveeranam 10(1)	51
Venkateshawarapuram 10(1)	100
Sundankurichi	118
Total	**367**

Annex-22.0

3.0 In order to meet out the (n-1) contingency condition and also to accommodate expected future RE generation, it is essential to enhance 400/110 kV ICT capacity from 2 X 200 MVA to 3 X 200 MVA at Kayathar 400/230-110kV SS. The space for erection of 400/110 kV, 200 MVA ICT is available at Kayathar 400/230-110 kV SS.

4.0 In the 34th Standing Committee on Power System Planning of Southern Region approval was accorded for the establishment of Thennampatty 400/230-110kV SS for evacuation of wind power projects coming in Tamil Nadu. However, provision for the 400/230kV and 400/110kV ICTs was not mentioned.

Now, the above SS is programmed to be commissioned and no specific approval is available for provision for the 400/230kV and 400/110kV ICTs.

5.0 Hence, it is requested that approval may kindly be accorded for commissioning the ICTs (400/230kV, 2x315MVA and 400/110kV, 2x200MVA) at Thennampatty 400/230-110kV SS and the proposed 3rd 400/110kV ICT (200 MVA) at Kayathar 400kV SS.

Thennampatty 400/230-110 kV SS is likely to be commissioned shortly .Hence, it is requested that inprinciple approval may be accorded for commissioning the 400/230kV, 2X315MVA and 400/110kV, 2x200 MVA ICTs at Thennampatty 400/230-110kV SS, pending approval of the Southern Region Standing Committee on Transmission.

Sd/-
(V.Kumar)
Chief Engineer/Planning & RC
For Director/Transmission Projects

Annex-23.0

TAMILNADU TRANSMISSION CORPORATION LTD.
(Subsidiary of TNEB Ltd.)

From

Shri.T.Senthilvelan, B.E.,
Director/ Transmission Projects,
TANTRANSCO,
144, Anna Salai,
Chennai -2.

To

The Member (Power System),
Central Electricity Authority,
Sewa Bhavan, R.K.Puram,
New Delhi 110 066.

Lr.No.CE/Plg.&R.C/SE/SS/EE1/AEE2/F.SRSCT -Agenda/D. 277 /dt. 18.10.2019

Sir,

Sub: TANTRANSCO – Enhancement of ICT capacity with additional 1 X 500 MVA, 400/230 kV ICT along with the existing 2 X 315 MVA, 400/230 kV ICTs at Sunguvarchatram 400/230-110 kV SS-To be included as an agenda point in the forthcoming 3rd meeting of SRSCT - reg.

*****

A Proposal for enhancement of 400/230 KV ICT capacity at Sunguvarchatram 400/230-110 kV substation has been evolved by TANTRANSCO. In this connection, the following are stated:

i. The Sunguvarchatram 400/230-110 kV substation was commissioned on 16.08.2011. The total Interconnecting transformer capacity at Sunguvarchatram 400/230-110 kV SS is 1030 MVA with 2 nos. of 400/230 kV, 315 MVA ICTs and 2 nos. 400/110 kV, 200 MVA ICTs.

ii. The sustained peak value of 2 nos. 315 MVA ICTs is 400 MVA which is 64 % of its full load capacity.

iii. Moreover, M/s. Rack Bank Data Centers Pvt. Ltd., has proposed to establish their company at SIPCOT Sriperumbudur Industrial Park, Kanchipuram Dt. with 192 MW (213 MVA) in phase – I and 288 MW (320 MVA) in phase – II.

Annex-23.0

iv. In order to accommodate all the existing & future loads and meet the N-1 condition, it is essential to enhance the ICT capacity with additional 1 X 500 MVA, 400/230 kV ICT along with the existing 2 X 315 MVA, 400/230 kV ICTs at Sunguvarchatram 400/230-110 kV substation.

2.0 Load Flow study has been carried out for 2020 - 21 year condition and from the study results, the following have been observed:

- The existing 2 X 315 MVA, 400/230 kV ICTs are loaded upto 112 MW each at Sunguvarchatram 400/230-110 kV SS in base case.
- After enhancement of 400/230 kV ICT capacity with additional 1 X 500 MVA ICT along with the existing 2 X 315 MVA ICTs at Sunguvarchatram 400/230-110 kV SS, the ICT loadings are as follows.

  - 315 MVA, 400/230 kV ICT - 1 - 133 MW
  - 315 MVA, 400/230 kV ICT - 2 - 133 MW
  - 500 MVA, 400/230 kV ICT - 265 MW

3.0 It is requested to include the proposal for the enhancement of 400/230 kV ICT capacity with additional 1 X 500 MVA ICT along with the existing 2 X 315 MVA ICTs at Sunguvarchatram 400/230-110 kV SS as an agenda point in the forthcoming 3rd meeting of the Southern Region Standing Committee on Transmission (SRSCT).

Sd/-
(N.Balaji)
Chief Engineer / Planning & RC
For Director/Transmission Projects
Chennai

Enclosures:

i. Study results in sav. File - by email.

TAMILNADU TRANSMISSION CORPORATION LTD.
(Subsidiary of TNEB Ltd.)

From

Shri. T.Senthilvelan, B.E.,
Director/Transmission Projects,
TANTRANSCO,
144, Anna Salai,
Chennai -2.

To

The Member (Power System)
Central Electricity Authority,
Sewa Bhavan, R.K.Puram,
New Delhi 110 066.

Lr.No.CE/Plg.&R.C/ACE/SS/EE-II/AEE1/F.SRSCT -2/D. 257 /19 dt.19.09.19

Sir,

Sub: Elecy-Power System Development Fund(PSDF)- Proposals of TANTRANSCO for re-conductoring of existing 110 kV DC Theni-Sembatty feeder I & II and Theni-Periyar feeder I & II(Proposal No.182) in Madurai region, Tamil Nadu- In-Principle Approval– Requested- reg.

Office of Member (Power System) Dy. No. 807 Date 27/9/19

****

TANTRANSCO has furnished a proposal for re-conductoring of existing 110 kV DC Theni-Sembatty feeder I & II and Theni-Periyar feeder I & II in Madurai Region for availing financial assistance from Power System Development Fund(PSDF). In this regard, the Techno Economic Group/NLDC insists TANTRANSCO to obtain approval from SRSCT, for availing grant from Power System Development Fund.

2.0 In this connection, the following are submitted:

- The existing 110 kV Theni-Sembatty feeder I & II and 110kV Theni-Periyar feeder I & II are having wolf and Lynx conductor respectively and are very old.
- Due to load growth in this area , new 110 kV substations are introduced in these feeders.

- In order to mitigate the existing overloading conditions, the above said reconductoring work needs to be expedited.
- Administrative approval for replacing the existing wolf/Lynx conductor with equivalent HTLS conductor in the 110 kV Theni-Sembatty feeder I & II has been accorded vide TANTRANSCO Proceedings No.5 Dated 06-01-15 and vide (Per)CH TANTRANSCO Proceedings No.137 dt.04.08.14 for 110 kV Theni –Periyar feeder I& II.

3.0 In view of the above, it is requested that in-principle approval may be accorded for the proposal of re-conductoring the existing 110 kV Theni-Sembatty feeder I & II from wolf to equivalent HTLS conductor and Theni-Periyar feeder I & II from Lynx to equivalent HTLS conductor in Madurai Region, Tamil Nadu for availing PSDF.

19/09/19

(V.Kumar)
Chief Engineer/Planning & RC
For Director/Transmission Projects

Copy to The Chief Engineer/PSP&A-II/ Central Electricity Authority/New Delhi.

Annex-31.0

पावर ग्रिड कारपोरेशन ऑफ इंडिया लिमिटेड
(भारत सरकार का उद्यम)
POWER GRID CORPORATION OF INDIA LIMITED
(A Government of India Enterprise)
पावरग्रिड

केन्द्रीय कार्यालय: "सौदामिनी" प्लॉट सं. 2, सैक्टर–29, गुडगाँव–122 001, (हरियाणा) दूरभाष: 0124-2571700-719, फैक्स : 0124-2571762,
"Saudamini" Plot No. 2, Sector-29, Gurgaon-122 001, (Haryana) Tel. : 0124-2571700-719, Fax : 0124-2571762, Web.: www.powergridindia.com

CIN : L40101DL1989GOI038121

C/CTU-Plg/S/03/3107

Date: 31.07.2019

Shri Pradeep Jindal
Chief Engineer (PSPA-II)
Central Electricity Authority,
Sewa Bhawan, R.K. Puram
New Delhi-110 066

Sub: Development of common facility for 230kV bus extension works at Tuticorin-II GIS substation – reg.

Dear Sir,

This is with reference to 230kV bus extension works to be carried out at 400/230 kV Tuticorin-II GIS substation, Tamil Nadu in Southern Region. The Tuticorin-II GIS substation has been established with 2x500 MVA, 400/230kV transformers and initial provision for 5 nos. of 230kV line bays for termination of 230kV dedicated transmission lines by the RE developers. Out of the 5 nos. of 230kV bays, 4 nos. of bays have already been commissioned and 1 no. bay is under advanced stage of commissioning for integration of RE generation projects of the area with the ISTS network. Further, the 3rd 500 MVA transformer is also under advanced stage of implementation for facilitating evacuation and transfer of RE power beyond Tuticorin-II GIS substation. Meanwhile M/s. Shapoorji Pallonji Infrastructure Capital Company Private Limited has been granted Stage-II Connectivity for its proposed 500 MW solar based generation project at Tuticorin-II GIS substation through 230kV D/c dedicated transmission line, for which 2 nos. of new 230kV bays would be required.

Considering difficulties faced in interface of GIS module of different makes with the existing 230kV GIS bus bar, further extension of 230kV switchyard of Tuticorin-II substation has been transformed into hybrid switchyard (Bus bar AIS and line bay equipment GIS) so that the future bay extensions can be carried out smoothly through the hybrid GIS module(s). This arrangement reduces the overall implementation period of bay extension works and also avoid the GIS supply extension requirements (proposed GA drawing is enclosed at **Annexure-I**).

To facilitate integration of 3rd 500 MVA transformer as well as 230kV bus bar extension for integration of RE generation projects, following common facilities at Tuticorin-II GIS substation are required to be developed as part of ISTS :

a) Outdoor AIS bus bar arrangement including necessary erection hardware
b) Indoor GIS bus is to be extended upto the outdoor AIS bus bars using GIB arrangement.
c) Connecting roads, cable trench, drains etc.
d) Earth mat in extension area etc.
e) Civil works associated with above.

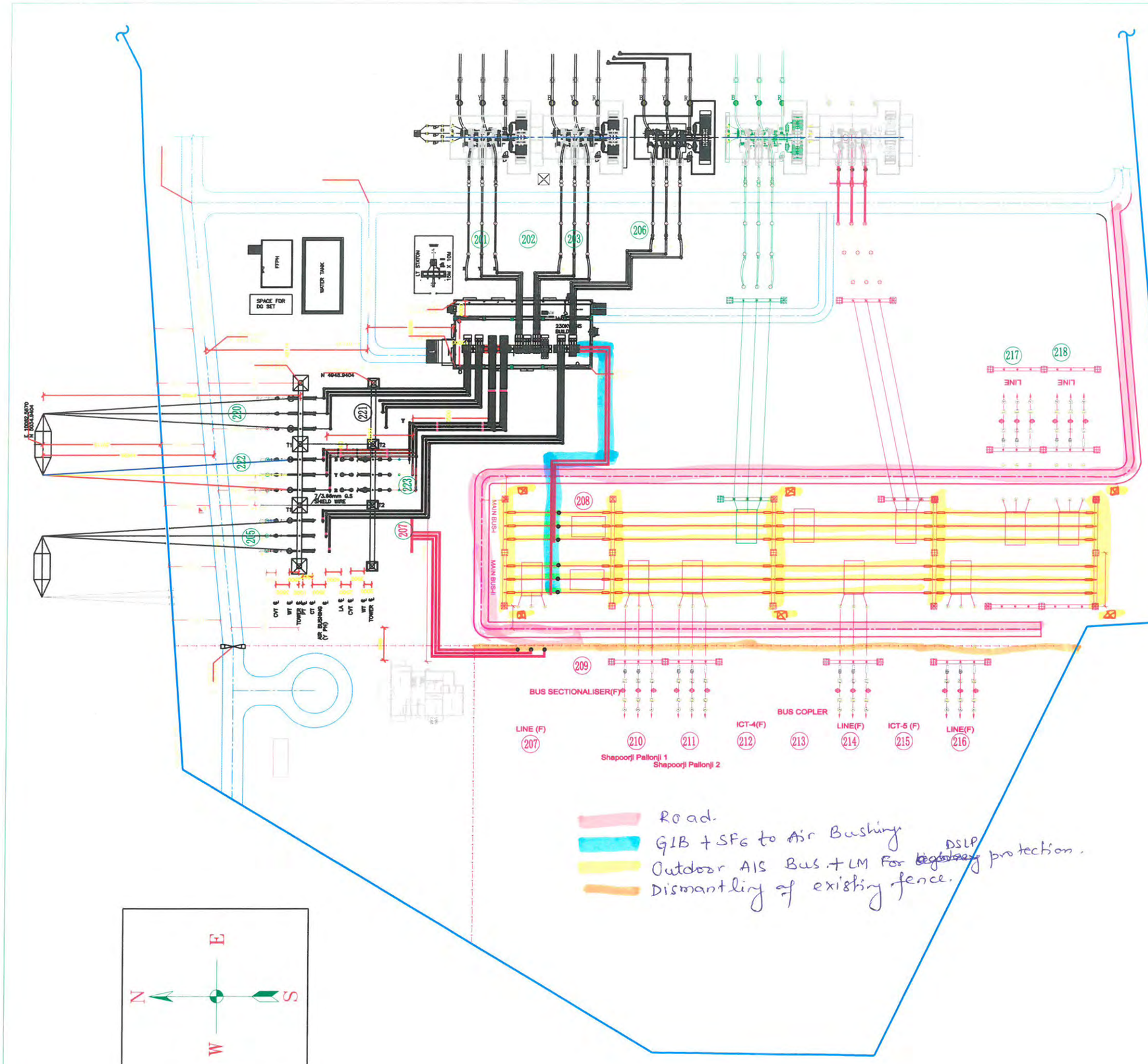
It is requested that in-principle approval may be accorded for development of above common facilities as part of ISTS to facilitate smooth integration of upcoming generation projects as well as 3rd 500 MVA ICT at Tuticorin-II substation.

Thanking you,

Yours faithfully,

Ashok Pal.

(Ashok Pal)
Chief General Manager (CTU-Plg)



FOR TENDER PURPOSE ONLY

POWER GRID CORPORATION OF INDIA LIMITED
(A GOVERNMENT OF INDIA ENTERPRISE)

PROJECT:

SUBSTATION: EXTN. OF 230kV TIRUNELVELI GIS SUBSTATION

TITLE: GENERAL ARRANGEMENT DRAWING

DATE	SCALE	DRG.NO.	REV
JAN 2019	NTS	C/ENGG/SR/CONSULTANCY/TIRU-EXT./GA	0

CDE (ENGG-S/S)	Sr. GM (ENGG-S/S)	Sr. DGM (ENGG-Civil)	GM (CIVIL)	GM (ENGG-S/S)	GM (ENGG-TL)
PREPARED	CHECKED BY		CLEARED BY		ED (ENGG-S/S & TL)
					APPROVED BY

Annex-32.0

फ़ैक्स/स्पीड पोस्ट /FAX/SPEEDPOST

भारत सरकार केंद्रीय विद्युत प्राधिकरण दक्षिण क्षेत्रीय विद्युत समिति बैंगलूरु - 560 009		Government of India Central Electricity Authority **Southern Regional Power Committee** Bengaluru - 560 009	
Web site: www.srpc.kar.nic.in	e-mail: mssrpc-ka@nic.in	Ph: 080-22287205	Fax: 080-22259343
सं/No. SRPC/SE-II/2019/5254-55		दिनांक / Date	30.10.2019

Chief Engineer
PSPA-II
CEA
New Delhi

Sir,

Sub: Transmission related issues in SR – reg.

Ref: 1. PSPA-II letter No.CEA-PS-12-14(12)/2018-PSPA-II Division dated 03.10.2019
2. PSPA-II letter No.CEA-PS-12-15/2/2018-PSPA-II Division dated 08.03.2019

1. **De-linking of 400 kV LILO at JSW generating station**

As desired vide letter cited under reference (1), the study report of SRLDC is enclosed at **Annexure-I**).

As desired vide letter cited under reference (2), the following issue related to Transmission Planning are brought to kind attention:

2. **Evacuation issues from NTPL, Tuticorin**

SRPC vide letter dated 03.09.2019 had requested to examine the additional connectivity at 400 kV or 230 kV at NTPL to enhance the reliability in evacuation during contingent conditions.

Further during the deliberations in the 159th OCCM (held on 15.10.2019), it was noted that the 230 kV connectivity at NTPL was part of evacuation scheme agreed in the 22nd and 24th Standing Committee meetings held in 2006/2007 (copy of extract enclosed at **Annexure-II**).

TANTRANSCO vide letter dated 10.10.2019 (copy enclosed at **Annexure-III**) had referred the 38th Standing Committee MOM (held on 07.05.2015) and stated that 230 kV connectivity from TANTRANSCO side was not part of ATS for NTPL power evacuation.

Therefore, it needs clarification whether 230 kV connectivity from TANTRANSCO side at NTPL was part of ATS. This connectivity may be required to draw the auxiliary power / evacuation of power (upto the extent possible) during outage of both the D/C lines to Tuticorin PS.

3. **Kudankulam Units 3 & 4 (2 x 1000 MW)**

In the 160th OCC meeting held on 15.10.2019, TANTRANSCO had raised their proposal of constructing additional evacuation lines from Kudankulam Atomic Power Plant to the nearby TANTRANSCO 400 kV substations (kindly refer TANTRANSCO letter dated 24.09.2019 addressed to Member (PS), CEA).

In the Meeting, KKNPP had informed that presently both the units are operating; Unit-1 at 1000 MWe and Unit-2 at 600 MWe, the loading pattern in 400 kV transmission lines is as follows:

Tirunelveli Line-1	Tirunelveli Line-2	Tuticorin Line-1	Tuticorin Line-2
625	625	105	105

While isolating any one of Tirunelveli line for maintenance, the loading pattern changes as follows:

Tirunelveli Line-1	Tirunelveli Line-2	Tuticorin Line-1	Tuticorin Line-2
1140	Under SD	160	160

While such unequal loading, the temperature of Quad connectors of most loaded line increases to more than 100 Deg C within 2 to 3 hrs. As per operating instruction, the line shall be taken out when the temperature more than 100 Deg C. Due to this KKNPP is not unable to give shutdown for any of Tirunelveli line for more than 3 hrs. Normally it takes 8 hrs for any maintenance on 400 kV lines.

Hence possibility of loading Tuticorin line has to be seen so that load can be equally shared in all lines in service and the temperature of connectors can be maintained within limits during the outage of any one Tirunelveli line. So far KKNPP had replaced 4 out of 12 connectors with new aluminum connector. Remaining 8 connectors are to be replaced in a phased manner.

While carrying out study for evacuation of power from KKNPP-3 & 4, this aspect of equal load sharing among all transmission lines has to be taken into consideration.

After deliberation, the forum had suggested that KKNPP may look in to the following:

- KKNPP was suggested to give their feedback to PSPA Division, CEA.
- KKNPP to assess the issue of connector as the failure below the rated value was not desirable from grid security aspects. KKNPP to furnish a feed back on this. Effect of switchyard being in coastal area also needed to be considered.

In earlier meetings in SRPC forum, the limitation of around 100 MVAR absorption (lesser than the Capability Curve limits) needed to be considered for KKNPP units-3 & 4 while planning reactive compensation at KKNPP units 3 & 4 switchyard.

The issues in respect of KKNPP may kindly be looked into.

धन्यवाद /Thanking you,

भवदीय / Yours faithfully

(ए बालन/ A BALAN)

सदस्य सचिव/Member Secretary

Copy for kind information to – Executive Director, SRLDC, Bengaluru

Minutes of the 22nd Standing Committee meeting on Power System Planning In Southern Region held on 17th August, 2006 at SRPC, Bangalore.

1.1 The 22nd meeting of Standing Committee on Power System Planning in Southern Region was held on Thursday the 17th August, 2006 at SRPC, Bangalore. The list of participants is at Annexure.

1.2 Shri V. Ramakrishna Member (Power System), CEA welcomed the participants to the meeting and thanked SRPC for organizing the meeting and stated that some of the items of the agenda for the meeting were also deliberated during the last meeting. The transmission system for evacuation of power from Tuticorin TPS JV (2x500 MW) and North Chennai TPS JV (2x500 MW) were discussed during the last meeting and based on issues raised during that meeting revised studies had been carried out by CEA considering 2000 MW of wind generator plants in and around Tuticorin area and also considering two scenarios with and without Ennore CCP (1000 MW). He further stated that there was scope of Southern region exporting 4000-5000 MW during surplus conditions by displacement to Western Region/Northern Region. However, for this strengthening of transmission system beyond Talcher up to Rourkela would be required. The strengthening works would physically be in Eastern Region but would be for the benefit of Southern Region. He listed out other items of the agenda viz Back up transmission system for Talcher Stage II, requirement of reactors in Southern Region to contain over voltages for which POWERGRID had carried out a study, APTRANSCO's proposal for 400 kV ring main around twin cities of Hyderabad and Secunderabad and Rangareddy Distt and TNEB's request for release of 230 kV bays at Tirunelveli 400 kV S/S and hoped that fruitful discussions would take place during the course of meeting and members would be able to arrive at a decisions. The agenda items were thereafter taken up for discussions.

2. Confirmation of minutes of 21st Standing Committee on Power System Planning in Southern Region held on 22nd September 2005 at Bangalore.

2.1 Chief Engineer (SP&PA) CEA stated that minutes of the 21st meeting held on 22nd September 2005 were circulated vide CEA letter No. 51/4/SP&PA/2001 dated 24.10.2005. Subsequently observations on the minutes were received from NPCIL vide their letter No. NPCIL/CE (ED-TAPS)/2005/M/131 dated 9th November, 2005. Based on he observations of NPCIL, corrigendum to the minutes was issued vide CEA letter No. 51/4/SP&PA/2001 dated 22.11.2005. The minutes of the meeting along with the corrigendum to the minutes was thereafter taken as confirmed.

3. Transmission system for evacuation of power from Tuticorin (2x500 MW) and North Chennai (2x500 MW).

3.1 Transmission System for Tuticorin TPS JV (2x500 MW)

3.1.1 DD (SP&PA) made a presentation of the studies carried out jointly by CEA and TNEB and stated that 2000 MW of wind power around Tuticorin, inputs for which were furnished by TNEB had been considered in the study. Because of uncertainty of Ennore CCP two transmission scenarios with and without Ennore had

been studied. For evolving evacuation system for Tuticorin TPS JV, a number of alternatives and cases were studied of which two main alternatives had been circulated in the agenda note. The first option was with 2 no 400 kV D/C lines with twin moose conductors from Tuticorin, one line to Madurai and another to Karaikudi. The second alternative had a single 400 kV D/C line with Quad Conductors from Tuticorin to Madurai. The studies indicated that alternative - 2 was a better option, as in alternative-1 power flowing towards Karaikudi was getting re-injected towards Madurai and off take at Karaikudi 400/220 kV ICT was also marginal.

3.1.2 CE (SP&PA) stated that basic evacuation system had been identified. Tamil Nadu had a 75% share in the project and balance 25% was meant for other beneficiaries which are yet to be identified. Additional transmission strengthening would be required and this would be firmed up after allocation of this 25% is finalized.

3.1.3 Member Secretary, (SRPC) confirmed that Tuticorin was a Joint Venture Project of Tamil Nadu & NLC and North Chennai TPS was a Joint Venture Project of Tamil Naidu and NTPC. He further informed that during the 130th SREB meeting the states had given their requirement. However, allocation of power had not yet been finalized.

3.1.4 NLC stated that two 400 kV DC lines should be provided to cover tower outage conditions. He also stated that inter-connection with existing Tuticorin TPS was suggested but there was no space for bays at existing Tuticorin.

3.1.5 Member (PS), CEA stated that providing two 400 kV D/C lines to cover tower outage as a evacuation planning criteria as a general rule was an expensive preposition. Such stipulation was there in the planning criteria only for power evacuation from nuclear station and in cyclone prone areas and not for every generating station. The tower design aspects took care of reliability and PGCIL had Emergency Restoration Systems (ERS) for restoration of lines within 48 hours in cases of tower failure. He stated that alternative-2 was satisfying the CEA planning criteria of single line contingency. Regarding inter-connectivity he stated that 2 circuits of 220 kV lines of TNEB presently emanating from Tuticorin TPS could be LILOed at Tuticorin TPS JV thus forming an interconnection.

3.1.6 Shri K. Rao, Director APTRANSCO stated that reliability and cost both have to be considered as all the beneficiaries had to share the transmission charges and endorsed the views expressed by CEA.

3.1.7 TNEB stated that they had already conveyed their concurrence to alternative 2 as proposed by CEA.

3.1.8 After discussions the following evacuation system was agreed for Tuticorin TPS JV (2x500 MW):

i) Tuticorin JV TPS - Madurai 400 kV D/C Quad
ii) 2x315 MVA 400/220 kV ICT at Tuticorin TPS JV.
iii) LILO of 2 nos. of 220 kV circuits at Tuticorin TPS JV. *

***Note:**

1) With the above, there would be provision of 2 nos. of 400 kV line bays and 4 nos. 220 kV line bays at Tuticorin TPS JV switchyard.
2) Works for LILO of 220 kV line would be under the purview of TNEB.

3.1.9 It was also decided that after finalization of the beneficiaries for 25% of share is made additional transmission strengthening required would be firmed up.

3.2 Transmission system for North Chennai TPS (2x500 MW).

3.2.1 DD (CEA) made a presentation of the studies and stated that study cases for three alternatives were circulated with the agenda note. The first option was with one 400 kV D/C line from North Chennai to Alamathy with quad conductor, second option was two 400 kV D/C lines with twin moose conductors one D/C line to Alamathy and second D/C line to Melakotaiyur and the third option was LILO of both circuits of Alamathy-Sriperumbudur 400 kV D/C line at North Chennai JV and construction of Melakotaiyur-Alamathy 400 kV D/C line. He stated that third option which was recommended would provide reliable evacuation of power and also improve reliability and security of power supply to North Chennai where most of the loads were concentrated. He informed that TNEB had also conveyed their approval to this option.

3.2.2 Members enquired whether the transmission system being proposed took care of the evacuation from wind power plants coming up in TNEB. CE (SP&PA) clarified that wind power plants are within the state sector and TNEB need to augment their state transmission network, no fresh assets were being provided under regional schemes and only the margins available in regional network could be utilized by seeking short term open access. Under outage conditions when margins in the regional network would be much less or not available wind power plants may or may not get open access depending on the operating conditions. Also, when wind power generation would be substantial other generators of TNEB may need to back down. However, if TNEB or the wind power generation wanted to have firm transmission capacity, they would need to seek long term open access so that required additional transmission system could be built based on their commitment to pay long term transmission charges.

3.2.3 After discussions the following network as suggested by CEA was agreed:

1. LILO of Alamathy- Sriperumbudur 400 kV D/C line at North Chennai TPS JV
2. Melakotaiyur - Alamathy 400 kV D./C line with twin moose conductor.
3. 2x315 MVA 400/230 kV ICT at North Chennai TPS JV.
4. 4 no. 230 kV bays at switchyard of North Chennai TPS JV
5. 230 kV inter connection with existing North Chennai TPS (under scope of TNEB at their cost).

Annex-32.0

MoM of 24th SC meeting held on 18.06.2007

(4/4)

Pondicherry 50 MW and Karnataka 125 MW. Member (PS), CEA said that this allocation should be got confirmed from the Ministry of Power, GOI.

6.0 Status of Transmission System for Tuticorin TPS (2x500 MW).

6.1 CE, CEA said that the transmission system for Tuticorin TPS (1000 MW) of JV of NLC and TNEB as agreed in the 23rd meeting, included:

i) Tuticorin JV TPS – Madurai 400 kV D/C Quad.

ii) 2x315 MVA 400/230kV ICT at Tuticorin TPS JV.

iii) LILO of 2 nos. of 230 kV circuits at Tuticorin TPS JV.

He said that the Tuticorin JV TPS – Madurai 400 kV D/C Quad line, was to be implemented by POWERGRID, 2x315MVA, 400/230kV ICT was to be provided by Generation Developers and the 230kV LILO lines were to be implemented by TNEB and the commissioning schedule of all the works should be properly matched. AGM, POWERGRID informed that the system would be built matching with commissioning of the generation project. TNEB informed that the 230kV LILO works, which are to be taken up by them, would also be completed matching with generation.

6.2 CE, CEA further said that 75% of power from this project was for TNEB, however, allocation of rest of 25% was yet to be decided. He asked the representatives of NLC and TNEB to decide the allocation of rest of 25% of power at the earliest. He said that based on allocation from Tuticorin JV TPS and North Chennai JV TPS, some new transformation capacities/ new substations could be added in Southern region as system strengthening works. He asked the state representatives to give their recommendations for transformer capacity additions, which could be taken up in the next meeting of the Standing Committee. States agreed to send their requirements.

7.0 Implementation of Reactors to contain over-voltage in Southern Region

7.1 CEA said that based on the decision taken in the 23rd meeting, POWERGRID was to deploy 11 nos. of reactor (7 bus reactors + 4 line reactors), NTPC – 2 nos. of bus reactors, NPCIL – 1 no. of bus reactor, NLC – 2 nos. of bus reactors, APTRANSCO - 4 nos. of reactor (3 bus reactors + 1 line reactors), and KPTCL – 5 nos. of bus reactors. NPCIL and NLC representatives expressed that these works should be implemented by PGCIL as system improvement schemes for Southern Region.

Study Report on De-LILOing of 400kV RTPS-BTPS-JSW-Guttur line at 400kV JSW SS

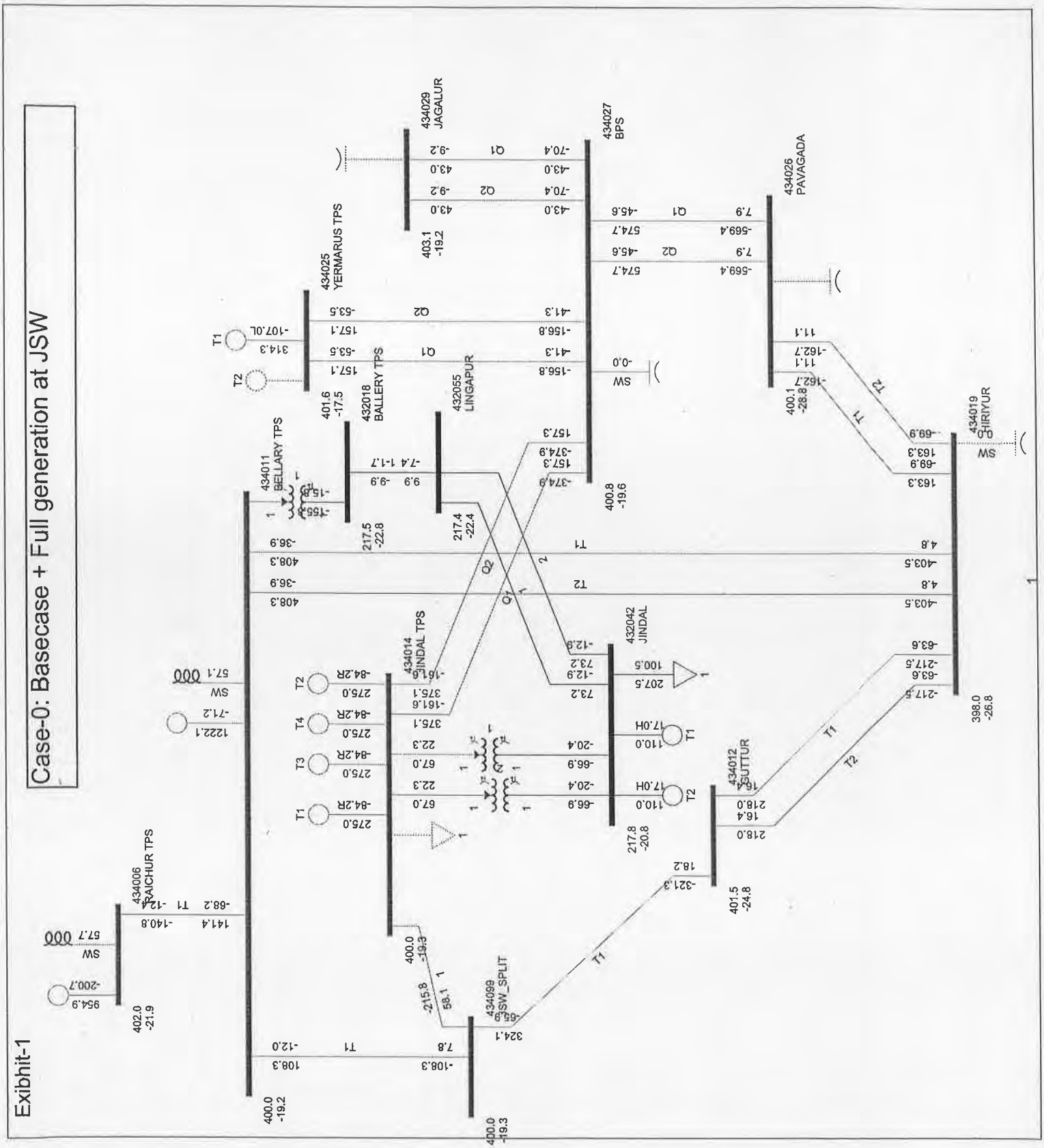
The following Transmission system was planned for evacuation of Yeramarus TPS, BTPS and Jindal.

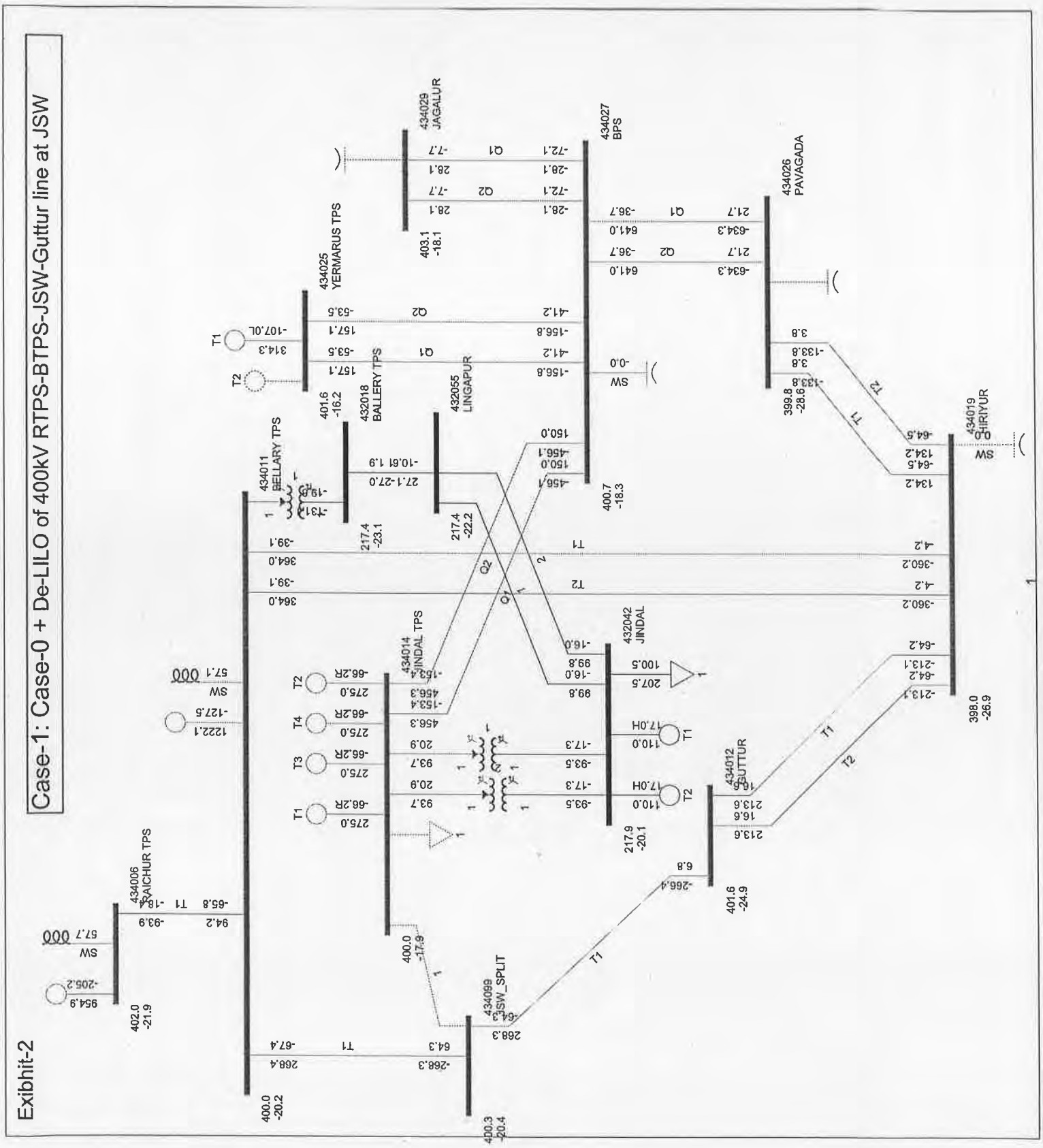
I. Bellary 400kV Pooling Station near 'BTPS'.- **Commissioned**
II. Gulbarga 400/220 kV substation 7x167 MVA(single phase) or 2x500 MVA.
III. Yermarus TPS - Gulbarga 400 kV D/C line with quad moose conductor
IV. Establish 400 KV station at Chikkanayakanahalli (C.N Halli) near "Loop in Loop Out" (LILO) point on the Nelamangala – Talaguppa 400kV lines to Hassan with 2x500 MVA, 400/220 kV ICT's.
V. LILO of both the circuits of Nelamangala – Talaguppa 400kV lines to the proposed pooling station near CN Halli.
VI. Terminate 400kV D/C line feeding 400/220 KV station at Hassan from Nelamangala – Talaguppa line at CN Halli 400kV pooling station.
VII. Yermarus TPS - Bellary Pooling Station 400kV D/C line with quad moose conductor- **commissioned**
VIII. Bellary Pooling Station - C.N.Hally 400kV D/C line with quad moose conductor
IX. Bellary Pooling Station - New Madhugiri (near Tumakur) 765/400kV station, 400kV D/C line with quad moose conductor **- Commissioned**
X. De-link 400kV S/C line running between RTPS-BTPS-JSW-Guttur with JSW and Retain the LILO to 'BTPS' from the existing 400 KV SC line running between 'RTPS-BTPS-JSW-Guttur.
XI. JSW would be connected with Bellari Pooling station by additional two nos 400kV Quad DC line. –**One D/C line commissioned**
XII. BTPS- Guttur 400kV Quad DC line.

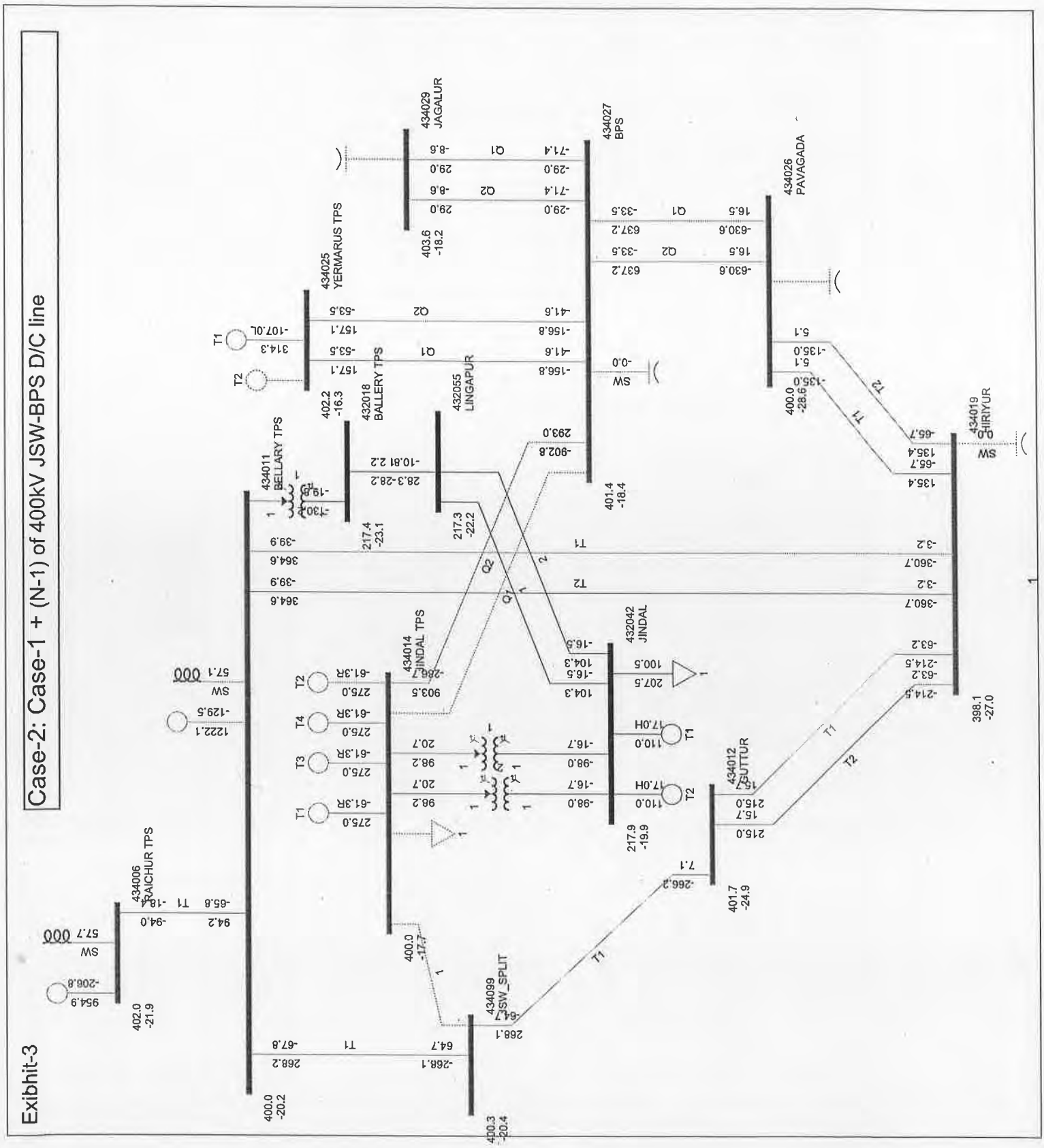
A study is conducted to ascertain the network sufficiency with de-linking of 400kV between RTPS-BTPS-JSW-Guttur at JSW mentioned in Sr. No. X.

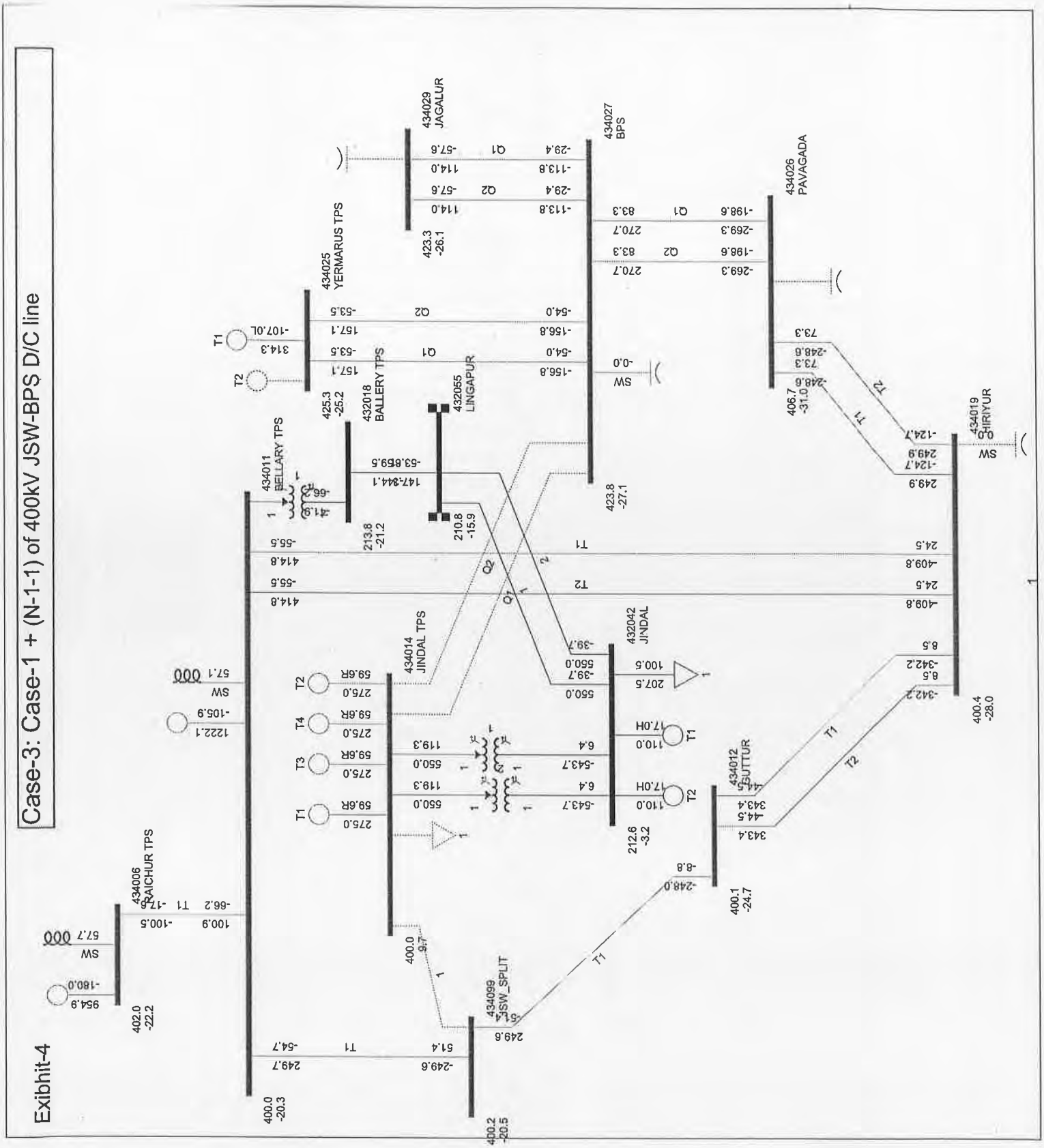
The following cases has been studied

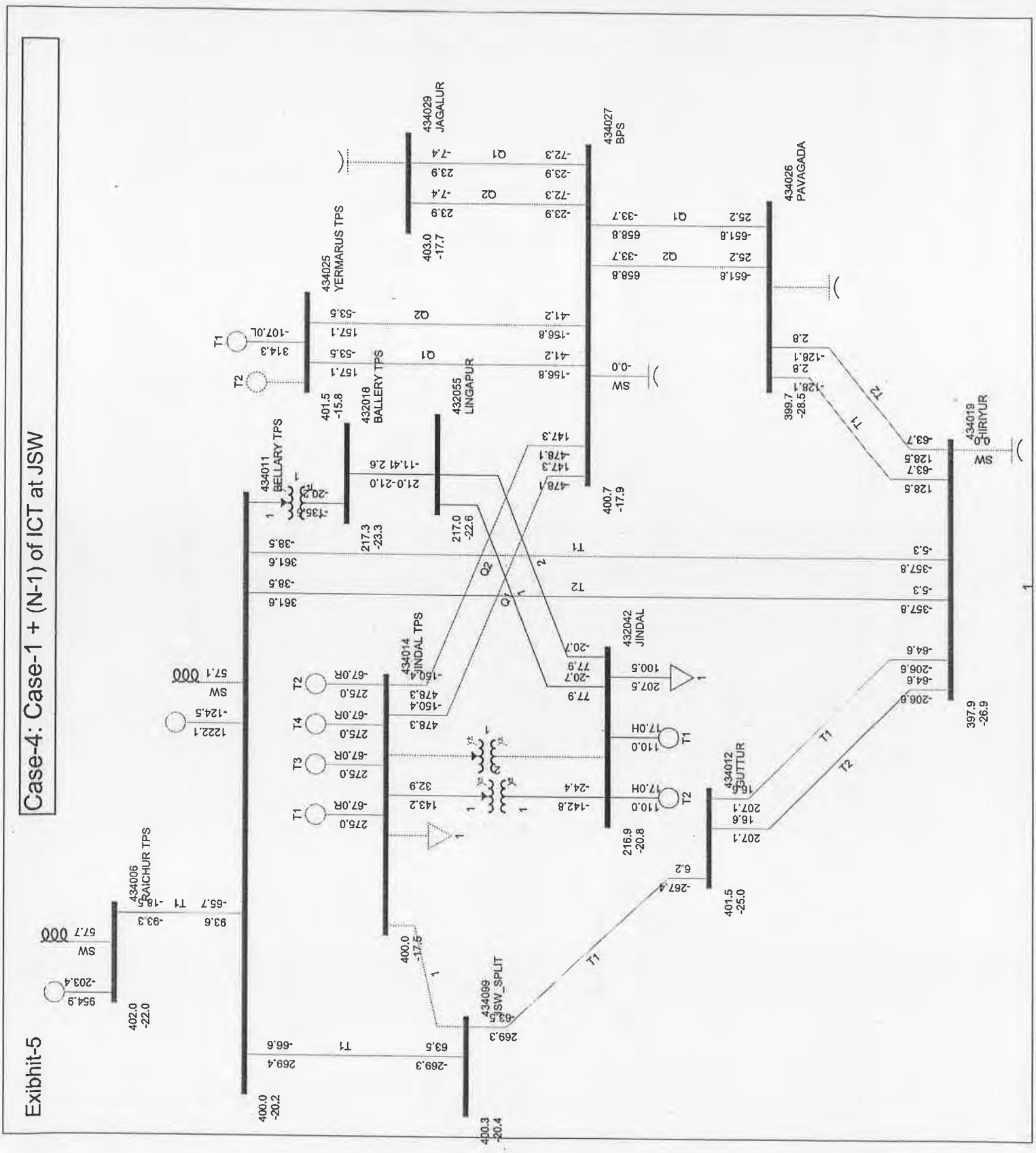
Case-0:	Base case-With Present arrangement and Full generation at JSW	**Exibhit-1**
Case-1:	Case-0+ De-LILO of 400kV RTPS-BTPS-JSW-Guttur line at JSW	**Exibhit-2**
Case-2:	Case-1+N-1 of 400kV JSW-BPS D/C line	**Exibhit-3**
Case-3:	Case-1+N-1-1 of 400kV JSW-BPS D/C line	**Exibhit-4**
Case-4:	Case-1+ N-1 of ICTs at JSW	**Exibhit-5**
Case-5:	Case-1+ Zero Generation at JSW	**Exibhit-6**

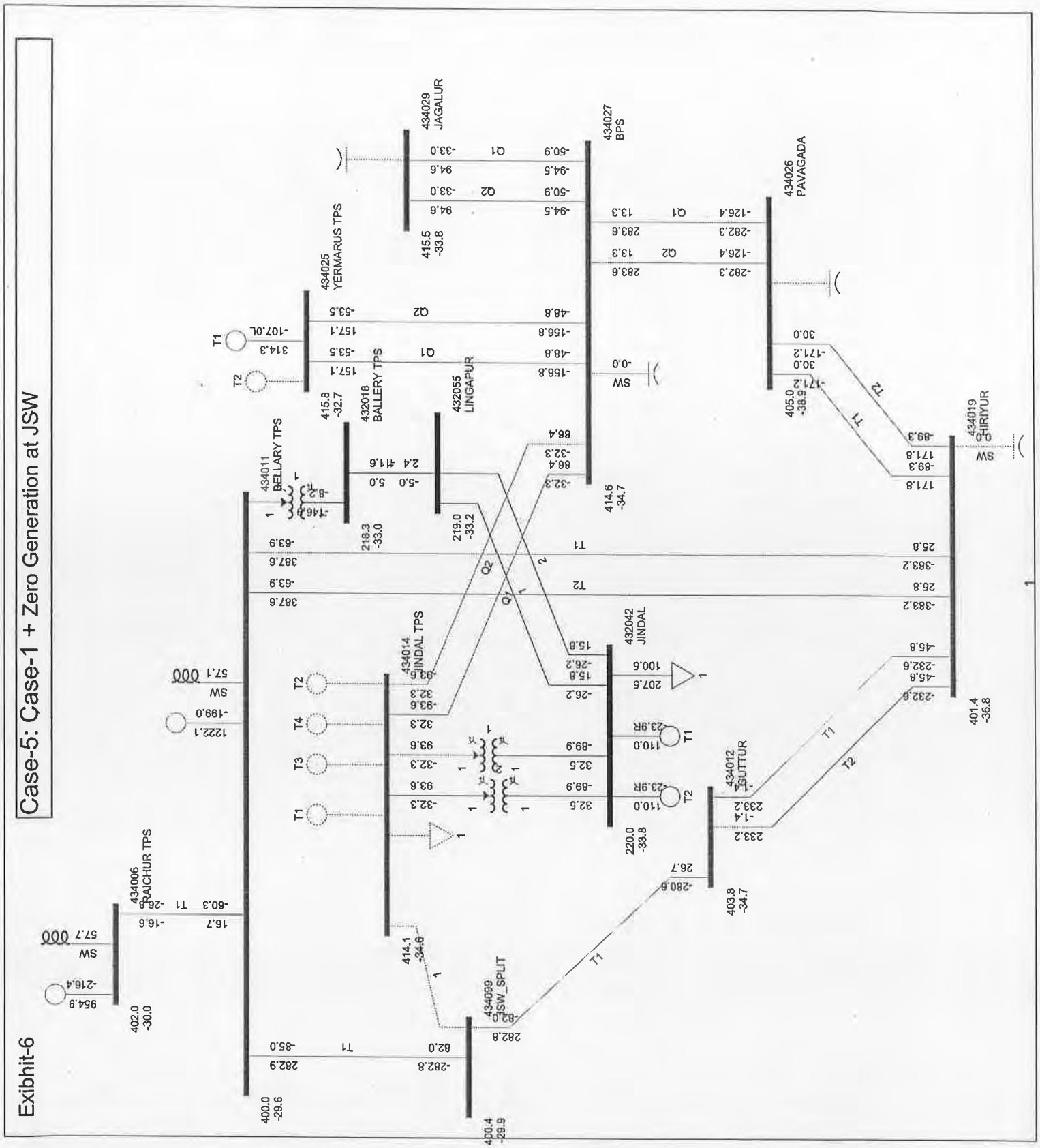

Case-0: Basecase + Full generation at JSW
Exibhit-1
434029 JAGALUR
434027 BPS
434026 PAVAGADA
434025 YERMARUS TPS
434019 GIRIYUR
434011 BELLARY TPS
432018 BALLERY TPS
432055 LINGAPUR
434014 JINDAL TPS
432042 JINDAL
434012 SUTTUR
434006 RAICHUR TPS
434099 SW_SPLIT
SW
MS
T1
T2
Q1
Q2


Case-1: Case-0 + De-LILO of 400kV RTPS-BTPS-JSW-Guttur line at JSW
Exibhit-2
434029 JAGALUR
434027 BPS
434026 PAVAGADA
434025 YERMARUS TPS
434019 CHIRIYUR
434011 BELLARY TPS
432018 BALLERY TPS
432055 LINGAPUR
434014 JINDAL TPS
432042 JINDAL
434012 GUTTUR
434006 RAICHUR TPS
434099 JSW_SPLIT
403.1 -18.1
400.7 -18.3
399.8 -28.6
398.0 -26.9
401.6 -16.2
400.0 -20.2
400.3 -20.4
217.4 -23.1
217.4 -22.2
217.9 -20.1
400.0 -17.9
401.6 -24.9
402.0 -21.9
Q1
Q2
T1
T2
SW


Case-2: Case-1 + (N-1) of 400kV JSW-BPS D/C line
Exibhit-3
434029 JAGALUR
434027 BPS
434026 PAVAGADA
434025 YERMARUS TPS
434019 CHIRIYUR
434011 BELLARY TPS
432018 BALLERY TPS
432055 LINGAPUR
434014 JINDAL TPS
432042 JINDAL
434012 GUTTUR
434006 RAICHUR TPS
434099 JSW_SPLIT
403.6 -18.2
401.4 -18.4
400.0 -28.6
398.1 -27.0
402.2 -16.3
217.4 -23.1
217.3 -22.2
217.9 -19.9
401.7 -24.9
400.0 -20.2
400.3 -20.4
402.0 -21.9
400.0 -17.7
SW
Q1
Q2
T1
T2
T3
T4


Case-3: Case-1 + (N-1-1) of 400kV JSW-BPS D/C line
Exibhit-4
434029 JAGALUR
434027 BPS
434026 PAVAGADA
434025 YERMARUS TPS
432018 BALLERY TPS
432055 LINGAPUR
434011 BELLARY TPS
434014 JINDAL TPS
432042 JINDAL
434012 SUTTUR
434019 SHIRIYUR
434006 RAICHUR TPS
434099 JSW_SPLIT
423.3 -26.1
423.8 -27.1
425.3 -25.2
213.8 -21.2
210.8 -15.9
406.7 -31.0
212.6 -3.2
400.1 -24.7
400.4 -28.0
400.0 -20.3
400.2 -20.5
402.0 -22.2
400.0 -9.7
249.6
SW
Q1
Q2
T1
T2


Case-4: Case-1 + (N-1) of ICT at JSW
Exibhit-5
434029 JAGALUR
434027 BPS
434026 PAVAGADA
434025 YERMARUS TPS
434019 HIRIYUR
432018 BALLERY TPS
432055 LINGAPUR
434011 BELLARY TPS
434014 JINDAL TPS
432042 JINDAL
434012 DAVANGUTTUR
434006 RAICHUR TPS
434099 JSW_SPLIT
403.0 -17.7
400.7 -17.9
401.5 -15.8
217.3 -23.3
217.0 -22.6
399.7 -28.5
397.9 -26.9
361.6 -38.5
357.8 -5.3
128.5 -63.7
206.6 -64.6
207.5 100.5
216.9 -20.8
207.1 16.6
401.5 -25.0
400.0 -17.5
269.3 -63.5
400.3 -20.4
400.0 -20.2
402.0 -22.0
478.3 -150.4
147.3 -478.1
157.1 -53.5
156.8 -41.2
658.8 -33.7
651.8 25.2
143.2 32.9
142.8 -24.4
110.0 17.0H
275.0 -67.0R
1222.1 -124.5
954.9 -203.4
93.6 -65.7
269.4 -66.6
63.5 -269.3
6.2 -267.4
57.1 000
57.7 000
SW
MS


Case-5: Case-1 + Zero Generation at JSW
Exibhit-6
434029 JAGALUR
434027 BPS
434026 PAVAGADA
434025 YERMARUS TPS
432018 BALLERY TPS
432055 LINGAPUR
434011 BELLARY TPS
434014 JINDAL TPS
432042 JINDAL
434012 TSUTTUR
434019 NARIYUR
434006 RAICHUR TPS
434099 GSW_SPLIT
SW
T1
T2
Q1
Q2

Annex-32.0

ANNEXURE (1/2)

TAMIL NADU TRANSMISSION CORPORATION LIMITED
(A Subsidiary of TNEB Ltd.,)
State Load Despatch Centre, Chennai – 600 002
Website:www.tnebldc.org E.mail:ceochn@tnebnet.org Phone:044-28545294 Fax No.:044-28545291

Lr.No. SLDC/CE/GO/SE/LD&GO/EE/AEE/ATC1/F.NTPL /D. 888 /2019, Date: 10.10.2019

To
The Member Secretary
SRPC, Bangalore

Sir,

Sub: 230 kV connectivity NTPL – Interim reply - Regarding

Ref: 1.SRPC letter No. SRPC/SE-II/2019/5940-43, Dated 23.09.2019
2. SRPC letter No. SRPC/SE-II/2019/5450-13, Dated 29.08.2019

*****

Kindly refer to the letter cited above wherein it was recorded that 230 kV connectivity at NTPL was part of evacuation schemes as agreed in the 22nd and 24th Standing committee meetings in 2006.

2.0 In this regard your kind attention is invited to the 38th Standing Committee meeting held on 7th May 2015 wherein it was recorded as

"Director, CEA stated for power evacuation from the Tuticorin JV TPS, a 400 kV Tuticorin JV TPS – Chekkanurani (Madurai) D/C Quad line with 2 x 315 MVA, 400 kV/220 kV ICT at Tuticorin JV TPS had been agreed. Accordingly, M/s. PGCIL has erected 2 nos. of 400kV NTPL - Madurai DC Quad feeder lines. For evacuation of power from Coastal Energen, LILO of one circuit of the NTPL – Madurai D/C line was agreed as an interim arrangement".

As recorded in the standing committee minutes, the 230 KV connectivity from TANTRANSCO side is not a part of ATS for NTPL power evacuation.

3.0 However, in the special meeting held at SRPC in this regard on 27.08.2019 TANTRANSCO has recorded its view as follows.

"8. It was concluded that 230 kV connectivity to NTPL switchyard (230kV NTPL –TTPS & 230kV NTPL-TTN Auto) would be restored

temporarily during the diversion works to ensure evacuation of power from NTPL. TANTRANSCO stated that approval from management would be sought for the above work ".

4.0 Accordingly, getting approval from the competent authority is under process. On obtaining approval it will be communicated at the earliest please.

Thanking you,

Yours sincerely

Chief Engineer/Grid Operation
for Director/Operation (a/c)

Encl: Copy of Minutes of 38th standing committee meeting

Copy communicated to ED/SRLDC, Bangalore
Copy communicated to M/s. Power Grid/SR-II
Copy communicated to M/s. NTPL

Annex-33.0

ಡಾ|| ಎಸ್. ಸೆಲ್ವಕುಮಾರ್, ಭಾಆಸೇ.,
ವ್ಯವಸ್ಥಾಪಕ ನಿರ್ದೇಶಕರು

Dr. S. SELVAKUMAR, IAS.,
Managing Director
& Chairperson, SRPC

ಕರ್ನಾಟಕ ವಿದ್ಯುತ್ ಪ್ರಸರಣ ನಿಗಮ ನಿಯಮಿತ
Karnataka Power Transmission Corporation Limited
Kaveri Bhavan, Bengaluru - 560 009.
CIN : U40109KA1999SGC025521
Office : 080-22244556 / 22214342
Fax : 91-80-22213526
e-mail : md@kptcl.com

30th July 2019

The Chairman & Managing Director,
NPCIL
16th Floor, Centre-1
World Trade Centre
Cuffe Parade, Colaba
Mumbai – 400 005

Sir,

Sub: Implementation of 400 kV, 2 x 125 MVAR bus reactors at Kaiga.

As you are kindly aware, two reactors of 125 MVAR each at Kaiga GS were approved in the 37th meeting of Standing Committee on Power System Planning of SR held on 31.07.2014. The high voltage issues and commissioning of reactors in SR was discussed in the 36th SRPC meeting held on 12.07.2019. Despite the issue being followed up in various forum of SRPC and assurance of NPCIL Management (Copy of NPCIL letter dated 02.08.2018 enclosed) on expediting the commissioning of the reactors, it was noted with concern that the reactors are still in tendering stage.

Further both the stage-2 units at Kaiga GS are injecting reactive energy though the grid requirements are for absorption. Needless to mention that the adjoining assets of KPTCL, KPCL and PGCIL are being stressed due to over voltages. The matter may be kindly be examined and suitable direction may be issued to expedite commissioning of the reactors.

Thanking you,

Yours faithfully,

Sd/-
Chairperson, SRPC,
Bengaluru.

Copy to:

The Member(PS), CEA, New Delhi,

Chairperson, SRPC,
Bengaluru.

TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED

From:
Chief Engineer/IPC & Power Systems
APTRANSCO,
Vidyut Soudha, Gunadala,
Vijayawada – 520008

To
The Chief Engineer (PSP & A-II),
Central Electricity Authority,
Seva Bhavan, R.K.Puram,
NEW DELHI – 110 066

Lr. No. CE(IPC&PS)/SE(PS)/DE(SS&LTSS)/ADE-3/F. Podili Reactor /D. No. 105 /2019, Dt. 19 .11.2019.

Sir,

Sub: - APTRANSCO – Proposal for erection of 80 MVAR Reactor at Podili SS in Prakasam District - Inclusion of Agenda Item for discussion in the Joint Studies Meeting of Southern Region Standing Committee on Transmission (SRSCT) – Approval – Communicated - Reg.

* * *

It is to submit that the following transmission network was approved in the 36th Standing Committee held on 4th September 2013 in Prakasam District.

a) 400/220kV Podili Sub-station with 3x315 MVA ICTs.

b) 400kV Twin Moose DC line from 400/220kV Sattenapalli SS to the proposed 400/220 kV Podili SS.

2. In this regard it is to submit that during 2nd meeting of SRSCT held on 10th June 2019 at Bengaluru it was observed that voltages are very high most of the times in 400 kV Podili SS. Hence, APTRANSCO has proposed for erection of 80 MVAR Bus Reactor at 400/220 kV Podili Substation to drop down the voltages.

3. Hence, it is requested to include the above proposal in the Agenda Item in the Joint Studies Meeting of Southern Region Standing Committee on Transmission (SRSCT) to be held on 21st & 22nd Meeting and arrange approval for erection of reactors at the earliest.

The same is sent through e-mail also.

Yours faithfully,

Chief Engineer (IPC & Power Systems)

Copy to:
Dr. Subir Sen, COO
PGCIL, 'Saudamini',
Plot NO.2, Sector-29,
GURGAON - 122001, Haryana.

E:\ADE 2\Reactors\Letter_SCM_Podili_80MVAr_Reactor_14112019.doc

TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED

From:
Chief Engineer/IPC & Power Systems
APTRANSCO,
Vidyut Soudha, Gunadala,
Vijayawada – 520008

To
The Chief Engineer (PSP & A-II),
Central Electricity Authority,
Seva Bhavan, R.K.Puram,
NEW DELHI – 110 066

Lr. No. CE(IPC&PS)/SE(PS)/DE(SS&LTSS)/ADE-6/F. T.Narsapuram /D. No.106 /2019, Dt.19.11.2019.

Sir,

Sub: - APTRANSCO – Proposal for erection of 132/33 kV Substation at T.Narsapuram **in West Godavari district** - Inclusion of Agenda Item for discussion in the Joint Studies Meeting of Southern Region Standing Committee on Transmission (SRSCT) – Approval – Requested - Reg.

* * *

APTRANSCO approved the following dedicated Transmission Scheme for erection of 132/33 kV T.Narsapuram Substation in West Godavari district for providing continuous 9 Hrs 3-Phase power supply to Agriculture consumers during day time and 24 x 7 hours power supply to the consumers in the scheme area.

i. Erection of 132/33 kV T. Narsapuram SS with 2 x 31.5 MVA PTRs.

ii. Making 132 kV LILO (10 KM approx.) of both circuits of existing 220/132 kV KV Kota – Ashwaraopet SC line & 132 kV KV Kota – Ashwaraopet SC line at proposed 132/33 kV T. Narsapuram SS.

In this regard it is to inform that making 132 kV SC LILO (10 KM approx.) of existing 220/132 kV KV Kota – Ashwaraopet SC line & 132 kV KV Kota – Ashwaraopet SC line at proposed 132/33 kV T. Narsapuram SS is an **ISTS line** and needs the Standing Committee approval from CEA.

Hence, it is requested to include the above proposal in the Agenda Item in the Joint Studies Meeting of Southern Region Standing Committee on Transmission (SRSCT) to be held on 21st & 22nd Meeting and arrange approval for erection of the above Substation at the earliest. The same is sent through e-mail also.

Yours faithfully,

Chief Engineer (IPC & Power Systems)

Copy to:

Dr. Subir Sen, COO
PGCIL, 'Saudamini', Plot NO.2, Sector-29,
GURGAON - 122001, Haryana.

The Chief Engineer/Power Systems/Vidyut Soudha/TSTRANSCO/Hyderabad.

मंगलूर रिफाइनरी एण्ड पेट्रोकेमिकल्स लिमिटेड
MANGALORE REFINERY AND PETROCHEMICALS LIMITED

अनुसूची 'अ' के अंतर्गत भारत सरकार का उद्यम SCHEDULE 'A' GOVT. OF INDIA ENTERPRISE.
(ऑयल एण्ड नेचुरल गैस कॉरपोरेशन लिमिटेड की सहायक कंपनी A SUBSIDIARY OF OIL AND NATURAL GAS CORPORATION LIMITED)
सीआईएन/CIN : L23209KA1988GO1008959

पंजीकृत कार्यालय : कुत्तेतूर पोस्ट, वाया काटीपल्ला, मंगलूरु - 575 030 (भारत) दूरभाष : 0824-2270400, फैक्स : 0824-2271404, E-mail : mrplmlr@mrpl.co.in
Regd. Office : Kuthethoor P.O. Via Katipalla, Mangaluru - 575 030 (India) Tel. : 0824-2270400 Fax : 0824-2271404 website : www.mrpl.co.in
आई.एस.ओ. 9001, 14001 एवं 50001 प्रमाणित कंपनी AN ISO 9001, 14001 AND 50001 CERTIFIED COMPANY

MRPL/PROJECT/CEA/008 Date:11.11.2019

The Chief Engineer,
PSP 2 CEA,
Sewa Bhavan, R K Puram,
New Delhi

Kind Attn: Mr. Pardeep Jindal

Sub: Requirement of power at 400KV for MRPL

Respected Sir,

MRPL is operating a 15MMTPA Petroleum Refinery in Mangalore, Karnataka and meeting requirement of petroleum products in Karnataka and neighbouring states.

Presently, the power requirement for the refinery is met through internal captive generation. The present load demand is about 180-200MW. By 2020, the Refinery load demand will increase by another 40-50MW due to the ongoing BSVI expansion project. Further as part of growth plan, MRPL is embarking on a massive Refinery expansion project which is expected to be completed by 2023-24.

MRPL is connected to grid at 110KV level fed from KPTCL, Sharavathi receiving station (SRS), Kavoor, Mangalore. As this connection is unreliable due to frequent trips and outages, minimum power is drawn and the connection is kept as backup for any black out situations in our Refinery.

MRPL has decided to meet the future load requirements through reliable and efficient grid system. The nearest reliable power system available is at 400KV level (UPCL- Hassan- Shanthigrama DC Transmission line) which is running about 17kms north of the refinery. In this regard, MRPL had submitted application (reference no HT-54 dated 26.09.2017) to MESCOM / KPTCL requesting for requirement of 100MVA power at 400kV level immediately, which will progressively increase to about 350 – 400MVA in a span of 7 to 8 years.

No-750/PSPA-II/14/11/2019

बेंगलूरु कार्यालय : प्लाट नं. A-1, के.एस.एस.आई.डी.सी.-प्रशासनिक कार्यालय भवन के सामने, इंडस्ट्रीयल एस्टेट, राजाजीनगर, बेंगलूरु - 560 010
Bengaluru Office : Plot A-1, Opp. KSSIDC A.O. Building, Industrial Estate, Rajajinagar, Bengaluru - 560 010,
दूरभाष : Tel :(का) (O) 080-22642200, फैक्स Fax : 080 - 23505501
दिल्ली कार्यालय : कोर-8, 7वीं मंजिल, स्कोप कांप्लेक्स, लोधी रोड, नई दिल्ली-110003 दूरभाष : 011-24306400, फैक्स : 011-24361744
Delhi Office : Core-8, 7th Floor SCOPE Complex, Lodhi Road, New Delhi-110003. Tel.: 011-24306400, Fax : 011-24361744
मुंबई कार्यालय : मेकर टॉवर, 'ई' विंग, 15वां तल, कफ परेड, मुंबई - 400 005. दूरभाष : 022-22173000, फैक्स : 22173233
Mumbai Office : Maker Tower, 'E' Wing, 15th Floor, Cuffe Parade, Mumbai - 400 005. Tel. : 022-22173000, Fax : 22173233

Based on our application for reliable power at 400KV, KPTCL has proposed to draw double LILO from Udupi-Shanthigrama 400kV line to a new 2x500MVA substation proposed in Arasapadavu and from this substation, two bays of 400kV line will be provided to MRPL. This scheme proposed by KPTCL was approved in the 1st meeting of SRSCT held on 07.09.2018.

As we require 100MVA of reliable power @ 400KV level to meet our present load requirements and about 350 – 400MVA in a span of 7 to 8 years, request your good office to expedite the project with the concerned authorities.

Thanking You,

With Warm Regards,

प्रशान्त शंकर पादुवाल Prasanth Sankar Poduval
मुख्य महा प्रबंधक (परियोजना) Chief Gen. Manager (Projects)
मंगलूरु रिफाइनरी एण्ड पेट्रोकेमिकल्स.
Mangalore Refinery & Petrochemicals Ltd.
Mangaluru - 575 030

Prasanth S. Poduval
Chief General Manager (Projects)

CC: COO, CTU Planning, PGCIL, Gurgaon
Director (Transmission), KPTCL, Bangalore
EE (Power System), KPTCL, Bangalore

पावर ग्रिड कारपोरेशन ऑफ इंडिया लिमिटेड
(भारत सरकार का उद्यम)
POWER GRID CORPORATION OF INDIA LIMITED
(A Government of India Enterprise)
पावरग्रिड

केन्द्रीय कार्यालय : ''सौदामिनी'' प्लॉट सं. 2, सैक्टर-29, गुडगाँव-122 001, हरियाणा
फोन : 0124-2571700-719, फैक्स : 0124-2571760, 2571761 तार 'नेटग्रिड'
Corporate Office : "Saudamini" Plot No. 2, Sector-29, Gurgaon-122 001. Haryana
Tel. : 0124-2571700-719, Fax : 0124-2571760, 0124-2571761 Gram : 'NATGRID'

Ref. No C/CTU-Plg/S/08/1408

Date: 14.08.2019

Shri Vikram Kapur
Chairman
Tamil Nadu Transmission Corporation Ltd.
6th Floor, Eastern Wing,
800 Anna Salai,
Chennai - 600002.

Sub: Implementation of bays at Edayarpalayam 400/230/110 kV substation of TANTRANSCO - reg.

Dear Sir,

This is with reference to the termination of 400kV D/c lines from Pugalur (new) and Udumalpet at proposed Edayarpalayam 400/230/110 kV substation of TANTRANSCO. In the 36th SRPC meeting held on 12.07.2019, the progress of implementation of Edayarpalayam substation has appeared quite slow. Further, on the CEA website, the present status of the station has been mentioned as "Tenders floated with due date of opening on 19.07.2019".

In this regard, it is pertinent to mention that the transmission lines Edayarpalayam – Pugalur (new) 400 kV D/c (quad) lines & Edayarpalayam – Udumulpeta 400 kV D/c (quad) lines are being implemented as a part of AC system strengthening under ±800 kV 6000 MW Raigarh-Pugalur HVDC link between NEW & SR Grid scheduled for commissioning by Feb/Mar'20. These AC transmission lines are essential for further dispersal of power being imported through HVDC link.

Keeping in view the importance of Edayarpalayam substation, it is requested to kindly arrange to expedite the implementation of the same in the matching timeframe of HVDC system i.e. Feb/Mar'20.

Thanking you,

Yours faithfully,

14.8.19

(R.K.Chauhan)
Director (Projects)

Copy:

Member (PS)
Central Electricity Authority
Sewa Bhawan, R.K.Puram
New Delhi-110 066

- With a request to take-up the matter in forthco
Standing Committee meeting

Annex-39.0

TAMILNADU TRANSMISSION CORPORATION LTD.
(Subsidiary of TNEB Ltd.)

From

T.Senthilvelan, B.E.,
Director/Transmission Projects,
TANTRANSCO,
144, Anna Salai,
Chennai -2.

To

The Member (Power System),
Central Electricity Authority,
Sewa Bhavan, R.K.Puram,
New Delhi 110 066.

Lr.No.CE/Plg.&R.C/SE/SS/EE-II/AEE2/F. 3rd SCSRT/D.311 dt. 16 .11.19

Sub: : 3rd Southern Region Standing Committee on Transmission –Agenda points - reg.

****

Sir,

The proposals in respect of TANTRANSCO, TamilNadu have been furnished below for including in the forthcoming Southern Region Standing Committee on Transmission(SRSCT) as the Agenda items for deliberations :

Establishment of Vishwanathapuram 400/230-110kV SS:

Vishwanathapuram 400/230-110 kV substation proposal was approved by CEA in the 2nd Southern Region Standing Committee on Transmission with the following connectivity :

ICTs:

2 x 500 MVA , 400/230 kV ICTs

3 x 200 MVA , 400/110 kV ICTs.

Provision of 1 x 125 MVAr Bus Reactor.

Provision of 2 X 50 MVAr Line reactor one on each line of 400kV Vishwanathapuram –Thiruvalam line at Vishwanathapuram SS end.

400 KV connectivity:

LILO of 400 kV Thiruvalam – Palavady Quad moose D/C line at the proposed 400/ 230-110 kV Vishwanathapuram SS.

230 KV connectivity:

i. 230kV S/C line to the existing Hosur 230 kV SS.

ii. 230kV D/C line to the proposed 230kV SS near Bagalur.

iii. 230kV S/C line to the proposed Kalukondapally 230 kV SS.

110 KV connectivity:

i. 110kV D/C line to Shoolagiri 110kV SS.

ii. 110kV S/C line to Uddanapally 230kV SS

iii. 110kV S/C line to proposed Alur 110kV SS.

iv. 110kV D/C line to proposed Hosur SEZ 110kV SS.

v. 110kV S/C line to proposed Vishwanathapuram 110kV SS.

It is ascertained from the field that there may be some practical issues in certain locations for erecting the associated 230 kV & 110 kV lines of the above proposed 400/230-110 kV substation in the land already identified for establishing the same. Hence alternate land was chosen at Ulagam village near Hosur so that the proposed 400/230-110 kV substation can be connected with the 230 kV & 110 kV network as proposed. The land acquisition at Ulagam village is under progress and the process is in the advanced stage .

In this regard, load flow study has been conducted again considering the already approved 400 kV connectivity (LILO distance of Palavady_-Thiruvalam 400 kV DC line getting reduced) and some modifications in the downstream network based on the field feasibility as detailed below:

Establishment of 400/230-110kV SS at Ulagam:

ICTs:

2 x 500 MVA , 400/230 kV ICTs

3 x 200 MVA , 400/110 kV ICTs

Provision of 1 x 125 MVAr Bus Reactor.

Provision of 2 X 50 MVAr Line reactor one on each line of 400kV Ulagam –Thiruvalam line at Ulagam SS end.

400 kV connectivity:

LILO of 400 kV Thiruvalam – Palavady Quad moose D/C line at the proposed Ulagam 400/ 230-110 kV SS.

230 kV connectivity:

i. 230kV S/C line to the existing Gurubarapally 230 kV SS in Hosur taluk.

ii. 230 kV D/C line to the proposed 230kV SS at Nandhimangalam village near Bagalur.

iii. 230kV D/C line to the proposed Kalukondapally 230 kV SS.

110 KV connectivity:

i. 110kV D/C line to the existing Nariganapuram 110kV SS.

ii. 110kV D/C line to the existing Bagalur 110kV SS.

iii. 110kV D/C line to the proposed Hosur SEZ 110kV SS.

It is requested that establishment of 400/230-110kV SS at Ulagam instead of at Vishwanathapuram may be included in the agenda for the ensuing meeting of SRSCT.

Sd/-
(N.Balaji)
Chief Engineer/Planning & R.C
For Director/Transmission Projects

TAMIL NADU GENERATION AND DISTRIBUTION CORPORATION LTD

From
V.Umamageswari, B.Com., ACMA,
Chief Financial Controller /Regulatory Cell,
7th Floor, Eastern wing,
144, Anna salai,
Chennai-02

To
The Chief Engineer,
Power System Planning and Appraisal Division-II,
Central Electricity Authority,
SEWA Bhawan, R.K.Puram, Sector -1- New Delhi -110066

Lr. No. CFC/RC/SE/CERC/EE/ AEE1 /F. SRSCT /D.244 /19 dt:31.07.2019

Sir,

Sub: Southern Region Standing Committee on Transmission – 2nd meeting held 10th June, 2019 at Bengaluru – Minutes of the meeting – Objections to the minutes- Issue of corrigendum – requested- regarding.

Ref : Minutes of the 2nd meeting of SRSCT

*****

1) Kindly refer minutes of the 2nd meeting of SRSCT held on 10th June, 2019 at Bengaluru, wherein it has been minuted that the following proposals have been approved by the Standing Committee under point No.6.14:

- ✓ *Transmission scheme for Solar Energy Zone in Andhra Pradesh (3500 MW)*
  - ➢ *Ananthpuram (Ananthapur) SEZ (2500 MW) and Kurnool SEZ (1000 MW)*
- ✓ *Transmission Scheme for Solar Energy Zone in Karnataka (5000 MW)*
- ✓ *Common Transmission System Strengthening in Southern Region for export of power from Solar & Wind Energy Zone in Southern Region*

2) In this context, it is brought to the knowledge of the CEA that the following comments and observations of TANGEDCO deliberated during the meeting have not been recorded as such:

No-597/PSPA-II/13/8/2019

"The above schemes should not be recorded as approved until a comprehensive All India Study as suggested by the POSOCO representative is carried out with the participation of all constituents"

3) The above disagreement was raised during the 35th TCC and 36th SRPC meetings held on 11.07.2019 and 12.07.2019 at Chennai.

In view of the above, it is requested to issue a corrigendum to the minutes including the above comments and views of TANGEDCO.

Yours faithfully,

Chief Financial Controller / Regulatory Cell

Copy submitted to Director (Finance) /TANGEDCO /Chennai
Copy submitted to Director (Distribution) /TANGEDCO/Chennai
Copy submitted to Director (Transmission Projects) /TANTRANSCO/Chennai
Copy to Chief Engineer / Planning & RC/Chennai

TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED
Andhra Pradesh Power Coordination Committee (APPCC)
Vidyut Soudha :: Vijayawada

From
Chief Engineer,
Commercial
APPCC
Vidyut Soudha, Vijayawada
Andhra Pradesh

To
The Member Secretary,
Southern Regional
Power Committee (SRPC)
No. 29, Race Course Road
Bangalore-560009

Lr.No: APPCC/CE/Comml./DE-CGS/F.2nd SRCTS /D.No: 110 /19,Dt: 08.08.2019

Sir,

Sub:- APPCC- 2nd SRCTS-proposals of CTU-Phase-II Solar & Wind Zone Transmission Schemes- comments of APDISCOMs -submitted - Reg.

Ref:-Ltr No. SRPC/SE-II/2019/4470-509, Dated 17/7/2019

****

Adverting to the letter under reference cited, the comments of APPCC on behalf of APDISCOMs on the proposal of PGCIL for Phase-II Solar & Wind zone transmission schemes to be taken up in Southern Region are as following:

- M/s PGCIL (the CTU) is requested to furnish the details of pending LTA applications from SR, particularly with regard to evacuation of RE generation. Further it is requested to explain whether, the proposals are just based on studies conducted taking into account the available potential of RE generation in the region or any pending LTA applications from RE generators.
- The STUs in Southern Region also undertaking RE evacuation schemes in a big way as part of InSTS and the CTU is requested to ensure that the requirements are assessed in cohesion and to see that the system is not over built which ultimately burdens the beneficiaries i.e DISCOMs.
- M/s PGCIL (the CTU) is requested to ensure that the proposed scheme should be implemented as ISTS, only after granting of LTA to the Applicants in compliance to the provisions of relevant regulations as per para 6.2 of the minutes of 2nd SRCTC.
- In an earlier communication, the Chairman SRPC has categorically requested NLDC/POSOCO to spell out the methodology of affecting waival of Transmission Charges & Losses to the RE generators in the POC mechanism, as per the

No-1409/PSPA-II/13/8/2019

(PTO)

direction of MoP. It is further reiterated that, the Yearly transmission charges (YTCs) of ISTS elements attributable to the RE generation shall need to be segregated and recovered from Govt. of India as special grant and not to be included in the POC pool, since this waival is being implemented at the behest of the Central Govt. So far there is no response on this issue.

- It is gathered from the Load flow reports that the present High Capacity Transmission corridors built as part of ISTS are loaded to the extent of 33.33% (1/3rd of their rated capacity) due to several reasons including back out of certain IPPs/MPPs sought LTA and abandoning the projects thereafter. The ISTS system appears to be overbuilt in the present conditions in the Southern region. CEA & CTU are requested to initiate measures to optimise the loading on those 765 kV Lines & Substations, before proposing any other new lines & Substations for RE evacuation under phase-II.
- It is observed that without considering the above points, seeking consensus for additional investment again, at this juncture, as part of evacuation of Wind Zone -II will tantamount to overburdening the DISCOMs and cannot be accepted.

Yours faithfully,

14/8/19

Chief Engineer
Commercial/APPCC

Copy to:

The Director/PSPA-II/Central Electricity Authority (CEA), Sewa Bhavan, R.K. Puram, Sector-I-New Delhi -110066

Executive Director/Powergrid/SR TS-1, Regional Headquarters, Kavadiguda Main Road, Hyderabad-500080

Executive Director /AP SLDC/APTRANSCO/Vidyuth Soudha-Vijayawada.

Chief Engineer, IPC&PS/APTRANSCO/ Vidyuth Soudha-Vijayawada

Sh. Ishan, Dr'v
urgent. Pl. do as
14/8/19