Central Electricity Authority
System Planning & Project Appraisal Division
Sewa Bhawan, R.K. Puram, New Delhi – 110066

No. 51/4/SP&PA-2012/ 541-552 **Date: 21st May 2012**

To

1.The Member Secretary, Southern Regional Power Committee, 29, Race Course Cross Road, **Bangalore 560 009**. **FAX : 080-22259343**	2. The Director (Projects), Power Grid Corp. of India Ltd. "Saudamini", Plot No.2, Sector-29, **Gurgaon 122 001, Haryana**. **FAX : 95124-2571932**
3.The Director (Grid Operation), Transmission Corp. of Andhra Pradesh Ltd., Vidyut Soudha, **Hyderabad – 500 082.** **FAX : 040-66665137**	4.The Director (Transmission), Karnataka State Power Transmission Corp.Ltd., Cauvery Bhawan, **Bangalore 560 009**. **FAX : 080 -22228367**
5.The Member (Transmission), Kerala State Electricity Board, Vidyuthi Bhawanam, Pattom, P.B. No. 1028, **Thiruvananthapuram - 695 004.** **FAX : 0471-2444738**	6. Member (Distribution), Tamil Nadu electricity Board (TNEB), 6th Floor, Eastern Wing, 800 Anna Salai, **Chennai - 600002.** **FAX : 044-28516362**
7.The Director (Power), Corporate Office, Block – I, Neyveli Lignite Corp. Ltd., **Neyveli , Tamil Nadu – 607 801.** **FAX : 04142-252650**	8.The Superintending Engineer –I, First Floor, Electricity Department, Gingy Salai, **Puducherry – 605 001**. **FAX : 0413-2334277/2331556**
9. Director (Projects), National Thermal Power Corp. Ltd. (NTPC), NTPC Bhawan, Core-7, Scope Complex, Lodhi Road, **New Delhi-110003.** **FAX-011-24360912**	10. Director (Operations), NPCIL, 12th Floor,Vikram Sarabhai Bhawan, Anushakti Nagar, **Mumbai – 400 094.** **FAX : 022- 25991258**

Sub: 34th meeting of the Standing Committee on Power System Planning of Southern Region
- **Minutes of the meeting**

Sir,

The **34th meeting** of the Standing Committee on Power System Planning of Southern Region was held **on 16 April, 2012** in **Hyderabad.**

Minutes of the meeting is enclosed. It is also available at CEA's website (www.cea.nic.in).

Yours faithfully,

(Pardeep Jindal)
Director (SP&PA)
(Telephone: 011 26198092, Fax No. 011 26102045)

Copy to:

Shri S. K. Soonee, CEO, POSOCO,
B-9, Qutub Institutional Area,
Katwaria Sarai,
New Delhi-110016

GM, SRLDC,
29, Race Course Cross Road,
Bangalore 560 009
FAX – 080-22268725

MINUTES OF MEETING

Minutes of 34th Meeting of
Standing Committee on Power System Planning in Southern Region (SCPSPSR)
held on 16 April, 2012(Monday) in Hyderabad

List of participants is given at Annex-I.

1.0 Member (Power Systems), CEA welcomed the participants and thanked POWERGRID for excellent arrangements for the meeting. Initiating the agenda topics, he said that today's meeting included some critical issues such as wind power evacuation system in Tamil Nadu, HVDC system strengthening in Southern region, reliable and secure operation of All India Grid, proposals to avoid S1-S2 congestion and LTA/connectivity application related issues. He asked Director (SP & PA), CEA to proceed with the Agenda for the meeting.

2.0 Confirmation of the minutes of 33rd meeting of the Standing Committee

2.1 Director(SP&PA), CEA stated that the minutes of 33rd meeting of the Standing Committee on Power System Planning of Southern Region were issued vide CEA's letter No. 51/4/SP&PA-2011/1647-58 dated 15th November, 2011. In this regard, an observation was received from SRPC, regarding high voltages in Vemagiri area of Andhra Pradesh and suggested for provision of 1x80 MVAR bus reactor at Vemagiri S/S which was agreed by APTRANSCO. Also, POWERGRID had requested to include minutes of 13th meeting of Southern Region constituents regarding LTA and Connectivity applications in Southern Region in the Minutes of 33rd meeting of the Standing Committee on Power System Planning of Southern Region.

2.2 Based on observations/comments received from SRLDC and POWERGRID, a corrigendum to the minutes of the 33rd meeting was issued vide CEA letter no. 51/4/SP&PA-2012/146-158 dated 06-02-2012. The minutes of the 33rd meeting along with the corrigendum, as circulated, were confirmed. Copy of the minutes is available at CEA and POWERGRID website.

3.0 Transmission System for Evacuation of Wind Power from Tamil Nadu

3.1 Director (SP&PA), CEA stated that Tamil Nadu presently has about 6200 MW installed capacity of wind power generation. The state has proposed to establish additional wind generation of about 6000 MW during 12th plan period. For planning of transmission system for these additional wind generations in Tamil Nadu, joint studies were carried out by CEA, TNEB and POWERGRID in CEA for considering load-generation balance for 2016-17 time-frame. Various network configurations were studied to arrive at optimum transmission addition alternatives. Two transmission

alternatives were found to be optimal which meet reliability criteria of N-1 and also integrate the wind evacuation system of Tamil Nadu with Southern /national Grid. System studies were carried out with both the transmission alternatives. Both the alternatives have equal merits. But if there is space constraint in Rasipalayam area, option-II may be preferred, however, it would be upto TNEB to choose the option.

3.2 Director(TANTRANSCO/TNEB) said that they would prefer Option-I as given in the Agenda. He also said that the Thennampatti 400kV may be connected with Tuticorin Pooling Point of POWERGRID for evacuating some power over this 765kV ISTS line. Member(PS) said that this connection can be considered only after TNEB has built and commissioned the complete transmission system that has been planned since 2007 for evacuation of wind generation of Tamil Nadu. He also said that States should not enter into PPA with wind generators more than their RPO requirement. He also emphasized need for incorporating scheduling and better forecasting methods for renewable energy sources of power.

3.3 Director (SP&PA), CEA further stated that as per studies, it was observed that operation of Chandrapur-HVDC back-to-back would need to be linked with wind generation in Southern Region. The quantum and direction of power through this link would depend upon capacity of wind generation and of conventional generation. The Gazuwaka HVDC back-to-back link can also be used in similar manner and should complete the transmission system planned for wind generation on an urgent basis.

3.4 CEO, POSOCO opined that the entire proposal for transmission augmentation should be seen as “Integration of Wind/Renewable Power” rather then “Transmission system for evacuation of wind/renewable power”. He expressed that looking at double digit load growth & double digit shortages, the planned transmission system shall not get stranded. He further explained that for integration of renewable energy important factors that need to be considered are - (i) system should rule out spilling of water during high wind & high hydro conditions (ii) option of Gas based power plants running for short periods due to intermittency of wind energy (iii) all conservable hydro are fully harnessed. Accordingly, the integration should be planned on a larger footprint. He further opined that the transmission system augmentation may be justified even if more then 90% loading for 10% of time is observed, however, in this case economics of dispatching costly generation verses high investment in transmission should be analyzed.

3.5 Director (SP&PA), CEA said that various load – generation scenarios were studied like high wind, moderate wind and no wind generation under both peak and off-peak load scenarios. Studies were also carried out for pessimistic scenarios assuming certain generations are delayed/not available. Details of the studies and their analysis are given in the Agenda. In particular it is observed that under high wind-off peak scenario, flow on Raichur-Sholapur 765kV 2xS/C lines goes up to about 4600 MW with SR exporting. This flow under contingency of outage of one circuit is more than 3800

MW. Under this scenario, option is to either augment SR-WR connectivity or reduce wind or other generation.

3.6 Director(GO), APTRANSCO said that it may not be possible all the time to reduce/shut down coal based or even gas fuelled generation at the time of high wind generation, because of PPA requirements and cost of switching off-on of conventional generation.

3.7 After discussion following system was agreed for evacuation of wind power projects coming in Tamil Nadu upto 2016-17, to be implemented by TNEB/TANTRANSCO:

(a) Transmission system for evacuation of power

i) Thappagundu 400/110 KV (5x200MVA) S/s in Theni area

ii) Anaikadavu 400/230-110 KV (2x315+ 2x200 MVA) S/s in Udumalpet area

iii) Rasipalayam 400/230-110 S/s (2x315+2x200 MVA) in Udumalpet area

iv) Anaikadavu- Rasipalayam 400kV D/c line.

v) Thappagundu- Anaikadavu 400kV D/c with one ckt LILO at Udumalpet 400/220 kV (PGCIL) substation.

vi) Rasipalayam -Singarapet 400kV 2xD/c line

vii) Vagrai 400/230-110 kV substation.

viii) Vagrai-Rasipalayam 400 kV D/c line

ix) Thennampatti 400/230-110 kV substation

x) Thennampatti - Kayathar 400kV D/C line

(b) System for additional inter-connection with ISTS and increased reliability

i) LILO of one Rasipalayam -Singarapet 400kV D/c line at Salem 765/400kV (POWERGRID) substation

4.0 Connectivity for Nirmal 400kV S/S of APTRANSCO

4.1 Director (SP&PA), CEA said that the issue of connectivity for Nirmal 400kV S/S (a 2x315 MVA 400/220kV new Substation at Nirmal by APTRANSCO) was discussed in the 32nd and 33rd meetings of the standing committee and it was agreed to study possibility of LILO one of the circuits of Ramagundam – Hyderabad 400kV lines at Nirmal.

4.2 DGM(SEF), POWERGRID presented two options (i.e. - Option-A, & Option-B) for LILO of the Ramagundam – Hyderabad line. Option-A is LILO of one circuit of Ramagundam-Gajwel-Hyderabad line at Nirmal. In this option, LILO point is 13.5 km from Ramagundam and LILO length comes to 140 km and thus Nirmal-Gajwel distance becomes 236 km. Option-B has LILO of one circuit of Ramagundam-Ghanapur(Hyderabad) line at Nirmal. In this option, LILO point is 24 km from Ramagundam and LILO length becomes 152 km and thus Nirmal- Hyderabad distance

becomes 301 km. The option-B is not preferred as it leads to increase in line length up to Hyderabad and involves number of road, rail and line crossings. POWERGRID suggested that instead of LILO of any of the Ramagundam-Hyderabad circuits, a direct 400kV D/C line can be planned from Gajwel(APTRANSCO) to Nirmal S/S which would have a line length of about 145 km as opposed to LILO length of 140 - 152km. POWERGRID also presented load flow results for this option.

4.3 Director, APTRANSCO said that they would examine the Gajwel-Nirmal 400kV D/C option and inform CEA/POWERGRID shortly.

5.0 Construction of 220kV Mylatti- Puttur line as a System Strengthening Scheme

5.1 Director (SP&PA), CEA informed that KSEB had proposed the construction of 220kV inter state line from Mylatti S/s of KSEB to Puttur S/s of KPTCL as a regional system strengthening scheme. The issue was discussed during 33rd meeting of the standing committee wherein, it was felt that this link would also provide an additional corridor from S1 to S2 thereby reducing the congestion to some extent. In this regard, a meeting was held on 27-03-2012 in CEA with PGCIL, KPTCL and KSEB.

5.2 EE, KPTCL said that Puttur S/s is fed from Kemar S/s which also feeds to Kudermukh and Kavoor S/s. Further, Puttur S/s is also proposed to feed SEZ coming in that area. Kemar S/s is getting power from Uddupi Generating station through Uddupi-Kemar 220kV D/c line. The simultaneous peak load that Kemar S/s feeds is of the order of 350 - 400 MW. Inter-connection of Puttur and Mylatti would further increase the loading on Uddupi - Kemar 220kV D/c line. Further, no power can be transmitted to Kerala at the time of peak load, if provision for n-1 reliability is to be considered. Therefore, if this line is implemented, Karnataka may have to restrict the flow on this line depending on need to meet its own load. In case of congestion in Kemar area, Karnataka would not be bound to transmit power to Kerala on this line.

5.3 After discussions it was brought out that at present this line may seem beneficial mainly for Kerala for feeding the loads in Mylatti area but after commissioning of Mysore –Kozhikode 400kV D/c line, the Mylatti – Puttur 220kV line may feed the load in Puttur and SEZ area and may also help in reducing the congestion in that area.

5.4 In any case, the line would also be beneficial in reducing congestion in S1-S2 areas to the extent of its loadability. Accordingly, it was agreed that this line may be built as ISTS line. The Committee also proposed that, due to urgency of this line to help reduce congestion, this line may be built under ‘compressed time schedule’ through CTU.

5.5 EE, KPTCL said that interconnecting Karnataka grid with neighbouring State’s grids at 220kV or 110kV for exporting power, through their network increases drawal POC rate for their State, therefore, if this link is made, it should be ensured that Karnataka’s interest is protected.

6.0 Associated transmission system for Kaiga APP St-III(U-5& 6)

6.1 Director (SP&PA), CEA said that on the issue of power evacuation system from KAPP St -III (2x700 MW) a meeting was held on March 05, 2012 at POWERGRID, Gurgaon, wherein, it was observed that due to involvement of the forest area it may would be difficult to get a new transmission corridor for building additional transmission lines. It was noted that technically it may be feasible to re-conductor the existing lines i.e. Kaiga –Davangere and Kaiga - Narendra 400kV twin moose D/C line with HTLS conductor.

6.2 ED, POWERGRID informed that they would be able to carry out re-conductoring of the existing lines within same RoW. Re-conductoring would take about 18-24 months per D/C line and shall required to be carried out serially one after the other to avoid complete shutdown of the existing Kaiga APP. Further, even with such arrangement the existing KAPP generations i.e. 4x220 MW shall have to work with reduced reliability of evacuation system. In case when only one D/C line is available (as other is under re-conductoring) and if there is a tower fault, it would lead to sudden shut down of the existing units, and NPCIL should be ready for this. ACE(T), NPCIL said that they would shortly respond on this issue.

6.3 Director(SP&PA), CEA said that with 700 MW units, total I/C at Kaiga would reach 2280 MW and NPCIL may have to upgrade their switchyard bus to 3150A or 4000 A. ACE(T), NPCIL informed that present Kaiga switchyard is a breaker and half scheme and is rated at 2000 A. He said that they would carry out necessary studies to upgrade the Kaiga switchyard and present the same to CEA/POWERGRID.

6.4 Director(SP&PA), CEA said that the existing Kaiga- Davangere 400kV D/C line has two sections – the Kaiga-Sirsi section is owned by POWERGRID and the Sirsi-Davangere is owned by KPTCL. If a re-conductoring is to be done on this line, then KPTCIL would also be required to do it for their section as was already decided in the 9th SRPC meeting. SE, KPTCL agreed for the same.

6.5 ED (SEF) stated that shutdown of Kaiga – Davangere and Kaiga – Narendra 400 kV lines shall be required for re-conductoring and during such period POWERGRID should not be adversely affected on account of non-availability. He therefore requested that this to be considered as deemed available during the shutdown period.

6.6 Member Secretary(I/c), SRPC said that as per Regulations, shut down availed for construction of elements of another transmission scheme shall be deemed to be available. Hence in this case, it appears logical that outage of the lines from Kaiga shall be deemed as available during the re-conductoring works.

6.7 Concluding the discussion it was agreed that:

(i) NPCIL would confirm their acceptance for operating Kaiga units at reduced reliability of evacuation system for the period of re-conductoring.

(ii) NPCIL would carry out studies for upgrading their switchyard for 2280 MW installed capacity and inform CEA/POWERGRID.

(iii) POWERGRID and KPTCL agreed to do re-conductoring for their sections of the lines.

(iv) CEA and POWERGRID to carry out transmission planning studies including load flow, short circuit, voltage stability and transient stability studies for expansion units at Kaiga. The Kaiga-Davangere D/C line may have to be terminated at some new Davangere location and additional system may be needed beyond new Davangere.

7.0 Transmission System for evacuation of power from Yermarus TPS(2x800 MW)/Edlapur TPS(1x800 MW) of KPCL in Karnataka

7.1 Director (SP&PA), CEA said that during the 33rd meeting of SCPSPSR, it was decided to review the transmission system for evacuation of power from Yeramaras and Edlapur TPS taking Kudgi Project in consideration. In this regard, a meeting was held on 27-03-2012 in CEA with POWERGRID and KPTCL in which following system was agreed for evacuation of power from Yeramaras and Edlapur TPS, to be implemented by KPTCL:

7.2 (a) Transmission system for evacuation of power:

(i) Edlapur TPS - Yermarus TPS S/S 400 kV DC Twin moose line
(ii) The existing Raichur TPS – Davangere 400kV SC line to be converted to 400kV DC line with QUAD conductors along with shifting of Raichur termination point to Yeramaras TPS switchyard.
(iii) BTPS – Hiriyur (under construction) 400 kV DC twin line
(iv) BTPS – Madhugiri(Tumkur) – 400 kV Quad DC line

(b) System for additional inter-connection with ISTS and increased reliability:

(i) Yermarus TPS – Raichur (New) 400kV Quad DC line

7.3 After deliberations, the above transmission system was agreed. It was also agreed that the Yeramaras TPS - Raichur (new) link, which gives additional inter-connection with ISTS and increased reliability, would be provided only after commissioning of the evacuation system for Yeramaras and Edlapur TPS given at 7.2(a) above.

8.0 400kV D/c Quad line from Pugalur 400kV S/S to Sholinganallur 400kV S/S

8.1 Director, TNEB said that as the existing Kalivanthapattu 400kV S/S is almost in line route of the Singarapet - Sholinganallur 400kV D/C line, so they proposed to make LILO of one circuit of Singarapet – Sholinganallur 400kV D/C line at Kalivanthapattu (Melakottaiyur) 400kV S/s. This would be in place of the Sholinganallur – Kalivanthapattu 400kV D/C line. The LILO arrangement would also save two number of 400kV bays at Sholinganallur.

8.2 ED(SEF), POWERGRID said that they have undertaken construction of Thiruvalam – Sholinganallur line that has been entrusted for implementation in compressed time schedule. The line is to be terminated at Sholinganallur S/s and therefore, this substation should be ready by July 2014. Director, TNEB informed that the land for Sholinganallur has been acquired and it would be commissioned by July 2014.

8.3 Regarding the Singarapet S/S, he informed that TNEB was considering locating this substation near Dharmapuri (near to the Salem 765/400kV S/S) instead of at Singarapet. The land acquisition for this S/S is in process and construction of the substations would take about 20-24 month after that.

8.4 ED(SRTS-II), POWERGRID said that the Thiruvalam – Sholinganallur 400kV D/C line may be allowed to be terminated at Melakottaiyur instead of at Sholinganallur as Melakottaiyur is en route to Sholinganallur and also that Sholinganallur was fast developing and they may face problems in getting RoW for entering there. Director(SP&PA), CEA said that this re-configuration can be considered only if there is space for four additional 400kV bays at the Melakottaiyur(Kalivanthapattu) S/S which means that there would be total eight 400kV feeder bays at Melakottaiyur (i.e. 2 for Thiruvalam D/C line(of PGCIL), 2 for Pugalur/Singarapet D/C line(of TNEB) and 2 for Sholinganallur D/C line(of TNEB, and 2 for connectivity with Vallur JV (of PGCIL)). This would be needed so that Sholinganallur gets sufficient in-feed and therefore TNEB would have to do LILO of both the circuits of Singarapet-Sholinganallur D/C line. ED(SRTS-II) POWERGRID confirmed that six additional bays shall be provided at Melakottaiyur

8.5 After deliberations, following was agreed:

(i) Thiruvalam – Sholinganallur 400kV D/C line would be re-configured as Thiruvalam – Melakottaiyur 400kV D/C line by POWERGRID

(ii) LILO of both circuits of Pugalur-Singarapet – Sholinganallur 400kV D/C line at Kalivanthapattu 400kV S/s by TNEB. Bays for this LILO would be in the scope of TNEB.

(iii) Considering the load growth in the area and space constraint at Sholinganallur S/S, TNEB may plan for 2x500 MVA GIS type S/s at Sholinganallur instead of 2x315 MVA AIS type S/S. This would also enable them to plan additional lines from Sholinganallur to Guindy/ Taramani.

8.6 ED (SEF) apprehended that change in termination location of Thiruvalam – Sholinganallur 400kV D/c line from Sholinganallur to Kalivanthapattu may require re-notification from MoP. Member(PS), CEA observed that since the above change has been authorized by the Standing Committee, POWERGRID would only need to obtain revised approval u/S 68 of Electricity Act 2003 for the change in terminal station.

9.0 KSEB proposals to avoid congestion in S1-S2 corridor

9.1 Director (SP&PA), CEA stated that KSEB had proposed a 400kV D/C link from NPCL(Uddupi) to Kozhikode 400kV S/s and setting up a new 40kV S/S at Kasargode by LILO of one ckt of above link to avoid congestion in S1-S2 corridor. KSEB had also proposed to convert existing 110kV Konaje- Manjeswaram single circuit feeder to double circuit as a part of southern region system strengthening scheme.

9.2 Member, KSEB stated that at present KSEB was drawing 12-15 MW from the 110kV Konje –Manjeswaram –Vidyanagar single circuit feeder. If this feeder is converted to double circuit line then more power can be drawn to Northern part of Kerala, providing direct link from S1 at 110kV level thereby, reducing S1-S2 congestion to some extent

9.3 EE, KPTCL said that they would examine the proposal and inform CEA so that matter could be taken up for further studies /discussion in subsequent meeting of the SCPSPSR.

10.0 Establishment of 400/220kV S/s near Doni to facilitate Wind Energy Evacuation:

10.1 EE, KPTCL informed that they plan to add a maximum 400 MW of wind generation capacity, gradually upto 2016-17, in Doni area. So, they proposed to LILO their Munirabad - Davangere (Guttur) 400 kV S/C line to facilitate wind energy evacuation. This was also discussed with CEA and POWERGRID in a meeting held in CEA on 27-03-2012 and the proposed system was found to be suitable for evacuation of power upto 400 MW from wind generations in Doni area.

10.2 Members agreed to KPTCL proposal for LILO of Munirabad - Davangere (Guttur) 400 kV S/C line at Doni for evacuation of up to 400 MW of wind generation.

11.0 Transmission System for evacuation of power from 2x500 MW Neyveli Lignite Corporation Ltd. TS-I (Replacement) in Neyveli, Tamil Nadu

11.1 Director (SP&PA), CEA stated that during 33rd meeting of the standing committee, Neyveli (Replacement) – Sholinganallur 400 kV D/c line was proposed as transmission augmentation for 2x500MW Neyveli Lignite Corporation Ltd. TS-I (Replacement). But TANTRANSCO was of the opinion that this line may not be required because a number of generation projects are proposed in the Chennai area. Therefore, the issue was discussed in a meeting held in CEA with POWERGRID and TNEB, in which, it was agreed that Neyveli (replacement)-Singarapet 400kV D/c line may be taken up for LTA requirement instead of Neyveli (Replacement) – Sholinganallur 400 kV D/c line. And thus, following system be taken up in he standing committee meeting:

<u>To be carried out by NLC(for connectivity system):</u>

(i) Provision of 7x166 MVA single phase 400/230 kV transformer at generation switchyard

(ii) 1x80 MVAR Bus Reactor at generation switchyard

(iii) LILO of existing Neyveli TS-II – Neyveli TS-I expansion 400 kV S/c at generation switchyard or of any other line as decided by NLC and POWERGRID based on the site realities.

To be carried out by TANTRANSCO/TNEB**:**

(i) To coordinate with NLC to reconfigure and re-conductor the existing 230kV network emanating from NLC project. TNEB may take help from CEA/CTU for system studies/design of the system.

ISTS system for LTA:

(i) Neyveli (replacement)-Singarapet 400kV DC line (This line may be built after ascertaining schedule of Singarapet/Dharmapuri S/s of TNEB)

11.2 CGM, NLC informed that NLC is implementing a Neyveli New Thermal Power Station (NNTPS) of 2x500 MW lignite based power project in Neyveli area as a replacement to the existing 600 MW power plant. Tenders for Main Plant for Boilers and Turbines and Balance of Plant are under process and that the commissioning of first unit is targeted for April, 2015. For the start-up power requirement, which is by July 2014, they would make LILO of their existing 220 kV lines in the vicinity. He requested that the transmission system for this power plant may be finalized soon.

11.3 CGM, NLC said that the work of "LILO of existing Neyveli TS-II – Neyveli TS-I Expansion 400 KV S/c at generation Switchyard" may be carried out by POWERGRID since this link line is owned by POWERGRID. Member(PS), CEA said that if the bays for terminating this LILO line are carried out by NLC in their switchyard, the LILO becomes a re-arrangement of existing tie-line of POWERGRID between Neyveli generating stations by extending the same with another 3-4 km line length. This was agreed by SCPSPSR members.

11.4 ED, POWERGRID said that the NNTPS - Singarapet 400kV DC line can be built after ascertaining schedule of Singarapet/or Dharmapuri S/s of TNEB). After discussion, it was agreed that for LTA requirement, NNTPS-Dharmapuri(POWERGRID) 400kV D/C line shall be implemented as an ISTS line.

11.5 Director, TNEB said that a 400 kV Substation may be established at Neyveli for Pooling power from NLC projects and disbursing in ISTS/State Grid and also re-route all 230/110kV lines. CGM, NLC said that if a 400/230kV S/s is planned in the Neyveli area, they may be allowed to have 2x315 MVA ICT at NNTPS instead of earlier planned 7x167 single-phase ICTs (i.e 2x500 MVA capacity). It was decided that a joint study group of CEA, POWERGRID, NLC and TNEB would examine these issues and work out a comprehensive evacuation arrangement including feasibility of a new 400kV Substation by TNEB, re-configuring the existing transmission lines in Neyveli area and ensuing system strengthening, if any, required in ISTS and TNEB grids.

11.6 Accordingly, following was agreed for Connectivity, Long Term Access, System Strengthening for NNTPS (2x500 MW):

(A) Transmission System for Connectivity with ISTS

(i) Provision of 7x167 MVA, 400/220 kV transformers (or 2x315 MVA, to be decided by a joint study group) at generation switchyard – by NLC

(ii) 1x80 MVAR Bus Reactor at generation switchyard – by NLC

(iii) LILO of existing Neyveli TS-II – Neyveli TS-I expansion 400 kV S/c at generation switchyard - by POWERGRID through extending their link line, for connectivity with ISTS. 400kV line bay for this LILO to be provided by NLC in their switchyard.

(B) Transmission System for LTA

(i) NNTPS – Dharmapuri (the new Salem 765/400kv S/S of POWERGRID)400kv D/C line – as an ISTS line. (Bays in the NNTPS generation switchyard to be provided by NLC and those in Dharampuri S/S to be provided by POWERGRID)

(C) Transmission System for connectivity with TNEB grid and system strengthening by TNEB

To be worked out by a joint study group and finalized in next meeting of the SCPSPSR.

12.0 220kV bays for 400/220kV transformer augmentation

12.1 DGM(SEF), POWERGRID informed that in the 33rd meeting of Standing Committee and 18th meeting of SRPC, transformation capacity augmentations at 12 nos of 400/220 kV substations of POWERGRID with 1x500 MVA transformers were approved. Of these, 6 substations are new where 220kV switchyard is owned by POWEGRID. In the balance 6 of substations viz. Somanahalli, Hyderabad (Ghanapur), Cuddapah, Khammam, Gooty and Vijayawada the substations belong to that period when the 220 kV switchyards used to be owned by respective STUs. Further, as per the norms, 220kV bays are to be provided along with the augmentation of the transformer. However at some substations more number of 220kV bays have already been constructed leaving no space to accommodate any additional 220kV bay. The detailed status on the same was provided in the agenda for the meeting.

12.2 Director(APTRANSCO) opined that the transformation augmentation is being provided for taking care of expected overloading of transformers with the load growth, therefore additional 220 kV bays should not be provided which may lead to more load drawl. He stated that for substations experiencing load drawl more than 1000 MVA a separate 400/220 kV substation should be suitably planned.

12.3 After discussions it was decided that POWERGRID may go ahead with the implementation of transformation augmentation as approved in previous meeting of SCPSPSR and SRPC meeting keeping the scope for 220 kV transformer bay for those substation also where the 220kV switchyard is not owned by POWERGRID. The

modalities for actual implementation may be worked out separately with the APTRANSCO and KPTCL.

12.4 It was also informed by POWERGRID that at the Narendra 400/220 kV substation where transformation capacity is to be augmented with 1x500 MVA there is no space available. Towards this it was proposed that the existing 2x315 MVA transformer may be replaced by 2x500 MVA transformers which shall effectively lead to augmentation of capacity by about 370 MVA. Further, the replaced 2x315 MVA transformers may be used as regional spare in the same manner as has been contemplated for the 1x315 MVA 400/220 kV spare transformer approved earlier in the 13th SRPC meeting. This shall enable the Southern region to utilize 3 nos of 315 MVA 400/220 kV spare transformers (including one spare already approved and being procured) to meet the demand with enhanced reliability.

12.5 After detailed deliberation members agreed for replacement of 2x315 MVA 400/220 kV transformers at Narendra with 2x500 MVA transformers and utilize the replaced 2x315 MVA transformers as regional spare.

13.0 Line reactor at Madakathara(North Trissur)

13.1 Director (SP&PA), CEA stated that Udumalpet - Madakathara (North Trissur) 400kV D/C line (130 Km) was provided with fixed 50 MVAR line reactors on each circuit at Madakathara end.

13.2 DGM(SEF), POWERGRID said that this line has been LILOed at Ellapally (Palakkad) 400/220kV substation under System Strengthening scheme. With the revised line length due to LILO, the line compensation for Ellapally – Madakathara 400kV D/c section is not desirable. However these line reactors shall still be required to control voltages at the Madakathara (North Trissur) end. So, PGCIL has proposed to convert 50 MVAR line reactors at Madakathara into switchable reactor by providing necessary switching arrangement

13.3 After discussions, members agreed for converting 50 MVAR line reactors at Madakathara into switchable reactor by providing necessary switching arrangement.

14.0 Transmission system for Kudgi Phase-I TPS of NTPC (3x800 MW)

14.1 Director (SP&PA), CEA stated that transmission system Kudgi Phase-I TPS was agreed in 33rd meeting of SCPSPSR. The issue of termination of Madhugiri-Bangalore line was discussed in CEA with POWERGRID and KPTCL on 27-03-2012, and it was suggested that Bidadi substation may be taken as the terminal point in Bangalore area. So, POWERGRID has proposed to modify the scope under ISTS for Kudgi(2400 MW) accordingly (i.e. Madhugiri – Bidadi 400kV D/c Quad line instead of Madhugiri – Bangalore 400 kV D/c quad line). Members agreed for this modification.

14.2 Member(Power System), CEA inquired about status of the Kudgi Stage-I project. DGM, NTPC informed that the first unit of 800 MW is scheduled for commissioning by June 2015 and subsequent unit after a gap of six months each. The investment

approval from the NTPC Board was given in December, 2011, MoEF clearance was received on 25th January, 2012 and the awards for Turbine, Generators and Boiler were given in February, 2012 to M/s. Toshiba and M/s. Bussan. He also informed that NTPC have arrangement for fuel supply from their internal mines at Tallaipally Coal Mines (Chhatisgarh) and Pakriarwah (Jharkhand).

14.3 GM, SRLDC said that the Kudgi – Raichur(New) 400kV D/C line that was initially planned for Kudgi 4000 MW TPS may also be included in the above scope, as it may help in system stability. Director(SP&PA), CEA said that this line was planned for the combined Stage-I and Stage-II, and it would be considered at the time when NTPC applies for Stage-II (i.e Unit 4&5 of 2x800 MW). Depending upon system conditions at that time, this line along with some other link could be studied.

14.4 After discussion, **f**ollowing **transmission system was agreed for Kudgi Phase-I TPS of NTPC (3x800 MW):**

14.4.1 **To be provided by NTPC**

(i) Stepping up of power at the generation project to 400 kV

(ii) Provision of Bus reactor of 2x125 MVAR at generation switchyard.

(iii) Provision of 2x500 MVA, 400/220kV transformers at generation switchyard and 6 nos. 220 kV bays

14.4.2 **To be implemented as ISTS (as evacuation system for Kudgi TPS Ph-I)**

(i) Kudgi TPS – Narendra (New) 400 kV 2xD/C quad lines

(ii) Narendra (New) – Madhugiri 765 kV D/C line (initially charged at 400 kV)

(iii) Madhugiri – Bidadi 400kV D/c Quad line

14.5 DGM, NTPC requested that the Kudgi TPS – Narendra New 400 kV 2xD/C Quad lines and the Narendra New – Narendra and Narendra New – Kolhapur system should be ready before June 2015. POWERGRID said that the Narendra New – Narendra and Narendra New – Kolhapur lines are going for investment approval from their Board and are being scheduled for March 2015. Regarding the Kudgi TPS - Narendra New 400kV 2xD/C quad lines, these would be built through tariff based competitive bidding. NTPC requested to explore the possibility of getting the Kudgi TPS - Narendra New lines be built by POWERGRID under compressed time schedule so as to match it schedule of their generation.

15.0 HVDC system strengthening in Southern Region

15.1 Director(SP&PA), CEA said that a total of about 33500 MW of generation capacity from conventional resources and about 10000 MW of non-conventional (mainly wind) capacity (TN-6000, KTK-500 & AP-3500)is in the horizon to be added in Southern Region during 12th Plan period. Presently SR is having a peak deficit of more than 5000 MW. Load in SR is expected to increase atleast by another 20000 MW in 12th Plan. Considering the uncertainties of generation addition, fuel availability and power from wind projects, a need is felt to plan a system that would enable – (i) import of power

into SR under deficit scenario, (ii) export in case of surplus, (iii) operate the grid under intermittency of wind generation to meet power requirements of SR constituents and also to decongest the grid.

15.2 Director (SP&PA), CEA further added that provision of an HVDC bipole line within SR grid is therefore proposed as system strengthening scheme which would cater to above needs. This system is planned to be linked with already planned Wardha – Hyderabad 765kV D/C line. The Srikakulam PP – Vemagiri-II 765kV D/C line that was earlier agreed in last meeting is also very helpful in case of import of power by SR. System study results for high-wind/no-wind and with optimistic/pessimistic generation addition scenarios have been carried out which are given in the Agenda.

15.3 Member (PS), CEA stated that out of envisaged projects, some of the projects may get delayed/dropped/ or may generate less due to issues related to coal, gas availability, environment etc. This uncertainty would have an impact of about 5000 - 8000 MW in availability of power for SR by 12th Plan. Further, it is not certain that how much of non-conventional (wind) generation may be actually added. If all the 10000 MW is added, it would give additional 6000 MW peak during some months. This generation is generally available during March-October months and even in these months, it has intermittent nature. Hence the above proposed system strengthening is required to cater to the power under these surplus-deficit scenarios. Detail analysis is given in the Agenda.

15.4 GM, SRLDC suggested that if Hyderabad HVDC S/S is linked with Kurnool 765kV S/S it would help dispersal of power both under import and export scenario. After deliberations, the members agreed for following system as strengthening scheme in Southern Region:

(i) A New Pugalur HVDC terminal (2500 MW) with 400kV switchyard
(ii) A New Hyderabad HVDC terminal (2500 MW) with 400kV switchyard

Connectivity for New Pugalur HVDC S/S

(iii) New Pugalur – New Hyderabad HVDC bipole of ± 500kV, 2500 MW
(iv) New Pugalur – Udumalpet 400kV quad D/C line
(v) New Pugalur – Pugalur 400kV quad D/C line
(vi) New Pugalur – Tuticorin PP 400kV quad D/C line

Connectivity for New Hyderabad HVDC S/S

(vii) New Hyderabad – Hyderabad (765kV PG S/S) 400kV quad 2xD/C lines
(viii) New Hyderabad – Kurnool (765kV PG S/S) 400kV quad D/C line

16.0 APTRANSCO's Proposals

16.1 Augmentation of transmission system for Talcher-II via Gazuwaka

Director(GO), APTRANSCO said that the 2x500MW Simhadri St-II is being commissioned without augmentation of the transmission system between Gazuwaka -

Vijayawada section. Further the downstream network between Vijayawada –Nellore – Tiruvalam have also been approved to relieve the constraints beyond Vijayawada. He said that it is essential to augment the transmission system between Gazuwaka – Vijayawada section for transfer of power from Talcher-II via Gazuwaka. After discussion, it was decided that CEA/POWERGRID would carry out studies to plan a system for above requirement.

16.2 Hyderabad-Wardha 765 kV line

Director(GO), APTRANSCO said that the Srikakulam Pooling Point – Vemagiri 765kV D/C line that was agreed in the last meeting of the SCPSPSR and the earlier agreed Hyderabad – Wardha 765kV D/C inter-regional line should now be implemented.

Members agreed to above proposal.

16.3 Wind Projects in Andhra Pradesh

It was agreed that CEA, POWERGRID and APTRANSCO would carry out joint system studies to plan an evacuation system for about 3200 MW of wind projects in Andhra Pradesh. APTRANSCO would provide all the necessary inputs for this study.

16.4 Third 315 MVA, 400/220 kV transformer at Gazuwaka (PGCIL)

Director(GO), APTRANSCO said that possibility of a 3rd transformer at Gazuwaka may be explored. ED, POWERGRID said that they examined the request and there is no space for 3rd transformer at Gazuwaka. However, while carrying out studies, as given in 16.1 above, provision of more transformation capacity in the Gazuwaka/Vizag area would be considered.

17.0 TNEB/TANGEDCO/TANTRANSCO Proposals

17.1 Four nos. of 400 kV Substations in Chennai area:

17.1.1 Director(SP&PA), CEA stated that TNEB had proposed to establish four numbers of 400/230-110kV substations and associated transmission line in Chennai area to cater the future load growth and for dispersal of power from the proposed private power plants in Gummidipoondi area.

17.1.2 TANGEDCO said that they have done the load flow study for these proposed S/Ss and submitted it to CEA. Based on the suggestions given by CEA the modification has been incorporated in the proposal.

17.1.3 After deliberations following substations and associated transmission line in Chennai area were agreed to cater the future load growth and for dispersal of power from the proposed private power plants in Gummidipoondi area:

1. Thervaikandigai 400/230-110kV S/S with 2x315MVA 400/230kV ICTs & 1x200MVA, 400/110kV ICT.
2. Upgradation of the existing Koratur 230/110kV S/S to 400/230-110kV GIS S/S with 2x315MVA 400/230kV ICTs & 21x200MVA, 400/110kV ICT.
3. Upgradation of the existing Manali 230/110kV S/S to 400/230-110kV GIS S/S. 2x315MVA 400/230kV ICTs & 2x200MVA, 400/110kV ICT
4. Up gradation of the sanctioned Guindy 230/110kV S/S in to 400/230kV S/S with 2X315MVA ICTs.
5. Thervaikandigai-Koratur 400kV S/c line.
6. Thervaikandigai-Manali 400kV S/c line.
7. LILO of one of the NCTPS Stage II - Alamathy 400kV D/C line. At Koratur 400/230kV S/s.
8. Koratur- Manali 400kV D/C line with HTLS conductors.
9. LILO of one circuit of the Alamathy – SVChatram 400kV DC line of TNEB at Guindy 400/230kV S/s.
10. Guindy – Sholinganallur 400kV D/C line.

The above system is to be implemented by TNEB/TANTRANSCO.

17.2 New generating stations in Chennai area

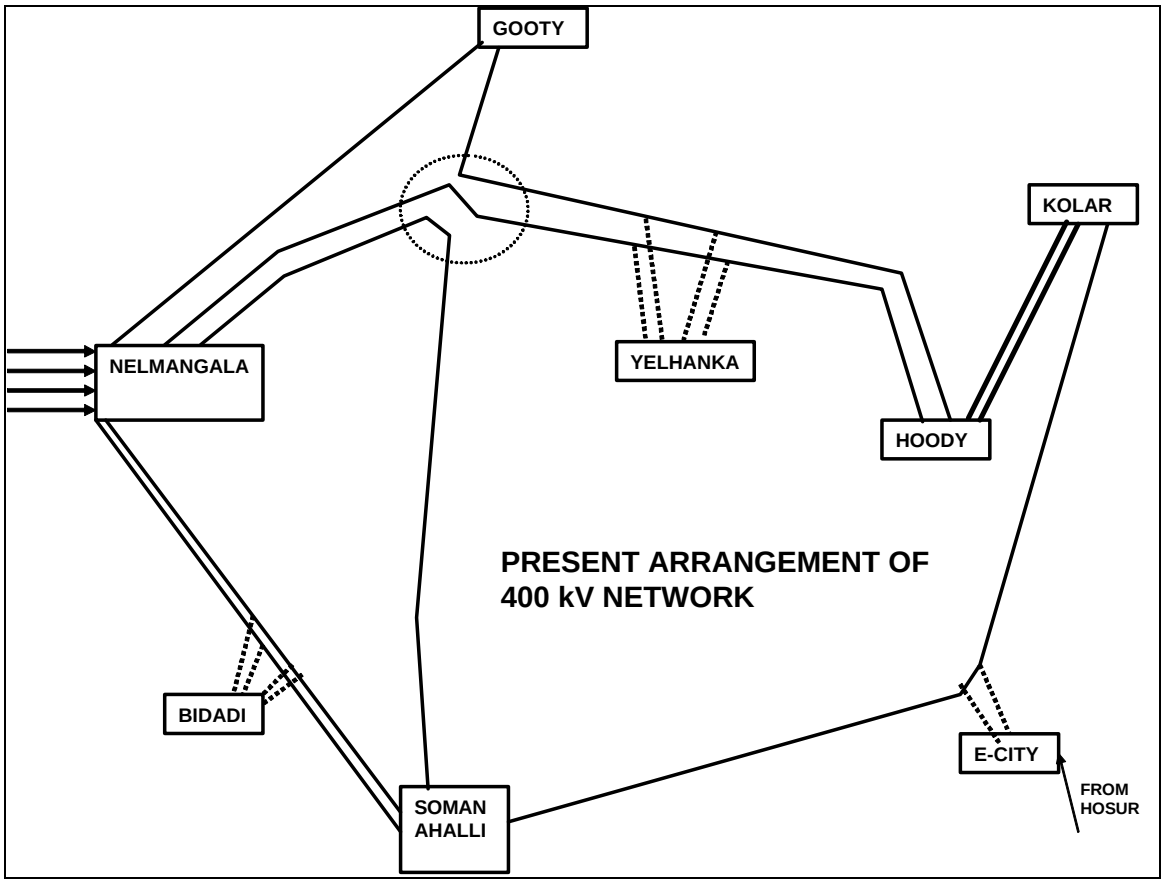
17.2.1 Director, TANTRANSCO said that the capacity of ETPS Annex project has been modified from 500 to 660 MW and further, a capacity addition of about 3700 MW is proposed in North Chennai area which includes ETPS Annex(1x660MW), ETPS Replacement(1x660MW), NCTPS St-III(1x800MW) and NCTPS St-IV (2x800MW). So, it is required to restudy the above system along with the proposed evacuation system for these four generating stations.

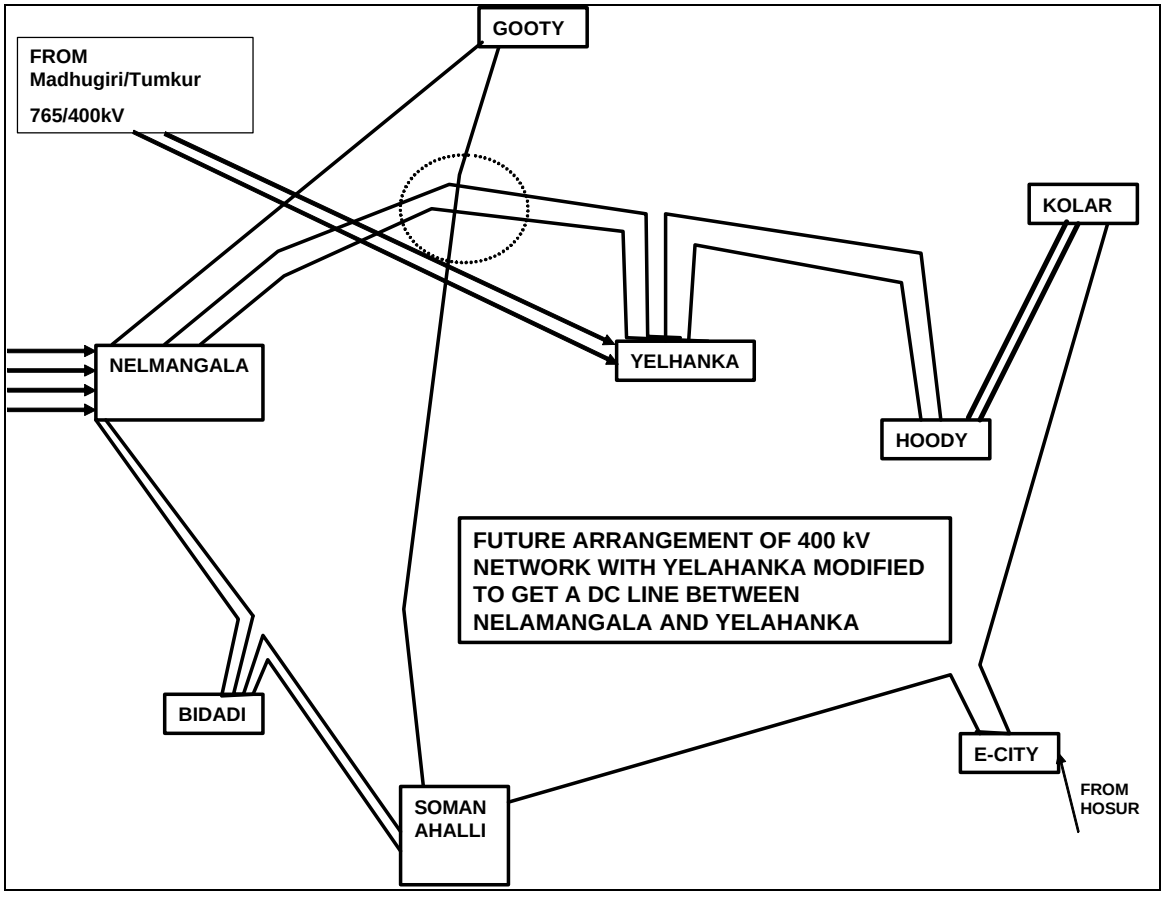
17.2.2 After discussions it was decided to rework the above transmission system along with proposed evacuation systems of ETPS Annex, ETPS Replacement, NCTPS St-III and NCTPS St-IV. At TNEB's initiative, they may involve CEA and POWERGRID for joint studies.

18.0 Re-configuration of Bangalore 400kV ring for Yelahanka 400kV S/S

18.1 SE(Ele Planning), KPTCL requested for re-arranging the line from the existing Gooty-Hoody configuration to Gooty- Somanahalli before commissioning of the 400/220 kV Yelahanka(Singanayakanahalli half GIS and half AIS) S/s of POWERGRID.

18.2 After discussion it was agreed to restore Gooty- Somanahalli connection as depicted in following diagrams(present arrangement, and future arrangement):


GOOTY
KOLAR
NELMANGALA
YELHANKA
HOODY
PRESENT ARRANGEMENT OF
400 kV NETWORK
BIDADI
E-CITY
FROM
HOSUR
SOMAN
AHALLI


GOOTY
FROM
Madhugiri/Tumkur
765/400kV
KOLAR
NELMANGALA
YELHANKA
HOODY
FUTURE ARRANGEMENT OF 400 kV
NETWORK WITH YELAHANKA MODIFIED
TO GET A DC LINE BETWEEN
NELAMANGALA AND YELAHANKA
BIDADI
E-CITY
FROM
HOSUR
SOMAN
AHALLI

18.3 It was agreed that this re-configuring would be carried out by POWERGRID in the time frame of doing the LILO of the Nelamangla-Hoody lines at Yelahanka, so that Nelamangla has D/C connectivity with Yelahanka.

19.0. Discussions on the Connectivity and LTA applications for Projects in Southern Region

Minutes of discussions on the Connectivity and Long Term Access applications for projects in Southern Region are issued by POWERGRID vide their letter no. C/ENG/SEF/S/00/LTA dated 15-05-2012 are given at **Annex-II.**

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Annex-I

List of participants of 34th Meeting of the Standing Committee on Power System Planning in Southern Region (SCPSPSR) held on 16 April, 2012 in Hyderabad

Sl. No.	Name and Organization	Designation
Central Electricity Authority (CEA)		
1.	Ravinder	Member (Power Systems)
2.	Pardeep Jindal	Director (SP&PA)
Southern Region Power Committee (SRPC)		
3.	S R Bhat	Member Secretary I/c
4.	Anil Thomas	AEE
Power Grid Corporation of India Limited (POWERGRID)		
5.	Pankaj Kumar	ED (SEF, IT, ERP & CE)
6.	Bharat Bhushan	ED (SR-II)
7.	V Sekhar	ED (SR-I)
8.	R Y Rao	GM (SR-I)
9.	S Ravi	AGM (SR-I)
10.	Dilip Rozekar	DGM(SEF)
11.	P Jayachandran	DGM (SR-II)
12.	RV Madan Mohan Rao	CDE (SEF)
13.	V Rajesh	Chief Manager (SR-II)
Power System Operation Corporation Limited (POSOCO)		
14.	S K Soonee	CEO
15.	P R Raghuram	GM, SRLDC
16.	S P Kumar	Chief Manager, SRLDC
17.	G Madhukar	Sr. Engineer, SRLDC
NTPC Limited (NTPC)		
18.	S S Mishra	DGM
19.	Shilpa Agrawal	DM
Neyveli Lignite Corporation Limited (NLC)		
20.	S Muthu	CGM
Nuclear Power Corp of India Limited (NPCIL)		
21.	Sandeep Sarwate	ACE(T)

Transmission Corp. of Andhra Pradesh Ltd. (APTRANSCO)

22.	P Srirama Rao	Director(GO)
23.	M Jayachandra	CE (PS)
24.	Ch. V S Subba Rao	SE (SP)
25.	V V Ramana Murthy	DE/System Studies

Karnataka Power Transmission Corporation Limited (KPTCL)

26.	Hanumantharayappa	SEE (Plg)
27.	D Chethan	EE (PSS)

Kerala State Electricity Board (KSEB)

28.	M A Rawther	Member (T & GO)

Tamil Nadu Electricity Board (TNEB) / TANTRANSCO

29.	S Akshaya Kumar	Dir / Tran.Projects (TANTRANSCO)
30.	S Ravichandran	SE / System Studies (TANGEDCO)

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Annex-II

Minutes of 14th Meeting of Southern Region constituents
Regarding Long Term Access and Connectivity Applications in Southern Region
held on 16th April, 2012 at Hyderabad.

List of Connectivity/LTA Applicants who participated in the meeting is given at **Annexure-I.**

1.0 ED, POWERGRID welcomed the participants for the 14th Meeting of Southern Region (SR) constituents regarding Long Term Access and Connectivity applications of SR. In his opening remarks, he informed that as per the earlier circulated agenda, POWERGRID had received 1 no. of new application for Connectivity and LTA from NCC Power Projects Ltd. He further informed that request from IPPs for early commissioning of Vemagiri & Nagapattinam Pooling Stations has been received by POWERGRID and the same is proposed for discussion. Also request from Lanco Kondapalli Power Limited (LKPL) has been received for reduction of 100 MW of LTOA granted earlier as per CERC Regulations, 2004. Further, there are 11 nos. of Connectivity applications and 2 nos. LTA application for which discussions were held earlier however could not be finalised in view of their slow progress. These applications are proposed to be discussed along with other related issues. ED, POWERGRID requested DGM (SEF), POWERGRID to proceed with the agenda for the meeting.

2.0 **Confirmation of the minutes of 13th Meeting of Southern Region constituents regarding Long Term Access and Connectivity applications**

2.1 There were no comments on the minutes of the 13th Meeting of Southern Region constituents regarding Long Term Access and Connectivity applications issued vide letter dated 25.11.2011 and the minutes were confirmed.

3.0 **New Connectivity & LTA application of Southern Region**

NCC Power Projects Limited (2x660 MW)

3.1 POWERGRID had informed that Connectivity & LTA application from NCC Power Projects Limited (NCC) has been received with following details.

- Installed Capacity : 1320 (2x660 MW)
- Connectivity applied for : 1240 MW
- Connectivity required from : June, 2014
- LTA applied for : 740 (MW)
- Target beneficiaries : SR constituents (for entire quantum)
- LTA required from : April, 2015

3.2 NCC informed that earlier this generation project was being developed by Nelcast Energy Corporation Limited (NECL) and recently this generation project is taken over by NCC and applied afresh under CERC regulations, 2009. NCC further informed that they have received necessary clearances and the details are as given below:

- Land : 927 acres under possession
- MoE & F : Available
- Fuel : LoA from Mahanadi Coalfields Limited available

- Financial Closure : Achieved
- EPC : EPC contract placed and Notice to Proceed with effect from 10.02.2012 & also released 10% advance payment to BTG supplier

3.3 In this regard, POWERGRID informed that Connectivity & LTA was earlier granted to NECL in May & December, 2010 respectively. The power from this project was to be pooled at Nellore 765/400 kV Pooling station being constructed by POWERGRID for IPP generations in Krishnapatanam area. Subsequently due to non-signing of Bulk Power Transmission Agreement (BPTA) and non-submission of Construction Bank Guarantee as per CERC Regulations, the Connectivity & LTA granted to Nelcast was withdrawn in line with the decision taken during 12th meeting of SR constituents regarding Connectivity/LTA applications.

3.4 As regards the construction of transmission line for connectivity, it was explained that as per the CERC regulations the same has to be considered as a part of co-ordinated planning. Further now all the ISTS elements have to be developed through Tariff based competitive bidding process which shall require about 8-10 months of bidding process and about 32 months for construction. The generation developer (NCC) informed that the connectivity line may be developed under Tariff Based Competitive Bidding (TBCB) as they have not made any provision for same in their Project Report and they are agreeable with the time lines as mentioned above.

3.5 POWERGRID indicated that the instant case is pertaining to re-issue of the connectivity & LTA to generation project which was earlier developed by Nelcast and now being developed by NCC. The transmission system for grant of Connectivity and LTA is as given below.

Transmission system for Connectivity

1.	125 MVAR Bus Reactor at generation switchyard and provision of 2 nos. of 400kV bays at generation switchyard for termination of line at (2) below	Under the Scope of Generation developer
2.	400 kV Quad D/c line to Nellore pooling station	Through tariff based competitive bidding

Transmission system for LTA

1.	**Common System Associated with ISGS projects in Krishnapatnam Area of Andhra Pradesh** a. Establishment of 765/400kV, 2x1500MVA Pooling station at Nellore b. LILO of both circuits of Simhapuri/Meenakshi - Nellore 400kV D/c quad line at Nellore Pooling station c. Nellore Pooling station - Kurnool 765 kV D/c line d. Kurnool - Raichur 765 kV S/c line	Under implementation by POWERGRID

	e. Associated 765kV & 400kV bays at Nellore Pooling station, Kurnool and Raichur substations	
2.	**Associated Transmission System of Krishnapatnam UMPP Part-C1** **a. Establishment of new 765/400 kV substation at Kurnool with 2x1500 MVA ICTs and 1x240 MVAR bus reactor.** **b. LILO of N'Sagar - Gooty 400 kV S/c line at Kurnool (New) substation** **c. Kurnool (New) - Kurnool (APTRANSCO) 400 kV D/c quad line** **d. Associated 400kV bays at Kurnool (APTRANSCO) substation**	

3.6 The connectivity is granted from the availability of the Nellore pooling station (i.e. expected by September, 2014) or the availability of the connectivity line (to be implemented under TBCB) which ever is later.

3.7 Regarding the requirement of Transmission System for LTA, POWERGRID informed that in Krishnapatnam area, POWERGRID is already implementing "Common System Associated with ISGS projects in Krishnapatnam Area of Andhra Pradesh" and "Associated Transmission System of Krishnapatnam UMPP Part-C1". In the Krishnapatnam area, LTA of 2776 MW (SEPL: 546 MW, MEPL: 910 MW & TPCIL: 1320 MW) has already been granted through the above transmission system. With additional LTA quantum of 740 MW of NCC, the total LTA shall be about 3516 MW. The under implementation LTA strengthening & Nellore Pooling Station – Gooty 400 kV D/c quad line shall be adequate for above power transfer.

3.8 GM (SRLDC) observed that injection of power at Nellore Pooling station may lead to high loading on the presently congested Nellore – Alamanthy transmission corridor and this may require opening of the interconnection between Nellore 765 kV pooling station and Nellore existing substation. Towards this, it was explained that the high capacity transmission corridor has been planned for evacuation of large sized generation projects in the Krishnapatnam area. Further, to control short circuit levels at the Nellore existing substation this interconnection was planned to be opened as and when the situation warrants. Further, implementation of Nellore – Gooty 400 kV Quad D/c line and Vijayawada – Nellore – Thiruvalem 400 kV D/c line as system strengthening shall adequately address the present congestion issue in the Nellore – Alamanthy corridor.

Taking above into considerations, it was decided to Grant Connectivity & LTA with above strengthening subject to signing of Connectivity/LTA Agreement and submission of Construction Bank Guarantee.

Members agreed for the same.

4.0 **Early Commissioning of Vemagiri & Nagapattinam Pooling Stations**

4.1 POWERGRID informed that for the proposed IPP generating stations in Vemagiri and Nagapattinam areas, high capacity 765 kV (initially charged at 400 kV) transmission corridors have been approved. The trunk transmission lines under the said transmission corridors are being constructed through tariff based competitive bidding route and the 765/400 kV pooling stations and their connectivity with the grid are being implemented by POWERGRID. The bidding process for both the corridors is completed and it is likely that these lines shall be available by March/April, 2015.

4.2 POWERGRID indicated the commissioning schedule as informed by IPP developers in Vemagiri and Nagapatinam area are much earlier than the above schedule of March/April, 2015, e.g. Samalkot Power Ltd. – March, 2012 (LTA Quantum – 2200 MW), GMR Rajahmundry – Unit-I already commissioned (LTA quantum – 775 MW), in Vemagiri area and ILFS Tami Nadu Power – September, 2013 (LTA quantum – 1100MW) in Nagapattinam area.

4.3 POWERGRID explained that SR is presently facing huge deficit of power, further with the capacity addition programme planned for 12th plan the region is likely to continue in the deficit scenario. Under this situation, it is prudent that whatever capacity is available should be used subject to the grid capacity. In this regard, it has been seen that if the pooling station in the immediate vicinity is developed earlier then the same shall not only facilitate drawing up of start-up power by the generation projects but shall also make available power to the constituents subject to availability of margins in the grid. Therefore it is prudent that Vemagiri & Nagapattinam pooling stations including LILO lines for both the Pooling stations may be commissioned early and the balance elements of both the schemes including bays at Vemagiri & Nagapattinam pooling stations for termination of TBCB lines may be implemented matching with the time schedule of transmission lines being implemented under TBCB. The transmission charges for the early commissioning period shall be borne by the IPPs who have been granted LTA using these systems viz. charges for Vemagiri pooling station & LILO line to borne by Samalkot/GMR/Spectrum and Nagapattinam pooling station & LILO line to be borne by IL&FS.

4.4 Director, TANTRANSCO opined that already the SR grid is facing congestion in Gazuwaka – Vijayawada & Vijayawada – Nellore – Chennai corridors and if the Pooling station at Vemagiri through LILO of Vijayawada – Gazuwaka 400 kV S/c line is implemented, this will further aggravate the congestion in this corridor. Further, this may also affect the import of power especially for S2 bid area. Therefore, the pooling station at Vemagiri may be established matching with TBCB lines. However, as regards the Nagapattinam pooling station it was observed that as it shall facilitate the availability of power in S2 area thereby relieving the congestion therefore POWERGRID may go ahead with the early commissioning of Nagapattinam Pooling station.

4.5 Accordingly, it was decided to develop the Nagapattinam Pooling Station earlier than the schedule of the transmission lines being developed under TBCB with following elements:

a) Establishment of 765/400 kV pooling station at Nagapattinam (initially charged at 400 kV)

b) LILO of Neyveli - Trichy 400 kV S/c line at Nagapattinam Pooling Station

Members agreed for the same.

5.0 **Request of M/s Lanco Kondapalli Power Limited (LKPL) to reduce Long-term Open Access quantum from 350 MW to 250 MW**

5.1 POWERGRID informed that LKPL was earlier granted LTOA as per CERC Regulations, 2004 as per the details below:

Sl. No.	Applicant	Installed Capacity (MW)	LTA Granted for (MW)	Time Frame	Target beneficiaries		
					SR	**WR**	**NR**
1.	**Lanco Kondapalli Power Limited**	**366**	**350**	**Commissioned**	**0**	**200**	**150**

5.2 POWERGRID explained that looking into the small quantum of power transfer requirement and as the above LTOA application envisaged transfer of entire power outside the Southern Region (SR) which as per the grid configuration was likely to take place through principle of displacement from Ramagundam TPS utilizing Chandrapur HVDC back-to-back link, therefore, the transmission system identified for the grant of LTOA did not envisaged any transmission capacity augmentation of ISTS and comprised of only construction of dedicated transmission line by the applicant from its generation switchyard upto Vijayawada substation of POWERGRID.

5.3 Accordingly LKPL signed Bulk Power Transmission Agreement (BPTA) with POWERGRID on 02.09.2009 for sharing transmission charges for transfer of power 350MW from SR to WR/NR as target beneficiaries. The generation project was commissioned in November, 2009.

5.4 POWERGRID indicated that LKPL recently has requested for reduction of LTOA quantum from 350 MW to 250 MW; reduction of 50 MW from each target beneficiary i.e. for WR from 200 MW to 150 MW and for NR from 150 MW to 100 MW.

5.5 In this regard LKPL had explained that at the time of applying for LTOA in the year 2009, LKPL had no fuel (gas) allocation by Govt. of India and now pursuant to the policy framed by the Empowered Group of Ministers (EGoM) for gas utilization, the Ministry of Petroleum and Natural Gas (MoPNG) made an allocation of gas limited only upto 70% PLF to LKPL from M/s Reliance Industries KG-D6 gas fields in August 2009. Accordingly LKPL have requested that as the gas allocation is made only upto 70% PLF, so the generation shall also be limited to 70% of the Installed Capacity i.e. maximum upto 250 MW only therefore LKPL requested for reduction of LTOA from 350 MW to 250 MW.

5.6 POWERGRID informed that the Regulation 12(1) of "Grant of Connectivity, Long Term Access and Medium Term Open Access in inter-state Transmission and related matters, Regulations 2009" given below deals with the change of capacity

Quote

"*Provided also that in cases where there is any material change in location of the applicant or change by more than 100 MW in the quantum of power to be interchanged using the inter-State transmission system or change in the region from which electricity is to be procured or to which supplied, a fresh application shall be made, which shall be considered in accordance with these regulations*."

Unquote

Further Regulation 18(1)(b) provides for relinquishment of the access rights fully or partly

Quote

"*Long-term customer who has not availed access rights for at least 12 (twelve) years* ***– such customer shall pay an amount equal to 66% of the estimated transmission charges (net present value) for the*** *stranded transmission capacity* ***for the period falling short of 12 (twelve) years of access rights;***

Provided that such a customer shall submit an application to the Central Transmission Utility at least 1 (one) year prior to the date from which such customer desires to relinquish the access rights;

Provided further that in case a customer submits an application for relinquishment of long-term access rights at any time at a notice period of less than one year, then such customer shall pay an amount equal to 66% of the estimated transmission charges (net present value) for the period falling short of a notice period of one (1) year, in addition to 66% of the estimated transmission charges (net present value) for the stranded transmission capacity for the period falling short of 12 (twelve) years of access rights."

Unquote

Further, as per the Regulations – 2(1)(v) Stranded Capacity has been defined as

Quote

'Stranded transmission capacity' means the transmission capacity in the inter-State transmission system which is likely to remain unutilized due to relinquishment of access rights by a long-term customer in accordance with regulation 16.

Unquote

5.7 POWERGRID indicated that taking into consideration that (i) ISTS augmentation has not been carried out for the power transfer requirement of arising due to LKPL, (ii) regulation permits change of capacity upto 100 MW without filing fresh application and (iii) regulation also provides for the Long term customer to relinquish his rights, the request of LKPL with details given below may be agreed and Long-term Access intimation may be revised. Further, the date of receipt for request for reduction of LTOA (30 January 2012) shall be considered as start date of notice period.

Sl. No.	Applicant	Installed Capacity (MW)	LTA Granted for (MW)	Time Frame	Target beneficiaries		
					SR	**WR**	**NR**
1.	**Lanco Kondapalli Power Limited**	**366**	**250**	**Commissioned**	**0**	**150**	**100**

However, LKPL shall have to pay the transmission charges, as per CERC, regulations for Notice period falling short of one year.

6.0 **Connectivity/LTA Application of Hinduja National Power Corporation Ltd.**

6.1 POWERGRID informed that Hinduja National Power Corporation Ltd. (HNPCL) was earlier granted Connectivity (975 MW) / LTA (725 MW) from their proposed coal based power plant of 1040 MW in Visakhapatnam district in the 12th Meeting of SR constituents regarding Connectivity/LTA applications. Considering the progress of generation project, the transmission system for Connectivity/LTA was proposed under Tariff Based Competitive Bidding. However HNPCL is yet to sign the LTA Agreement & submit the construction Bank Guarantee as per CERC regulations. Representative of HNPCL informed that they are awaiting for clarification/Final decision from APTRANSCO in regard to Connectivity & LTA application for evacuation of power from the above thermal power plant of HNPCL may take some more time. Based on the request of HNPCL, it was agreed that the Connectivity & LTA granted to HNPCL shall be reviewed during the next meeting of SR constituents. Further, the bidding process of the transmission system shall be under hold.

7.0 **Long pending Connectivity/LTA applications due to non-satisfactory progress - discussed in earlier meetings.**

7.1 POWERGRID informed that the grant of Connectivity and LTA as per the CERC regulation, 2009 is a time bound activity (Connectivity to be granted in 60 days and LTA in 120/180 days). Further it is directed by Hon'ble CERC that the transmission system development should be phased to avoid any redundant capacity. In the past, to facilitate project development activities POWERGRID had granted connectivity/LTA even to projects who had not achieved important milestones but in such cases it is seen that such IPPs are repeatedly delaying the signing of BPTA and furnishing Bank Guarantee(BG). Such delay in the BPTA/BG complicates the matter, especially in the scenario of implementation of transmission system through competitive bidding, where the selected bidder is not liable to delay/advance the commissioning schedule to match with the generation progress.

7.2 In this regard, POWERGRID informed that at present there are number of Connectivity & LTA applications pending for about 1 to 1½ years, details of which were covered in the agenda. Further some of the applicants are not responding and not attended the LTA meetings earlier. There were no representatives from Seshadri Power, North Chennai Power, Shri Renuka Energy, Pragdisa Power & AES Naganadu to attend this meeting neither they were present in previous 2-3 meetings except AES Naganadu as there application was received during last meeting. Further it was observed there is no significant progress in generation project from last 3-4 meetings with respect to Simhapuri Energy & Rajanagaram Gas.

7.3 The representative of Sindya Power informed that the public hearing has been completed and they shall be receiving the MoE&F clearance soon and so they have requested not to close the application and same may be reviewed during the next meeting. The representative of NPCIL had indicated there generation project is nuclear based which is going as per schedule, however may be reviewed in the next meeting.

7.4 Looking into the progress of various application of Connectivity/LTA from IPP generation projects, the Committee decided to close the following applications however it was indicated that the IPPs may apply afresh as and when the project progresses in getting requisite clearances.

Connectivity & LTA applications

Sl. No	Connectivity & LTA Applicant	Time frame	Applied for Connectivity & LTA Quantum
1.	Empee Power & Infrastructure Pvt. Ltd.	April, 2013	Conn – 1241 MW LTA – 1241 MW

Connectivity applications

Sl. No	Applicant	Time frame	Applied for Connectivity Quantum (MW)
1.	Sheshadri Power & Infrastructure (Pvt) Ltd	September, 2013	1320
2.	Rajanagarm Gas Power Private Limited	December, 2012	1100
3.	Simhapuri Energy Private Limited	4th Qtr, 2014	1235
4.	North Chennai Power Company Limited	February, 2015	1105
5.	Shree Renuka Energy Limited	March, 2014	956
6.	Pragdisa Power Private Limited	December, 2013	1320

8.0 Meeting ended with vote of thanks.

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Annexure-I

Connectivity/LTA Applicants

1.	Rakesh Gupta	COO	Lanco Kondapalli Power Ltd.
2.	B N K Saxena	Sr. VP (Op)	Lanco Kondapalli Power Ltd.
3.	K Mahesh Kumar	Dy. Manager	Lanco Kondapalli Power Ltd.
4.	P Raja Kumar	DGM	Empee Power & Infrastructure Pvt. Ltd.
5.	D Srinivasa Rao	AGM	Simhapuri Energy Pvt. Ltd.
6.	Sidhartha Das	CGM	NCC Power Projects Limited
7.	S K Gupta	Director	NCC Power Projects Limited
8.	Anil Kumar	VP	Hinduja National Power Corpn. Ltd.
9.	Balachandra K	VP (Projects)	Sindya Power Generating Company Ltd.
10.	Lalit Munjal	Manager	Sindya Power Generating Company Ltd.

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