

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

No. 51/4/SP&PA-2009/ 629-638

Date: July 15, 2009

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 (Transmission), 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), 6 th 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, 12 th Floor, Vikram Sarabhai Bhawan, Anushakti Nagar, Mumbai – 400 094. FAX : 022- 25991258

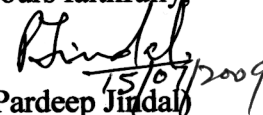
Sub: 28th meeting of the Standing Committee on Power System Planning of Southern Region
- Minutes of the meeting.

Sir,

The 28th meeting of the Standing Committee on Power System Planning of Southern Region was held on 15th June 2009 (Monday) at 10:00 AM at Orange County, Karadigodu Post, Siddapur, Coorg, Karnataka. Minutes of the meeting are enclosed.

The minutes are also available at CEA's website, www.cea.nic.in.

Yours faithfully,


(Pardeep Jindal)

Director (SP&PA)

(Telephone: 26732325)

FAX No.: 011 26102045)

Minutes of 28th Meeting of the Standing Committee on Power System Planning in Southern Region (SCPSPSR) held on June 15, 2009 (Monday) at Orange County, Karadigodu Post, Siddapur, Coorg, Karnataka

List of participants is given at Annex-I.

1.0 Member(PS), CEA thanked Power Grid Corporation of India Ltd (PGCIL) for arranging the meeting in very serene ambience and natural surrounding. He stated that the Southern Region Power Committee meeting was scheduled for 2nd July 2009 and the transmission system for the Tamil Nadu Ultra Mega Power Project (TNUMPP) of 4000 MW needs to be finalized for putting up to the SRPC for approval. The associated transmission system for this project is proposed to be implemented by a Transmission Service Provider to be selected through tariff based competitive bidding process. Considering the time required in processing award of the project to successful bidder through this process, there was an urgency to finalize the transmission system for TNUMPP. He further stated that for optimizing total investment in transmission development and for optimizing right-of-way it is necessary to assess total generation addition in a particular area. In Southern Region, many Independent Power Producers(IPPs) had applied for long-term open Access in the Tuticorin, Cuddalore, Nellore and Srikakulam areas. Total generation addition was much in excess of requirements of SR and, therefore, some quantum of power was likely to be exported out of SR. Similar was the situation in HP, NER, Chhatisgarh, Jharkhand and Orissa. This aspect needs to be considered while planning a comprehensive transmission system for a particular time frame. Also, the IPPs, in addition to obtaining open access for transmission, have to go through arranging a lot of inputs like land, fuel, finances and selection of beneficiaries, which introduces an element of uncertainty in the planning process. The E.Act2003 has mandated CTU to provide non-discriminatory open access to IPPs and consumers. We of course need to see if the indicated beneficiaries and the indicated time frames for their CoD are realistic or not so that we do not land up with stranded transmission assets. For the transmission developers, obtaining right of way and implementation of the transmission system was difficult. Investment needs to be under-written by some one. So, we need to work out a 'Transmission Master Plan', which would give a larger picture of the transmission developments. An when, actual IPPs/generation projects come up, we will identify specific transmission elements that would need to be implemented. It was under this back-ground that we have to discuss the issues in current meeting.

2.0 Confirmation of the minutes of 28th meeting of the Standing Committee

2.1 Director, CEA stated that minutes of 27th meeting of the Standing Committee on Power System Planning of Southern Region, held on 03rd March 2009 at Bangalore, were issued vide CEA's letter number 51/4/SP&PA-2009/ 246-255 dated March 17, 2009. KPTCL, vide letter no KPTCL/CEE(P&C)/KCO-97/9055/2008-09 dated March 20, 2009, had given observation regarding the issues of the Gooty-Yelahanka 400kV line and transmission system

for Yeramas/Edlapur projects and accordingly, a corrigendum to the minutes was issued vide CEA letter number 51/4/SP&PA-2009/ 285-294 dated April 02, 2009. There were no further observations and the minutes as circulated and amended as per the corrigendum were confirmed by the Standing Committee.

3.0 Status of Under Construction / Approved Schemes:

3.1 POWERGRID informed about the progress of the transmission works that were being implemented by them as part of regional schemes. A copy of the implementation status is **given at Annex-II.**

3.2 Member(PS), CEA stated that transmission schemes of State utilities should be implemented matching with the respective generation projects and also with the development of central sector schemes so that adequate state level network becomes available to take benefit from commissioned generating stations. In particular, he mentioned that the progress on transmission system for evacuation of power from Vijayawada Stage-IV and Bhoopalapally TPS in Andhra Pradesh and Nagarjuna TPS in Karnataka were not matching with schedule of commissioning of the generation projects. Director, KPTCL and Chief Engineer, APTRANSCO assured to take up necessary actions in this regard.

4.0 Transmission System for Evacuation of Power from Yeramaras(2x800 MW)& Edlapur (1x800 MW) Generation projects of KPCL near Raichur in Karnataka:

4.1 Director, CEA explained that, the transmission system for Evacuation of Yeramaras(2x800 MW)& Edlapur (1x800 MW) of KPCL near Raichur TPS, Connectivity to proposed 400 kV Yelahanka(PGCIL) Sub-station and Strengthening/Restructuring of Bangalore 400kV Ring were discussed in the 27th meeting of the Standing Committee on Power System Planning of Southern Region and subsequently, system studies were revised during 30th March - 2nd April 2009 with participation of officers from CEA, PGCIL and KPTCL. He stated that as the exact transmission system associated with new generation projects, in Southern Region, mainly in Tamil Nadu and Andhra Pradesh, who have sought Long Term Open Access(LTOA) for evacuation and transmission of their power within Southern Region(SR) and for export outside the Region, was not available at the time of studies and therefore, broad transmission corridors that would be needed for export of power from SR, were kept in mind while carrying out the studies. He further explained that as per the assessment, about 14000 MW of power would need to be exported out of SR to WR/NR. Out of this 14000 MW, transmission corridors for about 7000-8000 MW capacity would be needed from Tamil Nadu-Andhra Pradesh/Karnataka in SR to Western Region. For this, two high capacity transmission corridors viz. Salem(Tamil Nadu) - Hiriyur(Karnataka) - Basvana Bagewadi(Karnataka) - Sholapur(Western Region) and Tiruvalam (Tamil Nadu) – Kurnool(Andhra Pradesh) – Raichur(Karnataka) – Sholapur(Western Region) were considered for export of surplus power from SR. Considering these scenarios it was found that connecting Yeramaras and Edlapur generating stations with export points in Southern Region would optimize the additional transmission requirements both for Inter State Transmission System (ISTS) as well as for State transmission system. The transmission system that has been evolved based on the system studies include connecting Yeramaras with Raichur(765/400kV S/S) and Basavana Bagewadi 400kV S/S with 400kV D/C quad lines and Basavana Bagewadi-Narendra 400kV D/C line with a 400/220kV S/S at Basavana Bagewadi to be built by KPTCL. GM, PGCIL stated that this system was also taken in the studies carried out by them for panning the transmission system for evacuation/export of power from LTOA projects and thus was found to be fulfill system requirements under both cases i.e with considering LTOA projects and without considering LTOA projects.

- 4.2 PGCIL stated that for connecting the Basavana Bagewadi – Narendra 400kV D/C line sufficient bay space may not be available at Narendra, therefore it was suggested that in which case, the Basavana Bagewadi – Narendra line can be LILLOed into one circuit of the existing Narendra – Guttur(Davangere) 400kV D/C line.
- 4.3 PGCIL informed that JSW Power Trading Company Limited has confirmed that beneficiaries of the entire quantum of 600 MW from their Torangallu TPS in Karnataka would be Southern Region only. Further, they have also agreed to provide Jindal- Gooty 400kV D/C line as dedicated transmission line. After discussions, the members of the Standing Committee agreed for this line.
- 4.4 Member(PS), CEA stated that considering requirement of a new 765/400kV S/S near Hiriyur/north of Bangalore, the connectivity of Gooty to Yelahanka S/S can be routed via the New Hiriyur/(North) Bangalore S/S which falls almost en-route this line and by providing New Hiriyur – Yelahanka line as 400kV quad line requirement of another D/C line from Hiriyur – Yelahanka can be avoided. Additionally, this system also meets transmission requirement for evacuation of power from Torangallu TPS and Bellary TPS. He also stated that as the export for power from SR would take place through displacement method from Basavana Bagewadi/Raichur points, as explained above, the Bangalore loads can be met by strengthening and restructuring of Bangalore 400kV Ring. For this, he said, a scheme had been worked out based on the joint system studies, which includes connecting Hosur(Tamil Nadu) with Electronic City(Bangalore) and re-arranging the existing 400kV connections around Bangalore so as to obtain Somanahalli – Bidadi – Nelamangla – Yelahanka – Hoody – Kolar 400kV D/C links and Kolar – Electronic City – Somanahalli 400kV S/C links. The scheme to make Kolar – Electronic City – Somanahalli section of the Bangalore 400kV Ring also as a D/C link would be considered at a later stage. He also stated that in long-term, the Talcher – Kolar HVDC link could also be used to export power from SR rather than importing power in SR, and therefore, strengthening of Bangalore ring becomes essential.
- 4.5 PGCIL stated that the land/site at proposed New Hiriyur/Bangalore 765/400kV S/S needs to be selected and procured at the earliest. KPTCL stated that they would help PGCIL to select and procure new site location and stated they were examining possibility of a suitable location around Madhugiri, which could be as close to Bangalore as possible. Members suggested that the new 765/400kV S/S may be named as Madhugiri for future references.

4.6 Based on the discussions following transmission schemes were agreed:

4.6.1 Transmission System for Evacuation of Power from Yeramaras(2x800 MW) and Edlapur(1x800 MW) Generation Projects of KPCL:

- (i) Edlapur(1x800MW), being located adjacent to the RTPS project, will be connected to RTPS switchyard through extended bus arrangement.
- (ii) Yeramaras (2x800MW) – Raichur(New)765/400kV (PGCIL) Sub-station, 400kV Quad D/C line.
- (iii) Basavana Bagewadi 400/220kV 2x315 MVA S/S
- (iv) Yeramaras - Basavana Bagewadi 400 kV Quad D/C line
- (v) Basavana Bagewadi – Narendra (PGCIL) 400 kV Twin D/C line *

- * - In case there is no additional bay space at the Narendra S/S, the possibility of connecting Basavana Bagewadi – Narendra with LILO of one circuit of the Narendra-Guttur 400kV D/C line would be explored.

The above system would be implemented by KPTCL as transmission scheme for evacuation of power from Yeramaras(2x800MW) & Edlapur (1x500 MW) generation projects in the time-frame matching with the commissioning schedule of these projects.

4.6.2 Establishing new 765/400kV S/S at Madhugiri, Connectivity to Yelahanka 2X500 MVA 400/220 kV S/S and Additional ISTS In-feed for Bangalore:

- (i) Madhugiri 400/220kV S/S with provision of establishing a 765/400kV S/S in the same switchyard - **to be implemented by PGCIL**
- (ii) Gooty – Madhugiri(proposed new 765/400kV S/S by PGCIL), 400kV D/C line – **to be implemented by PGCIL.**
- (iii) Madhugiri - Yelahanka 400kV D/C Quad line – **to be implemented by PGCIL**
- (iv) Hosur – Electronic City 400kV D/C line – **to be implemented by PGCIL**
(The Hosur – Electronic City 400kV D/C line could be built using Right of Way of the existing Peenya-Singarapet 220kV line(presently Yerandahally-Hosur line). This RoW could be used by building multi-circuit towers and/or dismantling part of the line depending upon practicability. SRTS,PGCIL, would examine feasibility of using RoW of existing 220kV circuit for implementation of this line with help provided by TNEB and KPTCL)
- (v) Instead of Hiriyur – Yelahanka 400kV D/C line to be built by KPTCL for Bellary TPS, KPTCL would extend the Bellary TPS- Hiriyur 400kV D/C line up to Madhugiri S/S – **to be implemented by KPTCL**
- (vi) PGCIL would provide a total of ten (10) numbers of 220kV bays at Yelahanka S/S. These bays would be at the cost of KPTCL.

4.6.3 Strengthening/Restructuring of Bangalore 400 kV Ring Arrangement:

The existing 400kV connections around Bangalore would be rearranged to achieve Nelamangala – Yelahanka DC line, Yelahanka – Hoody - Kolar D/C line, Kolar - Electronic City - Somanahalli S/C line and Somanahalli – Bidadi - Nelamangala D/C line. Any revisions required in the protection schemes would also be carried out by PGCIL as System Strengthening Scheme for SR – **to be implemented by PGCIL.**

5.0 Transmission System Associated with Simhadri-II TPS:

- 5.1 ED, PGCIL informed that for evacuation of power from the Simhadri-II TPS of NTPC, Simhadri-II – Gazuwaka 400 kV D/C line was inter-alia agreed in the 25th meeting of Standing Committee. Due to growth of residential area in the vicinity, right of way problem and various existing 220 kV and 400 kV existing lines in position, termination of proposed Simhadri-II – Gazuwaka 400 kV D/C line at Gazuwaka was extremely difficult. Also, two numbers of adjacent bays for termination of both circuits were not available at Gazuwaka substation hence these have to be terminated at two opposite ends of the switchyard requiring single circuit line approach from two different sides.

5.2 The issue was discussed and following was agreed:

- (i) Instead of the Simhadri-II TPS to Gazuwaka 400kV D/C line, the Gazuwaka – Vemagiri 400kV D/C line would be LILoed at the Simhadri-II TPS through 2x400kV D/C lines – **to be implemented by PGCIL as ATS for Simhadri-II TPS.**
- (ii) NTPC would provide four number of 400kV line bays at their generation switchyard.

6.0 Transmission System Associated with Cheyyur UMP in Tamil Nadu 4000 MW

6.1 Member(PS), CEA stated that the transmission system for this project was presently proposed to be implemented by private developer selected through tariff based competitive bidding process. Considering the time required in processing award of the project to successful bidder through this process, there was an urgency to finalize the transmission system for TNUMPP so that necessary approvals and back-to-back contractual agreements between State utilities buying power from TNUMPP, the Generation developer and the Transmission developer could be obtained in time.

6.2 Director, CEA explained that the Cheyyur UMP (TNUMPP) at Cheyyur Taluk, Kanchipuram District, Tamil Nadu was being taken up by Coastal Tamil Nadu Power Ltd, an SPV company of PFC, who had applied to POWERGRID seeking Long Term Open Access for evacuation and transmission of power from the project to its beneficiaries. As per the allocation of power from this UMP, 3100 MW has been allocated for Southern Region and rest 900 MW for Western and Northern Regions:

Southern Region (3100 MW):

Tamil Nadu	-	1600 MW
Karnataka	-	800 MW
Andhra Pradesh	-	400 MW
Kerala	-	300 MW

Western Region (400 MW):

Maharashtra	-	400 MW
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Northern Region (500 MW):

Uttar Pradesh	-	300 MW
Punjab	-	200 MW

The project was presently expected to be commissioned in the time frame of 2015-17. A comprehensive transmission requirement has been assessed for evacuation of power from the new IPP projects, including TNUMPP, coming in Andhra Pradesh and Tamil Nadu who have applied for LTOA.

6.3 The system was discussed and following transmission system was agreed:

1. TNUMPP – Tiruvalam 765kV 2xS/C or D/C line \$
2. Tiruvalam – Kurnool 765kV S/C line
3. Kurnool – Raichur 765kV 2xS/C or D/C line \$
4. TNUMPP – Salem 765kV S/C line
5. Salem – Madhugiri 765kV S/C line (line no.# 2)*

§ - PGCIL would assess technical feasibility of constructing and maintaining 765kV D/C lines and submit the same to CEA. Decision regarding building the TNUMPP-Tiruvalam and Kurnool-Raichur links as 2xS/C or D/C lines would be taken up after examining the feasibility report submitted by PGCIL.

* - Another Salem-Madhugiri 765kV line (line no.# 1) alongwith Salem and Madhugiri 765kV pooling stations is being planned to be implemented by PGCIL as part of evacuation system from IPP generation projects in Tuticorin area of Tamil Nadu, which would be initially charged at 400kV. These two S/Ss and the Salem-Madhugiri line would be charged at 765kV matching commissioning of TNUMPP or IPP generating stations coming in Cuddalore area, which ever would be earlier. The Cuddalore and Tiruvalam 765kV pooling Sub-stations are planned to be implemented by PGCIL as part of transmission system for evacuation of power from IPP generation projects coming in Tamil Nadu and Andhra Pradesh. A final decision in this regard would be taken after reviewing the progress on IPP generation projects.

6.4 Accordingly, it was decided that the power at TNUMPP would be stepped up to 765kV level. The generation switchyard at TNUMPP would have five number of 765kV line bays. Out of these five line bays, three would be for the transmission lines mentioned above and two line bays would be for LILO of Cuddalore- Tiruvalam 765kV S/C line at TNUMPP. The Cuddalore- Tiruvalam 765kV S/C line is being planned for evacuation of power from IPP projects in Tamil Nadu. In addition to above, provision for two more 765kV bays would have to be kept in the generation switchyard for two number of bus reactors.

7.0 Tiruvalam 765/400kV and 400/230kV Sub-Stations:

7.1 Member(PS), CEA said that the during the 27th meeting of this Committee, the issue of setting up a 765/400/230kV sub-station by TNEB/POWERGRID came up for discussion while discussing the transmission system for Vallur TPS and NCTPS-II projects. TNEB informed that since conception of 765kV S/S may take longer time, they would initially establish the 400/230kV S/S to match with the commissioning schedule of the NCTPS-II and Vallur JV projects. Later, the 765kV side could be executed by PGCIL in the same premises in such a way that 400/230kV S/S owned by TNEB will be part of the 765kV S/S. TNEB also informed that they have identified about 140 acre of land at Illayanallur village about 6 km from Tiruvalam 230/110kV S/S.

7.2 It was decided that both TNEB and PGCIL would procure suitable contiguous land. TNEB would build their 400/230kV S/S for terminating their Alamathi-Tiruvalam 400kV D/C line and Singarapet-Tiruvalam 400kV Quad D/C line. And PGCIL would initially build their 400kV part of the 765/400kV S/S as extended bus of TNEB's 400kV bus and separated from it by bay sectionalizer. The Chittoor – Tiruvalam 400kV D/C line of PGCIL would be terminated at the PGCIL part of the Tiruvalam S/S.

8.0 Transmission System Strengthening in Tamil Nadu:

8.1 CE, TNEB stated that they have yet to estimate the quantum of surplus power to be exported out from Tamil Nadu and would revert back after due assessment. Accordingly, following was decided:

- (i) TNEB would go ahead in implementing following transmission works:
 - Establishment of 400/230kV S/S at Singarapet with 2x315 MVA ICT.

- LILO of both the circuits of Pugalur – Ottiampakkam (Sholinganallur) 400kV DC Quad line at Singarapet 400kV S/S with Quad Conductor.

- (ii) The Hosur – Singarapet 400kV DC line of TNEB was deferred pending assessment of export from Tamil Nadu.

9.0 Start-up Power for Vallur JV TPS of NTPC and TNEB:

9.1 NTPC representative stated that for start-up power for the Vallur project, they require connectivity with Nellore S/S. He said that Vallur TPS (3x500 MW) is to be connected to Alamathi and Melakottaiyur both of which are load centers, and the Nellore-Sriperumbudur 400kV D/C line would be restored for making way to connect Vallur and Chennai TPS-II at Alamathi.

9.2 The issue was discussed and it was decided that initially, only one circuit of the Nellore-Sriperumbudur 400kV D/C line would be restored and Vallur would be connected with Alamathi. With this arrangement, the Vallur TPS can draw start-up power from Nellore via Alamathi using the second Nellore-Alamathi-Sriperumbudur circuit. **NTPC-TNEB JV company would coordinate with PGCIL for this arrangement.**

10.0 Temporary Arrangements for Connecting Bhoopalapally TPS of APGENCO with the Grid:

10.1 APTRANSCO representative stated that the Bhoopalapally generation may be available by December 2009, but the Bhoopalapally – Warrangal 400kV D/C line was getting delayed and also that the required 400kV bays for this line at the Warrangal S/S of PGCIL would not be available by that time. They have proposed a temporary arrangement through LILO of Ramagundam – Khammam 400kV S/C line with part of the Bhoopalapally – Warrangal 400kV D/C line.

10.2 The issue was discussed and following was decided:

- (i) APTRANSCO would construct the 400kV Bhoopalapally – Warangal D/C line upto the line alignment of Ramagundam – Khammam 400kV S/C line and LILO one circuit of this line to provide start up power to Bhoopalapally TPS.
- (ii) The above arrangement would be a temporary arrangement till completion of the Bhoopalapally – Warrangal 400kV D/C line. APTRANSCO would speed up construction of the Bhoopalapally – Warrangal 400kV D/C line and also complete Warangal – Nagaram 220kV D/C line in time. APTRANSCO would report latest progress of these works to CEA and SRPC on regular basis.

11.0 Fourth transformer at Ghanapur by PGCIL:

11.1 ED, PGCIL stated that they were facing difficulty due to over-loading of their 3x315 MVA transformers at the Ghanapur 400/220kV S/S in Hyderabad. PGCIL had, therefore, proposed installation of 4th 400/220kV transformer at Ghanapur. Member(PS), CEA stated that the Gajwel 400/220kV S/S has been commissioned and the 400/220kV S/S at Malkaram was scheduled to be commissioned shortly. APTRANSCO need to re-arrange their 220kV network to draw power from Gajwel and relieve Ghanapur S/S. PGCIL stated in case APTRANSCO does not relieve loading on the Ghanapur S/S, any fault at the S/S may adversely affect power supply to Hyderabad city and also may affect grid security.

11.2 The issue was discussed and following was decided:

- (i) APTRANSCO would re-arrange their 220kV network to draw power from Gajwel and Malkaram 400kV S/S.
- (ii) As another 400/220kV S/S at Yeddumailaram was also being implemented, which would further relieve loading on the Ghanapur S/S, the addition of fourth transformer at Ghanapur need not be taken up.

12.0 Issue Regarding Stringing of Neyveli – Pugalur 400kV D/C line:

Director, NLC stated that they have been asked by PGCIL for shutdown of 400kV feeders from NLC TPS-I Expansion to Trichy and TPS-II for one day for stringing work of new Neyveli – Pugalur 400kV D/C line. This, he said would involve shutdown of units at TPS-I Expansion. NLC had discussed the matter with PGCIL and have given alternate proposals. The issue was discussed and it was decided that NLC would refer the matter to CEA and SRPC furnishing details for resolving this issue.

13.0 Issue Regarding LTOA and Signing of BPTA for the Nagarjuna TPS in Nandikur, Karnataka:

Director(Transmission), KPTCL stated that M/s UPCL (i.e. Nagarjuna TPS) is establishing a Thermal Power station with 1015 MW Capacity at Nandikur in Udupi District. Out of this 915 MW of power will be utilized in Karnataka and remaining 94MW will be sent to Punjab State Electricity Board and KPTCL was constructing 400kV quad moose DC line from UPCL switch yard to Shanthigrama, Hassan (PGCIL) sub station and 220 kV DC line to 220kV Khemar sub station. In this regard, he stated that, UPCL is requesting necessary directions regarding signing of Bulk Transmission Agreement with Power Grid Corporation of India. The issue was discussed and it was decided that KPTCL would refer the matter to CEA furnishing details for resolving this issue.

14.0 Discussions on the Inter State Transmission System(ISTS) Issues in respect of Long Term Open Access Applications(LTOA) made to the Central Transmission Utility(CTU) for Projects in Southern Region:

Minutes of the LTOA discussions issued by POWERGRID are given at Annex-III.

List of participants for
the 28th meeting of Standing Committee on Power System Planning
held on 15th June, 2009 at Koorg

<u>Sl. No.</u>	<u>Name and Organization</u>	<u>Designation</u>
<u>Central Electricity Authority (CEA)</u>		
1.	V Ramakrishna	Member (PS)
2.	Pardeep Jindal	Director (SP&PA)
<u>Southern Region Power Committee (SRPC)</u>		
3.	M.L.Batra	Member Secretary
4.	S R Bhat	SE
<u>Power Grid Corporation of India Ltd (POWERGRID)</u>		
5.	I.S.Jha	ED
6.	M. Krishna Kumar	GM (Proj.)
7.	Pankaj Kumar	GM(Engg.)
8.	M.R.V. Holla	AGM
9.	Dilip Rozekar	Chief Design Engr.
10.	K.P.Balanarayan	CM /Mysore
11.	A.Naga Raju	CM(Comm.)
<u>National Thermal Power Corp. (NTPC)</u>		
12.	Abhijit Sen	DGM(PE-Elect.)
13.	S.R.Bhat	DGM(NTECL)
<u>Nuclear Power Corp of India Ltd (NPCIL)</u>		
14.	Sandeep Sarvate	Dy. CE
<u>Neyveli Lignite Corp. (NLC)</u>		
15.	V. Seturaman	Director(Elect)
16.	S Muthu	GM/Ele.
<u>Transmission Corp. of Andhra Pradesh Ltd. (APTRANSCO)</u>		
17.	M.Jayachandra	CE(PS)
18.	M Balasubramanyam	DE/System Studies
<u>Karnataka Power Transmission Corp. Ltd. (KPTCL)</u>		
19.	Pratap Kumar	Director(Trans.)
20.	Suresh Babu	SEE(Planning)
21.	K Paramesha	AEE (Elect)
<u>Kerala State Electricity Board (KSEB)</u>		
22.	K.S.Antony Thomas	Dy. Chief Manager(Grid)

Status of Southern Region New Schemes

Sl. No.	Name of Scheme & Elements	Standing Committee Approval	FR Date	Investment approval by POWERGRID Board/CCEA	Target as of now	Comments/Reasons of delay
1.	<p>Neyveli TS-II Expn Tr. System</p> <p>a) Neyveli TS-II Expansion – Neyveli TS-II 400 kV 2xS/c</p> <p>b) Neyveli TS-II- Pugalur 400 kV D/c</p> <p>c) Pugalur – Madurai 400 kV D/c</p> <p>d) Udumalpet – Arasur 400 kV D/c</p> <p>e) LILO of Ramagundam-Khammam 400 kV S/c at Warrangal</p> <p>f) LILO of Neyveli – Sriperumbudur 400 kV S/c at Pondicherry</p> <p>g) Establishment of new 400/220 kV substations at Pugalur, Arasur, Pondicherry and Warrangal with 2x315 MVA transformer each.</p>	16 th Meeting on 20.01.03	Aug, 03	CCEA Approval – January, 2005	Sep' 09	<ul style="list-style-type: none"> – Commn schedule as per CCEA is Dec'07. – However, NLC have indicated that generation project has been delayed to Feb'10 – In 8th SPRC meeting held on 15th Feb, 08, NLC have indicated a further delay of generation revised schedule – Feb' 10 / Jun' 10
2.	<p>Kaiga U-3&4 Tr. System</p> <p>a) Narendra – Davangere 400 kV D/c line</p> <p>b) Mysore – Kozhikode 400 kV D/c line</p> <p>c) LILO of existing Kolar – Sriperumbudur 400 kV S/c at new 400/220 kV substation at Melakottaiyur</p> <p>d) Establishment of new 400/220 kV substations at Kozhikode and Melakottaiyur with 2x315 MVA, 400/220 kV transformers</p> <p>e) Provision of 2nd 315 MVA, 400/220 kV transformer at Hiriyur 400/220 kV substations each.</p>	16 th Meeting on 20.01.03	Oct, 03	CCEA Approval – March, 2005	Comm issione d Except Mysore - Kozhik ode	<ul style="list-style-type: none"> – Mysore – Kozhikode is getting delayed due to ROW (50 Kms) of coffee planters in Kranataka portion, forest clearance problem in Kerala & Karnataka portion. The matter is taken with highest level with State Governments and further being

Sl. No.	Name of Scheme & Elements	Standing Committee Approval	FR Date	Investment approval by POWERGRID Board/CCEA	Target as of now	Comments/Reasons of delay
						followed up through intervention of Ministry of Power.
3.	Kudankulam Tr. System a) Kudankulam – Tirunelveli 2x400 kV D/c lines with Quad conductors b) Tirunelveli – Udumalpet 400 kV D/c lines with Twin conductors. c) LILO of both circuits of Madurai – Trivandrum 400 kV D/c line at Tirunelveli d) Tirunelveli – Edamon 400 kV Multi-ckt line (2 ckts of quad & 2 ckts of twin) e) Edamon – Muvattupuzha 400 kV D/c line (with Quad conductors) constructed in new ROW corridor f) Muvattupuzha - North Trichur 400 kV D/c line with quad conductor g) Establishment of new 400/220 kV transformers with 2x315 MVA transformers at Tirunelveli and Muvattupuzha. h) Transformation augmentations with 1x315 MVA transformers at Udumalpet and Trivandrum 400/220 kV substations.	18 th Meeting on 05.03.04	June, 04	CCEA – May, 2005		– Generation project is delayed to Dec'09. – System to be commissioned Matching with generation project. – Tirunelveli 400/220 kV S/stsn and LILO of Madurai – Trivandrum commissioned – Severe ROW problems facing in Edamon – Muvattupuzha – North Trichur corridor
4.	System Strengthening – VII a) Establishment of 400/220 kV new substation with 2x315 MVA transformers at Karaikudi.	18 th Meeting on 05.03.04	July, 04	POWERGRID Board Approval - April, 05	July' 09	– Construction of line & substation are in progress.

Sl. No.	Name of Scheme & Elements	Standing Committee Approval	FR Date	Investment approval by POWERGRID Board/CCEA	Target as of now	Comments/Reasons of delay
	b) LILO of one circuit of Madurai-Trichy 400 kV D/c line at Karaikudi c) Establishment of 400/220 kV new substation with 2x315 MVA transformers at Hassan. d) LILO of one circuit of existing Talguppa-Neelmangla 400 kV D/c line at Hassan					
5.	System Strengthening – VIII a) 11 nos. of 63 MVAR Reactors (7 bus reactors + 4 line reactors)	23 rd Meeting on 22.01.07	Mar, 07	POWERGRID Board Approval –Jan, 08	Mar' 10 - Nov' 10	– Award placed in July 08 – Implementation work are in progress
6.	Kalpakkam PFBR Tr. System a) KPFBR - Kancheepuram 230 kV D/c line b) KPFBR – Arni 230 kV D/c line c) KPFBR – Sirucher 230 kV D/c line d) 2 nos of 230 kV bays each at Kancheepuram, Arni and Sirucher 230 kV substations of TNEB	20 th Meeting on 07.10.04	Mar, 08		Nov' 11	– Commissioning schedule for D/c line to Sirucher is Apr' 11 – Complete system by Nov' 11
7.	Transmission System associated with Tuticorin JV a) Tuticorin – Madurai 400kV D/c line (Quad conductor)	22 nd Meeting on 18.06.07	Jun, 07	POWERGRID Board Approval –Feb, 09	Feb' 12	– Award placed in Feb' 09
8.	Transmission system associated with Chennai NTPC-TNEB JV TPS a) LILO of Alamanthy – Sriperumbudur 400 kV D/c line at North Chennai TPS JV	24 th Meeting on 18.06.07	Nov, 07	POWERGRID Board Approval –May' 08	April' 09	– Activities in progress, to be commissioned six months ahead of Gen. Gen. likely by Oct'2010
9.	System Strengthening – IX a) Hassan - Mysore 400 kV	24 th Meeting on	Aug, 08	POWERGRID Board Approval	Feb' 12	– Award placed in

Sl. No.	Name of Scheme & Elements	Standing Committee Approval	FR Date	Investment approval by POWERGRID Board/CCEA	Target as of now	Comments/Reasons of delay
	D/c line	18.06.07		-Feb, 09		Mar' 09
10.	Simhadri-II Tr. System a) Simhadri – Gazuwaka 400 kV D/c with 95 degC conductor temperature	24 th Meeting on 18.06.07	Sept, 08		18 months from investment approval	– FR prepared – Tr. System under revision – Investment to be taken shortly
11.	System Strengthening – X a) Establishment of new 400/220 kV substation at Bidadi with 7x167 MVA 400/220 kV transformers and 1x63 MVAR bus reactor b) LILO of one circuit of Neelamangla – Somnahalli 400 kV D/c line at Bidadi 400 kV substation	24 th Meeting on 18.06.07	Sept, 08		36 months from investment approval	– FR prepared – Investment to be taken shortly
12.	System Strengthening – XI a) Establishment of new 400/220 kV substation at Chulliar (Palakkad) with 2x315 MVA transformers and 1x63 MVAR bus reactor. b) LILO of both circuits of Udumalpet - Madakathara (North Trichur) 400kV D/C line at Chulliar 400 kV substation	25 th Meeting on 28.03.08	Oct, 08	POWERGRID Board Approval -Feb, 09	Jul' 11	– Award placed in Mar' 09
13.	System Strengthening – XII a) Establishment of new 400/220 kV substation at Yelahanka with 2x500 MVA transformers and 1x63 MVAR bus reactor. b) LILO of Neelamangla-Hoody 400kV S/c line at Yelahanka 400kV substation c) LILO of Somanhally-Hoody 400kV S/c line at Yelahanka 400kV substation	27 th Meeting on 03.03.09	Jun, 08	FR under approval	28 months from investment approval	

पावर ग्रिड कारपोरेशन ऑफ इंडिया लिमिटेड

(भारत सरकार का उद्यम)

POWER GRID CORPORATION OF INDIA LIMITED

(A Government of India Enterprise)



पावरग्रिड

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संदर्भ संख्या/Ref. Number

Ref. No. : C/ENG/SEF/S/09/LTOA

Date : 25 June 2009

1. Sh.V.Ramakrishna Member (PS) Central Electricity Authority Sewa Bhawan, R.K.Puram, New Delhi-66	2. The Member Secretary, Southern Regional Power Committee, 29, Race Course Cross Road, Bangalore 560 009.
3. The Director (Transmission), 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), 6 th 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, 12 th Floor, Vikram Sarabhai Bhawan, Anushakti Nagar, Mumbai – 400 094. FAX : 022- 25991258

Sub: Long Term Open Access applications in Southern Region – Minutes of the Meeting

Dear Sir,

We write with reference to the Long Term Open Access meeting held on June 15, 2009 at Orange County, Siddapur, Coorg, Karnataka to discuss Long Term Open Access Applications in Southern Region. Minutes of the meeting are enclosed. Your comments and observations, if any, may be sent to us at the earliest.

Thanking You,

Yours faithfully

(Pankaj Kumar)

General Manager (Engg.-SEF)

Encl: Minutes

पंजीकृत कार्यालय : बी-9, कुतब इंस्टीट्यूशनल एरिया, कटवारिया सराय, नई दिल्ली-110016 दूरभाष : 26560121 फैक्स : 011-26560039 तार 'नेटग्रिड'
 Registered Office : B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi-110016 Tel. : 26560121 Fax : 011-26560039 Gram : 'NATGRID'

स्वहित एवं राष्ट्रहित में ऊर्जा बचाएं
 Save Energy for Benefit of Self and Nation

Minutes of meeting of SR constituents regarding Long Term Open Access applications held on 15.06.2009 at Coorg, Karnataka

1. List of participants in is enclosed at **Annexure-I**.
2. Member (PS), CEA and ED (Engg-II), POWERGRID welcomed all the participants. The LTOA applicants were requested to update the generation project status. The updated status of different generation project seeking LTOA to ISTS and considered in the present agenda, as provided by different applicants is given at annexure-II.
3. Sh. Pankaj Kumar, GM(Engg-SEF) made presentation on the studies carried out for identifying transmission system required for evacuation of power from the new generation projects. He explained that as indicated in the agenda, circulated earlier, it IS seen that generation projects have been proposed in the identifiable areas like Tuticorin, Cuddalore/Nagapattinam, Kanchipuram, Srikakulam etc. Accordingly, transmission system strengthening has been evolved and segregated in two categories (1) which shall be required for identified one or more generations in particular area and (2) common strengthening which shall be benefitting group of generation in more than one area. The transmission system has been phased in such a fashion that there is least dependency of materialization of one generator over another with respect to their evacuation needs.
4. The area-wise transmission system evolved were taken up FOR discussions
 - a. Srikakulam District – GM (Engg.-SEF), POWERGRID explained that in this area POWERGRID have received application for LTOA from East-Coast (2640 MW) and NCC Vamshadhara (originally 1980 MW subsequently revised to 2640 MW). He informed that M/s NCC have not indicated about the target beneficiaries from the generation project, in absence of this studies had been carried out assuming allocation of 1320 MW each to WR & NR constituents. Representative of M/s NCC committed to give the information about the target beneficiaries within one week. As regards, East-coast the studies in the agenda had been carried out on the basis of 750 MW to SR, 600 MW to WR and 1100 MW to NR constituents. M/s East-coast representative informed that subsequent to information provided in the application they had subsequently revised the target beneficiaries and it now stands as 1940 MW (AP-940 MW, Karnataka – 500 MW, Kerala – 500 MW) to SR constituents and 500 MW to WR , (Maharashtra – 500 MW) constituents.

POWERGRID stated that with the changed target beneficiaries revised studies would be carried out, however, prima-facie it would not make much material difference as the power allocated to SR constituents shall be displaced by the power allocated to NR/WR constituents in other generation projects in Tamil Nadu through principle of displacement. Member(PS), CEA stated that studies should also consider option of reversal of power on Talcher-Kolar HVDC bipole. Further, LILO of Talcher-Kolar HVDC line with Multi-terminal DC station at pooling station shall also required to be explored. After discussions, it emerged that even with these changes the connectivity requirement would essentially remain same inter-alia comprising of establishment of 765 kV pooling station in the area and integration of pooling station through LILO of Behrampur – Gazuwaka 400 kV D/c line. The East coast and NCC shall have to construct dedicated lines for bringing power upto pooling station through 400kV or 765 kV voltage level transmission lines. Here, it was mentioned that due to large size of projects the stepping of generation at 765 kV level shall be preferred to control short circuit levels. After deliberations Member(PS), CEA finalized that the stepping of generation for East-coast shall be at 400 kV level and that for the NCC shall be at the 765 kV level.

Power from pooling station shall be transmitted to Angul pooling station being planned with the other LTOA generations in Orissa. As regards, location of pooling station in the area, it was indicated both by M/s East Coast and NCC that surplus land of adequate size available with them which can be offered for establishment of pooling station. It was decided that decision on this shall be taken separately after carrying analysis with respect to location of the two projects vis-à-vis the location of Angul pooling station where power shall ultimately be transferred for onward transmittal.

- b. Tuticorin area – GM (Engg.-SEF) informed that two nos of generation projects viz. Coastal Energen (1200 MW) and IND-Barath (1400 MW) have applied for LTOA. It was informed that IND-Barath have applied for open access for 945 MW against its installed capacity of 1400 MW. Member (PS), CEA enquired about the balance power from the project to which representative of IND-Barath stated they would like to trade it on short term. It was explained that unless

generation project authorities get adequate transmission capacity built they would not be able to transmit the power in short term, as transmission capacity shall be created for the LTOA capacity that has been sought. There had been no specific comments from the members present on the transmission system proposed for generation project proposed in the agenda that inter-alia included establishment of 765/400 kV pooling station in the area initially charged at 400 kV. The pooling station is to be integrated to the SR grid through Tuticorin – Salem 765 kV D/c line (initially charged at 400 kV) and Tuticorin – Tuticorin JV 400 kV Quad D/c line. The Coastal Energen and IND-Barath shall bring power to the pooling station through dedicated transmission lines as indicated in the agenda. Therefore, the system as mentioned above was agreed.

Representative of Coastal Energen requested for LILO of one circuit of Tuticorin JV TPS – Madurai 400kV Quad D/c line at their switchyard to draw start-up power. In this regard it was decided that such LILO may be agreed to as a temporary measure subject to entering into suitable commercial arrangement and Coastal Energen shall have restore the line once the Tuticorin Pooling Station is established.

- c. Cuddlore/Nagapattinam area – The generation projects proposed in the area include PEL Power (1000 MW), IL&FS (1500 MW), SRM Energy (1800 MW) and NSL Power (1320 MW). The transmission system for these projects has been evolved taking into consideration proposed 4000 MW TN UMPP project in the nearby Kanchipuram District transmission system for which was discussed and finalized in the 28th meeting of Standing Committee held prior to LTOA meeting. The transmission system as included in the agenda was earlier discussed and agreed to while finalizing transmission system for TN UMPP and there as such no comments on the proposed system.
- d. North Chennai – There is one application viz. North Chennai Power Co. (1200 MW). The transmission system for this project was evolved keeping into consideration other generation projects in the vicinity like Vallur TPS (1500 MW), NCTPS-II (1200 MW), Ennore TPS (500 MW) etc. The transmission evolved for the project included pooling of power from the project at 400 kV level at Tiruvalem 765/400 kV pooling station that shall be established alongwith the

other LTOA projects proposed to be setup in Tamil Nadu. There was no specific comment on the system proposed in the agenda and the system was agreed by all the members.

5. Member (PS), CEA explained that transmission system development is taken up only when the investment on new transmission system is under written by its users for its recovery. Further, as the present LTOA applicants have not firmed up beneficiaries so till the time the beneficiaries from the project are firmed the generation developers shall have to give commitment for bearing proportionate transmission charges for new system as well as extend requisite security for making the investment.
6. It was decided that POWERGRID shall workout with individual/group of generators coming in same vicinity to finalise the transmission system and its sharing mechanism. The meeting ended with vote of thanks to the participants.

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**List of participants during the meeting of SR constituents regarding Long Term
Open Access applications held on 15.06.2009 at Coorg, Karnataka**

Sl. No.	Name & Organisation	Designation	
<u>CEA</u>			
1.	V. Ramakrishna	Member (PS)	
2.	Pardeep Jindal	Director (SP&PA)	
<u>SRPC</u>			
3.	M.L. Batra	Member Secretary	
4.	S.R. Bhat	SE	
<u>POWERGRID</u>			
5.	I.S. Jha	ED (Engg.-II)	
6.	Pankaj Kumar	GM (Engg.-SEF), CC	
7.	M. Krishna Kumar	GM (Projects), Bangalore	
8.	M.R.V Holla	AGM (Engg.), SRTS-II	
9.	Dilip Rozekar	CDE (Engg.), CC	
10.	A. Naga Raju	CM (Commercial), SR-II	
11.	K.P. Balanarayan	CM, Mysore	
<u>NTPC</u>			
12.	Abhijit Sen	DGM (PE-E)	
<u>NPCIL</u>			
13.	Sandeep Sarwate	Dy. C.E	
<u>Neyveli Lignite Corp.</u>			
14.	V. Seturaman	Dir (Electrical)	
15.	S. Muthu	GM	
<u>APTRANSCO</u>			
16.	M. Balasubramanyam	DE/System Studies	
<u>KSEB</u>			
17.	K. S. Antony Thomas	DE	
<u>KPTCL</u>			
18.	Pratap Kumar	Dir (Trans.)	
19.	Suresh Babu	SEE	
20.	K. Paramesha	AEE, Electrical	
<u>Long Term Open Access Applicants</u>			
21.	J. Balasubramanyam	Director	East Coast Energy Pvt. Ltd.
22.	Sharat Mahajan	Advisor	NCC Infrastructure Holding
23.	Sidharth Das	GM	NCC Infrastructure Holding
24.	K. Rajesh	DGM	NCC Infrastructure Holding
25.	R. Satishan	Advisor	TATA Power
26.	Kundan Kumar	Asst. Mgr	TATA Power
27.	K. Thiruppathi	Dir. (Proj.)	Coastal Energen
28.	S. M. Zafrulla	MD	Coastal Energen
29.	T.S. Das	VP	Ind-Barath Power
30.	R. Mani Mathavan	GM	SRM Energy
31.	G. Vijaya Kumar	COO	PEL Power
32.	N. Ramesh	AVP	IL&FS Tamil Nadu Power
33.	B. S. Rao	GM	NSL Power
34.	S. Suryaprakasa Rao	Advisor	