Central Electricity Authority
System Planning & Project Appraisal Division
Sewa Bhawan, R.K. Puram, New Delhi – 100 66.

No. 51/4/SP&PA-2001/ Date : 30th January, 2003.

To

1.The Member Secretary, Southern Regional Electricity Board, 29, Race Course Cross Road, Bangalore 560 009. **FAX : 080-2259343**	2.The Executive Director (Engineering), Power Grid Corp. of India Ltd. B-9, Institutional Area, Katwaria Sarai, New Delhi 110 016. **FAX : 011-6466823, 6564751**
3.The Director (Transmission), Transmission Corp. of Andhra Pradesh Ltd., Vidyut Soudha, Hyderabad – 500 082. **FAX : 040-3317652, 3320565**	4.The Director (Transmission), Karnataka State Power Transmission Corp. Ltd., Cauvery Bhawan, Bangalore 560 009. **FAX : 080 -2228367, 221352**
5.The Member (Transmission), Kerala State Electricity Board, Vidyuthi Bhawanam, Pattom, P.B. No. 1028, Thiruvananthapuram - 695 004. **FAX : 0471-446774**	6.The Executive Director/ Planning, Tamil Nadu Electricity Board, 6th Floor, Eastern Wing, 800 Anna Salai, Chennai – 600 002. **FAX : 044-8521210, 8544528**
7.The Director (Power), Corporate Office, Block – I, Neyveli Lignite Corp. Ltd., Neyveli, Tamil Nadu – 607 801. **FAX : 04142-52646**	8.The Superintending Engineer –I, First Floor, Electricity Department, Gingy Salai, Pondicherry – 605 001. **FAX : 0413-334277**
9.The Executive Director (Engineering), NTPC Ltd., Engg. Office Complex, A-8, Sector 24, Noida – 201 301. **FAX : 91-539462, 91-4410136, 91-4410137**	10.The Director (Transmission), Nuclear Power Corp. of India Ltd., 12th Floor,North Wing,Vikram Sarabhai Bhawan, Anushakti Nagar, Mumbai – 400 085. **FAX : 022- 5556513**
11. The Director (Tech), Power Trading Corpn. of India Limited, 2nd Floor, NBCC Tower, 15 Bhikaji Cama Place, NewDelhi 110066. **FAX-011-51659504**	

Sub: Sixteenth meeting of the Standing Committee on Power System Planning in Southern Region.

Sir,

Enclosed please find summary record of discussions in the 16th meeting of the Standing Committee on Power System Planning in Southern Region held at Kaiga on 20th January 2003.

Kindly acknowledge the receipt.

Yours faithfully,

Encl: As above.

(A.K. Asthana)
Director (SP & PA)

Summary record of discussions in the 16th meeting of the Standing Committee on Power System Planning in Southern Region,held at Kaiga on 20th January 2003.

List of participants is enclosed at Annex-I.

Station Director, Kaiga APP Generation Station, NPCIL welcomed the participants and gave a presentation on the achievements and future programme of nuclear generation capacity addition by NPCIL. He also mentioned the difficulties that were being faced by the Kaiga APP on account of grid operational problems and the need of improving the maintenance of protection system at Hubli substation of KPTCL.

Chief Engineer (SP&PA), CEA welcomed all the participants to the 16th standing committee and thanked NPCIL for arranging the meeting at Kaiga APP and for making excellent arrangements. He requested Director(Transmission), KPTCL to look into the problems of operational coordination between Kaiga APP and KPTCL substations and protection system at Hubli. Director(Transmission), KPTCL agreed to look into the matter and assured that whatever was necessary, would be done.

The agenda items were thereafter taken up for discussion.

1. Confirmation of Summary record of discussions of the 15th Standing Committee Meeting.

Chief Engineer (SP&PA), CEA stated that the summary record of the 15th meeting held on 18-4-02 at Bangalore were circulated vide No.51/4/SP&PA –2002/184-97 dt. 24-4-2002 and no observations or objections have been received from any participant.

Thereafter, the summary record was taken as confirmed.

2. Review of progress on the decisions taken in the 15th meeting.

2.1 Provision of new 400kV sub-stations and additional transformers at existing s/stn.

Chief Engineer (SP&PA), CEA stated that based on discussion in the last meeting, proposal for new 400kV substations and additional transformers at existing substations under regional scheme, had been considered and it was proposed to include the necessary provisions under the Regional Transmission System for Kaiga Extension (Unit-3 & Unit-4, 2 x 235 MW) and Neyveli TS-II Expansion (2 x 250 MW) Projects, covered under agenda item-5.

2.2 Kaiga Stage-I Transmission System – Upgrading Kaiga-Sirsi-Davanagere line for 400kV operation

The progress of works for upgraded operation of Kaiga-Davanagere line to 400kV was reviewed. NPCIL intimated that the work at Kaiga end would be ready by December 2003.

In regard to works at Davanagere end, Director (Transmission), KPTCL informed that tenders had was already been invited. The technical bids had been opened and the cost

bids were to be opened shortly. However, before KPTCL proceeded further, decision on the cost sharing of the Sirsi-Davanagere section of the line was required.

The issue was discussed and it was noted that the Sirsi-Davanagere section of line of KPTCL would become an integral part of Kaiga-Davanagere 400kV D/C line. Also, there would not be any 400kV switching station at Sirsi. As such, the Sirsi-Davanagere section of 400kV Kaiga-Davanagere D/C line as well as the two 400kV line bays that were required to be provided by KPTCL would qualify to be a part of regional system in all respect.

In view of this, it was agreed to include the Sirsi-Davanagere line section and the two 400kV bays at Davanagere under the regional scheme and it was decided that MS, SREB would take-up this issue for getting this endorsed in the SREB forum. However, this would be treated as a specific case and not linked the proposal for transfer of other transmission system of State utilities under the Regional category that was being discussed separately in the SREB.

It was also decided that KPTCL would go ahead with the works for provision of bays at Davanagere end and not wait for the SREB process.

2.3 LILO of second circuit between Kadra and Kodasalli at Kaiga.

CE (SP&PA), CEA stated that the views of NPCIL and KPTCL forwarded to CEA on the LILO proposal were examined and as this was more of an operational issue, the matter should be shorted out by KPTCL and NPCIL between them or in the Operating Committee of SREB.

2.4 Kaiga-Narendra 400kV D/C Line and Narendra 400kV Substation

POWERGRID representative intimated that the forest clearance for construction of Kaiga-Narendra 400kV line had finally been obtained in November 2002. For establishment of Narendra 400kV S/S they were in process of preparing FR for obtaining approval of their Board. The construction schedule of 400kV Kaiga-Narendra line along with Narendra 400kV S/S was being programmed for completion and commissioning by March 2005.

In regard to commissioning of Kaiga Stg-II, NPCIL informed that civil construction works for Kaiga Stg-II project was going on at rapids pace and the project was presently scheduled for commissioning by December 2006.

3. Co-opt of PTC as a member of standing Committee.

CE(SP&PA) stated that the PTC was a facilitator for trading of power to beneficiary states of different regions .The role of PTC was significant considering the power deficit in Southern Region and possibilities of meeting the gap through supply of power from other regions especially from the surplus available in Eastern Region. PTC was in a better position to provide information regarding emerging power exchange modalities and availability of power from future generating stations enabling decision for purchase of power judiciously. He requested the members to give their views on the proposal.

Director, PTC, an special invitee to the meeting, elaborated upon the role being played by PTC in the power trading.

Director (Trans), APTRANSCO and Director (Trans), KPTCL wanted to know whether PTC would be invited as special invitee or as a member of the committee and what would be its role in the process of agreement or decision on the issues.

CE(SP&PA), CEA stated that it was proposed to co-opt PTC as a member of the committee. He further explained that the decisions in the Standing Committee were arrived on the basis on consensus among those members of the Standing Committee who were the affected parties for the particular issue. As such, the role of PTC would be more towards providing information and in participative discussions on issues, and not in decisions relating to regional transmission where they had no stake.

After discussions all the other members of the Committee unanimously agreed for induction of PTC as a member of the Standing Committee of the Southern Region.

4. National Grid for Southern Region:

Inter-regional transmission system for import of additional power by the Southern Region from operational surpluses in Eastern and other regions and providing all India connectivity:

Chief Engineer (SP&PA), CEA stated that many thermal power projects in Eastern Region like Kahalgaon Extension, Barh, Maithon RBC, North Karanpura, etc were being envisaged to come up during the 10^{th} and 11^{th} Plan periods and generation from these plants would be transported to neighboring deficit regions. Formation of National Grid connecting Eastern Region with the Northern Region and Western Region was being envisaged in this context. With Rourkela-Raipur inter-connection, the Western Region and by year 2005 the Eastern Region would start operating in synchronous mode very shortly. Subsequently, with Tala transmission system, the Northern Region and Eastern Region would also get inter-connected synchronously. North Eastern Region was already operating with synchronous AC inter-connection with Eastern Region. With this, all regions except the Southern Region would be in synchronous operation. With strengthening of National Grid network associated with Barh and Kahalgaon etc., the total network of ER, NER, WR and NR would operated as an integrated system. It was proposed to extend the National Grid to the Southern region also so that an all India integrated grid could be realized.

Director (SP&PA), CEA gave a presentation on the proposal of extension of the National Grid for Southern Region (enclosed at Appendx-1). The presentation highlighted that with the demand projection as per 16^{th} EPS and generation programme that was being envisaged, the Southern Region would need an additional tie-up for 2000 to3000 MW for meeting the full supply requirements by 2008-09. This would be in addition to supply from Talcher-II, 2000 MW and imports of about 1000 MW via Gazuwaka HVDC back-to-back link. Further, as the current trends of demand growth incase of the Southern region were higher than the 16 EPS projections, the requirement of additional tie-up could be still higher if the demand growth in Southern region continued as per the current trend. A cost effective possibility for meeting this demand would be through import from Eastern Region. For enabling this import and providing all India inter-connectivity, it was proposed to include the Southern region also under the ambit of National Grid by

extending the 765kV network up to Raichur. Studies to evolve the required system had been carried out in CEA and circulated along with the agenda. A review of the options considered, results of the studies and an indicative cost comparison of the alternatives were also presented (please refer to Appendix-I for details).Indicative cost for option-I,AC Alternative was Rs.3200 crores, for option-2,Hybrid Alternative was Rs.5000 crores and for option-3, HVDC Alternative was Rs.5800 crores.

The members generally agreed to the need of National Grid connectivity for the Southern Region.Of the 3 alternatives, the choice was generally between Alt-I and Alt-II.

Director (Transmission), KPTCL asked regarding adoptability of 765 kV transmission system and the cost difference between 400kV Quad conductor lines and 765kV lines. Chief Engineer (SP&PA), CEA clarified that 765kV voltage level has been well accepted level as next higher transmission voltage. As compared to 400kV D/C Quad conductor line, the cost of 765kV S/C line was less as it had only 12 conductors against 24 in case of the former. However, in case of 765kV, the cost of substation equipments was higher. On over all basis the two were more or less at the same level of cost. The two were also comparable in respect of thermal limit of transmission capacity. However, the main advantage of 765kV level was due to its high SIL, which enables 765kV system to provide higher transmission capacity over longer distance with stability.

ED (Engg.), POWERGRID suggested that National Grid formation and integrated operation of regions should be implemented in a phased manner. He further stated that though AC option worked out to be economical it would be prudent to go for Hybrid system for SR National Grid for operational considerations.

Director, APTRANSCO emphasized that priorities should be given to security and reliability aspects towards formation of the SR National grid and stated that Hybrid System, though it appears to be a little costlier, could be envisaged.

Member (Technical), KSEB stated that after Talcher-Kolar HVDC bi-pole link was fully realized, it would be preferable to go for option-1 for formation of Southern National Grid. He suggested that planning of Southern National Grid should be made in stages for short and long term basis. CE, TNEB supported the views of KSEB.

CE (SP&PA), CEA suggested that all the constituents could again go through the studies circulated along with agenda in light of the presentation and discussions during the meeting and sent their suggestions to CEA by the end of February 2003. Based on the inputs, CEA would carry out further studies to firm up the proposal and the same could be discussed and finalized in the next meeting.

5. Review of the proposal for LILO of 400kV Gazuwaka-Vijaywada D/C line at Vemagiri and Signing BPTA for implementation of 400kV Rourkela-Riapur-Chandrapur scheme

Chief Engineer(SP&PA) stated that the LILO of Gazuwaka-Vijaywada 400kV D/C line at Vijaywada was agreed to in the 15th meeting of the standing committee meetings subject to completion of Vemagiri-Tadikonda 400 kV D/C lines by APTRANSCO. However, in view of APTRANSCO and TNEB not agreeing for sharing of the Rourkela-Riapur-Chandrapur 400kV system evolved as a fall-back transmission system for Talcher-II and agreed in the 12th meeting of the standing committee, the

implementation of fallback system for Talcher-II has been held up. The need for review of Vemagiri LILO proposal had been felt in this context. In a meeting taken by Chairman, CEA with the SR constituents on the issue of signing BPTA for implementation of 400kV Rourkela-Riapur-Chandrapur scheme, APTRANSCO representative had stated that instead of sharing transmission charges for the suggested fall back system, they would prefer to carry out load shedding. With application of this planning criteria/philosophy, the need for LILO of Gazuwaka-Vijaywada at Vemagiri, which was also a fall back arrangement for meeting the contingency of outage of Vemagiri-Tadikonda line, was also arguable.

The issue was discussed in detail. KPTCL informed that they have already conveyed their agreement for the 400kV Rourkela-Raipur-Chandrapur D/C line. CE (SP&PA), CEA emphasised the urgency of signing the BPTA for the Rourkela-Riapur-Chandrapur scheme so that fall back system could be put in place. Director (Transmission), APTRANSCO requested CEA to forward a consolidated note on the issue so that the matter could be taken up for a review in his organization. CE (SP&PA), CEA stated that all the necessary information was already available with APTRANSCO in their record. However, he agreed to send a note covering background on the issue and justification details for taking up the scheme so as to facilitate the review process by APTRANSCO and TNEB (and also by KSEB, KPTCL and Pondichery for expediting signing of BPTA).

6. Additional Transmission system for Kaiga APP Stage-II (3rd and 4th Units), and Evacuation system for Neyveli TS.II Expansion Project (2x250 MW).

CE(SP&PA) stated that upgrading and operation of the existing Kaiga-Sirsi-Davanagere D/C line at 400kV level and adding Kaiga-Narendra 400kV D/C line as part of approved Kaiga evacuation system would not be sufficient to meet stringent requirements for the Nuclear Stations. Also, with addition of 2x235 MW under Stage-II of Kaiga, taking total capacity at Kaiga to 910 MW, additional transmission lines from Narendra were needed for dispersal power towards Devanagere and from thereon to load centers in South Karnataka and North Kerala. He further stated that Neyveli TS.II Expansion Project (2x250MW) was also coming in the region in the same time frame and transmission system the same had also to be evolved. Accordingly, CEA had carried out studies for evolving the required transmission system. The result of the studies and the proposal system had been circulated with the agenda. This was required to be discussed to finalise the transmission system.

Thereafter, the proposal as contained in the agenda note was discussed in detail and based on the technical need of system strengthening for evacuation and dispersal of power from the extension projects and also for taking care of requirements arising out of changes in flow pattern on account of growth in demand and redistribution of power flows, the following decisions were taken:.

(a) It was agreed that in addition to new 400kV substations with 2x315MVA capacity at Mysore (Karnataka), Kozhikode (Kerala), Pondichery and Pugalur (TN) and second 315 MVA transformer at Vijaywada as proposed in the agenda, additional 400kV substations with 2x315MVA capacity at Warangal (A.P.) and Melakottaiyur (TNEB) were also needed and it was decided to include these under the regional scheme.

(b) The need for one additional 315 MVA 400/220 kV additional transformer each at Davanagere substation of KPTCL (2nd transformer) and Trissur substation of KSEB (3rd transformer) was also noted. However, as Davanagere and Trissur were already existing substations of KPTCL and KSEB respectively, the additional transformers would be provided by the respective utilities owing the substations at their own cost and compensatory provision under the regional scheme would be covered in some future scheme.

(c) KPTCL suggested that 400kV substations proposed at Haveri could be deleted and instead, second 315 MVA transformers at Hiriyur could be provided. This was agreed.

(d) In regard to the suitability of taking line to Mysore from Somanhalli via-a-vis from Neelamangala 400kV S/Ss, KPTCL stated that Neelamangala would be better point to take-off the line from system and ROW consideration. Accordingly, it was decided to have the line from Neelamangala.

(e) Taking note of result of studies for evolving evacuation system for Kudankulam, which were circulated as a supplementary agenda, it was decided that instead of taking towards Trichy or Udumalpettai, the 400kV line from Neyveli to Pugalur would be extended towards Mudrai.

(f) TNEB suggested that 400kV substation proposed at Villupuram could be deleted and instead, 400kV substation at Arasur could be provided. This was agreed. It was also decided that instead of LILO of Salem-Udumalpet as was proposed earlier by TNEB, the interconnecting arrangement for Arasur substation would be 400kV Udumalpet-Arasur D/C line, because this would fit better in the perspective scenario.

(g) On suggestion of POWEGRID, KPTCL and TNEB, it was agreed that the 400kV lines that were proposed to be S/C would be revised to D/C. Though this would result in lower initial utilization, this decision was taken with a view to reduce multiplicity of lines in long run and save ROW.

Accordingly, it was decided that the following works would be covered under the regional transmission schemes for Kaiga-II and Neyveli-II Exp. systems:

Kaiga-II Transmission System:

(1) Narendra-Davanagere 400kV D/C
(2) Neelamangala-Mysore 400kV D/C
(3) Mysore-Kozhikode 400kV D/C
(4) LILO (1xD/C) of 400kV Kolar-S P Budur line at Melakottaiyur
(5) New 400/220kV,2x315MVA substations at Mysore, Kozhikode and Melakottaiyur
(6) S/S extn for line bays at Narendra, Davanagere and Neelamangala
(7) Second 400/220kV,315MVA transformer at Vijayawada and Hiriyur

Neyveli TS-St.II Expansion Transmission system:

(1) Neyveli TS-II Expansion-Neyveli TS-II 400kV 2xS/C
(2) Neyveli TS-II Expn.-Pugalur 400kV D/C
(3) Pugalur—Madurai 400kV D/C
(4) Udumalpet-Arasur 400kV D/C
(5) LILO (1xD/C) of Neyveli-S.P.Budur 400kV S/C at Pondicherry
(6) LILO (1xD/C) of Ramagundam-Khammam 400kV S/C at Warangal
(7) New 400/220kV, 2x315MVA substations at Pugalur, Arasur, Pondicherry and Warangal
(8) S/S Extn for line bays at Madurai and Udumalpet

Early scheduling of works;

Director (Transmission), KPTCL informed that KPTCL had desired to construct Neelamangala-Mysore 400kV D/C line along with Mysore 400kV substation (part of regional transmission works under Kaiga Stage-II) ahead of the commissioning of the generation units so as to facilitate supply to Mysore area for which full transmission charge was proposed to be borne by KPTCL till commissioning of the first generating unit (U#3 or 4) at Kaiga APP. Member, KSEB and Chief Engineer, TNEB made similar suggestions in respect of Kozhikode and Melakottaiyur substations. It was agreed that the respective utilities might take up with POWERGRID for needful.

7. Construction of Raichur-Gooty 400kV D/C line instead of earlier agreed proposal for LILO of Hyderabad- Kurnool 400kV S/C line (part of Ramagundam –III transmission system) **at Raichur.**

CE (SP&PA) stated that based on route survey, POWERGRID had informed that LILO of Hyderabad-Kurnool line at Raichur, which was decided in the 12th meeting, would involve construction of a 400kV D/C line of about 95 km length, which was quite long. In view of this, there was a need to review the proposal and it was proposed that instead of the LILO, a 400kV D/C line from Raichur to Gooty as was suggested by KPTCL earlier, could be considered. The Raichur-Gooty line was also found to fit well into the plan of National Grid for Southern Region, presentation on which was made during the meeting. Director (SP&PA), CEA stated that as per the studies for National Grid for Southern region, the requirement of 400kV Raichur-Gooty D/C line with QUAD conductor was found under the AC and Hybrid alternatives. The proposal was then discussed in light of presentation on National Grid for Southern region and it was agreed to include the construction of the line under the regional strengthening scheme.

8. LILO of Nellore-Sriperumbudur line at Alamathi S/S of TNEB.

CE (SP&PA) stated that based on route survey, POWERGRID had informed that the route length for LILO of Nellore-S.P.Budur line at Alamathi was coming out to be about 85-90 km and therefore, they had proposed that instead of LILO of both circuits, as was agreed earlier in the 12th meeting, which would require 2xD/C lines, only one circuit could be LILOed.

ED, POWERGRID stated that as per the studies carried out by them, LILO of only one circuits was also found to suffice the purpose of providing the required connectivity for Alamathi.

CE,TNEB stated that the route length for the LILO would only be of the order of 55 km and as such LILO of both circuits as already agreed should be retained.

CE (SP&PA), CEA stated that if the load requirements could be satisfactorily met with LILO of only one circuit, one circuit LILO may be taken up in first phase and if need be, the second circuit could be LILOed at a later date.

9. Execution of LILO/bay extension works at Mehboobnagar S/S of APTRANSCO for LILO of Nagarjunasagar-Raichur 400kV S/C line and LILO/bay extension works at Alamathi S/S of TNEB for LILO of Nellore-Sriperumbudur 400kV line.

CE (SP&PA) stated that confirmation was required from APTRANSCO and TNEB about their position with respect to the execution arrangement for the bay extension works at Mehboobnagar S/S and Alamathi S/S, LILOes which were decided in the 12th meeting. The bays at their respective substations were required to be executed by them as part of regional scheme at the cost of POWERGRID. Director (Transmission), APTRANSCO and Chief Engineer, TNEB confirmed their agreement to the proposed arrangement. It was clarified that POWERGRID would pay the respective cost and recover transmission charges as part of regional transmission system. All the members took note of this.

10. Evacuation arrangement for Kudankulam APP Stage-I (2x1000MW)

Director (SP&PA), CEA stated that Kudankulam APP Stage-I (2x1000MW) was planned for commissioning at the start of 11th Plan, that is first unit in 2007-08 and the second unit in 2008-09. The transmission system for evacuations of power from Kudankulam was required to be evolved and finalized so that it could be programmed for commissioning matching with generation programme. Though the shares of the beneficiaries of Kudankulam were yet to be finalized, transmission requirements for evacuation of power from the project could be evolved as actual delivery of power would be through displacement, and Kudankulam being located at an extreme end, the transmission system would be practically independent of share allocation from generation. In this context, CEA had carried out studies and the results of the studies along with proposed evacuation network was circulated as a supplementary agenda. The following system was proposed:

FOR EVACUATION

- LILO (2xD/C) of both circuits of Madurai-Thiruvananthapuram 400 kV D/C line at Kudankulam.
- Kudankulam-Thiruvananthapuram-Pallom-Trissur 400 kV D/C Quad line
- New 2x315 MVA 400kV substation at Pallom
- Third 315 MVA transformer at Thiruvananthapuram

FOR START-UP POWER

- Tuticorin-Kudankulam.220kV S/C Zebra conductor
- Thiruvananthapuram-Kudankulam 220 kV S/C Zebra conductor, if ROW permits else, Kayathar-Kudankulam 220kV S/C Zebra conductor

ED (Engg.), POWERGRID stated that getting ROW in Kerala was very difficult and suggested that Kayathar substation in Tamil Nadu which was en-route to Madurai-Thiruvananthapuram line could be a better point for KAPP evacuation . POWERGRID also circulated a new proposal during the meeting.

Member, KSEB stated that they could provide ROW for establishment of 400 kV lines under Central Sector by dismantling of unloaded 220 kV and downward transmission lines in their system.

ED (Engg.), POWERGRID suggested that a joint survey by CEA, POWERGRID and KSEB would require to be carried out to find the availability of ROW/Corridors in Kerala before firming of transmission system for KAPP projects. The same was agreed and it was decided that the programme of joint survey would be finalized separately.

GM,NTPC stated that NTPC was proposing extension project at Kayamkulam and it would be desirable that the evacuation from this project may be examined along with Kudankulam project.

Based on the above discussions, it was decided that evacuation and start-up power system for KAPP would be reviewed based on outcome of joint route survey and further review studies to be carried out considering Kayamkulam Extn. Project.

11. Summary of decisions:

- KPTCL to look into the problems of operational coordination between Kaiga APP and KPTCL substations and protection system at Hubli.

- Summary record of discussions of the 15th Standing Committee Meeting as circulated vide No.51/4/SP&PA –2002/184-97 dt. 24-4-2002 were confirmed.

- The Sirsi-Davanagere section of 400kV Kaiga-Davanagere D/C line as well as the two 400kV line bays that were required to be provided by KPTCL at their Davanagere substation would qualify to be a part of regional system in all respect.

- MS, SREB would take-up for getting this endorsed in the SREB forum. However, this would be treated as a specific case and not linked the proposal for transfer of other transmission system of State utilities under the Regional category that was being discussed separately in the SREB.

- KPTCL would go ahead with the works for provision of bays at Davanagere end and not wait for the SREB process and schedule commissioning to match with commissioning 400kV S/S at Kaiga targeted presently for Dec, 2003.

- PTC was co-opted as a member of Standing Committee.

- All the constituents would again go through the proposal for National Grid for Southern Region and the studies circulated along with agenda in light of the presentation and discussions during the meeting and sent their suggestions to CEA by the end of February 2003. Based on the inputs, CEA would carry out further studies to firm up the proposal and the same could be discussed and finalized in the next meeting.

- CEA would circulate a note covering background on the issue and justification details for taking up the scheme so as to facilitate the review process by

APTRANSCO and TNEB (and also by KSEB, KPTCL and Pondichery for expediting signing of BPTA).

- The following works would be covered under the regional transmission schemes for Kaiga-II and Neyveli-II Exp. systems:

Kaiga-II Transmission System:

1. Narendra-Davanagere 400kV D/C
2. Neelamangala-Mysore 400kV D/C
3. Mysore-Kozhikode 400kV D/C
4. LILO (1xD/C) of 400kV Kolar-S P Budur line at Melakottaiyur
5. New 400/220kV,2x315MVA substations at Mysore, Kozhikode and Melakottaiyur
6. S/S extn for line bays at Narendra, Davanagere and Neelamangala
7. Second 400/220kV,315MVA transformer at Vijayawada and Hiriyur

Neyveli TS-St.II Expansion Transmission system:

1. Neyveli TS-II Expansion-Neyveli TS-II 400kV 2xS/C
2. Neyveli TS-II Expn.-Pugalur 400kV D/C (it is TS II exist.-Pugalur)
3. Pugalur—Madurai 400kV D/C
4. Udumalpet-Arasur 400kV D/C
5. LILO (1xD/C) of Neyveli-S.P.Budur 400kV S/C at Pondicherry
6. LILO (1xD/C) of Ramagundam-Khammam 400kV S/C at Warangal
7. New 400/220kV, 2x315MVA substations at Pugalur, Arasur, Pondicherry and Warangal
8. S/S Extn for line bays at Madurai and Udumalpet

- For early scheduling of works, with the arrangement that requesting state utility would be bearing full transmission charges till transfer of assets under regional works, the respective utilities might take up with POWERGRID for needful.

- Instead of LILO of Hyderabad-Kurnool line at Raichur, (which was decided in the 12th meeting), Raichur-Gooty 400kV D/C line with QUAD conductor would be taken up for construction under the regional strengthening scheme.

- In view of longer route length, instead of LILO of both circuits of Nellore-S.P.Budur line at Alamathi as agreed earlier, LILO of only one circuits would suffice the purpose of providing the required connectivity for taking up in first phase and, if need be, the second circuit could be LILOed at a later date.

- A joint survey by CEA, POWERGRID and KSEB would be carried out to find the availability of ROW/Corridors in Kerala and the proposal for **evacuation and start-up power system for Kudankulam APP** would be reviewed based on outcome of joint route survey and further studies considering Extn. Project at Kayamkulam.

List of Participants

The following Officers participated in the 16th Standing Committee Meeting on Power System Planning in Southern Region held on 20th January,2003 at Kaiga NPCIL.

Name	Designation
Central Electricity Authority	
1. ShriV.Ramakrishna	Chief Engineer (SP&PA)
2. Shri A.K.Asthana	Director
3. Shri R.Saha	Dy. Director
S.R.E.B.	
1. Shri S.Sivan	Member Secretary
2. Shri A.K.Yadav	A.E.E.
POWERGRID	
1. Shri R.N. Nyak	Executive Director(Engg.)
2. Shri V.Lakshmpathi	Add,l. Gen. Manager
3. Shri Y.K.Sehgal	D.G.M.
4. Shri Pankaj Kumar	D.G.M.
5. Shri Babu Varghese	D.G.M.
6. Shri A.Chocualingam	Chief Manager
7. Shri C.N.Suresh Babu	Chief Manager
N.T.P.C	
1. Shri N.N.Misra	G.M.(Elect.)
N.P.C.I.L.	
1. Shri K.J..Sebastian	Director(Trans)
2. G. Nageswararao,Station	Director(KGS)
3. V.Kausumu	Director(E&P.)
4. Shri K.Ramamurthy	CE(KGS 1&2)
5. Shri C.S.Malpatil	C.E.(E&P)
6. Shri Rajesh Laad	DGM(Trans)
7. R.C.Sinha	P.D.
8. Shri R.V.Manohar	SO1(TV)
P.T.C	
1. Shri S.K.Dube	Director
APTRANSCO	
1. Shri G. Kesav Rao	Director(Trans. & GO)

2. Shri M.Sitarama Sarma	SE(Tech. & SS)

K.P.T.C.L.

1. Shri S.Shivamallu	Director(Trans)
2. Shri S.K.Sridhara	EE(Planning)
3. Shri S.Ramesh	E.E.(Corp. off)
4. Shri Syed Zubair Ahamed	Asstt.Ex.Engr. (Corp. off.)
5. Shri P.L.Manjunath	Asstt.Ex.Engineer (Planning)
6. Shri K.Balaraman	AE(Elect)
7. Shri S.M.Mudeshwar	Section Officer(Kadra)

T.N.E.B.

1. Shri M.Duraira	Chief Engineer(Plg.)

Neyveli Lignite Corpn.

1. Shri S.Rajaram	Addl.Chief Engineer

K.S.E.B.

1. Shri C.Abdulla	Member(Trans.)