

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

**No. 26/10/2011-SP&PA/**

**Date: 29<sup>th</sup> April, 2011**

**To**


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|---|---|
| <p>1 The Member (PS),<br/>Central Electricity Authority,<br/>Sewa Bhawan, R. K. Puram,<br/>New Delhi-110066</p>   | <p>8 Chief Engineer (Trans),<br/>Nuclear Power Corp. of India Ltd.,<br/>9S30, VS Bhavan, Anushakti Nagar, Mumbai-<br/>400094<br/><b>Fax 022-25993570</b></p>    |
| <p>2 The Member Secretary,<br/>Western Regional Power Committee,<br/>MIDC Area, Marol, Andheri East, Mumbai<br/><b>Fax 022 28370193</b></p>                       | <p>9 The Executive Director (Engg.),<br/>NTPC Ltd., Engg. Office Complex,<br/>A-8, Sector-24, NOIDA 201301<br/><b>Fax 0120-2410201/2410211</b></p>              |
| <p>3 The Director (Projects ),<br/>Power Grid Corp. of India Ltd., "Saudamini",<br/>Plot No. 2, Sector-29, Gurgaon-122001<br/><b>Fax 0124-2571760/2571932</b></p> | <p>10 The Chief Engineer,<br/>Electricity Department,<br/>The Government of Goa, Panaji<br/><b>Fax 0832 2222354</b></p>   |
| <p>4 Chairman and Managing Director,<br/>MPPTCL, Shakti Bhawan,<br/>Rampur, Jabalpur-482008<br/><b>Fax 0761 2664141</b></p>                                       | <p>11 Executive Engineer (Projects)<br/>UT of Dadra &amp; Nagar Haveli,<br/>Department of Electricity , Silvassa<br/><b>Ph. 0260-2642338/2230771</b></p>        |
| <p>5 The Managing Director,<br/>CSPTCL, Dangania,<br/>Raipur (CG)-492013<br/><b>Fax 0771 2574246/ 4066566</b></p>   | <p>12 Executive Engineer<br/>Administration Daman &amp; Diu (U.T.)<br/>Department of Electricity<br/>Moti Daman-396220<br/><b>Ph. 0260-2250889, 2254745</b></p> |
| <p>6 The Managing Director,<br/>GETCO, Sardar Patel Vidyut Bhawan,<br/>Race Course, Baroda-390007<br/><b>Fax 0265-2338164</b></p>                                 | <p>13 GM, WRLDC<br/>Plot no F-3, MIDC Area, Msarol,<br/>Andheri(East) Mumbai-400093<br/><b>Fax no 022-28235434</b></p>  |
| <p>7. Director (Operation),<br/>MAHATRANSCO, 'Prakashgad', Plot No.G-9,<br/>Bandra-East, Mumbai-400051<br/><b>Fax 022-26390383/26595258</b></p>                   | <p>14 CEO, POSOCO<br/>B-9, Qutab Institutional Area, Katwaria Sarai<br/>New Delhi-110016<br/><b>Fax 011-26852747</b></p>  |

**Sub:** 32nd meeting of the Standing Committee on Power System Planning of Western Region

**Sir,**

The 32<sup>nd</sup> meeting of the Standing Committee on Power System Planning of Western Region is proposed to be held shortly. The agenda note of the meeting is available on CEA website ([www.cea.nic.in](http://www.cea.nic.in) at the following link: Home page-Power Systems-Standing Committee on Power System Planning-Western Region).The date and venue of the meeting would be intimated in due course.

Yours faithfully,

  
(P. K. Pahwa) 29/4/11  
Director, SP&PA

## **Agenda Note for 32<sup>nd</sup> Meeting of Standing Committee on Power System Planning in Western Region**

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### **1.0 Confirmation of the minutes of 31<sup>st</sup> meeting of the Standing Committee on Power System Planning in Western Region held on 27<sup>th</sup> December 2010 at Gurgaon.**

1.1 The minutes of the 31<sup>st</sup> SCM were issued vide CEA letter No.26/10/2011-SP&PA/46-59 dated 20<sup>th</sup> January 2011. GETCO vide their letter no. SE (CP&SS)/System/517-520/70 dated 02.02.2011 has sent the following comments on the minutes of the 31<sup>st</sup> SCM.

- (i) On Para no. 11.2.3 on page no. 17 under the item Proposals of GETCO for interconnection of STU and CTU network in Gujarat.

*Para no. 11.2.3:*

“After discussion the termination of Kosamba(GETCO)-Vapi(PG) 400kV D/C line at Vapi(PG) was agreed to be developed by GETCO. With the commissioning of Kawas II- Vapi(PG) 400kV D/C line the Kosamba(GETCO) - Vapi(PG) 400kV D/C line would be LILLOed into one circuit of Kawas –Vapi 400kV line”

GETCO has opined that the above configuration would result in power flow from Kawas-II to Kosamba which is not desirable. Therefore the proposal can be finalized only after detailed study by CEA/PGCIL.

With respect to the above, it may be noted that the Kawas –II generation project of NTPC has been provided connectivity only by LILO of one ckt of Kosamba – Vapi 400 kV D/C line. Based on the open access application of Kawas-II for transfer of power, the appropriate system strengthening based on the studies would be identified. The minutes reflect the discussions during the last meeting and no modification is required in Para 11.2.3 as proposed by GETCO.

- (ii) On Para No. 11.5.4 on page no.18 under the item Proposals of GETCO for interconnection of STU and CTU network in Gujarat.

*Para no. 11.5.4:*

“After discussions, LILO of one circuit of 400kV D/C Vadavi(Ranchhodpura)-Zerda(Kansari) line at proposed 400/220kV Sankhari(GETCO) substation to be undertaken by GETCO at their cost was agreed. GETCO confirmed they would drop the proposal of LILO of Mundra -Zerda 400kV lines at Sankhari.”

GETCO has requested to modify the above para as:

“After discussions, LILO of both circuits of 400kV D/C Vadavi (Ranchhodpura)-Zerda (Kansari) line at proposed 400/220kV Sankhari(GETCO) substation to be undertaken by GETCO at their cost was agreed. However in response to the proposal of dropping the LILO of 400kV D/C Mundra-Zerda lines at Sankhari, GETCO representative stated that the proposal has to be reviewed by GETCO and thereafter, GETCO would respond to CEA / Powergrid.”

The Minutes of the meeting reflect the discussions and decision taken and in our view no amendments to the minutes is required. However in case GETCO wants review of the earlier agreed proposal the same can be taken up separately as separate item.

- (iii) On Para no. 4.8 on page no. 6 under the item Transmission system associated with Chattishgarh UMPP.

*Para 4.8:*

“DGM, PGCIL suggested that a new 400kV substation near Karamsad (Kasor) or any suitable location may be established as part of above transmission scheme for interconnection from 765/400kV Vadodara substation

GETCO has requested to modify the above para as:

“As there is no sufficient space at 400kV Kasor substation, GETCO has proposed a new location near Vataman for establishment of new 400kV substation as part of transmission system associated with Chattisgarh UMPP (5x800MW) for interconnection from 765/400kV Vadodara substation”.

The issue of non availability of space at 400 kV Kasor substation was raised by GETCO representative in the 31<sup>st</sup> SCM also and was recorded accordingly at Para 4.7 of the minutes of the meeting.

No modification is required in Para No. 4.8 as suggested by GETCO. However the new location proposed by GETCO has been included as agenda for this meeting.

## **2.0 Review of Progress on Earlier Agreed Transmission Schemes**

PGCIL may furnish the status of implementation of earlier agreed schemes under construction / approved.

## **3.0 Modifications suggested by GETCO on Summary of Applications for Grant of Connectivity / Long Term Access / Medium Term Open Access.**

### **Gujarat Fluorochemicals Limited (GFL)**

- 3.1 Gujarat Fluorochemicals Limited (GFL) was granted connectivity through GFL WPP-Bharuch(PG) 220kV D/C (Twin Zebra) . GETCO has commented that there is no 220 kV system at Bharuch and the same should be amended to Bhimsar / Bhachau (PG):
- 3.2 POWERGRID had informed that as decided in the meeting, line from GFL WPP is to be terminated at Bhimasar/Bachau and there was a typographical error in the minutes.

The same may kindly be noted.

### **DGEN TPS**

- 3.3 The Long Term Access was granted to Torrent Energy Limited for their DGEN TPS along with the following Transmission system strengthening in WR Applications for grant of connectivity & long Term Access:
- (i) TEL (DGEN) TPS – Vadodara 400kV D/c.
  - (ii) Augmentation of transformation capacity of 400/220kV S/s at Navsari with 1x500MVA ICT.
  - (iii) 220kV Navsari(PG) - Valthan/any other location to be informed by GETCO D/c line.

- 3.4 With respect to the 220kV Navsari(PG) - Valthan/any other location , GETCO has proposed location at Bhestan . Bhestan substation has to be developed by GETCO in time frame of Navsari-Bhestan 220kV D/C line.

Members may deliberate.

#### **4.0 Agenda items proposed by MPPTCL for Standing Committee Meeting.**

##### **4.1 Proposal of MPPTCL for erection of 400kV substation at Jabalpur**

- 4.1.1 MPPTCL vide their letter no 04-02/PSP/33 dated 21/1/2011 have proposed to establish a 400kV substation at Jabalpur to evacuate power from 765/400 kV Jabalpur pooling station. MPPTCL has requested PGCIL to take into account availability of space and implementation of 2x400kV bays for interconnection of the new 400kV substation at Jabalpur proposed by them.
- 4.1.2 The 765/400 kV Jabalpur pooling station is being established by PGCIL as a part of system strengthening common for WR and NR associated with Orissa IPPs. The interconnection of the 765/400 kV pooling station with the existing Jabalpur (Shukha) 400 kV substation is planned through a 400 kV D/C line (high capacity).
- 4.1.3 MPPTCL may indicate the existing load demand in Jabalpur area and justification for new substation.

Members may deliberate.

##### **4.2 MPPTCL proposal of LILO of one ckt. of Khandwa – Rajgarh 400 kV D/C line at their proposed 400 kV Chhegaon substation.**

- 4.2.1 MPPTCL vide their letter no 04-02/PSP/33 dated 21/1/2011 has requested for LILO of one ckt. of Khandwa – Rajgarh 400 kV D/C line at their proposed 400 kV Chhegaon substation for improving flexibility of interconnection. MPPTCL has indicated that the Chhegaon 400 kV substation would be established by converting the existing 220 kV Chhegaon substation into 400 kV substation. The Chhegaon 400 kV substation is also proposed to be connected to the upcoming new Malwa TPS (2X600MW) through a 400 kV D/C line. MPPTCL has also informed that the Khandwa – Rajgarh line is about one km from their proposed Chhegaon 400 kV substation.
- 4.2.2 Since Malwa TPS (2X600MW) is for meeting the load requirements with in the state MPPTCL may indicate the transmission system planned for Malwa TPS and any connectivity with inter state transmission can be considered only for reliability purpose.

Members may deliberate the proposal of MPPTCL.

##### **4.3 MPPTCL proposal of provision of 315 MVA transformer at Indore (PG) 765/400 pooling station.**

- 4.3.1 MPPTCL vide their letter no.04-02/PSPN/N -171/1653 dated 24.12.2010 has stated that during Standing Committee meeting of WR held on 23.02.2007 it was finalized to charge 765 kV Bina –Indore line initially at 400 kV with installation of 1X315 MVA 400/220 kV transformer at Indore 765/400 substation of PGCIL under Korba – III scheme. MPPTCL has further informed that in the 27<sup>th</sup> SCM of WR it was decided to directly charge the Bina-Indore line at 765 kV level. Subsequently PGCIL vide their letter dated 06.08.2010 had informed MPPTCL that no 400/220 kV transformer was planned at Indore 765/400 kV substation. MPPTCL has now requested to reconsider the installation of 315 MVA,

400/220 kV transformer at Indore 765/400 kV (PG) substation to draw their share of power from central sector at Indore.

4.3.2 In the 31<sup>st</sup> SCM of WR held on 27<sup>th</sup> December 2010, provision of two nos. of 400 kV bays at Indore (PG) 765/400 kV substation was agreed for MPPTCL for construction of Indore (PG) – Pithampur (MPPTCL) 400 kV D/C line ( to be built by MPPTCL).

4.3.3 Since MPPTCL is constructing a 400 kv substation at Pithampur, installation of 315 MVA, 400/220 kV transformer at Indore 765/400 kV (PG) substation may not be required.

Members may deliberate.

#### **4.4 MPPTCL proposal of System Strengthening beyond Damoh 400 kV substation.**

4.4.1 MPPTCL vide their letter no.04-02/PSPN/N -171/1653 dated 24.12.2010 has intimated that 3 nos. of 400 kV D/C line (high capacity) are proposed to be terminated at Damoh 400 kV substation, viz

- (i) Jabalpur pooling station – Damoh 400 kV D/C line covered under transmission system Moser Baer TPS,
- (ii) Jabalpur pooling station – Damoh 400 kV D/C line covered under transmission system Chattishgarh UMPP and
- (iii) Banas TPS – Damoh 400 kV D/C line covered under transmission system Banas TPS.

This may cause congestion due to limited no. of existing outlets from Damoh, and therefore had suggested Damoh – Bina / Damoh – Bhopal as system strengthening beyond Damoh.

4.4.2 With regard to the above it is brought out that during the 31<sup>st</sup> SCM, the connectivity application of Banas TPS was discussed and was kept pending as the progress of the project was not adequate. Similarly System Strengthening under MoserBaer during 28<sup>th</sup> SCM was reviewed during the 30<sup>th</sup> SCM and Jabalpur-Damoh D/C line was deleted . In view of this 400kV outlets beyond Damoh may not be required at present.

Members may deliberate.

#### **4.5 Drawal of MPPTCL share of power in the IPPs located in Madhya Pradesh at the interconnection point of MPPTCL with CTU.**

4.5.1 MPPTCL vide their letter no.04-02/PSPN/N -171/1653 dated 24.12.2010 has intimated that they have 35% share in all the IPPs coming up in Madhya Pradesh that have already applied for connectivity / open access to CTU. They have informed that MPPTCL would be drawing their share of power from these IPPs at the interconnection point with the CTU. In this regard they have requested to take this into account while planning the transmission system associated with the IPPs.

4.5.2 For drawing their share of power from the IPPs located in Madhya Pradesh from the ISTS network, MPPTCL needs to seek Open Access as per CERC regulations so that transmission requirements could be planned accordingly.

#### **5.0 CSPTCL proposal for LILO of 400kV interconnection between Raipur and Khedamera(Bhilai) S/c at their proposed Raipur(Raita)400kV substation.**

5.1 CSPTCL vide their letter no. CE (Trans.) /5057 dated 22.02.2011, addressed to PGCIL has intimated that fault level at 400kV Raipur(PG) and Khedamara (Bhilai) is increasing due to connection of large capacity of power generation to these substations. To contain the high current contribution from the other substation, CSPTCL has proposed to open the 400 kV link between Raipur (PG) and Khedamara(Bhilai) through LILO at their proposed Raita 400

kV substation. With this configuration Raipur (PG) and Khedamara(Bhilai) 400 kV would be connected through Raita (CSPTCL) 400 kV substations (about 55 km away) and would help in containing the feeding of fault current from Raipur (PG) for a fault on feeders emanating from Khedemara substation and vice versa.

5.2 To address the high short circuit level at Raipur (PG) 400 kV substation, splitting of 400 kV Raipur bus into two sections along with reconfiguration of few lines /line bays has been agreed as regional system strengthening scheme in the 28<sup>th</sup> standing committee meeting of WR and is under implementation. At present Raipur (PG) and Khedamara(Bhilai) 400 kV substation are interconnected through two nos. of 400 kV link. Under the bus splitting scheme the, Bhatpara- Raipur 400 kV line and Raipur – Bhilai 400 kV line would be reconfigured to make it Bhatpara- Bhilai 400kV line. With this Khedamara (Bhilai) would be connected with only bus section at Raipur through a 400 kV S/C line. Thus the bus splitting at Raipur addresses the concern raised by CSPTCL.

5.3 The Raita 400 kV substation proposed by CSPTCL is part of the evacuation system of 2X500 MW Marwa TPP in Chattishgarh. Raita is connected with Marwa TPS through a 400 kV D/C line. Powergrid has carried out load flow studies (enclosed as Exhibit- I) on the CSPTCL proposal wherein high loading on Raita – Raipur/Raita – Bhilai is observed (about 800 MW) during outage of Raita – Bhilai/Raita – Raipur 400 kV line. For this CSPTCL needs to identify suitable transmission system strengthening beyond Raita to evacuate the power from Marwa TPS to their load centers with reliability.

Members may deliberate.

## **6.0 Transmission System of Mauda Stage-II (1320 MW)**

6.1 In the 31<sup>st</sup> meeting of the Standing Committee of WR held on 27<sup>th</sup> December 2010, following transmission system was agreed as an associated transmission system for Mauda Stage-II (1320 MW) of NTPC:

- (i) Mauda II – Suitable location near Chindwara 400KV D/c (Quad) line.
- (ii) Suitable location near Chindwara– Khandwa 400KV D/c (Quad) line.
- (iii) Khandwa – Rajgarh 400kV D/c (2<sup>nd</sup>) line.
- (iv) Establishment of 400/220kV, 2X500MVA substation at a suitable location near Chindwara

For identifying a suitable location near Chindwara, MPPTCL was requested to assist PGCIL.

6.2 POWERGRID has intimated that while exploring for suitable location near Chindwara it has been observed that 400kV Mauda-II-Chindwara line would pass through the vicinity of Pench Tiger Reserve and would involve considerable amount of forest area. MPPTCL has intimated that suitable location for establishment of 400kV substation in Baitul/Amla instead of Chindwara as number of 220kV lines are also passing in close vicinity.

6.3 In view of the above, the modified transmission system associated with Mauda Stage-II (1320 MW) of NTPC is as under:

- (i) Mauda II – Baitul 400KV D/c (Quad)- abt 180 km
- (ii) Baitul– Khandwa 400KV D/c (Quad)- abt 145 km
- (iii) Khandwa – Rajgarh 400kV D/c (2<sup>nd</sup>)-abt 215 km
- (iv) Establishment of 400/220kV, 2x315MVA substation near Baitul/Amla.

Members may take note of the above change.

## 7.0 Transmission System for RAPP-7&8 (2x700 MW)

- 7.1 In the 30<sup>th</sup> meeting of Standing Committee meeting on Power System Planning of WR, the issue of overloading on lines and interconnecting transformers in Indore, Nagda and Ujjain area due to power flow on Ujjain/ Badod – Kota 220 kV ( interconnection between WR and NR) was deliberated. It was suggested in the meeting that that 400 kV link between WR and NR through Shujalpur - RAPP along with strengthening in the RAPP to Jaipur corridor could be considered to address overloading of 220kV Ujjain/Badod- Kota link and interconnecting transformer in Indore, Nagda & Ujjain area.
- 7.2 Subsequently, in the 29<sup>th</sup> meeting of the Standing Committee on Power System Planning of Northern Region held on 29.12.10, the associated transmission system for RAPP-7&8 (2x700 MW) Nuclear power plant in Rajasthan ( with a commissioning schedule of Jun'16 and Dec'16) was discussed and the following transmission system was agreed :
- RAPP–Jaipur (South) 400kV D/c line of which one ckt. to be LILO ed at Kota
  - RAPP–Shujalpur (WR) 400 kV D/c

Member may take a note of the above.

## 8.0 Dedicated / Interim Transmission system for 600 MW Korba West Power Company Limited TPS and 1200 MW Athena Chhattisgarh Power Limited.

- 8.1 In the 29<sup>th</sup> Standing Committee meeting on Power System Planning of WR and 11<sup>th</sup> LTOA meeting of WR constituents the following dedicated transmission system for 600 MW Korba West Power Company Limited TPS and 1200 MW Athena Chhattisgarh Power Ltd. was agreed:

- |   |   |
|---|---|
| 1. Athena Chhattisgarh Power Ltd. (2x600MW) | (i) Athena Chhattisgarh – Raigarh Pooling Station(near Kotra) 400kV D/c(Quad)   |
| 2. Korba(West) Power Ltd.(1x600MW)          | (i) LILO of Athena Chhattisgarh – Raigarh Pooling Station 400kV D/c at Korba(W) |

- 8.2 PGCIL vide their letter no C/SEF/W/06/SCM dated 24 Feb 2011 have now intimated that in the quarterly review meeting of the IPPs held on 24-09-2010 and 17-02-2011, M/s Korba West had informed their revised commissioning schedule as Nov 2012 and Athena Chhattisgarh had informed their commissioning schedule as Jun 2013. In view of this mismatch M/s Korba West had requested PGCIL for direct interconnection at Raigarh (Kotra) pooling station. Accordingly in the quarterly review meeting with IPP's Korba(West) was proposed to be directly connected to Raigarh Pooling Station (Kotra). With this the dedicated transmission system for 600 MW Korba West Power Company Limited TPS and 1200 MW Athena Chhattisgarh Power Ltd is as given under:

- |   |   |
|---|---|
| 1. Athena Chhattisgarh Power Ltd. (2x600MW) | (i) Athena Chhattisgarh – Raigarh Pooling Station (near Kotra) 400kV D/c (Quad) line. |
| 2. Korba (West) Power Ltd.(1x600MW)         | (i) Korba (W) – Raigarh Pooling Station (near kotra) 400kV D/c line.                  |

Members may deliberate.

## **9.0 Transmission system associated with North Karanpura (3x660MW).**

9.1 The following transmission system which has been agreed as a part of evacuation system for North Karanpura generation project is being implemented under private sector through competitive bidding route:

- i. **Sipat-Seoni 765kV S/c**
- ii. Lucknow –Bareilly 765 kV S/c
- iii. Bareilly-Meerut 765 kV S/c
- iv. Agra-Gurgaon (ITP)-Gurgaon(PG) 400kV D/c (Quad)
- v. 2x500MVA 400/220kV substation at Gurgaon (ITP).

9.2 In the 29<sup>th</sup> SCM of NR held on 29.12.10, the NR constituents had agreed to delink the implementation of the elements (ii) to (v) from the commissioning of North Karanpura generation project and they have agreed to implement it as Regional Strengthening scheme.

9.3 Similarly, the transmission element (i) i.e., Sipat- Seoni 765kV S/c line would facilitate in transfer of power from Eastern to Western Region as WR Pooling station shall be interconnected with 765kV Ranchi through 765kV Ranchi-WR Pooling transmission line. Keeping above in view, it is proposed that Sipat/Korba (pooling)- Seoni 765kV S/c line may also be delinked from the North Karanpura generation project and considered as a part of Regional system strengthening scheme in Western region.

Members may deliberate.

## **10.0 Interconnection of 400/220kV Pirana(PG)and 400/220kV Pirana(Torrent).**

10.1 During the 25<sup>th</sup> Meeting of SCM Sugan-Pirana 400kV D/C line was agreed as part of Torrent Evacuation System. Also 400/220kV substation at Pirana (PG) was agreed as System Strengthening Scheme. Interconnection between Pirana (PG) and Pirana (Torrent) was through a 220 kV D/C line .During the 27<sup>th</sup> meeting of SCM interconnection of Pirana (PG) 400/220kV and Pirana(Torrent)400/220kV through a 400kV D/C line in place of the earlier 220kV interconnection was agreed.

10.2 Subsequently Torrent Power Ltd had given the proposal of interconnection of Pirana(TPL) through LILO of Sugan CCCP –Pirana(PG) 400kV D/C line at Pirana(TPL)since Sugan – Pirana (PG) was passing near to Sugan(Torrent).CEA had conveyed its no objection to the proposal .

10.3 With this modification evacuation system for Torrent is as under

- (i) LILO Of Gandhar-Vapi 400kV S/C line at Sugan CCPP switchyard.
- (ii) LILO of Sugan CCPP Akhakhol-Pirana(PG) 400kV D/C line at Pirana(TPL)400kV substation.
- (iii) 2 Nos of 400kV line bays at Pirana(PG) 400/220kV substation
- (iv) 2 Nos of 50MVAR line reactor at Pirana(TPL) 400/220kV substation.

This is for information.

10.4 PGCIL has intimated that at Pirana (PG) only two nos. of 220 kV bays have been developed and the 3<sup>rd</sup> and 4<sup>th</sup> 220 kV bay (which was initially to be developed by Torrent for interconnection) could be developed for GETCO if agreed.



## 11.0 Open Access Applications pertaining to New Generation Projects in Southern Region with target beneficiaries in Western/Northern/Southern Region

11.1 The Long Term Open Access / Long Term Access application in Southern Region were discussed and agreed in various Southern Region Standing Committee meeting & SRPC. The regulatory approval has been granted by the Central Electricity Regulatory Commission for the associated transmission system. These applications were also discussed earlier in WR Standing Committee as well as WRPC. These applications have undergone minor modifications at the BPTA signing stages like changes in target beneficiaries, allocation quantum, commissioning schedule etc. The details of the application in SR and associated transmission system intimated by PGCIL is as given below:

### 11.2 LTOA/LTA applications in Krishnapatnam Area, Andhra Pradesh

The details of the applications in Krishnapatnam area, Andhra Pradesh are as given below

Sl. No.	Applicant	Commencement date	Installed Capacity (MW)	Quantum (MW)	Allocation of Power (MW)		
					SR	WR	NR
1.	Simhapuri Energy Pvt. Ltd.	December, 2010	540	491	356	135	0
2.	Meenakshi Energy Pvt. Ltd.	April, 2011	600	546	186	177	183
3.	Meenakshi Energy Pvt. Ltd.	June, 2012	300	273	0	0	0
4.	Thermal Powertech Corporation India Ltd.	January, 2014	1320	1320	1125	115	0
	<b>Total</b>		<b>2760</b>	<b>2630</b>	<b>1667</b>	<b>427</b>	<b>183</b>

Following transmission system was discussed and agreed by SR constituents in 26<sup>th</sup> Standing Committee Meeting of SR held on 13<sup>th</sup> June, 2008 & 11<sup>th</sup> Long Term Access/31<sup>st</sup> Standing Committee Meeting of SR held on 16<sup>th</sup> November, 2010 and 8<sup>th</sup> & 15<sup>th</sup> SRPC meeting held on 19<sup>th</sup> December, 2008 & 27<sup>th</sup> November, 2010 respectively:

#### **Dedicated Transmission system:**

- (i) SEPL/MEPL Generation Switchyard - Nellore (existing POWERGRID substation) 400 kV D/c quad line with associated line
- (ii) TPCIL Generation switchyard – Nellore Pooling Station 400 kV D/c (quad) line with associated line bays

#### **Common Transmission System Associated With ISGS Projects in Krishnapatnam Area of Andhra Pradesh**

- (i) Establishment of 765/400kV, 2x1500 MVA pooling station at Nellore by LILO of Simhapuri-Nellore 400kV D/c quad line
- (ii) Nellore Pooling station – Kurnool 765kV D/c line
- (iii) Kurnool – Raichur 2<sup>nd</sup> 765kV S/c line (1<sup>st</sup> line covered under Krishnapatnam UMPP)

- (iv) Associated 765kV & 400kV bays at Nellore Pooling station, Kurnool and Raichur stations.

### 11.3 LTOA/LTA applications in Srikakulam Area, Andhra Pradesh

The details of the applications in Srikakulam area, Andhra Pradesh are as given below

Sl. No.	Applicant	Commencement date	Installed Capacity (MW)	Quantum (MW)	Allocation of Power (MW)		
					SR	WR	NR
1.	East-Coast Energy Pvt. Ltd.	March, 2013	1320	1320	1000	320	0
2.	NCC Power Projects Ltd.	January, 2014	1320	1320	900	420	0
	<b>Total</b>		<b>2640</b>	<b>2640</b>	<b>1900</b>	<b>740</b>	<b>0</b>

Following transmission system discussed and agreed by SR constituents in 30th meeting of Standing Committee held on 13-04-2010 and Minutes of the Special Meeting of SRPC held on 25.11.2010:

#### **Dedicated Transmission system:**

- (i) East Coast Energy generation switchyard - Srikakulam pooling station 400kV D/c quad line (*under the scope of East Coast Energy Pvt. Ltd.*)
- (ii) NCC Power Projects generation switchyard - Srikakulam pooling station 400kV D/c quad line (*under the scope of NCC Power Projects Ltd.*)

#### **Common Transmission System Associated With ISGS Projects in Srikakulam Area of Andhra Pradesh**

- (i) Establishment of 765/400kV Pooling Station in Srikakulam area with 2x1500 MVA 765/400kV transformer capacity
- (ii) Srikakulam Pooling station – Angul 765kV D/c line
- (iii) 765/400kV 1x1500 MVA transformer at Angul
- (iv) Angul – Jharsuguda 765kV D/c line
- (v) Jharsuguda - Dharamjaigarh 765kV D/c line
- (vi) Associated 400kV and 765kV bays at Srikakulam Pooling station, Angul, Jharsuguda and Dharamjaygarh 765/400kV S/Ss.

### 11.4 LTOA/LTA applications in Tuticorin Area, Tamil Nadu

The details of the applications in Tuticorin area, Tamil Nadu are as given below

Sl. No.	Applicant	Commencement date	Installed Capacity (MW)	Quantum (MW)	Allocation of Power (MW)		
					SR	WR	NR
1.	Coastal Energen Private Limited	March, 2012	1200	1100	820	280	0
2.	Ind-Barath Power (Madras) Limited	March, 2012	1320	900	225	270	405

Sl. No.	Applicant	Commencement date	Installed Capacity (MW)	Quantum (MW)	Allocation of Power (MW)		
					SR	WR	NR
	<b>Total</b>		<b>2520</b>	<b>2000</b>	<b>1045</b>	<b>550</b>	<b>405</b>

Following transmission system discussed and agreed by SR constituents in 29<sup>th</sup> & 30<sup>th</sup> Standing Committee/Long Term Open Access Meeting of SR held on August 27, 2009 & April 13, 2010, 11<sup>th</sup> meeting of SRPC September 17, 2009:

**Dedicated Transmission system:**

- (i) Coastal Energen generation switchyard- Tuticorin pooling station 400 kV D/c quad line (*under the scope of Coastal Energen Pvt. Ltd.*)
- (ii) Ind-Barath generation switchyard - Tuticorin pooling station 400 kV D/c quad line (*under the scope of Ind-Barath Power (Madras) Ltd.*)

**Common Transmission System Associated With ISGS Projects in Tuticorin Area of Tamil Nadu**

- (i) Establishment of 765kV pooling station in Tuticorin and Salem (initially charged at 400kV)
- (ii) LILO of both circuits of Tuticorin JV - Madurai 400 kV D/c (quad) line at Tuticorin Pooling Station
- (iii) Tuticorin Pooling station – Salem Pooling station 765kV D/c line initially charged at 400kV.
- (iv) Salem pooling station – Madhugiri pooling station 765kV S/c initially charged at 400kV.
- (v) Salem Pooling Station – Salem 400 kV D/c quad line.

**11.5 LTOA/LTA applications in Southern Region having beneficiaries in WR/NR**

The details of the applications are as given below

Sl. No.	Applicant	Commencement date	Installed Capacity (MW)	Quantum (MW)	Allocation of Power (MW)		
					SR	WR	NR
1.	Lanco Kondapalli Power Private Ltd.	Commissioned	366	350	0	200	150
2.	Simhapuri Energy Pvt. Ltd.	December, 2010	540	491	356	135	0
3.	Meenakshi Energy Pvt. Ltd.	April, 2011	600	546	186	177	183
4.	Thermal Powertech Corporation India Ltd.	January, 2014	1320	1320	1125	115	0
5.	East-Coast Energy Pvt. Ltd.	March, 2013	1320	1320	1000	320	0
6.	NCC Power	January,	1320	1320	900	420	0

Sl. No.	Applicant	Commencement date	Installed Capacity (MW)	Quantum (MW)	Allocation of Power (MW)		
					SR	WR	NR
	Projects Ltd.	2014					
7.	Coastal Energen Private Limited	March, 2012	1200	1100	820	280	0
8.	Ind-Barath Power (Madras) Limited	March, 2012	1320	900	225	270	405
	<b>Total</b>		<b>7986</b>	<b>7347</b>	<b>4612</b>	<b>1917</b>	<b>738</b>

Following transmission system discussed and agreed by SR constituents for transfer of power from Southern region IPPs to WR & NR beneficiaries in Long Term Open Access/29<sup>th</sup> Standing Committee Meeting of SR held on 27<sup>th</sup> August, 2009 and 11<sup>th</sup> SRPC meeting held on 17<sup>th</sup> September, 2009. The transmission system also has already been agreed in the 30<sup>th</sup> meeting of Standing committee of WR held on 08<sup>th</sup> July 2010:

**Transmission System Associated with IPP projects in Southern Region, for transfer of power to other regions**

- (i) Sholapur – Pune 765 kV 2<sup>nd</sup> S/c line (*1<sup>st</sup> circuit already covered under transmission associated with Krishnapatnam UMPP*)
- (ii) Jabalpur Pooling station – Orai 765 kV S/c line.
- (iii) Orai – Bulandshahar 765 kV S/c line.
- (iv) Bulandshahar – Sonipat 765 kV S/c line
- (v) Establishment of 765/400 kV 2X1000 MVA substation at Orai by LILO of one circuit of Satna – Gwalior 765 kV line
- (vi) Establishment of 765/400 kV 2X1500 MVA substation at Bulandshahar by LILO of Agra – Meerut 765 kV line.
- (vii) Establishment of 765/400 kV 2X1500 MVA substation station at Sonapat by LILO of Bhiwani – Meerut 765 kV line.
- (viii) Orai-Orai (UPPCL) 400kV D/c (Quad)
- (ix) Sonipat-Kurushetra 400 kV D/c (Quad)
- (x) Sonipat (new) – Sonipat (Under Construction) 400 kV D/c (Quad)
- (xi) Bulandshahr – Hapur ( UPPCL) 400kV D/c (Quad)

Members may note.

**12.0 Intra State Transmission system of Maharashtra at 400 kV and 765 kV.**

**12.1 Connectivity of 400 kV lines by MSETCL, TPC and R- Infra to Powergrid substations.**

12.1.1 MSETCL has intimated that the as per their STU plan for the year 2010-11 to 2014-15, the following 400 kV lines of MSETCL, TPC and R-Infra has been proposed:

S.No.	Transmission Line	Year
1.	765/400 kV Phadge (PG) – Kudus (MSETCL) 400 kV D/C (quad) line.	2012-13

2.	765/400 kV Phadge (PG) – Nalasopara (MSETCL) 400 kV D/C (quad) line.	2013-14
3.	LILO of Tarapur – Phadge 400 kV D/C line at Kudus (MSETCL) 400 kV substation.	2013-14
4.	Pune(PG) – Chakan(MSETCL) 400 kV S/C line	2011-12
5.	LILO of Parli (PG) – Pune (PG) 400 kV D/C line at Lonikhand-II (MSETCL) 400 kV substation with quad conductor.	2011-12
6.	LILO of Aurangabad (MSETCL) – Pune (PG) 400 kV D/C line at Retwadi (MSETCL) 400 kV substation with quad conductor.	2014-15
7.	LILO of one circuit of South Solapur (PG) – Kolhapur 400 kV D/C line at Alkud (Sangli) (MSETCL) 400 kV substation.	2011-12
8.	LILO of one circuit of Parli (PG) – South Solapur (PG) 400 kV D/C line at Osmanabad (MSETCL) 400 kV substation.	2013-14
9.	Boisar (PG) – Ghodbunder (R-Infra) 400 kV D/C line	2014-15
10.	Navi Mumbai (PG) – Vikroli (TPC) 400 kV S/C line	2014-15
11.	Boisar (PG) – Vikroli (TPC) 400 kV D/C line	2014-15

12.1.2 The above transmission lines are having connectivity with the inter state transmission system either through LILO arrangement or through termination substations, MSETCL has requested for ensuring the availability of 400 kV bays at the substation of PGCIL.

Members may deliberate.

## 12.2 Augmentation of Intra state system in Maharashtra at 400 kV and 765 kV level

12.2.1 For evacuating power from IPPs in eastern part of Maharashtra to their load centers, Tiroda – Koradi- Akola-Aurangabad (PG) 765 kV 2XS/C link has been planned by MSETCL. The IPPs in Maharashtra are scheduled for commissioning from 2012 onwards whereas the 765/400 kV Aurangabad (PG) substation linked with IPPs of Chhattisgarh was scheduled for commissioning in the year 2014. There was a gap of more than 15 months between requirements for evacuation from Tiroda II scheduled for commissioning in June/Sept 2012 and the commissioning schedule indicated by PGCIL for their Aurangabad 765/400 kV substation. To avoid bottling up of power due to above mismatch and as a part of intrastate augmentation of transmission system the following has been discussed and agreed between MSETCL, PGCIL and CEA:

- (i) Establishment of Aurangabad II 400 kV substation by MSETCL and initially charge Tiroda-Koradi-Akola- Aurangabad II 765 kV 2XS/C lines at 400 kV level.
- (ii) Aurangabad – II - Bableshwar – Kudus 400 kV Quad D/C line
- (iii) LILO of both circuits of Bhusawal II – Aurangabad I 400 kV D/C line at Aurangabad II.
- (iv) Establishment of 765/400kV substation at Aurangabad II.
- (v) Interconnection of 765/400kV Aurangabad II - 765/400kV Aurangabad (PG) through 765 kV S/C line on D/C towers.
- (vi) Termination of Koradi – Wardha 400 kV Quad D/C line into one circuit of Wardha – Akola 400 kV D/C line through LILO as an interim arrangement. (As soon as Tiroda – Koradi III – Akola – Aurangabad 765 kV system of Maharashtra is completed, the line would be connected to Koradi III and disconnected from Wardha – Akola line. MSETCL would plan for extending the Koradi-Wardha line towards load centers based on system studies. MSETCL would advice Ideal

Energy to install suitable reactive power compensation at their 400 kV generation switchyard to take care of reactive power compensation.)

This is for information of Members.

### **13.0 Interim arrangement for evacuation of power from proposed Vindhyachal – IV (2x500MW) generation project**

13.1 The following transmission system associated with Vindhyachal- IV and Rihand-III was agreed in the 29<sup>th</sup> Standing Committee meeting on Power System Planning of WR held on 10.09.2009:

#### **Part-I: Generation specific transmission system (to be implemented by POWERGRID)**

- A : Rihand-III: For NR only
  - Rihand-III – Vindhyachal Pooling Station 765kV 2xS/c (initially to be operated at 400kV)
- B : Vindhyachal-IV: For WR only
  - Vindhyachal-IV – Vindhyachal Pooling Station 400kV D/c (Quad)

#### **Part-II: Common System: For both WR and NR**

- Vindhyachal Pooling Station – Satna 765kV 2xS/c (initially to be operated at 400kV)
- Satna – Gwalior 765kV 2xS/c
- Sasan – Vindhyachal Pooling Station 765kV S/c
- Sasan – Vindhyachal Pooling Station 400kV D/c
- Establishment of 765/400kV 2x1500MVA S/s at Vindhyachal Pooling Station

*Note: In order to reduce the short circuit levels, under Sasan transmission it has been decided to delete the LILO of Vindhayachal STPP – Jabalpur 400 kV D/C at Sasan subsequent to development of 765 kV system from Sasan. One of the LILO line would be retained at Sasan with suitable switching arrangements at Sasan 400 kV switchyard to meet its starting power requirements in future. The LILO of the other ckt would be bypassed and the 400 kV bays at Sasan would be utilized for Vindhyachal Pool-Sasan 400 kV D/C line to be terminated at Sasan.*

#### **Part-III: NR Strengthening in Regional pool**

- Gwalior – Jaipur 765/400 kV S/c.

13.2 The above transmission system is under implementation by POWERGRID. As intimated by POWERGRID the commissioning schedule of the transmission system is expected to be Dec'12 whereas commissioning schedule of generating units at Vindhyachal-IV is Mar'12 & Jun'12. This may result into critical loading on the existing lines emanating from Vindhyachal complex. Therefore, to ease out the loading on 400kV lines from Vindhyachal complex, POWERGRID has proposed the following interim arrangement for Vindhyachal-IV:

- i) Completion of Vindhyachal IV- Sasan 400kV D/c (bypassing at Vindhyachal Pooling Station) and bunching of both ckts. to make single ckt only
- ii) Completion of Sasan - Satna 765kV S/c (to be operated at 400kV level) with termination at 765kV yard as planned by interconnecting 400kV and 765kV yards as well as interconnect Vindhyachal IV- Sasan 400kV bunched line
- iii) Completion of Satna – Bina 765kV S/c (to be operated at 400kV level) with termination at 765kV yard as planned by interconnecting 400kV and 765kV yards
- iv) Installation of 765/400kV transformers each at Bina and Gwalior S/s

v) Completion of 765kV Bina - Gwalior S/c

13.3 The above interim arrangement utilizes the Sasan – Satna - Bina line which is a part of the transmission system for Sasan UMPP (expected for commissioning in Jan'13) and is likely to be ready by Dec'11.

13.4 For implementing the above interim arrangement, few 400kV equipment like CVT, LA etc. are to be procured. Transmission charges of above interim arrangement till commissioning of Vindhyachal-IV transmission system along with cost of additional equipment are to be shared by the beneficiaries.

13.5 Further PGCIL has intimated that due RoW constraints, the Rihand-III – Vindhyachal Pooling Station 765kV 2xS/c (initially to be operated at 400kV) is now proposed to be developed as Rihand-III – Vindhyachal Pooling Station 765kV 1xD/C line.

Members may deliberate.

#### **14.0 Transmission System associated Krishnapatnam UMPP**

14.1 In the 27<sup>th</sup> meeting of Standing Committee of WR held on 30.07.07, Solapur - Pune 765kV S/c line along with establishment of 765 kV has been agreed as a part evacuation system for Krishnapatnam UMPP. Subsequently, establishment of 765/400 kV GIS at Pune was agreed in the 30<sup>th</sup> SCM of WR. The interconnection of 765 kV Pune substation with the existing Pune substation has been planned through a 400 kV D/C (quad) line.

14.2 PGCIL has intimated that the proposed location of 765/400kV Pune (GIS) substation has been identified near Shikarpur on Pune Ahmednagar Highway, which is around 50 Kms (aerial distance) from 400kV Pune S/s. Further, there is a right of way problem for establishment of interconnection between Pune and Pune(GIS). On the other hand, 400kV Aurangabad - Pune D/c and 400kV Parli - Pune D/c lines are being constructed by IPTC under WRSS-II are passing through the nearby areas of proposed location of 765kV Pune S/s. In view of the above, POWERGRID has proposed the following interconnection with 765/400 kV Pune GIS :-

- (i) LILO of both the circuits of 400kV Aurangabad - Pune D/c and 400kV Parli - Pune D/c line may be carried out at 765kV Pune S/s. LILO lengths of these lines shall be approx. 20 Kms. and 10 Kms. respectively.

14.3 The above arrangement will result into connectivity between Pune (765kV) - Pune (400kV) substations through 4 nos. 400kV Twin Moose lines. With this arrangement, proposed 400kV Pune - Pune (GIS) D/c (Quad) Interconnector shall not be required.

Members may deliberate.

#### **15.0 Pune – Navi Mumbai 400kV D/c as part of WR system strengthening scheme.**

15.1 In the 27<sup>th</sup> meeting of Standing Committee of WR held on 30.07.2007, Pune – Navi Mumbai 400kV D/c line was as WR system strengthening scheme to be implemented in the time frame of Krishnapatnam UMPP.

15.2 POWERGRID has intimated that while carrying out detailed survey for the above line, it is found that major part of the route is passing through forest areas, Hilly terrains, Ghat sections of Khandala / Lonawala, close vicinity to Matheran eco-zone, Navi Mumbai International Airport (proposed), urban/industrialized areas between Mumbai and Pune etc. Considering these factors, severe ROW constraints are envisaged during the

implementation of this line, as being presently experienced during the construction of 400kV Vapi - Navi Mumbai D/c line.

15.3 In view of the constraint being faced and considering other transmission system that has been planned as part of IPP projects in Chhattisgarh, POWERGRID has requested to review requirement of Pune-Navi Mumbai 400 kV D/C line and have proposed to drop the line.

15.4 In view of the proposal of POWERGRID, MSTECL may inform alternative suitable location for termination of line from Pune for onward dispersal of power.

Members may deliberate.

#### **16.0 Establishment of 400/220 kV substation by LILO of 400kV Vapi – Navi Mumbai and Navsari – Boisar D/c lines in UT of DD and UT of DNH respectively**

16.1 Establishment of Kala 400/220kV substation in UT DNH by LILO of both ckts. of 400kV Navsari – Boisar D/c line and establishment of Magarwada 400/220kV substation in UT DD by LILO of both ckts of Vapi – Navi Mumbai D/c has already been agreed.

16.2 POWERGRID has intimated due to severe ROW problem, both the above lines are being strung on multi circuit tower in certain stretches. Also LILO points fall in the multi circuit stretches. At the time of alignment of Vapi – Navi Mumbai 400kV D/c line on multi-circuit tower, to address ROW issue the position of this ckt. on the multi-ckt tower has been kept on the opposite side against earlier envisaged side. Similarly position of Navsari-Boisar line on the multi circuit will be on opposite side.

16.3 With the above re-alignment of 400kV lines at multi circuit towers, it is now proposed to establish Magarwada 400/220kV substation in UT DD by LILO of both ckts. of 400kV Navsari – Boisar D/c line and establish Kala 400/220kV substation in UT DNH by LILO of both ckts of Vapi – Navi Mumbai D/c line.

Members may deliberate.

#### **17.0 Transmission system associated with 4000 MW (6X660) Chhattisgarh UMPP**

17.1 The following transmission system associated with Chattishgarh UMPP (5x800 MW) was agreed in the 31<sup>st</sup> SCM of WR :

- (i) Chhattisgarh UMPP- Jabalpur Poling Station 765kV D/c – 350 km
- (ii) Chhattisgarh UMPP- Champa Poling Station 765kV D/c – 150 km
- (iii) Jabalpur Poling Station – Bhopal 765kV D/c – 330 km
- (iv) Bhopal – Indore 765kV 2<sup>nd</sup> S/c – 180 km
- (v) Indore - Vadodra 765kV 2<sup>nd</sup> S/c – 300 km
- (vi) Jabalpur Pool – Damoh 400kV D/c -180 km
- (vii) Vadodra- Karamsad/ alternative location 400kV D/c (Quad)
- (viii) LILO of Ranchi – Sipat 400kV D/c line at Chhattisgarh UMPP 400kV-60 km
- (ix) Establishment of 2x1000 MVA, 765/400kV substation at Chhattisgarh UMPP (under the scope of generation developer)
- (x) Augmentation of transformation capacity at 765/400kV Indore and Vadodra Substation each by 1x1500 MVA

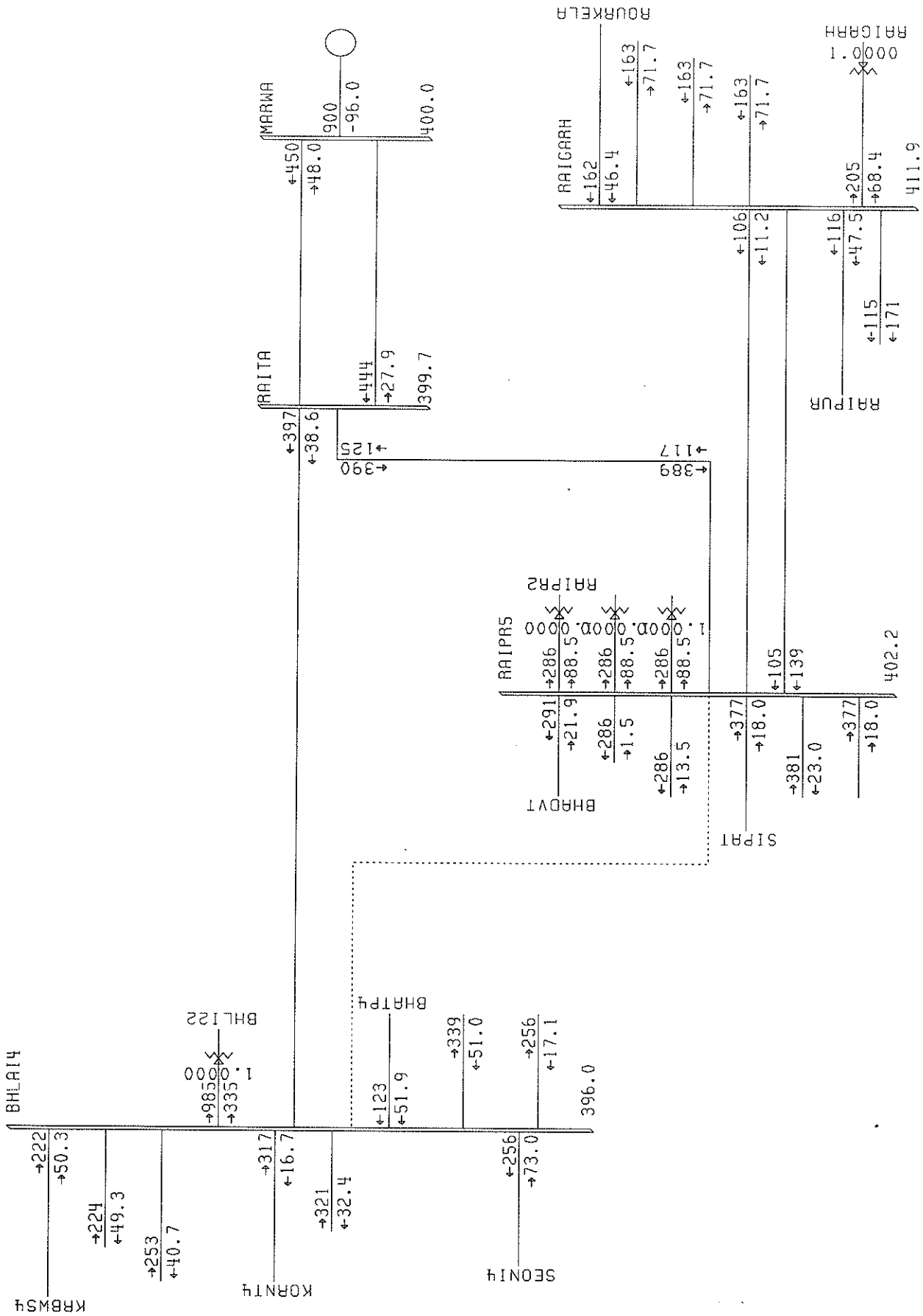
17.2 GETCO vide their letter no. SE (CP&SS)/System/517-520/70 dated 02.02.2011 has proposed a new location near Vataman for establishment of the new 400 kV substation for terminating the 400 kV D/c line from Vadodara.

Members may deliberate.



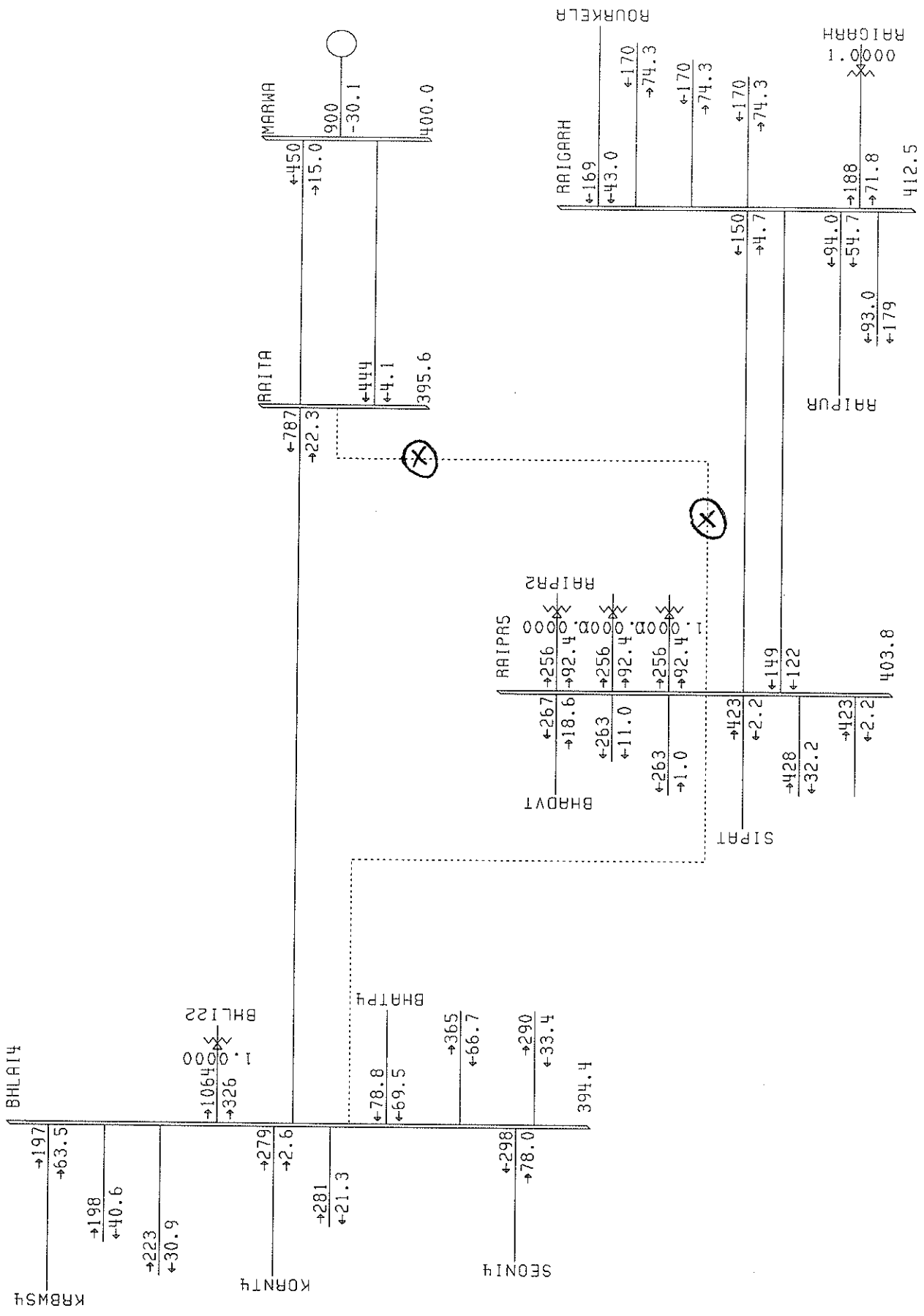
**18.0 Open Access meeting on Connectivity and Long Term Open Access (LTOA) applications in Western Region.**

The Open Access meeting would be held after the Standing Committee meeting. The agenda for the same has been circulated by PGCIL separately.



BUS - VOLTAGE (KV)  
 BRANCH - MW/MVAR  
 EQUIPMENT - MW/MVAR





RAITA STUDIES Outside of Raita - Raipur Line

BUS - VOLTAGE (KV)  
 BRANCH - MW/MVAR  
 EQUIPMENT - MW/MVAR