भारत सरकार
केन्द्रीय विद्युत प्राधिकरण
प्रणाली योजना एवं परियोजना मूल्यांकन प्रभाग
सेवा भवन, रामकृष्णपुरम्, नई दिल्ली 110066

क• सं• : 26/10/2009–प्र. यो. प. मू./ दिनाक: 01.04.2010

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पश्चिमी क्षेत्र विद्युत प्रणाली योजना की स्थाई समिति की 30वीं बैठक

पश्चिमी क्षेत्र विद्युत प्रणाली योजना की स्थाई समिति की 30वीं बैठक की एक कार्यसूची सूचना केन्द्रीय विद्युत प्राधिकरण की वेबसाइट www.cea.nic.in पर लिंक Home page – Power Systems-Standing Committee on Power System Planning-Western Region) पर उपलब्ध है।

बैठक के समय और स्थान की सूचना जल्दी ही दे दी जायेगी।

संलग्न – उपरोक्त

पी. के. पाहवा 1/4/10

(पी• के• पाहवा)
निदेशक

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

No. 26/10/2009-SP&PA/ **Date: 1st April, 2010**

To

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Agenda for the 30th meeting of the Standing Committee on Power System Planning in Western Region

Sir,

The agenda for the 30th meeting of the Standing Committee on Power System Planning of Western Region is available on CEA website (www.cea.nic.in at the following link: Home page-Power Systems-Standing Committee on Power System Planning-Western Region).

The venue and date of the meeting will be communicated separately

Yours faithfully,

(P. K. Pahwa)
Director, SP&PA

Agenda Note for 30th Meeting of Standing Committee on Power System Planning in Western Region

1.0 Confirmation of the minutes of 29th meeting of the Standing Committee on Power System Planning in Western Region held on 10th September 2009 at Ahmedabad.

1.1 The minutes of the 29th SCM were issued vide CEA letter No.26/10/2009-SP&PA/86-98 dated 17th September 2009.

No comments have been received on the minutes from any of the constituents.

The minutes of the 29th SCM issued vide CEA letter No.26/10/2009-SP&PA/86-98 dated 17th September 2009 may be confirmed.

2.0 Review of Progress on Earlier Agreed Transmission Schemes

2.1 Status of under construction / approved schemes

I. The latest status of earlier agreed schemes as obtained from PGCIL is at Annex-I

(a) Availability of land for 400/220 kV GIS at Mumbai New Location:

PGCIL vide their letter no. C/ENG/SEF/W/00/Plg dated 22nd October 2009 have informed that the identified land near Bhiwandi is not having proper approach/ connectivity (especially transportation of heavy equipments etc. upto the site may be very difficult), as well as non-availability of line corridors for laying the transmission lines. Therefore, the 400 kV Navsari- New location near Mumbai 400 kV D/C would now be terminated at existing Boisar 400 kV substation in place of New location near Mumbai, as a part of Regional System strengthening in WR for Mundra UMPP.

With the termination at existing Boisar 400 kV substation, MSETCL has to adequately plan the connectivity to their load centres in and around Mumbai.

Members may take a note of the above.

(b) Interconnection at 220kV level of the State Grid with proposed ISTS stations :

A number of 400/220kV substations are being developed by POWERGRID in various States of WR as a part of Regional Transmission schemes, agreed earlier in Standing Committee meetings. The substations are at Bhachau, Pirana, Navsari in Gujarat, Shujalpur in Madhya Pradesh and Navi Mumbai, Wardha, Solapur, Pune, Aurangabad in Maharastra. For absorption of power from the above substations, underlying 220kV interconnections are to be established by the respective STUs in matching time frame, otherwise non-provision of 220kV interconnection of the State grid would result into non-utilisation of the transmission assets.

Constituents may inform the present status of implementation of 220kV interconnections.

II. The status of WRSSS-II Set B & C being implemented by RPTL.

As per the decision during the 29th SCM of WR a progress review meeting was taken by Member (PS), CEA with RPTL to review the progress of works under WRSSS-II B & WRSSS –II C. Subsequently RPTL have started furnishing the status of progress of

works of the scheme to CEA. The latest status of the scheme is enclosed as Annexure-II

3.0 Transmission system associated with New IPP projects in Chattishgarh

3.1 During the 29th meeting of the Standing Committee on Power System Planning in WR the transmission system associated with new IPPs coming up in Raigarh and Champa generation complex was finalized along with the phasing of the transmission works, spread over four stages. The Stage-I works included establishment of pooling stations at Raigarh (Kotra), Raigarh (Tamnar) , Raipur and Champa and charging them at 400 kV level, interconnecting them with existing Raigarh and Raipur 400 kV substations. The Raigarh / Champa – Raipur – Wardha -Aurangabad 765 kV link was also initially to be charged at 400 kV level. The Stage-II works included charging of stage-I transmission system at 765 kV level and establishment of Aurangabad-Dhule-Vadodara and Aurangabad – Padge 765 kV link along with its interconnection with existing system. The stage-III and Stage-IV works included establishment of HVDC bipole between Raigarh-Dhule and Champa-Kurushetra respectively along with their interconnection with the existing system. From the finalized transmission system, Dhule (IPTC) 765/400 kV substation along with 400 kV connectivity and interconnection at 765 kV with Aurangabad and Vadodara was identified for implementation through private sector under competitive bidding route.

3.2 Subsequently, PGCIL vide their letter no. C/ENG/SEF/W/00/Plg dated 22nd October 2009 have proposed establishment of a separate Dhule (PG) 400 kV substation for termination of the ± 600 kV 4000 MW HVDC bipole from Raigarh Pooling Station (Near Kotra) along with its interconnection with Dhule (IPTC) 765/400 kV substation through two nos. of 400 kV D/C quad line. The proposal is slightly in variation with the scheme agreed in the 29th meeting of the Standing Committee on Power System Planning in Western Region as it involves establishment of an additional Dhule (PG) 400 kV substation. Considering injection of about 4000 MW of power through HVDC and its dispersal and also considering the ease of implementation, it would be desirable to have a separate 400 kV substation of PGCIL at Dhule in addition to the Dhule (IPTC) 765/400 kV substation.

3.3 PGCIL have further proposed a 2X315 MVA, 400/220 interconnecting transformer at their proposed Dhule (PG) 400 kV substation for providing auxiliary supply to the HVDC terminals and interconnectivity with MSETCL grid at 220 kV level.

3.4 With the proposed modification suggested by PGCIL, the scope of works to be implemented by PGCIL at Dhule is as following:

(i) Establishment of 2X315 MVA, 400/220 kV Dhule (PG) 400 kV substation to terminate ± 600 kV 4000 MW HVDC bipole from Raigarh Pooling Station (Near Kotra).
(ii) Dhule (PG) – Dhule (IPTC) 400 kV 2X D/c quad line.
(iii) Dhule (PG) – Nasik (MSETCL) 400 kV D/C (quad).
(iv) Dhule (PG) – Malegaon (MSETCL) 400 kV D/C (quad)

The scope of works under private sector at Dhule is as following:

(i) Establishment of Dhule (IPTC) 765/400 kV substation
(ii) Aurangabad- Dhule (IPTC) 765 kV S/C
(iii) Dhule (IPTC) – Vadodara (PG) 765 kV S/C
(iv) Dhule (IPTC) – Dhule (MSETCL) 400 kV D/C (quad)

3.5 As a part of comprehensive transmission system for HVDC from Raigarh to Dhule and Champa to Kurushetra, PGCIL have proposed provision of metallic return conductor in place of ground return envisaged earlier. At present all the existing bipole HVDC systems have

ground return arrangement for power evacuation in case of outage of one pole. The ground return arrangement requires earth electrode station. PGCIL have informed that the land requirement for setting up earth electrode station is of the order of 500 metre x 500 metre for carrying a current of 2000 Ampere. The land has to be so selected that there are no metallic buried objects i.e metallic gas and oil pipelines, railway lines, telephone lines using metallic wires etc within a radius of 8 to 10 kms. Also the soil resistivity has to be below 250ohm-metre in hemisphere of radius about 8 to 10 kms. PGCIL have stated that it is difficult to get land which meets the above mentioned criteria. Also there is element of uncertainty in proper functioning of the earth electrode station. They have therefore proposed a separate metallic return conductor on the same HVDC line towers. Provision of metallic return in lieu of earth electrode station results in additional cost to the tune of about 250-300 crores for Ragarh-Dhule HVDC bipole line.

3.6 To ascertain the status of generation projects of IPPs in Chattishgarh, Madhya Pradesh, Andhra Pradesh, Tamil Nadu, Jharkhand, Orissa and Sikkim, a review meeting was held in CEA on 01.02.2010 wherein it emerged that around 10,000 MW capacity out of the total 15,000 MW of generation capacity addition planned in Raigarh and Champa generation complex of Chattishgarh was likely to be commissioned in the time frame of 3 years i.e., by Dec 2013.

3.7 PGCIL have further informed that tower design / testing of 765 kV D/C lines is not yet completed and may take some more time. Till that time they may be allowed to proceed ahead with 2XS/C 765 kV lines against 1XD/C line agreed in the earlier meetings to avoid delays in implementation.

3.8 Subsequent to review meeting, a meeting was held by PGCIL for signing of BPTA and furnishing of Bank Guarantee by the project developers. In the meeting two more IPPs namely Visa Power (1200 MW) in Raigarh complex and GMR (1200 MW) in Raipur have also signed BPTA. The details of the total IPP projects in Raigarh, Champa and Raipur generation complexes including Visa Power and GMR Chhattisgarh Energy Pvt Ltd. is enclosed as Annexure- III. These two IPPs may be integrated with the already identified transmission corridor. The dedicated transmission namely, Visa Power – Raigarh pooling station (near Kotra) 400 kV D/c (triple) and GMR Chhattisgarh – Raipur pooling Station 400kV D/c (triple) would be developed by the respective developers.

3.9 Based on the above and keeping in view the progress made by the IPPs and their commissioning schedules, the following modifications have been proposed by PGCIL in the transmission system agreed in the 29th Standing Committee meeting of Western Region:

- Implementation of stage - I and Stage-II of transmission works in the transmission corridor identified for evacuation of power from IPPs in Raigarh / Champa generation complex simultaneously instead of initial charging at 400 kV (Stage-I) and subsequently charging the system at 765 kV (Stage-II).

- Provision of metallic return conductor instead of ground return for Raigarh – Dhule and Champa – Kurushetra HVDC lines.

- Till the completion of tower design / testing of 765 kV D/C lines, PGCIL may be allowed to proceed ahead with 2XS/C 765 kV lines against 1XD/C line agreed in the earlier meetings to avoid delays in implementation

3.10 In the review meeting with IPPs held on 01.02.2010 it was noted that in addition to Balco TPS, RKM Power Gen and Vandana, whose interim arrangement have already been agreed, KSK Mahanadi (erstwhile Wardha Power Ltd. 3600 MW) was also likely to be commissioned before the availability of the planned evacuation system. As an interim arrangement for providing connectivity PGCIL has proposed to LILO 400kV Raigarh – Raipur one ckt. at Champa Pooling Station/KSK Mahanadi generation switchyard. After the availability of transmission

system LILO arrangement shall be restored to its original configuration by the project developer.

3.11 CSPTCL vide their letter no. MD/CSPTCL/323 dated 20th January 2010 have proposed energisation of Champa pooling station through LILO of one ckt. of Raigarh – Raipur 400 kV D/C line instead of its energisation from Raipur through Raipur – Champa 765 kV D/C line charged at 400 kV level (approx. 250 km line) . They have further stated that with energisation of Champa pooling station through LILO of Raigarh –Raipur line and energisation of Raigarh(Kotra) pooling station by interconnecting with the existing Raigarh 400 kV substation, the need for temporary arrangement for providing connectivity to BALCO TPS (1200 MW), Vandana Vidhyut TPS (540 MW) and RKM Powergen (1440 MW) generation projects need not arise. This arrangement would provide the start up power to the developers through their dedicated line. And after the availability of planned evacuation system, the LILO of the line could be restored to its original status

3.12 The proposal of CSPTCL and PGCIL regarding LILO of Raigarh-Raipur 400 kV D/C line at Champa pooling station for providing start up power and interim connectivity to KSK Mahanadi (3600 MW) could be agreed. As Champa pooling station may not be available in similar time frame of KSK Mahandi, as an interim arrangement for providing connectivity LILO of one ckt of 400 kV Raigarh-Raipur at KSK switchyard could be done by the project developer. The LILO line should be routed via Champa pooling station so that as and when Champa pooling station is developed the same could be terminated at Champa pooling station. Regarding CSPTCL proposal that interim connectivity to Champa pooling station will also provide interim evacuation of power from BALCO, RKM, Vandana Vidhut and KSK Mahanadi, it is felt that proposal of CSTCL may result in evacuation constraints . Therefore the earlier interim arrangement agreed in the 29th SCM for BALCO, RKM, Vandana Vidhut need not be modified.

3.13 Based on the above, the revised transmission system associated with new IPPs in Chattishgarh would be as under:

A. Pooling Stations along with their interconnections for New IPP projects in Chattishgarh

(i) Raigarh Pooling Station (Kotra)- Raipur Pooling station 765 kV 1XD/C or 2XS/C
(ii) Raigarh Pooling Station (Kotra)- Champa Pooling station 765 kV S/C
(iii) Champa Pooling station- Raipur Pooling station 765 kV 1XD/C or 2XS/C
(iv) Raigarh Pooling station (Kotra) - Raigarh Pooling station (Tamnar) 765 kV 1XD/C or 2XS/C
(v) Champa Pooling station – Dharamjaygarh 765 kV S/C
(vi) Establishment of 765/400 kV pooling stations at Raigarh (4X1500 MVA) near Kotra, at Raigarh near Tamnar, at Champa (3X1500 MVA), and at Raipur (1X1500 MVA).
(vii) Raigarh Pooling Station (Kotra) - Raigarh existing 400 kV D/C (to be kept open at a later date).
(viii) Raipur Pooling Station – Raipur existing 400 kV D/C (to be kept open at a later date)

B. Transmission System within WR associated with New IPP projects in Chattishgarh

(i) Raipur Pooling station- Wardha 765 kV 2XD/C or 4XS/C.
(ii) Wardha- Aurangabad(PG) 765 kV 2XD/C or 4XS/C.
(iii) Aurangabad- Padge(PG) 765 kV 1XD/C or 2XS/C.
(iv) Establishment of 765/400 kV 2x1500 MVA substations at Aurangabad and Padghe (GIS)
(v) Aurangabad(PG)-Khargar 400 kV D/C (quad)
(vi) Padghe(PG)- Padghe 400 kV D/C (quad)
(vii) Vadodra-Asoj (GETCO) 400 kV D/C (quad)
(viii) Establishment of 2X315 MVA, 400/220 kV Dhule (PG).

(ix) Dhule (PG) – Dhule (IPTC) 400 kV 2X D/C (quad)
(x) Dhule (PG) – Nasik (MSETCL) 400 kV D/C (quad)
(xi) Dhule (PG) – Malegaon (MSETCL) 400 kV D/C (quad)
(xii) ± 600 kV 4000 MW HVDC bipole between Raigarh pooling station (Kotra) – Dhule (PG) with mettalic return conductor.
(xiii) 4000 MW, 600 kV HVDC bipole terminal each at Raigarh pooling station (Kotra) and Dhule (PG).
(xiv) Aurangabad- Dhule (IPTC) 765 kV S/C *(Implementation by private sector through tariff based competitive bidding route)*
(xv) Dhule (IPTC) – Vadodara (PG) 765 kV S/C *(Implementation by private sector through tariff based competitive bidding route)*
(xvi) Establishment of 765/400 kV 2x1500 MVA substations at Dhule (IPTC) *(Implementation by private sector through tariff based competitive bidding route)*
(xvii) Dhule (IPTC) – Dhule (MSETCL) 400 kV D/C (quad) *(Implementation by private sector through tariff based competitive bidding route)*

C. Transmission System in NR associated with New IPP projects in Chattishgarh

(i) ± 800 kV 6000 MW HVDC bipole between Champa Pooling Station – Near Kurushetra (NR) in Haryana with metallic return (initially to be operated at 3000 MW).
(ii) 3000 MW, 800 kV HVDC bipole terminal each at Champa pooling station and near Kurushetra in Haryana with provision to upgrade the terminals to 6000 MW.
(iii) Kurushetra- Jallandhar 400 kV D/C (Quad) (one ckt via Nakodar S/S)
(iv) LILO of Abdullapur- Sonepat 400 kV D/C (triple) at Kurushetra
(v) Establishment of 400/220 kV , 2x500 MVA substation at Kurushetra

D. Interim arrangement for connectivity to projects coming prior to availability of the planned transmission system

BALCO TPS (1200 MW), Vandana Vidhyut TPS (540 MW), RKM Powergen (1440 MW) and KSK Mahanadi (erstwhile Wardha Power Ltd.) generation projects are getting commissioned before the availability of the planned evacuation system. The following are the Interim arrangement for connectivity of these projects:

Balco Ltd. (1200 MW)	(i) LILO of both circuits of Korba – Birsinghpur 400kV D/c at Balco
RKM Powergen Ltd.(1440 MW)	(i) LILO of Rourkela- Raigarh 400kV D/c at RKM Powergen
Vandana Vidyut Ltd(540 MW)	(i) LILO of one ckt of Korba – Birsingpur 400kV D/c at Vandana Vidyut
KSK Mahanadi (3600 MW)	(i) LILO of one ckt of Raigarh – Raipur 400kV D/c at KSK Mahanadi

It may be noted that above is purely interim arrangement. LILO and restoration to original configuration would have to be carried out by the project developer. Till the availability of planned network, in case of any transmission constraints the above generators would have to be backed down and priority shall be given for evacuation of power from those generation stations who are having their identified transmission system along with their long term beneficiaries.

Revised phasing of the Transmission system associated with New IPP projects in Chattishgarh based on the above proposed modifications under the scope of Powergrid is as given under:

Stage – 1:

Pooling Stations along with their interconnections and Transmission System within WR associated with New IPP projects in Chattishgarh

(i) Raigarh Pooling Station (Kotra) - Raigarh existing 400 kV D/C (to be kept open at a later date).
(ii) Raipur Pooling Station – Raipur existing 400 kV D/C (to be kept open at a later date)
(iii) Establishment of 765/400 kV pooling stations at Raigarh (4X1500 MVA) near Kotra, at Raigarh near Tamnar, at Champa (3X1500 MVA), and at Raipur (1X1500 MVA).
(iv) Raigarh Pooling Station (Kotra)- Raipur Pooling station 765 kV 1XD/C or 2XS/C
(v) Raigarh Pooling Station (Kotra)- Champa Pooling station 765 kV S/C
(vi) Champa Pooling station- Raipur Pooling station 765 kV 1XD/C or 2XS/C
(vii) Raigarh Pooling station (Kotra) - Raigarh Pooling station (Tamnar) 765 kV 1XD/C or 2XS/C
(viii) Champa Pooling station – Dharamjaygarh 765 kV S/C
(ix) Raipur Pooling station- Wardha 765 kV 1XD/C or 2XS/C
(x) Wardha- Aurangabad(PG) 765 kV 1XD/C or 2XS/C
(xi) Aurangabad- Padge(PG) 765 kV 1XD/C or 2XS/C
(xii) Establishment of 765/400 kV 2x1500 MVA substations at Aurangabad and Padghe (GIS)
(xiii) Aurangabad(PG)-Khargar 400 kV D/C (quad)
(xiv) Padghe(PG)- Padghe 400 kV D/C (quad).
(xv) Vadodra-Asoj (GETCO) 400 kV D/C (quad).

Stage – 2:

Transmission System within WR associated with New IPP projects in Chattishgarh

(i) Raipur Pooling station- Wardha 765 kV 1XD/C or 2XS/C.
(ii) Wardha- Aurangabad (PG) 765 kV 1XD/C or 2XS/C.

Stage – 3:

Transmission System within WR associated with New IPP projects in Chattishgarh

(i) Establishment of 2X315 MVA, 400/220 kV Dhule (PG).
(ii) Dhule (PG) – Dhule (IPTC) 400 kV 2X D/C (quad)
(iii) Dhule (PG) – Nasik (MSETCL) 400 kV D/C (quad)
(iv) Dhule (PG) – Malegaon (MSETCL) 400 kV D/C (quad)
(v) ± 600 kV 4000 MW HVDC bipole between Raigarh pooling station (Kotra) – Dhule (PG) with mettalic return.
(vi) 4000 MW, 600 kV HVDC bipole terminal each at Raigarh pooling station (Kotra) and Dhule (PG).

Stage – 4:

Transmission System in NR associated with New IPP projects in Chattishgarh

(i) ± 800 kV 6000 MW HVDC bipole between Champa Pooling Station – Near Kurushetra (NR) in Haryana with metallic return initially to be operated at 3000 MW.
(ii) 6000 MW, 800 kV HVDC bipole terminal each at Champa pooling station and near Kurushetra in Haryana with provision to upgrade the terminals to 6000 MW.
(iii) Kurushetra- Jallandhar 400 kV D/C (Quad) (one ckt via Nakodar S/S)
(iv) LILO of Abdullapur- Sonepat 400 kV D/C (triple) at Kurushetra
(v) Establishment of 400/220 kV , 2x500 MVA substation at Kurushetra

Members may discuss and decide.

4.0 Transmission system associated with 1320 MW (2X660 MW) Solapur STPP and 1320 MW (2X660 MW) Mouda STPP-II.

4.1 NTPC vide their letter no.01/CP/1.100 dated 15th October 2009 have informed that they have planned to take up four projects through Bulk Tendering of 660 MW units to be implemented during XII plan period. Letter is enclosed as Annexure- IV. These projects are Solapur STPP 1320 MW, Mouda STPP-II 1320 MW, Meja- JV UPRUVNL 1320 MW and Nabinagar STPP- JV BSEB 1980 MW. Out of these Solapur and Mouda STPP located in Maharashtra would be implemented as regional projects for the benefit of Western Region. These projects are scheduled for commissioning in the year 2014-15. The tentative allocation to WR constituents from these projects, intimated by NTPC is as under:

S.No.	State	Mouda STPP-II	Solapur STPP
1.	Unallocated (15%)	198 MW	198 MW
2.	Home State (10%)	132 MW	132 MW
3.	Retained by NTPC (15%)	198 MW	NIL
4.	Madhya Pradesh	165 MW	305 MW
5.	Chattishgarh	66 MW	122 MW
6.	Maharastra	286 MW	524 MW
7.	Gujarat	253 MW	NIL
8.	Goa	12 MW	21 MW
9.	DNH	6 MW	11 MW
10.	DD	4 MW	7 MW
11.	Total	1320 MW	1320 MW

4.2 Load Flow studies have been carried out by PGCIL to evolve the evacuation arrangement of both the above generation projects. Load generation scenario and network configuration of Western Region corresponding to 2014-15 time frame has been considered taking into account various Central/State/Private Sector generation projects proposed to be set up by the time frame. Peak demand in WR is considered as 76,000 MW which is about 25% higher than the projected demand growth of about 59,000 MW as projected by the 17th EPS. The higher load growth has been considered in view of the availability of additional power from various IPP generation projects located in Chhattisgarh, Madhya Pradesh, Orissa, Jharkhand, Andhra Pradesh and Tamil Nadu which are scheduled for commissioning progressively by above time frame.

4.3 Based on the studies the following associated transmission system for the Mouda STPP and Solapur STPP generation projects of NTPC has been proposed:

A. Solapur (1320MW)

(i) Solapur NTPC- Solapur (PG) 400kV D/c-20 km
(ii) Solapur NTPC - Pune (PG) 400kV (Quad) D/c-250 km
(iii) Augmentation of 400/220kV ICT by 1x315 MVA transformer at Solapur (PG)

The estimated cost of the above transmission system is about Rs. 600 crores.

B. Mouda Stage-II (1320MW)

The Associated Transmission System for Mouda Stage-I project (1000 MW) scheduled for commissioning by 2012, agreed in the 29th SCM of Western Region is as under:

(i) Mauda- Wardha 400kV D/c (Quad).
(ii) Mauda- Khaperkheda 400kV D/c (Quad)

The Mouda Stage-II generation project (1320 MW) proposed by NTPC is in the same generation complex of Stage-I, therefore for evacuating 2320 MW power from Mouda generation complex, provision of one more 400 kV D/c quad line to Wardha is sufficient.

At Wardha, with large number of interconnections planned viz., seven nos. of 400 kV D/C lines, ten nos. of 765 kV lines the short circuit level at 400kV Wardha is expected to go beyond its permissible limits of 40kA. To take care of the high short circuit level, it is proposed to split the 400kV Wardha bus into to separate 400kV bus sections i.e., Wardha-A and Wardha-B. Both 400kV bus sections A & B are proposed to be interconnected with 765kV Wardha bus through 765/400kV transformers. At Wardha-A bus section the lines to terminated are: 400 kV D/C from Mouda Stage-I, 400 kV D/C to Aurangabad (upgradable to 1200 kV S/C at later stage) and 400 kV D/C from Warora. At Wardha-B bus section the lines to be terminated are: - 400 kV D/C from Mouda Stage-II, 400 kV D/C to Akola, 400 kV D/C from Parli and 400 kV D/c from Raipur.

The following Associated Transmission System is proposed for evacuation of power from Mauda Stage-II:

(i) Mauda-II STPS – Wardha 400kV 2nd D/c (Quad) - 120 km.

(ii) Bus splitting at Wardha 400 kV Bus into Section A and Section B with following interconnection arrangement:

At Wardha 400 kV bus Section-A:

- Mouda-I - Wardha-A 400 kV D/c quad line.
- Wardha Section-A – Aurangabad 400kV D/c(Quad)[to be upgraded to 1200 kV S/c line at a later date]
- Warora – Wardha-A 400 kV D/c quad line.
- 765/400kV 2x1500MVA ICT between 400kV Wardha-A and 765kV Wardha bus

At Wardha 400 kV bus Section-B:

- Mouda-II - Wardha-B 400 kV D/c quad line.
- Raipur – Wardha-B 400kV D/c quad line.
- Parli – Wardha-B 400kV D/c quad line.
- Wardha-B – Akola 400kV D/c quad line.
- 765/400kV 1x1500MVA ICT between 400kV Wardha Section-B and 765kV Wardha bus.

The estimated cost of the above transmission system is about Rs. 350 crores

The Load flow result for the time frame of 2014-15 with Mouda STPP and Solapur STPP generation projects is shown at Exhibit-1.The Load Flow study results shows normal loading on major 400 kV lines, except for some lines towards Kalwa/Mumbai area where higher loading of the line has been observed. This is due to the high demand (25% higher than EPS demand) considered in the studies. Since the project is scheduled for commissioning in the year 2014-15, based on the demand growth a separate system strengthening may be taken up in future for overcoming the higher loadings, if required.

PGCIL may present the studies and Members may deliberate.

5.0 **Transmission system associated with Mauda (2X500 MW) generation project of NTPC**

5.1 In the 29th SCM of WR the Transmission system associated with Mauda (2X500 MW) generation project agreed by the constituents is given under:

- Mauda – Wardha 400kV D/C (Quad)
- Mauda – Khaperkheda (MSETCL) 400kV D/C (Quad)

During the meeting, MSETCL had informed that for terminating the Mauda – Khaperkheda 400 kV D/C line at Khaperkheda, space for only one bay was available at Khaperkheda. To overcome the problem it was decided that MSETCL should procure additional land for providing one more bay at Khaperkheda and in case of difficultly the line would need to be terminated at some other nearby 400 kV substations.

5.2 POWERGRID has intimated that MSETCL has informed them that they are constructing the 400/220kV Khaperkheda S/s on the land made available to MSETCL by MSPGCL and there was no additional land that can be acquired adjacent to the Khaperkheda S/s site for accommodating the bay for terminating 400 kV D/c lines from Mauda.

5.3 POWERGRID have gone ahead with the implementation of Mauda Transmission system as agreed in the 29th SCM. In view of non-availability of bay space at Khaperkheda, POWERGRID have proposed to terminate the line from Mauda TPS at upcoming 400kV Koradi-II/Koradi-III substation of MSETCL in place of Khaperkheda S/s.

5.4 Further MSETCL vide their letter date 3rd February 2010 to CEA has requested to terminate Mauda – Khaperkheda (MSETCL) 400kV D/C (Quad) at the proposed Koradi-III (MSETCL) (765/400 kV) D/C in view of space constraints at Khaperkheda. Terminating the Mauda – Khaperkheda (MSETCL) 400kV D/C (Quad) at the proposed Koradi- III substation of MSETCL will add to the high short circuit level problem at Koradi – II which is still to be addressed by MSETCL.

5.5 MSETCL may intimate the steps taken or it proposes to take up to sort out the high short circuit level problem at Koradi – II.

Members may deliberate on the issue.

6.0 **Evacuation of Power from LANCO Amarkantak TPS 2X300 MW, Pathadi generation project in Chattishgarh.**

6.1 One unit of 300 MW of LANCO Amarkantak TPS (2X300 MW) at Pathandi is already in operation and 2nd unit has also been synchronized recently. Long term Open Access for Unit-1 was granted in 2006 with power evacuation through LILO of Korba-Sipat 400 kV S/C line at Pathadi. Long term Open Access was granted for Unit-II in 2008 with Lanco Amarkantak (Pathadi) - Bilaspur pooling station 400 kV D/C (quad) line as the dedicated transmission system for both Unit 1&2 and removal of LILO of 400 kV Korba - Sipat at Pathadi. While granting LTOA for Unit-II, it was decided that till the WR pooling station is available, power from Unit-II may be evacuated over the LILO arrangement on short term basis as there may be transmission constraints under some operating conditions.

6.2 Since Bilaspur pooling station is not yet available, at present transmission constraint are being experienced in transfer of power from Pathadi generating station under certain operating condition and Pathadi – Sipat 400 kV S/C line is getting overloaded. With the commissioning of 2nd unit transmission constraints are likely to increase. PGCIL has carried out studies to identify interim arrangement to overcome the constraint. The load flow results are enclosed as Annexure-V. The following alternatives can be adopted:

Alternative-1: Bypassing of LILO at Sipat of Korba-Pathadi-Sipat-Raipur 400 kV S/C line, making it Korba-Pathadi- Raipur line. To address the high voltage problems at Sipat, voltage control measures such as transformer tap adjustment at Sipat and possibility of use of line reactors at Sipat end of already opened Ranchi – sipat 400 kV line can be adopted.

Alternative-2: When both the Units at Pathadi are in operation, opening of CB of Korba (NTPC) end of 400 kV Korba – Pathadi S/C line would help in overcoming the overloading of Pathadi – Sipat line. However, when the generation at Pathadi is low and only one unit is running the CB at Korba end can be kept closed.

In both the above alternatives, in case of any transmission constraints in evacuation of power from NTPC/ State generating stations due to contingency or otherwise, Lanco Amarkantak TPS 2X300 MW will have to back down first and NTPC and other state generating units will have higher priority. Powergrid also needs to expedite commissioning of Bilaspur pooling Station.

Members may deliberate on the issue.

7.0 Provision of 400/220 kV substation to Union territory of DNH (Dadar and Nagar Haveli) and Daman & Diu.

7.1 In the 29th meeting of the Standing Committee on Power System Planning in WR the establishment of 400/220 kV, 2X315 MVA substation at Kala in DNH (Dadar and Nagar Haveli) by LILO of Navsari-Mumbai new location 400 kV D/C line and establishment of 400/220 kV, 2X315 MVA GIS substation in Daman & Diu by LILO of Vapi – Navi Mumbai 400 kV D/C line was agreed.

In the meting establishment of 400/220 kV, 2X315 MVA GIS substation in Daman & Diu, by LILO of Vapi-Navi Mumbai was also agreed

7.2 PGCIL have intimated that they have identified land near Magarwada for establishment of GIS substation and DPR is under preparation. PGCIL vide their letter (copy enclosed as Annexure-VI) have also stated that during survey, it was observed that LILO stretch point of above line is on multi-circuit tower comprising both Vapi – Navi Mumbai 400 kV D/C line and Navsari – New location near Mumbai/Boisar 400 kV D/C line. Further, Vapi – Navi Mumbai 400kV D/c line is being strung on top portion of the multi circuit tower and Navsari – Boisar 400kV D/c line is being strung on bottom portion of the tower. To take care of tower/conductor balancing, PGCIL has now proposed that one ckt. of Vapi – Navi Mumbai and one ckt. of Navsari – Boisar line may be made LILO at 400/220kV Magarwada S/S in place of LILO of both ckts. of Vapi – Navi Mumbai 400kV D/c.

It is observed that the above proposal of PGCIL results in creation of two LILOs on the Navsari - New location near Mumbai/Boisar 400 kV D/C line one at Magarwada and other at Kala and may not be an optimum solution. PGCIL may explore the possibility of implementing the earlier agreed system

7.3 Regarding 220 kV interconnectivity from Kala, Electricity Department, DNH have proposed two no. of 220 kV D/C lines from 400/220 kV Kala substation, one to existing 220 kV Kharadpada and other to existing 220 kV Khadoli substation in 1st phase. In the 2nd phase it has proposed establishment of 220 kV substations at Dadra and Sayali. Copy of the letter is enclosed as Annexure-VII.

Regarding 220 kV interconnectivity from proposed 400/220 kV Magarwada substation in Daman & Diu, Electricity Department, Daman vide their letter no.ED/EE/RING (220/400kV)/2009-10/2844 dated 05.02.2010 have proposed two no. of 220 kV D/C lines from Magarwada 400/220 kV substation i.e., one to existing 220/66/11 kV Magarwada substation

and other to the proposed 220/66/11 kV Ringanwada substation. Copy of the letter is enclosed Annexure-VIII.

7.4 In view of the RoW constraints in DNH and Daman & Diu ,it is desirable that the 220 kV transmission corridor planned by DNH and Daman & Diu for providing interconnectivity with the 400 kV substation at Magarwada and Kala should be developed keeping in mind the future requirements of power transfers. It is suggested that instead of normal zebra 220 kV conductors, high capacity conductors should be used and Electricity Deptt should also explore the possibility of using multi-circuit towers. Also Electricity Deptt, Daman & Diu, should ensure that Ringwada 220 kV substation is established in matching time frame of Magarwada 400/220 kV substation.

7.5 It is observed that the connectivity proposed from Kala 400/220 kV substation results in loop formation at 220 kV level with existing Vapi 400/220 kV substation which may result in increasing the short circuit levels. To avoid such a situation it is suggested that bus splitting should be done at Kharadpada and Khadoli 220 kV substations to avoid loop formation.

UT of DNH and Daman & Diu may incorporate the above suggestion in their 220 kV interconnection plan and members may take note of the above.

8.0 **Proposal of MPPTCL for LILO of 400 KV Birsinghpur - Damoh (PGCIL) – Bhopal 400 KV line at Sagar**.

8.1 MPPTCL vide their letter no. 04-01/CE(SSD)/560 dated 21st January 2010 have proposed to establish a 400 kV substation at Sagar by LILO of Birsinghpur – Damoh - Bhopal 400 kV line as this line is passing close to Sagar.

8.2 Birsinghpur – Damoh - Bhopal 400 kV line is a regional line being implemented by PGCIL under Western Region System Strengthening Scheme – II Set D (Regional Strengthening in Northern Madhya Pradesh), therefore establishing 400 kV substations at Sagar by LILO of Bhopal – Damoh 400 kV line involves connectivity with the Regional Grid.

8.3 MPPTCL had earlier proposed establishment of 400 V Sagar substations by LILO of one ckt of Birsingpur-Damoh 400 kV (MPPTCL) line. The proposal was examined in CEA and since it was resulting into a lengthy line (about 300 kM Birsingpur-Sagar 400 kV S/C line), it was suggested that instead of LILO arrangement 400 kV, Sagar sub-station could be established through a 400 kV D/C line between Damoh(PG)- Sagar .

8.4 MPPTCL may present the details of the above proposal and also clarify whether this proposal is in addition to their earlier proposal or a fresh proposal.

Members may deliberate on the issue.

8.0 **Proposal of MSETCL for Koradi-II – Wardha (PG) 400 kV D/C line with quad conductor**

8.1 MSETCL vide their letter no. MSETCL/CO/STU/ Trans Plan/ 15789 dated 21st November 2009 has intimated that they have already completed the tendering process for Koradi-II – Wardha (PG) 400 kV D/C line. Since the line is getting connected to the Regional Grid, MSETCL has sought the approval of Standing Committee for Koradi-II – Wardha (PG) 400 kV D/C line.

8.2 A large number of interconnections are already planned at Wardha (PG) 400 kV substation, therefore availability of bays at Wardha substation needs to be ascertained from PGCIL. Also in the 29th SCM of WR the evacuation system for Koradi-II TPS was informed by MSETCL as Koradi-II- Koradi-III 400 kV D/C line along with 1000 MVA 400/220 kV substation at Koradi-II.

Koradi- III was further proposed to be interconnected to Akola 765 kV through a 2xS/C 765 kV lines. MSETCL may present their justification for the modifications/ addition proposed along with studies.

Members may deliberate on the issue.

9.0 Establishment of 765/400kV substation at Pune as part of Krishnapatnam UMPP (4000MW) Transmission System

9.1 Establishment of 765/400kV substation at Pune was agreed as a part of Evacuation System of Krishnapatnam (4000MW) UMPP, in the 27th meeting of Standing Committee on Power System Planning in Western Region held on 30.07.2007 at Indore. PGCIL had informed that while identifying the land for Pune substation, it was difficult to find fairly leveled land of about 100 acres suitable for establishing the substation. To overcome the problem PGCIL has now proposed to establish the 765/400kV substation at Pune with GIS technology instead of AIS.

9.2 PGCIL may indicate the requirement of land in case GIS is adopted visa-vis AIS and cost implications. It may be noted that in WR only Maharashtra is beneficiary of Krishnapatnam UMPP and the proposal also needs to be put up to the other beneficiaries of the Krishnapatnam UMPP in Southern Region.

Members may deliberate.

10.0 MSETCL proposal of connectivity of 400 kV Sholapur with South Solapur (PG) under Central sector.

10.1 During the 29th SCM MSETCL had proposed a direct connectivity of 400 kV Sholapur with South Solapur (PG) under Central sector through Solapur (PG) – Solapur 400 kV D/c. The connectivity from South Sholapur (PG) through LILO of Karad (MSETCL) - Sholapur (MSETCL) 400 kV S/C at Sholapur (PG) was already agreed as a part of Western Region System Strengthening scheme and was under implementation by IPTC. A change in the already agreed scheme would also call for a change in scope of the IPTC, therefore it was decided that the issue would be discussed with IPTC and sorted out by CEA.

10.2 The issue was discussed by CEA with RPTL wherein RPTL informed that significant progress has been made with the already agreed route alignment and it was not feasible to re-route the transmission line for establishing a direct connectivity between Sholapur (MSETCL) and Sholapur (PG).

11.0 GETCO proposal of sparing additional 2 nos. of 220 kV line bays at 400/220 kV Bhachau (Bhimsar, PGCIL) substation for full evacuation of power from 1st unit of 800 MW at Mundra UMPP.

11.1 The Mundra UMPP (5X800 MW) located in Gujarat being implemented by M/s Coastal Gujarat Private Ltd.(CGPL) is scheduled for commissioning during the period Sep 2011 to March 2013 (Unit 1: Sep 2011, Unit 2: March 2012, Unit 3: July 2012, Unit 4: November 2012 and Unit 5: March 2013). The power from 1st 800 MW unit would be evacuated to GETCO system through Mundra - Bhachau 400 kV D/c line. The underlying 220 kV network planned by GETCO from 2X315 MVA Bhachau 400/220 kV substation of PGCIL is LILO of Halvad – Morbi 220 kV D/c line at Bhachau substation.

11.2 GETCO vide their letter no. SE(CP&SS)/System/29/6 dated 26.02.2010 has requested for sparing additional 2 nos. of 220 kV line bays and provision of one more ICT of 315 MVA at 400/220 kV Bhachau (Bhimsar, PGCIL) substation in order to evacuate full power from 1st unit of 800 MW at Mundra UMPP to their system. The two no. of addition bays would be

utilized for connecting Bhachau (PGCIL) 400/220 kV substation and Versana (GETCO) 400/220 kV substation through 220 kV D/c line. Further, GETCO has requested to take up the 220 kV D/c link between Bhachau (PGCIL) 400/220 kV substation and Versana (GETCO) 400/220 kV substation as system strengthening scheme.

11.3 Further GETCO vide their letter dated 04.03.2010 have proposed Bhimsar (Bachau) - Varsana 400 kV D/C line as a system strengthening scheme as this would facilitate Gujarat in drawing their share of power (1800 MW) from Mundra UMPP through Varsana- Hadala and Varsana – Halvad 400 kV lines.

In case of 400 kV interconnection between Bhachau (PGCIL) 400/220 kV substation and Versana (GETCO) 400/220 kV substation, the 220 kV D/C D/c link proposed would not be required. Also provision of one more ICT at Bhachau (PGCIL) 400/220 kV substation may not be required.

The GETCO proposal of Bhimsar (Bachau) - Varsana 400 kV D/C line as a system strengthening scheme could be agreed.

Members may deliberate.

12.0 Setting up of On Line High Power Short Circuit Test Facility in India.

12.1 The short circuit test facility available in India is only up 2500 MVA which is capable of testing transformers up to 90 MVA. The transformers rated above this value and especially in respect of 400 kV transformers where the minimum size is generally of the order of 100 MVA and above, the transformers are tested with accredited laboratories outside India such as KEMA Netherland, CESI Italy. Testing of transformer outside India takes considerable time and money – both for transportation of transformers to the test facility and back also facility charges which results in either delay in commissioning of substation or waiving of this these tests to ensure timely commissioning. Transformer commissioning without short circuit testing has been one of the contributing factor to the failure of transformers.

12.2 During XII Plan the anticipated requirements of substations corresponding to 1,00,000 MW capacity addition programme would be of the following order: 765 kV/400 kV substations – 1,20,000 MVA (40 to 50 nos.), 400/220, 400/132 kV – 80,000 MVA, 220/132,66, 33, 11 kV – 95,000 MVA. Also as per Integrated Energy Policy Planning document of Planning Commission the total generation capacity projected by 2027 is expected to be 6,85,000 MW. A matching augmentation would also be required in transmission and distribution infrastructure for delivering quality and reliable supply to the consumers

12.3 In view of the huge transmission capacity expansion requirements, both in the Inter State and Intra State Transmission system, over the next few decades and limited testing facilities in the country the need for augmentation / setting up equipment testing facilities been under consideration. A committee under the Chairmanship of Member (Power System), CEA was constituted in a meeting taken by Secretary (Power) in January 2008 to look into the issues and come up with recommendations.

12.4 The committee deliberated on the issue and keeping in view resource constraints recommended for establishment of On-line test facilities which requires lesser investment compared to short circuit generator based facilities. Accordingly, a taskforce comprising of members from CPRI, PGCIL, NHPC, NTPC, CEA, PFC, BHEL and RLDC was constituted to have better understanding and to provide inputs to the entire exercise of setting up the proposed facility in our country. The taskforce recommended establishment of the grid based on-line short-circuit testing facility. For the purpose technical consultancy services may be obtained from specialist technical consultants having experience in either using of developing such facility.

12.5 The decision for setting up an 'Online High Power Test Laboratory" (OHPTL) for short circuit test facility in India by a Joint Venture company formed by equal equity participation amongst NTPC, NHPC, POWERGRID and DVC was agreed in a meeting taken by Hon'able Minister of State for Power and Secretary Power on 1st September 2008.

12.6 National High Power Test Laboratory (Pvt.) Ltd., a Joint Venture Company of NTPC, NHPC, POWERGRID and DVC was incorporated on 22nd May 2009 with the objective of establishing a fully independent, stand alone, state of the art, professionally managed, international class On Line High Power Short Circuit Test Facility in India to provide a full range of Short Circuit testing for the electrical equipment manufacturing industry and power utilities in conformance to Indian and International Standards. This facility could also be used by the neighbouring countries (e.g. SAARC countries, ASEAN, Middle East countries) as it may have lower testing and transportation cost as compared to the testing facilities available in other countries. The Test facilities are to be established in phased manner as under;

STAGE-I: Facilities to test large power transformers up to 400 kV for short-circuits withstand capabilities as National (BIS) and International (IEC) standards.

STAGE-II: Facilities to test large power transformers up to 765 kV class for short-circuits with stand capabilities.

STAGE-III: Facilities to test switchgears (CBs) up to 550kV, 63 kA for short-circuits duties with synthetic methods (HPS) as per National (BIS) and International (IEC) standards.

STAGE-IV: Facilities to test the high current with stand capability of electrical equipment (HCLV) like LV Bus Bar, LV Contactor, LV breakers, LV Disconnectors, LV switchgear, Bushings, CT, up to 400 kA rms with 1100 kA peak (stage IV);

12.7 Based on the criterion of technical suitability and also proximity of the transformer manufacturing factories such as BHEL (Jhansi & Bhopal), CGL Mandideep (Bhopal) as well as connectivity by Rail & Road, Bina substation of PGCIL has been selected for establishing Online High Power Test Laboratory. The connectivity to the laboratory would be provided by extending line bays at 220 kV, 400 kV and 765 kV level from 765/400 kV Bina substation of Powergrid.

12.8 The cost of the project is of the order of Rs. 570 crores with the stage-I cost being of the order of Rs. 220 crores. The Stage-I and Stage-II of the project is scheduled for completion by mid 2012 and mid 2013 respectively. Stage-III and Stage-IV are scheduled for completion by 2015. National High Power Test Laboratory (Pvt.) Ltd. would be operated keeping in view its commercial viability. The project cost would to be funded through the mix of debt and equity in the ratio of 60:40. Initial equity would be infused by JV partners to fund the capital expenditure followed by the debt taken for the project from financial institution. At present, the Feasibility Report of the project is under approval of JV partners. After the approval of the Feasibility Report the construction of Stage-I shall be taken up.

12.9 Since the test facility is getting connected to the Western Region grid at Bina 765/400 kV substation, the same is put up to the members for information / approval.

13.0 Proposal of MPPTCL for construction of 220 kV D/c line between Shujalpur (400/220 kV) substation of Powergrid and Badod 220 substation of MPPTCL under Western Region system strengthening scheme.

13.1 MPPTCL vide their letter no.04-02/PS/92 dated 02nd Feb 2010 have stated that the interconnection of WR-NR system through Ujjain/ Badod – Kota 220 kV link is resulting in overloading of lines and interconnecting transformers in Indore, Nagda and Ujjain area. To overcome overloading MPPTCL have proposed a 220 kV D/C line between Shujalpur 400 kV

substation of PGCIL and Badod 220 kV substation of MPPTCL under Regional scheme. Copy of the letter is enclosed as Annexure- IX.

13.2 The issue was raised by MPPTCL in the 28th meeting of Standing Committee on Power System Planning in Western Region wherein the members felt that in view of Zerda-Kankroli 400kV D/C line which was already under implementation there was no justification in taking up this line as a regional scheme and in case MPPTCL wished they could construct this line on their own.

13.3 MPPTCL has intimated that even after commissioning of Zerda-Kankroli 400 kV D/c line, there is a constant flow of power from WR to NR on Ujjain-Kota/Badod line. The maximum power flow on these lines has reached 406 MW during August 2009 which has substantially increased the loading of the 220 kV lines between Indore and Ujjain as well as between Nagda and Ujjain resulting into substantial increase in the transmission losses of MP system on account of flow of power from WR to NR.

13.4 It is observed that 220 kV D/C line between Sujalpur and Badod as proposed may not be appropriate solution. Instead a 400 kV D/C link between Nagda-RAPP is suggested. Studies carried out by PGCIL indicate a flow of about 500 MW on this line which would reduce the flow on the underlying 220 kV network of MPPTCL. Load flow study result is enclosed as Exhibit – II.

Members may deliberate on the issue.

14.0 MSETCL proposal of connecting 400 kV substation with the Regional Grid.

14.1 MSETCL vide their letter no. MSETCL/CO/STU/Trans Plan/1397 dated 29th January 2010 have intimated that two nos. of 400 kV substation i.e., Vikroli substation by Tata Power and Ghodbunder substation by R-Infra has been planned as a part of 5 year STU plan of Maharastra. These substations are linked with following 400 kV lines:

Vikroli 400 kV substation:

- Vikroli – Panvel (PG) 400 kV S/c line – 35 km
- Vikroli – Bhiwandi (PG) 400 kV S/c line- 37 km
- Vikroli – Kharghar (MSETCL) 400 kV S/c line- 22 km

Ghodbunder 400 kV substation:

- Ghodbunder – Boisar (PG) 400 kV D/c line- 76 km
- Ghodbunder – Bhiwandi (PG) 400 kV D/c line – 17 km

14.2 The above 400 kV station are getting connected to the Powergrid substations therefore it involves connectivity with the regional grid and approval of standing committee is required.

It may be noted that due to RoW constraints being faced by Powergrid in terminating the 400 kV D/c line from Navsari at Bhiwandi, the same would now be terminated at existing Boisar 400 kV substation. Therefore, MSETCL needs to review the above connectivity planned for 400 kV substations at Vikroli and Ghodbunder.

Members may discuss.

15.0 Preliminary information on evacuation arrangements of 4000 MW (6X660) Chhattisgarh UMPP.

15.1 Chhattisgarh UMPP is proposed to come up near Village Salka and Khamaria in Surguja Distt. Chhattisgarh. Chhattisgarh Surguja Power Ltd in their LTOA application to Powergrid has indicated the unit wise commissioning schedule as: Unit-I – Dec 2016, Unit-II – May 2017,

Unit-III – Dec 2017, Unit-IV – May 2018, Unit-V – Dec 2018, Unit-VI – May 2019. The tentative allocation to WR constituent state is as under:

Sl.No.	Beneficiary	Allocation(MW)
Western Region		
1	Chhattisgarh	2000
2	Maharashtra	1000
3	Madhya Pradesh	425
4	Gujarat	275
5	Goa	200
6	UT DD	50
7	UT DNH	50
	Total	**4000**

15.2 For evacuating power to the beneficiaries in the Western Region, the power from Chattisgarh UMPP needs to be evacuated at 765 kV level. In view of the development of 765/400kV Jabalapur Pooling as a part of transmission system for IPPs in Orissa and Champa Pooling Station as a part of transmission system for IPPs in Chhattisgarh, connectivity of Chhattisgarh UMPP with Jabalpur Pooling Station as well as Champa Pooling station at 765kV level has been envisaged. The evacuation system as well as system strengthening required in Western Region in the time frame of 2016-17, for absorption of power by the beneficiaries would be evolved subsequently.

Members may deliberate and may kindly note.

16.0 Proposal of Installation of 3rd 315 MVA, 400/220 kV transformer at Vapi (PGCIL) substation.

16.1 Electricity Department, DNH vide their letter no. 9-2(30)/ELE/PROJECT-I/2010 dated 19-03-2010 has proposed the Installation of 3rd 315 MVA, 400/220 kV transformer at Vapi (PGCIL) substation. DNH have informed that Vapi 400 kV substation is fully loaded and outage of any one of the ICT overloads the other ICT. To avoid overloading load shedding has to be carried out. Further they have informed that with commissioning of 220/66 kV Khadoli sub-station in June 2010, the long pending loads will be released and this increased load will be further reflected on Vapi 400 kV substation.

16.2 To meet the future load requirements of DNH and D&D two nos of 2X315 MVA 400/220 kV substation i.e., one at Kala and other at Magarwada along with connectivity at 400 kV level and 220 kV level has already been planned and agreed.

Members may discuss.

17.0 Transmission System Associated with Cheyyur UMPP in Tamil Nadu 4000 MW.

17.1 Cheyyur UMPP (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 UMPP, 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

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. The following transmission system has been agredd by the SR constituents in their 28th Standing Committee meeting:

(i) TNUMPP – Tiruvalam 765kV 2xS/C or D/C line **$**
(ii) Tiruvalam – Kurnool 765kV S/C line
(iii) Kurnool – Raichur 765kV 2xS/C or D/C line **$**
(iv) TNUMPP – Salem 765kV S/C line
(v) 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.

17.2 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.

Members may kindly note.

18.0 **Transmission System for Tillaiyya(4000 MW) UMPP**

In Tilaiya UMPP Eastern Region, Northern Region and Western Region have got a share of 1500 MW, 1700 MW and 800 MW respectively. The generation specific transmission system associated with Tilaiya UMPP, as informed in the 28th standing Committee meeting of Power System Planning in Western Region is as under:

- Tilaiya UMPP – Sasaram, 765kV S/C line
- Tilaiya UMPP – Gaya, 765kV S/C line.
- Tilaiya UMPP – Balia 765kV S/C line

In view of the space constraints at Sasaram, the generation specific transmission system of Tilaiya UMPP was further deliberated in the Northern Region and Eastern Region. The revised system is as under:

- Tilaiya UMPP – Balia 765kV D/C line
- Tilaiya UMPP – Gaya 765kV S/C line

The charges for the above transmission system are to be shared by the constituents in proportion to allocation.

Members may kindly note.

19.0 **Any other item with permission of the Chair**

20.0 12th meeting of WR constituents regarding Long Term Open Access (LTOA) applications in Western Region.

The meeting will be held after the SCM meeting. PGCIL agenda for the LTOA meeting is at Annexure - X.

Annexure-I

STATUS OF WESTERN REGION TRANSMISSION SCHEME

1	2	3	4	5	6	7	8
S. No.	**Description of Scheme**	**Estimated Cost (Rs. Cr.)**	**Date of firming up in WR standing committee**	**Date of FR**	**Date of investment approval**	**Target date as of now**	**Remarks**
1.	East-West Tr. Corridor Strengthening scheme a) Ranchi-Rourkela 400kV D/c b) Rourkela-Raigarh 400 kV D/c c) Raigarh-Raipur 400 kV D/c d) 40% FSC on Raigarh-Raipur 400 kV 2nd D/c	803	20th (23.01.04)	Jul'04	June'06	Mar'10	Under implementation
2.	Western Region System Strengthening Scheme-II Set-A: For absorbing import in eastern and central part of WR Grid (POWERGRID) a) Raipur – Wardha 400kV D/c b) Seoni – Wardha 765kV 2nd S/c (initially to be operated at 400kV) c) Wardha – Parli(PG) 400kV D/c (Quad) d) Bhadravati – Parli(PG) 400kV D/c e) Parli(MSEB) – Parli(PG) 400kV D/c Set-B: For regional strengthening in Southern Maharashtra **(100 % private)**	5222 1700 1050	20th (23.01.04)	Sep'05 (Rev)	July'06	July'10	POWERGRID scope of works under implementation

1	2	3	4	5	6	7	8
S. No.	**Description of Scheme**	**Estimated Cost (Rs. Cr.)**	**Date of firming up in WR standing committee**	**Date of FR**	**Date of investment approval**	**Target date as of now**	**Remarks**
	a) Parli(PG) - Pune 400kV D/c b) Pune – Aurangabad 400kV D/c c) Parli(PG) – South Solapur 400kV D/c d) South Solapur - Kolhapur 400kV D/c e) LILO of Lonikhand – Kalwa 400kV D/c line at Pune f) LILO of Sholapur – Karad 400kV S/c line at South Solapur Set-C: For regional strengthening in Gujarat **(100 % private)** a) Rajgarh – Karamsad 400kV D/c b) Limdi(Chorania) – Ranchodpura 400kV D/c c) Ranchodpura – Zerda(Kansari) 400kV D/c Set-D: For regional Strengthening in Northern Madhya Pradesh **(POWERGRID)** a) Korba STPP – Birsinghpur 400kV D/c b) Birsinghpur - Damoh 400kV D/c c) Damoh - Bhopal 400kV D/c d) Bina – Gwalior 765kV 2nd S/c (initially to be operated at	600 1050					

1	2	3	4	5	6	7	8
S. No.	**Description of Scheme**	**Estimated Cost (Rs. Cr.)**	**Date of firming up in WR standing committee**	**Date of FR**	**Date of investment approval**	**Target date as of now**	**Remarks**
	400kV) Sub-Stations (POWERGRID) a) Establishment of 400/220kV 2x315MVA substation at Pune and South Solapur b) Establishment of 400kV switching station at Parli(PG) c) 25% Fixed Series Compensation at Rajgarh & Wardha d) Bay extension of existing substations to terminate lines under : Set-A Set-B Set-C Set-D	830					
3.	Barh Transmission System (1980 MW) (WR Portion) a) Seoni- Bina 765 kV S/c (initially to be operated at 400kV)	330	20th (23.01.04)	Mar'04	Dec'05	Mar'10	Under implementation
4	Western Region System Strengthening -V a) 400 kV Vapi- Navi Mumbai D/c b) LILO of 400 kV Lonikhand/Pune - Kalwa line	471	25th (30.09.06)	Jan'07	Nov'07	Sep'10	Under implementation

1	2	3	4	5	6	7	8
S. No.	**Description of Scheme**	**Estimated Cost (Rs. Cr.)**	**Date of firming up in WR standing committee**	**Date of FR**	**Date of investment approval**	**Target date as of now**	**Remarks**
	at Navi Mumbai c) Establishment of 400/220 kV, 2 x 315 MVA new S/s (GIS) at Navi Mumbai d) 220 kV Vapi- Khadoli D/c						
5.	Western Region System Strengthening -VI a) Pirana – Dehgam 400 kV D/c b) Establishment of 400/132 kV, 2 x 315 MVA S/s at Pirana c) Installation of additional 400/220 kV, 1x315 MVA transformers along with associated 220 kV line bays at Wardha, Pune, Gwalior, Raipur and Bina(PG)	311	25th (30.09.06)	Jan'07	Jan'08	Nov'10	Under implementation
6.	Western Region System Strengthening -VII a) Provision of 420 kV, 1x125 MVAR Bus reactor at Khandwa b) Provision of 420 kV, 1x125 MVAR Bus reactor at Dehgam	37	26th (23.02.07)	May' 07	Jan'08	Nov'10	Under implementation
7.	Western Region System Strengthening -IX a) LILO of 400kV Bina-Nagda D/c line at Shujalpur b) Establishment of 400/220kV 2x315MVA substation at	231	26th (23.02.07)	Jun'07	Apr'08	Jan'11	Under implementation

1	2	3	4	5	6	7	8
S. No.	**Description of Scheme**	**Estimated Cost (Rs. Cr.)**	**Date of firming up in WR standing committee**	**Date of FR**	**Date of investment approval**	**Target date as of now**	**Remarks**
	Shujalpur						
8.	Tr. System of Sasan Ultra Mega Power Project (4000 MW) Transmission Lines a) Sasan – Satna 765 kV 2xS/c b) Satna - Bina(PG) 765 kV 2xS/c c) Bina(PG)-Indore(PG) 765 kV S/c d) LILO of Vindhyachal-Jabalpur 400 kV D/c at Sasan e) Indore (MP)– Indore(PG) 400kV D/c (Quad) f) Bina(PG)-Bina(MP) 400 kV D/c Substations a) Establishment of new 765/400 kV, 2x1500MVA substation at Gwalior and 765/400 kV, 2x1000 MVA at Bina(PG) for charging of Bina-Gwalior and Agra-Gwalior 2xS/c lines at 765 kV level b) Provision of 765 kV Bays for charging of Seoni- Bina S/c line at 765 kV level c) Establishment of new 765/400 kV, 2x1000 MVA substation at Satna d) Establishment of new	5323	26th (23.02.07)	Jun'07	Dec'08	Dec'12	Under implementation

1	2	3	4	5	6	7	8
S. No.	**Description of Scheme**	**Estimated Cost (Rs. Cr.)**	**Date of firming up in WR standing committee**	**Date of FR**	**Date of investment approval**	**Target date as of now**	**Remarks**
	765/400 kV, 2x1500 MVA substation at Indore(PG)						
9.	Tr. System of Mundra Ultra Mega Power Project (4000 MW) Transmission Lines a) Mundra – Bachchau-Ranchodpura 400 kV (Triple) D/c b) Mundra – Jetpur 400 kV (Triple) D/c c) Mundra – Limbdi 400 kV (Triple) D/c d) Gandhar-Navsari 400 kV D/c e) Navsari-New Location near Mumbai 400 kV D/c f) LILO of both circuits of Kawas-Navsari 220 kV D/c at Navsari (PG) g) Wardha-Aurangabad 400 kV(Quad) D/c (with provision to upgrade at 1200 kV at later date) Substations a) 40% Fixed Series Compensation each on Wardha - Aurangabad 400 kV D/c at Wardha end b) Establishment of new 400/220 kV, 2x315 MVA substation at Navsari, Bachchau & a 400 kV switching station at New	4546	26th (23.02.07)	Jun'07	Oct'08	Oct'12	Under implementation

1	2	3	4	5	6	7	8
S. No.	**Description of Scheme**	**Estimated Cost (Rs. Cr.)**	**Date of firming up in WR standing committee**	**Date of FR**	**Date of investment approval**	**Target date as of now**	**Remarks**
	Location near Mumbai (GIS) c) Establishment of new 765/400 kV, 3x1500 MVA, substation at Wardha for charging of Seoni - Wardha 2xS/c lines at 765 kV level						
10.	Transmission system of Korba-III (500 MW) Gen. Project ▪ Korba STPS switchyard – Raipur 400kV D/c	347	27th (30.07.07)	Dec'07	Feb'09	Jun'11	Under implementation
11.	Western Region strengthening scheme-X ▪ Establishment of 400/765kV 2x1500MVA WR Pooling Station near Sipat ▪ LILO of Sipat-Seoni 765kV S/c at WR Pooling Station	446	27th (30.07.07)	Sep'07	Feb'09	Feb'12	Under implementation
12.	Western Region strengthening scheme-XI ▪ LILO of Sipat-Seoni 765kV 2nd S/c at WR Pooling Station ▪ Installation of 765/400kV, 1x1500MVA 3rd transformer at WR Pooling Station	425.28	27th (30.07.07)	Nov'08	Feb'09	Feb'12	Under implementation
13.	Western Region strengthening scheme-XII ▪ Pune–Navi Mumbai 400kV D/c	193	27th (30.07.07)	May'08		30 months from Inv. approval	As per standing committee minutes, system to be executed matching with the commissioning of Krishnapatnam project.
14.	Tr. System associated with	1100	27th	Sept'07	Jul'08	Mar'12	Under implementation

1	2	3	4	5	6	7	8
S. No.	**Description of Scheme**	**Estimated Cost (Rs. Cr.)**	**Date of firming up in WR standing committee**	**Date of FR**	**Date of investment approval**	**Target date as of now**	**Remarks**
	DVC, Maithon in ER (Part system) ▪ Ranchi-WR Pooling Station 765kV S/c		(30.07.07)				
15.	Transmission system associated with Krishnapatnam (5x800 MW) (WR Portion) ▪ Raichur – Sholapur 765 kV S/c ▪ Sholapur – Pune 765 kV S/c ▪ Pune (New) – Pune 400 kV Quad D/c ▪ Establishment of new 765/400 kV substations at Sholapur & Pune with 2x1500 MVA transformation capacity	2100	27th (30.07.07)	Jan'08		48 months from Inv. approval	Investment approval awaited
16.	Tr. System associated with South – West interconnection ▪ Establishment of 1000MW HVDC back-to-back station at Kolhapur ▪ Narendra – Kolhapur 400 kV D/c line with Lapwing conductor ▪ LILO of both circuits of existing Kolhapur – Mapusa 400 kV D/c line at Kolhapur HVDC back-to-back station	1234	27th (30.07.07)	Jan'08		42 months from Inv. approval	Investment approval awaited
17.	Split Bus arrangement and	16	28th (06.12.08)	Apr'09		15 months	Investment approval awaited

1	2	3	4	5	6	7	8
S. No.	**Description of Scheme**	**Estimated Cost (Rs. Cr.)**	**Date of firming up in WR standing committee**	**Date of FR**	**Date of investment approval**	**Target date as of now**	**Remarks**
	reconfiguration/shifting of terminating lines at Raipur 400kV S/s ▪ Splitting 400kV Raipur bus into two sections between existing line bays of Chandrapur-1 & Chandrapur-2 through bus sectionaliser. ▪ Bypass 400kV Bhatapara-Raipur-Bhilai line at Raipur and restore the line as 400kV Bhatapara-Bhilai S/c ▪ Shifting of Chandrapur-2 and Chandrapur-3 line bays from Section Raipur-B* to Raipur-A*.					from Inv. approval	
18.	Installation of 125 MVAr Bus reactor at 400kV Rajgarh S/s	10	Special SCM (18.04.09)	Jun'09		22 months from Inv. approval	Investment approval awaited
19.	Associated transmission system of VSTPP-IV and Rihand-III ▪ Rihand-III- Vindhyachal Pool 765 kV 2xS/c (initially to be op. at 400kV) ▪ Vindhyachal-IV Vindhyachal Pool 400kV	4334	29th (10.09.09)	Sep'09		32 months from Inv. approval	Investment approval awaited

1	2	3	4	5	6	7	8
S. No.	**Description of Scheme**	**Estimated Cost (Rs. Cr.)**	**Date of firming up in WR standing committee**	**Date of FR**	**Date of investment approval**	**Target date as of now**	**Remarks**
	D/c(Quad) ▪ Vindhyachal Pool-Satna 765 kV 2xS/c ▪ Satna -Gwalior 765 kV 2xS/c ▪ Gwalior – Jaipur(South) 765 kV S/c ▪ Vindhyachal Pool-Sasan 765 kV S/c ▪ Vindhyachal Pool-Sasan 400 kV D/c ▪ Establishment of 765/400kV, 2x1500 MVA substation at Vindhyachal Pool						
20.	Associated transmission system of Mauda Transmission System ▪ Mauda–Khaperkheda (MSETCL) 400kV D/c (Quad)-60 km ▪ Mauda – Wardha 400kV D/c (Quad) -125 km	469	29th (10.09.09)	Oct'09	Mar'10	Dec'11	Award expected in end of March'10
21.	Establishment of 400/220kV substation in UT DNH ▪ LILO of Navsari- New location near Mumbai/Boisar 400kV D/c at proposed Kala	185	28th (06.12.08)			28 months from Inv. approval	DPR under preparation

1	2	3	4	5	6	7	8
S. No.	**Description of Scheme**	**Estimated Cost (Rs. Cr.)**	**Date of firming up in WR standing committee**	**Date of FR**	**Date of investment approval**	**Target date as of now**	**Remarks**
	S/s in UT DNH-9 km ▪ Establishment of 400/220kV, 2x315 MVA substation at proposed Kala S/s in UT DNH						
22.	Establishment of 400/220kV substation in UT Daman ▪ LILO of Vapi- Navi Mumbai 400kV D/c at suitable location in UT Daman-30 km ▪ Establishment of 400/220kV, 2x315 MVA substation at suitable location in UT Daman	Approx. 200	29th (10.09.09)			28 months from Inv. approval	DPR under preparation

Annexure-II

C

Progress Report for Western Region Strengthening Scheme – II (WRSS-II), Project C

Date: 31.12.2009

Sl.No	Name of Line	Length (km)	Activities			Cummulative TARGET uptill Dec'09	Cummulative ACTUAL Progress uptill Dec'09
			Activity	Total	Unit		
PROJECT C							
1	400 kV. D/C Limdi - Vadavi Transmission Line	103	Detail Survey	103	Kms	103	103
			Foundation	265	Nos.	131	142
			Erection	265	Nos.	12	12
			Stringing	103	Kms		
2	400 kV. D/C Vadavi - Kansari Transmission Line	140	Detail Survey	140	Kms	140	140
			Foundation	373	Nos.	112	108
			Erection	373	Nos.	12	11
			Stringing	140	Kms		
3	400 kV. D/C Rajgarah - Karamsad Transmission Line	234	Detail Survey	234	Kms	229	229
			Foundation	652	Nos.	141	163
			Erection	652	Nos.		
			Stringing	234	Kms		
	Grand Total	477	Total Detail Survey	477	Kms	**472**	**472**
			Total Foundation	1290	Nos.	**384**	**413**
			Total Erection	1290	Nos.	**24**	**23**
			Total Stringing	477	Kms		

STATUTORY CLEARANCE PROPOSAL STATUS

S. No.	Not Requiredme of the Line	Length (Kms)	Forst NOC	Reserve Forest Case	PTCC	Aviation Clearence		Tapping Proposal	NH Xings	Railway Xings	Power Line Xings
						Civil	Defence				
1	400 kV. D/C Limdi - Vadavi Transmission Line	103	Not Required	Not Required	Submitted. Queries replied to.	Not Required	Submitted. NOC issued.	Not Required	1 - Case submitted and approved.	1 no. Submitted.	3 / 3 cases Submitted. Registration Fee for 2 cases paid to GETCO.
2	400 kV. D/C Vadavi - Kansari Transmission Line	140	Not Required	Not Required	Submitted. Queries replied to.	Under Preparation	Submitted. NOC issued.	Not Required	1 - Case under preparation.	5 nos, under preparation	1 / 3 case - Submitted. Registration fee to be paid
3	400 kV. D/C Rajgarah - Karamsad Transmission Line	234	Not Required	Preliminary Joint Inspection with Forest Dept. done for 8 Km. Proposal under preparation.	Submitted. Queries replied to.	Not Required	Submitted. NOC issued.	Not Required	3 cases (1-MP & 2-Gujarat) - under preparation.	4 nos, under preparation	4 cases (1-MP, 3-Gujarat) - under Preparation.

Progress Report for Western Region Strengthening Scheme – II (WRSS-II), Project B

Date: 31.12.2009

Sl.No.	Name of Line	Length (km)	Activities			Cummulative TARGET uptill Dec'09	Cummulative ACTUAL Progress uptill Dec'09	REMARKS
			Activity	Total	Unit			
	PROJECT B							
1	LILO of Solapur-Karad 400KV SC line at Solapur (POWERGRID)	116	Detail Survey	116	Kms	116	116	
			Foundation	297	Nos.	97	89	
			Erection	297	Nos.	7	6	
			Stringing	116	Kms			
2	Pune-Aurangabad	236	Detail Survey	236	Kms	212	212	- Objection from KEIPL SEZ / MIDC / local villagers on the line routing near Pune end - Detail Survey on the portion of Reserve Forest is to be undertaken - Construction in GIB Sanctuary is witheld for de-notification
			Foundation	623	Nos.	86	74	
			Erection	623	Nos.			
			Stringing	236	Kms			
3	Parli-Solapur	136	Detail Survey	136	Kms	136	136	
			Foundation	355	Nos.	9	3	
			Erection	355	Nos.	2		
			Stringing	136	Kms			
4	Solapur-Kolhapur	219	Detail Survey	219	Kms	219	219	
			Foundation	575	Nos.	40	22	
			Erection	575	Nos.	3		
			Stringing	219	Kms			
5	Parli-Pune	323	Detail Survey	323	Kms	283	283	Objection from KEIPL SEZ / MIDC on the line routing near Pune end
			Foundation	886	Nos.	91	77	
			Erection	886	Nos.	3		
			Stringing	323	Kms			
6	LILO of Lonikhand-Kalwa at 400KV DC Line at Pune (POWERGRID)	3	Detail Survey	3	Kms	3	3	
			Foundation	14	Nos.	6	0	
			Erection	14	Nos.			
			Stringing	3	Kms			
	Grand Total	1033	Total Detail Survey	1033	Kms	**969**	**969**	
			Total Found.	2750	Nos.	**329**	**265**	
			Total Erection	2750	Nos.	**15**	**6**	
			Total Stringing	1033	Kms			

STATUTORY CLEARANCE PROPOSAL STATUS

Project B

S. N	Not Requiredme of the Line	Length (Kms)	Forest NOC	Reserve Forest Case	PTCC	Aviation Clearance		Tapping Proposal	Railway Xings	Power Line Xing
						Civil	Defence			
1	**LILO of Solapur-Karad 400KV SC line at Solapur (POWERGRID)**	116	All cases submitted , and clearance received	Not Required	Submitted , Joint Inspection held with PTCC authorities and case sent to PTCC Delhi for IV calculations	NOC Received	Submitted	Submitted to MSETCL	1 nos. Submitted. Joint Inspection completed.	4 cases - Submitted
2	**Pune-Aurangabad**	236	All cases submitted, Clearance received except Great Indian Bustard (GIB) Wild life area and RF	Joint Survey done. Proposal for 0.85 Km stretch is under preparation	Submitted	Submitted	Under Preparation	Not Required	1 nos. Submitted. Joint Inspection completed.	6/8 cases - Submitted. Rest under preparation.
3	**Parli-Solapur**	136	All cases submitted, clearance received	Not Required	Submitted , Joint Inspection held with PTCC authorities	NOC Received	Submitted	Not Required	1 no. Submitted.	6/7 cases - Submitted. Rest under preparation.
4	**Solapur-Kolhapur**	219	All cases submitted, part obtained	Not Required	Submitted , Joint Inspection held with PTCC authorities	NOC Received	Submitted	Not Required	5 nos. Submitted. Joint Inspection for 1 completed.	3 cases - Under preparation
5	**Parli-Pune**	323	All cases submitted, NOC obtained for BEED and Ahmed Nagar divn.	Not Required	Submitted	Submitted	Submitted	Not Required	1 no. Submitted.	3/4 cases - Submitted. Rest under preparation.
6	**LILO of Lonikhand-Kalwa at 400KV DC Line at Pune (POWERGRID)**	3	Not Required	Not Required	Submitted	Submitted	Submitted	Detail Survey was held up due to ROW problem. Discussion in progress.	Not Required	Not Required

Annexure-III

LTOA DETAILS AS PER EARLIER INTIMATION

A. IPPs near Bilaspur Pooling Station (Chhatisgarh)

Sl. No.	Applicant	Gen. Project Capacity (MW)	LTOA Applied for (MW)	Location	Time Frame	Quantum allocated in the region	
						WR	**NR**
1.	Maruti Clean Coal	300(1x300)	300	Near Bilaspur	Jun'12	222	78
2.	PTC (Dheeru)	600(3x350) - part	600	Near Bilaspur	Sep'12, Dec'12, Mar'13	300	300
3.	Dheeru Power Gen	450(3x350) - part	450	Near Bilaspur	Sep'12, Dec'12, Mar'13	367.5	82.5
	Total	**1350**	**1350**			**889.5**	**460.5**

B. IPPs in Madhya Pradesh

Sl. No.	Applicant	Gen. Project Capacity (MW)	LTOA Applied for (MW)	Location	Time Frame	Quantum allocated in the region	
						WR	NR
1.	Jaiprakash Power Ventures Ltd.	1320(2x660)	1320	Near Nigri	May'13, Nov'13	908	412
2.	Aryan Coal Benefications	1200(4x300)	1200	Near Sidhi	Mar'13, Mar'14, Dec'14, Mar'15	900	300
3.	Bina Power Supply Company Ltd.	500 (2x250)	290	Tehsil Bina, Distt. Sagar,M.P	Sep'11, Dec'11	145*	145
	Total	**3020**	**2810**			**1953**	**857**

C. IPPs in Chattishgarh – Raigarh, Janjgir-Champa generation complex.

Sl. No	Developer	Capacity (MW)	LTOA (MW)	Unitwise comm schedule	LTOA Quantum (MW)**			
	RAIGARH COMPLEX				**WR**	**NR**	**SR**	**TOTAL**
1	RKM Powergen Ltd.(4x360)	1440	1440	Mar'11,Jun'11, Sep'11,Dec'11	840	300	300	1440
2	Athena Chhattisgarh Power Ltd.(2x600)	1200	1200	Mar'12, Aug'12	823	377		1200
3	Jindal Power Ltd.(4x600)	2400	2400	Mar'12,Jul'12, Nov'12,Mar'13	1610	790		2400
4	Jindal Power Ltd.(1x500)	500	500	Existing	500			500
5	SKS Ispat & Power Ltd.(4x300)	1200	1200	Nov'11,Dec'11, Mar'12,Mar'12	800	400		1200
6	Korba West Power Co. Ltd.(1x600)	600	600	Jul'12	600			600
7	DB Power Ltd.(2x600)	1200	1200	Nov'11,Feb'12	818	382		1200
	sub-total	**8540**	**8540**		**5991**	**2249**	**300**	**8540**

	JANJGIR-CHAMPA COMPLEX							
1	Wardha Power Co. Ltd (6x600)	3600	3600	Feb'12, Jun'12, Oct'12,Jan'13, Jun'13,Oct'13	3600			3600
2	BALCO(4x300)#	1200	900	Jun'10, ep'10, Dec'10, Mar'11	450	450		900
3	Vandana Vidyut Ltd.(2x135+1x270)	540	540	Apr'11,Dec'11 ,Mar'12	440	100		540
4	Lanco Amarkantak Power Pvt. Ltd.(2x660)	1320	1320	Mar'12,Jun'12	462	858		1320
5	Chhattisgarh Steel & Power Ltd.(1x35+1x250)	285	285	Existing, Dec'11	200	85		285
	sub-total	**6945**	**6645**		**5152**	**1493**	**0**	**6645**
	Total	***15485***	***15185***		***11143***	***3742***	***300***	***15185***

***WR/NR Allocation also includes Chhattisgarh Share i.e. 35/37.5% of project capacity as per of LTOA capacity of CSPTCL*

 # Balance 300 MW for their (Balco) captive consumption

LTOA DETAILS AFTER SIGNING OF BPTA WITH PGCIL

A. IPPs near Bilaspur Pooling Station (Chhatisgarh) and Madhya Pradesh

S. No	Applicant	Gen. Project Capacity (MW)	LTOA Applied for (MW)	Time frame (Unit wise)	LTA Granted (MW)		
					WR	**NR**	**TOTAL**
	Chhattisgarh IPP						
1	Maruti Clean Coal(1X300 MW)	300	171	Dec'12	126	45	171
2	Dheeru Power Gen (3x350 MW)	1050	450	Sep'13, Dec'13, Mar'14	367.5	82.5	450
3	Chhattisgarh State Power Trading Co. Ltd		432		260	172	432
	Sub-total	***1350***	***1053***		***753.5***	***299.5***	***1053.0***
	Madhya Pradesh IPP						
1	Jaiprakash Power Ventures Ltd.(2x660 MW)	1320	1240.8	May'13, Nov'13	853.5	387.3	1240.8
2	Aryan MP Power generation Pvt. Ltd(2x600 MW)	1200	1122	Mar'14, Sep'14	841.5	280.5	1122.0
3	Bina Power Supply Company Ltd.(2x250 MW) #	500	265.35	Sep'11, Dec'11	132.68	132.67	265.35
	Sub total	***3020***	***2628.15***		1827.68	800.47	2628.15
	Total	***4370***	***3681.15***		***2581.18***	***1099.97***	***3681.15***

*And whereas the project developer have executed an Implementation Agreement with Govt. of Chhattisgarh & CSP Holding Co. Ltd.(one of the successor Company of CSEB) separately.

Additional 210MW drawal by MPPTCL directly at Bina TPS generation switchyard

B. IPPs in Chattishgarh – Raigarh, Champa & Raipur generation complex

SNo.	Applicant	Gen. Project Capacity (MW)	LTA (MW)	Time Frame (Unit wise)	LTA Granted (MW)			
					WR	NR	SR	TOTAL
	RAIGARH COMPLEX							
1	RKM Powergen Ltd.(4x360)	1440	819	Jun'11,Sep'11, Dec'11, Mar'12	419	200	200	819
2	Athena Chhattisgarh Power Ltd.(2x600)	1200	683	Jun'13, Nov'13	342	341		683
3	Jindal Power Ltd.(4x600)	2400	1400	Mar'12,Jul'12, Nov'12,Mar'13	700	700		1400
4	Jindal Power Ltd. (225 MW from Dongamahua CPP(4x135 MW)+ 175MW from existing Tamnar TPS (4x250 MW))	400	400	Jul'10, Existing	400	0		400
5	SKS Power Gen. (Ch) Ltd.(4x300)	1200	683	Dec'12,Sep'13, Nov'13, Dec'13	319	364		683
6	Korba West Power Co. Ltd.(1x600)	600	240	Nov'12	140	100		240
7	DB Power Ltd.(2x600)	1200	705	Oct'13,Feb'14	530	175		705
8	Visa Power Ltd.(2x600)	1200	678	Jan'13,April'13	478	200		678
	sub-total	**9640**	**5608**		**3328**	**2080**	**200**	**5608**
	JANJGIR-CHAMPA COMPLEX							
1	KSK Mahanadi Power Co. Ltd (6x600)	3600	2340	Feb'12, Jun'12,Oct'12, Feb'13, Jun'13,Oct'13	2340	0		2340
2	BALCO(4x300)	1200	200	Oct'10, Jan'11, May'11,Aug'11	100	100		200
3	Vandana Vidyut Ltd.(2x135+1x270)	540	265	Jan'12,Mar'12, Mar'14	165	100		265
4	Lanco Amarkantak Power Pvt. Ltd.(2x660)	1320	858	Jan'12,Mar'12	858	0		858
5	Chhattisgarh Steel & Power Ltd.(1x35+1x250)	285	167	Jun'13	120	47		167
	RAIPUR COMPLEX							
1	GMR Chattishgarh Energy Pvt. Ltd. (2X600)	1200	678	Aug13, Jan'14	478	200		678
	sub-total	**6945**	**3830**		**3583**	**247**	**0**	**3830**
1	Chhattisgarh State Power Trading Co. Ltd*		**5639**		**3387**	**2252**		**5639**
	Total	***17785***	***15755***		***10776***	***4779***	***200***	***15755***

** And whereas the project developer have executed an Implementation Agreement with Govt. of Chhattisgarh & CSP Holding Co. Ltd.(one of the successor Company of CSEB) separately.*

ANNEXURE-IV

एनटीपीसी NTPC

एन टी पी सी लिमिटेड
(भारत सरकार का उद्यम)
NTPC Limited
(A Govt. of India Enterprise)

केन्द्रीय कार्यालय/Corporate Centre
01/CP/1.100
October 15, 2009

Shri Pankaj Kumar
General Manager (SEF)
Power Grid Corporation of India Ltd.
Plot No.02, Sector-29
Near IFFCO Chowk
Gurgaon (Haryana) – 122001.

Sub: Power Evacuation System for Mouda-II (2x660 MW), Meja JV with UP (2x660 MW) and Nabinagar STPP – JV with BSEB (3x660 MW) – Projects under NTPC Bulk Tendering

Dear Sir,

NTPC has planned to take up following four projects through Bulk Tendering of 660 MW generating units to be implemented during XII Plan Period. These are Solapur STPP (2x660 MW), Mouda STPP Stage-II (2x660 MW), Meja JV project of NTPC and UP Rajya Vidyut Utpadan Nigam (2x660 MW) and Nabinagar STPP – JV of NTPC and BSEB (3x660 MW). The first unit of the project shall be completed within 48 months (COD) with a gap of 6 months between the units. The schedule and list of beneficiaries for Solapur STPP has already been forwarded to Powergrid vide letter dated 24.02.2009. The Tentative schedule and Allocation for remaining projects is given below:

1.0 Schedule

Sl. No.	Project/ State	Capacity (MW)	NIT	LOA Anticipated	Commissioning Schedule
1.	Solapur STPP, Distt. Solapur, Maharashtra	1320 (2x660)	10/09	08/10	2014-15
2.	Mouda STPP-II, Dist. Nagpur, Maharashtra	1320 (2x660)	10/09	08/10	2014-15
3.	Meja – JV UPRUVNL, Dist. Allahabad, UP	1320 (2x660)	10/09	08/10	2014-15
4.	Nabinagar STPP – JV BSEB, Dist. Aurangabad, Bihar	1980 (3x660)	10/09	08/10	2014-16

2.0 Tentative Allocation

Tentative allocation from Mouda STPP -II (2x660 MW):

State	Allocation (MW)
Unallocated (15%)	198
Home State (10%)	132
Retained by NTPC (15%)	198

एन टी पी सी भवन स्कोप काम्पलैक्स, 7, इंस्टीट्यूशनल एरिया, लोधी रोड, नई दिल्ली– 110003 टेल/Tel. : 24360100, फैक्स/Fax : 011-24361018
NTPC Bhawan, SCOPE Complex, 7, Institutional Area, Lodi Road, New Delhi-110003, वेबसाइट/Website : www.ntpc.co.in

Balance to be allocated (60%)	792
Madhya Pradesh	165
Chattisgarh	66
Maharashtra	286
Gujarat	253
Goa	12
DNH	6
DD	4
Total	**792**

Tentative Allocation from Meja (2x660 MW):

State	**Allocation (MW)**
Uttar Pradesh (75%) – already allocated by MOP	990
Unallocated (7.5%)	99
Balance to be allocated (17.5%)	231
Uttranchal	17
Delhi	58
Haryana	24
Punjab	36
Rajasthan	50
Himachal	15
J&K	29
Chandigarh	2
Total	**231**

Tentative Allocation from Nabinagar STPP (3x660 MW):

State	**Allocation (MW)**
Bihar (75%)	1485
Unallocated (7.5%)	148
Balance to be allocated (17.5%)	347
West Bengal	153
Orissa	133
Jharkhand	52
Sikkim	9
Total	**347**

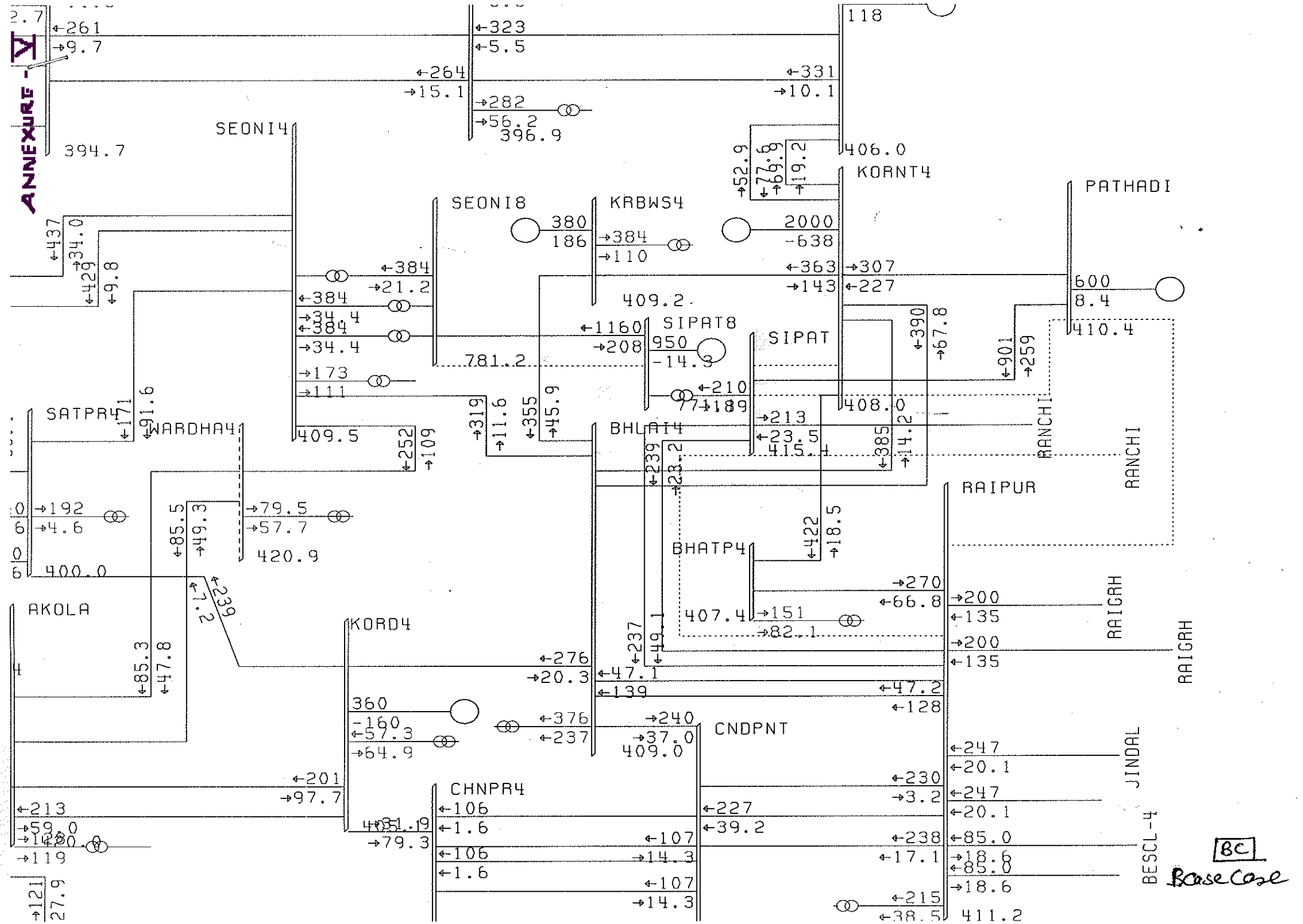
PGCIL is requested to plan Associated Transmission System (ATS) for the above projects based on above inputs.

Thanking you,

Yours faithfully,

(A.K. Sharma)
General Manager (CP)

Copy to:
Shri Ravinder Kumar, Chief Engineer (SP&PS),
Central Electricity Authority, Sewa Bhawan,
R.K. Puram, New Delhi – 110 066.


ANNEXURE - V
SEONI4
SEONI8
KRBWS4
KORNT4
PATHADI
SIPAT8
SIPAT
SATPR4
WARDHA4
BHLAI4
RAIPUR
RANCHI
BHATP4
AKOLA
KORD4
CNDPNT
CHNPR4
RAIGRH
JINDAL
BESCL-4
394.7
396.9
406.0
409.2
781.2
409.5
408.0
415.1
420.9
400.0
407.4
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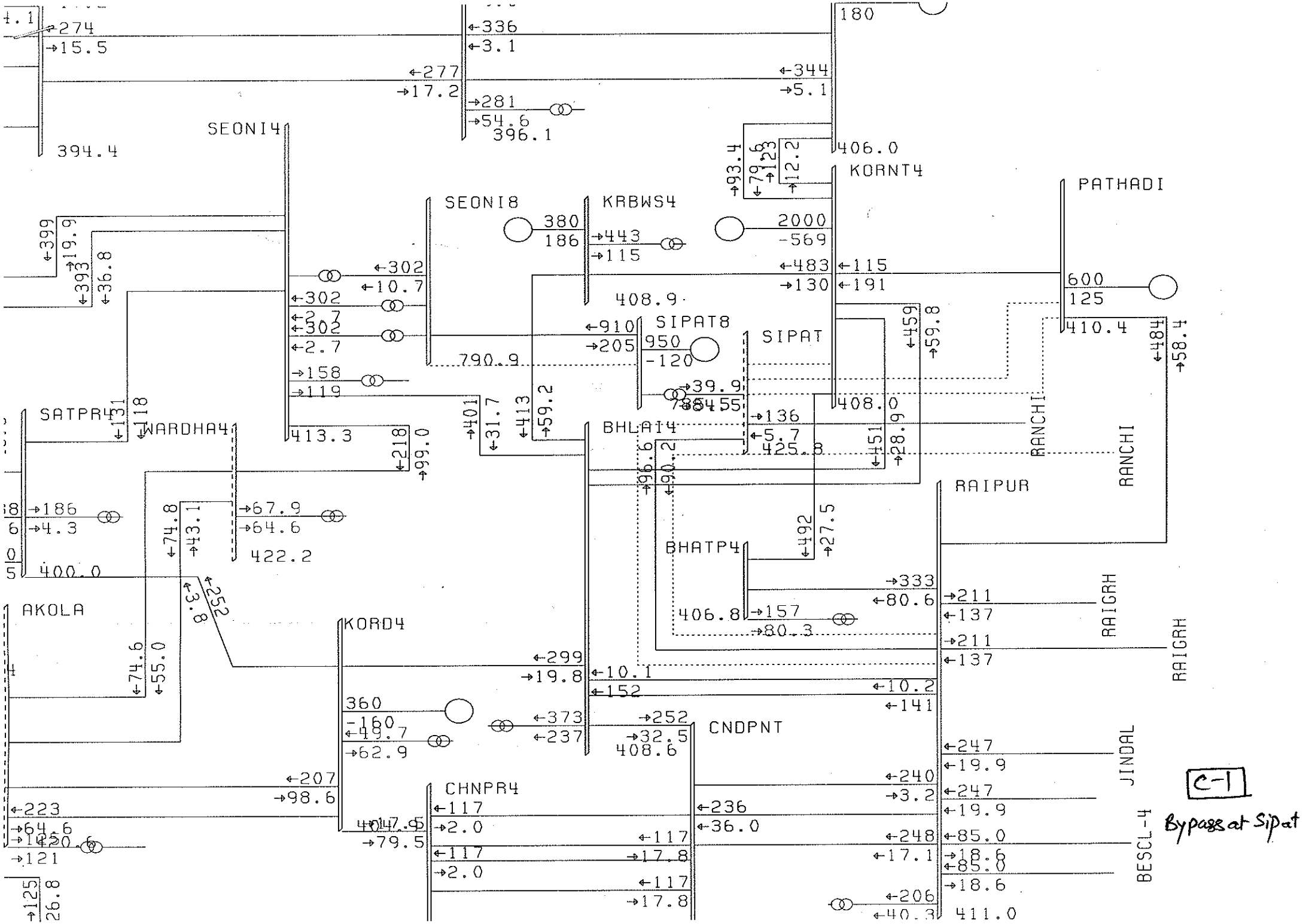
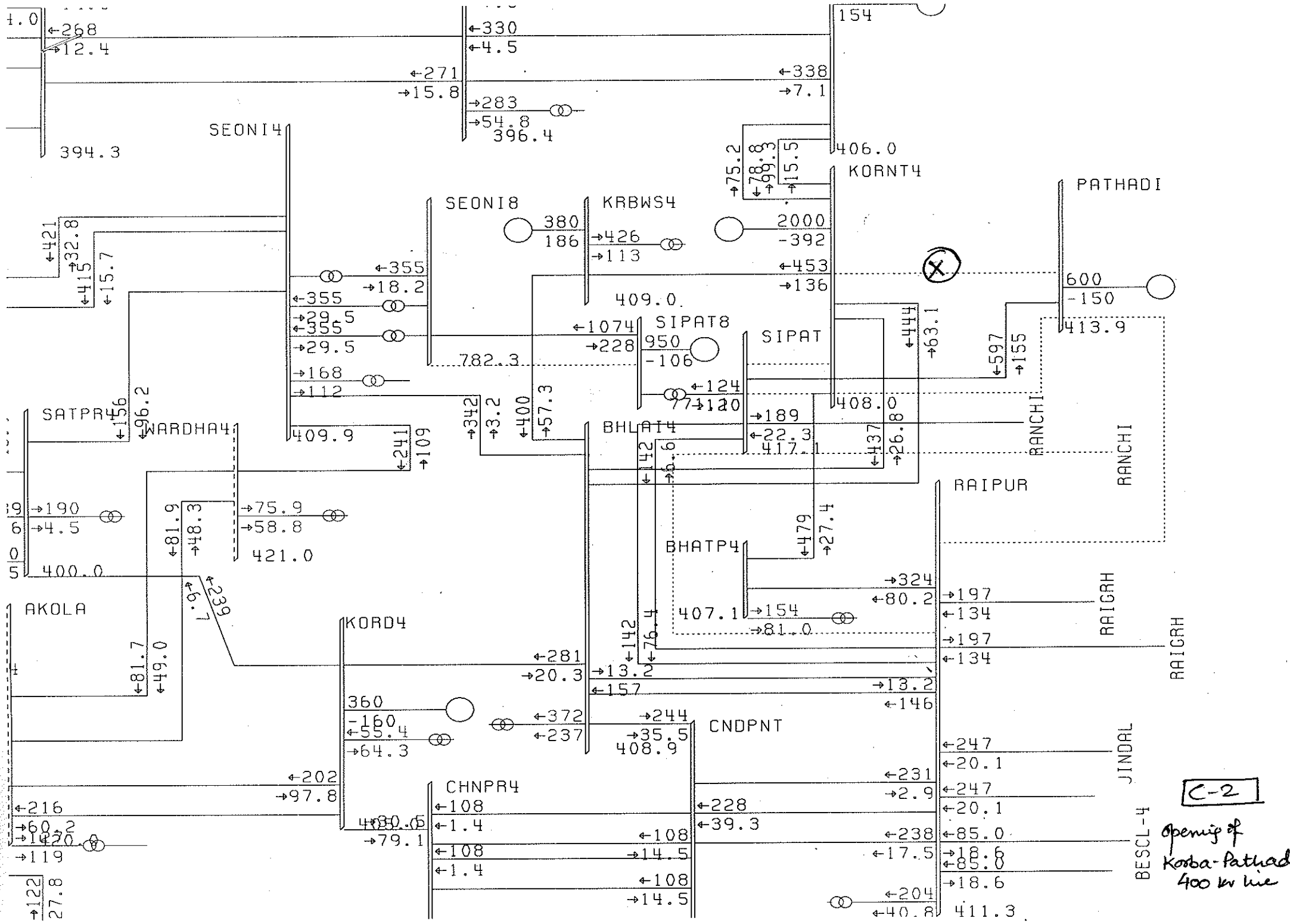
411.2
410.4
BC
Base Case


SEONI4
SEONI8
KRBWS4
KORNT4
PATHADI
SIPAT8
SIPAT
SATPR4
WARDHA4
BHLAI4
RANCHI
RAIPUR
BHATP4
RAIGRH
AKOLA
KORD4
CNDPNT
CHNPR4
JINDAL
BESCL-4
C-1
Bypass at Sipat


SEONI4
SEONI8
KRBWS4
KORNT4
PATHADI
SIPAT8
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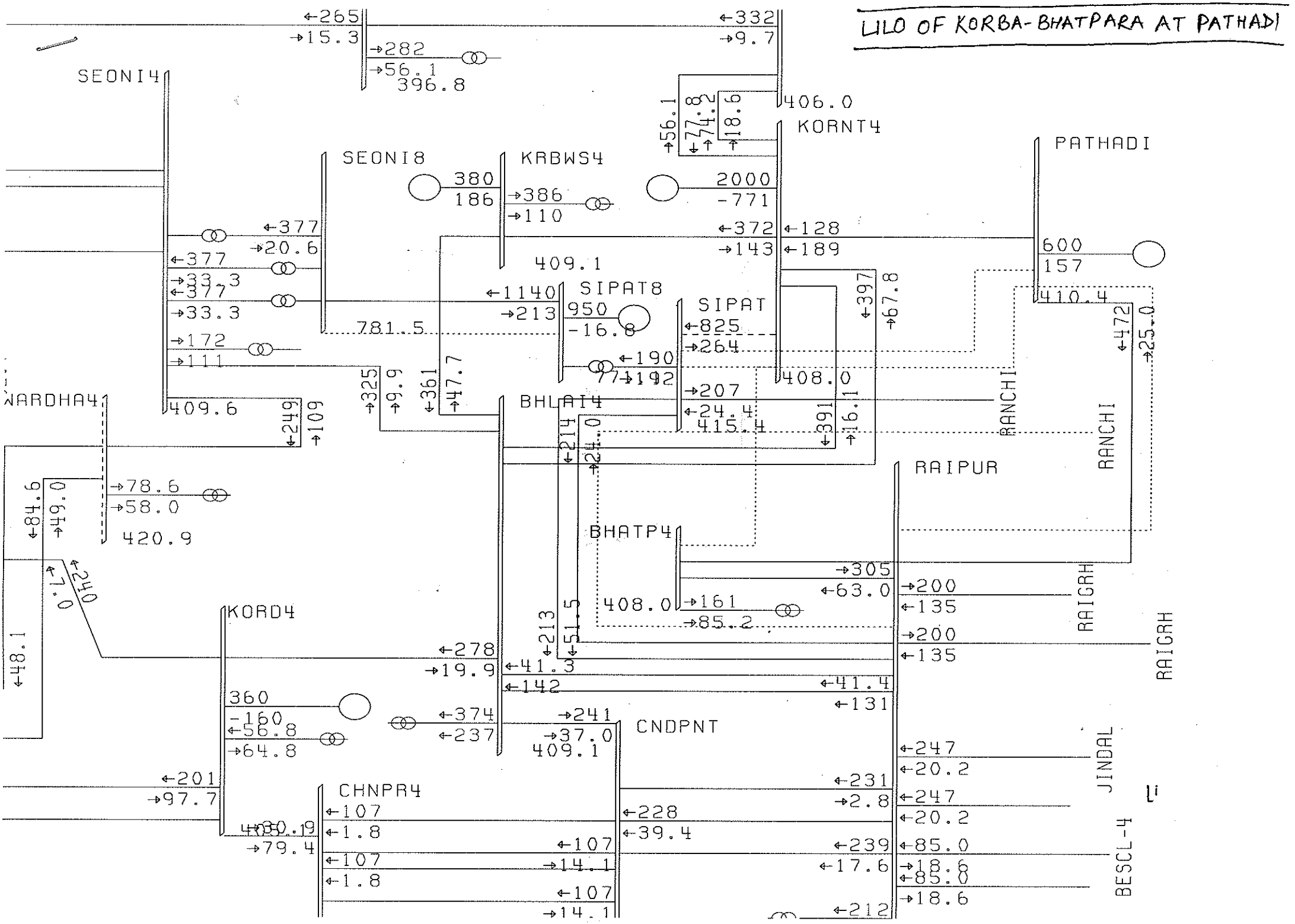
SATPR4
WARDHA4
BHLAI4
RANCHI
RAIPUR
BHATP4
RAIGRH
AKOLA
KORD4
CNDPNT
CHNPR4
JINDAL
BESCL-4
X
C-2
Opening of Korba-Pathadi 400 kv line


LILO OF KORBA-BHATPARA AT PATHADI
SEONI4
SEONI8
KRBWS4
KORNT4
PATHADI
SIPAT8
SIPAT
BHLAI4
BHATP4
WARDHA4
KORD4
CHNPR4
CNDPNT
RAIPUR
RANCHI
RAIGRH
JINDAL
BESCL-4
←265
→15.3
→282
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396.8
←332
→9.7
406.0
→56.1
←77.8
←74.2
18.6
380
186
→386
→110
2000
-771
←372
←128
→143
←189
409.1
600
157
410.4
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781.5
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950
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→18.6
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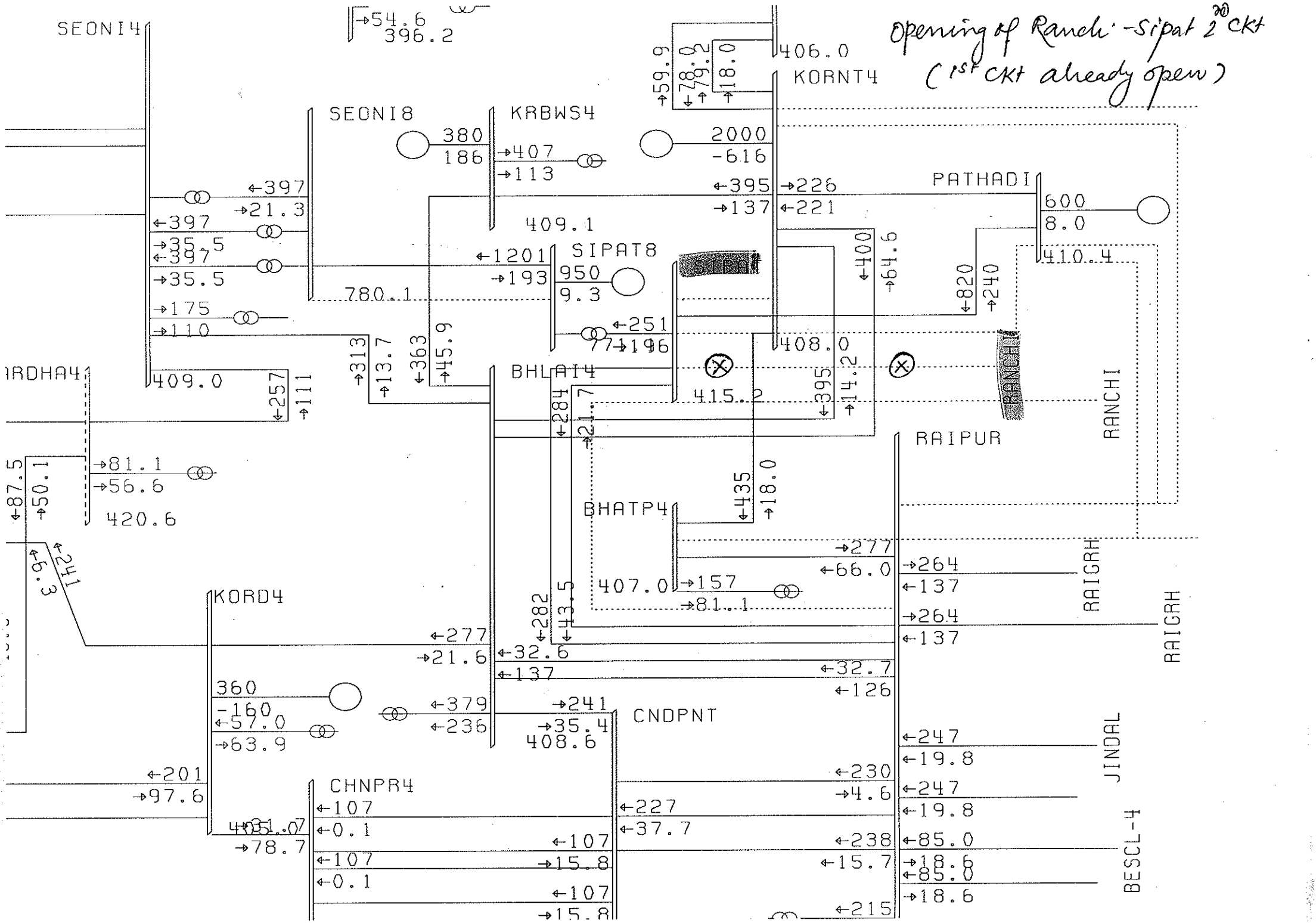
→18.6
←212


Opening of Ranchi-Sipat 2nd CKt
(1st CKt already open)
SEONI4
SEONI8
KRBWS4
KORNT4
PATHADI
SIPAT8
BHLAI4
BHATP4
RAIPUR
RANCHI
RAIGRH
KORD4
CNDPNT
CHNPR4
JINDAL
BESCL-4
SIPAT
RANCHI
54.6
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186
407
113
2000
-616
397
21.3
395
226
137
221
600
8.0
410.4
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1201
193
950
9.3
780.1
251
196
400
9.6
820
240
408.0
313
13.7
363
45.9
409.0
257
111
415.2
14.2
284
21.7
435
18.0
81.1
56.6
420.6
87.5
50.1
241
6.3
277
66.0
264
137
407.0
157
81.1
282
43.5
277
21.6
32.6
137
32.7
126
360
160
57.0
63.9
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236
241
35.4
408.6
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19.8
230
4.6
227
37.7
238
85.0
15.7
18.6
201
97.6
107
0.1
78.7
15.8
215

ANNEXURE - VI

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

पावरग्रिड

केन्द्रीय कार्यालय : ''सौदामिनी'' प्लाट सं–2, सेक्टर–29, गुड़गाँव–122 001, हरियाणा
फोन : 0124–2571700–719 फैक्स : 0124–2571760, 0124–2571761 तार : 'नेटग्रिड'
Corporate Office : "Saudamini" Plot No-2, Sector-29, Gurgaon - 122 001 Haryana
Tel.: 0124-2571700 - 719 Fax : 0124-2571760, 0124-2571761 Gram : 'NATGRID'

संदर्भ संख्या / Ref. No. केन्द्रीय कार्यालय / CORPORATE CENTRE

C/ENG/SEF/W/00/Plg

28th January, 2010

Shri P.K. Pahwa
Director(SP&PA)
Central Electricity Authority
Sewa Bhawan, R.K. Puram
New Delhi 110 066

Sub: Provision of 400/220kV substation to UT DNH and DD

Dear Sir,

We write with reference to your letter no. 26/10/2009-SP&PA/160 dated 20.11.2009 (received recently) regarding the status for establishment of 400/220kV substation each in UT DNH and DD along with its interconnectivity with 400kV network. In this regard, following may be noted:

a) For establishment of 400/220kV 2x135MVA S/s at Kala in UT DNH with LILO of Navsari – New location near Mumbai/Boisar, DPR is under approval process and the scheme is expected to be commissioned within 28 months from the date of investment approval. However, this substation is proposed as GIS grid substation keeping in view the non-availability of adequate land.

b) For establishment of 400/220kV 2x135MVA GIS S/s in UT DD, land has been identified near Magarwada and DPR is under preparation.

Regarding 400kV interconnection of the above S/s with grid, LILO of Vapi – Navi Mumbai 400kV D/c at Magarwada was agreed in the 29th Standing Committee meeting of WR. However, on survey, it was observed that LILO stretch(point) of the above line is on multi-circuit tower comprising both Vapi – Navi Mumbai and Navsari – New location near Mumbai/Boisar. Further, Vapi – Navi Mumbai 400kV D/c line is being strung on top portion of the multi circuit tower and Navsari – Boisar 400kV D/c line is being strung on bottom portion of the tower, considering the time schedule of commissioning of the system and further tower/conductor balancing.

Keeping above in view and multi circuit tower alignment & conductor proposition, it is proposed that one ckt. of Vapi – Navi Mumbai and one ckt. of Navsari – Boisar line may be made LILO at 400/220kV Magarwada S/s in place of LILO of both ckts. of Vapi – Navi Mumbai 400kV D/c. Schematic of the earlier and revised proposal of LILO at 400kV Magarwada substation is encloaed at Annexure-1 & 2 respectively.

It requested that CEA may examine above proposal and take up the matter in the next meeting of WR Standing committee.

Thanking you,

Yours faithfully,

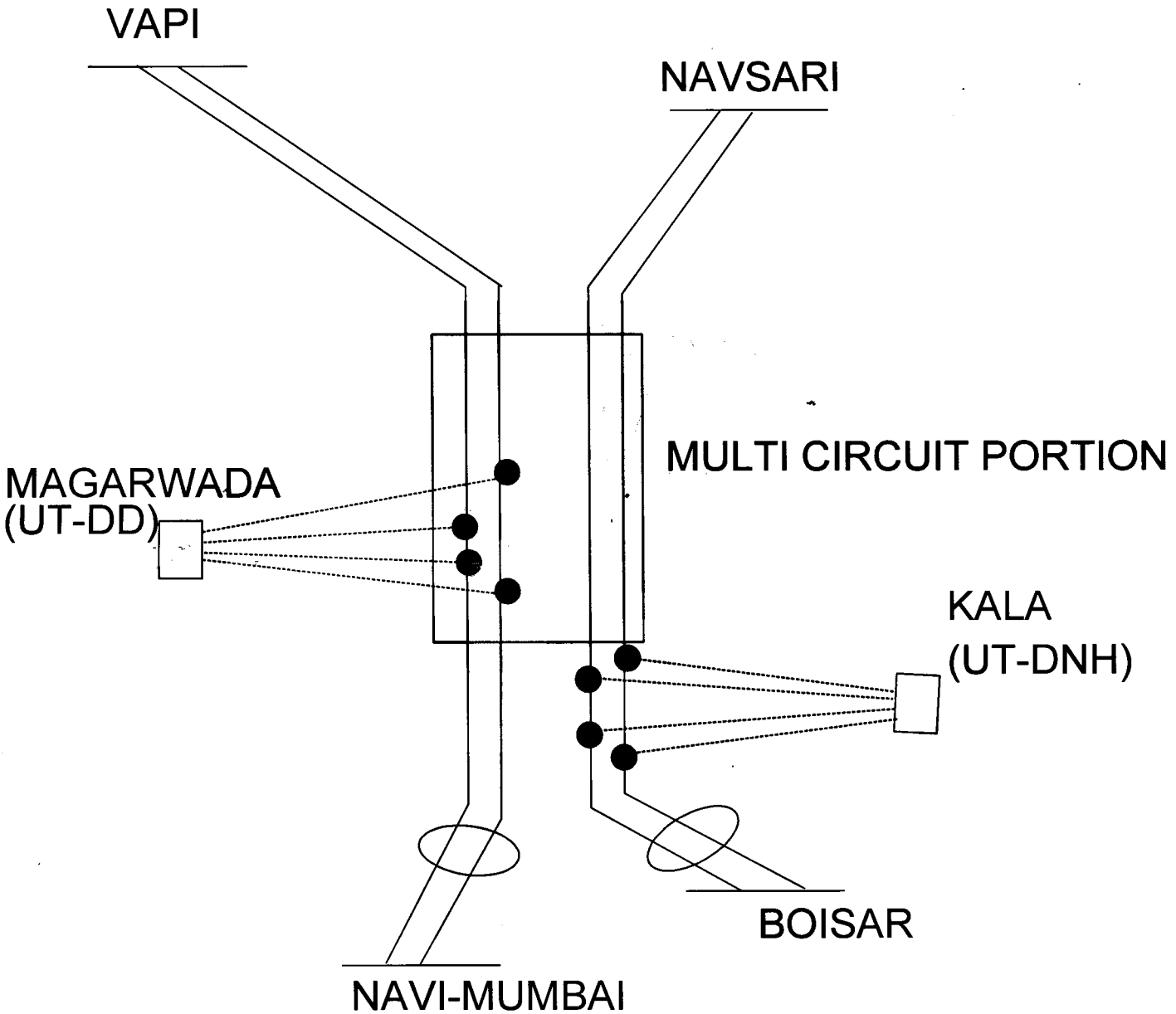
28/1/2010

(Pankaj Kumar)
General Manager(SEF)

Encl: As above

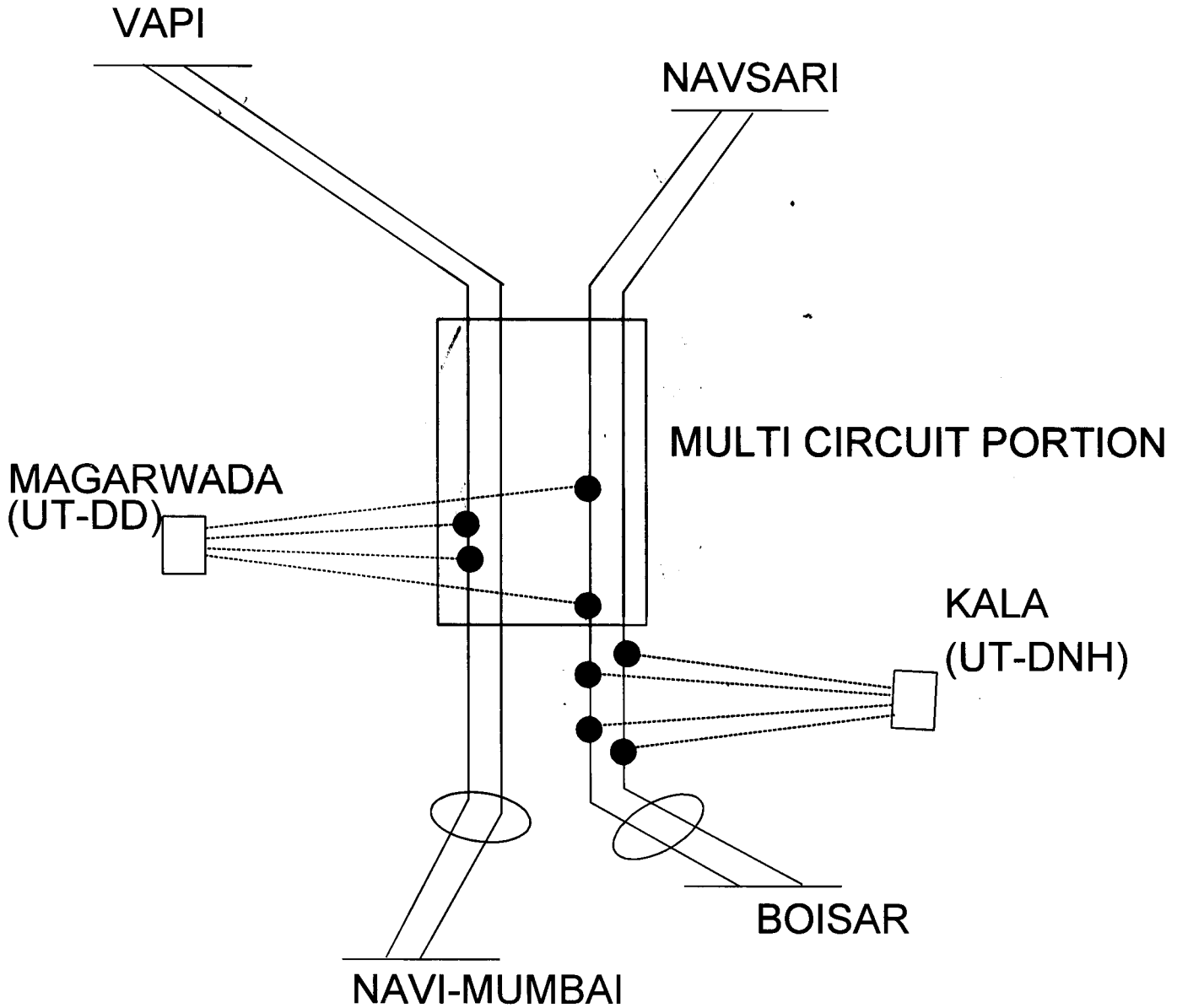
ANNEXURE - 1

PROPOSAL FOR LILO OF 400kV LINES AT MAGARWADA (UT-DD)



ANNEXURE-2

REVISED PROPOSAL FOR LILO OF 400kV LINES AT MAGARWADA (UT-DD)



ANNEXURE - VII

Administration of
Dadra and Nagar Haveli (U.T),
Electricity Department,
Silvassa.

E-Mail :- eeelect_dnh@yahoo.co.in
eeelectdnh@rediffmail.com
Tele. Fax :- 0260 – 2642338

No. DNH/ELE/Div-II/KP-332/ 104 Dtd. 04/02/2010.

To,

The Director,
System Planning & Project Appraisal Division,
Central Electricity Authority,
R. K. Puram, Seva Bhavan, 3rd Floor,
New Delhi - 110066....

Sub :- Planning for inter-connectivity of 220 KV line from proposed 400 / 220 KV Kala sub station of UT of D&NH...

Ref. :- 1. This office letter No. DNH/ELE/Div-II/KP-332/2007/995 dtd. 08.05.2008...
2. This office letter No. DNH/ELE/Div-II/KP-332/2007/53 dtd. 23.09.2009

(Kind Attention to Shri. P. K. Pahwa, Director, SP&PA)

Sir,

This has with reference to the above cite subject and reference this is to inform you that 400 / 220 KV sub station at village Kala has been approved under the regional strengthening scheme of Western Regional Power Committee.

In this regards it is to inform that the inter-connectivity of 220 KV lines from 400 / 220 KV proposed Kala sub station to existing 220 / 66 KV Kharadpada and Khadoli (likely to be commissioned in the end of March 2010) and proposed 220 KV sub station of Dadra and Sayli as per system study report carried out by Power Grid Corporation India Ltd., (Copy enclosed).

In view of the above, Electricity Department of Dadra & Nagar Haveli is preparing the scheme for establishment of 220 KV double circuit line from 400 / 220 KV Kala sub station to existing 220 KV Kharadpada and 220 KV Khadoli sub station in 1st phase. The detail project report and scheme will be submitted before 31st March – 2010 to Central Electricity Authority, New Delhi for accord of techno economical cleareance.

The single line diagram showing the inter-connectivity of proposed 220 KV lines of Khadoli and Kharadpada sub station with proposed 400 / 220 KV Kala sub station is enclosed herewith for your ready reference. The future planning of 220 KV sub station at Dadra and Sayli is also shown in the diagram enclosed.

This is for kind information please.

Encl :- As above.

Yours faithfully,
04.02.2010
(B.N. Mehta)
Superintending Engineer (Power),
Electricity Department,
Dadra and Nagar Haveli,
Silvassa.

➢ Copy to Director (UT /RE), Government of India, Central Electricity Authority, Distribiution Planning & Engineering Division, Sewa Bhavan, R. K. Puram, 6th Floor, New Delhi – 110066...

ANNEXURE -VIII

No.ED/EE/RING(220/400KV)/2009-2010/ 2844
Office of the Executive Engineer
Power House Building, 2nd Floor,
Electricity Department,
Daman – 396 210.
www.dded.gov.in
E Mail:- eddaman@rediffmail.com
Fax No. 0260-2250889/2254745.

Dated: 05**/02/2010.**

To,
The Director,
SP & PA,
Central Electricity Authority,
SP & PA Division, Sewa Bhavan,
R. K. Puram,
New Delhi – 110 066.

Kind Attention: Shri P. K. Pahwa, Director

Sub: Provision of 400/220 KV Sub Station to Union Territory of DNH (Dadra and Nagar Haveli) and Daman & Diu.

Ref: i) Your letter No.26/10/2009-SP&PA/ Dated: 21/01/2010.

Sir,

With reference to your letter cited above, following is the proposed connectivity of 220 KV outgoing feeders from proposed 400/220 KV, 2x315 MVA Sub Station, Magarwada in Daman.

1. 220 KV D/C line shall be erected for 0.5 Km length to feed 3x50 + 1x100 MVA existing 220/66/11 KV Magarwada Sub Station of Daman District.
2. 220 KV D/C line shall be erected for 5.0 Km length to feed proposed 220/66 KV, 1x100 MVA Ringanwada Sub Station of Daman District.

This is for your kind information.

Yours faithfully,

(M. R. Ingle)
Executive Engineer (Elect.),
Daman

Encl:- As above

220KV CONNECTIVITY EVOLVED FROM 400/220KV, 2X315MVA SUB-STATION DAMAN.

PROPOSED 2X315MVA
400/220KV SUB-STATION
MAGARWADA DAMAN.

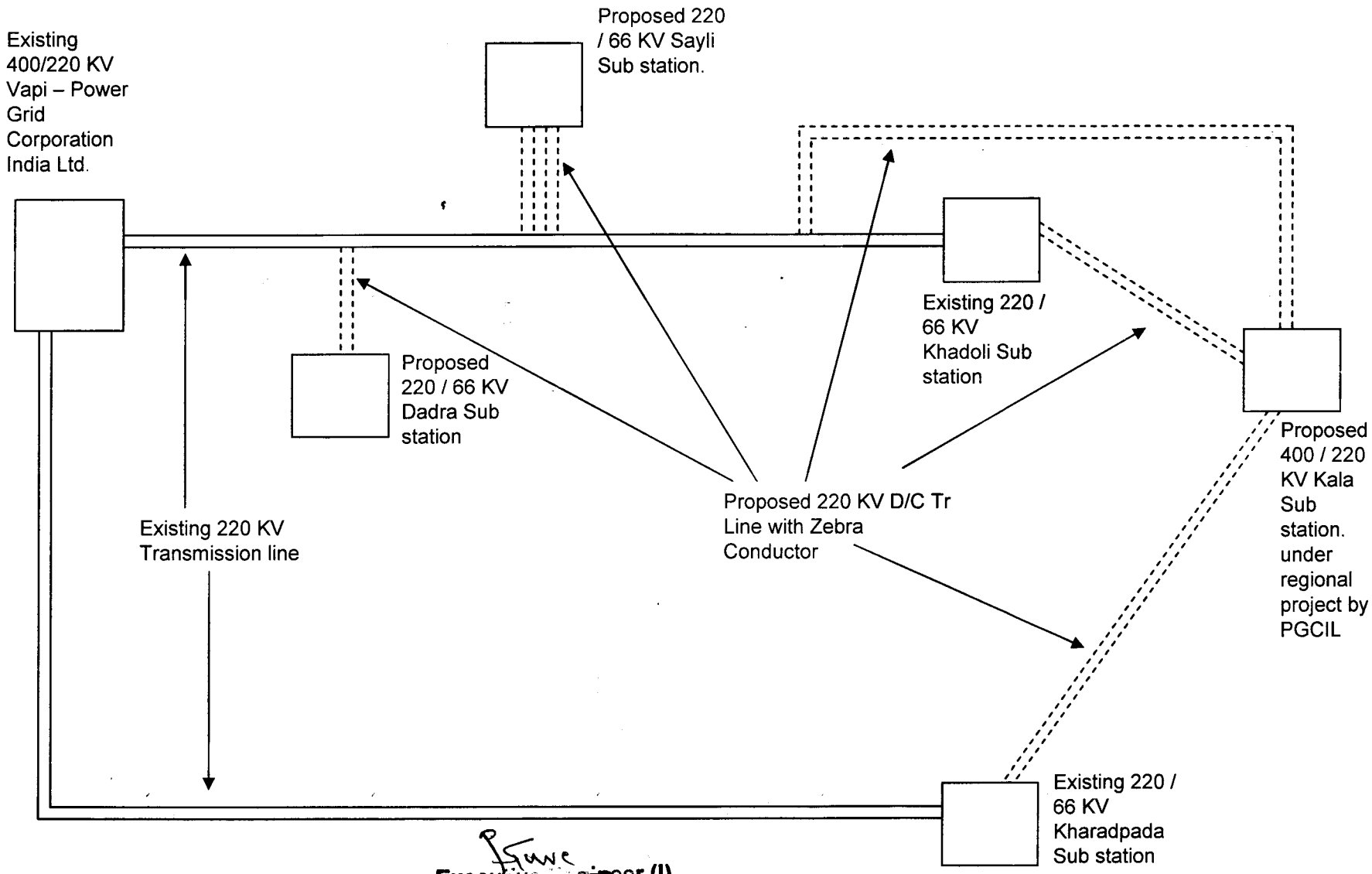
PROPOSED 220KV D/C LINE
0.5 KM

EXISTING 3X50+
1X100MVA 220/66KV
S/S MAGARWADA DAMAN.

5.00KMS
PROPOSED 220KV D/C LINE
(MAGARWADA TO RINGANWADA)

PROPOSED 220/66KV
1X100MVA S/S
RINGANWADA DAMAN.

Proposed Arrangement Showing the Inter Connectivity of 220 KV Lines from Proposed 400 / 220 KV Sub station at Kala in UT of D&NH.



Executive Engineer (I)
Electricity Department,
Circle Office,
Dadra & Nagar Haveli,
Silvassa

ANNEXURE - I X

M. P. POWER TRANSMISSION COMPANY LTD.

(FULLY OWNED BY GOVERNMENT OF MADHYA PRADESH)

No.04-02/PS/ 92 /Jabalpur, Date : 02/02/2010.

To,

Shri P.K.Pahwa
Director (SP&PA)
Central Electricity Authority
Sewa Bhawan, R.K. Puram
NEW DELHI – 110066.

Sub: Proposed agenda point for inclusion in 30th Standing Committee Meeting for construction of 220kV D/C line between 400kV Shujalpur (PGCIL) and Badod 220kV substation of MPPTCL.

Ref: Our letter No. 04-01/CE(SSD)/575 dated 21.01.2010.

*****

The proposal for construction of 220 KV double circuit line from Shujalpur 400kV substation of PGCIL to Badod 220kV substation of MPPTCL as Western Region System Strengthening Scheme is enclosed for inclusion in 30th Standing Committee meeting on Power System Planning in Western Region to be held shortly.

Encl : As above.

Chief Engineer(Power System)
MPPTCL : Jabalpur.

*****

To consider proposal for construction of 220 KV Double Circuit line from Shujalpur 400kV substation of PGCIL to Badod 220kV substation of MPPTCL as Western Region System Strengthening Scheme for inclusion in 30th Standing Committee meeting on Power System Planning

Since the initiation of the proposal of parallel operation of Ujjain-Kota/Modak lines by PGCIL, the issue is being taken up by MPPTCL in almost all the meetings being conducted by WRPC and CEA but no solution has been obtained by us in the matter so far. As desired by MPPTCL vide letter No. 04-01/N-155/6270 dated 28th June 2008, this issue was at the first time included in the agenda of 28th meeting of Standing Committee on Power System Planning in Western Region held on 6th December 2008 at Aurangabad.

The proposal of MPPTCL was discussed during the meeting at point No.6 and it was envisaged by the members that in view of Zerda-Kankroli 400kV D/C line, which was under implementation at that time, the 220kV double circuit line from Shujalpur 400kV substation of PGCIL to Badod 220kV substation of MPPTCL as Western Region System Strengthening Scheme was not justifiable. Therefore, after the discussions the proposal was not agreed to. (Copy of MOM of 28th SCM enclosed)

As gathered from the web site of CEA the Zerda-Kankroli 400kV D/C line is completed and commissioned in April 2009. Study of the system reveals that as envisaged earlier this line is not providing any relief to the Ujjain-Kota/Badod line since as per the actual flows recoded on these 220kV lines, there is a constant flow of power from WR to NR and there is no relief to these lines due to commissioning of Zerda-Kankroli 400kV D/C line. The maximum power flow on these lines has reached 406 MW in the month of August 2009 which has substantially increased the loading of the 220kV lines between Indore and Ujjain as well as between Nagda and Ujjain resulting into substantial increase in the

transmission losses of MP System on account of flow of power from WR to NR through this line. The details of the load flow for the month of August 2009 (Annexure-I) and energy exported from WR to NR from January 2009 to December 2009 are enclosed as Annexure-II. It would be observed that at the time discussions were held regarding paralleling of Ujjain-Kota link via Badod 220 KV S/s, a maximum flow of around 150 MW was envisaged and as against this the actual flow is more than double, which is causing acute problems for MPPTCL due to overloading of its 220 KV system.

On request of MPPTCL the issue was also raised by MP Power Trading Co. Ltd. in the 54th Commercial Committee Meeting held at Mumbai on 10.12.2009 and 12th WRPC and LTOA meeting held at Vadodara on 15th and 16th January 2010.

*****

The Standing Committee may kindly consider and approve the following :-

The construction of 220 KV double circuit line from Shujalpur 400kV substation of PGCIL to Badod 220kV substation of MPPTCL as Western Region System Strengthening Scheme.

*****

Annexure-I

Power flow on 220KV Baord-Kota + Barod-Modak lines during the month of Aug'09 (Values in MW)

Power-Flow in MW
(During the Month)

Date/Hrs.	0:0	1:0	2:0	3:0	4:0	5:0	6:0	7:0	8:0	9:0	10:0	11:0	12:0	13:0	14:0	15:0	16:0	17:0	18:0	19:0	20:0	21:0	22:0	23:0	Max	Min	Avg.
01-Aug-09	276	302	296	244	263	243	271	215	199	205	220	243	249	287	305	213	221	200	186	221	237	278	319	337	337	174	250
02-Aug-09	325	326	345	316	265	255	219	193	195	209	214	207	233	199	240	209	214	246	235	213	202	276	251	274	348	175	242
03-Aug-09	312	311	325	328	279	311	242	214	237	210	233	221	287	273	262	224	230	271	279	269	271	314	333	306	350	198	272
04-Aug-09	288	265	272	265	264	246	232	208	234	250	252	211	247	290	287	238	252	269	276	263	303	303	267	282	312	195	258
05-Aug-09	299	335	351	356	341	301	275	261	311	327	228	222	264	336	304	233	187	179	165	186	271	334	319	333	371	165	281
06-Aug-09	382	351	324	299	323	298	284	276	230	223	228	212	273	281	254	218	240	236	211	225	272	292	307	299	382	193	268
07-Aug-09	309	305	325	332	301	257	214	201	179	155	205	198	182	217	240	190	220	186	205	181	215	232	232	260	333	154	228
08-Aug-09	256	254	228	234	266	232	207	164	163	164	169	150	219	206	192	203	147	138	205	207	224	293	301	258	316	131	211
09-Aug-09	243	256	259	242	256	242	197	147	177	192	124	147	197	234	208	148	157	191	209	230	211	283	261	260	283	124	210
10-Aug-09	227	204	227	231	163	182	140	113	162	120	150	185	230	236	259	204	176	227	261	248	322	340	329	319	358	113	219
11-Aug-09	345	310	327	291	258	289	272	276	292	183	198	158	208	277	252	231	88	130	156	133	166	190	174	181	345	88	217
12-Aug-09	181	163	171	183	171	157	165	180	203	163	160	161	183	186	176	194	153	155	227	226	268	302	317	303	317	129	197
13-Aug-09	262	292	307	274	269	287	252	257	264	198	192	188	243	246	223	202	158	171	220	210	270	278	256	234	315	154	239
14-Aug-09	246	273	258	247	242	264	203	194	196	116	192	226	221	224	216	212	164	129	204	200	291	250	218	227	291	108	215
15-Aug-09	260	230	212	227	188	230	197	209	187	187	153	50	38	69	93	134	145	185	174	223	177	155	141	106	313	23	164
16-Aug-09	131	151	140	109	96	55	46	32	11	34	23	45	67	120	144	179	205	246	225	221	262	228	174	171	277	6	130
17-Aug-09	176	140	91	48	39	66	92	106	60	77	108	103	145	105	119	95	86	82	110	155	210	236	212	201	244	34	122
18-Aug-09	227	191	128	133	126	155	135	127	79	157	174	205	202	136	154	156	124	102	112	129	164	201	182	207	240	76	155
19-Aug-09	170	158	129	51	7	82	122	124	93	130	188	145	179	179	177	175	200	183	182	166	178	219	217	273	277	2	153
20-Aug-09	248	257	264	218	182	178	254	255	176	192	189	126	170	168	173	202	181	153	110	205	228	230	206	215	275	110	199
21-Aug-09	242	255	231	193	196	250	266	242	206	232	239	241	213	212	263	258	243	115	140	195	204	223	212	284	284	95	222
22-Aug-09	241	226	242	209	143	143	214	205	227	189	264	185	231	218	260	222	208	181	183	213	229	243	285	299	299	129	219
23-Aug-09	248	261	279	268	271	265	297	244	207	179	207	223	363	258	284	283	254	244	251	210	323	341	283	305	363	148	260
24-Aug-09	269	291	304	288	317	244	262	219	236	209	237	270	253	290	284	0	254	240	305	344	382	321	321	309	382	0	267
25-Aug-09	350	338	362	359	343	305	267	286	276	249	254	230	269	175	166	152	168	170	241	243	284	316	313	323	380	133	266
26-Aug-09	344	343	362	406	363	334	280	296	311	257	255	230	258	221	207	188	178	121	201	221	213	234	224	285	406	121	259
27-Aug-09	276	360	324	320	305	304	244	276	245	207	134	203	277	273	308	275	291	228	218	223	280	324	361	342	378	130	272
28-Aug-09	339	308	317	305	283	249	244	281	273	150	201	275	286	311	256	211	192	183	187	237	266	281	296	344	357	147	262
29-Aug-09	325	342	326	304	279	297	206	217	214	208	210	192	235	233	215	231	148	93	119	222	197	269	244	293	345	93	233
30-Aug-09	308	305	288	260	239	250	192	161	139	119	106	155	185	206	194	170	130	175	151	143	108	154	169	193	320	102	184
31-Aug-09	222	250	205	206	163	143	178	150	100	76	90	72	39	192	224	223	185	160	128	155	189	180	208	179	250	34	160
During the Month																									406	0	220

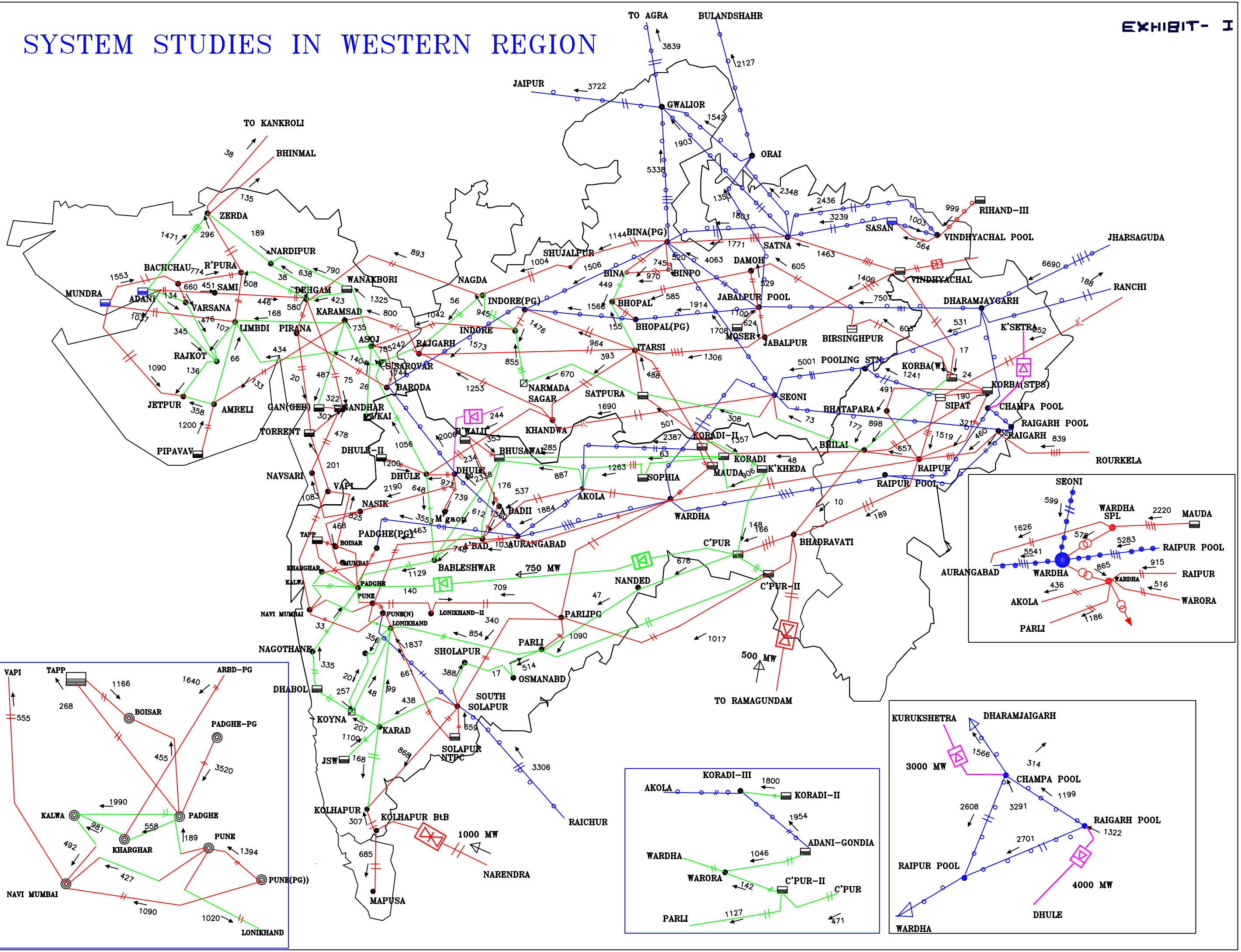
Annexure II

ENERGY DATA (MU) (Jan'09 To Dec'09)

S. NO.	Month	Barod-Kota		Barod-Modak		Barod-Kota-Modak (Net)	
		Import	Export	Import	Export	Import	Export
1	Jan-09	3.42	-3.84	0.92	-9.73		-9.23
2	Feb-09	10.85	-16.48	4.94	-34.35		-35.04
3	Mar-09	27.85	-15.12	16.73	-29.07	0.39	
4	Apr-09	30.58	-13.55	18.37	-24.32	11.09	
5	May-09	5.72	-30.25	1.64	-49.38		-72.27
6	Jun-09	2.22	-53.35	1.71	-39.89		-89.31
7	Jul-09	0.21	-85.69	0.75	-67.42		-152.14
8	Aug-09	0.00	-86.08	0.01	-77.98		-164.05
9	Sep-09	0.17	-60.55	0.00	-85.83		-146.22
10	Oct-09	0.43	-64.48	0.03	-59.54		-123.56
11	Nov-09	1.67	-45.82	0.21	-53.39		-97.32
12	Dec-09	0.70	-60.01	0.00	-83.66		-142.98

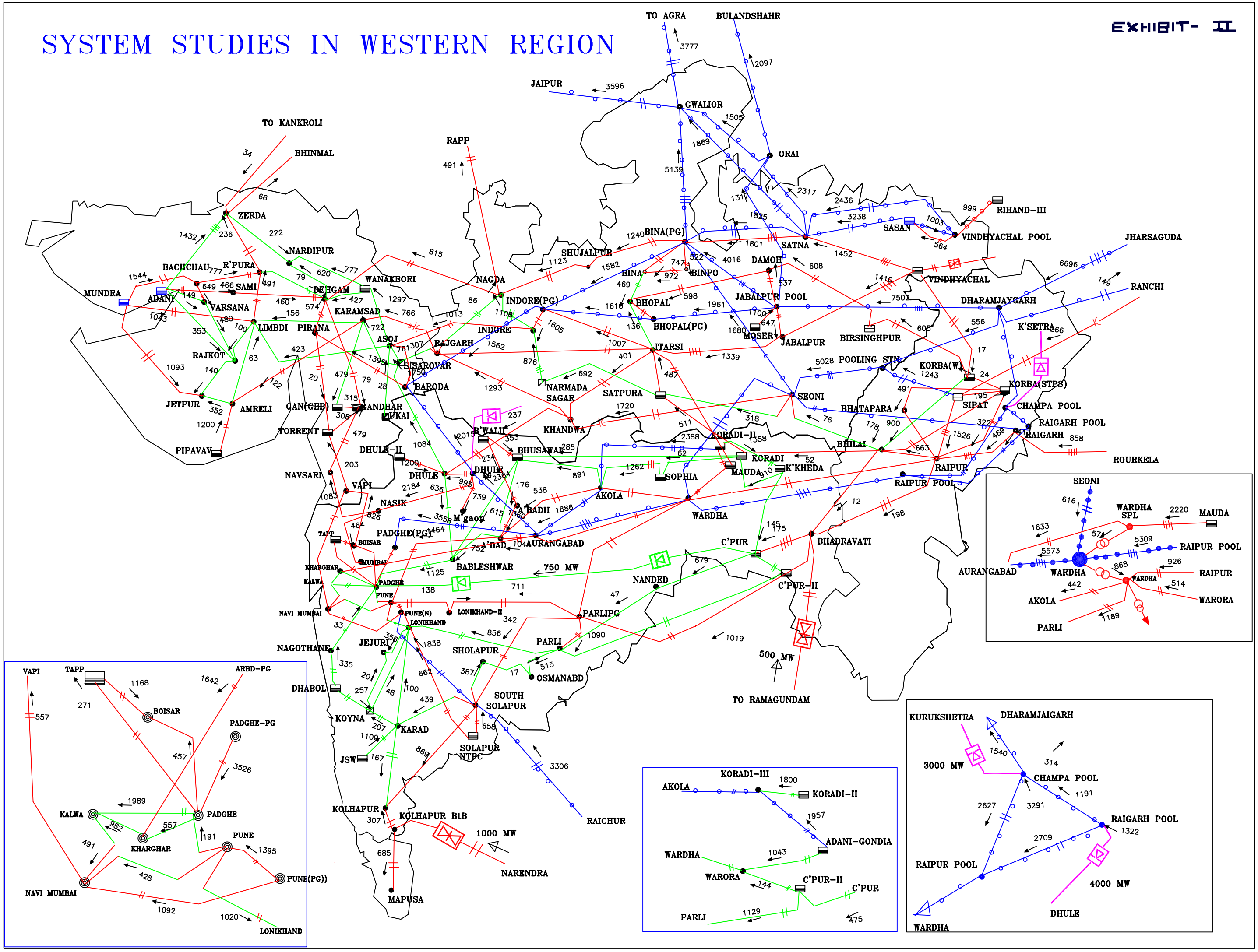
SYSTEM STUDIES IN WESTERN REGION

EXHIBIT- I



SYSTEM STUDIES IN WESTERN REGION

EXHIBIT- II



ANNEXURE - X

Agenda for meeting on the Connectivity and Long-term Access Applications

Following Long-term Open Access applications were discussed in the 29th meeting of Standing Committee in WR and 11th meeting of WR constituents for LTOA held on 10.09.09:

1. M B (Moser Baer) Power(Madhya Pradesh) Ltd. (1200MW)
2. Pipavav Energy Ltd. (1200MW)
3. Bina Power Supply Co. Ltd. (500MW)

Transmission system strengthening required for each of the above generation projects was identified and agreed. However, based on the deliberation, it was decided that connectivity of the M.B Power Ltd. generation project as well as strengthening requirement, if any, may be reviewed. Subsequently, M/s Moser Baer applied for connectivity and Long-term Access for the same project as per CERC Regulations, 2009.

For Pipavav Energy Ltd., GETCO informed during the above SCM that they would explore the possibility of connectivity at nearby GETCO's S/s in Saurashtra region and in case connectivity is not available, direct connection to 400kV Pirana may be provided.

Further, LTOA was granted to M/s Bina Power for transfer of 290MW from their generation project with identified system strengthening. Subsequently, M/s Bina Power suggested some modification/revision in the LTOA arrangement.

In view of the above, separate agenda taking into account the deliberations in the above meetings as well as observations of the applicants has been circulated by POWERGRID for comments by the constituents, CEA and WRPC.

Also, POWERGRID has received applications for grant of Connectivity as per CERC (Grant of Connectivity, Long-term Access and Medium-term Open access in inter-State transmission and related matters) regulation 2009 from the following applicants:

1. Hindustan Electricity Generation Co. Pvt. Ltd.(2500MW)
2. Dhariwal Infrastructure Pvt. Ltd. (600MW)

An agenda containing connectivity proposals for these applicants has been circulated by POWERGRID for comments by the constituents, CEA and WRPC.

A brief on the proposals regarding above applications is as under:

A. M B (Moser Baer) Power(Madhya Pradesh) Ltd. (1200MW)

1.0 M/s M B Power(Madhya Pradesh) Ltd. has submitted application to POWERGRID for grant of "Long term Open Access" for transfer of 1128MW power from their proposed generation project [2x600 MW] in Distt Anuppur, MP. Target

beneficiaries indicated by the applicant as M.P, Maharashtra, Gujarat in WR and NCR in NR. Expected date of commencement of open access is Dec'12 (commissioning schedule of 1st unit). The above application was discussed in the 11th Meeting of WR constituents regarding long-term open access applications held on 10.09.2009 at Ahmedabad. In the meeting, following transmission system strengthening was discussed to effect desired transaction of power:

a. Dedicated transmission system

- Moser Baer TPS – Jabalpur Pooling Station 400kV D/c (Quad)
- 2 nos. 400kV line bays at Jabalpur Pooling station

b. Transmission system strengthening in WR

- Jabalpur Pooling Station – Bina 765kV S/c along with associated bays at either end (Implementation through private sector)
- Jabalpur Pooling Station – Damoh 400kV D/c (Quad) along with associated bays at either end

In addition, sharing of transmission charges for other common transmission corridors in WR and NR-WR by the applicant was discussed.

2.0 In the meeting, M/s M B Power(Madhya Pradesh) Ltd. informed that they do not have any proposal for further expansion of this generation complex. Further, location of the generation project is en-route to the 400kV Korba – Birsinghpur - Damoh D/c line, which is already under implementation and suggested to explore the possibility of interconnection of this project at suitable location on the above lines as well as review the conductor configuration for dedicated line portion.

They also informed that as per MOU signed with M.P, MPPTCL needs to draw their share from the generation switchyard for which suitable transmission arrangement may be established by MPPTCL.

In view of the above, it was decided that connectivity of the generation project as well as strengthening requirement, if any, may be reviewed and proposal shall be circulated to the constituents for their concurrence. Accordingly, agenda was circulated vide our letter dated 16.11.09 with revised proposal for interconnection of the generation project. MPPTCL sent their observation on the proposed interim arrangement through LILO of 400kV Birsinghpur – Damoh one ckt at MB TPS.

Subsequently, M/s Moser Baer applied for connectivity and Long-term Access for the same project as per CERC Regulations, 2009 with revised commissioning schedule (Unit 1 Aug'13) and LTA quantum (392 MW) [Copy enclosed at ***Annexure-1***].

3.0 Considering above and taking into account the observations of MPPTCL, the connectivity and long-term access proposal of M/s Moser Baer has been reviewed and following is proposed :

a) Dedicated transmission system (for connectivity)

- Moser Baer TPS – Jabalpur Pooling Station 400kV D/c (triple)
- 2 nos. 400kV line bays at Jabalpur Pooling station

However, till availability of above proposed transmission system, connectivity at Moser Baer (MB) TPS with WR grid may be provided by interconnecting Moser Baer TPS with Jabalpur(Existing) S/s of POWERGRID through 400kV D/c line as an interim arrangement. On subsequent completion of line upto Jabalpur Pooling station, interconnection of line from Jabalpur (existing) sub station shall be opened and line shall be terminated at Jabalpur Pooling station.

b) Transmission system strengthening in WR (for Long-term access)

- Jabalpur Pooling Station – Bina 765kV S/c(3rd) along with associated bays at either end (Implementation through private sector)

Moser Baer have indicated the target regions along with the quantum of power (WR-200 MW & NR-192 MW) to be supplied to the regions. As per CERC Regulations, 2009, Moser Baer shall have to firm up exact destination at least 3 years prior to the intended date of availing LTA at least for a capacity equivalent to 50% of the quantum of power for which LTA has been sought for through signing of PPA with such grid connected entities/STUs.

Augmentation of identified transmission system for grant of LTA shall be undertaken only after fulfillment of above condition and other terms and condition of CERC regulations, 2009.

4.0 As per CERC regulation 2009/detailed procedure for making application for grant of connectivity in ISTS, connectivity implies as under:

a) The grant of connectivity shall not entitle an applicant to interchange any power with the grid unless it obtains long-term access, medium term open access or short term open access.

b) However, generating station, including captive generating plant, which has been granted connectivity to the grid shall be allowed to undertake interchange of power including drawl of power for commissioning activities and injection of infirm power in to the grid during full load testing before being put into commercial operation, even before availing any type of open access, after obtaining permission of the concerned regional load dispatch centre, which shall keep grid security in view while granting such permission.

This infirm power from a generating station or a unit thereof, other than those based on non-conventional energy sources, the tariff of which is determined by the commission, will be governed by the Central Electricity Regulator Commission (Terms and conditions of Tariff) Regulations, 2009. The power

injected into the grid from other generating stations during such testing shall also be charged at UI rates.

5.0 In view of the above, following is proposed :

For connectivity

i) Connectivity of MB TPS with WR grid may be provided through MB TPS – Jabalpur Pooling Station 400kV D/c (triple) line, as per CERC(Grant of connectivity, Medium-term Open Access, Long-term access in ISTS and related matters) regulations, 2009.

ii) Till the availability of proposed transmission system at Para 3 above, connectivity of Moser Baer(MB) TPS with WR grid may be provided by terminating the 400kV D/c(triple) line from MB TPS to Jabalpur(existing) S/s of POWERGRID as an interim arrangement. On completion of 400kV D/c stretch upto Jabalpur Pooling Station as identified at para 3 above, the termination at Jabalpur(Existing) S/s shall be removed.

The grant of connectivity shall not entitle an applicant to interchange any power with the grid unless it obtains long-term access, medium term open access or short term open access.

iii) In case the dedicated transmission system upto point of connection is to be undertaken by CTU, the applicants need to sign transmission agreement within one month of grant of connectivity, furnish requisite Bank Guarantee and fulfill other terms & conditions as stipulated in the CERC Regulations/Detailed Procedure, 2009 in this regard.

Further, time frame for commissioning of above dedicated transmission system from the signing of Transmission Agreement would be 9 months plus the time lines as specified by CERC in tariff regulations, 2009 or actual date of commissioning desired by the applicant and agreed to by the CTU, whichever is earlier.

Applicant have to apply for “Connection Offer” to CTU at least more than 2 years prior to physical interconnection as well as have to sign “Connection Agreement” with CTU prior to physical interconnection as per CERC Regulations, 2009.

For Long-term access

iv) Long term access to M/s M B Power (Madhya Pradesh) Ltd. for transfer of 392MW power [WR- 200MW, NR- 192MW] from their 1200 MW generation project at Dist. Anuppur, M.P to target beneficiaries in WR/NR may be provided subject to condition that M/s Moser Baer shall have to firm up PPA at least for 50% of LTA quantum 3 years prior to the intended date of availing LTA as per

CERC regulations, 2009 and intimate to POWERGRID as well as availability of following system strengthening scheme:

Transmission system strengthening in WR (for Long-term access)

- Jabalpur Pooling Station – Bina 765kV S/c(3rd) along with associated bays at either end (Implementation through private sector)

In that case, if there is any mismatch in establishment of 765/400kV Jabalpur Pooling Station, as an interim arrangement i.e, MB TPS – Jabalpur(Existing) 400kV D/c(triple), power transfer may be effected depending upon the system condition.

M/s Moser Baer shall share the transmission charges of the above strengthening scheme.

Further, M/s M B Power(Madhya Pradesh) Ltd. shall sign BPTA with POWERGRID/transmission licensee for sharing of WR regional transmission charges corresponding to 392MW, NR transmission charges corresponding to 192MW as per CERC norms as well as transmission charges towards following common transmission corridors in WR and NR-WR indicated at below:

Common Transmission Corridors

(I) Common Transmission system to shared by Maruti Clean Coal & Power Ltd.(300MW), PTC India(600MW), Dheeru Powergen(450MW), Jaiprakash Power Ventures Ltd(1320MW), Aryan M.P Power Generation Pvt. Ltd(1200MW), Bina Power(500MW), M B Power[Madhya Pradesh] (1200 MW) to be shared along with IPPs in Orissa in proportion to allocation to NR

a) Bina – Gwalior 765 kV S/c (3rd)
b) Gwalior – Jaipur 765kV S/c (2nd)
c) Jaipur – Bhiwani 765kV S/c

(II) Common Transmission system to shared by M B Power(Madhya Pradesh) [1200MW] along with IPPs in Orissa in proportion to allocation to WR

a) Jabalpur Pooling Station – Bhopal – Indore 765kV S/c
b) 765/400kV 2x1500MVA Jabalpur Pooling Station

(III) Common Transmission system to shared by Maruti Clean Coal & Power Ltd. (300MW), PTC India(600MW), Dheeru Powergen(450MW), Jaiprakash Power Ventures Ltd, (1320MW) and Aryan M.P Power Generation Pvt. Ltd. (1200MW), Bina Power(500MW), M B Power(Madhya Pradesh) [1200MMW] in proportion to allocation to WR

a) Indore - Vadodara 765 kV S/c
b) Vadodara – Pirana 400kV D/c(Quad)

c) Establishment of 765/400kV 2x1500MVA Pooling station at Vadodara

v) Balance 393MW is to be transferred to M.P and Long-term Open Access for transfer of above 393MW in ISTS is not covered in this proposal. Additional 337 MW power kept reserved by M/s Moser Baer for short term sale.

vi) The necessary arrangement for drawl of share of M.P.(393MW) from the switchyard of the generation project shall be established by MPPTCL/M B Power(Madhya Pradesh) Ltd. at their own cost .

vi) The applicants shall abide by all provisions of the Electricity Act, 2003, CERC(Grant of Connectivity, Long-term Access and Medium-term Open Access in inter-State transmission and related matters) Regulations, 2009, CEA (Technical Standards for connectivity to the Grid) and Indian Electricity Grid Code as amended from time to time.

B. Pipavav Energy Pvt. Ltd. (1200MW)

1.0 M/s Pipavav Energy Ltd has submitted application to POWERGRID for grant of "Long term Open Access" for transfer of 1200MW power from their proposed generation project [2x600 MW] in Distt Amreli, Gujarat and transfer requirement to 1110 MW (WR [555 MW] & NR [555 MW]). Expected date of commencement of above open access as subsequently informed by M/s Pipavav Energy Ltd is May'13. Proposed transmission system strengthening was discussed in the 11th meeting of WR constituents on long-term open access held on 10.09.09.

2.0 Earlier, following dedicated interconnection into the WR grid was considered.

i) Pipavav TPS – Pirana(PG) 400kV D/c
ii) 2 nos. 400kV line bays at Pirana(PG) to terminate above line

Subsequently, GETCO explored the possibility of connecting the generation project at nearby substation in Saurashtra region and informed following connectivity arrangement:

i) Pipavav TPS – Amreli (GETCO) 400kV D/c (Quad)
ii) 2 nos. 400kV line bays at 400kV Amreli(GETCO) S/s to terminate above line

In addition, GETCO informed that they have already identified strengthening of transmission corridor between Amreli and Kasor(Karamsad) through a 400kV D/c(quad) line.

Above transmission arrangement shall facilitate power transfer within WR while power transfer to beneficiaries in NR shall be effected on displacement basis. For this, strengthening in WR-NR corridors is required.

It is to mention that a separate high capacity transmission WR-NR corridor has already been identified along with other IPP generation projects in SR and agreed in the 29th meeting of Standing Committee in WR. Details are as under:

i) Jabalpur Pooling Station – Orai 765kV S/c
ii) Orai – Bulandshahar 765kV S/c
iii) Bulandshahar – Sonipat 765kV S/c
iv) Establishment of 765/400kV 2x1000MVA S/s at Orai by LILO of one ckt. of Satna – Gwalior 765kV line
v) Establishment of 765/400kV 2x1500MVA S/s at Bulandshahar by LILO of Agra – Meerut 765kV line
vi) Establishment of 765/400kV 2x1500MVA S/s at Sonepat by LILO of Bhiwani – Meerut 765kV line

Power flow to beneficiaries in NR (555MW) from Pipavav Energy generation project shall be effected through above WR-NR corridor.

3.0 In view of the above, following is proposed :

a) Long term Open access to M/s Pipavav Energy Ltd for transfer of 1100MW power from their 1200 MW generation project at Dist. Amreli, Gujarat to target beneficiaries in WR(555MW)/NR(555MW) may be provided, as per CERC (Open Access in ISTS) Regulations, 2004.

b) Following dedicated transmission system for the generation project shall be built, owned, operated and maintained by M/s Pipavav Energy Ltd. to interconnect the generation project with WR grid

   i) Pipavav TPS – Amreli(GETCO) 400kV D/c (quad)
   ii) 2 nos. 400kV line bays at Amreli(GETCO) S/s to terminate above line

c) GETCO need to strengthen transmission corridor between Amreli and Kasor(Karamsad) through a 400kV D/c(quad) line.

d) M/s Pipavav Energy Ltd shall sign BPTA with POWERGRID for sharing of WR regional transmission charges corresponding to 1100MW and NR transmission charges corresponding to 555MW as per CERC norms and as well as shall need to share the transmission charges towards following transmission system strengthening scheme for WR-NR corridor along with other already identified IPPs in SR (in Krishnapatnam, Tuticorin and Srikakulam area – refer minutes of 29th Standing Committee meeting).

   1) Jabalpur Pooling Station – Orai 765kV S/c
   2) Orai – Bulandshahar 765kV S/c
   3) Bulandshahar – Sonipat 765kV S/c
   4) Establishment of 765/400kV 2x1000MVA S/s at Orai by LILO of one ckt. of Satna – Gwalior 765kV line

5) Establishment of 765/400kV 2x1500MVA S/s at Bulandshahar by LILO of Agra – Meerut 765kV line
6) Establishment of 765/400kV 2x1500MVA S/s at Sonepat by LILO of Bhiwani – Meerut 765kV line

For this, M/s Pipavav Energy Pvt. Ltd. needs to submit bank guarantee equivalent to Rs. 5 lakh/MW along with signing of BPTA as construction phase bank guarantee and also share the transmission charges with other IPP projects in SR..

e) In addition, M/s Pipavav Energy Ltd need to share the necessary GETCO's Transmission charges for 1100MW capacity for which they need to enter separate agreement with GETCO.

f) Date of commencement of above open access is from the date of commissioning of 1st unit of the generation project i.e, May'13. Further, M/s Pipavav Energy Ltd shall take necessary action to fulfill the terms and conditions of long-term access as per CERC(Open Access in ISTS) Regulations, 2004.

C. Bina Power Supply Co. (500MW)

1.0 M/s Bina Power Supply Co. Ltd. has submitted application to POWERGRID for grant of "Long term Open Access" for transfer of power from their proposed generation project [2x250 MW] in Distt Sagar, MP to Madhya Pradesh [210 MW] and target region WR [145 MW] & NR [145 MW]. Expected date of commencement of open access is Sep'11 (commissioning schedule of 1st unit). Following transmission system strengthening was agreed to effect desired transaction of power in the 11th meeting of WR constituents regarding LTOA held on 10.09.09:

Dedicated transmission system (to be developed by the applicant)

- LILO of Bina(PG) – Bina(MPPTCL) 400kV D/c at Bina TPS

Common Transmission system strengthening in WR

i) Common Transmission system to shared by Bina Power(500MW) along with other IPPs viz. Maruti Clean Coal & Power Ltd.(300MW), PTC India(600MW), Dheeru Powergen(450MW), Jaiprakash Power Ventures Ltd(1320MW), Aryan Coal Benefications Pvt. Ltd.(1200MW), Indiabulls Power(390 MW) to be shared along with IPPs in Orissa(6080MW) in proportion to allocation to NR

a) Bina – Gwalior 765 kV S/c (3rd)
b) Gwalior – Jaipur 765kV S/c(2nd)
c) Jaipur – Bhiwani 765kV S/c

ii) Common Transmission system to shared by Bina Power(500MW) along with other IPPs viz. Maruti Clean Coal & Power Ltd.(300MW), PTC India(600MW),

Dheeru Powergen(450MW), Jaiprakash Power Ventures Ltd,(1320MW) and Aryan Coal Benefications Pvt. Ltd. (1200MW), in proportion to allocation to WR

a) Indore - Vadodara 765 kV S/c
b) Vadodara – Pirana 400kV D/c(Quad)
c) Establishment of 765/400kV 2x1500MVA Pooling station at Vadodara

It was also clarified that 210MW of MPPTCL shall be drawn directly at Bina TPS switchyard. Based on the above, LTOA was granted to M/s Bina Power Supply Ltd. for transfer of 290MW to target region as WR(145MW) and NR(145MW).

2.0 Subsequently, M/s Bina Power requested that considering the present capacity of the power plant as 500MW the proposed interconnection scheme for the Bina TPS may be reviewed. Accordingly, agenda was circulated vide our letter dated 14.12.09 with revised proposal for interconnection of the generation project.

MPPTCL agreed the revised proposal for interconnection of Bina TPS. However, they informed that Bina TPS has also future expansion proposal by another 3x250MW i.e, total capacity 5x250MW, out of which long-term access applied for 2x250MW.

3.0 Keeping above in view as well as to take care of right of way, the long-term access already granted to M/s Bina Power Supply Co. Ltd. for transfer of 290MW to WR/NR from Bina TPS in M.P is being reviewed. It is to mention that Bina(PG) and Bina(MPPTCL) substations are just adjacent to each other. Therefore, to effect transfer of power from Bina TPS, a 400kV D/c line from Bina TPS to a suitable point (along Bina (PG)-Bina(MPPTCL) 400kV line may be developed and interconnect one ckt at Bina(PG) and other at Bina(MPPTCL) S/s. Accordingly, following interconnection scheme of Bina TPS and common system strengthening is proposed :

a) Dedicated transmission system (to be developed by the applicant)

- Bina TPS – Suitable location (along Bina (PG)-Bina(MPPTCL) 400kV line) 400kV D/c (high capacity conductor)
- Terminate one ckt. out of above D/c from the suitable location to Bina(PG) and other to Bina(MPPTCL)

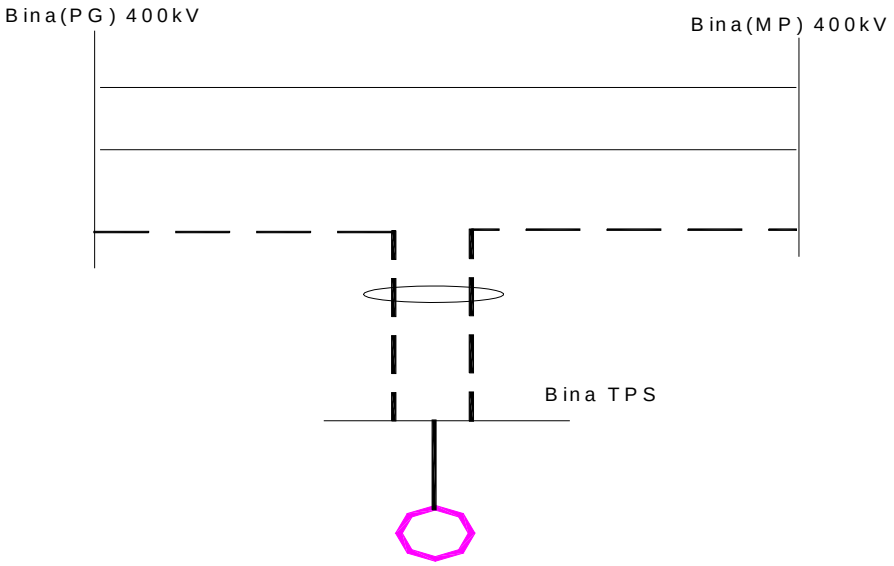


Fig. 1: Proposed interconnection arrangement of Bina TPS

b) Common Transmission system strengthening in WR

i) Common Transmission system to shared by Bina Power(500MW) along with other IPPs viz. Maruti Clean Coal & Power Ltd.(300MW), PTC India(600MW), Dheeru Powergen(450MW), Jaiprakash Power Ventures Ltd(1320MW), Aryan M.P Power Generation Pvt. Ltd(1200MW), Moser Baer(1200MW) to be shared along with IPPs in Orissa in proportion to allocation to NR

i) Bina – Gwalior 765 kV S/c (3rd)
ii) Gwalior – Jaipur 765kV S/c(2nd)
iii) Jaipur – Bhiwani 765kV S/c

ii) Common Transmission system to shared by Bina Power(500MW) along with other IPPs viz. Maruti Clean Coal & Power Ltd. (300MW), PTC India(600MW), Dheeru Powergen(450MW), Jaiprakash Power Ventures Ltd,(1320MW) and Aryan M.P Power Generation Pvt. Ltd.(1200MW), Moser Baer(1200MW) in proportion to allocation to WR

a) Indore - Vadodara 765 kV S/c
b) Vadodara – Pirana 400kV D/c(Quad)
c) Establishment of 765/400kV 2x1500MVA Pooling station at Vadodara

Regarding drawal arrangement for 210MW by MPPTCL from the generation project, M/s Bina Power Supply Co. Ltd. may take up the matter suitably with MPPTCL.

Subsequently, M/s Bina Power informed the LTA quantum for ISTS revised to 265.35MW with WR-132.68 MW & NR-132.67 MW.

4.0 In view of the above, following is proposed :

i) Long term Open access to M/s Bina Power Supply Co. Ltd. for transfer of 265.35MW power [WR- 132.68MW, NR- 132.67MW] from their 2x250 MW Bina TPS in Dist. Sagar, M.P to target beneficiaries in WR /NR may be provided, as per CERC regulations(Open Access in ISTS) Regulations, 2004. Balance 210MW is to be transferred to MPPTCL and Long-term Open Access for transfer of above 210MW in ISTS is not covered in this proposal.

ii) Bina TPS – Suitable location near Bina (PG)/Bina(MPPTCL) 400kV D/c (high capacity) and termination of one ckt each at Bina(PG) and Bina(MPPTCL) along with associated line bays at the above substations shall be the dedicated transmission system for the generation project which shall be built, owned, operated and maintained by M/s Bina Power Supply Co. Ltd. to interconnect the generation project with WR grid.

iii) M/s Bina Power Supply Co. Ltd. shall sign BPTA with POWERGRID/transmission licensee for sharing of WR regional transmission charges corresponding to 265.35MW, NR transmission charges corresponding to 132.67MW as per CERC norms as well as transmission charges for proposed common system strengthening scheme at para 3(b) above.

iv) The necessary arrangement for drawl of share of MPPTCL.(210 MW) from the generation project shall be established by MPPTCL/Bina Power Supply Co. Ltd. at their own cost .

v) M/s Bina Power shall apply for long-term access as per CERC Regulations, 2009 in case of any additional power transfer is envisaged from future 3x250MW generating units, based on which transmission system strengthening shall be identified.

vi) Date of commencement of above open access is from date of commissioning of 1st unit of the generation project i.e, Sep'11 and shall be govern as per CERC(Open Access in ISTS) Regulations, 2004. However, till the availability of proposed transmission system at Para 3(b) above, power transfer may be effected depending on the transmission capacity available and in case of any transmission constraint for power transfer from the Bina TPS during operation, M/s Bina Power Supply Co. Ltd. may take necessary action to backdown the generation as per the instruction of respective Load Despatch Centre.

D. Connectivity Applications

1.0 POWERGRID has received application for grant of Connectivity as per CERC (Grant of Connectivity, Long-term Access and Medium-term Open access in inter-State transmission and related matters) regulation 2009 from the following applicants :

- Hindustan Electricity Generation Co. Pvt. Ltd.(2500MW)

- Dhariwal Infrastructure Pvt. Ltd. (600MW)

2.0 **The details of application are as under :**

S.No.	Particulars	Hindustan Electricity Generation Co. Pvt. Ltd. (HEGCL)	Dhariwal Infrastructure Pvt. Ltd. (DIL)
1	Capacity for which Connectivity is required (MW)	2500	600
2	Date from which Connectivity is Required	Apr'12	Aug'11(for start up power)
3	Location of Generating Station	Village/Town-Navlaka-Umbre, District-Pune, State- Maharashtra	Village/Town-Tadali, District- Chandrapur, State- Maharashtra
4	Installed Capacity (MW)	1x350+3x700=2450	2x300=600
5	Commissioning schedule (Unit Wise)	U-1 May'12 U-2 Apr'13 U-3 Apr'14 U-4 Apr'14	U-1 Sep'12 U-2 Dec'12
6	Step up voltage of Generating station (kV)	400	400

Copy of the above applications is enclosed at ***Annexure-2 and 3*** respectively.

3.0 **Status of Generation project**

As per the applications, the status of respective generation projects is as follows :

S. No.	Item	HEGCL	DIL
1.	Land	74.22 Ha land acquired against total requirement of 112.438 Ha	442 acres land under possession against total requirement of 480 acres
2.	Environmental clearance	SEAC has approved TOR	Obtained from MOEF
3.	Fuel Arrangement	Allocation of gas requested from MoP. HEADS of agreement entered for supply of gas	LOA given by SECL

		with BPCL. Gas sales agreement to be signed by Nov'10. Gas transmission arrangement being tied-up with GAIL	
4.	Water arrangement	Confirmation letter for allocation of water from Maharashtra Jeevan Pradhikaran received	Confirmation letter from Govt. of Maharashtra obtained

4.0 As per CERC regulation/detailed procedure for making application for grant of connectivity in ISTS, connectivity implies as under:

a) The grant of connectivity shall not entitle an applicant to interchange any power with the grid unless it obtains long-term access, medium term open access or short term open access.

b) However, generating station, including captive generating plant, which has been granted connectivity to the grid shall be allowed to undertake interchange of power including drawl of power for commissioning activities and injection of infirm power in to the grid during full load testing before being put into commercial operation, even before availing any type of open access, after obtaining permission of the concerned regional load dispatch centre, which shall keep grid security in view while granting such permission.
This infirm power from a generating station or a unit thereof, other than those based on non-conventional energy sources, the tariff of which is determined by the commission, will be governed by the Central Electricity Regulator Commission (Terms and conditions of Tariff) Regulations, 2009. The power injected into the grid from other generating stations during such testing shall also be charged at UI rates.

5.0 Proposed Connectivity of generation project

Keeping above in view and considering the proximity of generation projects, unit sizes, etc, following connectivity of the generation projects are proposed based on technical examination as per CEA (Technical Standards for connectivity to the Grid) regulations, 2007:

1) For Hindustan Electricity Generation Co. Pvt. Ltd (HEGCL) –
First 350MW unit is considered to be stepped-up at 400kV level. However, keeping in view the entire capacity and unit sizes of the generation project, it is proposed to step-up the generation voltage of 3 nos. 700MW units at 765kV level. This shall also facilitate power transfer from the project for long-term sale (based on the long-term Access application to be submitted separately by HEGCL). In view of the above, following transmission arrangement for connectivity is proposed:

- HEGCL TPS – Pune (PG) (Existing) 400kV D/c
- Installation of 765/400kV 1x11000 MVA transformer between 400kV and 765kV bus of HEGCL

In order to take care of future long-term sale (based on the long-term Access application to be submitted separately by HEGCL) from this generation project. provision of following at generation switchyard is proposed :

- 765kV line bays : 2 nos.
- 400kV line bays : 2 nos.
- 765/400kV transformer : 4x333 MVA 1-ph units (including one spare unit)
- 765kV transformer bays : 1 no.
- 400kV transformer bays : 1 nos.
- 765kV reactor(Bus/line) : 3 nos.

Transmission system strengthening shall be identified to facilitate power transfer on long-term basis once M/s HEGCL apply for Long-term Access as per CERC Regulations, 2009.

2) For Dhariwal Infrastructure Pvt. Ltd. –

- LILO of Bhadravati – Parli(PG) 400kV one ckt at Dhariwal TPS

In order to facilitate power transfer from the project for long-term sale(based on the long-term Access application to be submitted by DIL), provision of following at generation switchyard is proposed :

- 400kV line bays : 2 nos.
- 400kV reactor(bus/line) : 3 nos.

Transmission system strengthening shall be identified to facilitate power transfer on long-term basis once M/s DIL apply for Long-term Access as per CERC Regulations, 2009.

6.0 **Proposal**

a) Both Hindustan Electricity Generation Company Private Ltd. and Dhariwal Infrastructure Private Ltd. may be provided connectivity with proposed arrangement

i) For Hindustan Electricity Generation Co. Pvt. Ltd (HEGCL) –

First 350MW unit is considered to be stepped-up at 400kV level. However, keeping in view the entire capacity and unit sizes of the generation project, it is proposed to step-up the generation voltage of 3 nos. 700MW units at 765kV

level. This shall also facilitate power transfer from the project for long-term sale (based on the long-term Access application to be submitted separately by HEGCL). In view of the above, following transmission arrangement for connectivity is proposed:

- HEGCL TPS – Pune (PG) (Existing) 400kV D/c
- Installation of 765/400kV 1x11000 MVA transformer between 400kV and 765kV bus of HEGCL

In order to take care of future long-term sale (based on the long-term Access application to be submitted separately by HEGCL) from this generation project. provision of following at generation switchyard is proposed :

- 765kV line bays : 2 nos.
- 400kV line bays : 2 nos.
- 765/400kV transformer : 4x333 MVA 1-ph units *(including one spare unit)*
- 765kV transformer bays : 1 no.
- 400kV transformer bays : 1 nos.
- 765kV reactor(Bus/line) : 3 nos.

The grant of connectivity shall not entitle M/s HEGCL to interchange any power with the grid unless it obtains long-term access, medium term open access or short term open access. However, HEGCL shall be allowed to undertake interchange of power including drawl of power for commissioning activities and injection of infirm power in to the grid during full load testing before being put into commercial operation, even before availing any type of open access, after obtaining permission of the concerned regional load dispatch centre, which shall keep grid security in view while granting such permission.

ii) For Dhariwal Infrastructure Pvt. Ltd. –

- LILO of Bhadravati – Parli(PG) 400kV one ckt at Dhariwal TPS

In order to facilitate power transfer from the project for long-term sale(based on the long-term Access application to be submitted by DIL), provision of following at generation switchyard is proposed :

- 400kV line bays : 4 nos.
- 400kV reactor : 3 nos.

The grant of connectivity shall not entitle M/s Dhariwal to interchange any power with the grid unless it obtains long-term access, medium term open access or short term open access. However, Dhariwal shall be allowed to undertake interchange of power including drawl of power for commissioning activities and injection of infirm power in to the grid during full load testing before being put into commercial operation, even before availing any type of open access, after obtaining permission of the concerned regional load

dispatch centre, which shall keep grid security in view while granting such permission.

b) Both the above applicants are required to inform/confirm following:

i) Likely date of synchronization, likely quantum and period of injection of infirm power before being put into commercial operation to the SLDC and RLDC concerned at least one month in advance.

ii) In case the dedicated transmission system upto point of connection is to be undertaken by CTU/Inter-State Transmission Licensee, the applicants need to sign transmission agreement within one month of grant of connectivity, furnish requisite Bank Guarantee and fulfill other terms & conditions as stipulated in the CERC Regulations/Detailed Procedure, 2009 in this regard. Further, time frame for commissioning of above dedicated transmission system from the signing of Transmission Agreement would be 9 months plus the time lines as specified by CERC in tariff regulations, 2009 or actual date of commissioning desired by the applicant and agreed to by the CTU, whichever is earlier.

iii) The applicants shall abide by all provisions of the Electricity Act, 2003, CERC(Grant of Connectivity, Long-term Access and Medium-term Open Access in inter-State transmission and related matters) Regulations, 2009, CEA (Technical Standards for connectivity to the Grid) and Indian Electricity Grid Code as amended from time to time.

iv) Both the applicants have to apply for "Connection Offer" to CTU at least more than 2 years prior to physical interconnection as well as have to sign "Connection Agreement" with CTU prior to physical interconnection as per CERC Regulations, 2009.

v) Transmission system strengthening shall be identified to facilitate power transfer on long-term basis once above applicants apply for Long-term Access as per CERC Regulations, 2009.

E. Long Term Open Access to Shri Bajrang Power & Ispat Ltd. for transfer of 45 MW power from Rupin HEP (45 MW)

1.0 Shri Bajrang Power & Ispat Ltd. has applied for long term Open Access in inter-state transmission system for transfer 45 MW of power from the proposed Rupin HEP (45MW) to be set up in Himachal Pradesh by the applicant The commissioning schedule for generation project as indicated in the application is Unit I II & III – June 2014. The Long Term Open Access is desired from June 2014 for 40 years. A copy of the application is enclosed at **Annexure-4.**

2.0 As per the application, quantum of 45MW would need to be transferred from the generating station to Punjab/ Rajasthan (22.5 MW) in Northern Grid and to Maharashtra (22.5 MW) in Western Grid. The project was discussed during the Long

term Open Access Meeting with Northern Region Constituents held on 23/02/2010 at NRPC, New Delhi, wherein LTOA to M/s Shri Bajrang Power & Ispat Ltd. was agreed to be granted, for transfer of 45MW of Rupin HEP beyond Nalagarh 400/220kV Substation of POWERGRID subject to following:

- Signing the requisite BPTA for Northern Regional & Western Regional Transmission system charges from June'2014 for 40 years
- The applicant shall enter into Bulk Power Transmission Agreement (BPTA) with POWERGRID within thirty days of confirmed grant of Long Term Open Access

3.0 It is to mention that, transfer of 22.5 MW power to Maharashtra shall be through displacement for which ISTS network is found to be adequate. Considering above, it is proposed that Long term access to Shri Bajrang Power & Ispat Ltd. for transfer 45 MW of power [Punjab/ Rajasthan (22.5 MW) in NR and Maharashtra (22.5 MW) in WR] from the proposed Rupin HEP (45MW) may be provided from June'14 for 40 years subject to fulfillment of above conditions as per CERC (Open Access in ISTS) Regulations, 2004.

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ANNEXURE-I

moserbaer
MB POWER (MADHYA PRADESH) LIMITED
Regd. Office: Hotel Govindam Complex, Kotma Road, Anuppur, Madhya Pradesh – 484224
Phone: 07659-290768 Fax: 07659-222175

FORMAT-LTA-2

Application for Grant of Long-term Access (LTA)

1 **Name the Applicant** : MB Power (Madhya Pradesh) Limited

2 **Address for Correspondence** : 213 B, Okhla Industrial Estate, Phase III New Delhi-110020

3 **Contact Details**

Prime contact person	:	Mr. Awadhesh Prasad Shahi
Designation	:	General Manager
Phone No (Landline)	:	011 – 47624 214
Phone No (Mobile)	:	9717045757
Fax	:	011 – 47624229
E mail	:	ap.shahi@moserbaer.in
Alternate contact person	:	Mr. Ravi Arya
Designation	:	General Manager
Phone No (Landline)	:	011 – 47624 215
Phone No (Mobile)	:	9910337978
Fax	:	011 – 47624229
E mail	:	ravi.arya@moserbaer.in

4 **Nature of the Applicant**

Generator (other than captive)	:	Generator
Captive Generator		
Bulk Consumer		
Electricity Trader		
Distribution Licensee		

5 **Details for Long Term Access (LTA)**

5a	**Quantum (MW) for which LTA required**	:	392 MW* *(Detailed Calculation as per the footnote)*
5b	**Date from which LTA required** *(not earlier than 3 years from the last day of the month in which application has been received)*	:	01-08-2013
5c	**Date upto which LTA required** *(12 years to 25 years from the date from which LTA is required)*	:	till 25 Yrs from the date of Grant of LTA i.e. 31-07-2038

5d	**Injection of Power (more than one only in case of single Drawl)**	:	NOT APPLICABLE
5e	**Drawal of Power (more than one only in case of single Injection)**		
	Entity-1	:	Targeted Beneficiaries
	State/Region	:	Western Region (Gujarat, Maharashtra etc)
	Quantum-1	:	200 MW** *(Detailed Calculation as per the footnote)*
	Connectivity with the Grid	:	
	Entity-2	:	Targeted Beneficiaries
	State/Region	:	Northern Region (NCR, Punjab, UP, Uttarakhand etc)
	Quantum-2	:	192 MW*** *(Detailed Calculation as per the footnote)*
	Connectivity with the Grid	:	
6	**Details of DD/Cheque e-transaction (Application Fee)**		
	Amount (in Rs.)		**NOT APPLICABLE**
	DD/Transaction No.		
	Date		We had filed an application for LTOA in Jan 2009 along with the requite fee of Rs 1 Lacs (vide pay order no. *439495 dated 06.01.2009, ABN AMRO Bank, copy enclosed as Annexure A)* and subsequently deposited the consultancy charges of Rs 21,69,030/- *vide pay order no 820631 dated 09.05.2009, ABN AMRO Bank, copy enclosed as Annexure B)*
	Bank Name		
	Branch name		
7	**Details of Bank Guarantee**		
	Amount (in Rs.)		
	Bank Name		
	Period of Validity		

Footnote: Detailed Calculation of power for which LTA is required

Total Installed Capacity	:	*1200 MW*
Less: Aux Consumption @ 6.5% of IC	:	*78 MW*
Net Capacity	:	***1122 MW***
Power Reserved for GoMP (35% of Net Capacity) #	:	*393 MW*
Power Reserved for short term sale (30% of Net Capacity)	:	*337 MW*
**** Balance Power for which LTA is required***	:	***392 MW***
*** LTA for power for targeted beneficiaries in WR*	:	*200 MW*
**** LTA for power for targeted beneficiaries in NR*	:	*192 MW*

#: As per its letter no 04-01/PSP-14/10148 dated 10 Nov 2009, MP Power Transmission Co. Ltd (MPPTCL) has proposed to draw its share of power through the regional network of POWERGRID at different locations in MP. A copy of the same is enclosed as Annexure C.

moserbaer
MB POWER (MADHYA PRADESH) LIMITED
Regd. Office: Hotel Govindam Complex, Kotma Road, Anuppur, Madhya Pradesh – 484224
Phone: 07659-290768 Fax: 07659-222175

FORMAT-CON-2

Application for grant of Connectivity

1 **Name the Applicant** : MB Power (Madhya Pradesh) Limited

2 **Address for Correspondence** : 213 B, Okhla Industrial Estate,
Phase III New Delhi-110020

3 **Contact Details**

Prime contact person	:	Mr. Awadhesh Prasad Shahi
Designation	:	General Manager
Phone No (Landline)	:	011 – 47624 214
Phone No (Mobile)	:	9717045757
Fax	:	011 – 47624229
E mail	:	ap.shahi@moserbaer.in
Alternate contact person	:	Mr. Ravi Arya
Designation	:	General Manager
Phone No (Landline)	:	011 – 47624 215
Phone No (Mobile)	:	9910337978
Fax	:	011 – 47624229
E mail	:	ravi.arya@moserbaer.in

4 **Nature of the Applicant**

Generator (other than captive)	:	Generator
Captive Generator		
Bulk Consumer		

5 **Details for Connectivity**

5a **Capacity (MW) for which connectivity is required** : 1122 MW
(1200 MW – Aux. consumption @ 6.5%)

Note:-*35% of 1122 MW i.e. 393 MW to be provided to the host state of Madhya Pradesh as per the Implementation Agreement signed with GoMP on 01-12-2009. A copy of the same is enclosed herewith as "Annexure D". Further MPPTCL has also accorded its in-principle consent for purchase of its share of 35% power vide its letter dated: 28-08-09 A copy of the same is enclosed as "Annexure E"*

5b **Date from which Connectivity is required** : 01-02-2013

6 Location of the Generating Station / Bulk Consumer

Nearest Village/ Town	:	Laharpur-Murra, Guwari, Jethari, Belia
District	:	Anuppur
State	:	Madhya Pradesh
Latitude	:	23°(3 - 4) ' (13.87 - 48.22) " N
Longitude	:	81°(46 - 48) ' (3.53 – 43.98) " E

7 Installed Capacity of the Generating Station

Unit 1	:	600 MW
Unit 2	:	600 MW

8 Commissioning Schedule of the Generating Station (new)

Unit 1	:	01-08-2013
Unit 2	:	01-12-2013

9 Details of the Generating Station

Name of the Power Plant	:	Anuppur Thermal Power Project
Promoter	:	MB Power (Madhya Pradesh) Limited
Fuel	:	Domestic Coal
Source of Fuel	:	Coal Linkage from South Eastern Coalfields Ltd. (SECL)
Generation Voltage	:	24 kV
Step-up Voltage	:	400 kV
Is it an identified project of CEA	:	No
Base Load / Peaking	:	Base load

10 Details of Nearest 400/220/132 kV sub-stations

Sub-Station-1	:	***Jabalpur, Madhya Pradesh***
Voltage levels available	:	400 kV
Owner	:	Power Grid Corporation of India Ltd. (POWERGRID)
Distance (Km)	:	240 km

11 Details of DD/e-transaction (Application Fee)

NOT APPLICABLE

Amount (in Rs.)	We had filed an application for LTOA in Jan 2009 along with the requite fee of Rs 1 Lacs (vide pay order no. *439495 dated 06.01.2009, ABN AMRO Bank, copy enclosed as Annexure A)* and subsequently deposited the consultancy charges of Rs 21,69,030/- *vide pay order no 820631 dated 09.05.2009, ABN AMRO Bank, copy enclosed as Annexure B)*
DD/Transaction No.	
Date	
Bank Name	
Branch name	

FORMAT-CON-2

Application for grant of Connectivity

1 Name the Applicant: Hindustan Electricity Generation Company Private Limited

2 Address for Correspondence: Olympia, Central Avenue, Hirnandani Business Park, Powai, Mumbai

3 Contact Details

Prime Contact Person: Mr.Darshan Hiranandani
Designation: Director
Phone No.(Landline): 022-5763600
Phone No.(Mobile):
Fax: 022-25705242
E-Mail: darshan@hiranandani.com
Alternate Contact Person: Mr. Zakir Khan
Designation: General Manager
Phone No.(Landline): 022-25763600/40076666
Phone No.(Mobile): +91-9920591285
Fax: 022-25705242
E-Mail: zkhan@hiranandani.com

4 Nature of the Applicant

Generator (Other than Captive) ✓
Captive Generator
Bulk Consumer

5 Details for Connectivity

5a Capacity (MW) for which connectivity is required: **2500 MW**

5b Date from which connectivity is required: **1st April 2012**

6 Location of the Generating Station / Bulk Cosumer

Nearest Village / Town: Navlakh-Umbre
District: Pune
State: Maharashtra
Latitude: 18° 48' 54.6'' N
Longitude: 73° 41' 13.3'' E

7 Installed Capacity of the Generating Station

Unit-1: 350 MW
Unit-2: 700 MW
Unit-3: 700 MW
Unit-4: 700 MW

8 Commissioning Schedule of the Generating Station (new)
Unit-1: 1 May 2012
Unit-2: 1 April 2013
Unit-3: 1 April 2014
Unit-4: 1 April 2014

9 Details of the Generating Station
Name of the Power Plant: Hindustan Electricity Generation Company Private Limited
Promoter: Mr. Darshan Hiranandani
Fuel: Natural Gas
Source of Fuel: RIL KG Basin Gas/ GAIL Dahej/Dhabol
Generation Voltage: 15.75 kV
Step-up Voltage: 400 kV
Is it an identified project of CEA: No
Base Load / Peaking: Base Load

10 Details of Nearest 400/220/132 kV substations
Sub-Station-1: Talegaon
Voltage levels available: 400 kV
Owner: PGCIL
Distance(km): 2 km
Sub-Station-2: Lonikhand
Voltage levels available: 400 kV
Owner: PGCIL
Distance(km): ~40 km
Sub-Station-3: Panvel
Voltage levels available: 400 kV
Owner: PGCIL
Distance (km): ~100 km

11 DD Details (Application Fee)

Amount (in Rs.): – 9,00,000.00/- (Rupees Nine Lac Only)
DD No: 232700
Date : 11/01/2010
Bank Name : Oriental Bank of Commerce
Branch Name :Galleria, Powai, Mumbai: 400 076

FORMAT-CON-2

Application for grant of Connectivity

1. **Name the Applicant :** **Dhariwal Infrastructure Pvt. Ltd**

2. **Address for Correspondence :** **CESC House**
Chowringhee Square
Kolkata – 700 001

3. **Contact Details**

Prime Contact Person	**Mr. Basab Ghose**
Designation	**Dy. General Manager**
Phone No.(Landline)	**033 2212 9872-74**
Phone No.(Mobile)	**09831054634**
Fax	**033 22360955**
E-Mail	**basab.ghose@rpg.in**
Alternate Contact Person	**Mr. Gautam Banerjee**
Designation	**Dy. General Manager**
Phone No.(Landline)	**033 220 40503**
Phone No.(Mobile)	**09831283408**
Fax	**---**
E-Mail	**gautam.banerjee@cesc.co.in**

4. **Nature of the Applicant**

Generator (other than captive)	IPP
Captive Generator	
Bulk Consumer	

5. **Details for Connectivity**

5a) Capacity(MW) for which connectivity is required	**600 MW**
5b) Date from which connectivity is required	**From August 2011 (for availability of start-up power early connectivity is requested)**

6. **Location of the Generating Station / Bulk Consumer**

Nearest Village / Town	Tadali
District	Chandrapur
State	Maharashtra
Latitude	20°0'04" – 20°0'07" N
Longitude	79°11'13" – 79°11'15" E

7. **Installed Capacity of the Generating Station**

Unit-1	300 MW
Unit-2	300 MW

8. **Commissioning Schedule of the Generating Station (new)**

Unit-1	September 2012
Unit-2	December 2012

9. Details of the Generating Station

Name of the Power Plant Promoter	Dhariwal Infrastructure Pvt. Ltd.
Source of Fuel F u	Coal from SECL allotted vide LOA dt.20.08.2008 & 06.06.2009
Generation Voltage	20 KV
Step-up Voltage	400 KV
Is it an identified project of CEA	No
Base Load / Peaking	Base Load

10. Details of Nearest 400/220/132 kV sub-stations

Sub-Station-1

Voltage levels available	***400 KV***
Owner	***Bhadrabati - PGCIL***
Distance(Km)	***12 Km***

Sub-Station-2

Voltage levels available	***400KV***
Owner	***WARDHA:POWERGRID***
Distance(Km)	***120Km***

Sub-Station-3

Voltage levels available	
Owner	
Distance(Km)	

11. Details of DD/e-transaction (Application Fee)

Amount (in Rs.)	5 lakh
DD/Transaction No.	011174
Date	28.01.2010
Bank Name	HDFC

ANNEXURE - V

SHRI BAJRANG POWER & ISPAT LTD.

GOEL

Office / Works : Vill. Borjhara, Urla-Guma Road, Raipur - 493 221 (C.G.) INDIA.
Ph. : (0771) 6536778, 3095217, 98931-00074, Fax : (91-771) 4288001, 4288150
E-mail : sbpil@goeltmt.com, sbpil.shribajrang@yahoo.com

SBPIL/2008-09/ 2761

Date:18.12.2008

To
The Director (Projects),
Power Grid Corporation of India Ltd.
Plot No. 2, Sector-29,
GURGAON – 122 002 (HARYANA)

Sub: Application for Long Term Open Access / Power Evacuation Study.

Dear Sir,

Please find enclosed the application alongwith the application fees for the Long-term Open Access / Power Evacuation Study and confirmation of acceptance of the terms and conditions in respect of the petition for open access for inter-state transmission system as per CERC Regulation 2004.

It is requested that the enclosed application may be processed at your end.

Thanking you,

Yours faithfully,

( )

Authorised Signatory of
Long –Term Open Access /
Power Evacuation Study Customer

पावरग्रिड/POWERGRID
केन्द्रीय कार्यालय/Corporate Centre
23 DEC 2008
प्राप्त किया/RECEIVED
गुड़गांव/GURGAON

Name : **S.K.Goyal**
Designation : **Director**
Seal :

SHRI BAJRANG POWER & ISPAT LTD. RAIPUR (C.G.)

Place : Raipur
Date : 18/12/08

APPLICATION FOR GRANT OF LONG TERM OPEN ACCESS

(To be submitted by Long Term Open Access Customer)

1	Name of the Long Term Open Access Customer	:	**SHRI BAJRANG POWER & ISPAT LTD.**
2	Address of Correspondence	:	C-15, LANE-I, SECTOR-I, NEW SHIMLA, DIST - SHIMLA, HIMACHAL PRADESH – 171 009
3	Contact Address		
3.1	Prime Contact Person		
i.	Name	:	SHRI S.K.GOYAL
ii.	Designation	:	DIRECTOR
iii.	Phone No.	:	+91 98264 22320
iv	FAX	:	0771 2323602
v	E-mail	:	skgoel@goeltmt.com, sbpil@goeltmt.com,
3.2	Alternate Contact Person		
i.	Name	:	Er. S.B. LALIT
ii.	Designation	:	G.M. (PROJECTS)
iii.	Phone No.	:	+91 94182 75471, 0177 2670023
iv.	FAX	:	0177 2670022
v.	E-mail	:	sbpil_rupin@yahoo.com,
4	Details of power transfer requirement		
i	Quantum of power to be transmitted (MW)	:	45 MW
ii.	Peak load to be transferred.	:	50 MW (45 MW + 10% OVERLOAD)
iii.	Average load to be transferred	:	45 MW
iv.	Name(s) of the injecting utility		
(a)	Point(s) of injection of power	:	OUR SUBSTATION PROPOSED AT GOSANGU IN DISTT. SHIMLA FOR **RUPIN HEP**
(b)	Its Quantum	:	45 MW
(c)	Voltage level of the EHV substation (Nearest EHV Substations and Ownership of EHV substations)	:	132 KV
(d)	Name(s) of concerned SLDC	:	HIMACHAL PRADESH STATE ELECTRICITY BOARD (HPSEB)
5	Name(s) of drawee utility		
(a)	Point(s) of drawl of power	:	MORI IN UTTARAKHAND/ANY OTHER SUITABLE POWER STATION IN HIMACHAL PRADESH (H.P.)
(b)	Its quantum	:	45 MW
(c)	Voltage level of the EHV substation (Nearest EHV Substations and Ownership of EHV substations)	:	132 KV
(d)	Name(s) of concerned SLDC	:	HIMACHAL PRADESH STATE ELECTRICITY BOARD (HPSEB)

Note: In case of mismatch between quantum of power injected and drawl then details of balance power to other beneficiaries should

		be furnished.		
	vi.	Electrical connectivity diagram of the EHV substation where the power is to be injected or drawl if it is not a POWERGRID substation.		
5		Expected date of commencement of transmission Open Access	:	JUNE 2014
6		Duration of availing long term Open Access	:	40 YEARS
7		In case of surplus power		
	i.	Daily Period of transaction	:	
	ii.	Details of Allocation of power from each beneficiary/generator	:	NOT APPLICABLE
	iii.	MOU/Agreement for surplus power availability.	:	
8		Incase of Generating Station		
	i.	Name of the promoter	:	SHRI BAJRANG POWER & ISPAT LTD.
	ii.	Generation Capacity	:	45 MW (PROPOSED)
	iii.	Location of the Generation plant	:	VILL- GOSANGU, DIST- SHIMLA (H.P.), RUPIN HEP
	iv.	No. of Units & Capacity of each unit	:	3 UNITS OF 15 MW EACH
	v.	Type of fuel	:	HYDEL POWER PLANT
	vi.	Base load station or peaking load station	:	PEAKING LOAD STATION
	vii.	If peaking load, then what is the estimated hours of running	:	4 HOURS A DAY
	viii	If it is a hydro plant, then whether it is – Run of the river /Reservoir/ Multipurpose / Pump storage.	:	YES, RUN OF THE RIVER
	ix.	MU generation in an year in case of Hydro plant	:	186 MU (90% DEPENDABLE YEAR) TO 256 MU (AVERAGE YEAR)
	x.	Specify the step-up generation Voltage – 400kV or 220kV or any other voltage	:	132 KV
	xi.	Whether it is a identified project of CEA	:	YES RUPIN HEP 39 MW IN DIST SHIMLA (H.P.) CAPACITY BEING AUGMENTED TO 45 MW
	xii.	Is it a captive Power Plant (Yes/No) If Yes, details of utilization	:	NO
	xiii.	Status of the Project: Existing/ Extension of existing Project/ New project	:	NEW PROJECT

xiv	Unit wise capacity and commissioning schedule		Capacity (MW)	Commissioning Schedule
	Unit – I	:	15	JUNE 2014
	Unit – II	:	15	JUNE 2014
	Unit – III	:	15	JUNE 2014
	Unit – IV	:		
xv.	Name(s) of the beneficiaries and their allocation of power	:	SHALL BE DECIDED AT THAT TIME	
9.	Status of various clearances for the generation project.			
i.	Land acquisition	:	UNDER PROCESS	
ii.	Fuel agreement	:		
iii.	Environment and forest clearance	:		
iv.	TEC clearance, wherever required	:		
v.	Power purchase agreement with beneficiaries	:		
10.	Name of Trader, if any	:	NOT APPLICABLE	
11.	Details of Bank Draft enclosed:	:	Draft No. 161459 on Dated 22/11/2008 For Rs. 1,00,000/- (Bank of Baroda)	

It is hereby certified that the applicant unequivocally confirms to the terms and conditions and has fully understood the guidelines issued by POWERGRID for long term open access. A confirmation to this effect is enclosed herewith at Annexure-I for ready reference.

Authorized Signatory

Of Long Term Open Access / Power Evacuation Study Customer

Name: **S. K. Goyal**

Designation: Director

Seal: BAJRANG POWER & ISPAT LTD. RAIPUR (C.G.)

Place:

Date: 18/11/08

Annexure-I

APPLICATION FOR GRANT OF LONG TERM OPEN ACCESS

Terms and Conditions for Long term Open Access

We hereby confirm that we shall abide by the following terms and conditions of open access for inter-state transmission.

1. We shall abide by the CERC's order in Petition no 48/2003 and CERC's regulation no. L-7/25(4)-2003 dated 30.1.04 and effective from 06-03-2004.

2. We shall submit with the application for long term open access, letter of comfort/MOU from beneficiary(ies), clearly incorporating the following aspects
   i) the details of allocation of power to each beneficiary(ies)
   ii) technical details as indicated in the application like point of injection/drawl, voltage level
   iii) Date of commencement and period for which access has been applied for.

3. POWERGRID shall carry out system studies to ascertain whether the long term open access can be permitted without any additional system strengthening. These studies would be conducted for the time frame for which open access has been desired taking into consideration the available information about load generation scenario. The applicant shall be informed about the same within 30 days of receipt of completed application in all respects.

4. If such a long term open access can be permitted without system strengthening, in consultation with concerned STUs (in case their system is being utilized), the same shall be communicated after which the long term open access customer, as per Regulation 11 of the CERC (Open Access in inter-State transmission) Regulation 2004 shall execute applicable Bulk Power Transmission Agreement (BPTA) for sharing of applicable transmission charges of CTU and concerned STU/SEB/other transmission licensees including inter-regional charges (if any). In the event, the open access customer fails to give its confirmation of execution of the BPTA within 30 days from date of intimation of open access, the application for the long term open access shall be treated cancelled. The long term open access will come into force after signing of BPTA with the concerned parties, based on which CTU will give its approval.

5. In case open access can not be provided without additional system strengthening, after receipt of request from the applicant, studies shall be carried out by POWERGRID for identification of additional transmission elements on payment basis. Upon receipt of terms & conditions including cost for carrying out system studies from POWERGRID, the applicant for availing long term open access shall deposit the total amount in advance within thirty days from the date of intimation by POWERGRID regarding the requirement of system strengthening, after deducting Rs 1,00,000 (Rupees One Lakh Only) submitted along with the

application. It shall also furnish the requisite data/information for the system studies. However, POWERGRID shall intimate the additional transmission elements within 90 days from the receipt of total amount or date of receipt of requisite data/information for system studies, whichever is later.

6. As per the terms of aforesaid CERC regulations, POWERGRID shall carry out the system studies to identify the additional transmission system required for long term open access and shall not be bound to construct the required augmentation/strengthening of transmission that may be required for the said identified additional transmission capacity.

7. POWERGRID shall endeavor to evolve most optimal transmission system keeping in view the existing and envisaged transmission system in the relevant time frame based upon the available information of the power system. As the power system is dynamic, the load - generation scenario of the power system may change from time to time. The long term open access customer shall have to, within 30 days of communication of study results, give confirmation for evolved transmission system. Further, within 90 days from the confirmation of the evolved transmission system, the applicant shall make arrangements for implementation of the same including signing of BTPA for paying transmission charges of CTU/STU/SEB/other transmission license for dedicated transmission system and also for sharing of the applicable transmission charges of the concerned region(s) including applicable inter-regional transmission charges, as per the CERC notifications. The applicant shall submit a copy of such agreement(s) to POWERGRID within 15 days from date of signing.

While communicating the confirmation of evolved transmission system, the applicant may request POWERGRID to implement the same for which POWERGRID shall convey their consent and their terms & conditions within 60 days from the date of receipt of such request.

Further, it has also been understood by us that the system studies may required to be revalidated before actual implementation of the system.

8. In case, we fail to give such confirmation or make necessary arrangements for implementation of identified transmission elements including signing of Bulk Power Transmission Agreement within the stipulated time, the studies shall be treated as null & void and fresh application shall required to be made for the system studies which inter-alia would take into considerations development that has take place in the intervening period.

9. We confirm that, the long term open access shall be effective from the date from which the open access has been permitted or the date on which the system strengthening identified through studies is in place, which ever is later, provided Bulk Power Transmission Agreement has been executed with CTU/ STU/ SEB/ other transmission licensees.

10. We shall comply with the provisions of Indian Electricity Grid Code in force from time to time.

11. We undertake to provide reliable and efficient speech and data communication system to facilitate necessary communication & data exchange, and supervision/control of the grid by RLDC following the technical specification and implementation protocol (as per attachment given on the POWERGRID web-site) requirement pertaining to the specific region(s) where access is being sought.

12. We shall indemnify POWERGRID for any loss or damage arising as a consequence out of the study conducted by them.

13. We shall not transfer rights & obligation specified in the BPTA without the prior approval by CERC and shall be subject to payment of compensation, as determined by the commission.

14. We shall share the RLDC fees and charges and any other charges as per notification of CERC.

15. We agree that POWERGRID reserves their right to amend the above terms and conditions within the Regulatory framework.

( )

Authorised Signatory of Long-Term Open Access Customer

Name : S. K. Goyal

Designation : Director

Seal :

Place : Raipur

Date : 18/12/08

SHRI BAJRANG POWER & ISPAT LTD. RAIPUR (C.G.)

GOEL

SHRI BAJRANG
POWER & ISPAT LTD.

Office / Works : Vill. Borjhara, Urla Indl. Area, Raipur (C.G.) Ph. : (0771) 4288019 / 29 / 39
Fax : (91-771) 2323601 / 602, 4288123, E-mail : sbpil@goeltmt.com, sbpilinfo@goeltmt.com

SBPIL/P-30/2008-09/ 5410 Date.21.03.2009

To
The General Manager (Engg.),
Power Grid Corporation of India Ltd.
Plot No. 2, Sector-29,
GURGAON – 122 002 (HARYANA)

Sh. Pankaj Kumar
GM (Engg. SEF)

Kind Attn. : Mr. Pankaj Kumar

Sub : Our Application for Long Term Open Access / Power Evacuation from Rupin HEP (45MW) in HP.

Ref : (1) Our letter No.SBPIL/2008-09/2761 dated.18.12.2008
(2) Your letter No. C/ENG/SEF/N/LTOA/RUPIN HEP dated.18.02.09

Dear Sir,

With reference to your letter dated.18.02.2009 as required we are furnishing below the information about beneficiaries or target beneficiaries and their target allocation :

Maharashtra State in Western Grid	-	22.5 MW
Punjab/Rajasthan State in Northern Grid	-	22.5 MW
	Total -	**45.0 MW**

We hope that you will find the above information in order for processing our application for Long Term Open Access/Power Evacuation.

Thanking you,

Yours faithfully,
For ***Shri Bajrang Power & Ispat Ltd.***

(Pankaj Singhal)
Authorised Signatory

26/3/2009

File// Doc 2008-09/Pankaj ji/ power grid pankaj