भारत सरकार / Government of India
विद्युत मंत्रालय / Ministry of Power
केन्द्रीय विद्युत प्राधिकरण / Central Electricity Authority
प्रणाली योजना एवं परियोजना मूल्यांकन प्रभाग
System Planning & Project Appraisal Division
सेवा भवन, आर. के. पुरम, नई दिल्ली-110066
Sewa Bhawan, R. K. Puram, New Delhi-110066 [ISO: 9001:2008]
वेबसाइट / Website: www.cea.nic.in

No. 26/10/2011-SP&PA/ **Date: 5th Oct., 2011**

To

1 The Member (PS),
Central Electricity Authority,
Sewa Bhawan, R. K. Puram,
New Delhi-110066

2 The Member Secretary,
Western Regional Power Committee,
MIDC Area, Marol, Andheri East, Mumbai
Fax 022 28370193

3 The Director (Projects),
Power Grid Corp. of India Ltd., "Saudamini",
Plot No. 2, Sector-29, Gurgaon-122001
Fax 0124-2571760/2571932

4 Chairman and Managing Director,
MPPTCL, Shakti Bhawan,
Rampur, Jabalpur-482008
Fax 0761 2664141

5 The Managing Director,
CSPTCL, Dangania,
Raipur (CG)-492013
Fax 0771 2574246/ 4066566

6 The Managing Director,
GETCO, Sardar Patel Vidyut Bhawan,
Race Course, Baroda-390007
Fax 0265-2338164

7 Director (Operation),
MAHATRANSCO, 'Prakashgad', Plot No.G-9,
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Fax 022-26390383/26595258

8 Chief Engineer (Trans),
Nuclear Power Corp. of India Ltd.,
9S30, VS Bhavan, Anushakti Nagar, Mumbai-400094
Fax 022-25993570

9 The Executive Director (Engg.),
NTPC Ltd., Engg. Office Complex,
A-8, Sector-24, NOIDA 201301
Fax 0120-2410201/2410211

10 The Chief Engineer,
Electricity Department,
The Government of Goa, Panaji
Fax 0832 2222354

11 Executive Engineer (Projects)
UT of Dadra & Nagar Haveli,
Department of Electricity , Silvassa
Ph. 0260-2642338/2230771

12 Executive Engineer
Administration of Daman & Diu (U.T.)
Department of Electricity
Moti Daman-396220
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13 GM, WRLDC
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14 CEO,POSOCO
B-9, Qutab Institutinal Area, Katwaria Sarai
New Delhi-110016
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Sub: 33rd meeting of the Standing Committee on Power System Planning of Western Region

Sir,

In continuation to our letter of even number dated 4th October 2011, it is to intimate that the agenda notes for the 33rd 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-Wing specific documents-Power Systems-Standing Committee on Power System Planning-Western Region).

Yours faithfully,

Ravinder Gupta

(Ravinder Gupta)
Director, SP&PA

Agenda Note for 33rd Meeting of Standing Committee on Power System Planning in Western Region

1.0 Confirmation of the minutes of 32nd meeting of the Standing Committee on Power System Planning in Western Region held on 13th May 2010 at Gurgaon.

1.1 The minutes of the 32nd SCM were issued vide CEA letter No.26/10/2011-SP&PA/209-222 dated 9th June 2011. PGCIL vide their letter no. C/SEF/W/06/SCM dated 23rd September 2011 has requested to add the following two no. of LTA applications as serial no. 6 and 7 in the list of Modifications in LTA quantum/commencement of LTA under Summary OA, para H on page no.33 of the minutes of the 32nd SCM:

S.No.	LTA Applicant	LTOA / LTA granted for	Modifications agreed in the LTOA / LTA
6.	TRN Energy(2X300 MW)	• Transfer of 600 MW from their generating station (600 MW) in Chattishgarh from Jul'12.	• At the time of signing of BPTA the applicant has requested for change in LTA quantum and commencement date. **Modified LTA**: • Transfer of 393 MW (**WR-243 MW, NR-150 MW**) from their generating station (600 MW) in Chattishgarh from September 2013 onwards.
7.	M/s CSPTCL(Chattisgatrh State Power Trading Co.Ltd)for their share from M/s TRN	---	**Modified LTA**: • Transfer of **207 MW (WR-123 MW, NR-84 MW)** from M/s TRN Energy (600 MW) in Chattishgarh from **September 2013** onwards**.**

1.2 With the above modification the minutes of 32nd meeting of the Standing Committee on Power System Planning in Western Region may be confirmed.

2.0 Review of Progress on Earlier Agreed Transmission Schemes

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

3.0 Proposal of UT of Dadra and Nagar Haveli for establishment of 220/66 kV 2X160 MVA Vagchipa.

3.1 UT of DNH vide their letter no. ELE/NZ-II/220/2011/1342 dated 23/08/2011 has given the proposal of establishment of 220/66 kV, 2X160 MVA Vagchipa substation by LILO of Vapi-Khadoli 220 kV D/C line. Vapi- Khadoli 220 kV D/C line being a inter state transmission system, DNH has requested the concurrence of the WR constituents for LILO of Vapi-Khadoli 220 kV D/C line at the proposed Vagchipa 220/66 kV substation.

3.2 UT of DNH is requested to furnish the details of the studies carried out for establishment of the Vagchipa 220/66 kV substation.

4.0 Proposal for establishment of GIS substations at Betul and Vataman.

4.1 In the 32nd meeting of Standing Committee of on Power System Planning in WR, establishment of 2X315 MVA, 400/220kV substation at Betul was agreed as a part of transmission system of Mauda Stage-II (1320 MW). It was also agreed that in case of difficulty in getting land for substation at Betul, POWERGRID may go ahead with implementation of GIS at Betul.

4.2 Similarly establishment of 2 X 500MVA, 400/220kV substation at Vataman was agreed as a part of transmission system associated with 4000(6X660) MW Chhattisgarh UMPP.

4.3 POWERGRID vide their letter no. C/SEF/W/06/SCM dated 23rd September 2011 had intimated that while exploring the land for establishment of Vataman and Betul 400 kV substation, they found that only 12 – 15 acre of Govt. land was available as against the requirement of about 30- 40 acres for setting 400 kV AIS. Further, in view of requirement of large piece of private land , its acquisition problem and high cost of land, POWERGRID have proposed that 400/220kV substation at Betul as well as Vataman may be developed as GIS as a part of transmission scheme for Mauda Stage-II and Chhattisgarh UMPP respectively.

Members may deliberate.

5.0 Interconnection of Vindhyachal Stage –IV (2X500 MW) generation project with existing stage-III switchyard.

5.1 In the 32nd meeting of Standing Committee of WR, the following interim arrangement for Vindhyachal-IV (2X500MW) generation project due to non availability of associated transmission system in the matching time frame of Vindhyachal-IV generation project units was agreed.

i) Completion of Vindhyachal IV- Sasan 400kV D/c (bypassing at Vindhyachal Pooling Station) and bunching of both ckts. to make single ckt.

ii) Completion of Sasan - Satna 765kV S/c (to be operated at 400kV level) with termination at 765kV yard as planned by interconnecting 400kV and 765kV yards as well as interconnect Vindhyachal IV- Sasan 400kV bunched line

iii) Completion of Satna – Bina 765kV S/c (to be operated at 400kV level) with termination at 765kV yard as planned by interconnecting 400kV and 765kV yards

iv) Installation of 765/400kV transformers each at Bina and Gwalior S/s

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

In the meeting NTPC has requested interconnection of the Vindhyachal-IV STPP 400 kV bus with the existing Vindhyachal-III STPP 400 kV bus to enable power evacuation during outage of the interim arrangement. It was decided that the NTPC proposal shall be further studied.

5.2 PGCIL have carried out the studies and they have proposed that the above interconnection is required as a part of interim arrangement to enable power evacuation with reliability. The load flow study results are enclosed at **Exhibit-I**. The studies suggests that the power flow on the Vindhyachal – Satna 400 kV lines and Vindhyachal – Jabalpur 400 kV lines are within limits. However in case of non availability of interim arrangement and outage of one Vindhyachal – Satna 400 kV line, higher loadings are observed on the other Vindhyachal – Satna 400 kV lines.

Members may deliberate.

6.0 Interim arrangement for charging of 765kV Bina - Indore(PG) S/c line at 400kV level along with 400kV Indore(PG) – Indore(MPPTCL) D/c line as part of Regional System strengthening in WR for Sasan UMPP

6.1 The following transmission system has been agreed as part of Regional System strengthening in WR for Sasan UMPP:

(i) Bina(PG)-Indore 765 kV S/c
(ii) New 765/400 kV, 2x1500 MVA S/s at Indore
(iii) Indore(PG)-Indore 400 kV D/c (quad)
(iv) Upgrading Bina and Gwalior S/s to 765 kV: 2x1000 MVA 765/400 kV at Bina and 2x1500 MVA 765/400 kV at Gwalior.

6.2 POWERGRID has informed that the Bina – Indore (PG) 765kV and Indore (PG) - Indore (MPPTCL) 400kV lines are likely to be ready for commissioning by Nov'11/Dec'11, whereas commissioning of 765kV Indore (PG) substation may take some more time. Till the availability of the 765kV Indore (PG) substation, PGCIL has proposed the following interim arrangement to facilitate power transfer to MPPTCL :

(i) Charging of 765kV Bina – Indore (PG) S/c line at 400kV level with direct termination at Indore (MPPTCL) bypassing Indore(PG) through the 400kV Indore (PG) – Indore (MPPTCL) D/c line to facilitate power transfer to MPPTCL.

(ii) Interconnection of the Bina - Indore(PG) 765 kV S/c line charged at 400kV level at Bina end by using 400 kV , 63 MVAR bus reactor bay and using the bus reactor as line reactor.

(iii) Provision of one 400kV, 80MVAR / 125MVAR line reactor (to be arranged suitably) at Indore (MPPTCL) end to facilitate smooth charging of the line.

6.3 Implementation of the above interim arrangement as well as termination of 765kV line at 400kV bus at Bina along with bypassing at Indore(PG), requires installation of 400kV CVTs for the reactor terminal at Bina S/s and other equipment including line reactor at Indore(MPPTCL) end. The transmission charges of above arrangement till commissioning of 765kV Indore(PG) s/s along with cost of additional equipments is to be shared by the regional constituents

Members may deliberate.

7.0 LILO of one ckt. of Khandwa – Rajgarh 400 kV D/C line at their proposed 400kV Chhegaon substation.

7.1 In the 32nd meeting of Standing Committee of Power System Planning in WR, the MPPTCL proposal for LILO of one ckt of Khandwa-Rajgarh 400kV D/c line at their proposed 400kV Chehgaon substation by MPPTCL for reliability purpose was in principle agreed by the WR constituents. It was also agreed that the proposal would be confirmed after joint study by CEA, PGCIL and MPPTCL.

7.2 PGCIL have carried out Load flow studies in the time frame of 2012-13 considering Malwa TPS (1200 MW) and its associated transmission system as under:

(i) Malwa TPS - Pithampur 400kV D/c line.
(ii) Malwa TPS - Julwania 400kV D/c one ckt via Chhegaon
(iii) Malwa TPS - Chhegaon 220 kV D/C line.
(iv) Pithampur400 – Pithampur 220 kV D/C interconnector.

(v) LILO of both ckt of Nimrani- Julwania 220 kV D/C line at Julwania 400 kV substation.
(vi) 1X315 MVA, 400/220 kV substation at Chhegaon, 2X315 MVA, 400/220 kV substation at Julwania and 2X315 MVA, 400/220 kV substation at Pithampur.

From the load flow results for above conditions, it is seen that the power flow on Khandwa – Rajgarh 400 kV D/C line is about 630 MW. With LILO of one ckt. of Khandwa – Rajgarh 400 kV D/C line at the proposed 400kV Chhegaon(MPPTCL) substation the loading on 400kV Khandwa-Chehgaon line, 400kV Chhegaon – Rajgarh line and Khandwa-Rajgarh line is about 70 MW, 360 MW and 320 respectively. The load flow result is enclosed at ***Exhibit-2***. The study shows normal loadings on the lines.

Member may deliberate.

8.0 CSPTCL proposal of LILO of 400kV S/c line between Raipur (PG) and Khedamera (Bhilai) S/c at proposed Raipur (Raita) 400kV substation.

8.1 In the 32nd meeting of Standing Committee of Power System Planning in WR, CSPTCL proposal of LILO of 400kV Raipur – Khedamera at their proposed Raipur (Raita) 400kV substation (being established as a part of Marwa TPS (1000MW) evacuation system) was discussed. Based on the studies carried out by POWERGRID it was noted that suitable transmission system strengthening beyond Raita was required to evacuate the power from Marwa TPS to their load centers with reliability. In the meeting CSPTCL intimated about the other interconnections planned with Marwa TPS and further it was decided that the proposal of CSPTCL needs to be studied afresh considering the additional transmission elements planned from Raita.

8.2 POWERGRID has carried out the studies considering the following transmission system planned with Marwa (2X500 MW) TPS in 2012-13 time frame:

(i) Marwa STPP- Raita (Raipur) 400kV D/c
(ii) Raita – Jagdalpur 400 kV D/c
(iii) Raita – Khedemara(Bhilai) 400 kV D/c
(iv) LILO of 400kV Korba(W)- Khedamara one ckt at Marwa
(v) Marwa – Baneri 220kV D/c line
(vi) 400/220kV, 1x315 MVA transformer at Marwa generation switchyard
(vii) Establishment of 400/220 kV, 2x315 MVA S/s at Raita, Jagdalpur

From the studies it is observed that the power flow on the Raipur – Bhilai 400 kV S/C line is around 660 MW and there is power flow of about 190 MW from Raita towards Bhilai. Results enclosed as ***Exhibit-III***.

With the LILO of 400kV Raipur(PG) - Khedamara(Bhilai) line at 400kV Raita substation, power flow on 400kV Raita–Raipur line is around 460 MW. In this case there is a power flow of about 230 MW from Bhilai towards Raita.

Members may deliberate.

9.0 Provision of 1x315 MVA ICT reliable auxiliary power supply at HVDC back-to-back station at Bhadrawati .

9.1 POWERGRID has informed that at present the auxiliary power supply to the HVDC back-to-back station at Bhadrawati is fed through 33 kV dedicated feeder of MSEDCL (one from MSEDCL 220 kV Warora Sub-station and the other from MSEDCL 220 kV MIDC Sub-station). However frequent tripping of Auxiliary Power Supply has been affecting smooth operation of HVDC Back-to-Back Station. Year-wise total auxiliary power failures are as tabulated below **:**

Year	2004	2005	2006	2007	2008	2009	2010	2011 (as on 20.04.11)
No.of failures	106	79	117	71	88	83	143	62

9.2 The issue of reliable auxiliary power supply was discussed in the 18th WRPC meeting held on 1st October 2011 wherein provision of 1x315 MVA ICT (along with 220kV line bays) at Bhadrawati was agreed. The tertiary of the 315 MVA ICT would be utilized for supply of reliable auxiliary power supply to HVDC back-to-back station at Bhadrawati and the two nos. of 220 kV line bays could be utilized by MSETCL for drawl of power at downstream network.

This is for kind information of the members.

10.0 Provision of Line Reactor at Solapur(PG) for 400kV Solapur(PG) - Karad S/c line.

10.1 2x315MVA, 400/220kV Solapur(PG) S/s has been established through LILO of Solapur(MSETCL)–Karad(MSETCL) 400kV S/c line as a part of WR System strengthening scheme-II. After establishment of LILO, the length of 400kV Karad(MSETCL) – Solapur(PG) & Solapur(PG) – Solapur(MSETCL) section has increased to about 300km and 178km respectively. In view of the increased length of 400kV Solapur(PG)-Karad Section, POWERGRID has proposed provision of 1x80MVAR switchable line reactor at Solapur(PG) end for Solapur(PG)-Karad 400kV line as a regional system strengthening scheme.

Members may deliberate.

11.0 Provision of additional spare converter transformers for HVDC back to back station at Chandrapur (Bhadrawati).

11.1 POWERGRID has informed that the HVDC Back-to-Back station (in operation from 01.10.97- Pole I and 01.03.98 –Pole II) at Chandrapur (2x500MW) was earlier planned for exchange of Power during contingencies. However, at times it has been consistently being operated at utilisation factor more than 93% during 2011 (except during June and July, 2011) and has exceeded 99% during Feb & March'2011. Further frequent change in Power Order depending upon Grid Condition/ System requirement, the Converter Transformers are subjected to frequent operation of on load tapchangers and transformers are subjected to enormous stress which ultimately has long term effect on its life. There are 12 nos. single phase Converter Transformers (6 nos. for each pole) against which there is provision for only one (1) Spare Converter Transformer unit at Chandrapur. These units are off-shore manufactured item. As such multiple unit failure at a station may lead to long outage of a pole leading to reduction of evacuation capacity by 500MW.

11.2 In view of such high capacity utilization of HVDC Back-to-Back station at Chandrapur POWERGRID has given the proposal of provision one spare Converter Transformer for each pole at each regional bus i.e., total three nos. of single phase Converter Transformers. The estimated cost of one single phase Converter Transformers is Rs.12 Crores.

Members may deliberate.

12.0 400 kV interconnection at Bhopal – Agenda proposed by MPPTCL

12.1 MPPTCL has informed that they have initiated the activities for establishment of 2nos. of 400 kV bays at Bhopal 400 kV substation of MPPTCL for interconnection with 765 kV Bhopal

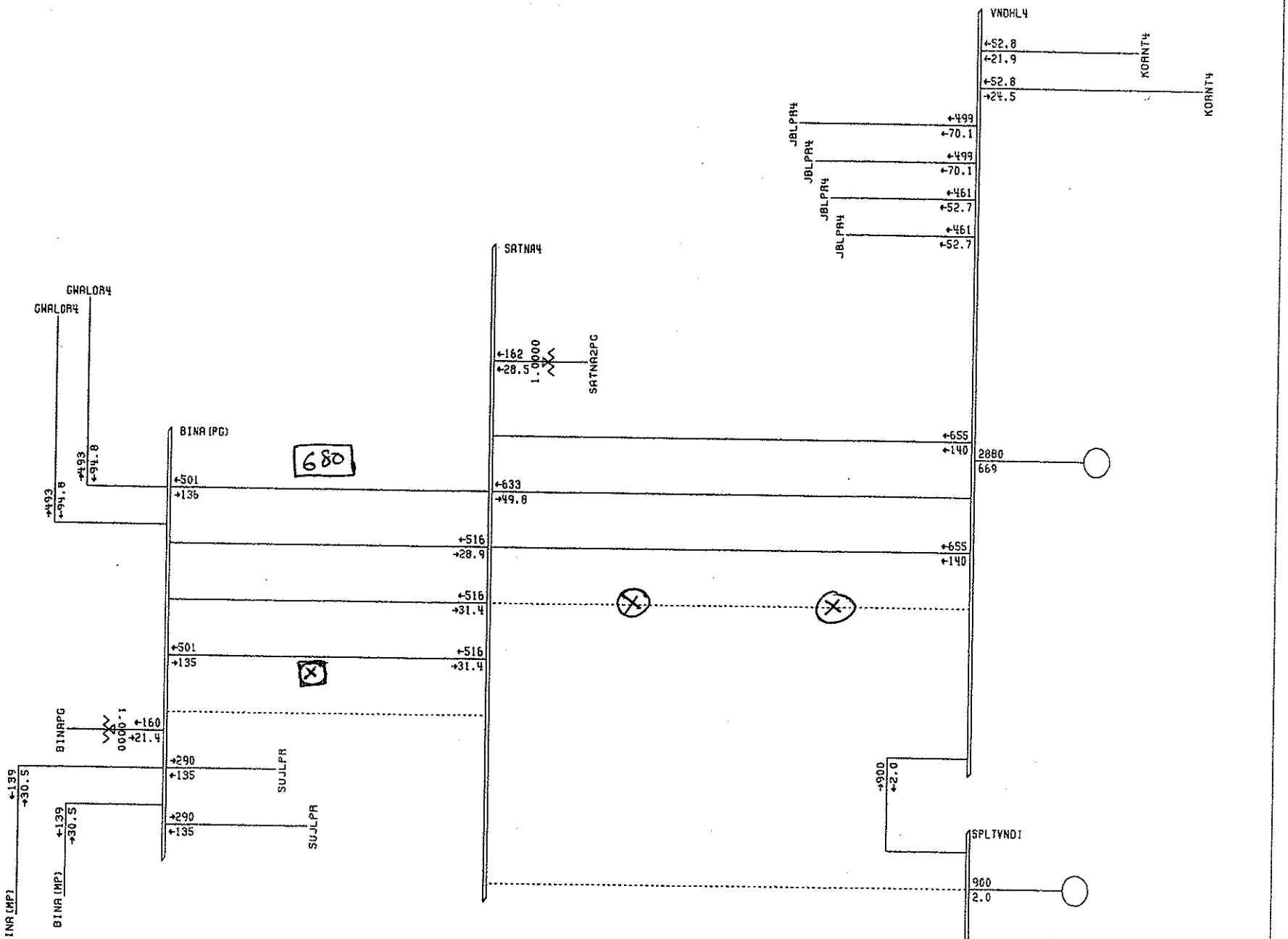
substation. They have requested to intimate the timeline for completion of 765 kV substation at Bhopal.

12.2 2X1500 MVA , 765/400 kV substation at Bhopal is a part of the System strengthening scheme for WR being implemented by M/s Sterlite Transmission Project Limited through tariff based competitive bidding route. The implementation period of the scheme is 36 months and is scheduled for completion by Jan 2014.

This is for the information of the members.

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

The Open Access meeting would be held after the Standing Committee meeting. The agenda received from PGCIL regarding Connectivity and Long Term Open Access (LTOA) applications in Western Region is enclosed at Annexure-1.



BC+ Outage of Vin-satna one ckt

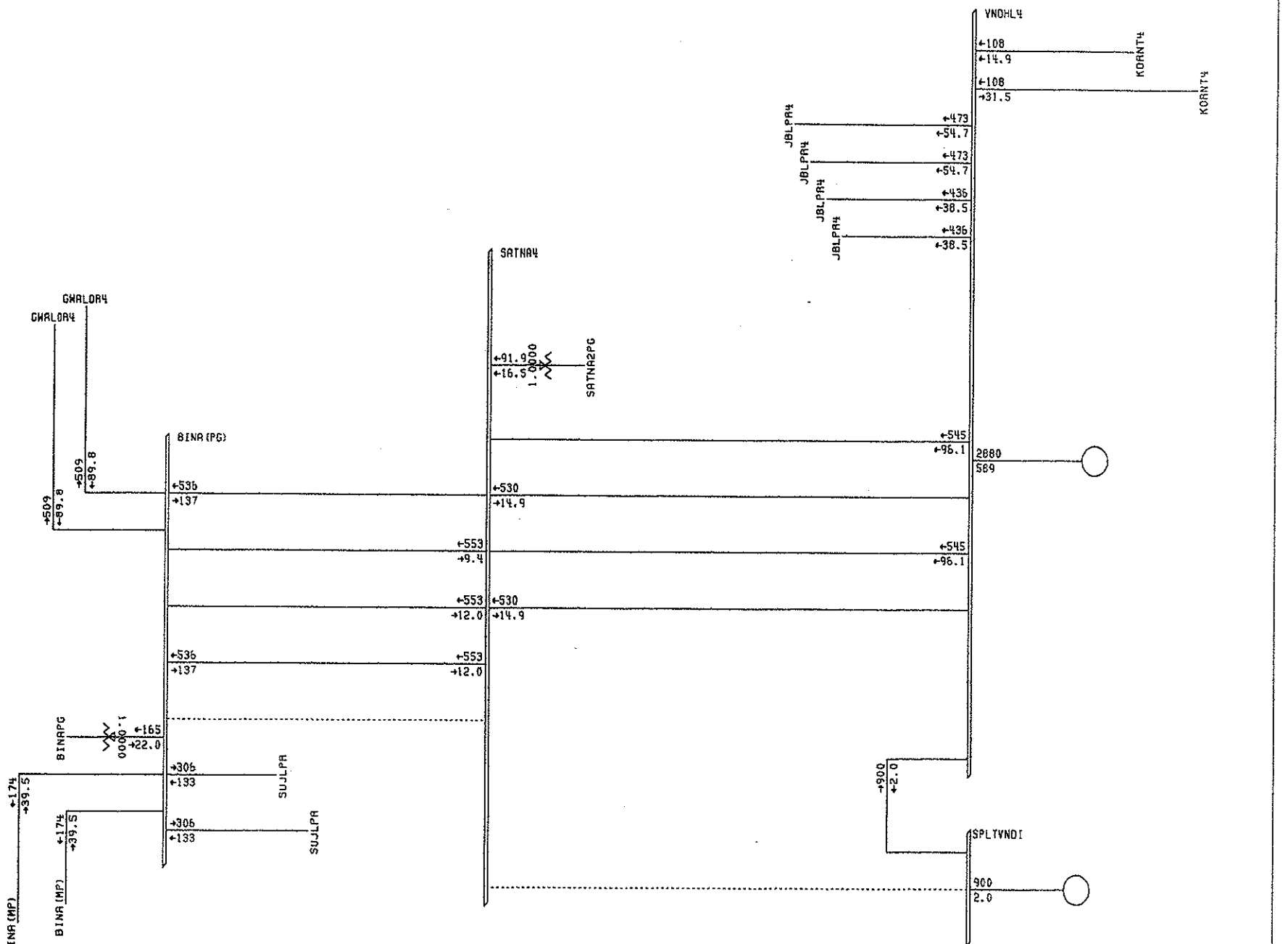
STUDIES FOR MUNDRA-WITH STRENGTHENING

POWER TECHNOLOGIES

WED OCT 05 2011 12:18

BUS - NONE
BRANCH - MW/MVAR

EXHIBIT - I



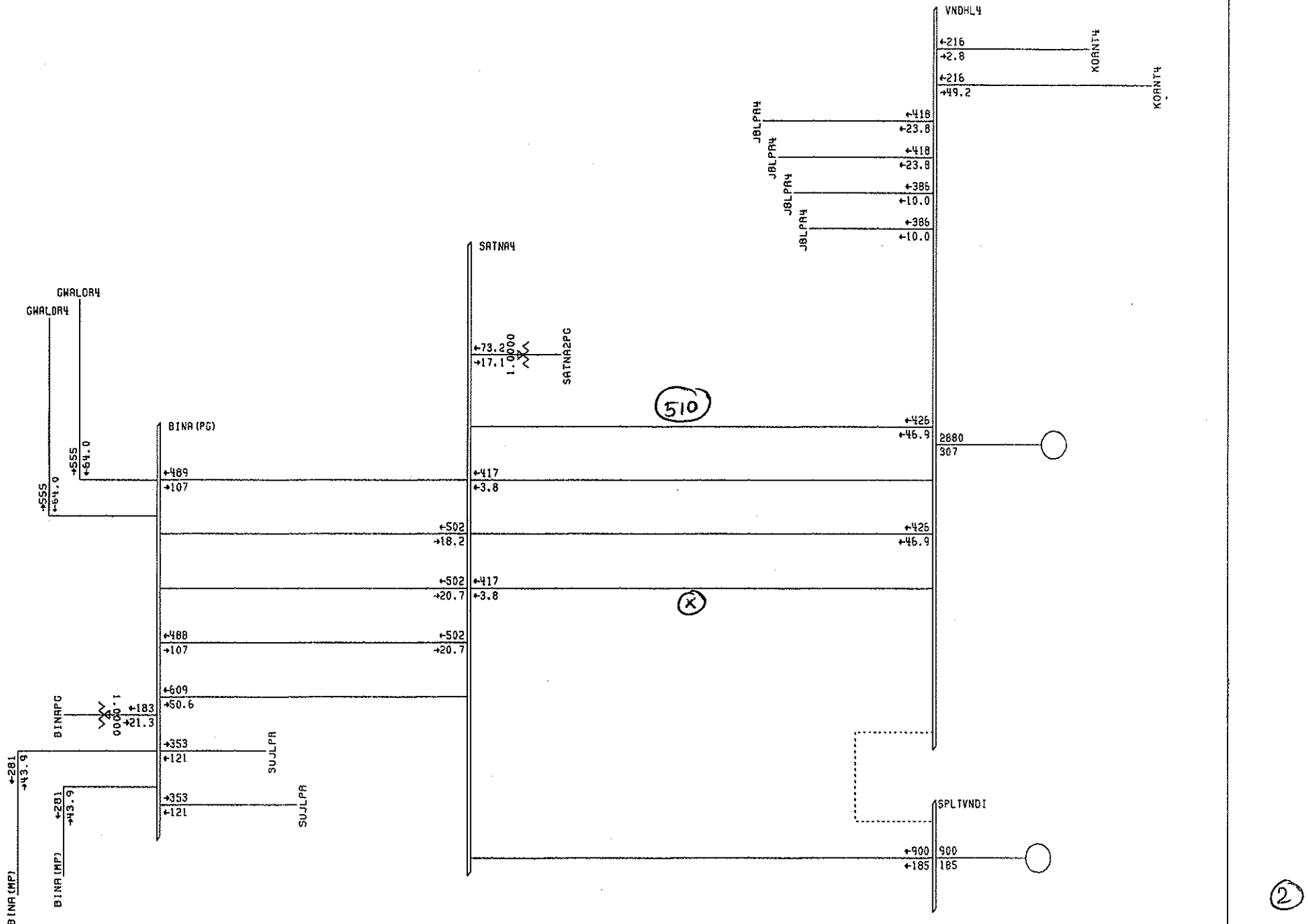
STUDIES FOR MUNDRA-WITH STRENGTHENING

WED OCT 05 2011 12:17

BUS - NONE
BRANCH - MW/MVAR

W/O interim system - = BC

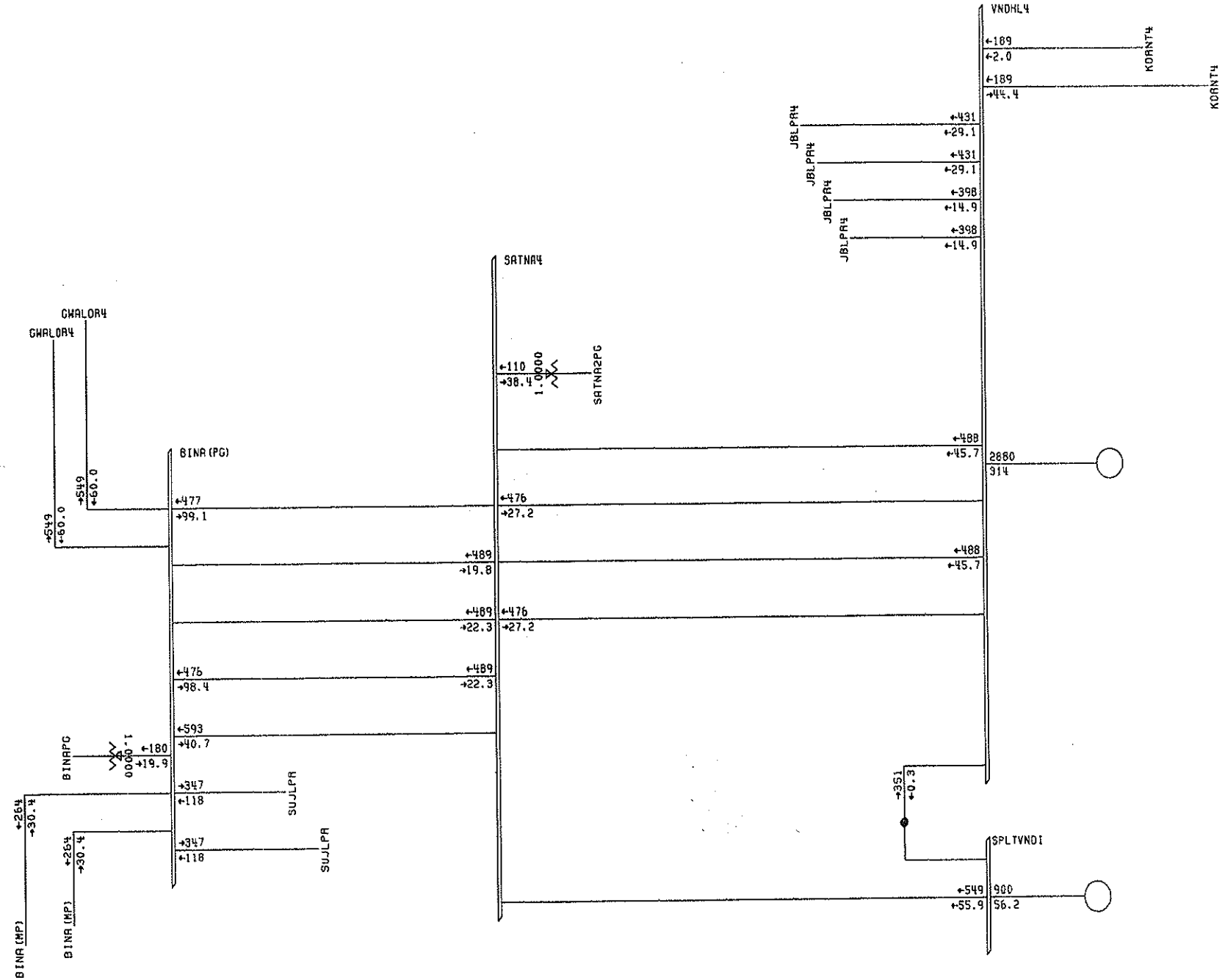
(1)



POWER TECHNOLOGIES, INC.	STUDIES FOR MUNDRA-WITH STRENGTHENING WED, OCT 05 2011 12:18		BUS - NONE BRANCH - MW/MVAR EQUIPMENT - MW/MVAR

Interim arrgmt - w/o Tie

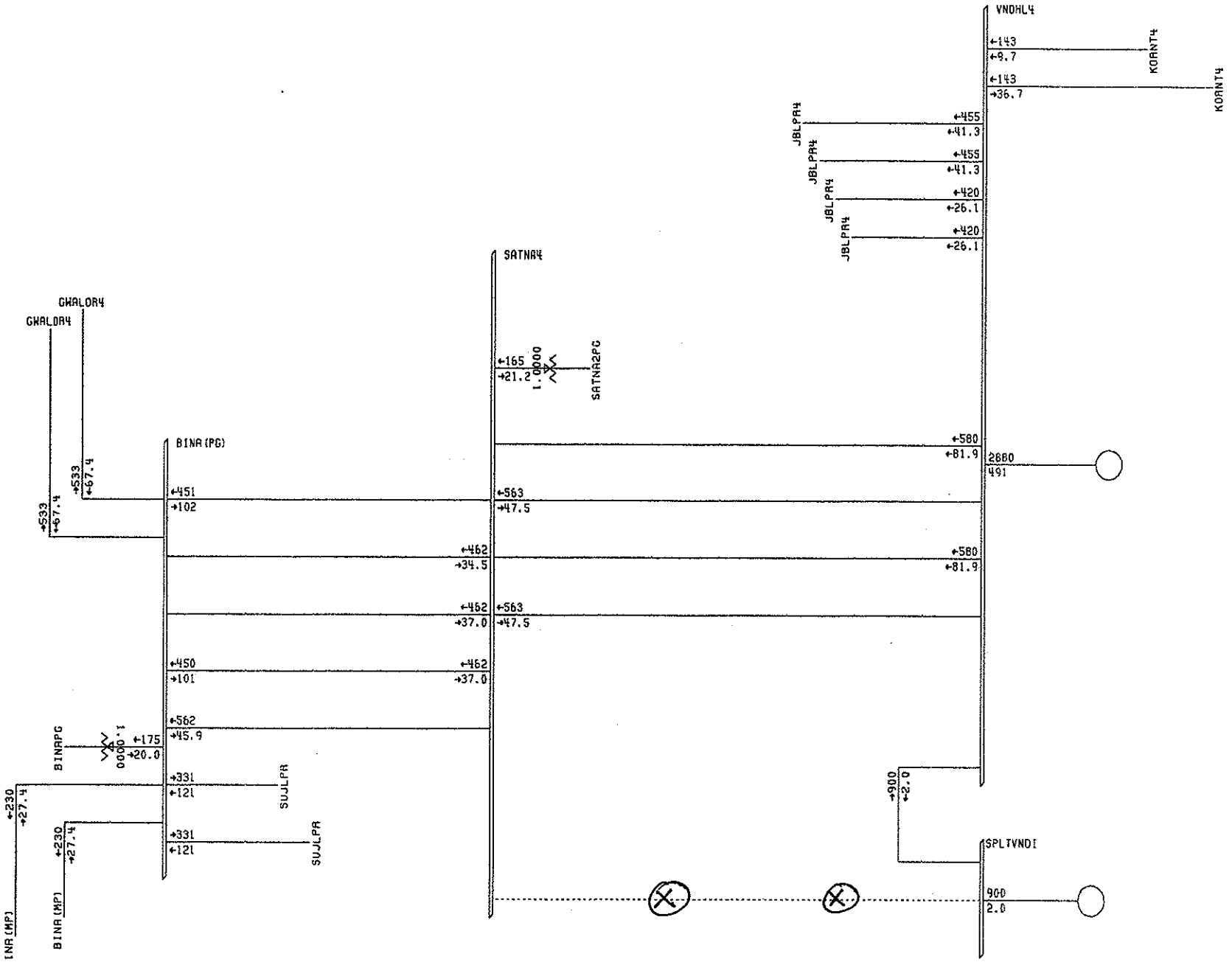
(2)



(3)

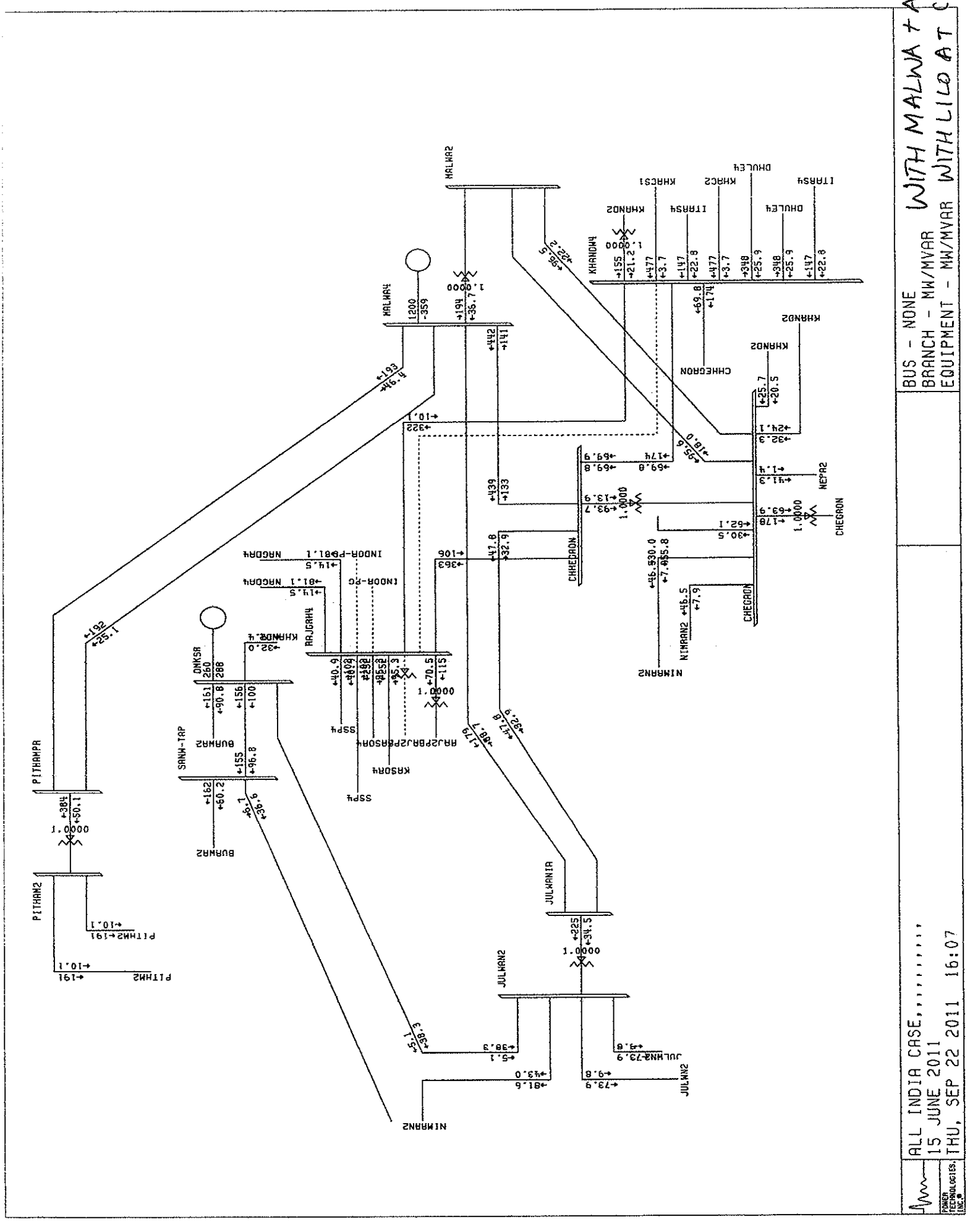
POWER TECHNOLOGIES, INC.®	STUDIES FOR MUNDRA-WITH STRENGTHENING WED, OCT 05 2011 12:18		BUS - NONE BRANCH - MW/MVAR EQUIPMENT - MW/MVAR

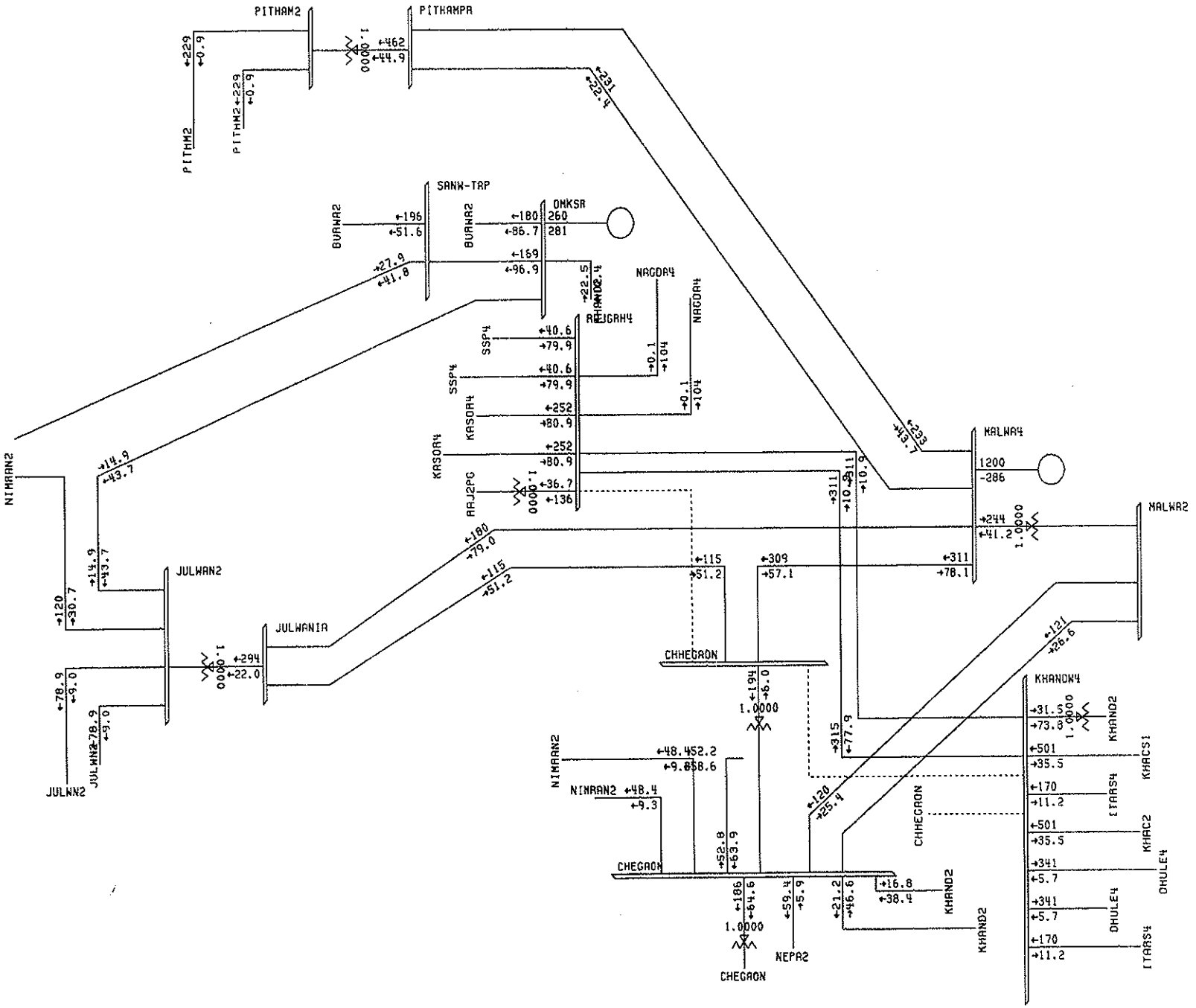
with Contingency assgnmt + Tie close.
(0)



POWER TECHNOLOGIES, INC.	STUDIES FOR MUNDRA-WITH STRENGTHENING		BUS - NONE
	WED, OCT 05 2011 12:18		BRANCH - MW/MVAR (3) + outage of Vin-Satna interconnector (4)
			EQUIPMENT - MW/MVAR

EXHIBIT - II


WITH MALWA + ATS
WITH LILO AT CHEGRON
BUS - NONE
BRANCH - MW/MVAR
EQUIPMENT - MW/MVAR
ALL INDIA CASE,,,,,,,,,,,,
15 JUNE 2011
THU, SEP 22 2011 16:07
POWER TECHNOLOGIES INC.
MALWA2
MALWA4
KHANDW4
KHANDW2
KHARC1
KHARC2
DHULE4
ITARSI4
CHHEGRON
NEPA2
CHEGRON
NIMRAN2
JULWANI2
JULWANI4
RAJGAH4
INDOR-PG
INDOR-PG81.1
NAGDA4
KHANDR.4
ONKSR
BURHR2
SANW-TAP
PITHAMPR
PITHAM2
PITHM2
SSP4
KASDA4
RAJGAH2
1.0000

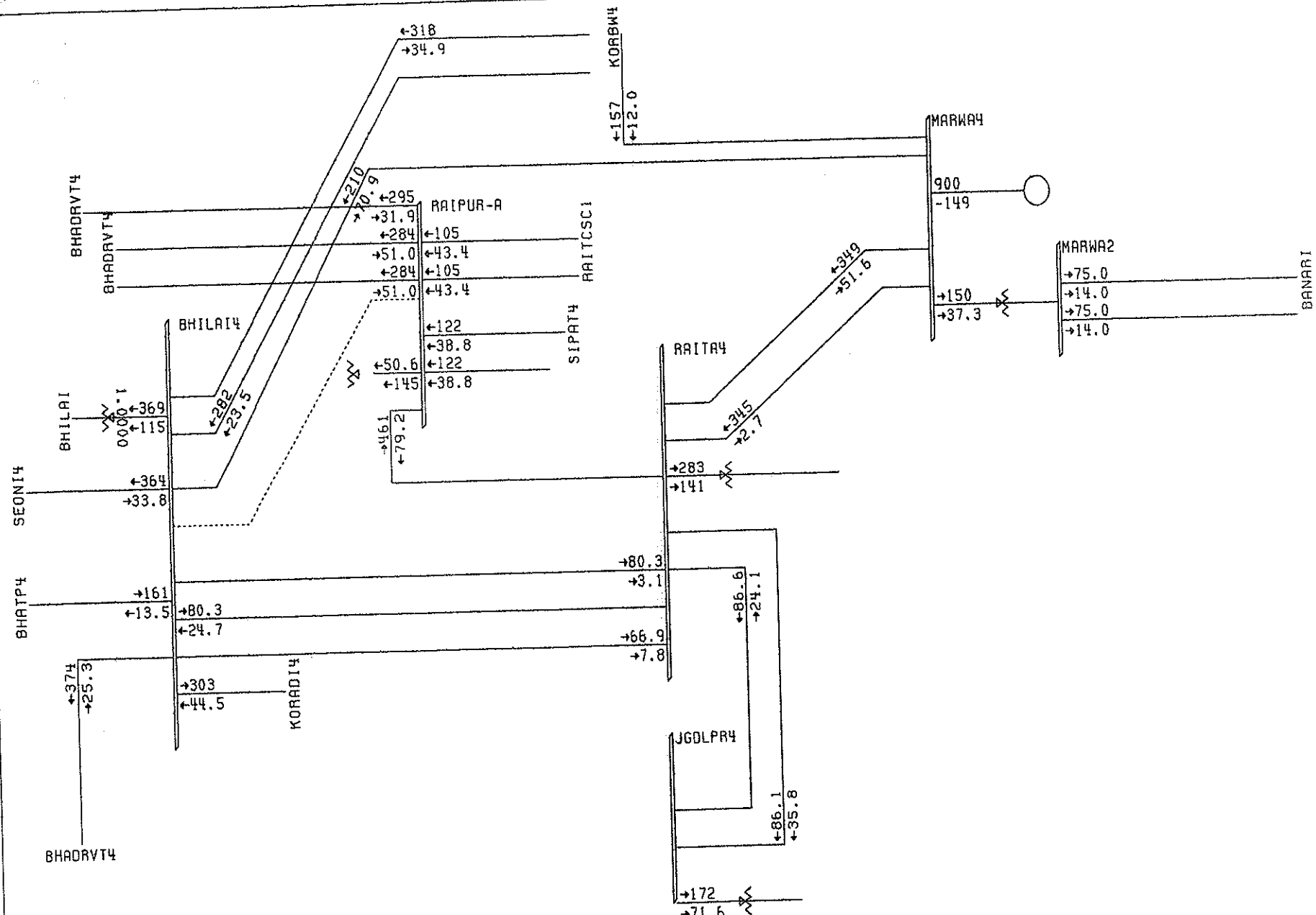


ALL INDIA CASE,,,,,,,,,
15 JUNE 2011
WED, OCT 05 2011 13:57

POWER TECHNOLOGIES, INC.

BUS - NONE
BRANCH - MW/MVAR
EQUIPMENT - MW/MVAR

with Malwa - W/O 400 at Chehgaon

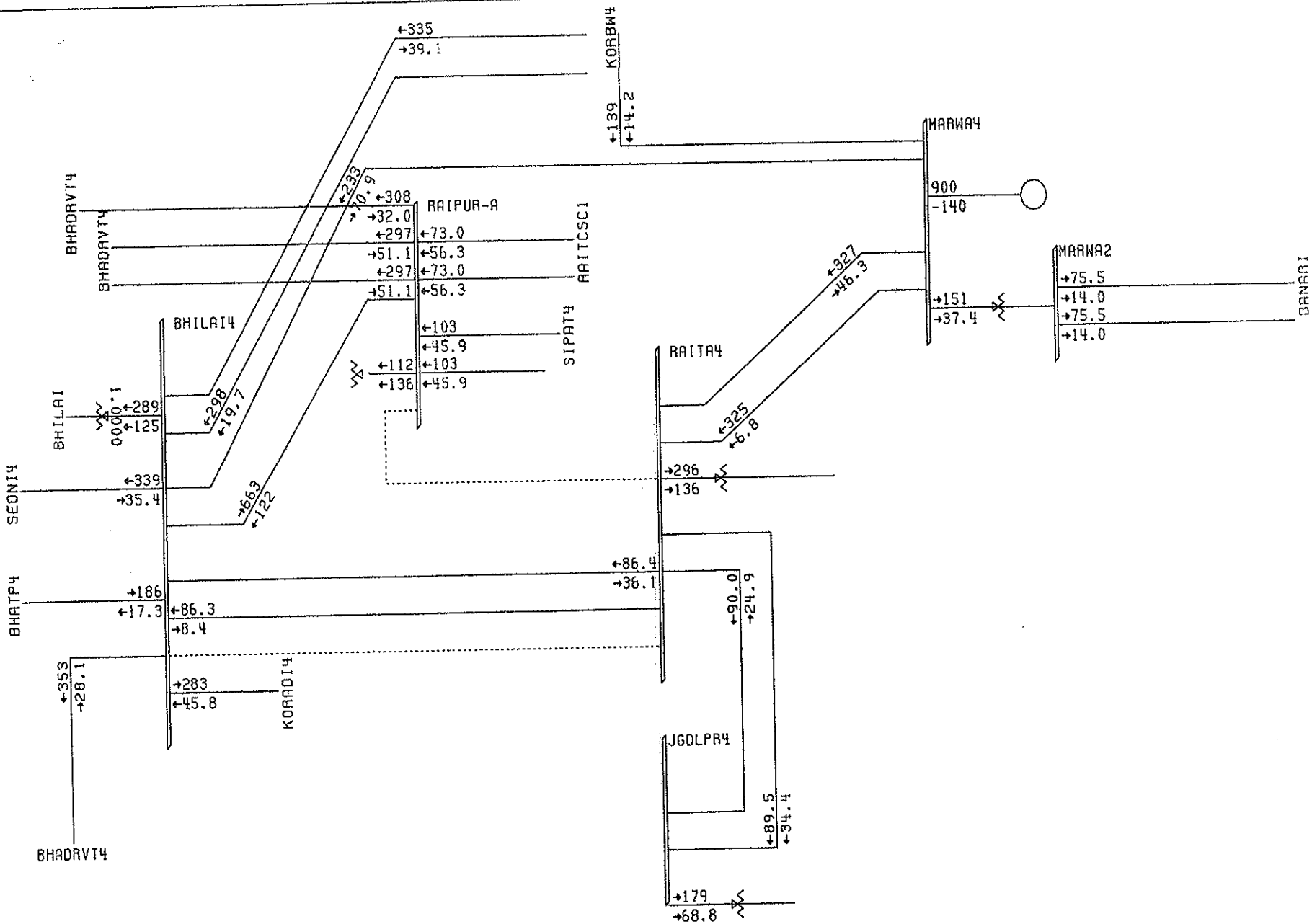


WITH LILO OF RAIPUR-BHILAI AT RAITA 400kV

ALL INDIA CASE,,,,,,,,,,
STUDY FOR MARWA 1200 MW CHHATTISGARH
THU. SEP 22 2011 15:40

BUS - NONE
BRANCH - MW/MVAR
EQUIPMENT - MW/MVAR

EXHIBIT - III



W/O LILO OF RAIPUR-BHILAI

ALL INDIA CASE,,,,,,,,,,
STUDY FOR MARWA 1000 MW CHHATTISGARH
THU, SEP 22 2011 15:40

POWER TECHNOLOGIES

BUS - NONE
BRANCH - MW/MVAR
EQUIPMENT - MW/MVAR