

**MINUTES OF THE 1ST MEETING OF WESTERN REGIONAL POWER
COMMITTEE HELD ON 31ST MAY 2006 AT PUNE**

INTRODUCTION:

The TCC and 1st WRPC meetings were held on 30th & 31st May 2006 respectively at Pune. The list of participants are at Annexure-1(A) and 1(B). Shri A.K.Palamwar, Director (Operations), MSEDCL welcomed the participants to the meeting. He thanked the Committee for giving opportunity to MSEDCL to host the First meeting of WRPC at the historic city of Pune and hoped that the delegates and participants of meeting were having a comfortable stay here.

Shri R.K.Verma, Chairman, WRPC and CMD, MPPTCL welcomed the participants and thanked MSETCL/MSEDCL authorities for hosting the first meeting of WRPC and making excellent arrangements for transport and stay.

He said that WR grid operated at much lower system frequency in months of February 2006 and April 2006, which called for special attention as the power availability within and outside the region got reduced considerably due to multiple generating unit outages. He stated that to accomplish load generation balance, additional load shedding had to be carried out. Unfortunately the feeders earmarked for AUFLS operation were not able to give expected load relief as some of these feeders were already taken out manually for system frequency improvement. He added that CERC in the recent directives ordered defaulting constituents to take immediate corrective measures to maintain system frequency within acceptable limits and ensure grid security. Consequently, WR constituents, in a meeting held on 9.5.2006 formulated a defense plan and agreed to implement it for bringing in the improvement. He hoped that power position would be better during the year 2006-07 due to new transmission and generation schemes coming up during this period. Till such time we shall have to adopt the agreed defense plan.

Thereafter he requested Shri P.Patel, Member Secretary, WRPC to take up the agenda items for discussion.

**ITEM No.1: CONFIRMATION OF THE MINUTES OF THE 128TH MEETING OF
WRE BOARD**

Member Secretary, WRPC said that the Minutes of the 128th meeting of WREB held on 2nd September 2005 at Raipur and Special Meeting of WR constituents held on 13th March 2006 at New Delhi were sent to the Members vide letter No.AS/128th WRE Board-MTG/WREB/2005-06/7627 dated 16th September 2005 and AS/Min/WRPC/2524 dated 22nd March 2006 respectively. No comments have been received from any constituent.

Minutes of the above meetings were, therefore, confirmed.

ITEM No.2: CONSTITUTION OF WRPC

2.1 Formation and membership of WRPC

Member Secretary, WRPC said that the issue regarding formation and membership of WRPC was discussed in the Special Meeting of WR constituents held at New Delhi on 13th March 2006. It was observed that as per the GOI Resolutions dated 25th May 2005 & 29th November 2005, the representatives of State holding companies (viz. GUVNL, MPSEB & MSEB) and UTs of DD & DNH were not included as members of the WRPC. It was resolved by the constituents that the State holding companies (viz. GUVNL, MPSEB & MSEB) and UTs of DD & DNH should also be the members of WRPC. It was further resolved that till such time they are given representation in WRPC by GoI, they shall be invited as Special Invitees to WRPC meetings and Chairman, WRPC should take up the matter with Ministry of Power for inclusion of the above Members in WRPC. He further stated that the matter was accordingly taken up by Chairman, WRPC / CMD. MPPTCL, vide letter dated 28.03.2006 with Secretary (P), Govt. of India to consider the same and issue suitable orders to include above entities as Members of WRPC. He added that the MOP vide letter dated 9.03.2006, have intimated that DD and DNH will be the members of WRPC. So far as nominations from association of IPPs having installed capacity up to 1000 MW is concerned, the same is still awaited.

Member Secretary, WRPC further stated that during TCC meeting held on 30th May 2006, CEA made the following observations regarding nomination of members on WRPC :

- (a) As CSEB has not been unbundled so far, there should be only one member representing the Generation, transmission and distribution wings. However SLDC of CSEB may be represented independently .
- (b) Indirasagar HEP of NHDC and SSP projects which are of capacity 1000 MW and more may also require to be represented.
- (c) WRLDC and NLDC should be represented independently as per the resolution.
- (d) According to the provisions of GOI Resolution dated 29th November 2005, representation of Tata Power Company Ltd., should be either the head of the organization or at least a person not below the rank of the Director on the Board of the Company.

The TCC deliberated the above and suggested the following:

- (i) In view of the resolution requiring separate representation from the state generating, transmission and distribution agencies the WRPC membership from CSEB as per the proposed list may continue.
- (ii) As the resolution does not provide for representation of the agencies like NHDC and SSP/NCA, which are neither Central/State Generating

Companies nor IPPs in WRPC, the matter may be taken up with them whether they would require to be represented.

- (iii) WRPC should take up with PGCIL to nominate members from WRLDC and NLDC.
- (iv) TPC representative stated that the resolution provision requiring higher-level representation from TPC would be conveyed to the management for needful.

Member (GO&D), CEA, said that since WRLDC and NLDC have been assigned statutory functions, they should be represented as members of WRPC. Also NCA and NHDC may be invited as Special Invitees in the meeting till such time they are nominated on WRPC. He also pointed out that as per the Resolution, Head of the Organization or next below person should be the member of RPC. Accordingly, the nomination from TPC needs to be amended.

NTPC Ltd., representative stated that Executive Director (WR), may also be nominated as additional member from NTPC on WRPC as most of the activities associated with Western Region are being carried out by him. In this context, Member (GO&D) stated that as per GOI resolution, only one member can be nominated from each organization.

In regard to the nomination of members from Chhattisgarh, Chairman, CSEB stated that CSEB is in the process of unbundling and the functions of transmission, generation and distribution are already being independently carried out. He therefore proposed that separate nomination from each of the wings should continue.

Managing Director, MSEDCL, stated that with the commissioning of 2nd Block at RGPPL's Dabhol Power Station, its capacity has become more than 1000 MW. As such, RGPPL should also be represented in WRPC as an IPP having installed capacity of more than 1000 MW.

The matter was discussed and the following was decided:

- i) Till unbundling of CSEB, Chairman, CSEB and Chief Engineer (Load Despatch), CSEB, shall be the Members of WRPC. However, Member (T&D) and Member (Gen), CSEB, shall be invited as Special Invitees in the WRPC meetings.
- ii) Regarding membership of SSP/NCA and NHDC, the matter shall be taken up by the WRPC Secretariat with them. WRPC might take decision in this regard after receipt of their replies. In the mean time, these agencies may be invited as Special Invitees.
- iii) The matter regarding representation of WRLDC and NLDC shall be taken up with PGCIL.

- iv) Regarding level of representation of TPC, the matter shall be taken up with them.
- v) Nominations shall be invited from RGPPL as an IPP having capacity more than 1000 MW.

Member (GO&D), CEA observed that GOI notification on WRPC formation was silent on representation from Captive Power Plants (CPPs). As the CPPs' involvement in grid operation is gaining significance, their role in this area would become substantial. Chairman, GUVNL indicated that CPPs have their own forum, wherein they take decisions in regard to their operation, whenever needed. WRPC after the discussions suggested that in case any CPP approaches WRPC for discussing an issue of common interest to the regional grid operation, their request could be considered appropriately.

(Action: WRPC)

2.2 Framing of the Western Regional Power Committee (Conduct of Business) Rules

2.2.1 Member Secretary, WRPC said that as per clause-9 of the GoI resolution dated 25th May 2005, the WRPC is required to frame its own rules of business for the conduct of its meeting and other related matters. Accordingly, the WREB/WRPC secretariat had drafted "The Western Regional Power Committee (Conduct of Business) Rules, 2006" which were discussed in the Special Meeting of WR constituents held at New Delhi on 13th March 2006. Some modifications were suggested by the constituents in Para 12.2 & 12.6 and deletion of para 12.3 & 12.4. He further stated that in the special meeting held on 13th March 2006, it was decided that these rules shall be placed before the 1st Meeting of the WRPC and shall come into force from the date of its approval by WRPC and shall remain in force unless otherwise modified. Accordingly, the draft rules were included in the Agenda Notes for consideration of the members.

During the TCC meeting held on 30.5.2006, NTPC Ltd., WRLDC and NPCIL suggested modification in certain clauses of the draft of "Western Regional Power Committee (Conduct of Business) Rules, 2006" circulated along with the Agenda notes. The modifications suggested and the recommendation of TCC is as below:

- (i) **Line No. 7 of Clause 18.1.1** - NTPC Ltd. suggested that the line "...reviewing the operational discipline and its norms to be observed by constituents." may be replaced as "...reviewing the operational discipline with reference to norms to be observed by constituents." TCC agreed to amend accordingly.
- (ii) **Clause 12.4** - NTPC suggested including of more than one representative (at least two) alongwith the WRPC member from NTPC. TCC suggested that provision to permit additional representative to participate in the WRPC already exists in draft rules. However, if NTPC Ltd. feels necessity for inclusion of more than one member in WRPC, they may take up with MOP.

- (iii) **Clause 18.2.2** - WRLDC suggested that OCC may be chaired by constituent members by rotation. TCC did not agree and decided to continue with the proposed provision of OCC being chaired by the Member Secretary, WRPC.
- (iv) **Clause 21.1(v)** - NPCIL suggested conducting transient stability studies periodically instead of as and when required. TCC suggested that when the system conditions require conducting any specialized network study the same could be done.
- (v) **In line 5 of Item 17.2.1** - NPCIL suggested to replace ".../General Manager in PSUs/" with ".../General Manager in PSUs or equivalent/". TCC agreed to amend accordingly

The matter was discussed and Members agreed to the recommendations of the TCC. The members approved the Western Regional Power Committee (Conduct of Business) Rules, 2006 with the amendment in Line No. 7 of Clause 18.1.1 and Line 5 of Clause 17.2.1 as given below:

- a) **Line No. 7 of Clause 18.1.1-** The line "...reviewing the operational discipline and its norms to be observed by constituents." shall be replaced as "...reviewing the operational discipline with reference to norms to be observed by constituents."
- b) **Line 5 of Item 17.2.1-** The line ".../General Manager in PSUs/" shall be replaced as ".../General Manager in PSUs or equivalent/".

The Western Regional Power Committee (Conduct of Business) Rules, 2006 with the above modifications are enclosed at Annexure-2.2.

(Action: WRPC)

2.2.2 In regard to Clause 4.4 of WRPC (Conduct of Business) Rules, WRLDC stated that providing of computer terminal to Member Secretary, WRPC to have view of all the parameters in real time is not required as real time data is available on their web site also.

In this context, Member (GO &D), CEA invited the reference to CERC order dated 26.09.2000 which stipulates, providing computer terminal to the Member Secretary by RLDC. The matter was discussed and members opined that RLDC should provide a computer terminal to Member Secretary, WRPC to have view of all the parameters in real time frame of the regional grid system.

2.3 Funding of WRPC Secretariat

Member Secretary, WRPC stated that the matter regarding funding of WRPC secretariat was discussed in the Special Meeting of WR constituents held at New Delhi on 13th March 2006 and reimbursement of expenditure in respect WRPC secretariat to Gol was agreed to. Regarding sharing of expenditure by the

constituents of WR, it was decided that this issue should be discussed in the meeting of WRPC. Member Secretary, WRPC intimated that the Central Electricity Authority vide letter No. 1/2/2006-Bud(CEA) dated 22.3.2006 have informed the approved Budget Estimate in respect of RPCs for the year 2006-07. Accordingly, the expenditure in respect of WRPC is Rs. 158.68 lakhs. He proposed that this amount may be shared by the members of WRPC except CEA, NLDC, RLDC and RPC Secretariat. He stated that the above amount may be reimbursed to the Government of India on quarterly basis or in any other way, as may be decided by the Government of India. He added that the amount to be shared by each member tentatively works out to Rs. 6.61 lakhs per year or about Rs. 55,100 p.m.

Chairman, CSEB stated that the above expenditure may be met by the Central Government as was being done in the case of erstwhile WREB and CEA may request again MOP in this regard. In this context, Member (GO&D), CEA stated that MOP have already issued the order and accordingly, the expenditure on WRPC Secretariat have to be borne by the constituents. Chairman, GUVNL also concurred with the views of Member (GO&D).

After deliberations, WRPC agreed to the proposal of equally sharing the expenditure by each WRPC member except CEA, NLDC, RLDC and WRPC Secretariat.

Member (GO&D), CEA stated that the above amount is provisional and that the actual amount to be reimbursed along with the modalities for reimbursement were under finalisation and would be intimated.

(Action: WRPC/CEA)

2.4 Chairperson of WRPC

As per GOI resolution dated 29.11.2005, the Chairperson of WRPC would represent the States of the region by rotation and the Members of WRPC from the particular State would nominate the Chairperson of WRPC from amongst themselves. Term of the Chairperson would be for a period of one year.

In the Special Meeting held on 13th March 2006, members resolved that the Chairperson of WRPC for the year 2006-07 be from the State of Madhya Pradesh. Shri R.K. Verma, Chairman & Managing Director, MPPTCL has been nominated by Madhya Pradesh as Chairman of WRPC and he has taken over w.e.f 1st April 2006.

Members noted the same.

2.5 Members of Technical Co-ordination Committee of WRPC

Member Secretary, WRPC stated that as per the draft WRPC (Conduct of Business) Rules, 2006, discussed in the Special Meeting of WR Constituents held on 13.03.06, the Technical Co-ordination Committee of WRPC shall be represented by the Technical Members of the RPC constituents dealing with Generation/Transmission/Distribution and representative from CEA. The representations shall be at the level of Technical Members in State Utilities, Executive Directors/General Managers in PSUs or equivalent/Technical Heads of

Distribution Company/Traders/IPPs and Chief Engineer in CEA. He informed that nominations have been received from MSETCL, MSEDCL, CSEB and NPCIL and requested other constituents to nominate their representative on TCC.

Member (GO&D), CEA desired that the nominations by the constituents should be made at appropriate level. He added that since discussions/decisions in WRPC meetings are generally based on the recommendations of TCC, the nominations for TCC members should be the next level below the WRPC member.

Chairman, GUVNL suggested that the nomination should not be below the rank of Chief Engineer. In case no equivalent rank is available in a particular entity, the next lower level rank available may be nominated.

It was agreed that all constituents will send their nominations accordingly to WRPC Secretariat.

(Action: All Constituents)

ITEM No. 3: PERFORMANCE OF WR GRID DURING SEPT. 05 TO APRIL 06

3.1 System Performance

Member Secretary, WRPC stated that except for the partial grid disturbances in September 2005, the grid operation was comfortable till January 2006. However low system frequency profile prevailed during the months February 2006 and April 2006. The percentage time grid operated in the frequency range between 49.0 Hz and 50.5 Hz was 85.77% in February 2006 and 66.70% in April 2006. The operation of the grid at low frequency profile during February to April 2006 was due to multiple outages of generating units, reduced generation availability, coupled with low generation at Farakka STPS in ER. The details of frequency profile and those relating to registered demand/unrestricted demand, energy availability and energy requirement during the above period, which are enclosed at Annexure 3.1(a) and Annexure-3.1 (b) respectively, were noted by the WRPC.

He said that two special meetings were held on 22.9.2005 and 12.12.2005 with the constituents respectively to discuss the situation arising out during the Rabi season in the wake of high demand and overloading of important 400 kV lines in the grid and take short-term corrective actions. WRPC noted as above.

3.2 Partial Grid Disturbances in WR grid during September 2005

Member Secretary, WRPC stated that there was a partial disturbance in Western Regional grid on 21.09.2005 at 0958 hours and again two partial disturbances in the grid on 26.09.2005 at 1028 hrs & 1429 hrs respectively. The incidence of 21.9.2005 resulted in splitting of WR Grid in 3 (three) parts – Western Maharashtra, Gujarat and Eastern part of Western Region comprising Eastern Maharashtra, Madhya Pradesh and Chhattisgarh. During the incidences of 26.9.2005, Western Maharashtra System got separated from the rest of the WR grid.

Central Electricity Authority, under Section 73(L) of Electricity Act, 2003, constituted an Enquiry Committee to look into the above incidences of grid disturbances. The Committee submitted its report on 17th October 2005 and the final report was circulated to all the concerned for early implementation of its recommendations by the concerned utilities. The recommendations of the Committee are at Annexure-3.2.

Member Secretary, WRPC requested that the recommendations of the Enquiry Committee, which are being monitored in PCM/OCC of WRPC may be implemented by all the concerned agencies at the earliest.

(Action: All Constituents)

3.3 Voltage Profile

The month-wise detail of voltages at important 400 kV substations during the September 2005 to April 2006 enclosed at Annexure 3.3 were noted by the WRPC.

Member Secretary, WRPC stated that low voltages in the range of 351-367 kV were recorded at 400 kV Indore during October 2005 to December 2005. Low voltage was also recorded at 400 kV Jetpur during the October 2005 to March 2006 in the range of 319 kV to 367 kV.

CMD, MPPTCL intimated that the voltage profile at Indore has improved subsequent upon shifting of loads from Indore bus to Khandwa and with the commissioning of 400 kV lines from SSP.

Member (GO&D), CEA stated that low voltage at Jetpur should also be given due attention to. WRLDC stated that although Jetpur was located at fag end of grid and low voltage there had not much repercussions in grid operation but voltage improvement at 400 kV Jetpur bus should require to be brought about.

GETCO intimated that additional reactive compensation was provided around Jetpur area, resulting thereby in improved voltage profile.

Member Secretary, WRPC further stated that during the ensuing monsoon period, high voltages are likely to occur in some parts of the WR grid. In order to control the incidences of high voltage in Western Maharashtra System, 80 MVAR bus reactor is in the process of installation by MSETCL on behalf of POWERGRID at 400 KV Kolhapur Sub-station of MSETCL. In TCC meeting, MSETCL had intimated that the installation work is in progress and the reactor would be commissioned by August 2006.

He further said that during the TCC, WRLDC had suggested that the reactor at Itarsi, which is proposed to be removed by POWERGRID for shifting it to the other location for Sipat transmission project, should not be removed till reactors are provided at Khandwa and Dhule. POWERGRID confirmed that these were already installed now. In the TCC meeting, MSETCL had intimated that Shunt Controllable Reactor is proposed to be installed at Padghe by them to control high voltages.

GM, WRLDC said that high voltages prevail at Dhule, Padghe and Itarsi. This required additional provision of reactors at these locations and suggested that at least one reactor at 400 kV Itarsi (out of the originally provided 2x80 MVAR reactors prior to creation of 400 kV LILO at Khandwa on Itarsi-Dhule D/C line) may be retained at Itarsi.

Chairman WRPC / CMD, MPPTCL observed that the existing one reactor at Itarsi should not be removed. Member (GO&D), CEA, suggested that no reactor should be removed by any utility in the grid without prior permission of the WRLDC. The need of providing / removing any additional/existing reactors might be decided only after studying the voltage profile of entire WR EHV network grid, which is presently being strengthened.

3.4 Commissioning of Transmission elements

During the period September 2005 to April 2006, the following important transmission lines have been commissioned:

- i) 400 kV Chandrapur-Bhadrawati second D/C (Ckts. 3 & 4)
- ii) 400 kV SSP-Dhule Ckt I
- iii) LILO of 220 kV Boisar-Padghe line at Boisar (PG)
- iv) LILO of 220 kV Vapi-Bhilad line at Vapi (PG)
- v) LILO of One ckt. Of 400 kV Korba-Raipur D/C line at Sipat

Members noted the same.

ITEM No. 4: POWER SUPPLY POSITION FOR THE PERIOD JUNE TO AUG. 06

The anticipated power supply position in the region during the period June 2006 to August 2006 as furnished in Annexure-4 was noted by the WRPC.

Member Secretary, WRPC stated that the shortages might prevail due to unexpected dry spell periods during the monsoon season. So constituents shall have to keep arrangements to meet shortfall arising out of the same. He said that in the TCC meeting, GETCO intimated that shortfall during the subject period would be overcome through maximizing the availability and adopting the necessary load management measures. MPPTCL had intimated that they had already submitted list of identified feeders for distress load shedding under the defense plan during low frequency operation. Member Secretary, WRPC further said that the constituents were requested to follow the defense plan even after the monsoon season when the loads would start picking up. WRPC noted the same.

To a query by Member (GO&D), CEA, MSPGCL intimated that Chandrapur 500 MW unit No. 5 that is on prolonged outage was expected to be restored by September 2006.

GM, WRLDC said that uninterrupted availability of both poles of HVDC Chandrapur-Padghe link of MSETCL was essential for secure grid operation.

Director (Operations), MSEDCL intimated that to mitigate frequent failure of the converter transformers of the HVDC Chandrapur-Padghe link, an additional spare transformer is proposed for procurement. Also the interruptions of the pole due to fault in the line would get minimized with the implementation of proposal by MSETCL to replace the existing earth-wire with that of an improved quality and design.

ITEM No. 5: GRID DISCIPLINE

Member Secretary, WRPC said that the grid had been operating at low system frequency during the period February 2006 to April 2006, endangering the grid security. He intimated that during the TCC meeting, status on steps taken to improve the system operation was intimated and discussed as follows: -

- (i) CERC directives given through a Press Release (enclosed at Annexure-5.1 of Agenda Notes) suggesting various measures to be taken to prevent low frequency operation were noted by the WR constituents for necessary compliance.
- (ii) During a meeting of the system operators of WR held at WRLDC on 9.5.2006, the issues concerning grid security had been discussed. Constituents agreed to restrict their draws as per the schedules, adopt load shedding measures as per recommended action plan suggested by WRLDC, keep U/F relay in operation and maximize their generation availability.
- (iii) The issue of low frequency operation was further discussed in the OCC meeting held on 10.5.2006 and the WR constituents were requested to implement distress load shedding under the defense plan recommended by WRLDC to improve system frequency. Inadequate load relief being obtained through AULFS was discussed and it was intimated that during inspection of UF relays by WRPC secretariat, it was observed that feeders earmarked for load shedding under AUFLS were already taken out for planned load shedding. Hence operation of AUFLS relays did not result in the expected load relief. Constituents assured that they would isolate the AUFLS feeders from routine load management programme to get the desired load relief at low frequency.
- (iv) The scheduled outage programme of each generating station during the month of May & June 2006 was reviewed and NTPC was requested to reschedule maintenance programme of their stations in order to increase the availability of generating capacity. NTPC agreed to the same.
- (v) In pursuance of CERC directive to NTPC that it may make immediate efforts to procure additional gas through open tenders on long term and spot contracts in consultation with the beneficiaries, so that peaking power could be supplied at cheaper cost and reliance on costly liquid fuel such as naphtha and diesel is avoided, NTPC intimated in the TCC meeting that tenders for additional 2.2 MCMD gas were floated and were opened on 25.5.2006. Awards for the same were likely to be placed shortly. With this

5.4 MCMD gas will be available for WR NTPC gas stations which would enable them to operate at 90% PLF.

ITEM No. 6 : ONGOING TRANSMISSION SCHEMES IN WR

6.1 The members reviewed the Annual Programme of Transmission Capacity Addition during 2006-07, as furnished in the Agenda Notes.

PGCIL, WRTS representative stated that 400 kV Bina-Nagda-Dehgam D/C line shall be commissioned in September 2007, 400 kV Vindhyachal-Satna D/C line is expected to be commissioned in July 2006, and 765 kV Bina-Gwalior by March 2007.

Based on the above, the following lines being executed by PGCIL are likely to be commissioned during 2006-07:

Sl. No.	Name of the Trans line	Ckts	Length (CKM)	Ant./ Act.
765 kV Lines :				
1	Sipat - Seoni (Line -1)	S/C	351	Feb-07
2	Sipat - Seoni (Line -2)	S/C	354	Feb-07
3	Bina-Gwalior			Mar-07
400 kV Lines :				
1	Seoni - Khandwa	D/C	701	Feb'07
2	LILO of S/C Korba - Raipur at Sipat.	D/C	10	**
3	LILO of S/C Bhilai - Satpura at Seoni	D/C	12	Feb'07
4	LILO of both ckt of D/C Sardar Sarovar - Nagda at Rajgarh.	2 X D/C	18	Feb'07
5	Vindhyachal - Korba D/C Trans. Line	D/C	289	Feb'07
6	Vindhyachal - Satna	D/C	513	July' 06
7	Bhadrawati - Chandrapur (MSEB) D/C	D/C	46	**

**Already commissioned and put in commercial operation w.e.f 1.5.2006

Chairman, WRPC/MPPTCL requested the State Utilities to ensure that their transmission schemes from POWERGRID Sub-stations should also be completed matching with the completion schedules of the above schemes.

The details of all the Transmission Schemes being executed by PGCIL in WR are furnished in Annexure-6.1(a). Details of State Sector Transmission Schemes targeted to be commissioned during 2006-07 is at Annexure-6.1(b).

6.2 Preponement of commissioning of LILO of one Ckt of 400 kV Korba-Raipur at Sipat

Member Secretary, WRPC stated that as per the schedule programme, the LILO of one circuit of 400 kV Korba-Raipur at Sipat was to be completed by PGCIL in February 2007. However, on the request of NTPC Ltd, PGCIL proposed commissioning of LILO of one ckt. of 400 kV Korba-Raipur at Sipat ahead of its schedule so as to facilitate availability of start up power to Sipat. He intimated that this matter was discussed during 42nd CCM held on 21.04.06. PGCIL intimated that NTPC have agreed to bear the transmission charges for this asset (the LILO portion) till commercial operation of first generating unit of Sipat. Thereafter, the asset shall be used for regional system by the beneficiaries. In this regard a copy of letter dated 19.4.2006 received from Executive Director (Comml.), NTPC Ltd. is enclosed at Annex-6.2. Subsequently, PGCIL vide letter dated 29.4.2006 intimated that LILO of one ckt. of 400 kV Korba-Raipur at Sipat has been successfully commissioned and put in commercial operation w.e.f 1.5.2006.

WRPC members agreed to this arrangement and noted the same.

6.3 400 kV Chandrapur-Bhadravti D/C line

Member Secretary, WRPC stated that as per the programme of transmission capacity addition by PGCIL, 400 kV Chandrapur-Bhadravati D/C was expected to be commissioned by March, 2007. However, on the request of WR constituents, the activities for commissioning of this live were advanced by PGCIL. Both the circuits were commissioned by PGCIL and put into commercial operation w.e.f. 01.05.06.

The members noted the same.

6.4 220 kV Boiser (PG)-Wada S/C line

Executive Director (O), NPCIL emphasized the need to expedite the construction of 220 kV Boiser (PG)-Wada S/C line before the revised target schedule of December 2006 given by MSETCL. Director (O), MSETCL stated that they would try to complete the line by August 2006.

6.5 400 kV Vindhyachal-Satna D/C line

PGCIL, WRTS representative stated that efforts were being made to advance the commissioning of 400 kV Vindhyachal-Satna D/C line along with one ICT at Satna by July 2006, in order to match the commissioning schedule of 500 MW Unit # 9 at Vindhyachal Stage III by July 2006 as intimated by NTPC.

The members gave their consent for commissioning of 400 kV Vindhyachal-Satna D/C line along with one ICT ahead of its original schedule of July 2007.

6.6 ULDC Scheme of WR

Consequent upon successful completion of System Availability Test of EMS/SCADA system of ULDC Scheme of WR on 12.01.2006, WRTS, PGCIL vide letter dated 21.05.06 have notified the System Co-ordination & control Project of WR under commercial operation w.e.f 1.2.2006.

Members noted the same.

ITEM No. 7 : GENERATING SCHEMES UNDER EXECUTION/TO BE ADDED IN WESTERN REGION

- 7.1** NTPC Ltd. intimated that 500 MW, Unit # 9 of Vindhyachal Stage-III is expected to be synchronized in July 2006 and infirm power from the unit would start flowing into the grid. Regarding allocation of power from this unit, the matter has been taken up by NTPC with MOP.

Member Secretary, WRPC intimated that this issue was discussed in 42nd CCM held on 21.4.2006 and it was decided that for day ahead scheduling of the infirm power from Vindhyachal stage-III, post facto correction would be applied over these figures as per actual injection from above station. NTPC was also requested to take expeditious action to ensure that allocation from this project is received well before the unit gets synchronized with the grid.

NTPC Ltd., stated that they would arrange to intimate the power allocation from Unit # 9 of VSTPS Stage III before its commissioning.

- 7.2** Executive Director (Opn), NPCIL stated that TAPP Unit # 3 (540 MW) has gone critical on 21.05.06 and expected to be synchronized in June 2006. The Unit may be declared in commercial operation by August 2006 subject to AERB approval. He also intimated that Unit No.4 at TAPP has been operating at 70% of its capacity as per the directions of AERB. He stated that the output of this unit will be raised after clearance by the AERB. Beneficiaries requested NPCIL to expedite the works and raise the output to full capacity at the earliest.

Member Secretary, WRPC stated that the allocation of the infirm power from TAPP Unit # 3 shall be done as per the approved allocation already issued by MOP vide letter No. 8/12/97-Th-3 dated 12.1.2005.

- 7.3** Member Secretary, WRPC intimated that Unit No. 5 (200 MW) of River Bed Power House at Sardar Sarovar Project has been test synchronized on 07.03.06 and the Unit No.6 is expected to be synchronized in June 2006.
- 7.4** The members of WRPC noted the details of new generating units under execution and to be added during XI Plan in the Western Region given in Annex-7.4.

ITEM No 8: INSTALLATION OF HT SHUNT CAPACITORS IN WR

Member Secretary, WRPC stated that for the year 2005-06, the Study Committee of WREB had recommended installation of 275 MVAR capacitors in the region with GUVNL 50 MVAR, MPPTCL 35 MVAR, CSEB 40 MVAR and MSETCL 150 MVAR. As against this, 392.5 MVAR H.T. capacitors were installed in the region during 2005-06.

He further said that study for requirement of shunt capacitors for the year 2006-07 is completed and the requirement will be sent to WR constituents very shortly for implementation of the installation programme.

ITEM No. 9: NATIONAL HVDC PROJECT – LOWER SILERU-BARSOOR

Member Secretary, WRPC stated that Lower Sileru-Barsoor National HVDC Project (NHVDC) has been built indigenously in two stages viz. Stage-I completed in the year 1990 and Stage-II commissioned in Aug.2000. In a meeting taken by Secretary (Power) on 23rd April 2005 with BHEL, it was desired that the efforts should be made to utilize the NHVDC project and keep this link continuously in operation so that investment made could be put to use. Subsequently, various meetings were held by CEA with APTRANSCO, CSEB, BHEL and PGCIL. As intimated by CEA, both APTRANSCO and CSEB have agreed to hand over the assets of NHVDC system to PGCIL and the cost of O&M for this inter-regional link has to be borne by the beneficiaries in Western and Southern Regions.

Member Secretary, WRPC further stated that as desired in the Special Meeting of WR constituents held on 13.03.2006, the matter was discussed in 42nd Commercial Committee meeting held on 21.4.2006. The Constituents observed the following:

- (i) In regard to the query about the feasibility of supporting 200 MW power over HVDC link by CSEB system when both Lower Sileru-Barsoor links are made operational, Addl. Chief Engineer (Comml.), CSEB intimated that their transmission system down below is capable of handling 200 MW import from SR through this link.
- (ii) The Committee desired that similar information from APTRANSCO need to be ascertained about feasibility of their transmission network supporting 200 MW transfer of power over this link.
- (iii) It was observed that wheeling charges towards usage of intervening system(s) for drawal of power from SR to WR through this link will required to be borne by the agency who imports power. This will be in addition to payment of O&M charges to PGCIL and wheeling charges to CSEB and APTRANSCO as proposed by CEA. Hence, financial viability of importing power from SR through this link will have to be examined before taking any decision for sharing the O&M cost by the beneficiaries.
- (iv) Further, there will be no uniformity about the payment of wheeling charges to CSEB and APTRANSCO and other intervening systems as the charges will be decided by the concerned Regulatory Commission.

- (v) It would be appropriate to consider handing over of entire assets/ownership to PGCIL and pool the transmission charges to be shared by WR & SR in their respective regional transmission charges paid to PGCIL.
- (vi) It was suggested that operational feasibility of the link to be studied before giving any commitment towards sharing of O&M charges.
- (vii) In order to ascertain O&M charges to be paid to PGCIL for maintenance of the above link, PGCIL requested CSEB to furnish the details of line length and number of bays proposed (both in CSEB and APTRANSCO portion) to be handed over to PGCIL for O&M.

Chairman, CSEB desired that CEA may study this issue in detail and come out with the solution. Chairman, GUVNL stated that the full comprehensive report on the Lower Sileru-Barsoor National HVDC project about its operation/commercial aspects, advantages and disadvantages should be made available so that it could be taken up for further discussions.

Member (GO&D), CEA stated that Power System Wing of CEA, is looking into the above matter and as desired by the members, the matter may be referred to them.

The matter was discussed and it was decided that WRPC Secretariat shall take up the matter with Power System Group of CEA for further needful.

(Action: WRPC/CEA)

ITEM No. 10 : STATUS OF UI PAYMENTS

10.1 The status of UI payments to UI pool account and Reactive Charges as on 29.05.06 (upto week ending 21.05.06), based on information furnished by WRLDC are as follows: -

UI Pool Account		Reactive Energy Pool Account	
Constituent	Dues (Rs.)	Constituent	Dues (Rs.)
GUVNL	9,517,875	GUVNL	3,798,919
MPSEB	510,541,381	MPSEB	1,601,441
CSEB	17,296,521	CSEB	(845,833)
MSEDCL	479,122,051	MSEDCL	(3,192,081)
GOA	(33,021,940)	GOA	(2,226,292)
DD	23,693,068		
DNH	153,033,265		
NTPC	(154,990,682)		
PGCIL-VIN.	(1,028,729)		
PGCIL-BHA.	(3,314,213)		
NR	6,968,411		
SR	(533,583,945)		
ER	(474,233,063)		

Figs indicated in () are receivable

Member (GO&D), CEA informed that the Secretary (Power), in the meeting held on 30th May, 2006 discussed the issue regarding defaults in payment of UI charges. It was decided in the meeting that all the States shall clear their outstandings within four months i.e. by September 2006 (except UP which has to clear the same within five months). Also all the current payments towards UI bill will be paid promptly by the concerned agencies.

Chairman, GUVNL stated that non-receipt of payments towards UI due to them has been affecting their incentives from the Government. He requested MPSEB to make payment to UI pool at the earliest

Chairman, WRPC/MPPTCL stated that all efforts will be made by them to clear their outstandings as directed in the meeting taken by Secretary (Power).

ITEM No. 11: WHEELING CHARGES FOR WHEELING CENTRAL SECTOR POWER TO DD & DNH

Member Secretary, WRPC stated that the WRE Board in its 127th meeting held on 20.05.2005 discussed the issue regarding payment of wheeling charges for wheeling of Central Sector power to DD and DNH through Gujarat system and to Goa through Maharashtra system, with reference to CERC (Open Access in Inter State Transmission) Regulations 2004. It was noted that the wheeling charges are required to be fixed by concerned SERCs. It was agreed that the concerned constituents of WR will take up the matter with appropriate Commission for obtaining the wheeling charges payable to them for wheeling Central Sector power or otherwise through their system. Till such time, they agreed to adopt the wheeling charges at existing rates.

Member Secretary, WRPC further informed that GUVNL vide their letter No. GUVNL/COA/(COM)/627 dated 17.4.2006 intimated that Gujarat Electricity Regulatory Commission (GERC) vide its order dated 28th February 2006 has determined the transmission charges of Rs. 3262.36 per MW per day for long term Open Access and Transmission Losses of 4.40 % for Gujarat Transmission Network. GUVNL stated that this should be made applicable from 28.02.2006. This matter was put up in Commercial Committee meeting held on 21.4.2006 and GUVNL agreed that the wheeling charges for wheeling Central Sector power to DD and DNH through GETCO system as per the GERC order may be made applicable from 1st March 2006 whereas the transmission losses of 4.40 % for GETCO system should be made applicable prospectively. As such, the above rates were made applicable with effect from March 2006 and the REAs were being issued accordingly..

Chairman, CSEB stated that the consumer mix of DD and DNH are quite good and hence, the wheeling charges for wheeling of Central Sector power to them through Gujarat Transmission System should not be pooled and paid by DD and DNH only.

The representative of DD stated that DD and DNH are not connected to Western Regional Transmission System of CTU, but they are sharing the pooled transmission charges of WR system. As such, the wheeling charges required to be

paid by them for utilization of Gujarat Transmission System for drawing Central Sector Power should be pooled, as per the existing practice. Alternatively, CTU may be requested to construct the required transmission system to enable them to draw their Central Sector Power through CTU network.

Member (GO&D), CEA opined that as already agreed by the constituents in WREB meeting, wheeling chares payable by DD & DNH for drawing their share of Central Sector Power should be pooled and shared by all beneficiaries. Regarding rate of wheeling charges payable to GETCO, he stated that the transmission charges for use of State's Transmission System have to be fixed by the State Regulatory Commission.

Chairman, MPPTCL/WRPC, while agreeing to the observation of Member (GO&D), CEA stated that the issue has financial implications on their part for which they have to obtain approval of the MPSEB. He, however, assured GUVNL that the issue will be resolved by 31st July 2006. He proposed that till such time, pooling of wheeling charges at the old rates may continue. He also stated that the agreed rates shall be made applicable w.e.f. 1st March 2006.

After further discussion, the above proposal of Chairman, WRPC/MPPTCL was agreed to and it was decided that in the meantime, the issue should be discussed in detail by the Commercial Committee.

(Action: WRPC/WRLDC)

ITEM No. 12 : COMMITTEE MEETINGS

Members noted the details of various Committee Meetings held since 128th WRE Board meeting given in Annexure-12.

ITEM No. 13: ANY OTHER ITEM WITH PERMISSION OF THE CHAIR

13.1 Applicability of UI to SSP

WRLDC raised the issue about applicability of UI to SSP for its deviation from schedule.

In this context, Member Secretary, WRPC intimated that this matter was discussed in 40th CCM held on 29.08.05 and subsequently taken up during 128th meeting of WRE Board held on 02.09.05. As the issue is concerning the three beneficiaries (Maharashtra, Gujarat and Madhya Pradesh) and SSP/NCA, the Board decided that they may address the matter.

Accordingly, WRPC took up the matter with NCA and as per the information furnished by NCA the matter was discussed by them during its Power subcommittee meeting held in February 2006. The Committee opined that the practice being followed for BBMB stations need to be studied. NCA intimated that they are getting views of beneficiary states and shall deliberate the matter in their next meeting of Power Subcommittee.

The matter was discussed and it was decided that Member Secretary, WRPC should take up the issue with NCA for expeditious action.

(Action : WRPC/NCA)

13.1 Interest on delayed payment of UI Charges

WRLDC raised the issue about giving top priority for payment of interest over normal UI charges. In this context Member Secretary, WRPC stated that the various issues raised by WRLDC in regard to interest on delayed payment of UI charges were earlier discussed in 128th meeting of WRE board held on 2.9.2005 and after detailed discussions, Board decided that the payment of UI charges and the interest at present shall be done as per CERC regulations.

GUVNL representative suggested that interest payment on account of delay in payment of UI charges may be first settled.

The matter was discussed and Chairman, WRPC/MPPTCL observed that in view of the far reaching implications of the proposal, the issue needs to be examined in detail. It was decided that this item will be included in the agenda of the next meeting of WRPC.

(Action: WRPC)

ITEM No. 14: DATE & VENUE FOR THE NEXT MEETING

It was decided that the next (2nd) meeting WRPC will be held in the month of September/October 2006. NTPC Ltd. agreed to host the same at Goa.

The meeting ended with Vote of Thanks to the Chair.

* * * * *

LIST OF PARTICIPANTS OF TCC MEETING HELD ON 30.05.2006 AT PUNE**I. GUJARAT**

- 1) Shri P.H. Rana, MD, GETCO
- 2) Shri J.V. Vyas, OSD-SLDC-GETCO
- 3) Shri S.B. Khyalia, GM (Comml.), GUVNL

II. CHHATTISGARH

- 1) Shri Manoj Dey, Member (T & D), CSEB
- 2) Shri S.P. Chaturvedi, Member (Gen.), CSEB
- 3) Shri D.P. Sharma, CE (T & C), CSEB
- 4) Shri S.N. Chauhan, Addl. CE, CSEB
- 5) Shri R.A. Alimchandani, ACE (LD), CSEB

III. MADHYA PRADESH

- 1) Shri R.K. Verma, Chairperson TCC & CMD, MPSEB
- 2) Shri D.N. Prasad, CMD, MPPTCL
- 3) Shri R.P. Sharma, CE (LD), MPPTCL

IV. MAHARASHTRA

- 1) Shri A.D. Palamwar, Dir (O.), MSEDCL
- 2) Shri Shishir Tamotia, Dir (O), MSETCL
- 3) Shri V.T. Bapat, Dir (O), MSPGCL
- 4) Shri Girish Limaye, ED (Trans-Proj.), MSETCL
- 5) Shri Ashok Deshmukh, ED (Trans.), MSETCL
- 6) Shri C.G. Barbole, CE (LD), MSETCL
- 7) Shri S.G. Kelkar, CE (Trans. Plang.), MSETCL
- 8) Shri K.V. Roday, Consultant, MSETCL

V. DADARA NAGAR HAVELI

- 1) Shri N.N. Tandel, EE

VI. DAMAN & DIU

- 1) Shri P.S. Dave, EE

VII. POWERGRID CORPN. OF INDIA LTD.

- 1) Shri S.C. Singh, GM (OS), WRTS
- 2) Shri V.K. Veluchamy, AGM, WRLDC
- 3) Shri C.M. Verghese, DGM (Comml.), WRTS

- 4) Shri P. Pentayya, DGM, WRLDC
- VIII. NATIONAL THERMAL POWER CORPN. LTD.**
- 1) Shri M.S. Dharmadhikari, AGM (Comml.)
 - 2) Shri G.Vijayakumar, AGM (OS), WR
 - 3) Shri N. N. Sadasivan, Sr. Manager (C)
- IX. NUCLEAR POWER CORPORATION OF INDIA LTD.**
- 1) Shri N.S.M. Rao, CE
- X. CENTRAL ELECTRICITY AUTHORITY**
- 1) Shri T. Chatterjee CE (GM), CEA
- XI. TATA POWER COMPANY**
- 1) Shri S.G. Patki, DGM
- XII. WESTERN REGIONAL POWER COMMITTEE**
- 1) Shri P. Patel, Member Secretary**
 - 2) Shri Manjit Singh, SE (O)
 - 3) Shri R.D. Pandhare, AS
 - 4) Shri S.S.Kalsi, EE (O)

LIST OF PARTICIPANTS OF 1st WRPC MEETING HELD ON 31.05.2006 AT PUNE**A. WESTERN REGIONAL POWER COMMITTEE****MEMBERS**

- 1) Shri R.K. Verma, Chairperson, WRPC & CMD, MPPTCL
- 2) Shri Santosh Kumar, Member, (GO&D), CEA
- 3) Shri D.N. Prasad, CMD, MPPGCL
- 4) Shri Rajib Ranjan, Chairman, CSEB
- 5) Shri Sanjay Bhatia, M.D. MSEDCL
- 6) Shri P.H. Rana, CMD, GETCO
- 7) Shri S. Mittal, Director (O.), NPCIL
- 8) Shri Manoj Dey, Member (T & D), CSEB
- 9) Shri S.P. Chaturvedi, Member (Gen.), CSEB
- 10) Shri C.G. Barbole, CE (LD), MSETCL
- 11) Shri R.P. Sharma, CE (LD), MPPTCL
- 12) Shri J.V. Vyas, OSD-SLDC-GETCO
- 13) Shri D.P. Sharma, CE (T & C), CSEB
- 14) Shri P. Patel, Member Secretary, WRPC

SPECIAL INVITEES

- 1) Shri P.K.Taneja, CMD, GUVNL

B. OTHERS**I. GUJARAT**

- 1) Shri S.B. Khyalia, GM (Comml.), GUVNL

II. MAHARASHTRA

- 1) Shri A.D. Palamwar, Director (O), MSEDCL
- 2) Shri V.T. Bapat, Director (O), MSPGCL
- 3) Shri S. Tamotia, Director (O), MSETCL
- 4) Shri G.S. Limaye, ED (Tran. Proj.), MSETCL
- 5) Shri A.K. Deshmukh, ED, MSETCL
- 6) Shri S.G. Kelkar, CE (Trans. Plng.), MSETCL

III. CHHATTISGARH

- 1) Shri R.A. Alimchandani, Addl. CE (LD), CSEB
- 2) Shri S.N. Chauhan, Addl. CE (Comml.), CSEB

IV. DADARA NAGAR HAVELI

- 1) Shri P.S. Dave, EE, DNH

V. DAMAN & DIU

- 1) Shri N.N. Tandel, EE, DD

VI. NUCLEAR POWER CORPN. OF INDIA LTD

- 1) Shri N.S.M. Rao, CE, NPCIL

VIII. POWERGRID CORPN. OF INDIA LTD.

- 1) Shri S.C. Singh, GM (OS), WRTS
- 2) Shri Anjan Roy, GM, WRLDC
- 3) Shri P. Pentayya, DGM (OS), WRLDC,

IX. NATIONAL THERMAL POWER CORPN. LTD.

- 1) Shri I.S. Paraswal, ED (Comml.), NTPC
- 2) Shri M.S. Dharmadhikari, AGM (Comml.), NTPC
- 3) Shri G. Vijaykumar, AGM (OS), WRHQ
- 4) Shri S.K. Johar, DGM (Comml.), NTPC
- 5) Shri N.N. Sadasivan Sr. Manager (Comml.), NTPC

X. CENTRAL ELECTRICITY AUTHORITY

- 1) Shri T. Chatterjee, CE (GM), CEA

XI. TATA POWER COMPANY

- 1) Shri V.H. Thakurani, AGM (LD)

XII. TATA POWER TRADING COMPANY

- 1) Shri Sunil Agrawal, AGM

XIII. WESTERN REGIONAL POWER COMMITTEE

- 1) Shri Manjit Singh, SE (O)
- 2) Shri S.G. Tenpe, SE (Comml.)
- 3) Shri R.D. Pandhare, Asst. Secretary
- 4) Shri S.S. Kalsi, EE(O)

Western Regional Power Committee**(Conduct of Business) Rules 2006****CHAPTER I****GENERAL****1. Short title and commencement:**

- (i) Government of India, under the provision of Section 2, Subsection 55 of the Electricity Act 2003 vide resolution F.No.23/1/2004-R&R dated 25th May, 2005 and subsequent amendment dated 29.11.2005 published in the Gazette of India has established the Western Regional Power Committee herein after referred to as WRPC comprising of States of Chhattisgad, Gujarat, Madhya Pradesh, Maharashtra and Goa and Union Territory of Daman & Diu and Dadra and Nagar Haveli.
- (ii) As per the clause –9 of the aforesaid resolution dated 25th May 2005, the WRPC hereby makes the following rules which may be called “The Western Regional Power Committee (Conduct of Business) Rules, 2006”.
- (iii) These rules shall come into force from the date of its approval by the WRPC and shall remain in force unless otherwise modified.

2. Definitions:**2.1 In these Rules unless the context otherwise requires:-**

- (a) ‘Act’ means the Electricity Act, 2003.
- (b) ‘Agenda’ means the list of business proposed to be transacted at a meeting of the Committee.
- (c) ‘Authority’ means Central Electricity Authority.
- (d) ‘Commercial sub-committee (CC)’ means a sub committee constituted by the Committee to consider commercial related issues.
- (e) ‘Commission’ means Central Electricity Regulatory Commission.

- (f) 'Committee' means the Western Regional Power Committee constituted by the Central Government under Sub-Section (55) of Section 2 of the Electricity Act, 2003.
- (g) 'IEGC' means the Indian Electricity Grid Code specified by Central Electricity Regulatory Commission.
- (h) 'Meeting ' means a meeting of the Committee or sub-committee convened by the head of the Secretariat or any member authorized to convene a meeting in the absence of the head of Secretariat.
- (i) 'Member' means the member of the WRPC as per Resolution of the Government of India on establishment of RPC dated 25.05.2005 and 29.11.2005 and as amended from time to time.
- (j) 'Operational Coordination Sub-Committee (OCC)' means a sub-committee constituted by the Committee to consider all issues related to operation of the regional grid.
- (k) 'Protection sub-committee (PC)' means a sub-committee constituted by the Committee to consider all power system protection related issues.
- (l) 'Rule' means Western Regional Power Committee (Conduct of Business) Rules 2006.
- (m) 'System study sub-committee' means a sub-committees constituted by the Committee to carry out the system studies.
- (n) 'Sub-committee' means the Sub-Committees constituted by the Committee to guide and assist it in conducting the functions assigned to it.
- (o) 'Technical Coordination Sub-committee (TCC)' means a sub-committee constituted by the Committee to assist the WRPC on all technical, commercial and other matters.

2.2 The words and expressions used and not defined in these Rules shall be construed as having the same meaning as defined in the Act.

3. Functions of WRPC

As per para 6. of the MOP Resolution dated 25.5.2005 WRPC shall carry out following functions:-

- (i) To undertake Regional Level operation analysis for improving grid performance.
- (ii) To facilitate inter-state/inter-regional transfer of power.
- (iii) To facilitate all functions of planning relating to inter-state/ intra-state transmission system with CTU / STU.

- (iv) To coordinate planning of maintenance of generating machines of various generating companies of the region including those of inter-state generating companies supplying electricity to the Region on annual basis and also to undertake review of maintenance programme on monthly basis.
- (v) To undertake planning of outage of transmission system on monthly basis.
- (vi) To undertake operational planning studies including protection studies for stable operation of the grid.
- (vii) To undertake planning for maintaining proper voltages through review of reactive compensation requirement through system study committee and monitoring of installed capacitors.
- (viii) To evolve consensus on all issues relating to economy and efficiency in the operation of power system in the region.

4. Secretariat of WRPC

4.1 Secretariat shall perform the following duties namely;

- a) Keep custody of records of proceedings of the Committee, sub-committees, task force and working groups of the RPC.
- b) Prepare agenda for the Committee and Sub-Committee meetings.
- c) Prepare minutes of Committee and Sub-Committee meetings.
- d) Take follow-up action on the decision taken in the Committee & Sub-Committee meetings.
- e) Maintain archive of data and information pertaining to operating parameters, protection system and communication system of the regional power system.
- f) Collect from constituent members or other offices, companies, firms or any other party as may be directed by Committee, such information as may be considered useful for the efficient discharge of functions of the Committee under the Resolution and place the information before the Committee and its sub-committees.

4.2 The duties and responsibility envisaged under CEA Regulations, Indian Electricity Grid Code (IEGC), Regulations made by CERC, GoI Resolution and WRPC from time to time shall be carried out by the Member Secretary, WRPC Secretariat .

In line with the provisions of IEGC the details of functions are given below:

- a) The Member Secretary, RPC shall investigate and endeavor to resolve the grievance regarding unfair practices, delays, discrimination, lack of information, supply of wrong information or any other matter related to open access in inter-state transmission.
- b) The Member Secretary, RPC shall, for the purpose of payment of transmission charges/ capacity charges and incentives, certify:

- (i) Availability of Regional AC and HVDC transmission system
 - (ii) Availability and Plant Load Factor for ISGS (Thermal)
 - (iii) Capacity Index for ISGS (Hydro)
- c) Member Secretary, RPC, shall verify and take up the matter regarding persistent non-compliance of IEGC with the defaulting agency for expeditious termination of the non-compliance. RPC shall maintain appropriate records of such violations.
- d) RPC is to carry out periodic inspection of Under Frequency Relays installed by the constituents and investigate cases of non operation of such relays at set frequency in actual system operation.
- e) The RPC Secretariat shall review on quarterly basis the Annual outage plan prepared by CEA in consultation with ISGS/other generators in advance for the financial year review on monthly basis for the concerned quarters.
- f) The RPC Secretariat shall be responsible for analyzing the outage schedule given by all Regional Constituents, preparing a draft annual outage schedule and finalization of the annual outage plan for the following financial year by 31st January of each year.
- g) Any other responsibilities assigned by CERC/ CEA Regulations/ WRPC/ RPC Resolution shall also be carried out by secretariat.
- 4.4 RLDC shall provide to Member Secretary, WRPC a computer terminal to have a view of all the parameters in real time frame of Regional grid system.

5. Furnishing of data / information to Secretariat of RPC.

RLDC and the constituents of the region shall make available all data / information required by the Secretariat to discharge its functions or to carry out any other responsibility / function assigned to it by the Authority / Commission / Committee. It shall also be responsibility of the constituents to ensure that any data though not specifically asked for by the Secretariat, but which may be required for the specific responsibility / function assigned to the Secretariat is also made available to the secretariat.

6. Chairperson of WRPC

The Chairperson of WRPC would be appointed as per GOI Notification No 23 / 1 / 2004-R&R dated 25.05.2005 and 29.11.2005 as amended from time to time.

7. Website of WRPC

The WRPC shall have its own website which shall be maintained by WRPC Secretariat.

CHAPTER II

PROCEDURE FOR CONDUCTING RPC MEETINGS

7. Place and date of WRPC Meeting

7.1 The place and date of the meeting will be decided by Member Secretary, WRPC in consultation with Chairperson, WRPC. The meeting generally be held within the region.

7.2 Meeting will be hosted by the member organizations as per the roster prepared by Member Secretary, WRPC in consultation with the members of the WRPC.

8. Notice for the Committee meetings and Agenda

8.1 Notice for the Committee meetings shall be issued by Member Secretary, WRPC at least 2 / 3 weeks in advance in consultation with Chairperson, WRPC. In case of emergency meetings required to be conducted to carry out urgent business, notice of one week is to be given.

8.2 The Agenda points for the meeting shall be sent to the Member Secretary by the members at least 20 days in advance of the meeting. The member Secretary, WRPC shall finalize the agenda and circulate the same to all its members at least 10 days in advance and also be posted on the website.

8.3 Agenda for Committee meeting shall generally be put up after discussions in Technical Co-ordination Sub-Committee (TCC).

8.4 Member Secretary, WRPC may also put any agenda involving urgent matters / policy issue directly in consultation with Chairperson, WRPC.

8.5 Member Secretary RPC may convene a meeting on short notice on any urgent matter in consultation with Chairperson of the committee.

9. Effect of Non-receipt of Notice of Meeting by a Member

The non-receipt of notice by any member of WRPC or sub-committee shall not invalidate the proceeding of the meeting or any decision taken in the meeting.

10. Cancellation / re-scheduling of Meeting

If a meeting is required to be cancelled or rescheduled the same shall be intimated to the members at the earliest by telephone / fax and also posted in WRPC website immediately.

11. Periodicity of meetings

The Committee members shall meet at least once in six months as per para-11 of amended Resolution of GOI dated 29.11.2005. However, the Committee may meet to discuss any issue as and when required in consultation with Chairperson, WRPC.

12. Quorum of WRPC Meeting

- 12.1 The Quorum of the meeting shall be 50 % of its members.
- 12.2 All decision in the WRPC shall be taken by consensus.
- 12.3 The decision of the WRPC arrived at for Operation of the Regional Grid and Scheduling and dispatch of Electricity shall be followed by Western Regional Load Despatch Centre (WRLDC) subject to the directions or regulations of the Central Commission.
- 12.4 Only members of WRPC and not more than one representatives of his organization shall participate in the Committee meeting. Other persons may attend the meeting by invitation / permission only.

13. Presiding Authority

- 13.1 The Chairperson, WRPC shall preside over the meeting of ...RPC and conduct business. The Member Secretary, WRPC shall assist the Chairperson of WRPC in conducting the meeting. If the Chairperson is unable to be present at the meeting for any reason, other members present in the meeting shall nominate a person among themselves to preside over the meeting.
- 13.2 In the absence of Member Secretary, WRPC such of the officer as may be designated by Authority shall function as Member Secretary to assist Chairperson, WRPC.

14. Recording of the minutes

- 14.1 The minutes of the meeting shall be finalized and circulated to all its members by the Members Secretary, WRPC within 15 working days from the date of the Committee Meeting. The minutes shall also be posted on the website of WRPC.
- 14.2 The discussions during the meeting shall be Audio recorded and the record shall be kept at the secretariat of -RPC till the confirmation of the minutes. The member organization hosting the meeting shall extend all facilities for audio recording of the proceedings of the meeting.

15. Confirmation of the Minutes

Minutes of the WRPC meeting shall be placed in the next meeting for confirmation. However, in case of urgency the minutes may be confirmed by circulation.

CHAPTER III

SUB-COMMITTEES OF WRPC

16. Constitution of Sub-Committees of W RPC

- 16.1 Following Sub-Committees will be constituted by WRPC to guide and assist it in conducting the functions assigned to it.
- a) Technical Co-Ordination Sub-Committee (TCC)
 - b) Operation Co-Ordination Sub-Committee (OCC)
 - c) Commercial Sub-Committee (CC)
 - d) Protection Sub-Committee (PC)
 - e) System Study Sub-Committee
- 16.2 WRPC or Member Secretary, WRPC or any Sub-Committee may constitute task force, core group for specific purpose from among the members and external experts to advice on any specific issue.

Functions and Composition Of Sub-Committees Of RPC

17. TECHNICAL CO-ORDINATION SUB-COMMITTEE (TCC)

17.1 Functions:

17.1.1 Technical Co-ordination Sub-Committee, shall consider all issues referred by the Operation Co-Ordination Sub-Committee, Commercial Sub-Committee and Protection Sub-Committee concerning operation of regional grid, commercial aspects, inter-state / inter-regional transfer of power, grid stability etc. leading to economy and efficiency in the operation of power system in the region

17.1.2 TCC shall implement the decisions of the WRPC and also provide guidance and assist WRPC in discharge of its functions and formulation of policy matters on regional grid operation, grid security, commercial matters.

17.2 Composition Of Technical Co-ordination Sub-Committee:

17.2.1 TCC shall be represented by the Technical Members of the RPC constituents dealing with the Generation / transmission /Distribution and representative from Central Electricity Authority. The representation shall be at the level of Technical Members in State Utilities, Executive Directors/General Manager in PSUS or equivalent/ Technical Heads of Distribution company/Traders/IPPs and Chief Engineer in CEA.

17.2.2 Other than members of WRPC constituents there shall be upto two additional representatives of DISCOM, IPPs upto 1000 MW and Electricity Traders in the TCC.

17.2.3 Chairperson, TCC shall be appointed by Chairperson, WRPC from the organizations in their concerned States. Chairperson, TCC shall be rotated every year from among the States in the same order as Chairperson of WRPC.

17.3 Meetings:

17.3.1 TCC shall meet before the WRPC meeting and put up its recommendations to the WRPC.

17.3.2 TCC shall meet separately also as and when needed to address urgent issues or specific issues, if any, concerning the operation of regional grid, security of the grid , commercial matters and other issues.

17.3.3 The Chairperson of the TCC shall preside over the meeting. In case Chairperson is unable to be present, members present shall elect a person among themselves to preside over the meeting.

17.3.4 Member Secretary, WRPC shall assist Chairperson, TCC in conducting TCC Meeting.

18. OPERATION CO-ORDINATION SUB-COMMITTEE (OCC)

18.1 Functions:

18.1.1 Operation Co-ordination Committee(OCC) shall discuss all issues related to operation of the regional grid viz. reviewing the schedule v/s. actual generation of various power stations drawn up in the previous month, estimating the availability of power and energy from each power station and demand of each State for the current and next month, drawing up coordinated maintenance schedule for generating units and major transmission lines, reviewing operational discipline with reference to norms to be observed by constituents, reviewing the operation of Automatic Under-Frequency Relays, discussing system occurrences, if any, during the previous month and reviewing the status of implementation of the recommendations of the Inquiry Committees and any other matter referred by the TCC/WRPC.

18.2 Composition Of Operation Co-Ordination Committee:

18.2.1 OCC shall be represented by the representatives of the constituent members of RPC. Other than members of RPC constituents there may be upto two additional representatives of DISCOM, IPPs upto 1000 MW and Electricity Traders in the OCC. The nominated representative shall be at the level of Chief Engineer and equivalent level. OCC may co-opt additional members as and when required.

18.2.2 Member Secretary, WRPC shall be Chairperson of the OCC and preside over the meetings. Superintending Engineer of secretariat shall be convener of the OCC.

18.3 Meetings:

The meeting will be held every month generally before 10th day of that month.

19. COMMERCIAL SUB-COMMITTEE (CC):

19.1 Functions:

19.1.1 Commercial Sub-Committee(CC) shall discuss all commercial related issues viz. energy accounting, schemes required for inclusion in the Bulk Power Supply Agreements, requirement of power from the new projects, installation of special energy meters and its cost sharing, etc., metering aspects, reviewing of the payments towards UI charges, treatment of transmission losses, commercial declaration of lines/substation and Generating units , commercial issues in inter-state and inter-regional exchange of power, issues concerning settlement of payments among constituents, if any, etc. and any other matter referred by the TCC/WRPC.

19.2 Composition Of Commercial Sub-Committee (CC):

19.2.1 Commercial sub-committee shall be represented by the representatives of the constituent members of RPC. Other than members of RPC constituents there shall be upto two additional representatives of DISCOM, IPPs less than 1000 MW and Electricity Traders in the CC. The nominated representative shall be Commercial Heads in the member organisation. CC may co-opt additional members as and when required.

19.2.2 Member Secretary, WRPC shall be Chairperson of the CC and preside over the meetings. Superintending Engineer of secretariat shall be convener of the CC.

19.3 Meetings:

19.3.1 The meeting will be held quarterly or as and when required to address the issues of urgent nature.

20. PROTECTION SUB-COMMITTEE (PC)

20.1 Functions:

20.1.1 Protection Sub-Committee (PC) shall discuss all power system protection related issues viz. analysis of system disturbances in the region, review of protective relaying schemes, relay co-ordination islanding schemes, automatic under frequency load shedding schemes, review of the implementation of recommendations made by the Inquiry Committee of the grid disturbance in the region concerning the above matters, etc. and any other matter referred by the TCC/WRPC.

20.2 Composition Of Protection Sub-Committee:

20.2.1 Protection Sub-Committee shall be represented by constituent members of RPC. Other than members of RPC constituents there shall be upto two additional representatives of DISCOM, IPPs less than 1000 MW and Electricity Traders in the PC. The nominated representative shall be at the level of Chief Engineers or equivalent level and concerns with power system protection / testing in the region. PC may co-opt additional members as and when required.

20.2.2 Member Secretary, WRPC shall be Chairperson of the PC and preside over the meetings. Superintending Engineer of secretariat shall be convener of the PC.

20.3 Meetings:

The meeting will be held quarterly or as and when required to address the issues of urgent nature.

21. System Study Sub-Committee:

21.1 Functions:

System Study Sub-Committee shall carry out following system studies:

- i) Studies for assessment of the quantum of capacitors required in the region taking into account the expected additions in the generation and transmission systems and the low voltage conditions in the system.
- ii) Studies for review of reactive compensation requirement.
- iii) Operational load flow studies, as and when required, for peak conditions off peak conditions etc.
- iv) Short-circuit studies as and when required
- v) Transient stability studies for major events like grid disturbances or other issues as and when necessary
- vi) Identification of requirement of reactors as and when required
- vii) Co-relation of protection related issues from Studies as and when required
- viii) Any other technical study referred by the WRPC/TCC.

21.2 Composition Of System Study Sub-Committee:

21.2.1 System Study Sub-Committee shall be represented by the Members of the WRPC constituents at the level of Superintending Engineer familiar with the subject. Study Sub Committee may co-opt additional members as and when required.

21.2.2 Superintending Engineer of secretariat shall be convener of this Sub-Committee.

21.3 Meetings:

As and when required, as decided by the Member Secretary, WRPC.

CHAPTER IV

PROCEDURE FOR CONDUCTING SUB-COMMITTEE MEETINGS OF WRPC

22. Conducting of Sub-Committee Meetings, issue of Notice, Agenda & its Minutes

22.1 The notice for the above sub-committee meeting shall be issued at least 10-15 days before the date of meeting and agenda points one week before the meeting by the WRPC Secretariat. The minutes of the meeting shall be finalized by Member Secretary and issued by WRPC Secretariat within 15 working days of the meeting.

22.2 The decision of the Committee arrived at for Operation of the Regional Grid and other above functions shall be implemented by the Constituents. In case

the Sub-committee recommends the matter to the TCC / WRPC, for further deliberation or decision, the same shall be referred by WRPC secretariat to TCC/ WRPC.

- 22.3 The meetings will be conducted at the place and venue preferably located in the Region to be decided by Member Secretary, WRPC.
- 22.4 Meeting may be hosted by the member organizations as decided by Member Secretary, WRPC in consultation with the members of the sub-committee. All the arrangements required for conducting the meeting shall be made by the host member organisation.

CHAPTER V

23. REPORTS BY WRPC

The following reports shall be prepared and furnished by WRPC secretariat:

S. No.	Name of the report	Periodicity
1	Monthly Progress Report Western Regional Grid/operational Data	Monthly
2	Annual Report of WRPC	Annual

CHAPTER VI

MISCELLANEOUS

24. Saving of inherent Power of the WRPC.

- 24.1 Nothing in these Rules shall bar the WRPC from adopting in conformity with the Act a procedure that is at variance with provisions of these Rules, if the WRPC in view of the special circumstances of a matter or class of matters deem it necessary or expedient to deal with such a matter or class of matters.
- 24.2 Nothing in these Rules shall expressly or by implication, bar the WRPC to deal with any mater or exercise any power under the Act for which no Rules have been framed and WRPC may deal with such matters, and functions in a manner it thinks fit.

Annexure- 3.1(a)**FREQUENCY PARTICULARS OF WESTERN REGION FOR
THE PERIOD SEPTEMBER 2005 TO APRIL 2006**

Sr.No.	PARTICULARS	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06
1	MAXIMUM FREQUENCY(Hz)								
1.1	Integrated over an hour	50.66	50.48	50.37	50.33	50.29	50.13	50.47	50.25
1.2	Instantaneous	52.02	50.82	50.90	50.76	50.73	50.63	50.78	50.61
2	MINIMUM FREQUENCY(Hz)								
2.1	Integrated over an hour	49.10	49.22	49.02	48.82	49.05	48.80	48.95	48.62
2.2	Instantaneous	47.14	48.56	48.52	48.51	48.52	48.47	48.51	48.24
3	AVERAGE FREQUENCY(Hz)	50.03	49.86	49.67	49.67	49.62	49.34	49.59	49.20
4	NUMBER OF TIMES FREQUENCY								
	TOUCHED 48.0 Hz	4	0	0	0	0	0	0	0
	TOUCHED 48.5.Hz	4	0	0	0	0	5	0	112
	TOUCHED 51.Hz	9	0	0	0	0	0	0	0
5	PERCENTAGE TIME WHEN								
	FREQUENCY WAS								
5.1	Above 50.2 Hz	35.98	13.53	6.69	7.29	4.50	0.47	8.00	0.74
5.2	Above 50.5 Hz	6.52	0.88	0.33	0.26	0.12	0.01	0.84	0.01
5.3	Between 50.2 Hz & 49.5 Hz	52.08	72.69	60.26	59.69	56.66	27.79	46.15	19.17
5.4	Between 50.2 Hz & 49.0 Hz	61.99	86.05	90.19	89.00	91.61	85.31	85.84	65.97
5.5	Below 49.0 Hz	2.03	0.42	3.12	3.71	3.89	14.22	6.16	33.29
5.6	Below 49.8 Hz	25.23	41.83	63.64	62.02	68.10	90.87	68.42	92.81
5.7	Between 49.0 Hz & 50.5 Hz	91.45	98.70	96.55	96.03	95.99	85.77	93.00	66.70
5.8	Between 50.5 Hz & 48.5 Hz	93.48	99.12	99.67	99.74	99.88	99.98	99.16	99.71

Annexure- 3.1 (b)

Power Position for period from September 2005 to April 2006

Details	Gujarat								Madhya Pradesh							
	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06
UR demand MW	9354	8451	8083	8234	8703	8710	8791	8813	5149	6011	6377	6734	6614	6553	5918	5782
Availability MW	7564	7677	7296	7696	7476	7341	7406	7390	4746	5623	5780	5573	5333	5118	4613	4209
Deficit MW(-)	-1790	-774	-787	-538	-1227	-1369	-1385	-1423	-403	-388	-597	-1161	-1281	-1435	-1305	-1573
Deficit(-)/Surplus(+) (%)	-19.14	-9.16	-9.74	-6.53	-14.10	-15.72	-15.75	-16.15	-7.83	-6.45	-9.36	-17.24	-19.37	-21.90	-22.05	-27.21
UR requirement MUs	4348	5518	5082	5345	5272	4908	5292	5392	2507	3353	4057	4154	4036	3590	3205	3248
Availability MUs	3969	5048	4785	5037	4875	4511	4948	4883	2465	3281	3575	3368	3254	2798	2661	2514
Deficit Mus (-)	-379	-470	-297	-308	-397	-397	-344	-509	-42	-72	-482	-786	-782	-792	-544	-734
Deficit(-)/Surplus(+) (%)	-8.72	-8.52	-5.84	-5.76	-7.53	-8.09	-6.50	-9.44	-1.68	-2.15	-11.88	-18.92	-19.38	-22.06	-16.97	-22.60
	Chhattisgarh								Maharashtra							
	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06
UR demand MW	1980	2003	1853	1843	1960	2182	2241	2267	13386	14828	16086	16590	16450	16311	16558	16396
Availability MW	1790	1854	1734	1792	1888	1924	1965	1927	11495	12877	12359	11981	11829	11993	12339	12498
Deficit MW(-)	-190	-149	-119	-51	-72	-258	-276	-340	-1891	-1951	-3727	-4609	-4621	-4318	-4219	-3898
Deficit(-)/Surplus(+) (%)	-9.60	-7.44	-6.42	-2.77	-3.67	-11.82	-12.32	-15.00	-14.13	-13.16	-23.17	-27.78	-28.09	-26.47	-25.48	-23.77
UR requirement MUs	1138	1181	1031	1102	1211	1195	1293	1357	7269	8811	9142	10074	10084	9523	10021	10410
Availability MUs	1123	1163	1011	1068	1167	1110	1227	1203	6701	7533	7452	7748	7718	7210	7969	8017
Deficit Mus (-)	-15	-18	-20	-34	-44	-85	-66	-154	-568	-1278	-1690	-2326	-2366	-2313	-2052	-2393
Deficit(-)/Surplus(+) (%)	-1.32	-1.52	-1.94	-3.09	-3.63	-7.11	-5.10	-11.35	-7.81	-14.50	-18.49	-23.09	-23.46	-24.29	-20.48	-22.99

Details	Goa								DD & DNH							
	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06
UR demand MW	351	347	343	335	326	368	367	367	539	486	470	474	485	510	523	568
Availability MW	351	347	343	335	326	368	367	367	539	486	470	474	485	455	501	508
Deficit MW(-)	0	0	0	0	0	0	0	0	0	0	0	0	0	-55	-22	-60
Deficit(-)/Surplus(+) (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-10.78	-4.21	-10.56
UR requirement MUs	184	200	191	202	204	183	215	212	312	333	310	343	344	330	357	366
Availability MUs	184	200	191	202	204	183	215	212	312	333	310	343	344	312	344	323
Deficit Mus (-)	0	0	0	0	0	0	0	0	0	0	0	0	0	-18	-13	-43
Deficit(-)/Surplus(+) (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-5.45	-3.64	-11.75
	Western Region															
	Sep-05		Oct-05		Nov-05		Dec-05		Jan-06		Feb-06		Mar-06		Apr-06	
UR demand MW	29120		30951		32506		33065		32678		32698		32432		32383	
Availability MW	25014		26575		26085		25939		25262		25525		25685		25809	
Deficit MW(-)	-4106		-4376		-6421		-7126		-7416		-7173		-6747		-6574	
Deficit(-)/Surplus(+) (%)	-14.10		-14.14		-19.75		-21.55		-22.69		-21.94		-20.80		-20.30	
UR requirement MUs	15759		19396		19813		21220		21152		19730		20383		20986	
Availability MUs	14755		17559		17325		17766		17563		16125		17366		17152	
Deficit Mus (-)	-1004		-1837		-2488		-3454		-3589		-3605		-3017		-3834	
Deficit(-)/Surplus(+) (%)	-6.37		-9.47		-12.56		-16.28		-16.97		-18.27		-14.80		-18.27	

**RECOMMENDATIONS OF THE INQUIRY COMMITTEE ON GRID
DISTURBANCES**

1. Arrangement for continuing transfer of power over the HVDC Chandrapur-Padghe link from Eastern to Western part of the Grid must be made in case of complete loss of supply at Chandrapur TPS sub-station, as recommended earlier in WREB forum.
2. Arrangement for sectionalizing the 220 kV bus at Padghe sub-station be made to ensure availability of A.C. supply.
3. To reduce the loading of Padghe substation and enhance the reliability of network surrounding Padghe and Kalwa, four 220 kV circuits from Nasik to Padghe substation should be rerouted from Nasik to 220 kV Kalwa substation.
4. In the grid disturbances of 21.9.2005 and 26.9.2005 the collapse of power supply in Western Maharashtra was a result of prolonged transmission network constraints, prevailing at the time of occurrences. This could have been minimized had the available generation in Western portion of the split grid been sustained. Uran GPS islanding scheme did not work successfully. Committee recommends that the existing Uran islanding scheme be reviewed on priority.
5. The protection and switchgear equipment of high capacity EHV substations at Padghe and Kalwa should operate selectively and reliably. To ensure this Committee recommends the following:-
 - i) The existing protection scheme at these substations should be reviewed by an expert group within three months to prevent mal-operations of relays in future.
 - ii) All the existing 220 kV minimum oil circuit breakers should be replaced with SF6 circuit breakers. This should be done in time bound manner.
 - iii) At the above-mentioned substations all the existing protective relays should be replaced with modern numerical relays in a time bound manner.

6. All EHV substations should be maintained well by adopting the best-known practices. Preventive Maintenance aspects of important EHV substations, Padghe and Kalwa in particular, should be paid due attention and the same may not be compromised because of fund constraints existing, if any.
7. The high voltage profile is generally found at Dhule/ Padghe substations causing tripping of important interstate and intrastate tie lines. The necessity of providing switchable bus reactors at these locations should be studied by the Study Committee within a period of three months.
8. The quantum of load relief obtained in Western Maharashtra under AUFLS was much less than the planned. The reasons for inadequate operation of under-frequency and df/dt relays may be looked into by Maharashtra. As the major load centres fall in Western Maharashtra, higher quantum of load relief than the existing quantum of 1095 MW should be implemented in this system. This load relief should be dominant at frequency settings of 48.2 Hz and 48.0 Hz.
9. Committee observed that upper and lower East-West EHV corridors in Maharashtra network require to be interconnected with additional strong EHV connections. This shall provide alternative path when transmission bottlenecks prevail at any time in one of the corridors. MSETCL may carry out system study in this regard in consultation with Power System Planning group of CEA.
10. One pole of Chandrapur-Padghe HVDC link is out since August 2005 due to convertor transformer problem. The availability of both the poles is essential for reliability of system. The restoration of the pole under outage should be expedited by Maharashtra. The Committee stresses the need for availability of two spare units of convertor transformers (one each at both ends) as recommended earlier in WREB forum.

Annexure – 3.3

**Voltages at the important 400 kV substations during the period
September 2005 to April 2006**

400 kV S/S	Indore		Itarsi		Karad		Bhilai	
	Max	Min	Max	Min	Max	Min	Max	Min
Sep-05	417	380	428	394	431	395	438	391
Oct-05	425	359	426	377	429	383	420	386
Nov-05	426	351	430	370	436	374	410	379
Dec-05	431	367	433	379	430	378	412	382
Jan-06	434	386	436	385	429	378	417	378
Feb-06	431	374	435	380	427	381	413	376
Mar-06	429	378	431	380	426	381	411	374
Apr-06	436	388	436	393	425	378	412	381
	Dhule		Asoj		Kasor		Jetpur	
	Max	Min	Max	Min	Max	Min	Max	Min
Sep-05	438	395	421	387	433	391	415	361
Oct-05	432	392	419	381	422	382	415	319
Nov-05	432	384	424	369	426	384	414	342
Dec-05	440	384	424	393	424	392	412	342
Jan-06	434	394	427	395	426	394	414	355
Feb-06	434	390	423	392	423	396	415	367
Mar-06	440	382	427	397	435	392	414	367
Apr-06	432	378	426	400	420	398	415	377

Annexure-4**Anticipated
Power Scenario during June 2006 to August 2006**

Details				Madhya Pradesh		
	Jun-06	Jul-06	Aug-06	Jun-06	Jul-06	Aug-06
Anticipated UR demand MW	8290	8231	8359	4800	4400	4500
Anticipated Availability MW	6186	6222	6637	3010	4197	4568
Anticipated Deficit MW(-)	-2104	-2009	-1722	-1790	-203	68
Anticipated Deficit(-)/Surplus(+) (%)	-25.38	-24.41	-20.60	-37.29	-4.61	1.51
Anticipated UR requirement MUs	5000	5601	5634	2550	2325	2480
Anticipated Availability MUs	4655	4660	4784	2389	2783	2922
Anticipated Deficit Mus (-)	-345	-941	-850	-161	458	442
Anticipated Deficit(-)/Surplus(+) (%)	-6.90	-16.80	-15.09	-6.31	19.70	17.82
				Maharashtra		
	Jun-06	Jul-06	Aug-06	Jun-06	Jul-06	Aug-06
Anticipated UR demand MW	2000	1950	1950	16050	15400	14900
Anticipated Availability MW	1455	1159	1160	11725	10842	10522
Anticipated Deficit MW(-)	-545	-791	-790	-4325	-4558	-4378
Anticipated Deficit(-)/Surplus(+) (%)	-27.25	-40.56	-40.51	-26.95	-29.60	-29.38
Anticipated UR requirement MUs	1086	1076	1126	7800	7400	7500
Anticipated Availability MUs	860	873	917	6692	6828	6863
Anticipated Deficit Mus (-)	-226	-203	-209	-1108	-572	-637
Anticipated Deficit(-)/Surplus(+) (%)	-20.81	-18.87	-18.56	-14.21	-7.73	-8.49
				DD/DNH		
	Jun-06	Jul-06	Aug-06	Jun-06	Jul-06	Aug-06
Anticipated UR demand MW	360	360	360	510	452	461
Anticipated Availability MW	320	269	270	354	325	342
Anticipated Deficit MW(-)	-40	-91	-90	-156	-127	-119
Anticipated Deficit(-)/Surplus(+) (%)	-11.11	-25.28	-25.00	-30.59	-28.10	-25.81
Anticipated UR requirement MUs	205	205	200	331	314	324
Anticipated Availability MUs	197	188	190	247	240	251
Anticipated Deficit Mus (-)	-8	-17	-10	-84	-74	-73
Anticipated Deficit(-)/Surplus(+) (%)	-3.90	-8.29	-5.00	-25.38	-23.57	-22.53
	Western Region					
	Jun-06	Jul-06	Aug-06			
Anticipated UR demand MW	31020	29523	29941			
Anticipated Availability MW	22790	23013	23499			
Anticipated Deficit MW(-)	-8230	-6510	-6442			
Anticipated Deficit(-)/Surplus(+) (%)	-26.53	-22.05	-21.52			
Anticipated UR requirement MUs	17141	16607	16940			
Anticipated Availability MUs	15095	15331	15676			
Anticipated Deficit Mus (-)	-2046	-1276	-1264			
Anticipated Deficit(-)/Surplus(+) (%)	-11.94	-7.68	-7.46			

Annex- 6.1(a)

TRANSMISSION SCHEMES UNDER EXECUTION BY POWERGRID IN WR

PGCIL

S.No.	Name of the Trans line	No. of Ckts	Length (CKM)	Ant./ Act.	Remarks
765 kV Lines :					
1	Sipat - Seoni (Line -1)	S/C	351	Feb-07	
2	Sipat - Seoni (Line -2)	S/C	354	Feb-07	
3	Bina - Malenpur (Gwalior) - (to be charged at 400 kV)	S/C	232	Mar -07	
4	Seoni - Wardha (to be operated at 400kV)	S/C	275	Jun-08	
5	Agra - Gwalior (to be initially charged at 400 kV)	S/C	128	Jul-07	
6	Seoni - Bina (to be initially charged at 400 kV)	S/C	292	Sep-09	
	TOTAL		1632		
400 kV Lines :					
a)	SIPAT - I Transmission System			Feb'07	
1	Seoni - Khandwa	D/C	701	Feb'07	
2	Nagda - Dehgam	D/C	664	Sept.'07	
3	LILO of S/C Korba - Raipur at Sipat.	D/C	10	Feb'07	LILO of one Ckt. preponed on NTPC's request. Charged & put in commercial wef 1.5.06
4	LILO of S/C Bhilai - Satpura at Seoni.	D/C	12	Feb'07	
5	LILO of both ckt of D/C Sardar Sarovar - Nagda at Rajgarh.	2 X D/C	18	Feb'07	
b)	Vindhyachal - Korba D/C Trans. Line	D/C	289	Feb'07	
c)	Vindhyachal -III Transmission System			July'07	
1	Vindhyachal - Satna	D/C	513	Aug'06	
2	Satna - Bina	D/C	558	Jul'07	
3	LILO of D/C Rourkela - Raipur at Rajgarh	D/C	37	Jul'07	
4	LILO of D/C Satna - Bina (MPSEB) at Bina (PG)	D/C	10	Jul'07	

d)	SIPAT - II Transmission System			Aug'07	
1	Khandwa-Rajgarh	D/C	426	Aug'07	
2	LILO of S/C Korba - Raipur at Bhatapara (PG)	D/C	30	Aug'07	
e)	Bhadrawati - Chandrapur (MSEB) D/C	D/C	46	Mar'07	Preponed on request of WR constituents. Charged & put in commercial operation wef 1.5.06
f)	Bina - Nagda	D/C	662	Sept.'07	
g)	Western Region System Strengthening- I			Dec'07	
1	Sipat - Raipur	D/C	296	Dec'07	
h)	Sipat - II Supplementary Trans. System			Jun'08	
1	Wardha - Akola	D/C	368	Jun'08	
2	Akola - Aurangabad	D/C	530	Jun'08	
	Total		5170		

TRANSMISSION SCHEMES IN STATE SECTOR SCHEDULED FOR 2006-07

GUJARAT

Sl. No.	Name of the Trans line	No. of Ckts	Length (CKM)	Ant./ Act.	Remarks
400 kV Lines :					
1	LILO of Chorania-Jetpur for Rajkot	D/C	130	Mar-07	
2	Dehgam (PGCIL)-Ranchodpura	D/C	130	Mar-07	
	TOTAL		260		
220 kV Lines :					
1	Akrimota-Panandhro	D/C	55	Jul-06	
2	Bardoli-Chikali	D/C	96	Mar-07	
3	Rajkot-Morbi	D/C	132	Mar-07	
4	Vapi-Bhilad	D/C	44	Mar-06	
5	Vadavi (Ranchodpura 400 kV) - Mitha (Jotana)	D/C	88	Jun-06	
6	LILO of Kansari - Tharad D/C at Lakhani	D/C	20	Mar-07	
7	Line for Deladwa (B)	S/C	20	Mar-07	
8	Dhanki-Adalsar	D/C	18	Apr-06	
	TOTAL		473		
MADHYA PRADESH					
400 kV Lines :					
1	LILO of Birsinghpur-Damoh at Damoh	D/C	40	Jun-07	
	TOTAL		40		
220 kV Lines :					
1	Nagda-Ratlam S/C on D/C		50	Jun-06	
2	Bina-Guna (2nd Circuit)	S/C	130	Jun-06	
3	Narsinghpur - Tikkamgarh S/C on D/C		130	Jun-06	
4	Bina-Shivpuri	D/C	340	Oct-06	
5	LILO of Barwaha-Nepanagar (Khandwa) at Omkareshwar,	2xD/C	92	Mar-07	
6	Omkareshwar-Sanawad	D/C	46	Mar-07	
7	Birsinghpur-Jabalpur	D/C	310	Sep-06	

8	LILLO of both ckts of Bhopal-Itarsi at Itarsi	D/C	4	Feb-07	
9	LILLO of Birsinghpur-Rewa at Amarkantak	D/C	86	Feb-07	
10	LILLO of Birsinghpur-Rewa for Sidhi	D/C	126	Feb-07	
11	Amarkantak-Jabalpur	D/C	470	Apr-07	
12	Rajgarh 400 kV(PG)-Rajgarh(MP)	D/C	50	Feb-07	
13	Seoni 400 kV(PG)-Seoni(MP)	D/C	20	Mar-07	
14	Seoni 400 kV S/S (PG)-Seoni 220 kV S/S	D/C	6	Feb-07	
15	LILLO of Satna-Katni for Satna (PG)	D/C	3	Mar-07	
16	LILLO of Gwalior-Malanpur at Gwalior 400 kV (PG)	D/C	100	Feb-07	
	TOTAL		1963		

MAHARASHTRA

Sl. No.	Name of the Trans line	No. of Ckts	Length (CKM)	Ant./ Act.	Remarks
400 kV Lines :					
1	Dabhol-Nagothane, (2nd Circuit)	S/C	134	Mar-07	
2	LILLO of Bhusawal-Koradi, 1st Circuit at Akola	D/C	77	Mar-07	
	TOTAL		211		
220 kV Lines :					
1	LILLO Chinchwad-Theur to Phursungi (4 ckts) M/C 4x5.4Km	M/C	22	Mar-06	
2	Theur-Jejuri	D/C	38	Dec-06	
3	LILLO of Nasik - Kalwa D/C at Ghatghar 4x22.323KmM/C+2x4.99KmD/C	M/C&D/ C	102	Mar-07	
4	LILLO of Malharpeth-Wankuswade for Satara MIDC S/S	D/C	60	Mar-06	
5	Padegaon – Savangi	D/C	30	Mar-06	
6	LILLO of Kanhan-Umred S/C on D/C at Umred	D/C	50	Mar-07	
7	LILLO of Bableshwar - Aurangabad at Bhenda	D/C	37	Dec-06	
8	LILLO of Apta-Chinchwad at Urse	D/C	22	Mar-07	
9	LILLO of Dhule-Dondaicha at Amalner	D/C	80	Mar-07	
10	LILLO Tarapur-Borivli at Boisar II	D/C	14	Mar-07	
11	Boisar (PGCIL 400/220 kV)-Wada S/C on D/C		57	Dec-06	
12	Kolhapur III-Mundhaltitta	S/C	40	Mar-07	

13	LILO of Jejuri-Pandharpur at Tembuni	D/C	6	Mar-07	
	TOTAL		558		

CHHATTISGARH**220 kV Lines :**

1	Korba-Darri-Bishrampur	D/C	300	Mar-07	
2	Korba (E)-Bhatapara	D/C	270	Mar-07	
3	LILO of Korba – Amarkantak at Pendra	D/C	29	Jun-06	
4	Bhatapara (Suhela) – Bemetara	D/C	120	Mar-07	
5	Bhatapara (Suhela) – Mahasamund	D/C	200	Dec-06	
6	Korba(E) – Korba(W) Interconnection	S/C	12	Jan-06	
7	Kumhari (PGCIL) – Mandirhasod	S/C	40	Mar-07	
8	LILO of Korba (E) – Bhatapara 2 nd Ckt. at Champa	D/C	30	Mar-07	
9	Bhatapara 400 kV (PGCIL) S/S – Bhatapara 220 kV S/S)	S/C	5	Mar-07	
10	LILO of Korba (E) – Bhatapara at Bhatapara 400kV (PGCIL)S/S	D/C	8	Mar-07	
11	Raigarh 400 kV(PGCIL) S/S – Raigarh 220 kV S/S	S/C	12	Mar-07	
12	LILO of Korba (E)-Budhipadar 2 nd Ckt at Raigarh 400 kV(PGCIL)S/S	D/C	15	Mar-07	
	TOTAL		1041		

GOA**220 kV Lines :**

1	Xeldem-Cuncolin	D/C	20	Mar-07	
	TOTAL		20		

Annex-7.4**NEW GENERATION SCHEMES TO BE ADDED IN 2006-07 (end of Xth Year Plan) & DURING XIth PLAN IN WESTERN REGION**

Sr. No.	Name of the Power Projects	Unit No.	Capacity (MW)	Schedule Date of Commissioning
A	Gujarat			
1	Panadro Power Project, Kutch (Lignite)	4	75	Nov. 2006
2	Dhuvaran CCPP Extn. - ST	ST	40	Jun-06
3	Sugan CCPP- TPGCL , Surat (Gas) (Pvt.)	Block-1	376	Mar.2007
		Block-2	376	Dec.2007
		Block-3	376	Feb. 2008
4	EASSAR Power, Hazira CCPP (Gas) (Pvt.)	Block-1	730	Jan. 2008
		Block-2	730	Jan. 2009
5	Sikka GSECL PP, Jamnagar (Thermal)	3	250	Dec.2009
		4	250	Mar. 2010
6	Uttran GSECL CCPP, Surat (Gas)	Block-1	350	Sept.-Dec.2008
7	Surat Lignite TPP Extn. - GIPCL	1	125	Oct. 2010
		2	125	
8	Pipavav CCPP (Gas) - KRISHBO	GTs & STs	615	Project clearance/inputs are being arranged.
9	Paguthan Expansion GPEC CCPP,Baruch	Blk-1 to 3	1050	Project clearance/inputs are being arranged.
10	Hazira CCPP Ext.- GSECL	GT&ST	200	Project clearance/inputs are being arranged.
11	Bhavanagar Lignite (Nirma Group)		250	Project clearance/inputs are being arranged.
12	Sesan - NLC		1000	Project clearance/inputs are being arranged.
13	Akrimota Extn. - GMDCL		250	Project clearance/inputs are being arranged.
B	Madhya Pradesh			
	<u>THERMAL /GAS</u>			
1	Birsinghpur TPS Extn.	5	500	Sep.2006
2	Amarkantak TPS Extn.	5	210	June.2007
3	Malwa TPP	1	500	Project clearance/inputs are being arranged.
		2	500	Project clearance/inputs are being arranged.
4	Chanderi CCGT JV		1000	Project clearance/inputs are being arranged.
	<u>HYDRO</u>			
5	Marhikheda HEP	1 x 2	20	July 2006
		1	20	Mar. 2007
6	Bansagar HEP-IV	1 x2	20	July 2006
7	Omkareshwar HEP	1 x4	260	2007-08
		1 x 4	260	2008-09
8	Kanhan HEP	1 x 2	90	2011-12
9	Sone HEP	1 x 5	100	2011-12

C	Chhattisgarh			
	<u>THERMAL /GAS</u>			
1	Korba (E)	1	250	Jan. 2007
		2	250	Mar. 2007
2	Raigarh TPP Ph-I - Jindal	1	250	Mar. 2007
	Raigarh TPP Ph-I & II - Jindal	2	250	Oct. 2007
		3	250	Oct. 2007
		4	250	Jan. 2008
4	Korba (W) Extn	1	300	Nov. 2008
		2	300	Feb. 2009
3	Lanco Amarkantak (Pathadi) Mega TPS (Pvt.)	1	300	Sep. 2008
		2	300	
	Lanco Amarkantak (Pathadi) TPS- Ph-III (Pvt.)	-	600	Project clearance/inputs are being arranged.
5	Marwa TPP	1	500	Project clearance/inputs are being arranged.
		2	500	Project clearance/inputs are being arranged.
	<u>HYDRO</u>			
6	Sikasar HEP		2x3.5	March.2006

Sr. No.	Name of the Power Projects	Unit No.	Capacity (MW)	Schedule Date of Commissioning
D	Maharashtra			
	<u>THERMAL /GAS</u>			
1	New Parli TPS Extn.-I	1	250	June 2006
		2	250	Project clearance/inputs are being arranged.
2	Paras TPS EXTN.-I	1	250	Oct. 2006
		2	250	Project clearance/inputs are being arranged.
3	Ratnagiri PGCL (Dabhol) CCPP-II (Pvt.) DPC/RPC	GTs+STs	1444	2006-07 -Jan. 2007
4	Uran Gas Power Station Expn.	Block-1	520	April.2008
		Block-2	520	July.2008
5	Ville TPP (Pvt.)	1	500	
		2	500	
6	Khaperkheda TPS Extn.	1	500	Project clearance/inputs are being arranged.
7	Bhusawal TPS Extn.	1	500	Project clearance/inputs are being arranged.
8	Talegaon TPP- CCPP	Blk-I & II	1400	Project clearance/inputs are being arranged.
9	Nagothane Ph-I, Ph-II & Ph-III Pvt. (Reliance)		4050	Project clearance/inputs are being arranged.
	<u>HYDRO</u>			

10	Ghatghar PSS (Hydro)	1 2	125 125	2006-2007
E	Central Sector/Shared Projects			
1	Vindhyachal -III (2x500 MW)	9 10	500 500	July. 2006 Mar.2007
2	Sipat-I (3x660 MW)	1 2 3	660 660 660	April.2008 May.2009 Dec.2009
3	Sipat-II (2x500 MW)	4 5	500 500	Feb.2007 Jul-07
4	Gandhar CCPP - II (2x650)	GTs & STs	1300	All clearances/main plant bids received
5	Kawas CCPP -II (2X650)	GTs & STs	1300	All clearances/main plant bids received
6	Bhilai Joint Venture - SAIL*	1 2	250 250	July.2007 Sep-07
7	IGTPP , Bhaiyathan JV CSEB/NTPC		1320	Project clearance/inputs are being arranged.
8	Lara STPP		2400	Project clearance/inputs are being arranged.
9	TAPP -II	3	540	June.2006
F	Shared Project			
	SSP- Canal Head PH (250 MW)	5x50	250	Commissioned.
	SSP-River Head Power House (1200 MW)	5x200 6	1000 200	Commissioned in 2005-06 Expected May 06

* Bhilai Joint Venture - SAIL Project - Allocation to CSEB - 50 MW, DD - 70 MW & DNH - 100 MW. Balance to SAIL.

GENERATING STATIONS TO BE COMMISSIONED IN ER HAVING ALLOCATIONS TO STATES OF WR

Sr. No.	Name of the Power Projects	Unit No.	Cap. (MW)	Schedule Date of Commissioning
1	Kahalgaon - II - Ph-I	5	500	Nov.2006
		6	500	May 2007
	Kahalgaon - II - Ph-II (\$ Allocation to WR States)	7	500	March.2007
2	North Karanpura (\$\$ Allocation to WR States)	1 2 3	660 660 660	Feb.2010 Dec.2010 Oct.2011
3	Barh (\$\$\$ Allocation to WR States)	1 2 3	660 660 660	March.2009 Jan.2010 Oct.2011

\$ Allocation from Kahalgaon-II (Ph I & II)- Gujarat-92 MW, Maharashtra-100 MW, MP-107 MW, DD-5 MW & DNH-5 MW (309 MW)

\$\$ Allocation from North Karanpura - Gujarat-231 MW, Maharashtra-100 MW, MP-199 MW, DD-7 MW & DNH-8 MW (545 MW)

\$\$\$ Allocation from Barh - Gujarat-260 MW, Maharashtra-100 MW, MP-224 MW & DD-5 MW (589 MW)

Annexure- 12**LIST OF MEETINGS HELD SINCE 128TH WESTERN REGIONAL BOARD MEETING**

Sr.No.	Name	Date	Number	Venue
1	Operating Committee Meeting	13/09/05	355	Mumbai
2	LGBR meeting	13/09/05		Mumbai
3	Meeting chaired by Member (GO & D) with WR constituents regarding action plan to meet Rabi Season demand	22/09/05		Mumbai
4	Committee constituted by CEA to inquire into grid disturbance in WR on 21 & 26 /9/05	4/10/2005		Mumbai
5	do	11/10/2005		Mumbai
6	do	17/10/05		Mumbai
7	Meeting of Subcommittee on Islanding for TAPP -4& KAPP 1&2	5/10/2005		Mumbai
8	Operating Committee Meeting	10/10/2005	356	Mumbai
9	Operating Committee Meeting	11/11/2005	357	Mumbai
10	A meeting to discuss Islanding scheme for TAPP Unit #4	25/11/05		Mumbai
11	Meeting with MSETCL & GETCO to finalise the outage schedule for R&M on 220 kV Ex-TAPS 1 & 2 lines during the long outage of TAPP Unit # 1 & 2.	28/11/05 04/12/05		Mumbai
12	Special TCC of WR	12/12/2005		Mumbai
13	Operating Committee Meeting	13/12/05	358	Mumbai
14	Protection Committee	14-15/12/05	90	Vindhyachal
15	Commercial Committee	16/12/05	41	Mumbai
16	Special meeting with MSETCL, MSEDCL, KPTCL, GED, SREB & WRLDC to discuss issues relating to import of power by Maharashtra from Southern Region.	29/12/05		Mumbai
17	Operating Committee Meeting	12/1/2006	359	Mumbai
18	Operating Committee Meeting	14/02/06	360	Kawas
19	Protection Committee Meeting	02-03/03/06	92	Panaji,Goa

20	Operating Committee Meeting	10/3/2006	361	Mumbai
21	Special Meeting of WR constituents	13/03/06		New Delhi
22	Operating Committee Meeting	12/4/2006	362	Mumbai
23	Commercial Committee Meeting	21/04/06		Nagpur
24	Operating Committee Meeting	10/5/2006	363	Mumbai
25	Meeting of system operators of WR to discuss action plan to maintain the system frequency etc.	9/5/2006		Mumbai
26	Meeting with constituents of WR to discuss updating of recovery procedure document to be issued by WRLDC.	10/5/2006		Mumbai