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No.07-05/SG-9B-II/2602 Jabalpur, dated16.12.2011

To

As per distribution list

Sub: Minutes of 26th meeting of Operation and Coordination Committee of MP..

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Please find enclosed herewith the minutes of 26th meeting of the Operation and Coordination Committee of MP held **on 28th November 2011**at Banquet Hall, Board Room, Shakti Bhawan Jabalpur. The Minutes is also available on the website of SLDC 'www.sldcmpindia.com'.

(P.A.R. Bende)
Member Secretary, OCC
Addl. C.E.(LD), SLDC
MPPTCL, Jabalpur

Encl : As above.

Distibution List

The Chief Engineer (T&C), MP Power Transmission Co. Limited, Jabalpur.	The Superintending Engineer (DCC-WZ), DISCOM Control Centre, MP Paschim Kshetra Vidyut Vitaran Co. Limited, Near Polo Ground, Jail Road, Indore.
The Chief Engineer (T&P), MP Power Transmission Co. Limited, Jabalpur.	The Superintending Engineer (DCC-EZ), DISCOM Control Centre, MP Poorva Kshetra Vidyut Vitaran Co. Limited, Jabalpur.
The Executive Director (Plg & PS), MP Power Transmission Co. Limited, Jabalpur	The Addl. Chief General Manager (LM), DISCOM Control Centre, MP Madhya Kshetra Vidyut Vitaran Co. Limited, Bhopal.
The Executive Director (O&M:Gen.), MP Power Generating Co. Limited, Jabalpur.	The Chief Engineer (PM&C), Narmada Hydroelectric Development Corpn. Ltd, NHDC Parisar, Shamla Hills, Bhopal – 462013.
The Chief Engineer (O&M:Hydel), MP Power Generating Co. Limited, Jabalpur.	The General Manager, Indira Sagar Power Station, NHDC Office complex, PO : Narmada Nagar, Distt : Khandwa (MP) – 450 119.
The Chief General Manager (S), MP Power Trading Company, Jabalpur.	The General Manager, Omkareshwar Power Station, Prashsnik Bhawan, Urja Vihar, Sidhwarkut, Distt : Khandwa (MP) – 450 554.
The Executive Engineer, Sub Load Despatch Centre, MPPTCL, Indore	The Executive Engineer, Sub Load Despatch Centre, MPPTCL, Bhopal
The President, Shree Maheshwar Hydel Power Corporation Limited, “Abhyanchal Parisar”, Mandleshwar Distt : Khargone 451 221 **(Fax 07283-233830)**	Shri Rajiv Keskar, E. A. to Chairman MP Tradeco, Energy Department, Vallabh Bhawan, Bhopal.

MINUTES OF 26TH MEETING OF OPERATION & COORDINATION COMMITTEE OF MP HELD ON 28TH NOVEMBER 2011 AT BANQUET HALL, SHAKTI BHAWAN, JABALPUR .

26th meeting of Operation & Co-ordination Committee of MP was held on 28.11.2011 at Banquet Hall, Shakti Bhawan, Jabalpur and hosted by MPPTCL. The list of participants is enclosed at Ann.-1.0.

Shri Dilip Dandwate SE (T&C) welcomed Shri R.K. Verma, Hon'ble CMD MPPTCL, Chairman OCCM, Member Secretary OCCM and all the participants of 26th OCC meeting. He also expressed sincere thanks to committee for giving the opportunity to MPPTCL for hosting the meeting and inviting Shri R.K. Verma Hon'ble CMD MPPTCL for his valuable suggestions and guidance to the OCC members.

Shri R.K. Verma, Hon'ble CMD MPPTCL has welcomed the members of OCC and appreciated the role of OCCM for efficient system operation and stated that fruitful discussion of the committee will help to achieve its role in resolving various issues on operational grid security and planning matters for the state network. He stated that keeping in view the actual requirement, the demand estimation by the Discoms should be accurate to the extent possible from the system operation point of view and expressed his confidence that Distribution Control Centres would function in such a manner that in near future the Discoms would be benefited by better demand side management. He stated that the power supply to rural area is not as per the target despite supplying record 154 MU power, which can be further improved by adopting proper demand estimation process by Discoms. He also stated that maximum demand met during last FY 10-11 was 8331 MW which may exceed during January & February 2012 in view of final examination of the students. Therefore a proper planning is a must for meeting out this increased demand.

The CMD, MPPTCL stated that during the month of November 2011 there was huge over drawal from regional grid by the State/DISCOMs. He instructed DCC's to take proper steps for curtailment of drawal at frequency below 49.7 Hz and avoiding overdrawal at frequency below 49.5Hz as like NRLDC, the WRLDC may also file petition against the overdrawing constituents of Western region. He expressed his great concern that the required relief from under frequency relay operation is not obtained and desired that the Committee should discuss to ensure all under frequency relay are to be in operation.

The CMD, MPPTCL also pointed out that there were excessive trippings of 33 KV feeders during last two months which will be reduced when breakers and associated protections are installed at DISCOM end. He also expressed the need to continuously watch the availability of capacitor banks in service as the capacitor banks plays a vital role in reactive power management. He also stated that before commencement of load period, 90 to 95% capacitor banks should be taken into service.

Shri R.K. Verma, Hon'ble CMD, MPPTCL extended his good wishes to the members of the committee and hoped that the discussions will yield fruitful results.

Shri A.P. Bhairve, Chief Engineer, SLDC & Chairman OCC, welcomed all the participant of OCCM from various entities and has expressed his gratitude to MPPTCL for hosting the meeting. He further stated that the members are gathered here to discuss various important operational issues and the presence of the participants shows their commitment towards maintaining a reliable and stable grid operation.

Thereafter, Chairman, OCC requested Shri P.A.R. Bende, Member Secretary (OCC) to take up the agenda items for discussion**.**

ITEM NO. 1 : CONFIRMATION OF MINUTES : Minutes of 25th meeting of Operation & coordination committee of MP held on 20.08.2011 at MP Power Trading Company, Jabalpur were forwarded to the committee members vide No. No.07-05/SG-9B-II/1809 dated 02-09-2011. The Member Secretary, OCC informed the committee that, NHDC has requested for modification in para 2 of point 6.1(2-ii) of the minutes as below :

"ISP informed the committee that the proposal/offer from BHEL for implementation of necessary modification in unit of ISPS so as to ensure operation of units under speed control mode during black start/islanding operation is still awaited, and it is planned to carry out such modification work in more than one unit/two units of ISPS."

Comments from any other entities have not been received. The committee confirmed the minutes accepting NHDC's proposed amendment.

ITEM NO. 2 :REVIEW OF SYSTEM OPERATION DURING THE MONTHS AUG to OCT 2011.

2.1 Frequency Particulars : The Committee has been apprised that the system frequency was within the permissible range of 49.5-50.2 Hz for 91.34% of time in Aug 2011, 84.13% of time in Sep 2011 and 75.65% of time in Oct 2011. The system frequency was below 49.5 Hz for 4.19% of time in Aug 2011, 10.74% time in Sep 2011, 23.55% time in Oct 2011. The average frequency during Aug 2011 was 49.87 Hz, 49.84 Hz in Sep 2011 and 49.65 Hz in Oct 2011. Regarding operation in high frequency range , frequency was above 50.2 Hz for 4.48% of time in Aug 2011, 5.13% of time in Sep 2011 and 0.80% of time in Oct 11 . The system frequency touched 48.8 Hz 5 times in Aug 2011, 5 Times in Sep 2011 and 217 times in Oct 2011 as per WRPC report.

The committee noted the detailed frequency particulars for the month of Aug 2011 to Oct 2011 are enclosed at **Annexure-2.1**. The brief details of frequency profile is given hereunder :

Month	Average frequency	minimum integrated frequency over an hour	maximum integrated frequency over an hour	instantaneous minimum frequency	Instantaneous maximum frequency
Aug 2011	49.87 Hz	49.07 Hz	50.54 Hz	48.78 Hz	50.69 Hz
Sep 2011	49.84 Hz	49.06 Hz	50.47 Hz	48.78 Hz	50.66 Hz
Oct 2011	49.65 Hz	48.7 Hz	50.29 Hz	48.57 Hz	50.63 Hz

2.2 Operational Matters

2.2.1 Operational Discipline : The Committee noted the system operation in terms of frequency profile for the months August to October 2011 is as given below:

Month	% of time Frequency Below 49.5 Hz	% of time Frequency above 50. 2 Hz	% of time frequency within the permissible range of 49.5-50.2 Hz	Average monthly frequency	No. of times frequency dipped below 48.8 Hz
Aug 2011	4.19	4.48	91.34	49.9 Hz	5
Sep 2011	10.74	5.13	84.13	49.8 Hz	5
Oct 2011	23.55	0.80	75.65	49.7 Hz	217

The chairman OCC stated that the number of times frequency touched below 48.8 Hz was 217 times in the month of October 2011 which is a matter of very great concern. He further stated that up to month of Sep 2011, the system position was quite good. In the month of October 2011, there was countrywide

shortage of 20,000 MW due to generation outage of many ISGS and State Sector thermal units on account of acute coal shortage. Out of this outage there was about 10,000 MW shortage in the Western region. The outage of units at KSTPS was due to breach of ash dike and coal supply affected generation at VSTPS because of heavy rains around open caste coal mines. The generation of MPPGCL was also affected due to coal shortage at Sanjay Gandhi and Satpura Thermal Power Stations. The excessive power shortage resulted low frequency profile in NEW Grid throughout the month.

2.2.2 Messages for drawal curtailment: Member Secreatary, OCC informed the committee that total number of messages of significant violation of IEGC by the DISCOMs by overdrawing at frequency below 49.7 Hz or under drawing above 50.20 Hz is as given hereunder:

MONTH	East Discom	Central Discom	West Discom	Total
AUGUST 2011	19	19	2	40
SEPT 2011	59	51	18	128
OCT 2011	178	127	187	495

Committee members requested that the action taken by the DISCOMs against each message given by SLDC should also be displayed. SLDC agreed to display the same from the next OCC meeting. Member Secretary conveyed his concern on increasing trend of significant violations in the month of October 2011. Member Secretary, OCC also stated that up to the month September 2011, SLDC has furnished the details of violation/Non-compliance of IEGC by the DISCOMs only to WRLDC, but October 2011 onwards SLDC has started submitting the same to the MPERC also. He requested the DCCs to take prompt action whenever SLDC sends message for drawal curtailment at low frequency or taking load when frequency is high.

2.3.1 Voltage Profile : The Committee noted the date wise voltage profile at some of the important 400 KV and 220 KV substations during the months Aug to Oct 2011 is enclosed at **Annexure -2.3.1.**

During the months Aug 2011 to Oct 2011, the deviation of voltage from the accepted limit on either side was recorded at following important 400 KV s/s in MP Grid.

SrNo	Name of 400 KV Substation	AUGUST 2011				SEPTEMBER 2011			
		Max. Voltage observed		Min. Voltage observed		Max. Voltage observed		Min. Voltage observed	
		Voltage	Date	Voltage	Date	Voltage	Date	Voltage	Date
1	Indore	428	10,14.08.11	---	---	427	12.09.11	---	---
2	Itarsi	427	10,27,28.08.11	---	---	428	01,0209.11	---	---
3	Bina	428	15.08.11	376	26.08.11	432	09.09.11	---	---
4	Gwalior	430	15.08.11	366	26.08.11	433	09.09.11	---	---
5	Nagda	432	09,31.08.11	---	---	431	12,13.09.11	---	---

Sr. No.	Name of 400 KV Substation	OCTOBER 2011			
		Max. Voltage observed		Min. Voltage observed	
		Voltage	Date	Voltage	Date
1	Indore	428	10.10.11	---	---
2	Itarsi	426	11.10.11	---	---
3	Bina	427	17,18.10.11	---	---
4	Gwalior	430	17.10.11	---	---
5	Nagda	432	10.11.11	---	---

Member Secretary informed the committee that at Gwalior and & Nagda, Voltage exceeded the permissible limits.

2.3.2 Status of Capacitor Banks in sub-transmission system : The Committee noted the updated information of the status of capacitor banks in sub-transmission system as on 31st October 2011 as submitted by DISCOMs, as detailed below :

DISCOM	Capacitor bank installed in good condition (No)		Capacitor bank installed but defective & are repairable (No)			Requirement of repair against each unit (No)	Requirement against non-repairable capacitor banks		Capacitor banks already covered under ADB T-V		Balance capacitor banks to be covered in other schemes	
	600 KVAR	1200 KVAR	600 KVAR	1200 KVAR	2400 KVAR	No of 100 KVAR Units required	600 KVAR	1200 KVAR	600 KVAR	1200 KVAR	600 KVAR	1200 KVAR
WZ	519	193.8	28	108	9	294	38	46	194	173	61	50
CZ	8	721	3	34	-	24	3	16	0	588	0	440
EZ	415	237	12	18	-	94	18	38	--	--	--	--

DISCOMs have also furnished the updated additional information as detailed below.:

Figures are in MVAR

SN	Particularas	WZ	CZ	EZ
1	MVAR capacity of connected capacitors in good condition	712.8	806.4	533.4
2	MVAR capacity of connected capacitors in partially good condition	137.5	42.6	14
3	MVAR capacity of connected capacitors in good condition including partially good condition.	850.3	849.0	547.4
4	MVAR capacity of connected capacitors covered under ADV T-V Scheme.	214.8	705.6	Nil
5	Grand total MVAR of capacitors including that are proposed in ADB T-V scheme	1065.1	1554.6	Nil

Chairman OCC, enquired about reason for large number of defective as well as repairable Capacitor bank in West DISCOM. The representative of West DISCOM has informed the committee that all the capacitor banks are not covered under AMC and for defective capacitor banks, procurement of spare units is in progress. Member Secretary, OCC stated that there is no major improvement observed in the status of capacitor banks as furnished by the DISCOMs wrt to last OCCM. Shri Vasant Mehto, Advisor, MPPTCL stated that such capacitor banks may be utilized by operating at under loading condition for which DISCOM representatives have assured to look into the matter.

The details of capacitor banks as submitted by the MPPTCL in the meeting is enclosed at A**nnexure -2.3.2** .

2.4.1 Status of completion of on going Transmission Schemes being executed by MPPTCL : The Committee noted the latest status of completion various ongoing Transmission Schemes for the current financial year i.e. Year 2011-2012 upto 31-10-11 and progress of various ongoing Transmission Schemes as submitted by MPPTCL is enclosed as annexure **2.4.1(i) & 2.4.1(ii).** The committee also noted that 2x50 MVar bus reactors at 400 KV Nagda s/s have been commissioned.

2.4.2 U/F and df/dt Relay Operation

(i) **U/F and df/dt Relay Operation :** The Committee noted the details of under frequency operation at 48.8 Hz and 48.60 Hz during Aug 2011, Sep 11 and Oct 2011 which is given in **Annexure 2.4.2 (i).** The frequency did not touch 48.2 Hz during the period.

Member Secretary, OCC stated that in the 429th OCC meeting of WRPC it was informed that during the first week of October the system frequency remained below 49.5 Hz. for 50% to 77%of time and touched 48.8 Hz on many occasions. The frequency even touched 48.56 Hz at 14:57 hrs on 10.10.2011. As per data available, frequency touched 48.8 Hz. at 14:46 hrs. and remained below 48.8 Hz for 9 minutes. As stage-I under frequency relay (set at 48.8 Hz) did not operate, frequency further deteriorated to 48.56 Hz at 14:57 which was below stage-II operation of UFR (set at 48.6 Hz). Frequency remained below 48.6 Hz for the period of 5 minutes which was serious threat to the grid. The frequency improved to 49.5 Hz. after around 6 minutes from which it appeared that automatic under frequency relay did not operated and load relief was obtained by manual load shedding only.

Member Secretary further stated that as per the approved UFLS scheme in Western Region a total relief of 960 MW at frequency of 48.8 Hz and 48.6 Hz is envisaged (MP 152 MW at 48.8 Hz, 152 MW at 48.6 Hz & 205 MW at 48.2 Hz). However, the relief obtained was not sufficient. WRPC observed that the defense mechanism is expected to provide grid security and ensure load relief to commensurate with fall of frequency as recommended. The recommended relief is attached at **Annexure-2.4.2(ii).** It was decided that MPPTCL and SLDC shall review the u/f load shed plan and if required the same shall be modified to ensure proper load relief.

(ii) **Defective u/f, df/dt relays :** The Committee noted that there are no defective u/f and df/dt relays.

2.5 Power Cuts / Load restrictions/Differential Load Shedding by DISCOMS & group allocation to 33 KV feeders :

(i) The committee noted the details of DISCOM wise Power supply given to various domestic categories during the period Aug 2011 to Oct 2011 which is enclosed at **Annexure 2.5(i).**

(ii) **Group Allocation to Newly Commissioned existing EHV substations :-**The committee noted the region wise list of 33 KV feeders emanating from various newly commissioned/existing EHV substations for which groups have not been allocated. The list is enclosed at **Annexure 2.5 (ii)**. The DISCOM wise details of pending group allocation to 33 KV feeders is given below :

SN	DISCOM	Region	No of 33 KV feeders for which groups to be allocated
01	EAST	Jabalpur	08
02		Sagar	07
03		Rewa	27
04		**Total**	**42**
05	WEST	Indore	19
06		Ujjain	09
07		**Total**	**25**
08	CENTRAL	Bhopal	05
09		Gwalior	02
10		**Total**	**07**
TOTAL		**Grand Total**	**74**

ED (Plg &PS) informed that proposals for group allocation is not submitted by East and West Discom for newly commissioned EHV s/s. Chairman OCC proposed that the DCCs should be the nodal agency for group allocation in each DISCOM. He further stated that despite giving assurance in the previous OCC meetings East and West DISCOMs have not taken up the responsibility of group allocation work. ED (Plg&PS) stated that the DISCOMs should take approval from the CMD authorizing the DCCs for group allocation.

After detailed deliberations, the Committee decided that the East and West DISCOM will obtain necessary approval from the CMD for authorizing the respective DCC for group allocation of 33 KV feeders.

ITEM NO. 3 : OPERATIONAL PLANNNING

3.1 Anticipated availability for the Month of December 2011 to March 2012.: The committee noted the details of Source wise anticipated availability for the period December 2012 to March-2013. The same is enclosed in **Annexure-3.1.**

3.2 Demand Estimation for the Month of December 2011 to March 2012:

(i) The Power supply plan for the months of December 2011 to March 2012 has been submitted and finalised by the Committee. DISOCMS have also submitted their revised hourly demand for the month of December 2011 to March 2012.

(ii) Member Secretary pointed out that DISCOMs are furnishing the day ahead demand in the evening and quite frequently the same is not received in day ahead basis and requested the DISCOMs to submit their day ahead hourly requirement of power before 10:00 hrs daily so that power for the next day to be arranged through power exchange could be estimated by MP Tradeco and also Hydel potential could be planned as per system requirement by SLDC.

DISCOMs have expressed their difficulty to submit their day ahead hourly requirement of power before 10:00 hrs daily as the office opens at 10:30 Hrs. Shri Keskar, MP Tradeco suggested that the DISCOMs may furnish the day ahead demand one day in advance which has been agreed by the DISCOMs.

3.3 Annual Load generation Balance for the year 2012-13 : The committee noted that the data required for Annual Load generation Balance Report of WR & MP for the year 2012-13 has been received.

Shri Keskar, MP Tradeco informed that the demand estimation submitted by the DISCOMs is not as per demand forecasting made by M/s PWC. Member Secretary requested DISCOMs to look into the matter and revise the demand estimation if necessary. West DISOM representative informed that the demand estimation submitted is as per forecasting done by PWC. Central DISCOM has submitted their revised estimated demand in the meeting. East DISCOMs has also revised the estimated demand for the year 2012-13.

3.3 Generating Units under planned outage and proposed maintenance programme : The Committee Noted that the generating units under planned outages for the period December 2011 to March 2012 based on R-06 of MPPGCL is as detailed here under :

SN	Description	Capacity	From	To	Reason
01	Amarkantak # 3	120 MW	08.09.2010	31-01-2012	R&M work + COH

3.4 Proposed shutdown programme of Transmission lines / Transformers : The Committee noted the proposed shutdown of transmission elements for the period 01.12.2011 to 20.01.2011 submitted by MPPTCL which is enclosed at **annexure 3.4.**

Member Secretary informed the committee that the proposed shut down for transmission element for LGBR of WR, OCCM of WR and OCCM of MP is being submitted separately by EHT & T&C & SLDC finds it difficult to compile where the dates for same proposed shut down is different. He requested the T&C to compile and furnish the same to SLDC. The Committee decided that the T&C will compile the proposed shut down of transmission element for LGBR of WR, OCCM of WR and OCCM of MP before onward transmission to SLDC.

3.5 Long Outages of transmission elements: The committee noted status of long outages of transmission elements as detailed below :

SN	Line/Transformer/Breaker/ Reactor etc under long outage	Outage date	Reason	Expected date of restoration.
1	63 MVAR Bus-I Reactor at Satpura TPS.	24.05.2005	Damage of all three limbs along with reactor tank.	As intimated by the GCC representative that long outages the delivery of reactor is expected by Feb 2012 and the commissioning would be completed by end of March 2012.
2	40 MVA 132/33 KV transformer at Amarkantak TPS.	19.04.2010	Damage due to fire.	The transformer has been spared by MPPTCL and installed at Amarkantak TPS. The same has been charged from 132 KV side by MPPGCL. The transformer is taken on load on 24.11.2011.
3	220 KV Breaker of 220 KV Tons-Rewa line-II at Tons HPS.	30.06.2011	R & Y Phase pole out.	MPPGCL representative informed that the work will be completed by end of December 2011.

ITEM NO. 4 : OPERATIONAL STATISTICS FOR THE MONTH OF August 2011 TO OCTOBER 2011 : The committee noted the details of actual generation, Schedule from Central Sector demand etc. which are given in the following Annexures:

Annex. 4.1 Unit wise actual Generation of MPPGCL thermal Units and station wise Generation of MPPGCL& NHDC Hydel Units.
Annex. 4.2 Power Supply Position.
Annex. 4.3 Hourly Average of Availability and Demand.
Annex. 4.4 Hourly average schedule Vs Drawal of DISCOMs.

ITEM NO. 5 : SYSTEM DISTURBANCE IN MP DURING AUGUST 2011 TO OCTOBER 2011 : The committee noted the events in MP categorized under GI-01 and GD-01 in MP in September & October 2011. A brief description of the incidents is given below :

1. Occurrence at 220 KV Badnagar S/S :- On dtd. 03.09.2011 at about 21.45 hrs. C-Phase pole of Ckt Bkr of 220KV Indore feeder failed at 220KV S/S Badnagar, causing total interruption occurred on 220KV S/S Badnagar from 21.45 to 22.20 hrs (Total interruption at about 35 minutes). Support column of AREVA make 220KV Bkr of 160 MVA X'mer No.-2 also damaged due to shattring of

insulator of 220KV Bkr of Indore feeder. Restoration was started by taking supply from 132KV S/S Ingoriya at 22.20 hrs.

2. Occurrence at 220 KV Dewas S/S :- On dtd. 27.09.2011 at about 05.59 hrs. Total interruption occurred on 132KV Main Bus at 220KV S/S Dewas due to bursting of LA of 33 KV Shipra feeder at 132KV S/S MSP Dewas. The shattered LA conductor snapped and hit to overhead 132 KV MSP-220 KV Dewas, causing phase to phase fault and tripping of 160 MVA X-mer I & II at 220 KV S/s Dewas. Due to above tripping, interruption occurred at 220 KV S/s Dewas (11 minutes), 132 KV S/s MSP-Dewas (3 minutes), 132 KV S/s BNP Dewas (4 minutes), 132 KV S/s Chapda (11 minutes) and 132 KV S/s Sonkatchh (13 minutes). Supply normalized at 10.10 Hrs. at 220KV S/S Dewas

3. Occurrence at Satpura TPS :- On dtd. 30.09.2011 at about 12.05 hrs. 220 KV Bus-I dead due to bus bar differential protection caused by fault occurred in 220 KV Pandhurna feeder. All connected feeders and Generator of Bus-I tripped on Bus bar differential protection resulting in tripping of all running units 3,5 & 7. Total generation loss of 215 MW (Unit #3- 35 MW, Unit # 5- 35W, & Unit # 7- 145 MW) and feeders connected with 220 KV Bus I. 220 KV Bus-II was healthy. 220 KV Bus Coupler Bus-I B-Ph. Isolator arm also found damaged.

Restoration started and units syncronised as below :

Unit No.3	:	17.55 Hrs on dtd. 30.09.2011
Unit No.5	:	13.08 Hrs on dtd. 30.09.2011
Unit No.7	:	13.45 Hrs on dtd. 30.09.2011

Member Secretary has requested MPPGCL to investigate repeated occurrence at STPS and take appropriate action to avoid recurrence in future. He also suggested that if required MPPTCL's help may be obtained if required. MPPGCL representative assured to look into the matter.

4. Mal operation of bus bar protection relay at 220 KV S/s, Badnagar : On dated 10.10.2011 at 19.30 hrs, mal operation of bus bar protection relay occurred at 220 KV S/s, Badnagar resulting tripping of all connected feeders with the bus i.e. 220 KV Ratlam-I, Ratlam-II, Indore, 160 MVA CGL X-mer, 160 MVA Areva, 100 MVA Areva X-mer from 220 KV side. No interruption has been occurred to any area as the supply was available from 132 KV side. The bus bar relay has been kept out of service for investigation and will be taken back in service after rectification of the problem. The 220 KV bus has been charged within 20 min. time.

5. Mal operation of bus bar protection relay at 220 KV S/s, Barod : On dated 31.10.2011 at 06.17 hrs, mal operation of bus bar protection relay occurred at 220 KV S/s, Barod resulting tripping of all connected feeders with the bus i.e. 220 KV Ujjain I, 220 KV Ujjain-II, 220 KV Kota, 220 KV Modak and 220 / 132 KV 160 MVA X-mer from 220 KV side. No interruption has been occurred to any area as the supply was available from 132 KV side. The bus bar relay has been kept out of service for investigation and will be taken back in service after rectification of the problem. The 220 KV bus has been charged within 01.15 hrs time.

6. System Disturbance at 220 KV Chhindwara s/s on 19.01.2011 : The incident of tripping occurred at 220 KV s/s Chhindwara due to overloading of 160 MVA transformer due to delay in restoration of shutdown of 160 MVA transformer at 220 KV Pandhurna s/s was discussed in the 112th Protection Committee Meeting of WRPC on 11th & 12th October 2011. The Committee felt that CT ratio of 220 KV Sarni-Pandhurna feeder should be increased from existing 400/1 A. MPPGCL has assured to look into the matter.

ITEM NO. 6.0 : OTHER IMPORTATNT OPERATIONAL ISSUES

6.1 Black-Start mock drill of Hydel Power Stations:

6.1(i) Action on the outcome of Black Start at ISP: Member Secretary requested concerned utilities to intimate the follow up actions taken on the observations of WRLDC on black start mock drill of ISP.

1. ISP, NHDC informed that the proposal/offer from BHEL for implementation of necessary modification in unit of ISPS so as to ensure operation of units under speed control mode during black start/islanding operation is still awaited, and it is planned to carry out such modification work in more than one unit/two units of ISPS.

2. MPPTCL assured to investigate following problem noticed during mock drill.

6.1(ii) Auto Start facility on DG sets at Hydel Power Stations of MPPGCL: The SE (O&M) Hydel, MPPGCL informed the committee that it is not possible to implement auto start facility on DG sets at Hydel Power Stations of MPPGCL. He further informed that the DG set at Pench HPS shall be attended by January 2012.

6.1(iii) Black Start mock drill at Bargi HPS: Member Secretary informed the committee: Member Secretary informed the committee that plan for black start mock drill of Bargi Hydel Power Station has been finalised in consultation with MPPGCL, MPPTCL and East DISCOM. The mock drill shall be done in the first week of December 2011. MPPGCL are requested to submit the latest status in this regard.

7.0 SOME IMPORTANT MATTERS DISCUSSED IN WRPC FORUM REQUIRED IMMEDIATE ATTENTION:

7.1 Implementation of Demand Management(IEGC 5.4):

7.1.1 Demand Disconnection : Member Secretary, OCC informed that the Clause 5.4.2 (d) of Grid code provides for formulation and implementation of state-of-the art demand management schemes for automatic demand management like rotational load shedding, demand response (which may include lower tariff for interruptible loads) etc. by each SLDC through respective State Electricity Boards/Distribution Licensees before 01.01.2011 to reduce overdrawal from the grid to maintain the grid at the frequency in IEGC band. Accordingly SLDC had taken up the matter with DISCOMs. The DISCOMs have informed that the issue shall be suitably addressed and included in ERP implementation.

He further stated that the matter was again came up for discussion in the 429th OCC meeting of WRPC. The WRPC has requested all SLDCs/STUs may provide following requirements.

a) The current status of contingency procedures and arrangements required to enable demand disconnection as mandated under Regulation 5.4.2(c)of Grid code.

b) Automatic demand management schemes mandated under Regulation 5.4.2(d) of the Grid code indicating date of implementation, the maintenance and operational preparedness of the scheme.

c) The contingency procedures to restrict the drawal of its control area whenever the system frequency falls to 49.7 Hz(5.4.2a) and the requisite load shedding scheme to avoid overdrawal at low frequency i.e <49.5 or below(5.4.2b).

Member Secretary informed the committee that in the 24th OCC meeting, the DISCOMs had explained the difficulties being faced to identify 33 KV feeders for preparation of contingency schemes as most of the feeders are tapped to different substations which may also be under load shedding when contingency situation arise. After detailed discussion it was felt necessary to prepare the plan by DISCOMs such that during different time periods, different set of feeders for contingency operation are identified. The representatives from DISCOMs had assured to look into the matter and prepare the contingency plan accordingly. The matter has been discussed again in 25th OCC meeting and the CE(LD) requested the DISCOMs to identify the feeders for contingency operation and a contingency

document may be prepared and submitted to SLDC, which SLDC will forward to WRLDC. The DISCOMs had assured to submit the same by the end of September 2011. However, SLDC has not received any communication form the DISCOMs so far.

DISCOMs have informed in the meeting that the automatic demand management scheme has been separated out from ERP package and the current status of its implementation will be intimated in the next OCC meeting planned in January 2012

7.1.2 Load Curtailment Planning: The committee noted that in the 429th WRPC-OCC meeting the WRPC has pointed out that Clause 5.4.2 (e) of IEGC stipulates that "In order to maintain the frequency within the stipulated band and maintaining the network security, the interruptible loads shall be arranged in four groups of loads, for scheduled power cuts/load shedding, loads for unscheduled load shedding, loads to be shed through under frequency relays/ df/dt relays and loads to be shed under any system protection schemes identified at the RPC level. These loads shall be grouped in such a manner, that there is no overlapping between different Groups of loads. In case of certain contingencies and/or threat to system security, the RLDC may direct any SLDC/SEB/Distribution licensee or bulk consumer connected to the ISTS to decrease drawl of its control area by a certain quantum. Such directions shall immediately acted upon. SLDC shall send compliance report immediately after compliance of these directions to RLDC."

7.2 Maintaining grid security of the grid by curbing overdrawlas and effecting proper load management in terms of the Indian Electricity Grid Code and electricity Act 2003. : Member Secretary, OCC informed that in line with petition filed by NRLDC in the and the interim order passed by CERC in the matter of Maintaining grid security of the entire North East West (NEW) grid by curbing overdrawlas and effecting proper load management by Northern Region constituents in terms of the Indian Electricity Grid Code and electricity Act 2003, the matter of continuous overdrawal by WR constituents was also discussed in the 429th OCCM of WRPC. The WRPC and WRLDC have expressed serious concern on the threat to grid security due to continuous overdrawal by the constituents which is also causing overloading of Bhilai flow gate and requested constituents to cooperate in maintaining Grid security.

Member Secretary requested the DISCOMs to formulate their Load Plan and contingency plan such that there is no overdrawal from the grid when the frequency is below 49.5 Hz so as to comply with the provisions of Grid code.

7.3 Quarterly Review of Crisis Management Plan : Member Secretary informed that in the 429th OCC meeting of WR it was informed that in line with the decision taken by Secretary (Security), Cabinet Secretariat in a review meeting taken in October, 2009, it had been intimated that CMP/Mock drills in Power Sector would henceforth require to be monitored regularly on the basis of quarterly reports. It has been requested that all regional power utilities may therefore send quarterly report on CMP for the year 2011-12. He further requested that the quarterly information on CMP/Mock drills, may be sent by MPPTCL, MPPGCL and NHDC directly to the Chief Engineer (GM), CEA New Delhi under intimation to SLDC Jabalpur and WRPC Mumbai regularly.

7.4 Status of Physical & Cyber Security in Power Sector regarding : : Member Secretary informed the committee that in the 428th and 429th OCC meeting of WRPC, the matter of physical and Cyber security was discussed in detail and it was decided that the power utilities in Western Region would prepare Crisis Management Plan for countering the cyber-attacks and its implementation including the Mock Drills, audits etc. and same would be informed to WRPC & the concerned Nodal agencies on a regular basis. The necessity of the same has been informed by the Member Secretary, WRPC to all regional entities vide letter No. WRP Committee/Opn./Opn.S.S./2011/9125 dated 04.10.2011**(Annexure 7.4(i).**

He further informed that WRLDC vide letter No. WRLDC/SS/2011/4780 dated 03.11.2011 **(Annexure 7.4(ii)** has informed the SLDC that they have acquired the information security management

system certification (IMS) as per ISM 21000:2005 wef 01.04.2010 and that as per IMS requirement, mock drill in the event of fire and terrorism attack have been carried out at WRLDC during Feb-March 2011 and the same would be carried out annually. The penetration tests for computer network at WRLDC including the SCADA EMS system have been carried out in Feb 2011 as it was prerequisite for IMS, the vulnerability analysis and penetration tests would be carried out once every year and the cyber security audit would be carried out twice every year internally and once by external certification agency BSI. The parties empanelled by CERT-in are available on website **http://www.cert-in.org.in.**

The names of nodal agencies for different utilities for assistance in physical and Cyber security issues has been intimated by Member Secretary to the committee. The same is detailed hereunder:

SN	Name of utility	Nodal Agency	Name and address and contact number
01	Sate Transmission Utilities	PGCIL	Pankaj Kumar, ED (ERP & IT), PGCIL, Saudamini, Plot No. 2 Sector 29, Gurgaon. Phone-0124-2571809, Fax-0124-2571809 / 2571802 N.S. Sodha, Executive Director, PGCIL, Saudamini, Plot No. 2 Sector 29, Gurgaon. Fax-0124-2571990 / 2571800/2571932
02	Thermal Generators	NTPC	A.K.Hajela, AGM(IT), NTPC Ltd., Engineering Office Complex, Plot no.8 A, Sector 24, NOIDA (UP). Fax-0120-2410626
03	Hydel Generators	NHPC	S.K.Roy, Executive Director (IT&C), NHPC Ltd. Sector 33, Faridabad (Haryana. Phone—0129-2277894, Fax-0129-2278430

Member Secretary requested MPPTCL, MPPGCL and NHDC to furnish status on Crisis Management Plan to countering cyber-attacks to WRPC & the concerned Nodal agencies on a regular basis.

ITEM NO 8 : SCADA/EMS RELATED ISSUES :

8.1 PROGRESS OF INSTALLATION OF NEW RTUS ALONG WITH PLCC DATA LINKS AT EHV S/S: MPPTCL informed that the instructions have been issued to filed officers to extend full cooperation top installation & commissioning agencies. The schedule for procurement / availability of material will be given by Addl CE (Tr.-Proc). After availability of complete material at site work will be completed within one month's time.

8.2 DISCREPANCY IN TELEMETRERED VALUES RECEIVED FROM DIFFERENT EHV S/S & POWER STATIONS : Member Secretary, OCC informed the committee that WRLDC has filed a petition in CERC wherein it was submitted that all discrepancy shall be resolved within six months. Hence, the matter was discussed in detail and it was decided that necessary instructions to the field officers, shall be issued by T&C and MPPGCL, for rectification of the telemetry discrepancies on priority basis.

MPPGCL representative informed the committee that the following action have been taken to remove discrepancies in telemetered values of different Hydel power stations :

(i) **Bargi HPS :** The discrepancies have been rectified by replacing OEN make contract multiplier Relays for the Generator No 2 and 20 MVA, 132/33 KV Station Transformer.

(ii) **MadhiKheda HPS :** The following attempts have been done to attend the telemetry discrepancy at Madikheda Hydel power station

(a) MW transducer of unit no.3 was replaced by new transducer issued from SLDC, Bhopal but the discrepancy could not be rectified. Efforts shall be made to rectify the same.

(b) MW transducer of the bay in which telemetry communication was healthy was used to use in the bay for 132 kv Karera feeder no 1 &2. But the desired result could not be achieved.

(iii) **Pench HPS :** As per the site report, the discrepancies have been rectified.

(iv) **Rajghat HPS :** Efforts are being made for the rectification & shall be rectified within a month.

(v) **Bansagar-II HPS, Silapara :** The discrepancies indicated against the BS-II HPS Silpara are not related with BS-II HPS. The same are related to 220/132 KV Substation Silpara, Rewa of MPPTCL. Member Secretary requested MPPTCL to rectify the discrepancies at RTU installed at 200 KV Silpara s/s.

(vi) **Gandhisagar HPS :** As per the site report, the discrepancies have been rectified and event status as actual is available at Sub-SLDC Indore.

T&C, MPPTCL informed the committee that at many location data telemetry is working properly. However, at some of the locations, the rectification of discrepancies in telemetry data will be done within six months' time.

The list of faulty telemetered values/process connections is detailed in **annexure-8.2(i) & 8.2(ii).**

8.3 UPGRADATION OF EXISTING RTUS : T&C, MPPTCL informed the committee that the procurement of required material is being done and the upgradation will be completed within six month.

ITEM NO. 9 : Additional points : ED (PS&Plg), MPPTCL has proposed diversion of load to adjoining substations to avoid over loading of 132kV substations as detailed in **Annexure 9**. Central DISCOM representative informed that load diversion of Seondha will be completed by the end of December 2011 and load diversion of Bhind is currently not possible. West DISCOM representative informed the following status of diversion of load to the adjoining substation.

132KV Khargone - One no. 33kv Sawda feeder from 132kv Kasrawad has been charged . Due to charging of this feeder, load of 33KV kasrawad from 132KV S/s Khargone has been shifted on 33kv sawda radiating from 132Kv Kasrawad.

132KV Kannod:- Load of 33KV Khategaon from 132KV Kannod has been partly shifted on recently charged 33KV Haragaon feeder radiating from 132KV Sandalpur.

132KV Sendhwa: Recently work of commissioning of one no. 33KV Mankui feeder from 132KV Pansemal S/s is in progress. On commissioning of this feeder, load of 132KV sendhwa S/s will be partly shifted on 132KV Pansemal S/s

ITEM No 10 : DATE AND VENUE OF NEXT OCC MEETING : It is proposed to hold 27th meeting of Operation and Coordination Committee of MP on 21st January 2012 at SLDC, Jabalpur.

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Annexure 1.0

LIST OF PARTICIPANTS IN THE 26TH OCC Meeting of Madhya Pradesh

Sr.No.	Name of participant S/Shri	Designation	Office
1	A.P. Bhairve	Chairman, OCC & CE(LD)	SLDC, MPPTCL, JBP
2	P.A.R. Bende	MS, OCC & Addl CE(LD)	
3	S.K. Gaikwad	Superintending Engineer	
4	Rajesh Gupta	Executive Engineer	
5	Anurag Misra	Executive Engineer	
6	Jayant Agasty	Assistant Engineer	
7	O.P.Jaiswal	Executive Director	Plg &PS, MPPTCL, Jabalpur
8	Umesh Raoutji	Chief Engineer	EHT, MPPTCL, Jabalpur
9	Vasant Mehto	Technical Adviser	MPPTCL, Jabalpur
10	S.K.Mukati	Chief Enginner	T&C , MPPTCL, Jabalpur
11	D G Dandwate	Superintending Engineer	Omkareshwar Power Station
12	Jaydeep Singh	Superintending Engineer	Plg &PS, MPPTCL, Jabalpur
13	Siddhart Pandey	Executive Engineer	T&C , MPPTCL, Jabalpur
14	R C Chakraborty	Executive Engineer	Plg &PS, MPPTCL, Jabalpur
15	Rajesh Shrivastava	Executive Engineer	Communication, MPPTCL
16	Surya Bali	AGM	MP Tradeco, Jabalpur
17	Rajeev Keshkar	EA to Chairman, MP Tradeco	MP Tradeco, Bhopal
18	M.K. Raghuvanshi	AE	Plg &PS, MPPTCL, Jabalpur
19	Girish Dixit	A.E.	GCC, MPPGCL, Jabalpur
20	H.S. Namdeo	S.E.	MPPGCL, Hydel Gen.
21	Mrs. Kamal K. Katthar	SE	West DISCOM, Indore
22	R. Shrivastava	AE	SUB_LDC, Indore
23	Pradeep Sachan	E.E.	Sub LDC, Bhopal
24	Shyamji Tiwari	Director DCC	East DISCOM, Jabalpur
25	Ashok Saxena	Add SE	East DISCOM, Jabalpur
26	Navneet Rathore	AE	East DISCOM, Jabalpur
27	K.C. Mishra	DGM (LM)	Central DISCOM, Bhopal
28	S.K.Verma	Dy. Manager (E)	Indira Sagar
29	Amit Katiyar		NHDC, Bhopal

FREQUENCY PARTICULARS

S. No.	Particulars	Aug-11		Sep-11		Oct-11	
1	**INTEGRATED OVER AN-HOUR**						
1.1	Maximum Frequency	50.54 Hz	Between 13.00 hrs & 14.00 Hrs on 15.08.11	50.47 Hz	Between 0300 Hrs & 0400 Hrs on 16.09.11	50.29 Hz	Between 0700 Hrs & 0800 Hrs on 26.10.11
1.2	Minimum Frequency	49.07 Hz	Between 19.00 hrs & 20.00 Hrs on 16.08.11	49.06 Hz	Between 21.00 hrs & 22.00 Hrs on 29.09.11	48.7 Hz	Between 01.00 hrs & 02.00 Hrs on 11.10.11
1.3	Average Frequency	49.87 Hz		49.84 Hz		49.65 Hz	
2	**INSTANTANEOUS FREQUENCY**						
2.1	Maximum Frequency	50.69 Hz	AT 07.22 HRS ON 15.08.11	50.66 Hz	AT 04.11 HRS ON 16.09.11	50.63 Hz	AT 05.22 HRS ON 26.10.11
2.2	Minimum Frequency	48.78 Hz	AT 19.10 HRS ON 16.08.11	48.78 Hz	AT 21.08 HRS ON 29.09.11	48.57 Hz	AT 14.57 HRS ON 10.10.11

3 Percentage of time when frequency was :-

	%age of time when frequency was	Aug-11	Sep-11	Oct-11
3.1	Below 48.5 Hz	0.00	0	0
3.2	Between 48.50 Hz and 48.8 Hz	0.01	0.01	1.42
3.3	Between 48.80 Hz and 49.2 Hz	0.45	2.28	8.57
3.4	Between 49.20 Hz and 49.5 Hz	3.73	8.45	13.56
3.5	Between 49.50 Hz and 49.7 Hz	15.48	15.52	44.02
3.6	Between 49.70 Hz and 50.2 Hz	75.86	68.61	31.63
3.7	Between 50.20 Hz and 50.3 Hz	2.77	3.66	0.5
3.8	Between 50.30 Hz and 51.0 Hz	1.71	1.47	0.3
3.9	Between 51.0 Hz AND 51.5 Hz	0.00	0	0
3.1	Above 51.5 Hz	0.00	0	0
4.1	No. of times frquency touched 48.80 Hz	5	5	217
4.2	No. of times frquency touched 48.60 Hz	0	0	4
4.3	No. of times frquency touched 51.0 Hz	0	0	0

Voltage Profile During the Month of AUG- 2011

Date	Indore		Itarsi		Bina		Gwalior		Nagda	
	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
1	425	400	423	400	417	394	418	384	429	400
2	424	413	423	412	419	396	422	382	427	413
3	425	407	426	411	425	395	424	378	430	417
4	424	410	424	409	425	387	423	378	428	417
5	424	414	423	411	425	387	423	378	428	416
6	420	413	424	410	421	390	419	387	427	418
7	423	416	422	413	419	396	420	391	430	417
8	423	413	423	413	421	399	422	391	430	416
9	427	413	426	412	425	399	425	384	432	416
10	428	413	427	410	420	404	426	384	427	416
11	424	413	424	408	422	395	422	393	431	416
12	423	414	424	411	422	396	425	393	430	416
13	427	416	426	409	427	394	427	396	429	417
14	428	414	426	407	423	398	430	399	430	414
15	427	411	424	406	428	394	430	384	429	415
16	427	409	423	403	421	387	423	382	430	409
17	422	413	421	411	420	405	424	398	426	413
18	421	412	421	407	424	396	424	391	428	412
19	423	413	423	410	421	404	425	398	426	414
20	422	411	421	407	427	400	427	390	426	411
21	424	412	424	407	423	394	424	392	427	409
22	423	410	424	407	418	389	422	385	425	407
23	421	411	424	408	416	394	418	381	424	410
24	422	411	425	411	427	403	428	391	424	411
25	423	410	424	409	420	388	419	377	426	409
26	423	410	426	408	418	376	420	366	428	414
27	426	407	427	407	417	390	419	382	431	414
28	424	414	427	410	423	385	422	381	427	416
29	424	411	426	409	419	386	422	378	426	414
30	422	409	424	404	422	380	422	372	425	416
31	419	407	422	406	421	386	418	374	424	407
Max / Min	**428**	**400**	**427**	**400**	**428**	**376**	**430**	**366**	**432**	**400**

Voltage Profile During the Month of Sep 2011

Date	Indore		Itarsi		Bina		Gwalior		Nagda	
	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
1	423	409	428	406	427	388	423	380	428	413
2	423	409	428	409	425	397	426	385	429	411
3	423	413	426	407	429	391	431	387	427	413
4	424	410	425	404	426	401	430	403	428	409
5	422	400	423	398	422	392	425	390	426	398
6	423	411	425	404	427	395	427	391	428	413
7	424	400	424	397	423	392	423	390	428	401
8	421	401	426	394	429	402	427	400	427	402
9	421	405	423	403	432	405	433	405	427	409
10	423	410	424	407	429	406	429	406	427	411
11	424	411	422	406	426	402	429	403	429	414
12	427	409	423	404	427	409	429	402	431	411
13	426	411	425	403	426	404	428	398	431	411
14	424	411	423	410	425	405	427	396	429	411
15	426	412	424	407	423	407	427	409	430	412
16	424	410	426	404	423	394	427	397	428	411
17	423	407	423	399	426	385	427	389	427	411
18	423	411	423	402	425	388	428	393	428	413
19	424	409	422	405	426	398	428	394	426	414
20	424	409	421	404	422	398	426	397	429	411
21	422	409	421	405	423	397	428	393	428	408
22	422	405	420	405	425	399	424	392	427	407
23	419	408	419	406	420	401	423	396	424	409
24	424	411	424	412	426	410	428	405	431	416
25	423	414	426	417	425	415	423	405	427	412
26	423	413	424	414	425	405	426	393	430	410
27	420	410	423	410	424	400	428	397	426	407
28	420	402	421	408	425	406	428	398	425	394
29	421	402	423	409	426	414	427	405	427	400
30	424	409	421	407	426	409	429	402	430	410
Max	**427**	**400**	**428**	**394**	**432**	**385**	**433**	**380**	**431**	**394**

Voltage Profile During the Month of Oct 2011

Date	Indore		Itarsi		Bina		Gwalior		Nagda	
	Max	Min	Max	Min	Max	Min	Max	Min	428	Min
1	424	404	420	401	423	405	422	400	428	401
2	424	407	419	404	423	407	425	402	430	406
3	422	405	419	408	424	409	422	401	428	400
4	427	410	417	409	420	410	421	401	428	406
5	424	403	421	403	424	408	423	399	429	405
6	426	410	424	410	421	407	423	402	429	412
7	425	398	417	404	425	406	426	399	429	397
8	424	402	419	406	422	408	423	406	427	406
9	424	403	423	405	424	404	424	405	427	401
10	428	405	425	407	427	409	427	403	432	405
11	405	425	426	405	425	406	426	403	430	389
12	423	400	421	402	422	408	424	396	430	401
13	424	392	423	396	421	404	424	395	428	397
14	424	399	421	404	424	409	427	395	430	397
15	421	399	420	404	424	408	426	400	426	400
16	424	401	421	406	424	409	429	405	429	404
17	421	400	420	404	423	408	427	407	427	404
18	426	393	424	401	427	408	424	405	431	400
19	424	401	423	403	427	414	430	404	428	406
20	420	398	419	399	421	405	427	402	426	403
21	424	401	420	401	427	409	426	403	426	403
22	421	397	418	398	417	406	419	404	428	403
23	425	396	423	396	422	403	427	407	431	400
24	423	406	421	403	423	408	423	403	428	410
25	423	406	421	403	419	398	422	396	427	409
26	424	400	423	400	419	397	424	391	429	402
27	423	403	421	405	425	399	427	397	428	406
28	421	400	419	400	420	408	423	398	429	403
29	423	399	420	403	420	407	421	402	429	404
30	423	402	424	406	426	408	424	408	429	404
31	423	400	424	406	425	413	427	412	428	402
Max	**428**	**392**	**426**	**396**	**427**	**397**	**430**	**391**	**432**	**389**

STATUS OF SHUNT CAPACITOR BANK (IN MVAR) INSTALLED AT VARIOUS EHV SUBSTATION AS ON 26 NOV'11

Sr. no.	Name of Circle	Volatge Class				Capacitor in Service (in MVAR)
		220 KV	132 KV	33 KV	Total	
1	Jabalpur	---	66	235	301	272.88
2	Sagar	---	132	178	310	265.4
3	Satna	---		94	94	42.5
4	Bhopal	---		398	398	356.26
5	400 KV Bhopal	---	132	206	338	269.37
6	Gwalior	---	330	469	799	728.09
7	Indore	62	324.34	756	1142.34	1076.91
8	Ujjain	---	132	555	687	491.5
9	nagda	---	66	226	292	272.72
10	Total	62	1182.34	3117	4361.34	3775.63

M.P POWER TRANSMISSION COMPANY LIMITED

TRANSMISSION WORKS COMPLETED DURING 2011-12 (UP TO 31.10.2011)

S. No.	NAME OF THE TRANSMISSION LINE / (FINANCED BY)	TYPE OF CIRCUITS	ROUTE LENGTH	CIRCUIT KMS.	DATE OF COMPL-ETION	DATE OF COMMI-SSIONING	ESTIMATED COST (Rs. In lacs)
I.	**EHV TRANSMISSION LINES**						
A.	**400 KV TRANSMISSION LINES**			**NIL**			
	Sub-Total (A)						
B.	**220 KV TRANSMISSION LINES**						
1	LILO of one ckt of 220kv Bina - Shivpuri line at 765KV S/s Bina of PGCIL (2x0.83) (GoMP)	DCDS	0.83	1.66	APRIL'11	14.04.2011	143
2	Diversion of 220kv Jabalpur (220kv) - Jabalpur (Sukha) line due to Guage Conversion of Jabalpur - Gondia Rly line (from NG to BG (2x6.18) (D/W)	DCDS	6.18	12.36	JULY'11	29.07.2011	858
	Sub-Total (B)		**7.01**	**14.02**			**1001.00**
C.	**132 KV TRANSMISSION LINES**						
1	Modification / Shifting of 132 kv Vindhyachal - Waidhan line due to Stage - IV VSTPP extension project of NTPC, Singrauli (2x6.71) (D/W)	DCDS	6.71	13.42	MAY'11	03.05.2011	432
2	Power supply to M/s Bhilai JP Cement, Satna from Kotar (220kv) S/s (17.49) (D/W)	DCSS	17.49	17.49	MAY'11	26.05.2011	614
3	Second Circuiting of 132 KV Sabalgarh - Sheopurkalan line (ADB - II)	2nd Ckt		88.97	JULY'11	13.07.2011	600
4	Shahdol - Dindori DCSS line (GoMP)	DCSS	61.76	61.76	AUG'11	28.08.2011	2041
5	Sironj - Maksoodangarh DCSS line (PFC)	DCSS	59.33	59.33	AUG'11	29.08.2011	1543
6	LILO of 2ND ckt of 132 kV Betul - Multai line through Betul 220 kv S/s (2x3.75) (ADB - II)	DCDS	3.75	7.50	SEPT'11	21.09.2011	186
	Sub-Total (C)		**149.04**	**248.47**			**5416.00**
	Total (EHV LINES) (A + B + C)		**156.05**	**262.49**			**6417**
II.	**EHV SUB - STATIONS**						
S. No.	**NAME OF THE SUBSTATION / (DISTRICT) / (FINANCED BY)**	**VOLTAGE RATIO (KV)**	**No.OF X-mer & Cap.(MVA)**	**EFFECTIVE CAPACITY MVA**	**DATE OF COMPL-ETION**	**DATE OF COMMI-SSIONING**	**ESTIMATED COST (Rs. In lacs)**
A.	**400 KV SUBSTATIONS**			**NIL**			
	Sub Total (B) (220KV S/s)			**0**			**0**
B.	**220 KV SUBSTATIONS**						
a.	**NEW SUBSTATIONS**						
1	Maihar (Distt.Satna) (D/W)	220/132/33	1x160	160	JULY'10	31.07.2011	2188
b.	**ADDITIONAL TRANSFORMERS**						
1	Ashta (Addl Trans) (Distt. Sehore) (PFC)	220/132	1x160	160	JULY'11	01.07.2011	1147
	Sub Total (B) (220KV S/s)			**320**			**3335**
C.	**132 KV SUBSTATIONS**						
a.	**NEW SUBSTATIONS**						
1	Chicholi (Distt. Betul) (ADB - II)	132/33	1x40	40	APRIL'11	09.04.2011	851
2	Shamsabad (Distt. Vidisha) (GoMP)	132/33	1x40	40	MAY'11	27.05.2011	958
3	Vijaypur (Distt. Sheopur) (ADB - II)	132/33	1x40	40	AUG'11	22.08.2011	841
4	Dindori (Distt. Dindori) (GoMP)	132/33	1x20	20	AUG'11	28.08.2011	1040
	Sub Total (C.a) (NEW S/s)			**140**			**3690**
b.	**ADDITIONAL TRANSFORMERS**						
1	Rewa (Addl) (Distt. Rewa) (ADB - II) (S)	132/33	1x40	40	JUNE'11	12.06.2011	578
2	Pithampur (Addl) (Distt. Dhar) (GoMP)	132/33	1x40	40	AUG'11	30.08.2011	498
3	Katni (400kv) (Addl) (Distt. Katni) (GoMP)	132/33	1x40	40	SEPT'11	29.09.2011	630
	Sub Total (C.b) (ADDITIONAL TRANSFORMER)			**120**			**1706**

c.	**AUGMENTATION OF CAPACITY**						
1	Bhopal (MACT) (Aug from 20 to 63 MVA) (Distt. Bhopal) (ADB - II)(S)	132/33		43	JUNE'11	06.06.2011	499
2	Jabalpur (VB) (Aug from 40 to 63 MVA) (Distt. Jabalpur) (GoMP)	132/33		23	AUG'11	09.08.2011	629
3	Kymore (Aug from 20 to 40 MVA) (Distt. Katni) (GoMP)	132/33		20	OCT'11	31.10.2011	467
	Sub Total (C.c) (AUGMENTATION OF CAPACITY)			**86**			**1595**
	Sub-Total (C) (132 kv Sub-stations)			**346**			**6991**
	Total (EHV SUB - STATIONS) (A+B+C)			**666**			**10326**
III	**CAPACITOR BANKS**						
S.No.	**NAME OF THE SUBSTATION**	**District**		**EFFECTIVE CAPACITY MVAR**	**DATE OF COMPL-ETION**	**DATE OF COMMI-SSIONING**	**ESTIMATED COST (Rs. In lacs)**
A.	**33 KV SHUNT CAPACITORS (MVAR)**						
1	Ashta 220 kv S/s. (2x12 MVAR)	Sehore		20	APRIL'11	01.04.2011	70
2	Badnagar 220 kv S/s. (2x12 MVAR)	Ujjain		20	APRIL'11	22.04.2011	70
3	Betul 220 kv S/s. (1x12 MVAR)	Betul		10	JULY'11	07.07.2011	38
4	Chicholi 132 kv S/s. (1x12 MVAR)	Betul		10	JULY'11	12.07.2011	38
5	Indore (East) 220 kv S/s. (1x12 MVAR)	Indore		10	AUG'11	02.08.2011	38
	Total (33 KV SHUNT CAPACITORS)			**70**	**MVAR**		**254**
	Total Cost of Trans. Works Completed in 2011-12						**16997.00**
	(*) : Cost included in respective 220 kv New Sub-stations .					**04.11.2011**	

EHV TRANSMISSION LINES UNDER PROGRESS DURING 2011-12 (AS ON 31.10.2011)						ANNEXURE - VII		
					(Rs.in Lakhs)			
S. No.	**NAME OF THE TRANSMISSION LINE**	**TYPE OF CIRCUITS**	**ROUTE LENGTH**	**CKT.KMS.**	**COMPLETION PROGRAMME**	**FUNDING AGENCY**	**ESTIMATED COST**	**PROGRESS IN %**
A.	**400 KV TRANSMISSION LINES**							
1	400KV DCDS Indore (PGCIL) - Pithampur line (2x65)	DCDS	65	130	Jun-12	PFC	9551.00	12%
2	400KV DCDS Malwa TPS - Pithampur line (2x150)	DCDS	150	300	Jun-12	PFC	20464.00	12%
3	400KV DCDS Malwa TPS - Chhegaon line (2x65)	DCDS	65	130	Jun-12	PFC	9325.00	22%
4	400KV DCDS Chhegaon - Julwania line (2x115)	DCDS	115	230	Jun-12	PFC	16088.00	8%
	Sub Total (A)		**395**	**790**			**55428**	
B.	**220 KV TRANSMISSION LINES**							
1	Maheshwar - Pithampur line	DCDS	54	108	Dec-11	ADB - II (S)	2845.00	97%
2	Malwa TPS - Chhegaon DCDS line (2x65)	DCDS	65	130	Mar-12	PFC	3627.00	60%
3	LILO of 220 kV Satna (PGCIL) - Katni line for Maihar 220 kv S/s (2x1.5 +2x0.5)	DCDS	2	4	Mar-12		145.00	60%
4	Second Circuiting of 220 kv Satpura - Pandhurna line	2nd ckt		83	Mar-12	ADB - II	1705.00	43%
5	220KV DCDS Interconnector between 400 & 220KV Sub-stations at Pithampur (Two Lines)(4x6 + 2x21)	DCDS	27	66	Jun-12	PFC	2439.00	2%
6	LILO of 220KV Nagda - Neemuch line for Daloda 220kV S/S. (2x4.41)	DCDS	4.41	8.82	Mar-12	PFC	555.00	6%
	Sub Total (B)		**152.41**	**399.82**			**11316**	
C.	**132 KV TRANSMISSION LINES**							
1	Sabalgarh (220 kv) - Vijaypur DCSS line	DCSS	33	33	Aug-11	ADB - II	813.00	90%
2	132kv Sidhi - Deosar DCDS line (2x50)	DCSS	50	100	Dec-11	ADB - II (S)	2198.00	31%
3	Birsinghpur - Shahdol DCSS	DCSS	48	48	2012-13	PFC	994.00	2%
4	LILO of Gadarwada - Pipariya line for Bankhedi DCDS (2x3.08)	DCDS	3.08	6.16	Feb-12	PFC	292.00	60%
5	Satna - Nagod DCSS (DCSS - 4.12 + 2nd Ckt - 19.50)	DCSS	4.12	23.62	Dec-11	PFC	453.00	35%
6	Shivpuri - Mohna DCSS	DCSS	65	65	Sep-12		1963.00	3%
7	Second Circuiting of 132 KV Sidhi - Mouganj line	2nd ckt		7.3	Dec-11		58.00	92%
8	LILO of both ckts of 132 kv Amarkantak - Morwa / Waidha line for Rajmilan 132KV S/s (2x2x0.3 + EC 0.9)	DCDS		2.1	Dec-11		103.00	16%
9	Handiya220 - Sultanpur (Rolgaon) 132KV DCSS line	DCSS	31.3	31.3	Jul-12	PFC	1203.00	2%
	Sub Total (C)		**234.5**	**316.48**			**8077**	
	Grand Total (A+B+C)		**781.91**	**1506.30**			**74821.00**	

EHV SUB STATIONS UNDER PROGRESS DURING 2011-12 (AS ON 31.10.2011)								
S.No.	**NAME OF THE SUBSTATION**	**VOLTAGE RATIO (KV)**	**No.OF X-mer & Cap. (MVA)**	**EFFECTIVE CAPACITY MVA**	**COMPLETION PROGRAMME**	**FUNDING AGENCY**	**ESTIMATED COST (Rs.in Lakhs)**	**PROGRESS IN %**
A.	**400 KV SUBSTATIONS**							
1	Ashta (New S/s) (Distt. Sehore)	400/220	2x315	630	2012-13	PFC - II	8844.00	15%
2	Pithampur (New S/s) (Distt. Dhar)	400/220	2x315	630	2012-13	PFC - II	8989.00	15%
3	Julwania (New S/s) (Distt. Badwani)	400/220	2x315	630	2012-13	PFC - II	8620.00	3%
4	Chhegaon (New S/s) (Distt. Khandwa)	400/220	1x315	315	2012-13	PFC - II	5101.00	15%
	Sub Total (A) (400 kv)			**2205**			**31554**	
B.	**220 KV SUBSTATIONS**							
1	Daloda (New S/s) (Distt. Ratlam)	220/132	1x160	160	2011-12	PFC - II	1905.00	50%
2	Amarkantak (New S/s) (Distt. Anooppur)	220/132	1x160	160	2012-13		2922.00	1%
3	Mehgaon (ADDL) (Distt. Bhind)	220/132	1x160	160	2011-12	ADB - II	1064.00	40%
4	Seoni (ADDL) (Distt. Seoni)	220/132	1x160	160	2012-13	ADB - II (S)	721.00	35%
5	Chhegaon (ADDL) (Distt. Khandwa)	220/132	1x160	160	2012-13	ADB - II (S)	1230.00	25%
6	Sabalgarh (ADDL) (Distt. Morena)	220/132	1x160	160	2012-13	ADB - II (S)	1217.00	20%
	Sub Total (B) (220kv)			**960**			**9059**	
C.	**132 KV SUBSTATIONS**							
(a)	**NEW SUBSTATIONS**							
1	Mohna (Distt. Shivpuri)	132/33	1x40	40	2012-13	GoMP	403.00	19%
2	Rajmilan (Distt. Singrauli)	132/33	1x40	40	Dec-11	GoMP	1180.00	38%
3	Moondi (Distt. Khandwa)	132/33	1x40	40	Jun-12	PFC - II	957.00	35%
4	Deosar (Distt. Sidhi)	132/33	1x40	40	Dec-11	PFC - II	987.00	20%
5	Nagod (Distt. Satna)	132/33	1x40	40	Mar-12	PFC - II	957.00	10%
6	Nowgong (Distt. Chhatarpur)	132/33	1x40	40	Mar-12	PFC - II	957.00	10%
7	Banda (Distt. Sagar)	132/33	1x40	40	2012-13	PFC - II	957.00	6%
8	Sultanpur (Distt. Harda)	132/33	1x40	40	2012-13	PFC - II	957.00	5%
9	Bankhedi (Distt. Hoshangabad	132/33	1x40	40	2011-12	PFC - II	973.00	5%
10	Indore (RAU) (Distt. Indore)	132/33	1x63	63	2012-13	PFC - II	1061.00	5%
	Sub Total (a)			**423**			**9389**	
C.	**132 KV SUBSTATIONS**							
(b)	**Additional/ Augmentation of Transformers**							
1	220 KV Damoh (Addl) (Distt. Damoh)	132/33		40	Sep-11	ADB - II (S)	370.00	30%
2	132 KV Indore (Chambal) (Addl) (Distt. Indore)	132/33		63	2012-13	GoMP	487.00	30%
3	Multai (Aug 20 to 40.) (Distt. Betul)	132/33		20	Oct-11	ADB - II (S)	585.00	50%
4	Damoh (Aug from 20 to 40 MVA) (Distt. Damoh)	132/33		20	Sep-11	ADB - II (S)	524.00	20%
5	Katra (Addl.) (Distt. Rewa)	132/33		20	Oct-11	GoMP	130.00	25%
6	Aron (Addl.) (Distt. Guna)	132/33		40	Nov-11	GoMP	398.00	10%
7	Ghosla (Addl.) (Distt. Ujjain)	132/33		40	2011-12	ADB - II (S)	606.00	40%
8	Dindori (Addl.) (Distt. Dindori)	132/33		20	2011-12	GoMP	(*)	90%
9	Dabra (Aug from 20 to 40 MVA) (Distt. Gwalior)	132/33		20	2012-13	GoMP	526.00	20%
10	Mansakra (Aug from 20 to 63 MVA) (Distt. Jabalpur)	132/33		43	2012-13		630.00	40%
11	Lakhnadaun (Addl) (Distt. Seoni)	132/33		20	2012-13		160.00	10%
	Sub Total (b)			**346**			**4416**	
	Grand Total (a+b+c) (132 kv)			**769**			**13805**	
	Grand Total (A+B+C)			**3934**			**54418**	
Total Cost of EHV Lines and Substations under progress (A+B+C)							**129239.00**	**04.11.2011**
D.	**MISC WORKS**							
1	2x50 MVAR Reactor at 400 KV Nagda S/s (Distt. Ujjain)	400kv		2x50	2011-12		1905.00	90%
(*) : Cost included in respective estimate for New Sub-station.								

Datewise Under Frequnecy (48.8 Hz & 48.6 Hz) & Df / Dt Operation in Madhya Pradesh

Date	Month : August-2011				Month : September- 2011				Month : October 2011			
	U/F 48.8 Hz		U/F 48.6 Hz		U/F 48.8 Hz		U/F 48.6 Hz		U/F 48.8 Hz		U/F 48.6 Hz	
	No.of Occasion	MAX LOAD RELIEF IN MW	No.of Occasion	MAX LOAD RELIEF IN MW	No.of Occasion	MAX LOAD RELIEF IN MW	No.of Occasion	MAX LOAD RELIEF IN MW	No.of Occasion	MAX LOAD RELIEF IN MW	No.of Occasion	MAX LOAD RELIEF IN MW
1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7	0	0.0	0	0.0	0	0.0	0	0.0	5	**58.8**	0	0.0
8	0	0.0	0	0.0	0	0.0	0	0.0	10	**141.5**	0	0.0
9	0	0.0	0	0.0	0	0.0	0	0.0	1	**66.6**	0	0.0
10	0	0.0	0	0.0	0	0.0	0	0.0	34	**106.6**	3	**11.9**
11	0	0.0	0	0.0	0	0.0	0	0.0	37	**186.0**	10	**15.0**
12	0	0.0	0	0.0	0	0.0	0	0.0	13	**175.9**	5	**26.0**
13	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
14	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
16	**4**	**30.8**	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
17	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
18	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
19	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
20	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
21	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
22	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
23	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
24	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
25	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
26	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
27	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
28	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
29	0	0.0	0	0.0	5	**67.5**	0	0.0	0	0.0	0	0.0
30	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
31	0	0.0	0	0.0					0	0.0	0	0
TOTAL	**4**	**30.75**	**0**	**0.00**	**5**	**67.50**	0	**0.00**	**100**	**186.00**	0	**0.00**

NOTE :- U/F 48.2 Hz and DF/DT Operation - **NIL**

Western Regional Power Committee

Under frequency Load Shedding scheme

AUTOMATIC UNDER FREQUENCY LOAD SHEDDING SCHEME IN WR

Discrete Relays (AUFLS)

UFR Setting (Hz)	Time delay (Sec.)	Recommended Load Relief for WR (MW)	Load relief implemented in WR (MW)	Load Relief (MW)							
				GETCO		MPPTCL		CSEB		MSETCL	
				Approved	Actual	Approved	Actual	Approved	Actual	Approved	Actual
48.8	Inst.	960	1359	220	506	152	247	38	39	550	567
48.6	Inst.	960	1384	220	564	152	167	38	38	550	615
48.2	Inst.	1280	1699	295	525	205	187	50	51	730	936
Total	Inst.	3200	4442	735	1595	509	601	126	128	1830	2118

Frequency Trend Relays (df/dt relays)

Settings (Hz/Sec)	Recommended Load Relief for WR (MW)	Implemented Load Relief (MW)					
	REGION	REGION	GETCO	MPPTCL	MSETCL	TPC	CSEB
49.2/0.4 (St-III)	2472	2390	972	392	686	273	67
49.0/0.2 (St-II)	2212	2211	972	393	687	91	68
48.8/0.01 (St-I)	3023	3064	1537	546	825	91	65
Total	7707	7665	3481	1331	2198	455	200

Annexure-2.5(i)

Discoms wise Average Supply Hours

PARTICULARS	East Zone			Central Zone		
	Aug-11	Sep-11	Oct-11	Aug-11	Sep-11	Oct-11
Commissinary HQ	23:37	24:00	22:50	23:43	24:00	23:16
District HQ	23:26	24:00	21:46	22:56	24:00	21:27
Tehsil HQ	19:53	21:58	15:00	20:10	22:22	16:40
Rural -3Phase	16:38	20:26	11:28	16:11	20:27	11:53
Rural -1Phase	0:00	0:00	0:00	0:00	0:00	0:00
Total Rural	16:38	20:26	11:28	16:11	20:27	11:53
PARTICULARS	**West Zone**			**MP**		
	Aug-11	Sep-11	Oct-11	Aug-11	Sep-11	Oct-11
Commissinary HQ	23:54	24:00	23:14	23:43	24:00	23:06
District HQ	23:45	24:00	20:48	23:23	24:00	21:23
Tehsil HQ	19:41	22:44	14:04	19:55	22:19	15:15
Rural -3Phase	15:38	21:38	9:36	16:58	21:11	11:51
Rural -1Phase	0:00	0:00	0:00	0:00	0:00	0:00
Total Rural	15:38	21:38	9:36	16:58	21:11	11:51

LIST OF 33KV FEEDERS FOR WHICH GROUP TO BE ALLOCATED
EAST DISCOM
JABALPUR REGION

Name of EHV Substation	Name of 33KV feeder
132KV	
132KV Marhotal	33KV Kathonda
	33KV Sewage
132KV Mansakra	33KV Eurobond
132KV Dindori	33KV Dindri
	33KV Samnapur
	33KV Gadasarai
	33KV Shahpura
220KV	
220KV Pipariya	33KV Panagar

SAGAR REGION

132KV	
132KV Gaurjhamer	33KV Deori-II
132KV Khajuraho	33KV Airport
220KV	
220KV Damoh	33KV PGCIL
	33KV Narsinghgarh
	33KV Industrial Estate
220KV Sagar	33KV Karrapur
22KV Tikamgarh	33KV Digoda-II

REWA REGION

132KV	
132KV Umariya	33KV Pipariya (Coal Mines)
	33KV Manpur
132KV Kotma	33KV Chachai (Anoop-pur)
132KV Shahdol	33KV DCL
132KV Majhgawan	33KV Majhgawan
	33KV Barondha
	33KV Kothi
	33KV Chitrakoot
132KV Rewa	33KV Amiriti
132KV Maihar	33KV Reliance
132KV Pawai	33KV Pawai
	33KV Amanganj
	33KV Mohendra
	33KV Gunnore
132KV Beohari	33KV Bansagar
	33KV Beohari
	33KV Jaisingh nagar
	33KV Papoundh
220KV	
220KV Kotar	33KV Kotar
	33KV Sukwah
	33KV Birsinghpur
	33KV Dagdiha
	33KV Tikuri
220KV Birsinghpur	33KV Ascent Hydro
220KV Sidhi	33KV Mahan
	33KV JP-II
220KV Satna	33KV Bhilai JP

WEST DISCOM
INDORE REGION

Name of EHV Substation	Name of 33KV feeder
132KV	
132KV Indore West	33KV Gandhi Nagar
	33KV Airport Director
132KV Betma	33KV Chiklonda
	33KV Industrial
	33KV Gohan
132KV Dhamnod	33KV NVDA
	33KV BPCL
132KV Kanwan	33KV Chhayan
	33KV Rajod
	33KV Oasis & Kashyap Sweatner
132KV Manawar	33KV Toki
	33KV NVDA
132KV Jamli	33KV MES
220KV	
220KV South Zone(Indore)	33KV Datoda
	33KV Tillore
220KV Jetpura (Indore)	33KV Rama Phosphate
	33KV BPCL
220KV Pithampur	33KV Nalrip Water Works
	33KV MPAKVN

UJJAIN REGION

132KV	
132KV Manasa	33KV Kukdewshawar
132KV Jaora	33KV New Suzlon-I
	33KV Ringnod
132KV Malhargarh	33KV Vishniya Pipliya
132KV Ratangarh	33KV Jathala
220KV	
220KV Ratlam	33KV Raj Solvex

CENTRAL DISCOM
BHOPAL REGION

Name of EHV Substation	Name of 33KV feeder
132KV	
132KV Ayodhyanagar	33kV BMC
132KV Sarangpur	33KV Mou-II
132KV Samsabad	33KV Gholana
220KV	
220KV Ashta	33KV Amla Majju
	33KV Kajlas

GWALIOR REGION

132KV	
132KV Vijaypur	33kV Vijaypur
220KV	
220KV Shivpuri	33KV Chandanpura

Anticipated Average Availability at MP Periphery: 2011-12

WITH BILATERAL

Figures in MW

Particulars	Nov-11										Dec-11				
											0 to 06	06 to 12	12 to 18	18 to 24	Energy in MU
Thermal (R-04)											2073	2073	2073	2073	1543
Hydel											450	450	410	720	378
CSS											1950	1950	1950	1950	1451
ISP											0	180	230	550	179
SSP											30	80	130	430	125
Omkareshwar											0	80	90	220	73
Maheshwar											0	0	0	0	0
DVC											200	200	200	200	149
Rihand +Matatila											15	15	15	15	11
Sugen											96	96	96	96	71
Banking											1135	175	205	593	392
Sale (-) / Purchase (+)											350	160	160	223	166
Total											**6300**	**5459**	**5559**	**7070**	**4536**
Unres. Demand											**7920**	**7980**	**8350**	**8500**	**6092**
Resl. Demand											**6580**	**6190**	**6050**	**6760**	**4758**
Shortgae(+) / Surplus(-) (wrt Unres)											**1620**	**2521**	**2791**	**1430**	**1555**
Shortgae(+) / Surplus(-) (wrt res)											**280**	**731**	**491**	**-310**	**222**

Particulars	Jan-12					Feb-12					Mar-12				
	0 to 06	06 to 12	12 to 18	18 to 24	Energy in MU	0 to 06	06 to 12	12 to 18	18 to 24	Energy in MU	0 to 06	06 to 12	12 to 18	18 to 24	Energy in MU
Thermal (R-04)	2073	2073	2073	2073	1543	2148	2148	2148	2148	1495	2154	2154	2154	2154	1602
Hydel	470	410	360	720	365	190	320	420	680	280	370	330	200	650	288
CSS	1990	1990	1990	1990	1481	2000	2000	2000	2000	1392	2020	2020	2020	2020	1503
ISP	160	180	40	580	179	0	170	130	610	158	0	70	130	680	164
SSP	50	130	220	410	151	20	140	110	330	104	100	110	120	310	119
Omkareshwar	70	90	30	240	80	0	80	70	270	73	0	30	60	310	74
Maheshwar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DVC	200	200	200	200	149	200	200	200	200	139	200	200	200	200	149
Rihand +Matatila	15	15	15	15	11	15	15	15	15	10	15	15	15	15	11
Sugen	96	96	96	96	71	96	96	96	96	67	96	96	96	96	71
Banking	983	10	40	415	269	910	0	30	390	231	462	0	21	237	134
Sale (-) / Purchase (+)	150	160	160	158	117	0	0	0	0	0	0	0	0	0	0
Total	**6258**	**5355**	**5225**	**6898**	**4415**	**5579**	**5169**	**5219**	**6739**	**3951**	**5416**	**5025**	**5015**	**6671**	**4116**
Unres. Demand	**7830**	**7880**	**8260**	**8380**	**6017**	**6920**	**7220**	**7800**	**8210**	**5246**	**6580**	**6730**	**7150**	**7420**	**5186**
Resl. Demand	**6540**	**6160**	**6070**	**6750**	**4747**	**5810**	**5720**	**5910**	**6750**	**4209**	**5510**	**5350**	**5310**	**6030**	**4129**
Shortgae(+) / Surplus(-) (wrt Unres)	**1572**	**2525**	**3035**	**1482**	**1602**	**1341**	**2051**	**2581**	**1471**	**1384**	**1164**	**1705**	**2135**	**749**	**1070**
Shortgae(+) / Surplus(-) (wrt res)	**282**	**805**	**845**	**-148**	**332**	**231**	**551**	**691**	**11**	**258**	**94**	**325**	**295**	**-641**	**13**

Basis of Anticipated Availability for 2011-2012

1 Central Sector :- Availability from Central Sector as per Maintenance Programme furnished by WRPC(LGBR), Mumbai & including 200 MW for drought prone area of Bundelkhand. Availability of Unit no. 1 of Sipat Stage -I considered from 01-10-11

2 Thermal :- As furnished by O&M : Generation , MPPGCL (R-05) & excluding Aux. Cons.

3 Hydel :- As furnished by O & M Hydel.

(a) Schedule of generation from Bansagar-III HPS shall depend upon requirement of water from Bansagar reservoir by Bihar Sate as per share.

(b) Schedule of Generation from Pench HPS shall depend upon reservoir level of Kheri dam of Govt. of MS Situated in down stream of Pench

(C) Schedule of generation for other HPS is also dependent on release of water allocated by WRD

(d) Hydel Generation may change during real time as per system requirement.

4 ISP,OSP and SSP : As furnished by NHDC/NCA

5 Maheshwar : Not Considered

6 DVC & Sujen : Considering Avaialability as furnished by MP Tradeco.

Annexure-3.4

Proposed shut down of transmission elements during 21-11-11 to 20-12-11

S.No	Name of Sub station	Details of Transformer	Date of Maintena	Time	Remark
1	400KV Katni	315MVA BHEL	28-12-11	9:00Hrs - 17:00Hrs	For Post monsoon maintenance
2	400KV Katni	315MVA BHEL	29-12-11	9:00Hrs - 17:00Hrs	For Post monsoon maintenance
3	400KV Katni	315MVA BHEL	30-12-11	9:00Hrs - 17:00Hrs	For Post monsoon maintenance
4	400KV Indore	400KV NAGDA	25-11-11	07.00 hr - 17.00 hr	For Post monsoon maintenance and replacement of R-ph wave trap
5	400KV Nagda	400KV INDORE	25-11-11	07.00 hr - 17.00 hr	For Routine maintenance
6	400KV Nagda	400KV MAIN BUS-I	03-12-11	08.00 hr - 17.00 hr	For Routine maintenance
7	400KV Nagda	400kv RAJGARH-II	12-Dec-11	8:00Hrs to 17:00HR	For Routine maintenance
8	400KV Nagda	400KV MAIN CB BAY-I(RAJGARH-I)	19-Dec-11	8:00Hrs to 17:00HR	For Routine maintenance
9	400KV Bhopal	NIL			
10	400KV Bina	NIL			

Unitwise / Stationwise Genration in MU

A. Thermal

Stn. Name	UNIT No.	Capacity MW	Aug-11	Sep-11	Oct-11
AMARKANTAK	3	120	0	0.00	0.00
	4	120	0.00	0.00	0.00
	PH II	**240**	**0.00**	**0.00**	**0.00**
	PH III	**210**	**139.18**	**139.90**	**157.55**
	TOT	**450**	**150.52**	**139.90**	**157.55**
SATPURA	1	62.5	30.04	26.90	32.53
	2	62.5	15.81	22.95	30.51
	3	62.5	26.99	24.14	29.63
	4	62.5	11.12	20.96	35.18
	5	62.5	26.72	29.14	29.50
	PH I	**312.5**	**110.68**	**124.10**	**157.36**
	6	200	0.00	2.66	105.55
	7	210	75.79	88.69	97.50
	PH II	**410**	**75.785**	**91.34**	**203.05**
	8	210	83.92	20.10	0.00
	9	210	86.615	75.69	107.72
	PH III	**420**	**170.535**	**95.78**	**107.72**
	TOT	**1142.5**	**357.00**	**311.22**	**468.12**
SANJAY GANDHI	1	210	63.495	70.69	25.27
	2	210	59.42	16.48	0.15
	PH I	**420**	**122.91**	**87.16**	**25.42**
	3	210	0.00	56.09	119.82
	4	210	116.57	109.32	134.99
	PH II	**420**	**116.57**	**165.41**	**254.81**
	PH III	**500**	275.90	182.42	344.29
	TOT	**1340**	**515.37**	**434.99**	**624.52**
MPPGCL THERMAL		**2932.5**	**1011.56**	**886.11**	**1250.19**

AMARKANTAK POWER HOUSE-I RETIRED FROM SERVICE WEF 01.04.2009

B. Hydel

Station Name	Capacity MW	Aug-11	Sep-11	Oct-11
GANDHISAGAR	**115.0**	1.26	9.46	28.51
R.P.SAGAR	**172.0**	0.00	1.68	13.80
J.SAGAR	**99.0**	14.48	16.56	10.89
CHAMBAL	**386.0**	**15.74**	**27.69**	**53.20**
M.P.CHAMBAL	**193.0**	**7.87**	**13.85**	**26.60**
PENCH	**160.0**	22.97	78.34	51.24
M.P.PENCH	**107.0**	**15.31**	**52.23**	**34.16**
BARGI	**90.0**	66.40	64.59	67.13
TONS	**315.0**	104.32	162.99	179.38
BIRSINGHPUR	**20.0**	14.47	14.46	2.08
B.SGR(DEOLONDH)	**60.0**	8.07	36.66	10.25
B.SGR(SILPARA)	**30.0**	1.24	7.65	13.54
RAJGHAT	**45.0**	22.99	19.21	7.84
M.P.RAJGHAT	**22.5**	**11.49**	**9.60**	**3.92**
B.SGR(JINHA)	**20.0**	2.31	12.17	14.69
MADIKHEDA	**60.0**	45.87	24.53	5.00
TOTAL HYDEL	**1186.0**	**304.39**	**448.3**	**404.4**
MPPGCL Hydel	**915.0**	**289.91**	**430.1**	**379.7**
MPSEB HYDEL Share	**917.5**	**277.37**	**398.7**	**356.8**

C. NHDC

Station Name	Capacity MW	Aug-11	Sep-11	Oct-11
Indira Sagar Hydel Project	1000	591.230	722.671	326.953
Omkareshwar Hydel Project	520	213.053	251.140	132.869

MP SUPPLY EXCLUDING AUXILIARY CONS.
in Million Units

S.No.	Particulars	Aug-11	Sep-11	Oct-11
1	MPSEB Thermal Availability	875.21	749.63	1083.32
2	MPSEB Hydel Availability	274.52	395.30	355.96
3	Indira Sagar	591.02	720.61	326.11
4	Omkareshwar	213.05	251.14	132.87
5	Schedule / Drawal From Central Sector	1222.10	941.27	1354.31
6	Schedule of DVC	0.00	0.00	47.80
7	Schedule of Sujen	17.18	64.99	71.27
8	Sardar Sarovar	436.40	528.62	252.02
9	Additional Power Purchase	0.00	3.47	125.84
10	Sale of Power	-245.28	-353.61	-75.57
11	Banking of Power	-355.08	-298.21	-11.95
12	Energy Exchange	0.00	0.00	0.00
13	Unschedule Interchange	-337.54	-230.63	36.39
14	Other Imp / Exp	94.29	112.28	118.23
15	Total MPSEB Supply excl. Aux. Cons.	2785.86	2884.86	3816.59
16	Average Supply per Day	89.87	96.16	123.12
17	Maximum Daily M.P. Supply	102.00	107.80	151.93
18	Minimum Daily M.P. Supply	81.53	87.38	106.09
19	Registered Demand : MW	5403	6025	7973
24	Unrestricted Demand : MW	5680	6576	8766

Hourly Average Own Generation, Schedule Drawal , Actual Drawal & Demand
Month :- August 2011

FIGURES IN MW

Hrs.	FREQ.	Own Generation							Schedule from												Tot Avl.	Act. Drl	UI	Other Imp/ Exp	DEMAND MET	Load Shedding			REST. DEMAND	UNREST. DEMAND
		THER. Incl Aux	THER. Excl Aux	HYD.	ISP	OSP	Injection from STOA	Total	CSS	DVC ER	Sugen	SSP	SEZ	Banking	Sale	Pur	Exchange	STOA	Rihand+ Matatila	Total					SCH	UNSCH	TOTAL		
1:00	49.93	1365	1243	390	864	347	0	2843	1641	0	22	513	9	-443	-414	0	0	26	19	1374	4217	1210	-163	5	4027	263	0	263	4035	4298
2:00	49.93	1361	1239	378	834	342	0	2792	1629	0	22	513	9	-443	-310	0	0	37	19	1476	4269	1206	-270	5	3961	262	0	262	3969	4231
3:00	49.92	1361	1239	373	820	336	0	2768	1618	0	22	514	10	-443	-259	0	0	39	19	1519	4287	1226	-293	5	3954	196	0	196	3963	4159
4:00	49.96	1356	1234	373	789	332	0	2729	1527	0	22	514	10	-443	-236	0	0	39	19	1452	4180	1219	-233	5	3908	142	0	142	3913	4055
5:00	49.90	1354	1232	374	755	314	0	2676	1528	0	22	514	10	-443	-228	0	0	44	19	1466	4141	1034	-431	5	3665	143	0	143	3676	3819
6:00	49.99	1363	1240	358	711	305	0	2614	1524	0	22	514	10	-443	-243	0	0	51	19	1453	4067	829	-624	5	3391	155	5	161	3397	3552
7:00	49.99	1357	1235	338	696	291	0	2561	1523	0	22	514	9	-360	-238	0	0	57	19	1546	4107	788	-758	5	3292	91	0	91	3292	3383
8:00	50.07	1355	1233	336	690	287	0	2547	1525	0	22	514	9	-360	-240	0	0	55	19	1544	4091	749	-795	5	3241	81	0	81	3234	3314
9:00	49.95	1325	1206	334	703	281	0	2523	1521	0	22	516	9	-360	-401	0	0	37	19	1363	3887	747	-617	5	3232	60	0	60	3237	3297
10:00	50.00	1327	1207	351	735	279	0	2572	1517	0	22	655	9	-519	-308	0	0	24	19	1419	3991	798	-621	5	3345	74	0	74	3346	3419
11:00	49.90	1343	1222	354	747	280	0	2602	1523	0	22	684	9	-519	-422	0	0	12	19	1327	3929	915	-412	5	3505	94	0	94	3516	3610
12:00	49.92	1336	1216	364	760	277	0	2617	1517	0	19	684	9	-526	-447	0	0	10	19	1285	3902	905	-380	5	3512	143	0	143	3520	3663
13:00	50.05	1336	1216	370	764	250	0	2599	1542	0	19	678	9	-526	-459	0	0	7	19	1288	3887	895	-393	5	3487	211	0	211	3482	3693
14:00	49.96	1330	1210	365	756	209	0	2539	1572	0	19	671	9	-535	-432	0	0	6	19	1329	3869	871	-459	5	3403	195	0	195	3408	3603
15:00	49.84	1303	1186	365	764	209	0	2524	1578	0	19	532	9	-535	-481	0	0	6	19	1148	3671	808	-340	5	3325	251	0	251	3340	3591
16:00	49.92	1321	1202	375	757	217	0	2552	1517	0	19	510	9	-535	-458	0	0	6	19	1087	3639	698	-390	5	3243	254	4	258	3254	3509
17:00	50.03	1309	1191	373	751	216	0	2531	1509	0	19	517	9	-541	-373	0	0	11	19	1169	3699	697	-471	5	3217	260	0	260	3214	3473
18:00	49.96	1343	1222	373	753	235	0	2584	1508	0	19	517	9	-571	-355	0	0	11	19	1156	3740	768	-388	5	3340	220	0	220	3345	3565
19:00	49.77	1400	1274	399	781	266	0	2719	1672	0	25	651	9	-475	-337	0	0	3	19	1567	4287	1322	-245	5	4038	295	0	295	4067	4362
20:00	49.74	1433	1304	454	890	311	0	2958	1697	0	28	683	9	-475	-217	0	0	-11	19	1732	4690	1517	-215	5	4486	492	6	499	4526	5019
21:00	49.80	1442	1312	493	960	345	0	3110	1699	0	28	683	9	-475	-218	0	0	-12	19	1734	4844	1525	-208	5	4647	383	18	401	4694	5076
22:00	49.82	1439	1310	491	958	349	0	3109	1708	0	28	683	9	-475	-205	0	0	-12	19	1756	4864	1480	-275	5	4600	310	20	330	4645	4955
23:00	49.86	1375	1251	439	936	348	0	2975	1717	0	28	568	9	-544	-352	0	0	-6	19	1440	4415	1187	-253	5	4167	512	10	522	4195	4707
24:00	49.92	1369	1246	403	904	348	0	2900	1717	0	28	533	9	-469	-278	0	0	-3	19	1555	4456	1185	-370	5	4087	492	8	501	4106	4598
Avg.	49.92	1359	1236	384	795	291	0	2706	1584	0	22	578	9	-477	-330	0	0	18	19	1405	4130	1024	-400	5	3711	233	3	235	3724	3956
00 TO 06 HRS.	49.94	1360	1238	374	795	329	0	2737	1578	0	22	514	9	-443	-282	0	0	39	19	1457	4194	1121	-336	5	3818	194	1	194	3826	4019
06 TO 12 HRS.	49.97	1340	1220	346	722	283	0	2570	1521	0	21	594	9	-441	-343	0	0	33	19	1414	3984	817	-597	5	3354	90	0	90	3357	3448
12 TO 18 HRS.	49.96	1324	1205	370	757	223	0	2555	1538	0	19	571	9	-541	-426	0	0	8	19	1196	3751	789	-407	5	3336	232	1	233	3340	3572
06TO 18 HRS.	49.97	1332	1212	358	740	253	0	2563	1529	0	20	583	9	-491	-385	0	0	20	19	1305	3868	803	-502	5	3345	161	0	161	3349	3510
18 TO 24 HRS.	49.82	1410	1283	446	905	328	0	2962	1702	0	28	633	9	-486	-268	0	0	-7	19	1631	4593	1369	-261	5	4337	414	10	424	4372	4786

Hourly Average Own Generation, Schedule Drawal , Actual Drawal & Demand
Month :- September 2011

FIGURES IN MW

Hrs.	FREQ.	Own Generation							Schedule from												Tot Avl.	Act. Drl	UI	Other Imp/ Exp	DEMAND MET	Load Shedding			REST. DEMAND	UNREST. DEMAND
		THER. Incl Aux	THER. Excl Aux	HYD.	ISP	OSP	Injection from STOA	Total	CSS	DVC ER	Sugen	SSP	SEZ	Banking	Sale	Pur	Exchange	STOA	Kriha nd+ Matat la	Total						SCH	UNSCH	TOTAL		
1:00	49.93	1222	1112	575	1003	353	0	3043	1292	0	93	726	7	-383	-461	7	0	37	29	1347	4390	1407	60	5	4412	17	39	56	4462	4479
2:00	49.95	1229	1119	569	1002	352	0	3042	1303	0	90	726	7	-383	-446	7	0	39	29	1372	4414	1292	-80	5	4295	17	53	70	4354	4371
3:00	49.98	1219	1110	564	1001	352	0	3027	1321	0	86	726	7	-383	-434	7	0	42	29	1401	4428	1258	-143	5	4243	16	55	71	4302	4317
4:00	50.02	1207	1098	552	1001	352	0	3003	1297	0	86	726	7	-333	-410	7	0	47	29	1456	4460	1212	-244	5	4169	12	52	64	4219	4231
5:00	49.93	1203	1095	549	1002	352	0	2997	1265	0	86	726	7	-333	-438	7	0	47	29	1397	4395	1166	-231	5	4116	14	39	54	4165	4179
6:00	49.99	1210	1101	545	1002	352	0	3000	1244	0	83	726	7	-333	-454	0	0	47	29	1350	4350	989	-361	5	3942	18	40	58	3984	4002
7:00	49.99	1193	1085	519	1003	353	0	2960	1142	0	83	727	7	-250	-507	0	0	45	29	1276	4236	753	-524	5	3667	51	0	51	3669	3720
8:00	50.04	1197	1089	505	1001	353	0	2948	1153	0	83	727	7	-250	-548	0	0	45	29	1246	4195	679	-567	5	3582	48	0	48	3580	3628
9:00	49.92	1192	1085	504	1002	354	0	2945	1140	0	83	727	7	-250	-613	0	0	41	29	1163	4108	619	-544	5	3522	60	0	60	3532	3592
10:00	49.91	1186	1079	498	1002	356	0	2934	1128	0	81	747	7	-480	-522	0	0	30	29	1021	3955	694	-326	5	3598	70	5	75	3614	3684
11:00	49.85	1187	1080	509	1000	357	0	2945	1154	0	85	746	7	-530	-551	0	0	30	29	971	3916	746	-225	5	3661	93	9	101	3687	3780
12:00	49.93	1190	1083	532	999	356	0	2970	1146	0	85	746	7	-530	-622	0	0	27	29	888	3858	666	-222	5	3608	133	6	138	3622	3754
13:00	50.01	1189	1082	532	999	355	0	2968	1176	0	85	727	7	-530	-648	0	0	27	29	872	3840	645	-228	5	3585	146	16	162	3600	3746
14:00	49.88	1192	1085	541	1002	357	0	2984	1169	0	85	727	7	-530	-640	0	0	27	29	874	3858	574	-300	5	3530	145	19	165	3563	3708
15:00	49.87	1207	1099	545	1004	356	0	3004	1164	0	85	727	7	-530	-659	0	0	24	29	847	3851	547	-300	5	3527	135	9	144	3550	3685
16:00	49.88	1196	1088	535	1004	356	0	2982	1159	0	85	727	7	-530	-639	0	0	25	29	863	3845	508	-354	5	3465	123	6	129	3485	3609
17:00	49.88	1195	1087	530	1004	354	0	2975	1158	0	84	727	7	-530	-574	0	0	28	29	929	3904	481	-448	5	3428	133	2	134	3442	3575
18:00	49.97	1254	1141	539	1003	355	0	3038	1184	0	84	727	7	-560	-567	0	0	28	29	932	3970	701	-231	5	3710	132	6	139	3720	3852
19:00	49.54	1322	1203	626	1006	355	0	3190	1457	0	95	747	7	-371	-365	7	0	0	29	1604	4793	1631	28	5	4821	76	76	152	4964	5040
20:00	49.82	1349	1227	684	1005	354	0	3270	1483	0	95	747	7	-371	-327	12	0	-7	29	1667	4937	1794	127	5	5071	48	262	310	5360	5408
21:00	49.78	1348	1227	708	1006	354	0	3294	1486	0	95	747	7	-371	-323	18	0	-7	29	1681	4975	1754	73	5	5055	30	242	272	5331	5361
22:00	49.84	1318	1200	690	1005	353	0	3247	1479	0	95	747	7	-371	-324	15	0	-7	29	1670	4918	1685	15	5	4939	57	203	260	5164	5222
23:00	49.84	1260	1146	661	1004	353	0	3165	1494	0	95	727	7	-424	-371	28	0	4	29	1589	4753	1527	-62	5	4687	62	192	254	4902	4963
24:00	49.96	1245	1133	616	1003	353	0	3105	1445	0	95	727	7	-383	-344	3	0	10	29	1589	4695	1424	-166	5	4518	51	163	214	4687	4738
Avg.	49.90	1230	1119	568	1003	354	0	3043	1268	0	88	732	7	-414	-491	5	0	26	29	1221	4293	1031	-219	5	4048	70	62	132	4123	4194
00 TO 06 HRS.	49.97	1215	1106	559	1002	352	0	3019	1287	0	87	726	7	-358	-441	5	0	43	29	1387	4406	1221	-167	5	4196	16	46	62	4248	4263
06 TO 12 HRS.	49.94	1191	1083	511	1001	355	0	2950	1144	0	83	736	7	-382	-560	0	0	36	29	1094	4045	693	-401	5	3606	76	3	79	3617	3693
12 TO 18 HRS.	49.92	1205	1097	537	1003	355	0	2992	1168	0	84	727	7	-535	-621	0	0	26	29	886	3878	576	-310	5	3541	136	10	146	3560	3696
06TO 18 HRS.	49.93	1198	1090	524	1002	355	0	2971	1156	0	84	732	7	-458	-591	0	0	31	29	990	3961	634	-356	5	3574	106	6	112	3589	3694
18 TO 24 HRS.	49.80	1307	1189	664	1005	353	0	3212	1474	0	95	740	7	-382	-342	14	0	-1	29	1633	4845	1636	3	5	4848	54	189	243	5068	5122

Hourly Average Own Generation, Schedule Drawal , Actual Drawal & Demand
Month :- October 2011

FIGURES IN MW

Hrs.	FREQ.	THER. Incl Aux	Own Generation						Schedule from												Tot Avl.	Act. Drl	UI	DEMAND MET	Load Shedding			REST. DEMAND	UNREST. DEMAND
			THER. Excl Aux	HYD.	ISP	OSP	Injection from STOA	Total	CSS	DVC ER	Sugen	SSP	SEZ	Banking	Sale	Pur	Exchange	STOA	Rihand+ Matatila	Total					SCH	UNSCH	TOTAL		
1:00	49.63	1672	1521	527	538	244	15	2844	1392	60	93	174	9	-8	-39	319	0	-15	25	2010	4854	2630	620	5439	890	158	1048	5654	6544
2:00	49.67	1665	1515	510	501	219	15	2760	1392	58	93	171	9	-8	-39	320	0	-15	25	2006	4766	2528	522	5257	895	274	1169	5581	6476
3:00	49.73	1663	1513	502	478	208	14	2716	1392	58	93	171	9	-8	-39	319	0	-14	25	2006	4722	2536	530	5222	922	244	1165	5506	6427
4:00	49.65	1660	1510	504	385	171	14	2584	1392	58	93	171	9	-8	-48	320	0	-14	25	1998	4582	2559	562	5113	640	251	890	5415	6055
5:00	49.58	1658	1508	502	379	165	8	2562	1393	58	93	171	9	-8	-47	315	0	-8	25	1999	4562	2476	476	5008	648	242	890	5310	5958
6:00	49.73	1672	1521	496	270	125	8	2421	1393	60	93	171	9	-8	-80	295	0	-8	25	1948	4369	2392	444	4783	676	341	1017	5161	5837
7:00	49.72	1673	1522	474	178	80	4	2259	1393	60	93	171	9	-8	-154	97	0	-4	25	1680	3939	2115	435	4353	1127	161	1288	4549	5676
8:00	49.78	1664	1515	435	166	75	7	2196	1393	63	93	171	9	-8	-158	96	0	-7	25	1676	3873	2047	370	4233	1301	106	1407	4364	5665
9:00	49.68	1663	1513	418	174	72	12	2189	1393	66	94	194	9	-8	-166	96	0	-12	25	1691	3879	2077	386	4259	1305	82	1387	4379	5684
10:00	49.67	1657	1508	402	242	89	13	2254	1393	66	94	458	9	-35	-160	83	0	-13	25	1920	4174	2179	259	4430	1347	54	1401	4526	5873
11:00	49.63	1661	1512	415	259	104	15	2305	1392	63	94	465	9	-35	-154	105	0	-15	25	1949	4254	2442	493	4740	1233	97	1330	4887	6120
12:00	49.68	1667	1517	428	260	109	16	2330	1392	63	94	469	9	-35	-155	105	0	-16	25	1951	4281	2309	358	4630	1203	198	1400	4871	6073
13:00	49.80	1675	1524	431	267	109	17	2348	1392	64	94	476	9	-35	-155	99	0	-17	25	1952	4301	2515	563	4855	1087	177	1264	5059	6147
14:00	49.67	1676	1525	428	271	110	17	2352	1392	66	94	479	9	-35	-155	99	0	-17	25	1957	4308	2312	355	4654	1219	190	1409	4886	6105
15:00	49.71	1674	1523	421	224	95	12	2276	1392	68	94	306	9	-35	-150	99	0	-12	25	1796	4072	2219	423	4489	1256	141	1397	4665	5921
16:00	49.73	1653	1504	425	154	72	14	2169	1392	68	94	225	9	-35	-152	118	0	-14	25	1730	3900	2255	525	4419	1087	280	1367	4732	5820
17:00	49.74	1648	1500	426	218	91	18	2253	1392	68	94	207	9	-35	-159	118	0	-18	25	1701	3954	2294	593	4538	932	234	1166	4803	5735
18:00	49.87	1698	1545	492	494	190	22	2743	1392	61	94	207	9	-35	-150	90	0	-22	25	1673	4416	2085	412	4811	855	262	1117	5091	5946
19:00	49.73	1724	1569	700	752	296	21	3338	1393	64	94	549	9	0	-73	131	0	-21	25	2171	5509	2629	457	5924	997	59	1056	6028	7025
20:00	49.77	1744	1587	718	924	356	22	3606	1393	64	94	696	9	0	-39	188	0	-22	25	2409	6016	2782	373	6340	900	42	941	6425	7325
21:00	49.75	1747	1589	699	931	360	23	3603	1393	66	94	696	9	0	-39	212	0	-23	25	2434	6036	3184	750	6740	591	191	782	6979	7570
22:00	49.79	1737	1580	686	933	361	24	3584	1393	66	94	619	9	0	-39	217	0	-24	25	2361	5945	3017	656	6555	739	155	894	6749	7488
23:00	49.72	1684	1533	665	932	361	23	3513	1393	66	94	343	9	0	-39	134	0	-23	25	2002	5515	2558	557	6026	996	29	1025	6102	7098
24:00	49.73	1682	1531	608	837	337	22	3335	1393	66	93	199	9	0	-47	84	0	-22	25	1801	5135	2354	553	5645	1053	49	1103	5738	6792
Avg.	49.72	1680	1529	513	449	183	16	2689	1392	63	94	332	9	-16	-102	169	0	-16	25	1925	4640	2437	486	5103	996	167	1163	5311	6307
00 TO 06 HRS.	49.66	1665	1515	507	425	188	12	2648	1392	59	93	171	9	-8	-49	315	0	-12	25	1994	4642	2520	526	5137	778	251	1030	5438	6216
06 TO 12 HRS.	49.70	1664	1514	429	213	88	11	2256	1392	63	94	321	9	-21	-158	97	0	-11	25	1811	4067	2195	384	4441	1253	116	1369	4596	5848
12 TO 18 HRS.	49.75	1671	1520	437	271	111	17	2357	1392	66	94	317	9	-35	-153	104	0	-17	25	1801	4158	2280	479	4628	1073	214	1287	4873	5946
06TO 18 HRS.	49.72	1667	1517	433	242	100	14	2306	1392	65	94	319	9	-28	-156	100	0	-14	25	1806	4112	2237	431	4534	1163	165	1328	4734	5897
18 TO 24 HRS.	49.75	1720	1565	679	885	345	22	3496	1393	65	94	517	9	0	-46	161	0	-22	25	2196	5693	2754	558	6205	879	87	967	6337	7216

Hourly Average Schedule Drawal , Actual Drawal &Over(+)/Under(-) Drawal
Month :- August 2011

FIGURES IN MW

Hrs.	FREQ.	CZONE			EZONE			WZONE		
		SCH	ACTUAL	O/U DRL	SCH	ACTUAL	O/U DRL	SCH	ACTUAL	O/U DRL
1:00	49.93	1284	1382	99	1291	1429	138	1654	1216	-439
2:00	49.93	1301	1358	57	1304	1420	116	1660	1183	-478
3:00	49.92	1310	1349	39	1312	1415	103	1664	1190	-474
4:00	49.96	1280	1372	92	1281	1338	57	1628	1198	-430
5:00	49.90	1268	1337	68	1268	1164	-104	1600	1164	-436
6:00	49.99	1252	1208	-43	1249	1009	-240	1564	1174	-391
7:00	49.99	1268	1115	-153	1270	1002	-267	1570	1174	-396
8:00	50.07	1266	1112	-155	1263	975	-288	1566	1154	-411
9:00	49.95	1190	1075	-114	1199	938	-261	1496	1219	-277
10:00	50.00	1203	1071	-131	1219	1009	-209	1549	1265	-284
11:00	49.90	1178	1128	-50	1198	1116	-82	1539	1260	-279
12:00	49.92	1171	1136	-35	1191	1173	-18	1537	1203	-334
13:00	50.05	1167	1162	-5	1185	1180	-5	1527	1144	-383
14:00	49.96	1171	1165	-6	1186	1117	-68	1514	1121	-393
15:00	49.84	1119	1167	48	1126	1118	-7	1432	1039	-393
16:00	49.92	1112	1115	3	1110	1101	-10	1417	1027	-390
17:00	50.03	1131	1099	-31	1129	1008	-122	1438	1109	-328
18:00	49.96	1141	1167	26	1141	970	-171	1455	1203	-252
19:00	49.77	1302	1387	85	1313	1260	-54	1656	1391	-265
20:00	49.74	1424	1462	37	1422	1577	154	1824	1448	-376
21:00	49.80	1473	1484	11	1462	1740	279	1905	1423	-482
22:00	49.82	1477	1514	36	1467	1690	223	1912	1396	-516
23:00	49.86	1333	1391	58	1336	1502	166	1745	1274	-471
24:00	49.92	1353	1388	35	1354	1433	78	1741	1266	-474
Avg.	**49.92**	**1257**	**1256**	**-1**	**1261**	**1237**	**-25**	**1608**	**1218**	**-390**
00 TO 06 HRS.	49.94	1283	1334	52	1284	1296	12	1628	1187	-441
06 TO 12 HRS.	49.97	1213	1106	-106	1223	1036	-188	1543	1213	-330
12 TO 18 HRS.	49.96	1140	1146	6	1146	1082	-64	1464	1107	-356
06TO 18 HRS.	49.97	1176	1126	-50	1185	1059	-126	1503	1160	-343
18 TO 24 HRS.	49.82	1394	1438	44	1392	1533	141	1797	1366	-431

Discomwise Hourly Average Schedule Drawal , Actual Drawal &Over(+)/Under(-) Drawal
Month :- September 2011

FIGURES IN MW

Hrs.	FREQ.	CZONE			EZONE			WZONE		
		SCH	ACTUAL	O/U DRL	SCH	ACTUAL	O/U DRL	SCH	ACTUAL	O/U DRL
1:00	49.93	1293	1487	194	1292	1498	206	1799	1427	-371
2:00	49.95	1299	1443	144	1298	1469	171	1802	1382	-420
3:00	49.98	1305	1427	122	1306	1458	152	1807	1358	-449
4:00	50.02	1316	1408	93	1315	1416	101	1819	1344	-475
5:00	49.93	1292	1405	113	1291	1345	54	1796	1366	-430
6:00	49.99	1281	1288	7	1279	1229	-51	1784	1425	-359
7:00	49.99	1245	1168	-77	1240	1139	-102	1750	1360	-390
8:00	50.04	1229	1125	-104	1225	1080	-145	1731	1377	-354
9:00	49.92	1200	1075	-126	1198	1023	-174	1703	1425	-279
10:00	49.91	1146	1077	-69	1148	1083	-65	1651	1437	-214
11:00	49.85	1132	1107	-24	1137	1141	5	1639	1412	-227
12:00	49.93	1113	1097	-16	1220	1157	-63	1624	1354	-270
13:00	50.01	1102	1141	40	1110	1134	24	1613	1309	-303
14:00	49.88	1111	1149	38	1118	1082	-36	1626	1300	-326
15:00	49.87	1109	1130	22	1115	1120	5	1611	1276	-335
16:00	49.88	1105	1092	-13	1111	1108	-3	1605	1265	-340
17:00	49.88	1124	1071	-53	1128	1050	-79	1626	1307	-318
18:00	49.97	1150	1204	54	1150	1094	-57	1647	1413	-234
19:00	49.54	1453	1577	125	1423	1520	97	1907	1724	-183
20:00	49.82	1488	1630	142	1465	1699	234	1966	1742	-224
21:00	49.78	1503	1630	127	1476	1743	266	1988	1683	-305
22:00	49.84	1481	1608	126	1460	1704	244	1973	1627	-346
23:00	49.84	1419	1550	131	1410	1609	199	1918	1528	-390
24:00	49.96	1399	1522	123	1392	1533	141	1898	1463	-435
Avg.	**49.90**	**1262**	**1309**	**47**	**1263**	**1310**	**47**	**1762**	**1429**	**-332**
00 TO 06 HRS.	49.97	1298	1410	112	1297	1402	105	1801	1384	-417
06 TO 12 HRS.	49.94	1178	1108	-69	1195	1104	-91	1683	1394	-289
12 TO 18 HRS.	49.92	1117	1131	14	1122	1098	-24	1621	1312	-309
06TO 18 HRS.	49.93	1147	1120	-27	1158	1101	-57	1652	1353	-299
18 TO 24 HRS.	49.80	1457	1586	129	1438	1634	197	1942	1628	-314

Discomwise Hourly Average Schedule Drawal , Actual Drawal &Over(+)/Under(-) Drawal
Month :- October 2011

FIGURES IN MW

Hrs.	FREQ.	CZONE			EZONE			WZONE		
		SCH	ACTUAL	O/U DRL	SCH	ACTUAL	O/U DRL	SCH	ACTUAL	O/U DRL
1:00	49.63	1607	1677	70	1510	1658	148	2086	2104	18
2:00	49.67	1578	1601	23	1484	1600	115	2044	2056	13
3:00	49.73	1567	1547	-20	1474	1594	120	2026	2081	55
4:00	49.65	1527	1595	69	1436	1494	58	1968	2024	56
5:00	49.58	1524	1568	44	1434	1401	-33	1965	2040	75
6:00	49.73	1467	1442	-26	1380	1356	-25	1889	1986	98
7:00	49.72	1333	1213	-120	1256	1273	17	1710	1867	157
8:00	49.78	1314	1095	-219	1239	1235	-4	1683	1904	222
9:00	49.68	1316	1149	-167	1240	1122	-119	1687	1988	301
10:00	49.67	1389	1137	-253	1313	1241	-73	1793	2053	260
11:00	49.63	1423	1255	-168	1343	1376	33	1836	2110	273
12:00	49.68	1429	1304	-125	1348	1380	32	1846	1946	100
13:00	49.80	1433	1368	-65	1352	1403	50	1851	2084	233
14:00	49.67	1432	1276	-156	1349	1295	-55	1863	2083	220
15:00	49.71	1360	1191	-168	1280	1359	79	1756	1938	182
16:00	49.73	1310	1221	-88	1234	1305	71	1685	1893	208
17:00	49.74	1323	1379	56	1248	1243	-5	1707	1915	209
18:00	49.87	1466	1540	73	1375	1362	-13	1912	1910	-2
19:00	49.73	1800	1811	11	1681	1745	63	2360	2369	9
20:00	49.77	1955	1880	-75	1825	1988	163	2560	2473	-87
21:00	49.75	1963	1963	0	1834	2157	323	2573	2619	46
22:00	49.79	1936	1910	-26	1809	2085	276	2537	2560	23
23:00	49.72	1805	1746	-59	1690	1927	237	2372	2352	-20
24:00	49.73	1691	1692	2	1585	1816	230	2220	2138	-83
Avg.	**49.72**	**1539**	**1482**	**-58**	**1447**	**1517**	**70**	**1997**	**2104**	**107**
00 TO 06 HRS.	49.66	1545	1572	27	1453	1517	64	1996	2049	52
06 TO 12 HRS.	49.70	1367	1192	-175	1290	1271	-19	1759	1978	219
12 TO 18 HRS.	49.75	1387	1329	-58	1307	1328	21	1796	1971	175
06TO 18 HRS.	49.72	1377	1261	-117	1298	1299	1	1777	1974	197
18 TO 24 HRS.	49.75	1858	1834	-25	1737	1953	215	2437	2419	-19

भारत सरकार
Government of India
केन्द्रीय विद्युत प्राधिकरण
Central Electricity Authority
पश्चिम क्षेत्रीय विद्युत समिति
Western Regional Power Committee
एफ -3, एमआयडीसी क्षेत्र, अंधेरी (पूर्व), मुंबई - 400 093
F-3, MIDC Area, Andheri (East), Mumbai - 400 093
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Website : www.wrpc.gov.in E-mail : comml-wrpc@nic.in

आईएस/आईएसओ : 9001-2008
IS/ISO : 9001-2008

No: WRP Committee/Opn./Opn. S.S./2011 9125 Dated: 04.10.2011

To,

As per list

Sub: **Status of Physical & Cyber Security in Power Sector regarding.**

Sir,

Government of India has set up India Smart Grid Task Force (ISGTF) under the Chairmanship of Shri Sam Pitroda, Advisor to Hon'ble Prime Minister of India on Public Information, Infrastructure and Innovation for development of smart grid in the country. The ISGTF in its first meeting held on 06.09.2010 has created five working groups to look in to various aspects related to development of smart grid. Working Group-5 has been created on Physical, Cyber Security, Standards and Spectrum under Chairperson, CEA and Chief Engineer (DPD), CEA as convener, WG-5 has already submitted its draft report to the India Smart Grid Task Force and the same is available on cea website which covers IT intervention in the Power Sector Types of Physical & cyber threats / crisis, system / areas of cyber security focus in Power Sector & road map for countering cyber attacks.

Ministry of Power has formed Computer Emergency Response Teams i.e. CERT-Thermal, CERT-Hydro and CERT-Transmission and have nominated NTPC, NHPC & PGCIL respectively as nodal agencies to take necessary action to prevent cyber attacks on the respective Thermal, Hydro and Transmission Utilities under their jurisdiction. The State Utilities were requested to prepare their own Crisis Management Plan (CMP) and be in touch with the above Nodal Agencies i.e. NTPC, NHPC & PGCIL and CERT-In for the necessary action, who have offered to provide all assistance to respective utilities of Central & State Governments in matters relating to cyber security to them.

In meeting held on 09.08.2011 regarding status of physical, cyber security in Power Sector in which Member (GO & D), CEA stated that Five Regional Power Committees are already functioning in the country and deal with the operational and commercial matters of mutual interest and have participation of all Power Utilities including Generating Companies (both Thermal & Hydro), Transmission Companies (all Central & State) and Distribution Companies in the Region.

In the above meeting representatives from above nodal agencies intimated that they have participated in the mock drills carried on by CERT –Trans and are working in preparing CMP and as per the CMP prepared by CERT-In. However none of the state utilities have contacted them regarding CMP for any assistance regarding cyber security.

After detailed discussions in above meeting, it was suggested that status on preparation of Crisis Management Plan for countering the cyber attacks and its implementation including the Mock Drills, audits etc. by all respective Power Utilities of region on a regular basis may be monitored by Regional Power Committees (RPC's).

In view of above all the power utilities in Western Region are requested to prepare of Crisis Management Plan for countering the cyber attacks and its implementation including the Mock Drills, audits etc. and same may kindly be informed to WRPC & the concerned Nodal agencies on a regular basis.

Thanking you,

Yours faithfully,

(MANJIT SINGH)
Member Secretary

पावर सिस्टम ऑपरेशन कारपोरेशन लिमिटेड
(पावरग्रिड की पूर्ण स्वामित्व प्राप्त सहायक कंपनी)
POWER SYSTEM OPERATION CORPORATION LIMITED
(A wholly owned subsidiary of POWERGRID)

पश्चिम क्षेत्रीय भार प्रेषण केन्द्र
एफ-३, सेन्ट्रल रोड, एम्.आई.डी.सी. एरिया, मरोल, अन्धेरी (पूर्व), मुंबई-400 093.
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F-3, MIDC Area, Marol, Andheri (East), Mumbai - 400 093.
Phone (O) : 022-28202690, 28203885, 28397634 • E-mail : wrldc@bol.net.in • Fax : 022 - 28235434, 28202630

संदर्भ संख्या / Ref. No.

WRLDC/SS/2011/4780 Date: 3rd November 2011

Chief Engineer(LD),
MPPTCL, SLDC,
Nayagaon,
Jabalpur – 482 008

Sub : Status of physical and cyber security in Power Sector regarding
Ref : 1. Member Secretary, WRPC letter No. WRPcommittee/Opn/OPn.s.s.2011 dated 04-10-2011
2. Your letter No. SE/LD:E&T/657-WRLDC/655 dated 07-10-2011

Sir,

This is with reference to the cyber security issues considered while finalizing crisis management plan. The information in respect of activities carried out by WRLDC in this regard is as below:

1. WRLDC has acquired the information security management system certification (IMS) as per ISM 21000:2005 w.e.f. 01.04.2010. As per IMS requirement, mock drill in event of fire and terrorism attack have been carried out at WRLDC during February-March 2011. The same would be carried out annually once.
2. The penetration tests for the computer network at WRLDC including the SCADA EMS system have been carried out as it was pre-requisite for IMS in February 2011. The vulnerability analysis and penetration tests would be carried out once every year.
3. Cyber security audit would be carried out twice every year internally and once by the external certification agency BSI.
4. The above works were carried out with M/s. Network Intelligence (NII), Mumbai as consultant.

However, it is suggested that any party empanelled by CERT-in (website www.cert-in.org) would be able to cater to the above requirement of MPPTCL.

C.E. (L.D.)
M.P.P.T.C.L., JBP.
R / D No. 4688
Date 10.11.11

Yours faithfully,

(P.Pentayya)
General Manager

पंजीकृत एवंम् केन्द्रीय कार्यालय: बी - 9, कुतब इंस्टीटयूशनल एरिया, कटवारिया सराय, नई दिल्ली 110 016. दूरभाष : 011-26536832, 26524522 फैक्स : 011-26524525, 26536901
Regd. & Corp. Office : B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi - 110 016. Tel.: 011-26536832, 26524522 Fax: 011-26524525, 26536901

Annexure-8.2 (i)

TELEMETRY DISCRIPIENCY LIST FOR MPPTCL S/s

Sr.No	DESCRIPTION	status	telemetry value at SLDC	actual value at site
NAGDA 400 KV S/S				
1	400KV NAGDA –SUJALPUR 1 & 2	CB & SOE	NOT AVAILABLE	**RTU CONFIGURATION ALREADY ARRANGED BY SLDC.PROCESS CONNECTIONS NOT EXTENDED DESPITE OF CONSTANT PERSUATION**
2	400KV NAGDA –DEHGAON 1 & 2	CB & SOE		
3	400/220 KV XMER 3	CB & SOE		
4	400KV NAGDA –RAJGRAH 1 & 2	CB & SOE		
5	400Kv DEH2-SUJALPUR 1 & 2 TIE BREAKER	CB &SOE		
6	RAJGARH1-RAJGARH2 TIE BREAKER	CB & SOE		
7	220 KV NAGDA –RATLAM-1 & 2	CB & SOE		
8	220KV NAGDA-RATLAM 1 & 2	MW & MVAR		
9	400/220 TR-3 220 SIDE	CB	FAULTY	CLOSE
10	400/220 TR-2 220 SIDE	CB	FAULTY	CLOSE
12	400/220 KV ICT I	OLTC	17	9
13	400/220 KV ICT II & III	OLTC	N/C	7
14	220KV RATLAM 1	MW	786	68
15	220KV RATLAM-1	MVAR	793	-12
16	220KV RATLAM-2	MW	0	68
17	220KV RATLAM-2	MVAR	0	-12
18	NAGDA 400KV BUS TIE	CB	FAULTY	CLOSE
NAGDA 220 KV S/S				
1	220 KV BUS COUPLER	CB	FAULTY	CLOSE
2	220/132 XMER NEW	CB	NOT AVAILABLE	CLOSE
3	220/132 XMER NEW	MW	NOT AVAILABLE	40
4	220/132 XMER NEW	MVAR	NOT AVAILABLE	15
5	220/132 XMER (132 SIDE) –I	CB	FAULTY	CLOSE
6	220/132 XMER(132 SIDE)-II	CB	FAULTY	CLOSE
8	NAGDA 132 KACHROD	CB	FAULTY	CLOSE
9	NAGDA132 RATDIYA	CB	FAULTY	CLOSE
10	125 MVA TRANSFORMER	OLTC	9	8
11	160 MVA TRANSFORMER	OLTC	9	12
12	40 MVA TRANSFORMER –II	OLTC	17	5
6	220/132 XMER-II (220 SIDE)	CB	FAULTY	CLOSE
DEWAS 220 KV S/S				
1	220KV BUS COUPLER	CB	OPEN	CLOSE
2	220/132 XMER -2	CB	FAULTY	CLOSE
3	132 /33 KV TRANSFORMER 1	OLTC	N/C	8
4	132/33 KV TRANSFORMER 2	OLTC	N/C	7
5	220/132 KV TRANSFORMER 1	OLTC	N/C	7
6	220/132 KV TRANSFORMER 2	OLTC	N/C	7
7	DEWAS 220 KV –INDORE EAST	CB	FAULTY	CLOSE
8	DEWAS 220 KV –INDORE 400KV S/S	CB	FAULTY	CLOSE
9	220 DEWAS ASTHA-2	CB	FAULTY	OPEN
10	132 KV BUS COUPLER	CB	FAULTY	CLOSE

11	132 DEWAS IC-I	CB	FAULTY	OPEN
NOTE:-SOE DATA NOT RECEIVED.CONNECTIONS FOR ALL FEEDERS HAVE TO BE VERIFIED				

Sr.No	DESCRIPTION	status	telemetry value at SLDC	actual value at site
UJJAIN 220 KV S/S				
1	220/132 KV TRANSFORMER 4	OLTC	N/C	6
2	UJJAIN132-SYNTHETIC I&II	CB	FAULTY	OPEN
3	220/132 KV XMER-3	CB	FAULTY	CLOSE
4	UJJAIN132 AGAR	CB	FAULTY	CLOSE
5	UJJAIN220/132 XMER-4	CB	FAULTY	CLOSE
6	UJJAIN 132 KV –GHOSLA	CB	FAULTY	CLOSE
7	UJJAIN 132 BUS SECTION	CB	FAULTY	OPEN
8	220/132 KV XMER-3	OLTC	N/C	6
9	UJJAIN 132 sanawad	CB	FAULTY	CLOSE
NOTE:-SOE'S OF BADOD 1 & 2,INDORE-1 220/132 XMER-4 FEEDERS ARE NOT COMING.				
SHUJALPUR 220 KV S/S				
1	160MVA TRANSFORMER-II	OLTC	2	10
2	220/132 160MVA XMER 3	OLTC	NOT CONNECTED	
3	220/132 160MVA XMER 3	MW	**TO BE PROVIDED BY ALREADY AVAILABLE FUTURE FEEDER IN RTU**	
4	220/132 160MVA XMER 3	MVAR		
5	220/132 160MVA XMER 3	CB		
6	160 MVA TRANSFORMER I (132 KV SIDE)	CB	FAULTY	CLOSE
7	132 SHUJALPUR ARNIKALAN-I	CB	FAULTY	OPEN
8	132 SHUJALPUR IC-I & IC-II	CB,MW,MVAR	NOT CONNECTED	
RATLAM 220 KV S/S				
1	220/132 XMER-2	CB	FALTY	CLOSE
2	RATLAM-NAGDA-I	CB	FAULTY	CLOSE
3	220 KV TRB	CB	FAULTY	CLOSE
4	RATLAM - NAGDA 2 NEW	CB	NOT AVAILABLE	CLOSE
5	RATLAM - NAGDA 2 NEW	MW	NOT AVAILABLE	10
6	RATLAM - NAGDA 2 NEW	MVAR	NOT AVAILABLE	5
7	220/132KV 132 SIDE XMER 2	CB	FAULTY	CLOSE
8	RATLAM132 –IC-I	CB	FAULTY	CLOSE
9	132/33 KV TRANSFORMER 2	OLTC	N/C	7
10	RATLAM-132 Kachrod	CB	FAULTY	OPEN
NEEMUCH 220 KV S/S				
1	220/132 KV TRANSFORMER 2	CB,SOE	**TELEMETRY NEED TO BE ARRANGED BY UPGRADATION OF RTU**	
2	220/132 KV TRANSFORMER 2	MW		
3	220/132 KV TRANSFORMER 2	MVAR		
4	NEEMUCH 132 KV INTER CONNECTOR II	CB	FAULTY	CLOSE
5	132 KV BUS COUPLER 2	CB	FAULTY	CLOSE
6	132 NEEMUCH UDEPUR	CB	FAULTY	OPEN
7	132 NEEMUCH MALHARGARH	CB	FAULTY	OPEN
8	132 NEEMUCH RATANGARH	CB	FAULTY	OPEN
9	220/132 KV TRANSFORMER 1	OLTC	N/C	7

NOTE:-SOE DATA NOT RECEIVED.CONNECTIONS FOR ALL FEEDERS HAVE TO BE VERIFIED

Sr.No	DESCRIPTION	status	telemetry value at SLDC	actual value at site
BHOPAL 400 KV S/S				
1	400/220 KV TRANSFORMER 3	OLTC	N/C	5
2	400 KV TIE BREKAR 3	CB	FAULTY	CLOSE
3	400 KV BHOPAL-DAMOH I	CB & SOE	.PROCESS CONNECTIONS NOT EXTENDED DESPITE OF CONSTANT PERSUATION	
4	BHOPAL-DAMOH TIE BREAKER	CB & SOE		
5	400 KV BHOPAL –DAMOH –II	CB & SOE		
6	220KV BHOPAL-BINA1 & 2	CB & SOE		
7	220 BHOPAL 400/220 TR-2	CB	FAULTY	CLOSE
BHOPAL 220 KV S/S				
1	100MVA XMER-IV	OLTC		
2	132KV BHEL	CB	OPEN	CLOSE
PIPARIA 132 KV S/S				
1	132/33 KV TRANSFORMER 1	OLTC	N/C	4
2	132KV BARELI	CB	FAULTY	OPEN
3	132/33KV 20MVA XMER	OLTC	N/C	
4	132/33KV 40MVA XMER	OLTC	N/C	
5	132 ITARSI	CB	N/C	
6	132/33 TR-II	MW,MVAR	N/C	
SARNI 220 KV S/S				
1	SARNI 220 KV TRB	CB	FAULTY	CLOSE
2	SARNI 220/132KV 100 MVA XMER 2	CB	FAULTY	CLOSE
3	SARNI 220 POWER HOUSE	CB	FAULTY	OPEN
4	SARNI 220 BUS TRANSFER	CB	FAULTY	OPEN
5	132KV BUS VOLTAGE	VOLTAGE	1	133
BAIRAGARH 220 KV S/S				
1	220 KV BUS 1	VOLTAGE	143	225
2	220 KV BUS 1	FREQUENCY	N/C	49.78
3	220/132 XMER –I	CB	FAULTY	CLOSE
4	220/132 XMER (160MVA) NEW II	CB	**TELEMETRY NOT AVAILABLE AND NEED TO BE PROVIDED BY UPGRADATION OF RTU**	
5	220/132 XMER (160MVA) NEW II	MW		
6	220/132 XMER (160MVA) NEW II	MVAR		
7	132/33 XMER (20 MVA) NEW IV	CB		
8	132/33 XMER (20 MVA) NEW IV	MW		
9	132/33 XMER (20 MVA) NEW IV	MVAR		
10	BAIRAGRAH 132 KV BHOPAL II	CB	OPEN	CLOSE
11	BAIRAGRAH 132KV-LALGHATI II	CB	FAULTY	OPEN
13	132 SHYAMPUR	CB,MW,MVAR	N/C	

Sr.No	DESCRIPTION	status	telemetry value at SLDC	actual value at site
HANDIA 220 KV S/S				
1	220KV HANDIA –ITARSI –I	CB	FAULTY	CLOSE
2	220KV HANDIA –BURWAHA	CB	FAULTY	CLOSE
3	220KV HANDIA –ITARSI -2	CB		
4	220/132 XMER-2	CB	FAULTY	CLOSE
5	132/33 XMER-2	CB	FAULTY	CLOSE
NOTE:-SOE DATA NOT RECEIVED EXCEPT BARWAHA FEEDER.CONNECTIONS FOR ALL FEEDERS HAVE TO BE VERIFIED				
MALANPUR 220 KV S/S				
1	220 KV BUS COUPLER I	CB	FAULTY	CLOSE
2	220 KV BUS COUPLER II	CB	FAULTY	CLOSE
3	132 SIDE 220/132 TR-1	CB	FAULTY	CLOSE
4	132/33 TR-3	CB	OPEN	CLOSE
5	132/33 Banmore	CB	FAULTY	CLOSE
5	132/33 Mehgaon	CB	FAULTY	CLOSE
NOTE:-SOE DATA NOT RECEIVED EXCEPT 132 AMBAHA FEEDER.CONNECTIONS FOR ALL FEEDERS HAVE TO BE VERIFIED				
MEHGAON 220 KV S/S				
1	220 KV BUS TRANSFER	CB	FAULTY	**None of the status process connections from the rtu is extended so far. All cb and soe need to be extended**
2	220/132 KV TRANSFERMER	CB	FAULTY	
3	MEHGAON 22KV- MALANPUR	CB	FAULTY	
4	MEHGAON 22KV- AURIYA	CB	FAULTY	
5	220/132 KV TRANSFERMER (132 KVSIDE)	CB	FAULTY	
6	MEHGAON 132 KV RON	CB	FAULTY	
7	132 KV BUS TRANSFER	CB	FAULTY	
8	132 KV BHIND	CB	FAULTY	
9	132 KV SEONDHA	CB	FAULTY	
10	132KV PORSA	CB	FAULTY	
11	132 KANNOD	CB	FAULTY	
12	132/33 XMER-2	CB	FAULTY	

GWALIOR 220 KV S/S				
1	GWALIOR 132 KV-BANMORE	CB	FAULTY	OPEN
2	132 KV TRB	CB	FAULTY	OPEN
NOTE:-SOE DATA NOT RECEIVED EXCEPT 132 DABRA FEEDER.CONNECTIONS FOR ALL FEEDERS HAVE TO BE VERIFIED				

Telemetry need to be provided by upgradation of RTU

Sr.No	DESCRIPTION	status	telemetry value at SLDC	actual value at site
	GUNA 220 KV S/S			
1	220/132 XMER NEW	CB,SOE	NOT AVAILABLE	Telemetry need to be provided by upgradation of RTU
2	220/132 XMER NEW	MW	NOT AVAILABLE	
3	220/132 XMER NEW	MVAR	NOT AVAILABLE	
NOTE:-SOE DATA NOT RECEIVED CONNECTIONS FOR ALL FEEDERS HAVE TO BE VERIFIED				
	Narsingpur 220 KV S/S			
1	220/132 KV TRANSFORMER 1	OLTC	N/C	7
2	220/132 KV TRANSFORMER 2	OLTC	N/C	5
3	132/33 KV TRANSFORMER 1	OLTC	N/C	6
4	NARSINGPUR220 KV-ITARSI	CB	FAULTY	CLOSE
5	220/132 KV TRANSFORMER 2	MW	456	23
6	220/132 KV TRANSFORMER 2	MVAR	456	32
7	220/132 KV TRANSFORMER 2	CB	OPEN	CLOSE
8	220 KV TRB	CB	OPEN	CLOSE
9	132 BUS TRANSFER	CB	FAULTY	CLOSE
9	Pipariya 220	CB	FAULTY	CLOSE
NOTE:- SOE DATA NOT RECEIVED.CONNECTIONS FOR ALL FEEDERS HAVE TO BE VERIFIED				
	Jabalpur 220 KV S/S			
1	220/132 KV TRANSFORMER 1	CB	FAULTY	CLOSE
2	220 KV TRB	CB	FAULTY	OPEN
3	JABALPUR 132 KV- MADHOTAL	CB	FAULTY	CLOSE
4	132 KV BUS TRF	CB	FAULTY	CLOSE
5	220KV JABALPUR-BIRSINGHPUR 1	CB & SOE	NOT AVAILABLE	CONNECTION TO BE EXTENDED
6	220KV JABALPUR-BIRSINGHPUR 2	CB & SOE	NOT AVAILABLE	
7	132/33 KV TRANSFORMER 2	CB	FAULTY	CLOSE
8	220/132KV XMER-1 132 SIDE	CB	FAULTY	CLOSE
NOTE:- SOE DATA NOT RECEIVED EXCEPT 220 NTPC-1 & 132 DAMOH FEEDERS.CONNECTIONS FOR ALL FEEDERS HAVE TO BE VERIFIED				
	KATNI 220 KV S/S			
1	220 KV BUS COUPLER	CB	FAULTY	CLOSE
2	220 KV TRB	CB	FAULTY	OPEN
3	220/132 KV TRANSFORMER 2	MW	NOT AVAILABLE	
4	220/132 KV TRANSFORMER 2	MVAR	NOT AVAILABLE	
5	220/132 KV TRANSFORMER 2	CB	NOT AVAILABLE	
6	220/132 KV TRANSFORMER 1 & 2	OLTC	NOT AVAILABLE	
7	132 SIDE 220/132 TR-1 & 2	CB	FAULTY	OPEN
8	132/33 TR-1	CB	FAULTY	OPEN
	Satna 220 KV S/S			

1	220/132 KV TRANSFORMER 2	OLTC	N/C	7
2	132/33 KV TRANSFORMER 1	OLTC	N/C	7
3	132/33 KV TRANSFORMER 2	OLTC	N/C	7
4	SATNA 220KV CHHATARPUR-1	CB	FAULTY	CLOSE
Morwa 132 KV S/S				
1	132/33 KV TRANSFORMER 1	OLTC	N/C	7
2	132/33 KV TRANSFORMER 2	OLTC	N/C	7
3	132/33 KV TRANSFORMER 3	CB	NOT AVAILABLE	
4	132/33 KV TRANSFORMER 3	MW	NOT AVAILABLE	
5	132/33 KV TRANSFORMER 3	MVAR	NOT AVAILABLE	
6	132/33 XMER-I	CB	FAULTY	OPEN
7	132/33 XMER-2	CB	FAULTY	OPEN
NOTE:-SOE DATA NOT RECEIVED.CONNECTIONS FOR ALL FEEDERS HAVE TO BE VERIFIED				
PITHAMPUR 220 KV S/S				
1	220 KV TRB	CB	FAULTY	OPEN
2	PITAMPUR 220 KV-BADNAGAR	CB	FAULTY	OPEN
3	132/33 KV TRANSFORMER 2	OLTC	N/C	8
4	132/33 KV TRANSFORMER 3	OLTC	N/C	11
5	PITAMPUR 132 KV-HML	CB	FAULTY	OPEN
6	132 KV TRB	CB	FAULTY	OPEN
7	132 KV BUS COUPLE	CB	FAULTY	OPEN
8	132/33 KV TRANSFORMER 1	CB	CLOSE	CLOSE
9	132/33 KV TRANSFORMER 2	CB	OPEN	CLOSE
10	132/33 KV TRANSFORMER 3	CB	OPEN	CLOSE
11	220/132 XMER 1, XMER 2	CB	FAULTY	CLOSE
12	220KV RAJGARH I& II	CB	FAULTY	CLOSE
13	132KV BUS COUPLER	CB	FAULTY	CLOSE
14	220KV BUS COUPLER	CB	FAULTY	CLOSE
15	132 KV IC-2	CB	OPEN	CLOSE

Sr.No	DESCRIPTION	status	telemetry value at SLDC	actual value at site
Burwaha 220 KV S/S				
1	160 MVA XMER	OLTC	17	3
2	3X40 MVA XMER	OLTC	17	3
3	63 MVA XMER	OLTC	17	4
4	220 KV BUS COUPLER	CB	FAULTY	OPEN
5	220 /132 KV TRANSFORMER 1	CB	FAULTY	CLOSE
6	BURWAHA 132KV-CHEGAON	CB	FAULTY	CLOSE
7	BURWAHA 220 KV NIMRANI	CB	FAULTY	CLOSE
7	132 Indore SZ	CB	FAULTY	OPEN
SOE DATA NOT RECEIVED.CONNECTIONS FOR ALL FEEDERS HAVE TO BE VERIFIED				
Nepanagar 220 KV S/S				
1	160 MVA XMER	OLTC	17	15
2	3X40 MVA XMER	OLTC	1	9
3	12.5 MVA XMER	OLTC	17	5
4	NEPA –CHEGAON 132 KV	CB	FAULTY	CLOSE
5	132/33 XMER (20 MVA) NEW	CB	NOT AVAILABLE	CLOSE
6	132/33 XMER (20 MVA) NEW	MW	NOT AVAILABLE	15
7	132/33 XMER (20 MVA) NEW	MVAR	NOT AVAILABLE	5
8	3*40 MVA TXMER (220/132 KV)	CB	FAULTY	CLOSE

SOE DATA NOT RECEIVED.CONNECTIONS FOR ALL FEEDERS HAVE TO BE VERIFIED				
DAMOH 220 KV S/S				
1	DAMOH 220 KV SAGAR	MW	181	125
2	220/132 XMER NO-1	MW	0	0
3	220/132 XMER NO-1	MVAR	0	0

Bina 400 KV S/S				
1	400/220 KV XMER III	CB	FAULTY	CLOSE
SOE .CONNECTIONS FOR ALL FEEDERS NEED TO BE VERIFIED EXCEPT 220 BHOPAL-1 FEEDER.				
Bina 220 KV S/S				
2	BINA 132 KV-GANGBASODA	CB	FAULTY	CLOSE
3	BINA 132 KV- BORL 1 &2	CB	NOT AVAILABLE	
4	BINA 132 KV- BORL 1 &2	MW	NOT AVAILABLE	
5	BINA 132 KV- BORL 1 &2	MVAR	NOT AVAILABLE	
SOE DATA NOT RECEIVED.CONNECTIONS FOR GWALIOR-2,GUNA-1 FEEDERS HAVE TO BE VERIFIED				

Telemetry Discripiency at power stations

Sr No	DESCRIPTION	status	telemetry value at SLDC	actual value at site
AMARKANTAK THERMAL POWER STATION				
1	GENERATOR 3	MW	78	0
2	GENERATOR 4	MW	78	0
3	ATPS220KV-SIDHI	MW	80 MW	95 MW
4	ATPS220KV-SIDHI	MVAR	6 MVAR	31 MVAR
5	ATPS220KV-BRS220 III	MW	21MW	40MW
6	GENERATOR 5	CB	N/C	CLOSE
7	ATPS220KV-BRS220 III	CB	N/C	
8	ATPS 220/6.6 KV Stn Xmer A	CB	N/C	CLOSE
9	ATPS 220/6.6 KV Stn Xmer B	CB	N/C	CLOSE
10	ATPS SIDHI	CB	N/C	CLOSE
11	132/33 KV TRANSFORMER 4	OLTC	N/C	6
12	132/33 KV TRANSFORMER 4	CB	FAULTY	CLOSE
13	132/33 KV TRANSFORMER 5	CB	FAULTY	CLOSE
14	132/33 KV TRANSFORMER 5	OLTC	N/C	6
15	132KV BUS COUPLER	CB	N/C	CLOSE
16	132KV MORWA	CB	FAULTY	CLOSE
17	132KV WADHAN	CB	FAULTY	CLOSE
Note:- **SOE CONNECTION FOR ALL FEEDERS NEED TO BE DONE**				
BARGI HPS				
Note:- SOE CONNECTION FOR ALL FEEDERS NEED TO BE DONE				
MADHIKHEDA HPS				
5	Madhikheda 132 Kv- Karera I	MW	0	10
6	Madhikheda 132 Kv- Karera I	MVAR	0	5
7	Madhikheda 132 Kv- Karera II	MW	0	10
8	Madhikheda 132 Kv- Karera II	MVAR	0	5
PENCH HPS				
Note:- SOE CONNECTION FOR ALL FEEDERS NEED TO BE DONE				

Sr No	DESCRIPTION	status	telemetry value at SLDC	actual value at site
RTU name –TONS HPS				
1	220/33 20 MVA Xmer	CB	FAULTY	OPEN
2	GENERATOR-3	CB	FAULTY	OPEN
3	220KV REWA-2	CB	FAULTY	CLOSE
4	Bus Coupler	CB	FAULTY	OPEN

Note:- SOE CONNECTION FOR ALL FEEDERS NEED TO BE DONE.

Sr No	DESCRIPTION	status	telemetry value at SLDC	actual value at site
RTU name –BANSAGAR-II HPS				
1	132/33KV STN XMER	CB	FAULTY	CLOSE
2	BUSCOUPLER	CB	FAULTY	CLOSE
3	220/132KV 160MVA XMER	CB	FAULTY	CLOSE
4	132/33 40 MVA XMER	CB	FAULTY	CLOSE
5	220KV MANGAWAN	CB,MW,MVAR	N/C	
6	220KV SIDHI	CB,MW,MVAR	N/C	
7	220/132 160 MVA XMER	CB,MW,MVAR	N/C	
Note:- SOE CONNECTION FOR ALL FEEDERS NEED TO BE DONE				
RTU name –GANDHISAGAR HPS				
1	132 KV GAROTH-1	CB	FAULTY	OPEN
2	132/33 KV XMER	OLTC	6	9
Note:- SOE of all feeders are coming				
RTU name –OMKARESHWAR HPS				
Note:- SOE CONNECTION FOR ALL FEEDERS NEED TO BE VERIFEID				
RTU name –RAJGHAT HPS				
1	RAJGHAT132 KV-LALITPUR	CB	FAULTY	OPEN
2	RAJGHAT132 KV-GEN-1	CB	FAULTY	OPEN
3	RAJGHAT132 KV-GEN2,GEN3	CB	FAULTY	OPEN
Note:- SOE CONNECTION FOR ALL FEEDERS NEED TO BE DONE				
RTU name –SATPURA TPS				
1	GENERATOR-8	CB	FAULTY	OPEN
3	STPS PH II ICT-1	CB	OPEN	CLOSE
Note:- SOE 'S of Sarni, Handia, Itarsi –II, Itarsi-III, Itarsi-IV STP PH-I FEEDERS are not coming. SOE'S of Seoni,Koradi,Itarsi of STP 400 KV S/S are not coming.				

ANNEXURE- 9

OVER LOADING OF 132KV SUBSTATIONS- DIVERSION OF LOAD THEREOF TO ADJOINING SUBSTATION.

CE (GR) GWALIOR (CENTRAL DISCOM):

1. Overloading of 132kV S/s Seondha-

   -Shifting of load thereof to adjoining 132kV S/s Lahar S/s running under loaded.

2. Overloading of 132kV S/s Bhind-

   -Shifting of load to adjoining 132kV S/s Ron S/s running under loaded.

CE (IR) INDORE (WEST DISCOM):

1. Overloading of 132kV S/s Khargone-

   -Shifting of load to adjoining 132kV S/s Kasrawad S/s running under loaded.

2. Overloading of 132kV S/s Sendhwa-

   -Shifting of load to adjoining 132kV S/s Pansemal running under loaded.

CE (UR) UJJAIN (WEST DISCOM):

1. Overloading of 132kV S/s Kannod-

   -Shifting of load to adjoining 132kV S/s Khategaon running under loaded.

* * *