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No.07-05/SG-9B-II/ 1179

Jabalpur, dated 22-04-2013

To

As per distribution list

Sub: Agenda of 33rd meeting of Operation and Coordination Committee of MP.

The Agenda of 33rd meeting of the Operation and Coordination Committee of MP scheduled on 26th April 2013 at 11.00 AM at Rani Avanti Bai, Hydel Power Station, Bargi has been uploaded on the website of SLDC 'www.sldcmpindia.com' and can be downloaded.

(K.K.Prabhakar)
Member Secretary, OCC
S. E. (LD), SLDC
MPPTCL, Jabalpur

Encl : As above.

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AGENDA FOR 33RD MEETING OF OPERATION & COORDINATION COMMITTEE OF MP TO BE HELD ON 26TH APRIL 2013 AT 11.00 AM AT RANI AVANTI BAI, HYDEL POWER STATION, BARGI.

ITEM NO. 1 : CONFIRMATION OF MINUTES : Minutes of 32nd meeting of Operation & coordination committee of MP held on 18.02.2013 at State Load Despatch Centre, Jabalpur were forwarded to the committee members vide No. 07-05/SG-9B-II/882 dated 21.03.2013.

[Committee may confirm the minutes]

ITEM NO. 2 : REVIEW OF SYSTEM OPERATION DURING THE MONTHS FEBRUARY 2013 TO MARCH 2013.

2.1 Frequency Particulars : During February 2013 the system frequency was below 49.7 Hz for 1.30% of time against 4.63% of time during January 2013. The system frequency was within the IEGC range of 49.7-50.2 Hz for 78.76 % of the time against 80.95 % of time during January 2013. The average monthly frequency was 50.07 Hz during February 2013 and 50.04 Hz March 2013. Regarding operation in high frequency range, frequency during the month of March 2013 was above 50.20 Hz for 11.55% of time against 19.93% of time during February 2012. The system frequency did not touched 48.8 Hz during the above period.

The detailed frequency particulars for the month of February 2013 and March 2013 are enclosed at **Annexure-2.1**. The brief details of frequency profile is given here under :

Month	Average frequency	minimum integrated frequency over an hour	maximum integrated frequency over an hour	Instantaneous minimum frequency	Instantaneous maximum frequency
Feb. 2013	50.07 Hz	49.78 Hz	50.54 Hz	49.40 Hz	50.75 Hz
March 2013	50.04 Hz	49.72 Hz	50.46 Hz	49.31 Hz	50.72 Hz

[Committee may like to note]

2.2 Operational Matters

2.2.1 Operational Discipline : System operated in terms of frequency profile for the months February 2013 and March 2013 is as given below for discussion by the committee :

Month	% of time Frequency Below 49.7 Hz	% of time Frequency above 50. 2 Hz	% of time frequency within the permissible range of 49.7-50.2 Hz	Average monthly frequency	No. of times frequency dipped below 48.8 Hz
Feb. 2013	1.30 %	19.93%	78.76%	50.07 Hz	0
March 2013	1.02 %	11.55%	87.43%	50.04 Hz	0

[Committee may like to note.]

2.2.2 Messages for drawal curtailment : The total number of messages of significant violation of IEGC by the DISCOMs by overdrawing at frequency below 49.7 Hz is as given hereunder:

MONTH	East Discom	Central Discom	West Discom	Total
Feb. 2013	3	2	2	7
March 2013	0	0	0	0

[Committee may please note & discuss.]

2.3.1 Voltage Profile : Date wise voltage profile at some of the important 400 KV and 220 KV substations during the months February 2013 and March 2013 is enclosed at **Annexure -2.3.1.**

During the months February 2013 and March 2013, the deviation of voltage from the accepted limit on either side was recorded at following important 400 KV s/s in MP Grid.

Sr No	Name of 400 KV Substation	February 2013				March 2013			
		Max. Voltage observed		Min. Voltage observed		Max. Voltage observed		Min. Voltage observed	
		Voltage	Date	Voltage	Date	Voltage	Date	Voltage	Date
1	Indore	425	4.2.13	---	---	424	17,27.03.13	---	---
2	Itarsi	427	15.02.13	---	---	428	18.03.13	---	---
3	Bina	430	16.02.13	---	---	429	18.03.13	---	---
4	Gwalior	437	16.02.13	---	---	430	1.03.13	---	---
5	Nagda	430	01.02.13	---	---	428	16.03.13	---	---
6	Khandwa	431	19.02.13	---	---	432	24,25.03.13	---	---
6	Satpura	429	17.2.13	---	---	430	27.3.13	---	---
7	Birsingpur	437	16.2.13	---	---	429	12,13,14.3.13	---	---
8	ISP	431	2,17.2.13	---	---	430	16,17,20.3.13	---	---

[Committee may please note & discuss]

2.3.2 Status of Capacitor Banks in sub-transmission system : The updated information of the status of capacitor banks in sub-transmission system as on 31st March 2013 as submitted by DISCOMs is 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	1500 KVAR	No of 100 KVAR Units required	600 KVAR	1200 KVAR	600 KVAR	1200 KVAR	600 KVAR	1500 KVAR
WZ	794	564	28	96	--	225	38	46	--	--	---	325
CZ	8	721	3	34	-	24	3	16	0	588	0	373
EZ	399	159	3	01	-	94	37	6	18	36	--	--

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

Figures are in MVAR

SN	Particulars	WZ	CZ	EZ
1	MVAR capacity of connected capacitors in good condition	1153.2	884.4	430.2
2	MVAR capacity of connected capacitors in partially good condition	109.5	42.6	0
3	MVAR capacity of connected capacitors in good condition including partially good condition.	1262.7	927	430.2
4	MVAR capacity of connected capacitors covered under ADV T-V Scheme.	0.0	481.5	Nil
5	Grand total MVAR of capacitors including that are proposed in ADB T-V scheme	1262.7	1408.5	Nil

[Committee may please note & discuss]

2.3.3 Status of Shunt Capacitor Banks installed at various EHV Transmission Substation : The updated information of the status of Installed capacitor banks(in MVAR) in EHV transmission system as on 31st March 2013 as submitted by MPPTCL is given below :

Voltage Class	Capacitor bank installed in good condition (No/Mvar)	Capacitor bank installed but defective & are repairable (No/Mvar)	Requirement of repair against each unit (No/Mvar)	Requirement against non-repairable capacitor banks	Capacitor banks already covered under ADB T-V	Balance capacitor banks to be covered in other schemes
220 KV	2 No / 62 MVAR	All in Service	---	---	---	
132 KV	36 Nos / 1182.34 MVAR		---	---	---	
33 KV	366 Nos / 3319 MVAR		---	---	---	-
Total	404 nos / 4563.34 MVAR		---	---	---	

The proposed line reactors/ bus reactors at coming up 400 KV substations and in the existing substation may be furnished by MPPTCL along with schedule date of commissioning.

[Committee may like to note]

2.4.1 Status of completion of on going Transmission Schemes being executed by MPPTCL : The latest status of completion various ongoing Transmission Schemes for the current financial year i.e. Year 2012-2013 upto 31.01.2013 as submitted by MPPTCL is enclosed as annexure 2.4.1. MPPTCL are also requested to furnish the list of various ongoing scheme for the year 2013-14 in the meeting.

[Action : MPPTCL]

2.4.2 U/F and df/dt Relay Operation

(i) **U/F and df/dt Relay Operation:** Frequency did not touch 48.80 Hz during February 2013 to March 2013.

[Committee may like to note]

(ii) **Defective u/f, df/dt relays:** MPPTCL has informed that there are no defective u/f and df/dt relays.

(iii) **Review of df/dt and Under Frequency Relay:** In the last OCC meeting, Chairman OCC stated that one of the recommendations of enquiry committee was to review the df/dt and under frequency relays. Df/dt relays are already been reviewed by MPPTCL and information has been submitted. The MPPTCL has been required to submit the district wise list of U/F relays along with quantum of load. In receipt of above AUFLS shall be finalized for implementation.

[Action : MPPTCL]

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

(i) Details of DISCOM wise Power supply given to various domestic categories during the period February 2013 to March 2013 is enclosed at **Annexure 2.5(i)**.

[Committee may like to note]

- (ii) **Group Allocation to Newly Commissioned existing EHV substations :-** As per information submitted by CE (PIng. & Design), the region wise list of 33 KV feeders emanating from various newly commissioned/existing EHV substations for which groups have not been allocated is given in **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	01
02		Sagar	02
03		Rewa	11
04		Total	14
05	WEST	Indore	01
06		Ujjain	00
07		Total	01
08	CENTRAL	Bhopal	02
09		Gwalior	03
10		Total	5
TOTAL		Grand Total	20

Discoms are requested to furnish the details as per list enclosed at **annexure-2.5(ii)**
[ACTION : DISCOMs]

ITEM NO. 3 : OPERATIONAL PLANNING

- 3.1 Generating Units under planned outage and proposed maintenance programme :** All the planned outages of MPPGCL units was completed in the month of Oct 2012.

SN	Description	Capacity	From	To	Reason
01	NIL				

[Committee May like to note]

- 3.2 Proposed shutdown programme of Transmission lines / Transformers :** The proposed shutdown of transmission elements for the period 01.05.2013 to 30.06.2013 as submitted by MPPTCL and NHDC is enclosed as **Annexure 3.2** [Committee May like to note]

- 3.3 Long Outages of transmission elements and protections :** The transmission elements as detailed below are under long outages :

S N	Line/Transformer/Breaker/ Reactor etc under long outage	Outage date	Reason	Response from Utility
1	63MVAR Bus-I Reactor at Satpura TPS	24.05.2005	Damage of all three limbs along with reactor tank	Installation and Commissioning in bay no.17 is under progress. Tender for work contract Floated. Expected by September'13
2	Bus bar Differential protection scheme at Amarkantak TPS	Since installation	Not commissioned	Order has been placed to M/s. ABB. Work is under progress.
3	220 KV Bus bar protection scheme at SGTPS Birsinghpur	Since commissioning of 220 KV	The scheme not available	One offer is received. Case file under process for placement of order.

		switch yard		
4	220 KV Bus bar differential protection at TONS HPS	Since commissioning	Not mentioned	New scheme with digital relays is required to be procured & commission. Case is under progress.
5	400KV Main Bkr of Satpura-ISP Line	04.08.2012	Not mentioned	Procurement from M/s Crompton Greaves, Nasik is under progress.
6	50 MVAR Line Reactor of 400KV Satpura-Seoni line at Satpura	25.01.2013	Sparking in R&B phase	
7	132/33KV 20MVA (NGEF) transformer at 220KV S/s Narsinghpur	03.01.2013	Differential Protection operated	Replaced with new 20 MVA X'mer and charged on 10.04.2013 at 12.15 hrs.
8	132/33KV 20MVA (NGEF) at 220KV S/s Pandhurna	16.02.2013	Differential Protection and Buchholtz relay operated	
9	132 /33 KV 20 MVA (NGEF) transformer at 132 KV Kanwan	04.03.2013	For Augmentation work by 40 MVA.	
10	132/33 KV 40 MVA (TELK) at 220 KV Badnagar	04.03.2013	For Augmentation with 100 MVA	
11	132/33 KV 20 MVA(NGEF) at 132 KV Manasa	22.03.2013	For Augmentation work	
12	132/33 KV 20 MVA (NEI) transformer at 132 KV Sanawad	12.02.2013	For augmentation work with 63 MVA	Transformer replaced with new 63 MVA transformer and taken into service on 3103.2013 at 18.55 Hrs.

[Action : MPPGCL/MPPTCL]

ITEM NO. 4 : OPERATIONAL STATISTICS FOR THE MONTH OF February 2013 and March 2013 : The details of actual generation, Schedule from Central Sector demand etc. 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. [Committee may like to note]

ITEM NO. 5 : SYSTEM DISTURBANCE IN MP DURING FEBRUARY AND MARCH 2013 : There was no major grid disturbance in MP during February 2013 to March 2013. However the Grid Disturbance and Grid Incidents in MP are given in **Annexure 5.0**. [Committee may like to note]

ITEM NO. 6.0 : IMPORTANT OPERATIONAL ISSUES

6.1 Transmission line/ elements outage planning procedure in Western Region: The transmission elements outages planning is becoming very complex day by day which needs sophisticated and better planning procedure well in advance. After lot of discussion/exercise in various OCC meeting, WRPC Secretariat framed a standard procedure (**IEGC-5.7.4**) under guidance of Member (GO&D), CEA for

better planning. The summarized transmission lines / elements outages planning procedure in WR is attached at **Annexure 6.1**.
[Committee may like to discuss]

6.2 Outage Programme of Transmission Lines /elements in OCCM of WRPC : The outage programme of Inter-state lines for the next month is to be approved by the OCC of WRPC to be held in the current month. SE (Opn.) WRPC informed in the 443rd OCCM that since short term market clearance depends on available transmission capacity and is cleared on day ahead basis, there was a need for better planning. In this regard WRPC intimated that following procedure shall be implemented:

- (A) All utilities shall confirm on D-2 about readiness to avail outages (where D is date of outage).
- (B) WRLDC shall issue code in real time within 10 minutes either the code to avail or cancel depending on real time conditions.
- (C) All utilities that do not confirm by D-2, those outages shall be deemed cancelled.

It has been observed that the outages of transmission elements approved in OCCM of WRPC are not fully availed by the constituents of the state grid . In the month March 2013 only 50% of approved outages have been availed and concerned authorities have not intimated the reason for not availing the approved outages. CEA / WRPC is closely monitoring the same and the percentage of actual shut down availed is to be submitted in the OCC meeting.

[Action : MPPTCL/MPPGCL/NHDC/IPPs]

6.3 Outage of various 400 KV feeders by STPS- It has been discussed in several OCC meetings of MP that planned outages of 400 KV feeders /transformers and 220 KV / 132 KV inter-state lines have to be approved by the OCCM of WRPC. Outages of emergency nature shall only be approved by WRLDC in real time. If outages are availed citing the emergency, the nature of emergency should have to be explained in next OCCM by the SLDC.

The S.E. (Constn) Extn. Unit No.10 & 11, STPS Sarni has proposed outages on various 400 KV feeders, ICT and Bus Reactors II for laying and termination of control cable from CT & CB JB to New Bus Bar Protection Panel (Main-II). When the shutdown was not approved by the WRLDC as the work to be performed was not of emergency nature, the S.E. (Constn) Extn. Unit No.10 & 11, STPS Sarni has given revised message as - Emergency shutdown is required for immediate commissioning of Bus Bar Differential Protection Main – II. Subsequently the SLDC has arranged shutdown of 400 KV feeders of STPS and the emergency of availing outages have to be justified in the ensuing OCC meeting of WRPC.

All the planned outages of 400 KV transmission elements and 220 KV / 132 KV inter-state lines for the next month should be submitted to SLDC before 3rd of current month for approval in OCCM of WRPC. SLDC shall not allow any outage in future except those of emergency nature.

[Action : MPPTCL/MPPGCL/NHDC/IPPs]

6.4 Frequent mal-operation of overvoltage protection at Indira Sagar HPS : 400 KV ckts emanating from Indira Sagar are tripping frequently on over voltage since 19th January 2013. It has been observed that 400 KV Satpura- Indira Sagar trips very often on over voltage stage-I (Main –I & Main –II) from ISP end. The frequent tripping of 400 KV lines at ISP making the state grid vulnerable and the threat to the grid persist.

MP SLDC requested Member Secretary, WRPC to depute protection audit team for conducting protection audit of ISP and Satpura Thermal Power Station and for any other substation connected with ISP at the earliest, so that the problem of frequent tripping of 400 KV STPS-ISP circuit on mal operation of some relays could be eliminated. SLDC also raised the same in the meeting on protection audit held on 08.04.2013 at WRPC. WRPC agreed to depute protection audit team of experts.

6.5 Change of CT ratio of all feeders at Omkareshwar Hydel Power Station : The CT of 220 KV Nimrani and 220 KV Barwaha line at Omkareshwar has been changed to 800/1 Amp. In the last OCC Meeting the Member Secretary OCC requested the Omkareshwar HPS to furnish the plan for replacement of CT of remaining three feeders. Omkareshwar representative informed the committee that looking to present loadings it is not required to change the CTs. Chairman OCC stated that as per technical requirement of the grid, the CTs should be replaced by the Omkareshwar HPS. Omkareshwar representative informed the committee that they shall replace the CTs of remaining three feeders by the end of August 2013.

The updated status of replacement of CTs in remaining three feeders may be submitted in the meeting. **[Action : NHDC]**

6.6 Voltage at Omkareshwar HPS :- Sometimes it crosses the 110% of rated voltage, thereby resulting in tripping of lines very often. Omkareshwar has requested SLDC to instruct concern for necessary action. SLDC has taken up the matter with Chief Engineer (T&C), MPPTCL and requested to send an expert from T&C at OSP to identify the problem.

The OSP Authorities are requested to discuss the problem of high voltage with SE(T&C), Indore and EE(T), Barwaha. **[Action : NHDC]**

ITEM NO. 7 : BLACK-START MOCK DRILL OF HYDEL POWER STATIONS :

7.1 Black Start mock drill of Tons HPS: The Black Start Mock Drill of Tons HPS was scheduled to be performed on 21.11.2012 but could not be completed due to wide variations in frequency and voltage in the islanded area due to problem in turbine governor. The concerned authorities were requested by this office to rectify the problem of governor and intimate the next date for Black Start Mock Drill. The confirmation of date is awaited from MP Power Generating Co. Ltd. **[Action MPPGCL]**

7.2 Black Start mock drill of Madikheda, Rajghat & Birsinghpur HPS: The Black Start Mock Drill of Rajghat, Madikheda and Birsinghpur Hydel Power Stations was proposed in the month of January 2013. The MP Power Generating Co. has shown inability to carry out the Black Start Mock Drill at these stations. The MPPGCL representative in the OCCM of MP has informed that the Black Start Mock Drill at Madikheda & Rajghat HPSs is not possible due to non-availability of governor in auto mode and also there is single 132 KV bus at these HPS.

The revised scheme for Black start mock drill of Madikheda and Rajghat HPS is proposed. One machine will be started with DG set after creating black out at Hydel Power Station and radial load of adjoining substation shall be put on the machine. The island thus formed shall be run for a period 15-20 Minutes and voltage and frequency shall be adjusted manually by governor. Machine shall be stopped after this operation and system shall be normalized. MPPGCL may give suitable dates for performing Black start mock drill of Madikheda and Rajghat HPS.

The Black Start Mock Drill of Birsinghpur HPS could be performed only after 220 V DC battery set, which is not in healthy condition, is replaced by MPPGCL, as the start-up supply is available at this station through 220 Volt DC batteries. MPPGCL has also informed that the governor is not working properly and hunting is observed. **[ACTION: MPPGCL]**

ITEM NO 8: SOME IMPORTANT MATTERS REQUIRED IMMEDIATE ATTENTION:

8.1 Quarterly Review of Crisis Management Plan: All the entities are requested to submit the CMP report for the fourth quarter (January 2013 to March 2013) for the year 2012-13.

[ACTION: MPPTCL, MPPGCL, NHDC& IPPs]

8.2 Status of Physical & Cyber Security in Power Sector regarding : The cyber security audit of SLDC has been conducted from 21.01.2013 to 15.02.2013. Status of physical & cyber security in Power Sector for the fourth quarter (January 2013 to March 2013) have not been received from any of the constituents. All the entities may like to furnish the Status of physical & cyber security in Power Sector for the fourth quarter (January 2013 to March 2013) directly to the Chief Engineer (GM), CEA New Delhi under intimation to SLDC Jabalpur and WRPC Mumbai.

[ACTION: MPPGCL, MPPTCL, NHDC & IPPs]

8.3 Absorption of reactive power by generators:- In the OCCM of WR the WRPC, based on the discussions held during last OCC meetings, stated that it is imperative that generators will absorb maximum MVAR when asked by SCM/Shift Incharge, WRLDC/SLDC. It is requested that generators will come with data of reactive power absorption; voltage at the bus before and after the message is given by WRLDC/SLDC in every OCC of WR. In order to monitor the response, WRPC also requested the generators to send the capability curves of generators in their system to all concerned.

[ACTION: MPPGCL, NHDC & IPPs]

ITEM NO 9: OTHER OPERATIONAL ISSUES :

9.1 RGMO status of generating units in WR :- The RGMO feature is not available in any of the eligible units of MPPGCL Thermal and Hydel Stations. The RGMO in SGTPS # 5 is also not functioning. Thus primary response from these machines is not available. JP Bina TPS may also intimate the time limit by which they will implement the RGMO in their unit.

[Action MPPGCL, JP Bina]

9.2 Action on the recommendations of the Enquiry Committee formed by MoP on Grid Disturbances on 30th & 31st July 2012: A meeting was organized at SLDC, Jabalpur on 22.11.2012 to discuss and decide the action to be taken on the recommendations of the Enquiry Committee formed by MoP GoI on grid disturbances in the Northern Region on 30th & 31st July 2012. As per recommendations of the Enquiry Committee all the participants have to carryout the Protection Audit through third party in a time bound manner within a year. This exercise shall be repeated periodically and the same shall be monitored by SLDC / WRPC/MoP. In the meeting it was decided that till the third party audit is carried out, groups of engineers from SLDC, MPPTCL, PGCIL & NHDC have been formed to conduct "Internal Protection Audit".

In the first phase, Protection Audit of all the 400 KV sub-stations of MPPTCL and thermal power stations including IPPs, Tons, ISP & OSP Hydel Power Stations have been completed. Detailed reports of deficiencies/irregularities observed during the Protection Audit have been sent to all concerned and action taken for removal/rectification of the deficiencies have not been intimated to the SLDC so far.

In the second phase Internal Protection Audit of 23 nos of 220 KV sub-stations of MPPTCL and 2 nos of Hydel Power Stations of MPPGCL is proposed to be conducted from 22nd April 2013 to 10th May 2013 by the groups of engineers from different entities, formed by SLDC. The detailed report of Protection Audit shall be submitted to WRPC in the 3rd week of 2013 for onward submission to CEA/ MoP.

The utilities may give details of the action taken for conducting third party protection audit.

CEA / MoP are closely monitoring the progress of protection audit conducted by the States / utilities. CEA has also directed regional power committee to prepare a detailed progress report(DPR) to resolved the deficiencies and submit within one month on completion of protection audit. Schemes

for renovation and upgradation of sub stations, replacement of equipments to make it compatible with latest protection system- action plan for the same.

As per directives of WRPC issued in the meeting held on 08.04.2013 protection audit of 25 no. 220 KV substations / HPS is to be completed by the 1st week of May 2013 and detailed report shall be submitted within 15 days to WRPC. SLDC has constituted 4 groups of engineers from SLDC, MPPTCL, MPPGCL and NHDC for carrying out the protection audit.

[Committee may like to discuss]

9.3 Implementation of GSES and Automatic Demand Management Scheme (IEGC 5.4): Clause 5.4 (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.

Hon'ble CERC has directed that the Automatic Demand Management Scheme shall be discussed in RPC for technology, coordination and funding. Recommendations / decisions of RPC shall be placed before the Hon'ble Commission for consideration of necessary action. Representatives from the DISCOMs of Madhya Pradesh were also invited to attend the 444th meeting of OCC of WRPC held at Mumbai to discuss the issue of the Scheme.

Accordingly, WRPC had called a meeting to implement Grid Security expert System(GSES) and Automatic Demand Management Scheme (ADMS) on 22.04.2013 at WRPC, Mumbai to formulate methodology to integrate the Automatic Demand Management Scheme (ADMS) with the GSES, since the ADMS is a subset / part of GSES.

A draft template of the same has been prepared considering various scenarios when the system could be under stress. There could be ten different scenarios is detailed in **Annexure 9.3**

ITEM NO.10. Protection Audit of Power Station and Substations:

10.1. Independent Third Party Protection Audit of Generating Stations and EHV Substations :

This office vide letter no. 07-05/RPC-37A/919 dated 25.3.13 requested to furnish weekly information regarding progress in third party Protection Audit, but no report has been received so far. Ministry of Power is reviewing the matter and weekly report through WRPC to CEA is being monitored seriously. The utilities may intimate the status of third party protection audit.

10.2 Introduction of Ancillary Services in Indian Electricity Market: The CERC has prepared a consultation paper on "Introduction of Ancillary Services in Indian Market". Ancillary Services are aimed at supplementing efforts at maintaining power quality, reliability and security of the electricity grid and optimum utilisation of resources. Ancillary Services are an indispensable part of electricity industry.

There are basically three main types of Ancillary Services, viz. real power support services or Frequency Support Ancillary Services(FSAS)/ Load Following, Voltage or reactive power support services and Black Start Support Services.

The utilities may send their comments to CERC before 30.04.2013.

ITEM NO. 11: AVAILABILITY BASED TARIFF (ABT) RELATED ISSUES:

11.1 CALIBRATION AND PERIODICAL TESTING OF INTERFACE METERS : As per Central Electricity Authority (Installation and Operation of meters) Regulation, 2006 and amendment thereof “All interface meters shall be tested at least once in five years. These meters shall also be tested whenever the energy and other quantities recorded by the meter are abnormal or inconsistent with electrically adjacent meters, whenever there is unreasonable difference between the quantity recorded by the interface meter and the corresponding value monitored at the billing centre via communication network, the communication system and the terminal equipments shall be tested and rectified.”

All the entities are requested to submit the calibration and periodical testing of interface meter as per CEA regulation mentioned above.

[Action : MPPTCL/ MPPGCL/NHDC]

11.2 Replacement of faulty ABT meters and providing new ABT meters at Sub-stations : The Substation wise list of around 14 Nos. faulty ABT meters and the requirement of around 17 Nos. ABT meters to be installed in place of Non ABT meters at various sub-stations is enclosed herewith as **Annexure – 11.2**. The list has also been furnished to T&C. The present status along with plan for replacement / installation of ABT meters may be discussed.

[Action : MPPTCL]

11.3 Providing Discom wise weekly information of Sub-station consumption : In accordance with MPERC (Terms & Conditions of Transmission Tariff) Regulations-2012, the auxiliary consumption at EHV sub-station is to be accounted in State Transmission Losses for the control period 2013-14 to 2015-16. In view of the accounting procedure finalised during previous OCC meeting, Discom wise weekly (Monday to Sunday) auxiliary consumption (consolidated) recorded by conventional energy meters shall be furnished by CE (T&C) to SLDC by Tuesday of next week. However, the same is not being received by SLDC.

[Action : MPPTCL]

11.4 Providing updated details of Main and Check meters installed at power stations : The updated and verified ABT meter details of Main Meter and Check meters have been requested from all the Power stations, however the information has not being furnished so far.

[Action : MPPGCL]

11.5 Implementation of AMR system at Generating Stations : As discussed in earlier meetings, the AMR facility is being integrated with MIS of MPPGCL. However it is gathered that MIS vendor is facing some problem for down loading of .mrd files from ABT meters installed at power stations. MPPGCL may ensure implementation of AMR functionality in their coming up MIS system, else may plan implementation of dedicated AMR facility. It is requested to submit the updated status of the same.

[Action : MPPGCL]

ITEM NO 12 : SCADA/EMS RELATED ISSUES :

12.1 PROGRESS OF INSTALLATION OF NEW RTUS ALONG WITH PLCC DATA LINKS AT EHV S/S

In the petition No. 194/MP/2011 for “maintenance of communication facilities & availability of real time data at WRLDC”, it was informed by MPPTCL that commissioning of RTU under phase-1 be completed by November 2012 and Phase-2 RTU shall be completed by December 2012. Subsequently vide UO No. 12 dated 136 dated 22-01-2013; it was informed by T&C that the RTUs shall be commissioned by March 2013. However, presently, out of 40 RTU's, only twenty Six RTU is integrated (18 from Phase1 + 8 Phase -2) ..

The Status with regard to following is required to be provided:-

- (1) Commissioning schedule of balance RTUs.
- (2) Arrangement of Training under RTU Project.
- (3) Arrangement of wiring details and configuration Software of RTU commissioned.
- (4) Completion of balance p[rocess connections specially SOE connections.

(5) Addl CE (Procurement) vide letter dated 10-04-2013, informed that the 28 RTUs are commissioned. However, RTU at 132KV Harda & 220KV Chindwara which is mentioned as commissioned in letter dated 10-04-2012 is still pending for integration due to non availability of communication channel/faulty MFM/modems etc **[Action: - CE(T&C)/CE(T&P), MPPTCL]**

12.2 Commissioning of RTU at Anuppur 220KV S/s :-

The matter of commissioning of telemetry of **220KV Anuppur S/s** was discussed in detail in previous OCCM and SLDC informed that the telemetry of Anuppur is required to be commissioned on priority basis because of interstate **220KV Anuppur-Kotmi kalaon** feeder. In the last meeting, It was categorically clarified by SLDC that 132KV Anuppur- Rajmilan feeder shall not be allowed for charging till commissioning of telemetry of 220KV Anuppur S/s. However, the telemetry is yet to be commissioned.

The commissioning schedule for the same is to be provided.

[Action: - CE(T&C)/CE(T&P), MPPTCL]

12.3 Maintenance of RTU's and Availability of spares:-

The present status of available spares for various RTUs, along with status of procurement of spares, repairing of spares may please be intimated. **[ACTION: T&C, MPPTCL & MPPGCL]**

12.4 Status of telemetry arrangements for Singaji TPS:-

The commissioning of telemetry equipments, voice & data channel for SSTPP is required to be completed and tested before synchronization of its first unit. The present status of various activities may please be provided. **[ACTION : ED (O&M:GEN) ,MPPGCL & CE(T&C)]**

12.5 The arrangement of data channel for remote VDU installed at GCC, DCC

(A) During the last OCCM meeting, it was informed by SLDC that BSNL have laid the OFC cable upto SLDC for SLDC's requirement under FTTH scheme. Therefore utilities may also approach BSNL for data channel on OFC network so that fast and reliable communication channels are available. Present status may please be provided by East DISCOM, MPPGCL.

(B) Further, it is gathered that period of contract for Wireless Link from Sub-LDC to DISCOM Control Centre, hired by Central DISCOM, is completed and new link is to be arranged by Central DISCOM. The present Status of the same may please be provided. Similar action is required to be taken by WEST DISCOM before expiry of contract. **[ACTION: DCC, GCC, T&C, MPPTCL]**

12.6 DISCREPANCY IN TELEMETRERED VALUES RECEIVED FROM DIFFERENT EHV S/S & POWER STATIONS & UPGRADATION OF EXISTING RTUS

Regarding telemetry discrepancy, & upgradation of RTU's, WRLDC has filed Interlocutory application in petition No. 194/MP/2011 in CERC. In response, it was informed by ED(O&M),MPPGCL and CE(T&C) that the work of telemetry discrepancy shall be completed by Nov-2012 and upgradation of RTU's shall be completed by Dec 2012.

The present status of telemetry discrepancy is enclosed herewith as **Annexure-12.6**. As may be seen from the annexure, the progress in the matter is not encouraging and hence suitable instructions need to be issued to the field officers to complete the work on priority basis.

Telemetry of all reactors is also required to be arranged. Transducers for the same is required to be arranged.

At some locations eg. Neemuch 220KV, Sarni 220KV, Nagda 220, etc, all works required for configuration of RTU i.e. arrangement of material, CPU configuration etc is completed but upgradation is pending for want of process connections.

Further, in Most of the Power Stations including Tons & Pench Hydel power stations, process connection for SOE has not yet done. Manual copies of all power stations issued to CE(O&M:HYDEL) office, in the month of February. The manuals are yet to be returned to SLDC.

MPPGCL and MPPTCL may please provide completion schedule regarding rectification of telemetry discrepancy and upgradation of RTU's. **[ACTION : T&C, MPPTCL & O&M :GEN,MPPGCL]**

12.7 Long Outage of RTU's /data channels,, non availability of alternate data channels :-

The Long Outage of RTU's along with their reasons is as detailed hereunder:-

01. 220KV Damoh S/s :- The Telemetry of Damoh 220KV S/s is out since long time & could not be restored despite all efforts by field officers as well as deputation of engineer from SLDC. The spare for the ABB RTU is not available. In view of the importance of telemetry of Damoh 220KV S/s, SLDC vide

UO 141 dated 24-05-2012 has already requested either to arrange new RTU or shift RTU from 132KV S/s Sagar to 220KV S/s Damoh. The matter was taken up by SLDC & it was informed by MPPTCL that RTU from IInd phase of Chemtrol project is being diverted to 220KV Damoh S/s. However, present status is not known.

02. 132KV Morwa S/s :- The telemetry is not functioning due to non availability/fault in communication channels. Present status may please be provided.

The action for restoration of above telemetry need to be taken.

[ACTION : T&C, MPPTCL]

12.8 Providing Alternate data channels & express Voice channels for RTU Stations:-

Recently Alternate data channel for SGTPS is commissioned. However, the Alternate data channel for STPS, Tons HPS & Gandhi agar HPS is not functioning. The telemetry of Bansgar –II & Bansagar-III is very unreliable and fails too frequently because of improper functioning of communication channels.

Further, the Express Voice Channels, up to SLDC are also not available for many of the stations. The present status of availability of alternate data channels as well as express voice channels are enclosed herewith as annexure-II.

In this reference, it is to mention that:-

- (1) Recently commissioned voice channel link for Madikheda HPS, Gandhi Sagar HPS, ATPS, STPS is functioning one way i.e. SLDC can contact but PS can not contact due to old exchanges.
- (2) The Pench HPS voice link is not working because of faulty Power Supply module of carrier equipments at Pench HPS end.
- (3) For alternate data channel of TONS HPS through Kotar, outdoor equipment is required to be arranged by MPPGCL.
- (4) Bargi HPS regular PLCC voice channel has not been working since last one year due to faulty exchange at Bargi HPS.

The action for restoration of alternate data channels, express voice channels as well as improving reliability of telemetry data channels need to be taken.

[ACTION : T&C, MPPTCL & O&M :GEN,MPPGCL]

12.9 Non Availability of telemetry of BLA Power:-

The telemetry of BLA power has not yet commissioned. Earlier it was promised by M/s BLA power that the telemetry shall be commissioned by March-13. The present status of establishment of communication channel as well as IEC 101 gateway may please be provided

[ACTION : M/s BLA POWER]

12.10 Telemetry discrepancy of JP Bina :-

Following telemetry discrepancy in JP Bina telemetry is observed:-

- (1) The telemetred value of Ex bus generation and actual generation of JP Bina first generator received is same
- (2) Further, actual generation of IIInd unit is not at all received.
- (3) Through GPRS all indications are received as non current.

The above discrepancies are pending since long time and not attended despite constant pursuance by SLDC.

An urgent action is requested

[ACTION : M/s JP BINA POWER]

ITEM NO. 13. Any other issue with the permission of the chair-

ITEM No 14 : DATE AND VENUE OF NEXT OCC MEETING : It is proposed to hold 33rd OCC meeting of Operation and Coordination Committee of MP on 20th Junel 2013. The venue of the same shall be decided in the meeting.

FREQUENCY PARTICULARS

S. No.	Particulars	Feb-13		Mar-13	
1 INTEGRATED OVER AN-HOUR					
1.1	Maximum Frequency	50.54 Hz	Between 03.00 hrs & 04.00 Hrs on 16.02.13	50.46 Hz	Between 17.00 hrs & 18.00 Hrs on 27.03.13
1.2	Minimum Frequency	49.78 Hz	Between 19.00 hrs & 20.00 Hrs on 17.02.13	49.72 Hz	Between 22.00 hrs & 23.00 Hrs on 07.03.13
1.3	Average Frequency	50.07 Hz		50.04 Hz	
2 INSTANTANEOUS FREQUENCY					
2.1	Maximum Frequency	50.75 Hz	AT 03.28 HRS ON 05.02.13	50.72 Hz	AT 17.30 HRS ON 27.03.13
2.2	Minimum Frequency	49.4 Hz	AT 06.50 HRS ON 22.02.13	49.31 Hz	AT 22.03 HRS ON 08.03.13

3 Percentage of time when frequency was :-

	%age of time when frequency was	Feb-13	Mar-13
3.1	Below 48.5 Hz	0.00	0
3.2	Between 48.50 Hz and 48.8 Hz	0.00	0
3.3	Between 48.80 Hz and 49.2 Hz	0.00	0
3.4	Between 49.20 Hz and 49.5 Hz	0.03	0.04
3.5	Between 49.50 Hz and 49.7 Hz	1.27	0.98
3.6	Between 49.70 Hz and 50.2 Hz	78.76	87.43
3.7	Between 50.20 Hz and 50.3 Hz	--	--
3.8	Between 50.20 Hz and 51.0 Hz	19.93	11.55
3.9	Between 51.0 Hz AND 51.5 Hz	0.00	0
3.1	Above 51.5 Hz	0.00	0
4.1	No. of times frquency touched 48.80 Hz	0	0
4.2	No. of times frquency touched 48.60 Hz	0	0
4.3	No. of times frquency touched 51.0 Hz	0	0

Voltage Profile During the Month of FEB- 2013

Date	Indore		Itarsi		Bina		Gwalior		Nagda		Birsingpur		Satpura	
	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
1	418	404	419	406	422	410	426	402	430	416	422	414	428	414
2	421	399	424	406	422	408	424	400	426	400	423	415	425	414
3	421	399	424	406	423	408	429	400	426	400	423	413	426	415
4	425	400	427	403	426	410	431	401	429	403	430	414	427	414
5	420	397	426	404	427	404	434	404	424	401	426	415	426	412
6	420	399	424	404	423	405	428	402	423	401	427	415	426	412
7	420	407	424	411	423	405	428	402	426	405	428	418	426	419
8	419	399	424	400	418	398	424	395	423	401	427	416	426	411
9	423	403	427	408	426	407	426	399	426	404	426	415	428	417
10	420	401	425	405	422	401	426	399	425	401	426	414	426	412
11	423	401	425	407	423	406	428	398	426	403	428	412	428	414
12	421	402	425	406	426	401	429	394	423	403	428	418	427	416
13	420	399	426	407	423	398	426	389	424	402	427	413	428	417
14	423	405	426	412	422	407	429	397	424	406	427	417	427	418
15	423	406	427	411	423	411	430	407	426	408	432	419	428	420
16	423	399	426	404	430	402	437	408	427	403	437	418	425	420
17	422	405	427	409	424	402	427	403	424	407	433	421	429	417
18	422	405	427	409	420	400	427	396	424	407	429	421	427	422
19	423	403	427	407	420	400	427	396	426	406	428	416	428	417
20	421	403	423	407	421	400	426	397	423	403	426	415	426	413
21	421	403	423	407	422	404	428	400	423	403	424	415	427	416
22	421	399	424	401	422	395	427	399	423	402	424	412	428	411
23	419	401	423	407	420	405	428	408	422	404	425	416	424	414
24	420	402	423	407	417	394	429	404	423	406	424	413	424	416
25	420	404	423	407	420	401	428	404	422	405	422	413	426	416
26	420	404	423	407	416	399	428	399	422	405	424	414	424	414
27	420	404	423	407	420	399	432	401	422	405	423	413	424	412
28	421	399	423	402	422	402	431	400	424	402	426	412	424	411
29														
30														
31														
Max / Min	425	397	427	400	430	394	437	389	430	400	437	412	429	411

Voltage Profile During the Month of MAR - 2013

Date	Indore		Itarsi		Bina		Gwalior		Nagda		Birsingpur		Satpura	
	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
1	421	405	425	407	424	402	430	400	424	408	423	413	426	410
2	421	403	424	406	422	403	426	399	428	408	422	413	426	411
3	419	400	424	402	422	399	421	399	424	402	424	412	427	410
4	420	404	421	408	424	401	421	394	423	402	423	413	426	410
5	420	402	424	411	423	411	423	407	423	410	423	413	426	414
6	420	407	424	411	423	405	424	399	423	410	423	412	427	412
7	421	407	424	411	424	406	423	403	423	410	423	412	428	412
8	422	402	426	407	422	409	420	402	423	403	424	412	428	413
9	423	402	426	401	424	399	422	397	424	404	424	410	428	409
10	421	408	428	411	424	399	422	397	426	409	427	415	427	415
11	422	403	426	407	421	400	422	388	424	404	426	413	426	409
12	420	404	426	407	423	405	422	396	424	404	429	414	427	413
13	423	406	424	405	418	403	415	397	423	407	429	413	426	414
14	423	405	424	409	423	403	425	397	426	406	429	413	425	414
15	423	407	425	411	421	403	425	397	424	408	424	415	427	415
16	424	407	426	410	424	404	419	396	428	406	427	418	429	415
17	423	408	428	410	425	404	419	396	425	409	425	414	428	416
18	420	401	425	409	429	405	420	395	423	410	424	415	426	414
19	420	406	424	411	422	407	415	399	421	406	423	415	426	412
20	420	400	426	409	424	409	414	394	421	400	425	415	427	415
21	420	408	422	410	423	410	419	398	420	409	426	412	427	413
22	420	408	422	410	422	406	419	387	420	409	424	415	426	413
23	419	409	421	410	421	411	418	398	419	411	425	415	427	414
24	421	409	422	411	424	408	419	398	421	408	426	416	426	415
25	421	409	422	411	420	409	415	398	421	408	424	417	425	414
26	422	409	426	413	421	412	418	400	424	408	426	418	426	417
27	424	411	427	409	422	406	420	399	426	410	429	418	430	414
28	423	408	426	405	423	404	421	398	423	407	425	415	427	412
29	420	406	423	409	424	406	417	396	421	404	425	415	426	414
30	420	406	423	409	420	401	417	396	421	404	423	415	424	411
31	421	410	425	408	421	408	419	403	421	404	424	417	427	414
Max	424	400	428	401	429	399	430	387	428	400	429	410	430	409

Status of ongoing transmission schemes					
EHV TRANSMISSION LINES FOR THE YEAR 2013-14					
(AS ON 31.03.2013)					
					(Rs.in Lakhs)
S. No.	NAME OF THE TRANSMISSION LINE	TYPE OF CIRCUITS	ROUTE LENGTH	CKT.KMS.	COMPLETION PROGRAMME (TENTATIVE)
A.	400 KV TRANSMISSION LINES				
1	400KV DCDS Indore (PGCIL) - Pithampur line (2x64)	DCDS	65	128	Mar-14
2	400KV DCDS Malwa TPS - Pithampur line (2x135.85)	DCDS	150	271.7	May-13
3	400KV DCDS Chhegaon - Julwania line (2x114)	DCDS	114	228	Mar-14
	Sub Total (A)		329	627.7	
B.	220 KV TRANSMISSION LINES				
1	LILO of 220KV Nagda - Neemuch line for Daloda 220kv S/S. (2x4.41)	DCDS	4.41	8.82	Mar-14
2	Ashta (400) - Indore - II (Jaitpura) (2x100)	DCDS	100	200	Mar-14
3	Ratlam - Daloda DCSS Line (1x72.168km)	DCSS	72.168	72.168	Feb-14
4	LILO of Itarsi - Narsinghpur 220 DCDS line at Chichali S/S. (DCDS) (2x2.06)	DCSS	2.06	4.12	Jan-14
5	LILO of both ckts Of 220KV Nimrani - Julwania DCDS line at Julwania 400 kv S/s (2x2.53)	DCDS	2.53	5.06	Sep-13
6	Diversion of 220KV Sarni-Pandhurna line between location no.3A to 17 (2x02.142)	DCDS	2.142	4.284	2013-14
7	220KV line from Gwalior (400kv) (PGCIL) to Gwalior (220kv) (II) (2x0.76)	DCDS	0.76	1.52	Dec-13
8	LILO of Jabalpur(Sukha) - Birsinghpur/Amarkantak DCDS line at 220kv S/S Panagar. (DCDS) (2x7.938)	DCSS	2.06	638	2013-14
	Sub Total (B)		186.13	933.972	249836
C.	132 KV TRANSMISSION LINES				
1	132kv Sidhi - Deosar DCDS line (2x50.62)	DCSS	50.62	101.24	Dec-13
2	2nd Ckt of Satna - Pawai section for Nagod 132kv S/s (19.50)	2nd ckt	19.5	19.5	Dec-13
3	Shivpuri - Mohna DCSS (1x63km)	DCSS	63	63	Jun-13
4	132kv Sagar - Banda line.(1x28.562)	DCSS	28.562	28.562	Sep-13
5	Mandsaur - Neemuch DCDS line (2x50.508 Kms)	DCDS	50.508	101.02	2014-15
6	Chhatarpur - Nowgaon DCSS line (34Kms)	DCSS	34	34	Dec-13
7	Diversion of 132KV Sarni-Chhindwara line between location no.305 to 311 (2x1.139)	DCDS	1.139	2.278	2013-14
8	LILO of 132 kv Barman - Gadarwara line for Chichli 220 KV S/s (2x14)	DCDS	14	28	Jun-13
9	132kvHoshangabad -Khatpura tap to Shahganj DCSS line (1x9.630)	DCSS	9.63	9.63	Nov-13
10	132kv DCDS line for proposed GOPALPUR S/s (2x6+1x3.35) (GoMP)	DCDS	9.35	15.35	Apr-13

11	132kv Birsinghpur -Shahdol DCSS line (1x48)	DCSS	48	48	Mar-14
12	132kv Badod -A lot-Sitamau DCSS line (1x66)	DCSS	66	66	2014-15
13	132kv Handiya(220kv)-Satwas DCSS line (1x37)	DCSS	37	37	2014-15
14	132kv Tikamgarh (220kv)- Digoda line (1x37)	DCSS	20	20	2014-15
15	Lilo of Balaghat -Birsa 132kv line at Baihar (DC) (1x20)	DCSS	20	20	Oct-13
16	132kv From 220kv Hosangabad -M/S Security Paper mill (SPM) ITARSI DCSS line (1x1.350)	DCSS	1.35	1.35	2013-14
17	132kv Gudgaon-M/s Betul wind near kurku (DIST.-BETUL) DCSS line (1x24.976)	DCSS	24.976	24.976	Mar-14
18	220kv S/s Maihar -M/s KJS Cement ltd. Amiliya (DIST.-Satna) DCDS line (2x5.60)	DCDS	5.6	11.2	Mar-14
19	220kv S/s Anoopur -M/s MB Power ltd. Jaitahri (DIST.-Anoopur) DCSS line (1x20.10)	DCSS	20.1	20.1	Mar-14
20	M/s Orient Green power Plant to 132kv S/s Gadarwara (DIST.-Narsinghpur) DCSS line (1x5.116)	DCSS	5.116	5.116	Mar-14
21	220kv S/s MandiDeep -M/s Proctor & Gamble MandiDeep (DIST.-Bhpoal) DCSS line (1x9.0)	DCSS	9	9	Mar-14
22	220kv S/s Maihar -M/sReliance Cementation maihar (DIST.-Satna) DCSS line (1x11.535)	DCSS	11.535	11.535	Mar-14
23	132kv DCSS line from132kv s/s Kukshi to M/s Alfa Infra prop 20MW Solar Power .(1x20.283)	DCSS	20.283	20.283	Mar-14
Sub Total (C)			569.269	697.14	
Grand Total (A+B+C)			1084.40	2258.81	

EHV SUB STATIONS UNDER PROGRESS DURING 2012-13

(AS ON 31.03.2013)

S.No.	NAME OF THE SUBSTATION	VOLTAGE RATIO (KV)	No.OF X-mer & Cap. (MVA)	EFFECTIVE CAPACITY MVA	COMPLETION PROGRAMME
A.	400 KV SUBSTATIONS				
1	Ashta (New S/s) (Distt. Sehore)	400/220	2x315	630	Jun-13
2	Julwania (New S/s) (Distt. Badwani)	400/220	2x315	630	Mar-14
Sub Total (A) (400 kv)				1260	
B.	220 KV SUBSTATIONS				
1	Chichli (New S/s) (Distt. Narsinghpur)	220/132	1x160	160	Jan-14
2	Jabalpur (ADDL) (Distt. Jabalpur)	220/132	1x160	160	Sep-13
Sub Total (B) (220kv)				320	
C.	132 KV SUBSTATIONS				
(a)	NEW SUBSTATIONS				
1	Mohna (Distt. Shivpuri)	132/33	1x40	40	Nov-13
2	Deosar (Distt. Sidhi)	132/33	1x40	40	Jun-13
3	Nowgong (Distt. Chhatarpur)	132/33	1x40	40	Sep-13
4	Banda (Distt. Sagar)	132/33	1x40	40	May-13
5	Gopalpur (Distt. Sehore)	132/33	1x40	40	Apr-13
6	Simrol (Distt. Indore)	132/33	1x63	63	Aug-13
Sub Total (a)				263	
C.	132 KV SUBSTATIONS				

(b)	Additional/ Augmentation of Transformers				
1	220 KV Damoh (Addl) (Distt. Damoh)	132/33	1x40	40	Jun-13
	Sub Total (b)			40	
	Grand Total (a+b) (132 kv)			303	
	Grand Total (A+B+C)			1883	
Total Cost of EHV Lines and Substations under progress (A+B+C) Amount in Lac.					

Discoms wise Average Supply Hours

PARTICULARS	East Zone		Central Zone	
	Feb-13	Mar-13	Feb-13	Mar-13
Commissary HQ	23:55	24:00	23:29	23:42
District HQ	23:51	24:00	22:38	23:41
Tehsil HQ	21:53	24:00	21:17	23:12
Rural -Mixed	18:53	23:58	16:34	21:56
Rural -DLF	21:26	24:00	20:47	23:00
Rural -Irrigation	8:21	8:00	8:03	7:53
PARTICULARS	West Zone		MP	
	Feb-13	Mar-13	Feb-13	Mar-13
Commissary HQ	23:51	23:44	23:44	23:49
District HQ	23:53	23:55	23:27	23:52
Tehsil HQ	20:37	23:20	21:21	23:33
Rural -3Phase	14:44	19:22	17:01	22:08
Rural -1Phase	19:31	21:15	20:40	22:52
Total Rural	8:07	7:51	8:10	7:55

LIST OF 33KV FEEDERS UNDER MPPKVCL, JABALPUR

(For which group to be allocated)

JABALPUR REGION		
Name of EHV Substation	Name of 33kV feeder	Date of charging of feeder
220KV		
220kV Pipariya	33kV Panagar	02.03.2011
SAGAR REGION		
132KV		
132 KV Gourjhamer	33 KV Gaurjhamar	04.01.2013
220 KV		
220 KV Sagar	33 KV Medical	19.06.2012
REWA REGION		
132KV		
132kV Beohari	33kV Madwas	03.01.2012
132kV Rajmilan	33kV Khutar	05.03.2012
132 KV Rewa-II	33 KV Ratahara	13.09.2012
	33 KV Raipur	13.09.2012
	33 KV Sirmour	04.10.2012
	33 KV Mohra	04.10.2012
220KV		
220kV Satna	33KV Raigaon	19.05.2011
220 KV Anupur	33 KV Anuppur	07.11.2012
	33 KV Moserbear	07.11.2012
220kV Kotar (Rewa)	33kV Semariya	22.10.2011
220kV Maihar	33kV Reliance	15.04.2011

BHOPAL REGION

Name of EHV Substation	Name of 33KV feeder	Date of charging of feeder
132KV		
132KV Gudgaon	33KV Gudgaon	31.06.2012
132 KV Bareli	33 KV Bhopatpur	13.12.2012

GWALIOR REGION

132KV		
132 KV Morena	33 KV Sankara	26.12.12
132 KV Bhind	33 KV Etawa Road	01.05.2011
	33 KV Pratappura	20.10.2012

LIST OF 33KV FEEDERS UNDER MPPKVCL, INDORE

(For which group to be allocated)

INDORE REGION

Name of EHV Substation	Name of 33KV feeder	Date of Charging of feeder
220KV		
220KV Pithampur	33KV MPAKVN (Nalrip Water Works)	30.07.2011

Proposal of Shut Down for Maintenance Programme of Transmission Elements for May and June 2013

A. MPPTCL

S.No.	Name of 400 KV Substation	Name of Feeder/ Transformer	Proposed Date of Shutdown	Time		Work to be done
				From	To	
1	Bhopal	315 MVA Transformer No II Make BHEL	01.05.2013	10.00	18.00	X'mer Body Painting Work
2	Bhopal	315 MVA Transformer No II Make BHEL	02.05.2013	10.00	18.00	X'mer Body Painting Work
3	Nagda	315 MVA Transformer No III	02.05.2013	8.00	17.00	Pre Monsoon Maint. Work
4	Nagda	315 MVA Transformer No I	06.05.2013	8.00	17.00	Pre Monsoon Maint. Work
5	Nagda	315 MVA Transformer No II	18.05.2013	8.00	17.00	Pre Monsoon Maint. Work
6	Nagda	400 KV Indira Sagar Line	16.05.2013	8.00	17.00	Pre Monsoon Maint. Work
7	Nagda	400 KV Raigarh - I Line	28.05.2013	8.00	17.00	Pre Monsoon Maint. Work

B. NHDC

1	OSP Generating Station	220 KV Bus - A	02.05.2013	7.00	17.00	ShutDown
2	OSP Generating Station	220 KV Bus - B	04.05.2013	7.00	17.00	ShutDown
3	OSP Generating Station	220 KV Bus - A & B	06.05.2013	7.00	17.00	ShutDown

Unitwise / Stationwise Genration in MU				
A. Thermal		Ann 4.1		
Stn. Name	UNIT No.	Capacity MW	Feb-13	Mar-13
AMARKANTAK	3	120	37.12	57.45
	4	120	51.20	57.45
	PH II	240	88.32	114.90
	PH III	210	132.71	142.10
	TOT	450	221.03	257.00
SATPURA	1	62.5	30.64	32.24
	2	62.5	0.00	0.00
	3	62.5	0.00	0.00
	4	62.5	3.55	0.00
	5	62.5	0.00	0.00
	PH I	312.5	34.18	32.24
	6	200	92.19	82.46
	7	210	113.23	97.67
	PH II	410	205.415	180.12
	8	210	96.965	88.89
	9	210	84.145	98.78
PH III	420	181.11	187.67	
TOT	1142.5	420.71	400.03	
SANJAY GANDHI	1	210	87.762	119.39
	2	210	114.72	114.29
	PH I	420	202.48	233.67
	3	210	111.59	126.26
	4	210	113.69	124.47
	PH II	420	225.28	250.73
	PH III	500	286.39	337.01
	TOT	1340	714.15	821.41
MPPGCL THERMAL		2932.5	1355.88	1478.44
AMARKANTAK POWER HOUSE-I RETIRED FROM SERVICE WEF 01.04.2009				
B. Hydel				
Station Name	Capacity MW	Feb-13	Mar-13	
GANDHISAGAR	115.0	31.68	40.98	
R.P.SAGAR	172.0	53.43	54.11	
J.SAGAR	99.0	35.81	34.26	
CHAMBAL	386.0	120.92	129.34	
M.P.CHAMBAL	193.0	60.46	64.67	
PENCH	160.0	39.50	18.59	
M.P.PENCH	107.0	26.33	12.39	
BARGI	90.0	20.18	31.48	
TONS	315.0	81.68	107.32	
BIRSINGHPUR	20.0	0.01	0.00	
B.SGR(DEOLONDH)	60.0	6.21	0.00	
B.SGR(SILPARA)	30.0	9.12	11.80	
RAJGHAT	45.0	3.01	6.10	
M.P.RAJGHAT	22.5	1.50	3.05	
B.SGR(JINHA)	20.0	8.53	9.97	
MADIKHEDA	60.0	10.10	1.14	
TOTAL HYDEL	1186.0	299.26	315.7	
MPPGCL Hydel	915.0	210.02	227.4	
MPSEB HYDEL Share	917.5	224.13	241.8	
C. NHDC (Ex-Bus)				
Station Name	Capacity MW	Feb-13	Mar-13	
Indira Sagar Hydel Project	1000	120.168	222.570	
Omkareshwar Hydel Project	520	56.604	101.049	

**MP SUPPLY EXCLUDING AUXILIARY CONS.
in Million Units**

Ann 4.2

S.No.	Particulars	Feb-13	Mar-13
1	MPSEB Thermal Availability	1223.66	1329.05
2	MPSEB Hydel Availability	221.90	239.16
3	Indira Sagar	120.41	221.75
4	Omkareshwar	56.60	101.05
5	Schedule / Drawal From Central Sector	1303.55	1671.91
6	Schedule of DVC	198.41	245.87
7	Schedule of Sujen	13.47	12.46
8	Lanco AMK	117.00	191.04
9	Sardar Sarovar	37.90	112.73
10	Additional Power Purchase	158.04	136.45
11	Sale of Power	-80.42	-159.04
12	Banking of Power	255.75	158.60
13	Energy Exchange	0.00	0.00
14	Unschedule Interchange	-20.73	-49.40
15	Other Imp / Exp	95.40	93.33
16	Total MPSEB Supply excl. Aux. Cons.	3700.94	4304.96
17	Average Supply per Day	132.18	138.87
18	Maximum Daily M.P. Supply	158.17	153.39
19	Minimum Daily M.P. Supply	85.58	99.80
20	Registered Demand : MW	7615	8175
24	Unrestricted Demand : MW	8057	8173

**Hourly Average Own Generation, Schedule Drawal , Actual Drawal & Demand
Month :- February 2013**

FIGURES IN MW

Hrs.	FREQ.	Own Generation										Schedule from														Tot Avl.	Act. Drl	UI	Intra State STOA	DEMAND MET	Load Shedding			REST DEMAND	UNRES T. DEMAND
		Ther. Incl Aux	Ther. Excl Aux	HYD.	ISP	OSP	BLA Power	JP BINA IPP	Injection from STOA	Total	CSS	DVC ER	Sugen	Lanco	SSP	SEZ	Banking	Sale	Pur	Exchange	STOA	Rihand+Matatila-Rajghat	Total	SCH	UN SCH						TOTAL				
1:00	50.22	1890	1720	110	13	7	12	85	-57	1890	1587	263	15	154	33	12	852	-41	248	0	57	12	3192	4830	3167	-5	1	5078	43	0	43	5045	5088		
2:00	50.25	1889	1719	88	13	6	12	85	-57	1866	1460	257	15	151	33	12	852	-37	248	0	57	12	3059	4676	3110	51	1	4977	43	0	43	4940	4983		
3:00	50.25	1863	1695	82	13	7	12	85	-59	1836	1407	250	15	145	33	12	852	-30	248	0	59	12	3001	4596	3029	28	1	4866	46	0	46	4831	4876		
4:00	50.25	1846	1680	79	13	6	12	85	-59	1815	1375	250	15	151	33	12	852	-29	248	0	59	12	2977	4544	3003	26	1	4819	70	0	70	4784	4854		
5:00	50.14	1856	1689	94	21	7	12	85	-58	1850	1379	250	15	151	33	12	852	-29	248	0	58	12	2980	4582	3046	67	1	4898	70	0	70	4878	4948		
6:00	50.08	1958	1782	243	73	32	12	85	-50	2176	1520	249	15	151	33	12	852	-106	248	0	50	12	3035	4963	2949	-86	1	5126	187	0	187	5113	5300		
7:00	49.99	2020	1838	344	193	76	13	91	-41	2514	1955	302	22	170	33	11	140	-152	229	0	41	12	2762	5002	2833	71	1	5348	241	0	241	5349	5590		
8:00	50.11	2053	1868	410	287	124	13	91	-23	2770	2009	302	22	173	33	11	140	-146	229	0	23	12	2808	5301	2857	49	1	5628	247	0	247	5609	5856		
9:00	50.05	2058	1873	388	257	111	13	91	-19	2714	2025	304	21	173	49	11	140	-210	229	0	19	12	2772	5209	2722	-51	1	5437	341	0	341	5428	5770		
10:00	50.14	2060	1875	364	273	116	12	91	-18	2712	2047	305	21	170	67	11	140	-258	219	0	18	12	2752	5191	2669	-83	1	5383	313	0	313	5360	5673		
11:00	50.07	2044	1860	422	317	136	12	91	-20	2818	2047	305	21	173	67	11	140	-218	211	0	20	12	2790	5331	2761	-28	1	5581	250	0	250	5569	5819		
12:00	50.17	2053	1868	358	261	123	12	86	-17	2692	2040	305	21	164	67	11	140	-272	211	0	17	12	2715	5145	2495	-220	1	5188	299	0	299	5161	5460		
13:00	50.26	2042	1858	330	235	109	12	86	-28	2602	1975	286	21	164	67	11	118	-167	211	0	28	12	2727	5067	2757	30	1	5360	255	0	255	5319	5573		
14:00	50.19	2032	1849	290	220	107	12	86	-36	2529	1988	279	21	170	67	11	118	-144	211	0	36	12	2768	5030	2684	-84	1	5214	257	0	257	5185	5442		
15:00	50.09	2018	1837	260	179	91	12	86	-35	2429	1972	273	21	170	60	11	118	-150	211	0	35	12	2734	4895	2703	-30	1	5134	231	0	231	5121	5352		
16:00	50.06	2017	1835	221	152	78	12	86	-37	2348	1962	277	21	170	49	11	118	-129	211	0	37	12	2740	4820	2726	-14	1	5076	236	0	236	5067	5303		
17:00	50.18	2021	1839	239	149	78	12	86	-38	2365	1977	274	21	170	49	11	118	-122	211	0	38	12	2760	4857	2837	77	1	5204	206	0	206	5177	5383		
18:00	50.18	2050	1866	374	268	113	12	86	-37	2682	2016	270	21	173	49	11	172	-131	246	0	37	12	2876	5287	2745	-131	1	5428	229	0	229	5398	5627		
19:00	49.98	2111	1921	588	508	207	12	86	-37	3284	2170	322	22	182	99	11	172	-92	258	0	37	12	3192	6196	3254	62	1	6539	210	0	210	6542	6752		
20:00	50.08	2128	1936	622	527	232	12	86	-36	3380	2187	322	22	182	110	11	172	-124	258	0	36	12	3187	6286	3209	22	1	6591	223	0	223	6575	6798		
21:00	50.13	2138	1945	555	373	195	12	86	-41	3127	2196	322	22	182	110	11	220	-60	258	0	41	12	3314	6160	3218	-96	1	6346	199	0	199	6322	6521		
22:00	50.15	2087	1899	350	108	88	12	86	-40	2504	2140	295	22	182	110	11	220	-32	258	0	40	12	3258	5481	3335	77	1	5840	160	0	160	5815	5975		
23:00	50.19	2015	1834	247	43	33	12	80	-37	2212	1750	275	15	172	64	11	818	-118	248	0	37	12	3283	5231	3146	-138	1	5359	117	0	117	5329	5446		
24:00	50.31	1937	1763	112	21	19	12	80	-44	1962	1694	271	15	178	49	11	818	-99	248	0	44	12	3242	4934	3039	-202	1	5003	114	0	114	4957	5071		
Avg.	50.15	2008	1827	299	188	88	12	87	-39	2462	1870	284	19	167	58	11	381	-121	235	0	39	12	2944	5151	2930	-25	1	5393	191	0	191	5370	5561		
00 TO 06 HRS.	50.20	1883	1714	116	24	11	12	85	-57	1906	1455	253	15	150	33	12	852	-46	248	0	57	12	3041	4699	3054	13	1	4961	76	0	76	4932	5008		
06 TO 12 HRS.	50.09	2048	1864	381	265	114	12	91	-23	2704	2021	304	22	170	53	11	140	-210	221	0	23	12	2766	5197	2723	-44	1	5427	282	0	282	5413	5695		
12 TO 18 HRS.	50.16	2030	1847	286	201	96	12	86	-35	2493	1982	277	21	169	57	11	127	-140	217	0	35	12	2767	4993	2742	-25	1	5236	236	0	236	5211	5447		
06 TO 18 HRS.	50.12	2039	1856	333	233	105	12	89	-29	2598	2001	290	21	170	55	11	133	-175	219	0	29	12	2767	5095	2732	-35	1	5332	259	0	259	5312	5571		
18 TO 24 HRS.	50.14	2069	1883	412	263	129	12	84	-39	2745	2023	301	20	180	90	11	403	-87	254	0	39	12	3246	5715	3200	-46	1	5946	170	0	170	5923	6094		

Hourly Average Own Generation, Schedule Drawal . Actual Drawal & Demand
Month :- March 2013

FIGURES IN MW

Hrs.	FREQ.	Own Generation										Schedule from															Tot. Avl.	Act. Drl	UI	Intra State STOA	DEMAND MET	Load Shedding			REST DEMAND	UNRES. T. DEMAND
		Ther. Incl. Aux	Ther. Excl. Aux	HYD.	ISP	OSP	BLA Power	J.P. BINA IPP	Injection from STOA	Total	CSS	DVC ER	Sugen	Lanco	SSP	SEZ	Banking	Sale	Pur	Exchange	STOA	Rihand+Matallah-Rajhat	Total	SCH	UN SCH	TOTAL										
1:00	50.05	1979	1801	240	133	74	10	41	-39	2259	2139	329	16	238	42	13	486	-102	177	0	39	15	3392	5362	3333	180	11	5603	6	0	6	5597	5603			
2:00	50.06	1964	1788	191	122	67	10	41	-42	2176	2112	310	16	238	42	13	486	-102	177	0	42	15	3349	5236	3317	207	12	5505	6	0	6	5496	5502			
3:00	50.14	1955	1779	126	99	54	10	41	-43	2064	2104	310	16	238	39	13	486	-40	177	0	43	15	3401	5176	3343	180	10	5417	6	0	6	5395	5401			
4:00	50.18	1955	1779	94	83	42	10	41	-44	2006	2102	310	16	238	39	13	486	-40	177	0	44	15	3400	5117	3372	211	6	5384	6	0	6	5355	5362			
5:00	50.10	1957	1781	117	145	64	10	41	-45	2112	2115	314	16	238	39	13	486	-44	177	0	45	15	3414	5237	3348	173	6	5466	6	0	6	5450	5457			
6:00	50.11	1977	1799	268	295	119	10	41	-41	2491	2202	328	16	241	39	12	486	-95	177	0	41	15	3462	5661	3246	26	9	5746	39	0	39	5729	5767			
7:00	50.05	1991	1812	343	472	197	13	41	-38	2839	2233	334	16	257	39	11	54	-130	171	0	38	15	3037	5566	3006	225	13	5857	121	0	121	5849	5970			
8:00	50.18	2006	1826	386	509	218	13	41	-27	2965	2232	326	16	257	39	11	54	-164	171	0	27	15	2983	5638	2910	183	13	5889	142	0	142	5857	5999			
9:00	50.09	2004	1823	344	420	181	13	41	-32	2790	2237	331	16	257	55	11	54	-279	171	0	32	15	2899	5379	2737	95	15	5542	187	0	187	5527	5714			
10:00	50.10	1996	1817	300	354	162	12	41	-31	2655	2156	314	16	257	207	11	54	-356	171	0	31	15	2875	5220	2737	119	15	5407	204	0	204	5391	5595			
11:00	50.03	1998	1818	353	338	153	12	36	-14	2697	2146	310	16	254	270	11	48	-407	168	0	14	15	2844	5239	2825	234	14	5536	181	0	181	5532	5713			
12:00	50.10	1997	1817	337	326	148	12	36	-4	2673	2145	306	17	254	283	11	48	-436	168	0	4	15	2816	5187	2622	60	10	5305	197	0	197	5289	5485			
13:00	50.18	1983	1805	277	294	138	11	36	-4	2557	2135	306	17	251	283	11	48	-409	168	0	4	15	2828	5088	2764	186	11	5332	104	0	104	5304	5408			
14:00	50.10	1978	1800	216	263	128	11	38	-8	2446	2134	307	17	251	270	11	54	-411	168	0	8	15	2824	4971	2695	122	11	5153	113	0	113	5138	5251			
15:00	50.09	1971	1794	192	209	105	10	41	-8	2343	2129	303	17	251	131	11	54	-427	168	0	8	15	2659	4701	2601	192	11	4955	130	0	130	4942	5072			
16:00	50.14	1953	1777	178	153	80	10	41	-8	2231	2116	303	17	244	87	11	54	-422	168	0	8	15	2601	4538	2458	101	4	4693	187	0	187	4674	4862			
17:00	50.17	1922	1749	115	90	45	10	36	-15	2031	2116	277	16	235	80	11	54	-389	168	0	15	15	2597	4347	2558	195	3	4592	199	0	199	4568	4767			
18:00	50.20	1919	1746	181	242	101	10	36	-39	2277	2104	274	16	232	80	11	91	-267	217	0	39	15	2813	4813	2634	53	4	4916	152	0	152	4886	5038			
19:00	50.00	1978	1800	572	609	252	14	38	-40	3245	2265	395	16	254	256	11	120	-99	217	0	40	15	3489	6429	3583	347	7	6834	7	0	8	6837	6844			
20:00	50.05	2000	1820	607	702	304	14	41	-25	3462	2291	401	16	260	420	11	120	-142	217	0	25	15	3635	6783	3669	293	7	7138	7	2	9	7131	7138			
21:00	50.08	2003	1822	563	641	284	14	45	-40	3330	2293	399	16	260	420	11	130	-75	217	0	40	15	3726	6737	3629	164	10	6969	7	0	7	6954	6961			
22:00	50.03	2009	1828	466	445	209	13	45	-39	2968	2286	399	16	260	414	11	130	-55	217	0	39	15	3732	6381	3633	161	9	6609	7	0	7	6605	6612			
23:00	50.06	1994	1814	413	311	150	13	45	-9	2738	2163	313	16	254	128	12	515	-78	217	0	9	15	3564	5991	3424	113	12	6174	7	0	7	6164	6171			
24:00	50.10	1975	1797	351	193	103	12	45	-25	2477	2142	313	16	241	58	12	515	-110	177	0	25	15	3405	5583	3328	164	15	5819	7	0	7	5802	5809			
Avg.	50.10	1978	1800	301	310	141	11	40	-27	2576	2171	326	16	248	157	11	213	-212	183	0	27	15	3141	5433	3074	166	10	5660	85	0	85	5645	5729			
00 TO 06 HRS.	50.11	1965	1788	173	146	70	10	41	-42	2185	2129	317	16	239	40	13	486	-71	177	0	42	15	3403	5298	3327	163	9	5520	12	0	12	5504	5515			
06 TO 12 HRS.	50.09	1999	1819	344	403	176	12	39	-24	2770	2192	320	16	256	149	11	52	-295	170	0	24	15	2909	5372	2806	153	13	5589	172	0	172	5574	5746			
12 TO 18 HRS.	50.15	1954	1778	193	209	100	10	38	-14	2314	2122	295	17	244	155	11	59	-387	176	0	14	15	2720	4743	2618	142	7	4940	148	0	148	4919	5066			
06 TO 18 HRS.	50.12	1977	1799	269	306	138	11	39	-19	2542	2157	308	16	250	152	11	56	-341	173	0	19	15	2815	5057	2712	147	10	5265	160	0	160	5246	5406			
18 TO 24 HRS.	50.05	1993	1814	496	484	217	13	43	-30	3037	2240	370	16	255	283	11	255	-93	211	0	30	15	3592	6317	3544	207	10	6591	7	0	7	6582	6589			

Discomwise Hourly Average Schedule Drawal , Actual Drawal &Over(+)/Under(-) Drawal
Month :- February 2013

FIGURES IN MW

Hrs.	FREQ.	EZONE							CZONE							WZONE						
		SCH	Demand Met	O/U DRL	SCH LS	Unsch LS	Restrict ed Demand	Unrestrict ed Demand	SCH	Demand Met	O/U DRL	SCH LS	Unsch LS	Restrict ed Demand	Unrestrict ed Demand	SCH	Demand Met	O/U DRL	SCH LS	Unsch LS	Restrict ed Demand	Unrestrict ed Demand
1:00	50.22	1631	1567	-64	0	0	1557	1557	1721	1562	-159	43	0	1552	1595	1827	1949	122	0	0	1936	1936
2:00	50.25	1572	1515	-57	0	0	1503	1503	1668	1518	-150	43	0	1507	1550	1765	1944	179	0	0	1930	1930
3:00	50.25	1546	1470	-77	0	0	1459	1459	1644	1488	-156	43	0	1478	1520	1739	1908	170	3	0	1894	1897
4:00	50.25	1530	1444	-86	0	0	1434	1434	1627	1472	-155	43	0	1462	1504	1722	1902	181	27	0	1889	1916
5:00	50.14	1537	1424	-114	0	0	1418	1418	1637	1529	-108	43	0	1523	1566	1731	1945	215	27	0	1937	1964
6:00	50.08	1647	1463	-185	0	0	1459	1459	1757	1639	-118	43	0	1635	1678	1871	2025	154	144	0	2020	2164
7:00	49.99	1687	1535	-152	3	0	1535	1538	1766	1791	25	69	0	1791	1860	1913	2022	110	169	0	2022	2192
8:00	50.11	1764	1616	-149	3	0	1610	1613	1847	1885	37	91	0	1878	1969	2038	2128	90	152	0	2121	2273
9:00	50.05	1746	1612	-134	7	0	1610	1617	1821	1805	-16	88	0	1802	1890	2002	2020	18	247	0	2016	2263
10:00	50.14	1736	1593	-143	7	0	1587	1594	1806	1756	-50	100	0	1749	1848	1988	2034	45	206	0	2025	2231
11:00	50.07	1770	1645	-124	19	0	1642	1661	1845	1672	-173	96	0	1668	1764	2048	2263	216	135	0	2259	2394
12:00	50.17	1715	1534	-181	20	0	1526	1547	1789	1580	-209	96	0	1572	1668	1961	2074	113	183	0	2063	2246
13:00	50.26	1692	1510	-183	36	0	1498	1534	1771	1535	-236	108	0	1523	1631	1931	2316	385	111	0	2298	2409
14:00	50.19	1684	1413	-271	31	0	1405	1436	1759	1460	-299	111	0	1452	1563	1915	2341	426	114	0	2328	2442
15:00	50.09	1656	1452	-205	22	0	1448	1470	1726	1439	-287	91	0	1436	1527	1868	2243	375	118	0	2238	2356
16:00	50.06	1635	1402	-233	15	0	1399	1414	1702	1516	-186	69	0	1513	1582	1833	2158	325	152	0	2154	2306
17:00	50.18	1645	1426	-219	9	0	1419	1427	1714	1615	-98	69	0	1607	1676	1846	2163	317	129	0	2151	2280
18:00	50.18	1758	1543	-216	9	0	1534	1543	1830	1785	-45	75	0	1775	1851	2021	2100	79	145	0	2088	2233
19:00	49.98	2020	2156	137	10	0	2157	2167	2100	2100	0	82	0	2101	2183	2411	2283	-128	117	0	2284	2401
20:00	50.08	2046	2255	209	12	0	2250	2262	2128	2120	-8	90	0	2115	2204	2456	2215	-240	121	0	2210	2331
21:00	50.13	2024	2153	129	8	0	2144	2153	2098	2035	-63	79	0	2027	2106	2375	2159	-216	112	0	2151	2262
22:00	50.15	1847	1917	71	21	0	1909	1930	1906	1879	-28	76	0	1871	1947	2072	2044	-28	63	0	2035	2098
23:00	50.19	1756	1743	-13	1	0	1733	1734	1848	1740	-108	56	0	1730	1786	1976	1876	-100	61	0	1866	1927
24:00	50.31	1669	1593	-77	1	0	1578	1579	1752	1612	-140	52	0	1597	1649	1865	1798	-67	61	0	1782	1843
Avg.	50.15	1721	1624	-97	10	0	1617	1627	1803	1689	-114	73	0	1682	1755	1966	2080	114	108	0	2071	2179
00 TO 06 HRS.	50.20	1577	1480	-97	0	0	1472	1472	1676	1535	-141	43	0	1526	1569	1776	1946	170	33	0	1934	1968
06 TO 12 HRS.	50.09	1736	1589	-147	10	0	1585	1595	1812	1748	-64	90	0	1743	1833	1992	2090	99	182	0	2084	2266
12 TO 18 HRS.	50.16	1678	1457	-221	20	0	1450	1471	1750	1558	-192	87	0	1551	1638	1902	2220	318	128	0	2210	2338
06 TO 18 HRS.	50.12	1707	1523	-184	15	0	1518	1533	1781	1653	-128	89	0	1647	1736	1947	2155	208	155	0	2147	2302
18 TO 24 HRS.	50.14	1894	1970	76	9	0	1962	1971	1972	1914	-58	72	0	1907	1979	2192	2063	-130	89	0	2055	2144

Discomwise Hourly Average Schedule Drawal , Actual Drawal &Over(+)/Under(-) Drawal
Month :- March 2013

FIGURES IN MW

Hrs.	FREQ.	EZONE							CZONE							WZONE						
		SCH	Demand Met	O/U DRL	SCH LS	Unsch LS	Restrict ed Demand	Unrestrict ed Demand	SCH	Demand Met	O/U DRL	SCH LS	Unsch LS	Restrict ed Demand	Unrestrict ed Demand	SCH	Demand Met	O/U DRL	SCH LS	Unsch LS	Restrict ed Demand	Unrestrict ed Demand
1:00	50.05	1819	1719	-101	0	0	1717	1717	1869	1893	24	6	0	1890	1897	2045	1992	-53	0	0	1990	1990
2:00	50.06	1780	1662	-118	0	0	1659	1659	1826	1846	20	6	0	1843	1850	1992	1997	4	0	0	1993	1993
3:00	50.14	1763	1624	-139	0	0	1617	1617	1809	1823	14	6	0	1816	1822	1963	1970	6	0	0	1962	1962
4:00	50.18	1748	1609	-139	0	0	1600	1600	1793	1814	21	6	0	1804	1811	1941	1962	20	0	0	1951	1951
5:00	50.10	1777	1620	-157	0	0	1615	1615	1822	1850	28	6	0	1844	1851	1989	1997	8	0	0	1991	1991
6:00	50.11	1885	1627	-258	0	0	1622	1622	1939	1987	48	6	0	1980	1987	2154	2133	-21	32	0	2126	2159
7:00	50.05	1861	1480	-381	0	0	1478	1478	1911	2119	208	8	0	2116	2124	2178	2259	81	113	0	2256	2368
8:00	50.18	1875	1481	-394	0	0	1473	1473	1932	2150	218	9	0	2139	2147	2218	2257	39	133	0	2245	2378
9:00	50.09	1803	1498	-305	0	0	1494	1494	1851	2034	183	9	0	2029	2037	2092	2009	-83	178	0	2004	2182
10:00	50.10	1778	1629	-149	0	0	1624	1624	1813	1909	97	9	0	1904	1913	2052	1869	-183	194	0	1863	2057
11:00	50.03	1775	1711	-64	0	0	1709	1709	1811	1802	-9	10	0	1801	1810	2049	2023	-26	172	0	2022	2193
12:00	50.10	1748	1651	-97	0	0	1646	1646	1782	1682	-100	11	0	1677	1687	2012	1972	-40	186	0	1966	2152
13:00	50.18	1723	1619	-104	0	0	1610	1610	1749	1570	-179	10	0	1562	1572	1970	2143	173	94	0	2131	2225
14:00	50.10	1698	1521	-177	0	0	1517	1517	1720	1524	-196	10	0	1519	1530	1925	2108	183	103	0	2102	2205
15:00	50.09	1609	1451	-158	0	0	1448	1448	1641	1512	-128	10	0	1509	1519	1798	1991	193	120	0	1986	2106
16:00	50.14	1562	1318	-243	0	0	1313	1313	1592	1542	-50	9	0	1536	1545	1724	1833	109	178	0	1825	2004
17:00	50.17	1516	1247	-269	0	0	1241	1241	1538	1628	90	9	0	1620	1629	1642	1717	74	189	0	1708	1897
18:00	50.20	1626	1327	-299	0	0	1319	1319	1664	1821	158	9	0	1810	1820	1825	1767	-58	143	0	1756	1899
19:00	50.00	2100	2158	58	0	0	2159	2159	2150	2304	154	7	0	2305	2312	2523	2372	-151	0	0	2372	2372
20:00	50.05	2210	2342	132	0	2	2342	2342	2252	2405	153	7	0	2402	2409	2701	2391	-310	0	0	2387	2387
21:00	50.08	2202	2300	97	0	0	2295	2295	2242	2344	102	7	0	2339	2346	2669	2326	-343	0	0	2320	2320
22:00	50.03	2123	2156	33	0	0	2155	2155	2151	2242	91	7	0	2240	2247	2505	2211	-294	0	0	2209	2209
23:00	50.06	1989	1998	9	0	0	1996	1996	2050	2106	57	7	0	2103	2110	2316	2069	-247	0	0	2066	2066
24:00	50.10	1880	1850	-29	0	0	1845	1845	1936	2005	69	7	0	1999	2006	2141	1964	-177	0	0	1959	1959
Avg.	50.10	1827	1692	-136	0	0	1687	1687	1868	1913	45	8	0	1908	1916	2101	2055	-46	76	0	2050	2126
00 TO 06 HRS.	50.11	1795	1643	-152	0	0	1638	1638	1843	1869	26	6	0	1863	1870	2014	2008	-6	5	0	2002	2008
06 TO 12 HRS.	50.09	1807	1575	-232	0	0	1571	1571	1850	1949	99	9	0	1944	1953	2100	2065	-35	163	0	2059	2222
12 TO 18 HRS.	50.15	1622	1414	-209	0	0	1408	1408	1651	1600	-51	10	0	1593	1603	1814	1926	112	138	0	1918	2056
06 TO 18 HRS.	50.12	1715	1494	-220	0	0	1489	1489	1750	1775	24	9	0	1768	1778	1957	1996	38	150	0	1989	2139
18 TO 24 HRS.	50.05	2084	2134	50	0	0	2132	2132	2130	2234	104	7	0	2231	2238	2476	2222	-254	0	0	2219	2219

SYSTEM DISTURBANCE

February 2013 to March 2013

1. **System Disturbance on 18.02.13 at 220KV S/s Satna** : On dated 18.02.13 at around 21:32 Hrs MP system was running normal at frequency 50.29 Hz with N-E-W grid. At around 21:34 Hrs, 132KV Satna-Kymore ckt tripped from both ends & its R-Phase pole of MOCB burst at 220KV S/s Satna , consequently 220/132KV both 160MVA (BHEL) & 160MVA (AREVA) transformers tripped and 132KV Satna-Satna Ckt-I&II also tripped from 132KV S/s Satna end, hence 132KV & 33KV supply failed at 220KV S/s Satna. Interruption occurred at 132KV Nagod, 132KV Pawai, 132KV Panna, 132KV Majhgawan S/s and 132KV Satna Cement (Industrial feeder) & 132KV Prism Cement (Industrial feeder). There was consumer load loss about 31.7 MWH for approx. 20 Min. System was normalized in due course of time.
2. **System Disturbance on 28.02.13 at 220KV S/s Malanpur** : On dated 28.02.13 at around 03:42 Hrs MP system was running normal at frequency 49.97 Hz with N-E-W grid. At around 03:45 Hrs 220KV Malanpur-Auriya Ckt tripped from both ends and 220KV Malanpur-Gwalior (PGCIL) Ckt-II already tripped at 02:14 Hrs from both end. While charging of 220KV Malanpur-Gwalior (PGCIL) Ckt-II at 03:50 Hrs its bkr did not hold and 220KV Malanpur-Gwalior (PGCIL) Ckt-I tripped from Gwalior end & 220KV Malanpur-Mehgaon Ckt tripped from Mehgaon end simultaneously 132KV Banmore Ckt-I&II also tripped from 132KV S/s Banmore end, resulting total supply failure at 220KV S/s Malanpur and 132KV S/s Ambha & Morar. System was normalized in due course of time. There was consumer load loss of around 25.13 MWH for 26 Min only.
3. **System Disturbance on 16.03.2013 at 220 KV S/s Pithampur** :- On dtd. 16.03.2013 at around 05.38 hrs 220 KV Pithampur-Badnagar(which was on Main Bus -I) tripped from both ends. At 220 KV Sub station Pithampur LBB of transfer bus-coupler operated causing the bus-bar protection to operate and resulting in tripping of bus-coupler breaker and 220 KV Pithampur-Rajgarh(PGCIL) Ckt-I from 220 KV Pithampur end. At the same time 220 KV Pithampur-Rajgarh(PGCIL) ckt-II also tripped from both ends. Due to above tripping both main bus-I and Main bus-II became dead at 220 KV Sub station Pithampur resulting in failure of 132 KV supply at 132 KV S/S Pithampur, 220 KV S/S Pithampur, 132 KV S/S Betma, 132 KV S/S Bagdi and 132 KV S/S Jamli. The Supply resume at 06.10. hrs from 132 KV interconnector I & II and System was normalized in due course of time. There was consumer load loss of around 131 MWH for 32 Min only.
4. **System Disturbance on 23.03.2013 at 220 KV S/s Birsingpur** :- On dtd 23.03.2013 at around 16.41 hrs, Y-phase PT of Main bus-II of 220 KV S/S Birsingpur burst and its jumper fall on Main bus-II causing bus fault. This resulted

in tripping of all the feeders i.e. 220 KV-Birsingpur-Jabalpur I &II, Interconnector I,II,III & IV, 220 KV Railway traction I & II from far end.This caused interruption at 220 KV S/S Birsingpur, 132 KV S/S Umariya apart frpm tripping of SGTPS unit 1,3 and 4 on jerk. The 220 KV breaker of 220 KV S/S Birsingpur did not clear the fault which led to heavy voltage jerk and frequency fluctuate in the 220 KV / 400 KV system of SGTPS. Supply resume at 17.27 hrs by charging 220 KV Birsingpur-Jabalpur ckt no. I. Therafter system was normalized in due course of time. There was consumer load loss of around 30 MWH and generation loss of around 550 MW and approx. 1422 MWH.

5. **System Disturbance on 23.03.2013 at 220 KV S/s Dewas** :- On dtd 23.03.2013 at around 22.25 hrs, B-phase CT of 132 KV Dewas–MSP circuit burst resulting in tripping of Dewas-MSP from both ends, 132 KV Dewas-BNP I & II, 132 KV Dewas-Chapda, 132 KV BNP –Ujjain and 160 MVA transformer I & II. 132 KV Dewas – Sonkatch circuit, 132 KV MSP-Indore(SZ) ckt, 132 KV BNP-Ujjain ckt were kept open for load management. Thus the interruption has caused at 220 KV Dewas, 132 KV BNP, 132 KV MSP, 132 KV Manglia and 132 KV S/S Chapda. 220 KV supply was intact at 220 KV S/S Dewas. 132 KV Supply resume at 220 KV Dewas by charging charging incomer-I at 22.45 hrs. subsequently all other feeders / transformers were charged. The B-phase CT has been replaced and 132 KV Dewas-MSP interconnector was charged at 14.40 hrs on 26.03.2013. There was consumer load loss of around 67.96 MWH for 40 minutes only.

ANNEXURE-8.4**TRANSMISSION LINES/ELEMENTS OUTAGE PLANING PROCEDURE IN WESTERN REGION(Latest Position March 2013) :-**

The transmission elements outages planning procedures being followed in the WR OCC are as follows:

The annual transmission elements outages planning shall be done in annual LGBR. And shall be reviewed in OCC meeting on monthly basis .

- 1) The OCC held in the current month (M) shall discuss the line outages for the period in the next month(M+1).
- 2) The line /element outages are of the following types: Routine Maintenance, Constructional and Inter-Regional.
- 3) As per the control areas, IEGC roles and existing practices WR, OCC discusses all 400 kV and 765 kV lines outages, irrespective of ownership, all inter-regional/ inter-state lines , all 220 kV lines from ISGS stations. Where outage of a line not covered under the above and wholly under a state, for example a 220 kV line in Gujarat, the agency seeking the outage shall have to approach Gujarat STU /SLDC authorities. If there are any problems, WR OCC may be informed for any assistance required.
- 4) The data for the above line outages shall be positively sent by 4th of current month for outages of next month.
- 5) The compiled data is e-mailed to SLDCs /utilities for any comments by 5th .
- 6) Since line outages are becoming complex, they are discussed in a pre-OCC meeting with utilities.
- 7) WR OCC typically meets between 10th to 15th of every month.
- 8) Inter-regional outages shall be preferably planned in the last week. Hence the outage for Inter-Regional can get about 36 days time (15 in current month and three weeks of following month) time for co-ordination by NLDC/WRLDC. NLDC shall co-ordinate inter-regional outages under intimation to the concerned RPC/RLDC. As per letter no. 7 /AI/GD/GM-2012, dated 7th Sept., 2012 from Member (GO & D), CEA, OCC clear NOC for outage of the inter-regional lines in respect of Western Region. NLDC coordinates inter-regional outages under intimation to WRPC/WRLDC. WRLDC coordinates in real-time and also along with line outages already agreed in OCC.
- 9) For construction related outages the dates cannot be exactly planned in advance though the tentative month/ dates may be decided and based on real time conditions the outages can be permitted by WRLDC/SLDC for constructional related category.

- 10) Only those elements planned for maintenance shall be taken for outage subjected to real time condition permitting.
- 11) Urgent outages not in the above plan shall be taken as per advice of SLDC/WRLDC and information of same to all SLDC / WRPC shall be given.
- 12) The status of lines planned vs. lines availed and any deviation from planning or emergency outages for the concerned month shall be submitted by WRLDC for discussion in respective OCC.
- 13) **Code Giving Procedure:** Since short term market clearance depends on available transmission capacity & is cleared on day ahead basis, there was a need for better planning . In this regard he informed that that following was decided in the previous OCC meeting and shall be implemented: (a) All utilities shall confirmed on D-2 about readiness to avail outages(where D is date of outage). (b) WRLDC shall issue code in real time within 10 minutes either the code to avail or cancel depending on real time conditions. (c) All utilities that do not confirm by D-2, those outages shall be deemed cancelled.
- 14) **Clearing of Rescheduled line outages:** SE(Opn), WRPC informed that in spite of planning in the OCC, at times a few outages are required to be shifted in real time. Under such conditions WRLDC is insisting on WRPC to give clearance for shift of plan. SE(Opn), WRPC stated that WRLDC/ SLDC can mutually decide and shift from the plan if grid conditions permit. Only the number of such cases to the possible extent, shall be very few. AGM, WRLDC informed that any shift from the plan cleared from OCC, has to be cleared by WRPC OCC and hence SE(Opn), WRPC was approached. He requested that this practice of getting clearance from WRPC on behalf of the constituents for such changes is very much required. The matter was discussed and OCC members agreed that SE(O), WRPC may on behalf of OCC members, give approval without further consultation with OCC members for such changes, provided system conditions permit WRLDC to give the outage, and the same may be brought to the notice of the next OCC for comments, if any. However the utilities were requested to adhere to the plan as far as possible.
- 15) **Time limits for changes in Outage plan:** AGM, WRLDC informed that outages cleared say more than a month ago but could not be availed in real time due to system conditions were being asked by the utilities. He queried how long the outage earlier planned but not availed may be claimed. The OCC discussed the matter and concluded the following: 1) All outages of M + 1 is cleared by OCC (Where M is the current month) 2) Any outage of M+1, which could not be cleared in M+1, can be availed within the next week. Example any outage planned on Thursday in week W of M+1 month, and not availed can be availed upto the next Thursday in week W +1. Thereafter a new outage plan has to be proposed in the next OCC. (The OCC accepted day wise approach as load-

(3/3)

shedding plans are generally planned day-wise) 3) All outages shall adhere to the Code Giving procedure 4) Considering difficulties in giving line outages, all utilites may plan the outage with adequate manpower and avoid repeating outages again and again.

Automated Defence Plans for secure operation of the Grids

- 1.0 A 12-point resolution was adopted in the meeting taken by Secretary (Power) on 6th August 2012 with Chief Secretaries of Northern Region states. One of the points (No. 11) was that *'POSOCO would evolve a contingency load shedding protocol, especially when non frequency related load shedding is required.'*
- 2.0 A draft template of the same has been prepared considering various scenarios when the system could be under stress. There could be ten different scenarios outlined below.
- i. **Overdrawals:** All constituents shall normally maintain their withdrawal from the Grid strictly as per schedule. In the event of any deviation of actual withdrawal from schedule greater than a set amount when the system frequency is falling below 50 Hz, pre-identified radial load/feeders constituting in different identified Groups shall be automatically disconnected on rotational basis by the command automatically generated from the Programmable Logic Controller (PLC) based Expert System located at SLDCs/RLDCs.
 - ii. **Over-injection/Under-drawal:** Power generating stations shall normally maintain their injection into the Grid strictly as per schedule. In case of state utilities the under-drawal is also not desirable as it could lead to problems in other parts of the grid. Manual generation reduction through secondary control may be resorted to in Stage-I followed by an automatic signal sent from the PLC based Expert System installed at SLDCs/RLDCs to the power stations within the state which can be used for automatically reducing the generation.

- iii. **Under-voltage:** For maintaining system voltage above the minimum limits specified as per IEGC, Automatic Under Voltage Load Shedding scheme (AUVLS) shall be effected. Bus voltage of 400 kV and 220 kV nodes shall be monitored for this purpose. The UVLS shall be a multi-stage scheme and would trip the designated group of loads in case voltage falls below 200 kV/380 kV at the node.
- iv. **Line loading crossing set limits:** Whenever a trunk line loading crosses normal operating limits endangering system security, designated loads shall be disconnected by operation of System Protection Schemes (SPS). In Stage-I Manual disconnection shall be resorted to by the SLDCs/RLDCs. In Stage-II automatic load disconnection shall be effected through PLC based Expert System.
- v. **Power flows exceeding Total Transfer Capability (TTC):** Automatic load disconnection shall be effected in case inter-area flows exceed TTC limits by greater than 100 MW. Based on measurements obtained at RLDCs SCADA automatic load shedding or generation reduction shall be effected.
- vi. **Loss of generation exceeding 1000 MW or loss of high capacity transmission corridor:** In case of sudden loss of generation in excess of 1000 MW or loss of high capacity transmission corridor, automatic control action to be initiated through System Protection Schemes (SPS).
- vii. **Angular separation:** In case of angular separation between any two identified set of nodes exceeding the cut off value (based on system studies with data obtained from PMUs/WAMS), automatic load disconnection of Groups on rotational basis would be automatically generated from the PLC based Expert System located at NLDC/RLDCs.

- viii. **Flat frequency Under Frequency Relays (UFRs):** Four stages of Automatic UFR load relief as decided in respective RPC forum with Stage-I set at 49 Hz, Stage-II set at 48.8 Hz, Stage-III set at 48.6 Hz and Stage-IV set at 48.4 Hz.
- ix. **RATE OF change of frequency or df/dt relays:** In case of sudden major loss of generation or isolation of part or full regional system especially if such grid/system is importing power from adjacent systems the rate of change of frequency protection system shall automatically disconnect pre-identified feeders in its control area.
- x. **Islanding schemes:** Automatic islanding schemes at 47.9 Hz or below through UFRs to isolate power stations with matching loads and dynamic reactive reserves as finalized in respective RPC forums.

3.0 While the Exhibits enclosed have been mainly prepared at RLDC level, it is suggested that a uniform methodology is adopted for feeder selection, grouping etc. so that maximum flexibility is

available during implementation of the scheme. A suggested outline could be as under:

- 3.1 Identify the maximum requirement of load in each state, say A, that needs to be shed. A suggested figure is 60% of the peak load. If the state's peak load is 10000 MW then 'A' would be 6000 MW.
- 3.2 Divide 'A' MW into 100 MW groups so that we get approximately A/100 groups. In this example we would get sixty (60) groups numbered as Group 1, Group 2 and so on up to Group 60.
- 3.3 The groups should be geographically spread throughout the state and not confined to a particular zone or pocket.
- 3.4 For each group or a set of groups, the nearest geographically connected 220 kV or 400 kV node would be identified/listed. For instance Node 1 might contain Groups 1 to 3, Node 2 might contain Groups 4 to 6 and so on. The groups 1 to 3 should be geographically and electrically adjacent to each other.
- 3.5 All state owned coal fired and gas power generating stations above 250 MW would also be identified for automatic generation regulation actions. For instance in the example taken we could have ten (10) such power stations from say Station A to Station J.

4.0 **Typical automatic load shedding matrix:**

For the ten identified schemes at S no. 2 above, the groups could be selected from these sixty (60) and the typical automatic load-shedding matrix could be as tabulated below considering the need

for rotational load shedding and the assumption that generally not more than two contingencies would arise simultaneously.

S no	Logic	Control Action
1	Overdrawal > 12% of schedule or 150 MW (PLC based scheme at LDCs)	On day 1, Group 1 load is shed in the first instance of violation followed by Group 2 in the second instance and so on say upto Group 5 if there are five (5) violations On day 2, Group 6 would be shed for the first violation followed by Group 7 and so on. After Group 60, Group 1 would start.
2	Under-drawals > 12% of schedule or 150 MW (PLC based scheme at LDCs)	On day 1, signal would be sent to Power station 'A' in the first instance followed by station 'B' in the second instance and so on say upto Power station 'C' if there are three (3) violations. On day 2, signal would be sent to the Power station 'D' in the first instance and so on.
3	Voltage <200 kV for more than 5 minutes (Local or PLC installed at the nodes identified)	Under Voltage Load Shedding (UVLS) Relays would be installed at each of the twenty nodes. In case of UV at node 1 shed load in Group 1 and if the UV persists, shed Group 2 and so on.
4	ICT/line loading crossing limits (Local or PLC installed at select locations).	Choose appropriate Groups from 1 to 60 for each set of ICTs/lines.
5	Flows crossing TTC and overdrawal (PLC based scheme at RLDCs)	Choose Group 1 in state 1, Group 1 in state 2 and so on for the first instance violation followed by Group 2 in state 1, Group 2 in state 2 and so on Day 1. On Day 2 move to the group following day 1 for the respective states.
6	Loss of generation > 1000 MW. (PLC based scheme installed at power station end)	Choose appropriate ten (10) groups adjacent to the power station. Further the PLC can also be used to secure the power station in case of depletion of the network emanating from the power station.

Annexure-12.6

TELEMETRY DISCRIPIENCY LIST FOR INDORE T&C CIRCLE

Sr.No	DESCRIPTION	Status	telemetry value at SLDC	actual value at site
Burwaha 220 KV S/S				
1	220 /132 KV TRANSFORMER 1	CB	FAULTY	CLOSE
2	BURWAHA 220 KV NIMRANI	CB	FAULTY	CLOSE
3	132KV IND SZ-1	CB	FAULTY	OPEN
4	220/132KV 160 MVA XMER	OLTC	17	3
5	220/132KV 3X40 MVA XMER	OLTC	17	3
6	63 MVA XMER	OLTC	17	4
Nepanagar 220 KV S/S				
1	160 MVA XMER	OLTC	N/C	
2	3X40 MVA XMER	OLTC	1	9
3	12.5 MVA XMER	OLTC	17	5
4	132/33 XMER (20 MVA) NEW	CB,MW,MVAR,SOE	Telemetry Not available	
5	132 KV NAPA-BADGAON			
6	220/132 KV 3*40 MVA TXMER 220SIDE	CB	FAULTY	CLOSE
7	220/132 KV 3*40 MVA TXMER 132SIDE	CB	FAULTY	CLOSE
8	220KV BUS COUPLER	CB	FAULTY	CLOSE
9	220KV MAIN BUS	VOLTAGE	N/C	
10	220KV MAIN BUS	FREQUENCY	N/C	
SOE'S OF ALL THE FEEDERS ARE NOT COMING				
PITHAMPUR 220 KV S/S				
1	220KV BUS XFER	CB	FAULTY	OPEN
2	220KV PITHAMPUR - RAJGARH I	CB	NC	CLOSE
3	220KV PITHAMPUR- RAJGARH II	CB	NC	CLOSE
4	220KV BUS COUPLER	CB	FAULTY	CLOSE
5	PITAMPUR 132 KV-HML	CB	FAULTY	OPEN
6	132 KV TRB	CB	FAULTY	OPEN
7	132 KV BUS COUPLE	CB	FAULTY	CLOSE
8	132 KV IC-2	CB	OPEN	CLOSE
9	132KV HML	MW,MVAR	NOT AVAILABLE,UPGRADATION OF RTU REQUIRED	
10	132KV PARASRAMPURIYA	MW,MVAR		
11	132KV JAMLI	MW,MVAR,CB		
12	132/33 KV 20MVA TRANSFORMER 2	MW,MVAR,CB,OLTC		
13	132/33 KV 40 MVA TRANSFORMER 3	MW,MVAR,CB,OLTC		
14	132/33 KV TRANSFORMER 2	OLTC	N/C	8
15	220/132 XMER2	OLTC	N/C	11
SOE'S OF ALL THE FEEDERS ARE NOT COMING				
INDORE NZ 220KV S/s				
1	220KV BUS COUPLER	CB	Faulty	Close
2	132KV NZ- SANWER	MW,MVAR CB,SOE	Telemetry Not Available, Upgradation required	
3	132KV NZ- UJJAIN			
4	132KV TRACTION			
5	220KV BUS TIE	CB	FAULTY	CLOSE
6	132KV IND NZ-1	CB	FAULTY	CLOSE

TELEMETRY DISCRIPIENCY LIST FOR NAGDA T&C CIRCLE

Sr.No	DESCRIPTION	status	telemetry value at SLDC	actual value at site
NAGDA 400 KV S/S				
1	400KV NAGDA –RAJGARH 1	CB	FAULTY	CLOSE
2	440/220 ICT-III	CB	FAULTY	CLOSE
3	400KV NAGDA –DEHGAON 2	CB	FAULTY	CLOSE
4	400Kv SUJALPUR-2 & DEHGAON-2 TIE BREAKER	CB	FAULTY	CLOSE
5	400/220 KV ICT II & III	OLTC	N/C	7
NAGDA 220 KV S/S				
1	220/132 XMER(132 SIDE)-III	CB	OPEN	CLOSE
2	125 MVA TRANSFORMER	OLTC	9	8
3	160 MVA TRANSFORMER	OLTC	9	12
4	40 MVA TRANSFORMER –II	OLTC	17	5
5	132/33 XMER NEW	CB, SOE, MW, MVAR	Telemetry not available. RTU configuration required for upgradation already arranged by SLDC.	
6	132 GRASIM	CB	FAULTY	CLOSE
7	132KV BUSCOUPLER	CB	FAULTY	CLOSE
8	220KV BUS COUPLER	CB	FAULTY	CLOSE
NEEMUCH 220 KV S/S				
1	220/132 KV TRANSFORMER 2	CB,SOE	TELEMETRY NOT AVAILABLE.PROVISION OF TELEMETRY ALREADY AVAILABLE.	
2	132KV MANDSOR-1	CB	FAULTY	OPEN
3	132KV MANDSOR-2	CB	FAULTY	OPEN
4	132 MANDSOR 1&2	OLTC	N/C	7
NOTE:-SOE DATA NOT RECEIVED.CONNECTIONS FOR ALL FEEDERS HAVE TO BE VERIFIED				

TELEMETRY DISCRIPIENCY LIST FOR UJJAIN T&C CIRCLE

Sr.No	DESCRIPTION	status	telemetry value at SLDC	actual value at site
DEWAS 220 KV S/S				
1	132/33 KV TRANSFORMER 2	OLTC	N/C	7
2	220KV INDORE EAST(BICHOLI)	CB	FAULTY	CLOSE
3	132KV IC-1	CB	FAULTY	CLOSE
4	132 /33 KV TRANSFORMER 1	OLTC	N/C	8
5	132KV BUSCOUPLER	CB	FAULTY	CLOSE
6	132KV CHAPADA	CB	FAULTY	CLOSE
UJJAIN 220 KV S/S				
1	220/132 KV TRANSFORMER 3*40MVA	OLTC	N/C	6
SHUJALPUR 220 KV S/S				
1	160MVA TRANSFORMER-III	OLTC	N/C	
2	132KV ARNIKALAN	CB	FAULTY	OPEN
3	132/33 63 MVA XMER-2	MW,MVAR,OLTC	Telemetry not available	
4	132KV SHAJAPUR	CB	FAULTY	CLOSE
BADOD 220KV S/S				
1	220/132KV TRANSFORMR	OLTC	NA	

2	132KV BUS COUPLER	CB	FAULTY
3	132/33KV Transformer	CB, SOE, MW, MAVR	Telemetry not available,Proces connection need to be done
4	132 KV Badod- Gahosla		
5	132KV Badod- Suwasar		
RAJGARH DHAR 220 KV S/s			
1	132 KV Bus	VOLTAGE	NOT COMING
2	132 KV Bus	FREQUENCY	NOT COMING
ALL CB AND SOE received as faulty			

TELEMETRY DISCRIPIENCY LIST FOR SATNA T&C CIRCLE

Sr.No	DESCRIPTION	Status	telemetry value at SLDC	actual value at site
Satna 220 KV S/S				
1	SATNA 220KV BUS COUPLER	CB	FAULTY	CLOSE
2	220/132 KV TRANSFORMER 2	CB	FAULTY	CLOSE
3	220/132 KV TRANSFORMER 2	OLTC	N/C	7
4	132/33 KV TRANSFORMER 1	OLTC	N/C	7
5	132/33 KV TRANSFORMER 2	OLTC	N/C	7
6	132 SATNA-SATNA IC-1			
7	132 STANA-SATNA IC-2			
8	220KV KOTAR	CB	FAULTY	CLOSE
Morwa 132 KV S/S				
MORWA RTU FAILED TELEMETRY NOT COMING				

TELEMETRY DISCRIPIENCY LIST FOR JABALPUR T&C CIRCLE

Sr.No	DESCRIPTION	Status	telemetry value at SLDC	actual value at site
NARSINGPUR 220KV S/s				
1	220/132 TRANSFORMER-2	CB	FAULTY	CLOSE
2	220/132 BHEL TR	MW	148	0
3	220/132 BHEL TR	MVAR	10	8
4	220/132 CGL TR	MW	292	20
5	220/132 CGL TR	MVAR	13	10
6	220/132 KV TRANSFORMER 1	OLTC	N/C	7
7	220/132 KV TRANSFORMER 2	OLTC	N/C	5
8	132/33 KV TRANSFORMER 1	OLTC	N/C	6
9	132 BUS TRANSFER	CB	FAULTY	CLOSE
10	132 Narsingpur-Barman-2	CB,SOE,MW,MVAR	TELEMETRY NOT AVAILABLE	
11	132/33 TRANSFORMER-2			
SOE'S OF ALL THE FEEDERS ARE NOT COMING				
Jabalpur 220 KV S/S				
1	JABALPUR 132 KV- MADHOTAL	CB	FAULTY	CLOSE
2	132 KV BUS TRF	CB	FAULTY	CLOSE

3	220/132KV XMER-1 132 SIDE	CB	FAULTY	CLOSE
4	220KV PG-1	CB	FAULTY	CLOSE
5	132KV BARGI -I	MW,MVAR	TELEMETRY NOT AVAILABLE	
6	132KV BARGI -II			
NOTE:- SOE OF ALL THE FEEDERS ARE NOT COMING				

TELEMETRY DISCRIPIENCY LIST FOR GWALIOR T&C CIRCLE

Sr.No	DESCRIPTION	Status	telemetry value at SLDC	actual value at site
GUNA 220 KV S/S				
1	220/132KV XMER-1	OLTC	17	7
2	220/132KV XMER-2	OLTC	NOT AVAILABLE	
3	40MVA XMER 1&2	OLTC	NOT AVAILABLE	
4	132KV BUSCOUPLER	CB	FAULTY	CLOSE
SOE'S OF ALL THE FEEDERS ARE NOT COMING IN GUNA 220 S/S				
GWALIOR 220 KV S/S				
1	132/33 TRF 2	OLTC	NC	8
2	132/33 TRf-4	OLTC	NC	7
3	132 KV BUS COUPLER	CB	FAULTY	CLOSE

TELEMETRY DISCRIPIENCY LIST FOR BHOPAL T&C CIRCLE

Sr.No	DESCRIPTION	status	telemetry value at SLDC	actual value at site
BHOPAL 400 KV S/S				
1	220/132 KV TRANSFORMER-3 132 SIDE	CB	OPEN	CLOSE
2	132KV BHEL	CB	OPEN	CLOSE
3	220KV BAIRAGARH	CB	OPEN	CLOSE
4	220/132KV TR-4	OLTC	NOT AVAILABLE	
SARNI 220 KV S/S				
1	220/132KV 100 MVA XMER-I	OLTC		N/C
2	220/132KV 100 MVA XMER-II	OLTC		N/C
3	132/33 TR1	OLTC		N/C
4	132/33 TR2	OLTC		N/C
5	220KV BUS TRF	CB	FAULTY	CLOSE
6	220KV SARNI PH-I	CB	FAULTY	OPEN
7	220KV SARNI PH-II	CB,SOE,MW,MVAR	Telemetry not available,Proces connection need to be done	
8	220KV PANDURNA			
9	220KV BETUL			
BAIRAGARH 220 KV S/S				
1	220 KV BUS 1	VOLTAGE	143	231
2	220 KV BUS 1	FREQUENCY	N/C	50.22
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	
5	220/132 XMER (160MVA) NEW II	MW,MVAR		

7	132/33 XMER (20 MVA) NEW IV	CB,OLTC	UPGRADATION OF RTU	
8	132/33 XMER (20 MVA) NEW IV	MW		
9	132/33 XMER (20 MVA) NEW IV	MVAR		
10	132KV BHOPAL	CB,MW,MVAR,SOE		
11	BAIRAGRAH 132KV-LALGHATI II	CB	FAULTY	OPEN
12	220KV BUS TIE	CB	FAULTY	CLOSE
13	132KV BUS COUPLER	CB	FAULTY	CLOSE
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 220/132 TR-2	CB	FAULTY	CLOSE
3	132KV HANDIA 220/132 TR-2 132 SIDE	CB	FAULTY	CLOSE
4	220KV BARWAHA	CB	FAULTY	CLOSE
5	220/132 TR-2	OLTC	N/C	
NOTE:- SOE DATA NOT RECEIVED EXCEPT NASRULLAGANJ FEEDER.CONNECTIONS FOR ALL FEEDERS HAVE TO BE VERIFIED				

TELEMETRY DISCRIPIENCY LIST FOR SAGAR T&C CIRCLE

Bina 400 KV S/S				
1	400/220 KV XMER III Primary side	CB	TRANSIT	CLOSE
2	400/220 KV XMER III Secondary side	CB	TRANSIT	CLOSE
Bina 220 KV S/S				
1	132KV BINA –GANGBASODA	CB	N/C	
2	220KV INTERCONNECTOR-2	CB	FAULTY	CLOSE
3	132KV BUSCOUPLER	CB	FAULTY	CLOSE
4	22KV TIKAMGARH	CB,SOE,OLTC MW,MVAR	NOT AVAILABLE	
5	132KV BINA - BORL 1 &2			
6	220/132KV TR-3			
7	132KV BINA – MUNGAWALI	CB,SOE,MVAR		
Tikamgarh 220KV S/S				
1	220KV DAMOH PG	CB	FAULTY	CLOSE
2	220/132KV XMER-II			
3	132KV JATARA			
4	132/33 XMER-2			
5	132/33KV XMER-I	CB	FAULTY	CLOSE
SOE DATA NOT RECEIVED.CONNECTIONS FOR GWALIOR-2,GUNA-1 FEEDERS HAVE TO BE VERIFIED				
Telemetry Discripiency List of Sagar 132,Pipariya 132 not prepared because all two RTU's are not functioning				

Telemetry Discrepancy at power stations

Sr No	DESCRIPTION	Status	telemetry value at SLDC	actual value at site
SATPURA TPS				
1	GT 6	MW	152	0
2	GT6	MVAR	1	1
3	GT7	MW	184	0
4	GT7	MVAR	1	1
5	400KV SATPURA-ISP	CB	OPEN	CLOSE
6	BUS TIE 220 KV	CB	FAULTY	CLOSE
7	GENERATOR-8	CB	OPEN	CLOSE
8	GENERATOR-7	CB	FAULTY	CLOSE
9	GENERATOR-6	CB	FAULTY	CLOSE
10	220KV NUS TIE	CB	FAULTY	CLOSE
AMARKANTAK THERMAL POWER STATION				
1	132KV ANUPUR-1	CB	FAULTY	CLOSE
2	132KV ANUPUR-2	CB	FAULTY	CLOSE
3	132/33 KV TRNSFRMER 5	OLTC	N/C	6
4	132KV BUS COUPLER	CB	N/C	CLOSE
5	220/132 XMER-1 132 SIDE	CB	OPEN	CLOSE
6	220/132KV TR-I	CB	FAULTY	CLOSE
7	132KV BUS	FREQUENCY	N/C	
8	132KV HJIM	CB,MW,MVAR	Telemetry not available,ProcesS connection need to be done	
9	63 MVA 220/132 XMER 2	CB	FAULTY	CLOSE
BARGI HPS				
1	132/33KV TR	MW	0	5
2	132/33KV TR	MVAR	0	2
<p>Note :- The circuit breaker status of all generator/bus coupler etc. are displayed correctly in On condition. However, in off condition, the same is received as faulty.</p>				
TONS HPS				
1	220/33 20 MVA XMER	CB	FAULTY	OPEN
2	GENERATOR-3	CB	FAULTY	OPEN
3	220KV REWA-2	CB	FAULTY	OPEN
4	BUS COUPLER	CB	FAULTY	OPEN
Note:-	SOE CONNECTION NOT DONE FOR ANY FEEDER AT TONS HPS. The matter was taken up in various OCCM meetings as well as telephonically.			
GANDHISAGAR HPS				
1	GENERATOR 4	CB	FAULTY	OPEN
2	GENERATOR 5	CB	FAULTY	OPEN
3	GENERATOR 3	MW	- 4	0
RAJGHAT HPS				
1	RAJGHAT132 KV-LALITPUR	CB	FAULTY	CLOSE
2	RAJGHAT132 KV-PICHHORE	CB	FAULTY	CLOSE
NOTE- SOE CONNECTION NOT DONE FOR ANY FEEDER AT BANSAGAR-II HPS				

Telemetry Discrepancy at SGTPS

Sr No	DESCRIPTION	Status	telemetry value at SLDC	actual value at site
1	220KV IC-3	MW	NOT AVAILABLE	

NOTE:- SOE'S OF MOST OF THE FEEDERS ARE NOT COMING ,CONNECTIONS FOR ALL FEEDERS HAVE TO BE VERIFIED.

BANSAGAR-III HPS			
1	132/33 20 MVA TRANSFORMER	MW,MVAR,CB,SOE,OLTC	Telemetry not available,Process connection need to be done
NOTE- SOE CONNECTION NOT DONE FOR ANY FEEDER AT BANSAGAR-III HPS			

MADIKHEDA HPS			
1	132kv Madhikheda-Karera-II	MW	Telemetred value is coming half
Note :-SOE's of Generator 2& 3, Karera-1&2 feeders are not coming.			
PENCH HPS			
1	132/33KV TRF	OLTC	NOT AVAILABLE
Note:- SOE,S OF ALL FEEDERS ARE NOT COMING			

ANNEXURE-11.2

I. Interface points where ABT meters has not been provided –

Sr. No.	Name of Sub Station	Description of Interface Point
1.	132 kV S/s, Khategaon	132/33 kV Xmer, 40 MVA BBL.
3.	132 KV S/s, Ingoria	132/33 kV Xmer, 20 MVA BHEL.
4.	132 KV S/s, Jamli	132/33 kV Xmer, 63 MVA BBL.
5.	132 KV S/s, Jhabua	132/33 kV Xmer, 40MVA EMCO
6.	132 KV S/s, Satya Sai	132/33 kV Xmer, 20 MVA NGEF
7.	132 KV S/s, Aron	132/33 kV Xmer, 40MVA EMCO
8.	132 KV S/s, Chhegaon	132/33 kV Xmer, 20 MVA TELK
9.	132 KV S/s, Sanawad	132/33 kV Xmer, 20 MVA NEI.
10.	132 KV S/s, Suwasara	132 kV Suwasara Rly. Traction.
11.	132 KV S/s, Mullapura	132 kV Naikheri Rly, Traction.
12.	132 KV S/s, Panwadi	33 KV Sarangpur feeder.
13.	220 KV S/s, Nepanagar	132 KV Chegaon I (For 132KV Rly. Tract. Dongargaon-II).
14.	132 KV S/s, Bahadarpur	132kV Rly. Traction, Burhanpur I&II.
15.	132 KV S/s, Bhonra	132/33 kV Xmer, 20MVA NGEF.
16.	132 KV S/s, Chhegaon	132kV Rly. Traction, Talwadiya.
17.	33 KV Chandel	Chandel Power Station, NVDA I &II
18.	220 KV Nagda	100 MVA LV-I

II. Interface Points where ABT meters are faulty -

Sr. No.	Name of Sub Station	Description of Interface Point
1.	132 KV S/s, Rewa	132/33 kV Xmer, 40 MVA BHEL.
2.	220 KV S/s, Rewa	132/33 kV Xmer, 40 MVA NGEF.
3.	132 KV S/s, Katangi	132/33 kV Xmer, 40MVA BBL.
4.	132 KV S/s, Khandwa	132/33 kV Xmer, 40MVA BHEL.
5.	132 KV S/s, Rewa	132/33 kV Xmer, 40 MVA NGEF.
6.	220 KV S/s, Nagda	132kV Rly. Traction, DRM, Nagda.
7.		
8.	132 KV S/s Meghnagar	132kV Rly. Traction, Bamniya.
9.	132KV S/S MORWA	132/33 KV 10MVA X-mer-II (EMCO)
10.	132KV S/S NEEMUCH	132/33 KV 20MVA X-mer BBL

III. Interface points where ABT meters has not been provided –

Sr. No.	Name of Sub Station	Description of Interface Point
1.	SATPURA PH	33 KV CHP FEEDERS
2.	ATPS CHACHAI	SETTLING TANK END
3.	SGTPS	0.4KV MANGTHAR FEEDER

IV. Interface Points where ABT meters are faulty -

Sr. No.	Name of Sub Station	Description of Interface Point
1.	RAJGHAT HPS	33 KV CHANDERI
2.	SGTPS BRSP	400/220 KV ICT (220 KV Side)