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No.07-05/SG-9B-II/2068 Jabalpur, dated 10-07-2013

To

As per distribution list

Sub: Minutes of 34th meeting of Operation and Coordination Committee of MP.

Please find enclosed herewith the Minutes of 34th meeting of the Operation and Coordination Committee of MP held **on 24th June 2013 at 11.00 AM** at **State Load Despatch Centre, MPPTCL, Jabalpur.** The Minutes is also available on the website of SLDC 'www.sldcmpindia.com'.

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

Encl : As above.

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MINUTES OF 34TH MEETING OF OPERATION & COORDINATION COMMITTEE OF MP TO BE HELD ON 24TH JUNE 2013 AT 11.00 AM AT STATE LOAD DESPATCH CENTRE, MPPTCL, JABALPUR

34th meeting of Operation & Co-ordination Committee of MP was held on 24TH June 2013 at SLDC, MPPTCL, Jabalpur. The list of participants is enclosed at Ann.-1.0.

The meeting commenced with welcoming the participants in the meeting by Shri P.A.R.Bende, Chief Engineer (LD) & Chairman OCC. He stated that the present system position is almost same as compared to last two months i.e April 13 and May 13. The system frequency remained above 50.2 Hz during Apr 13 for 7.00 % time and 11.99 % time during May 2013 which is on higher side. The system frequency below 49.7 Hz during Apr 13 was 3.24 %time and 0.96 %time during May 2013. He further informed that Central Electricity Regulatory Commission has notified the draft CERC (Deviation Settlement Mechanism and related matters) Regulations, 2013 which shall repeal the CERC (UI Charges and related matters), Regulations, 2009 and volume of injection / drawal & system frequency shall have definite impact on intra state entities of MP also. He stated that in draft regulation, CERC proposes narrowing down frequency band to 49.95 Hz to 50.05 Hz. He further informed the committee members that in draft regulation of CERC, there is penalty for both over drawal/under drawl and over injection/under injection. Now each entities has to maintain their actual drawal / injection nearer to their schedule to avoid any penalty. All the entities have been requested to go through the draft regulation and submit their comments to CERC before due date i.e. 19.07.2013.

He further informed that voltage profile is on slightly higher side though there is some improvement in the month of June 13 with respect to previous months. As per CERC regulation on Frequency response characteristics, the RGMO should be in operation as per clause 5.2(f) of IEGC and there is no exemption for generating units qualifying under clause 5.2(f) of IEGC. The Revised procedure for congestion has also been issued by CERC and the congestion of corridor has been delinked with frequency. He requested the DISCOMs to discuss the modalities of Implementation of GSES and ADMS.

Thereafter, Chairman, OCC requested Shri K.K Parbhakar, Member Secretary (OCC) to take up the agenda items for discussion**.**

ITEM NO. 1 : CONFIRMATION OF MINUTES : Member Secretary informed that minutes of 33rd meeting of Operation & coordination committee of MP held on 26.04.2013 at Rani Awanti Bai hydel power stations, Bargi were forwarded to the committee members vide No**.** 07-05/SG-9B-II/1556 dated 28.05.2013**.** No comments have been received from the members. The minutes of the 33rd meeting of Operation & coordination committee of MP have been confirmed by the Committee**.**

ITEM NO. 2 : REVIEW OF SYSTEM OPERATION DURING THE MONTHS APRIL 2013 TO MAY 2013.

2.1 Frequency Particulars : Member Secretary, OCC stated that during May 2013 the system frequency was below 49.7 Hz for 0.96% of time against 3.24% of time during April 2013. The system frequency was within the IEGC range of 49.7-50.2 Hz for 87.05 % of the time during May 2013 against

89.76 % of time during April 2013. The average monthly frequency was 50.05 Hz during May 2013 and 50.03Hz April 2013. Regarding operation in high frequency range, frequency during the month of May 2013 was above 50.20 Hz for 11.99% of time against 7.00% of time during April 2013. The system frequency did not touch 48.8 Hz during the above period.

The detailed frequency particulars for the month of April 2013 and May 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
April 2013	50.07 Hz	49.65 Hz	50.60 Hz	49.33 Hz	50.67 Hz
May 2013	50.05 Hz	49.74 Hz	50.59 Hz	49.25 Hz	50.94 Hz

2.2 Operational Matters

2.2.1 Operational Discipline : Member Secretary, OCC stated that system operated in terms of frequency profile for the months April 2013 and May 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
April 2013	3.24 %	7.00%	89.76%	50.03 Hz	0
May 2013	0.96 %	11.99%	87.05%	50.05 Hz	0

Member Secretary, OCC presented the 15 minutes average frequency graph for the month of April 2013 and May 2013. He also presented the Discom wise Hourly Average Schedule vs Actual Drawal along with hourly average frequency for month of April 13 and May 13. He informed the committee that it can be seen from the graph that the frequency was almost on higher side particularly during night hours. However East Discom was overdrawing during night hours as well as during peak hours.

Chairman OCC stated that there may be incidences of drawal within schedule as a whole state but one DISCOM may be at over drawl and other may be at under drawl condition, as such both the Discoms may require to pay charges for deviation beyond 150 MW as per draft regulation and to mitigate the violation. Under drawing DISCOM were suggested to go for surrender and the over drawing Discom take un-requisition power. Looking to provisions of draft regulation, real time revision by DISCOMs may be essential to maintain drawl within specified limit, accordingly a working mechanism may be developed by DISCOMs and MPPMCL.

2.2.2 Messages for drawal curtailment : Member Secretary, OCC stated that the total number of messages of significant violation of IEGC by the DISCOMs for overdrawing at frequency below 49.7 Hz is as given hereunder:

MONTH	East Discom	Central Discom	West Discom	Total
April 2013	3	4	2	9
May 2013	0	0	0	0

2.3.1 Voltage Profile : Member Secretary, OCC stated that the date wise voltage profile at some of the important 400 KV and 220 KV substations during the months April 2013 and May 2013 is enclosed at **Annexure -2.3.1.**

During the months April 2013 and May 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	April 2013				May 2013			
		Max. Voltage observed		Min. Voltage observed		Max. Voltage observed		Min. Voltage observed	
		Voltage	Date	Voltage	Date	Voltage	Date	Voltage	Date
1	Indore	426	20.04.13	---	---	422	11.05.13	---	---
2	Itarsi	428	09.04.13	---	---	425	25.05.13	---	---
3	Bina	426	19.04.13	---	---	426	11.05.13	---	---
4	Gwalior	422	04.04.13	---	---	417	11.05.13	---	---
5	Nagda	427	20.04.13	---	---	424	11,18.05.13	---	---
6	Khandwa	432	16.04.13	---	---	433	30.05.13	---	---
6	Satpura	429	20.04.13	---	---	426	19.05.13	---	---
7	Birsingpur	429	18,19.04.13	---	---	430	07,17,18.5.13	---	---
8	ISP	430	02,14.04.13	---	---	431	02,17.05.13	---	---
9	Bina 765kv	803	02.04.2013			804	11.05.13		

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 May 2013 as submitted by DISCOMs is as detailed below :

DISCOM	Capacitor bank installed in good condition (No)		Capacitor bank installed but defective & are repairable (No)			Requirement of repair against each unit (No)	Requirement against non-repairable capacitor banks		Capacitor banks already covered under ADB T-V		Balance capacitor banks to be covered in other schemes	
	600 KVAR	1200 KVAR	600 KVAR	1200 KVAR	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	359	153	40	06	-	94	0	0	--	--	--	--

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	399
2	MVAR capacity of connected capacitors in partially good condition	109.5	42.6	14
3	MVAR capacity of connected capacitors in good condition including partially good condition.	1262.7	927	413
4	MVAR capacity of connected capacitors covered under ADB 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

Member secretary informed the committee that the information furnished by East Discom was not consistent and wide variations were observed in each OCC meeting and requested East Discom to verify and submit the latest and final status to SLDC.

2.3.3 Status of Shunt Capacitor Banks installed at various EHV Transmission Substation : Member Secretary, OCC stated that the updated information of the status of Installed capacitor banks(in MVAR) in EHV transmission system as on 31st May 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		---	---	---	

2.4.1 Status of completion of on going Transmission Schemes being executed by MPPTCL : Member Secretary, OCC stated that the various ongoing Transmission Schemes for the current financial year i.e. Year 2013-2014 and latest status of completion of various ongoing Transmission Schemes for the current financial year i.e. Year 2013-2014 upto 31.05.2013 as submitted by MPPTCL is enclosed as annexure **2.4.1(i) and 2.4.1(ii)**.

2.4.2 U/F and df/dt Relay Operation

(i) **U/F and df/dt Relay Operation:** Member Secretary, OCC stated that Frequency did not touch 48.80 Hz or below during April 2013 to May 2013.

(ii) **Defective u/f, df/dt relays:** Member Secretary, OCC stated that MPPTCL has informed that there is no defective u/f and df/dt relay.

(iii) **Review of df/dt and Under Frequency Relay:** Member Secretary, OCC stated that the revised u/f plan shall be prepared after receipt of feeder list having u/f relay and should be prepared group wise / district wise indicating quarterly average load. The same may be submitted by CE(Plg. & Design) MPPTCL to SLDC.

The information is submitted by MPPTCL. The revised u/f plan shall be prepared after finalizing feeder list for ADMS.

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

(i) Member Secretary, OCC stated that the details of DISCOM wise Power supply to various domestic categories during the period April 2013 to May 2013 is enclosed at **Annexure 2.5(i).**

(ii) **Group Allocation to Newly Commissioned existing EHV substations :-** Member Secretary, OCC stated that as per information submitted by CE (Plng. & Design), the region wise list of 33

KV feeders 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	04
02		Sagar	01
03		Rewa	13
04		**Total**	**18**
05	WEST	Indore	04
06		Ujjain	08
07		**Total**	**12**
08	CENTRAL	Bhopal	15
09		Gwalior	06
10		**Total**	**21**
TOTAL		**Grand Total**	**51**

Discoms are requested to furnish the details as per list enclosed at **annexure-2.5(ii)**

Member Secretary informed that the updated status of group allocation to newly constructed feeders as per list enclosed at Annexure 2.5(ii) of the agenda is not furnished by the DISCOMs and requested to submit the same from Next OCC meetings in advance so that consolidated analysis of present status/ pendency could be prepared and discussed in the meeting.

ITEM NO. 3 : OPERATIONAL PLANNNING

3.1 Generating Units under planned outage and proposed maintenance programme : Member Secretary, OCC informed the committee members that the planned outage of MPPGCL units for the period July 2013 to August 2013 is as under :-

SN	Description	Capacity	From	To	Reason
01	Amarkantak # 3	120 MW	01.07.2013	25.07.2013	AOH
02	Amarkantak # 4	120 MW	01.08.2013	25.308.2013	AOH
03	Satpura # 6	200 MW	05.08.2013	23.09.2013	AOH
04	Satpura # 8	210 MW	01.07.2013	20.08.2013	AOH
05	SGTPS # 2	210 MW	15.07.2013	05.08.2013	AOH
06	SGTPS # 3	210 MW	15.08.2013	08.09.2013	AOH

3.2 Proposed shutdown programme of Transmission lines / Transformers: Member Secretary, OCC stated that the proposed shutdown of transmission elements for the period 01.07.2013 to 31.08.2013 has been submitted by MPPTCL, MPPGCL and NHDC.

3.3 Long Outages of transmission elements and protections : Member Secretary, OCC stated that the transmission elements as detailed below are under long outages :

SN	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. Work contract estimate prepared & submitted for approval. Expected by Mar 14.

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. However the same is also included in R&U scheme of WRPC.
3	220 KV Bus bar protection scheme at SGTPS Birsinghpur	Since commissioning of 220 KV switch yard	The scheme not available	One offer is received. Case file under process for placement of order. However the same is also included in R&U scheme of WRPC.
4	220 KV Bus bar differential protection at TONS HPS	Since commissioning	Not mentioned	New scheme with digital relays is required to be procured & commissioned. Case is under process. However the same is also included in R&U scheme of WRPC.
5	400KV Main Bkr of Satpura-ISP Line	04.08.2012	Not mentioned	Material procured and work contract tender under process & may take 6 months time to finalize..
6	132/33KV 20MVA (NGEF) at 220KV S/s Pandhurna	16.02.2013	Differential Protection and Bucholtz relay operated	New 40 MVA charged on 21.06.13
7	132 /33 KV 20 MVA (NGEF) transformer at 132 KV Kanwan	04.03.2013	For Augmentation work by 40 MVA.	The new 40MVA X'mer has been charged on 29.04.2013.
8	132/33 KV 20 MVA(NGEF) at 132 KV Manasa	22.03.2013	For Augmentation work	The new 40MVA X'mer has been charged on 22.04.2013
9	132 / 33 KV 40 MVA ECE Transformer at Chhegaon S/s	15.04.2013	For Reconditioning work	

Chairman OCC stated that outage of 63MVAR Bus-I Reactor at Satpura TPS, Bus bar Differential at ATPS, SGTPS and Tons HPS, Main Bkr of Satpura-ISP Line can not be prolonged for indefinite period and requested MPPGCL to expedite the matter so as to ensure availability of above transmission elements latest by September 2013 accordingly submit their action plan within 7 days to SLDC.

ITEM NO. 4 : OPERATIONAL STATISTICS FOR THE MONTH OF APRIL AND MAY 2013 : Member Secretary, OCC stated that 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.

ITEM NO. 5 : SYSTEM DISTURBANCE IN MP DURING APRIL AND MAY 2013 : Member Secretary, OCC stated that there was no major grid disturbance in MP during April 2013 to May 2013. However the Grid Disturbances and Grid Incidents in MP during April 13 and May 13 are given in **Annexure 5.0**.

Member secretary informed that the tripping report of Tons HPS and Shivpuri sub-station was submitted by respective entities after vigorous persuasion by SLDC despite the regulatory requirement

of submission of report within 24 hours. Chairman OCC stated that inordinate delay in submission of tripping report should be avoided and authenticity of contents of the reports should be maintained.

ITEM NO. 6.0 : IMPORTANT OPERATIONAL ISSUES

6.1 Absorption of reactive power by generators: - Member Secretary, OCC stated that during the ensuing monsoon season the voltage profile is going to be high due to less system demand and low line loadings. The problem of high voltages becomes severe during night/off peak hours. It is observed that during these hours MVAR absorption at generating units is not significant. The power factor at many generating plants is non-conformity with CEA Technical Standards for connectivity to Grid Regulations-2007. All the generating stations are advised to absorb reactive power from grid within their capability curve to maintain voltages within operational limits. The Chairman, OCC informed the Committee that SLDC shall start issuing the code for absorption of reactive power by the generator, and emphasized the requirement of absorption of reactive power by the generators as and when asked by SLDC.

6.2 Outage of various Transmission Elements - Member Secretary, OCC stated that **i**t 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. 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 which is not approved in the OCCM of WR except those of emergency nature.

6.3 Frequent tripping of 220 KV feeders at Omkareshwar Hydel Power Stations : - Member Secretary, OCC stated that 220 KV feeders emanating from Omkareshwar are tripping frequently on over voltage. This matter was discussed in a meeting between NHDC and MPPTCL. It was decided that the over voltage setting and time delay are to be graded and following settings were advised to be implemented on 220 KV feeders emanating from OSP –

(i)	220 KV OSP- Barwaha tapped Nimarani	-	108% with time delay of 6 Sec.
(ii)	220 KV OSP- Barwaha Line	-	110% with time delay of 6 Sec.
(iii)	220 KV OSP- Julwania Line	-	108% with time delay of 5 Sec.
(iv)	220 KV OSP-Chhegaon Line	-	110% with time delay of 5 Sec.
(v)	220 KV OSP-Khnadwa Line	-	110% with time delay of 5 Sec.

The instantaneous over current settings of Generator Transformer is also to be revised from 1.5 times with 70 msec to 4 times with same time delay. The NHDC has confirmed that the same has been implemented.

Member secretary OCC pointed out that Omkareshwar has not furnished the line loading of each feeders with 8 / 6 / 4 / 2 machines in service after implementation of above time settings. The OSP representative ensured to submit the same at the earliest.

6.4 Change of CT ratio of all feeders at Omkareshwar Hydel Power Station : Member Secretary, OCC stated that the CT of 220 KV Nimrani and 220 KV Chhegaon line at Omkareshwar has been changed to 800/1 Amp. The updated status of replacement of CTs in remaining three feeders may be submitted in the meeting.

NHDC representative informed that 220 KV main buses of OSP are designed to carry only 2500 amp with quadruple moose conductors. The case of procurement of CT for balance three nos of lines is kept on hold in view of construction of 6th bay at 220 KV switchyard of Omkareshwar by MPPTCL. He further stated that after commissioning of 6th bay at OSP the replacement of CT in the balance three lines may not be required. CE (Plng & Desg) stated that requirement of 6th bay at Omkareshwar has already been decided and MPPTCL has arranged funding from PFC for the same. MPPTCL representative and Chairman OCC informed that provision of CT of 800/1 amp in 220KV feeders is as per prevailing practice of adopting 800/1 Amp CT for 220KV lines and OSP has to replace CTs of the remaining three feeders with 800/1 Amp irrespective of construction of 6th bay at OSP.

6.5 Bus Bar Protection Scheme :- Member Secretary, OCC stated that it has been noticed that bus bar protection scheme is not in place at some of the EHV sub stations / Generating stations. WRLDC in its tripping reports specifically mentioned in analysis of tripping at Amarkantak TPS that absence of Bus-Bar protection led to tripping of all the elements connected on both the buses. Such occurrences have severe impact on the security and reliability of the grid. There is a need to review protection schemes provided at generating stations and EHV sub-stations 220 KV & above on priority. Action should be taken for upgradation of protection system wherever necessary and bus bar protection system should be kept in service all the time and problem if any should be rectified on priority.

MPPTCL has informed that the order for commissioning of bus-Bar protection at 220KV Nagda and Katni has already been placed and informed the committee that bus bar differential in remaining sub-stations shall be completed with a time frame. Member Secretary OCC stated that all the entities should submit their action plan for installation and commissioning of bus-bar protection scheme at their power stations/ sub-station to SLDC, if not already commissioned. He further informed that SLDC shall forward a format to all concern to submit the availability of bus-bar protection in all 220 KV and 400 KV Sub stations/Power Stations. Chairman OCC further stated that bus-bar protection at major / important substation should be installed and commissioned at the earliest.

6.6 ISSUING CODE FOR OPERATION OF 132KV TRANSMISSION ELEMENTS IN THE STATE GRID: - Member Secretary, OCC stated that SLDC has already started issuing the code for operation of transmission elements in the state grid w.e.f. 01.11.2012. MPPTCL has informed SLDC that with the existing procedure charging of transmission elements specially 132 kV feeders gets delayed and requested SLDC to review the same so as to minimize the delay. It has been decided that the code for switching of 132 KV transmission elements within the area of Sub SLDC Indore and Bhopal shall be issued by respective Sub-SLDC from 01.07.2013. However the present practice of issuing code for transmission elements at 220 KV and above and all interstate inter-utility lines shall be within the jurisdiction of SLDC.

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

7.1 Black Start mock drill of Tons HPS: Member Secretary, OCC stated that 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.

MPPGCL informed the committee that one machine is ready for black start mock drill and remaining two units shall be available within three months i.e. up to Sep 13. Chairman OCC stated that Black Start Mock Drill date shall be finalized in the next OCC meeting.

7.2 Black Start mock drill of Madikheda, Rajghat & Birsinghpur HPS: Member Secretary, OCC stated that 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 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 Madhikheda 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 Madhikheda 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 battery. MPPGCL has also informed that the governor is not working properly and hunting is observed.

Chairman OCC stated that all the problem in Madikheda, Rajghat and Birsinghpur Hydel should be resolved upto Spe'13 so that the black start mock drill of above HPS could be finalize.

ITEM NO 8: SOME IMPORTANT MATTERS REQUIRED IMMEDIATE ATTENTION:

8.1 Quarterly Review of Crisis Management Plan: Member Secretary, OCC stated that all the entities are requested to submit the CMP report for the fourth quarter (January 2013 to March 2013) for the year 2012-13. NHDC and SLDC informed the committee they have submitted the CMP report of fourth quarter to WRPC. Member secretary stated that other entities should also submit the same to CEA/WRPC with intimation to SLDC.

8.2 Status of Physical & Cyber Security in Power Sector regarding : Member Secretary, OCC stated that 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 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.

ITEM NO 9: <u>OTHER OPERATIONAL ISSUES :</u>

9.1 RGMO status of generating units in WR :- Member Secretary, OCC stated that the RGMO feature is not available in any of the eligible units of MPPGCL Thermal and Hydel Stations except SGTPS # 5. The RGMO in both units of Jaypee Bina TPS is also not implemented. Thus primary response from these machines is not available.

Member Secretary OCC requested all the entities to submit their action plan to SLDC and RGMO should be made available in all the eligible units of MPPGCL/IPP within two months. Chairman OCC stated that as per CERC regulation on primary frequency response, all the generators have to put th RGMO in service without any exemption.

9.2 Action on the recommendations of the Enquiry Committee formed by MoP on Grid Disturbances on 30th & 31st July 2012: It was decided and agreed in the 117th PCM held on 3rd & 4th June 2013, that in WR, the following nodal agencies would be responsible for submission of data pertaining to implementation of recommendations made by Grid Disturbance enquiry committee.

Sr. no.	Data pertaining to	Nodal Agency
1	State	SLDC
2	Power Grid	PG WR-I & WR-II
3	NTPC	NTPC WR-I & WR-II
4	POSCO	WRLDC

The respective nodal agencies are required to submit a report in the prescribed format by 1st and 15th of every month.

The format in which the information has to be submitted is enclosed as **Annexure 9.2**.

(i) Information in Format 1 to 3 is to be submitted by SLDC and CTU by 1st and 15th of every month.

(ii) Information in format 4 is to be furnished by SLDC /WRLDC/POSOCO by 1st and 15th of every month.

(iii) Information in Format 5,7 &8 is to be furnished by WRLDC POSOCO by 1st and 15th of every month.

(iv) Information in format 6 is to be furnished by CTU by 1st and 15th of every month.

(v) The information related to FGMO/RGMO in format 9 to be furnished by WRLDC by 1st and 15th of every month.

It is therefore necessary that the updated status are submitted to SLDC in the prescribed formats i.e. Format 1 to Format 4 to SLDC by 1st and 15th of every without fail for onward transmission to CEA/ MoP, GoI through WRPC.

Member secretary OCC requested all the entities to furnish the information in prescribed format 1 to 4 by 1st and 15th of every month by 14.00 Hrs without fail.

9.3 Implementation of GSES and Automatic Demand Management Scheme (IEGC 5.4): Member Secretary, OCC stated that **the** 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.

A meeting was held on 01.06.2013 at SLDC, Jabalpur to discuss the implementation of GSES and ADMS in Madhya Pradesh. Representative of all three DISCOMs, STU, MPPTCL and MPPMCL have attended the meeting.

It was decided in the meeting that the 60% of annual average demand has to be defined in GSES, out of which 28% would be in under-frequency and df/dt, 30% in ADMS and remaining 2% for others (consisting of exempted feeders, shutdowns, outages, Naxalite area feeders etc.). The group allocation for under frequency should be different from ADMS to avoid over lapping. It was decided that the DISCOMs shall prepare their load mapping for ADMS such that a total 30 groups in each DISCOMs are formed. The DISCOMS are required to submit the load mapping details to SLDC by 20.06.2013.

In the 23rd WRPC meeting, it was clarified that the ADMS shall be separate from GSES and SLDC through DISCOMs have to implement the same. It was proposed in the meeting that Maharashtra shall perform common study for the WR entities and shall formulate the logics etc. by appointing a consultant for which the constituents shall share the cost. Though the proposal was approved in TCC meeting, the same was not agreed in the WRPC meeting as DISCOM representative was of the opinion that study for formulating the schemes logics etc. should be conducted at state level by appointing the consultant by MP SLDC. Accordingly the decision was conveyed in the WRPC meeting.

The Chairman, OCC proposed that the cost towards consultancy service may be shared by the DISCOMs in proportion to their normative % allocation of power, which should be confirmed to SLDC within a week time, so that further action in the matter could be initiated.

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He further informed that load mapping for ADMS has been done by DISCOMs. However, only Central DISCOM has furnished quarterly average load whereas other DISOCMs have furnished annual average load for load mapping. Chairman requested East and West Discoms to consider quarterly average load for load mapping. Member Secretary requested the DISCOMs to complete the activities within a week and submit the information to SLDC.

Chairman OCC requested all the DISCOMS representatives to intimate their consent for funding after taking approval from higher authority. He further requested that DISCOMs shall also intimate that DISCOMS should clarify within a week to SLDC whether they are agree for proposal of WRPC to conduct common study for all WR constituents through Maharashtra or MP should conduct separate study so that the same may be informed to WRPC.

9.4 Nomenclature of three phases : Member Secretary, OCC stated that it has been observed that nomenclature for three phases is used as both R,Y,B and A,B,C and also X,Y,Z. Sometimes in the tripping report of occurrence submitted to SLDC two types of nomenclature are used in the same report which leads to misjudgment of relay indication while preparation of detailed report of occurrence at

SLDC / WRLDC. It is advised to use R,Y,B terminology for three phase in future. The WRLDC has also pointed out the same & advised to adopt standard practice. MPPTCL informed that the substation staff is conveying the relay indications as appear in the relay panel. However the tripping reports shall be prepared by the T&C section using R,Y,B terminology for submission to SLDC.

9.5 Communication problem at Tons HPS : Member Secretary, OCC stated that the PLCC communication for Tons HPS remains out for most of the times. The matter has been brought into the notice of MPPGCL and MPPTCL from time to time and but the problem still persist.. During the ensuing Mansoon season Tons machines are required to be run as per reservoir level of Behar Barrage and discharge into CWC from Bansagar dam, so as to avoid discharge of water through spillway gates. The communication through DoT telephone is not possible for most of the time due to geographical situation of Tons HPS. Thus to ensure proper utilisation of water, reliability of PLCC communication is necessary.

Member Secretary requested MPPTCL and MPPGCL to look into the matter and fault if any in PLCC channel should be rectify at the earliest. The MPPTCL representative stated that PLCC link between Jabalpur and Satna is working alright and fault is at Tons end. The Chairman OCC requested MPPTCL to depute a PLCC expert at Tons HPS to ascertain the problem and rectify the problem.

9.6 REVISED REGULATION ON CONGESTION MANAGEMENT : Member Secretary, OCC stated that the Hon'ble Central Electricity Regulatory Commission (CERC) has approved the "Revised Procedure for relieving Congestion in Real Time " prepared by NLDC in compliance to sec.4(2) (2) of the CERC (Measures to relieve congestion in real time operation) Regulation-2009. The same is available on CERC web site in the following link. http://cercind.gov.in/2013/regulation/26_4.pdf The same is also available on WRLDC web site (www.wrldc.com). The committee discussed the salient points of the regulation for better understanding and compliance by all WR constituents and utilities.

The Salient Points of the Revised Procedure are as follows:

- Frequency factor de-linked from imposition of congestion charge
- Provision for Non-imposition of congestion charge for FORCED OUTAGE withdrawn.
- Provision for TTC/ATC revision following a forced outage.
- Provision for TTC/ATC revision for Voltage Limit / Line loading limit violation in real time.

Chairman OCC stated that all the entities should go through the regulation and informed the committee that the congestion management shall also be implemented in inter-state and intra state corridor in future. He further informed whenever there is a notice of congestion, the DISCOMS should act properly and not ignore the same to ensure security and reliability of the system and also to avoid imposition of congestion charge.

9.7 CERC ORDER ON FREQUENCY RESPONSE CHARACTERISTIC (FRC) PETITION :- Member Secretary, OCC informed that the Hon'ble commission (CERC) in its recent order (dated 3.5.2013) on petitions on the matter of enforcing adequate frequency response from all control areas in Indian Grid

through primary response, has approved the "Procedure for Assessment of Frequency Response Characteristic (FRC) of Control areas in Indian Power System". The order is available on WRLDC web site on link http://wrldc.com/docs/CERC_Order_on_FRC.pdf. The procedure has been developed by NLDC to monitor the compliance of regulation 5.2(f) of the grid code (IEGC). The Honorable Commission (CERC) has approved the "Procedure for Assessment of FRC of Control Areas in Indian Power System" formulated by NLDC.

Further Hon'ble CERC has also directed in its order that all generating stations shall comply with Regulation 5.2(f) of the Grid Code and failing which appropriate proceeding shall be initiated against them for non- compliance with the provisions of the Grid Code and directions of the commission.

The Member Secretary requested all the intra state entities in MP to go through procedure and ensure availability of controls and protection i.e. RGMO, SPS, under frequency relays and df/dt relays etc. and detailed information may be furnished to SLDC, so that composite frequency response characteristics could be computed by SLDC

Chairman OCC stated that the as per regulation SLDC may also define the control area within the state to compute the frequency response and submit the report to WRPC as per format FRC-1 given in the regulation.

9.8 : SCHEDULING ISSUES AT NTPC STATIONS DURING FUEL SHORTAGE CONDITIONS:- Member Secretary, OCC stated that in the 23rd WRPC meeting it was decided by the beneficiaries that if in future NTPC declares DC under fuel shortage conditions, all the beneficiaries will give flat requisition and under such condition the WRLDC shall schedule according to the requisition. If however, any of the beneficiary deviates from the same, the maximum DC shall be considered for PAF. Whether such methodology is also to be adopted in intra state is to be decided by the state beneficiaries.

Chairman OCC requested DISOCMs to convey their readiness for implementation of this condition at intra state level within one week, after taking approval of their commercial section.

9.9 : Scheduling of Kawas and Gandhar Gas Stations of NTPC :- Member Secretary, OCC stated that **i**n the 23rd WRPC, the regional beneficiaries including MPPMCL agreed to NTPC offer that day ahead power of Kawas and Gandhar if not scheduled, the gas may be diverted to any other region. The NTPC communication is enclosed as **Annexure 9.9.**

9.10 : Installation of Line Shunt reactors on Nagda-Indira Sagar and Indira Sagar-Satpura 400 Kv lines at 400 KV Nagda, Indira Sagar and Satpura TPS :- Member Secretary, OCC stated that in the 23rd Meeting of WRPC, MPPTCL and WRLDC proposal for installation 125 MVAR Bus reactor at Indira Sagar and Birsingpur and 50 MVAR line reactor at both end of 400 KV lines on ISP–Satpura and ISP- Nagda was discussed. It was decided in the meeting that MP STU shall submit the proposal in next standing committee meeting for installation of these reactors..

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

10.1. Independent Third Party Protection Audit of Generating Stations and EHV Substations : Member Secretary, OCC stated that one of the recommendation of the enquiry committee constitute by MoP, GoI was to carry out third party protection audit by the utilities. The SLDC has carried out the internal protection audit of 37 Sub Station / Power stations in MP. Progress of third party protection audit may be submitted by each utility i.e. MPPTCL/MPPGCL/NHDC and IPPs to SLDC.

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

11.1 Replacement of faulty ABT meters and providing new ABT meters at Sub-stations : Member Secretary, OCC stated that **the** Substation wise list of around 12 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 are enclosed herewith as **Annexure – 11.1.** The list has also been furnished to T&C. The present status along with plan for replacement / installation of ABT meters may be discussed.

SE(T&C) informed that replacement of faulty ABT meters and installation of ABT meters in place of non-ABT meters is in process and shall be expedited. Moreover, replacement of faulty meter is in routine practice. SE(GCC) informed that procurement of ABT meters for SGTPS and STTPS complex has been initiated and stock of spare ABT meters shall be available shortly at each Power stations.

11.2 Providing Meter Master Details along with ABT Meter Data : Member Secretary, OCC stated that it has been observed that changes in CT / PT ration, replacement of faulty ABT, multiplying factor etc. are not furnished by the entities along with ABT meter data. It is therefore desired that standard practice may be adopted to furnish meter master details along with ABT meter data. All the intra-state entities has assured to provide Meter Master Details along with ABT meter data and MPPGCL has informed that complete details of all the ABT meters installed at Power stations have been recently sent to SLDC.

11.3 Implementation of AMR system at Generating Stations : Member Secretary, OCC stated that 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. CE (Plg & PS) informed that it will not be possible for them to process extension of the order placed on M/s Secure Meters Ltd to include AMR facility for ABT meter installed at power stations. However the extension order may be issued by MPPGCL for additional hardware items such as modem, antenna, communication channel etc., the extension order for AMR software may not be required. SLDC requested MPPGCL to short out the technical issue and ensure implementation of AMR facility for down loading of ABT meter data of power stations.

11.4 Details of Renewable Energy Generators : Member Secretary, OCC stated that as per CERC order dtd. 16.01.2013, the mock exercise for forecasting / scheduling of Renewable generations for implementations of Renewable Regulatory Fund (RRF) mechanism has already been commenced wef 01.02.2013 and RRF mechanism shall be effective from 01.07.2013. The details of Renewable Energy

Generator, date of commissioning of dedicated feeder of RE Generators with MP grid, Weekly ABT Meter data of Renewable Energy injected into the grid through dedicated feeder generation etc. have been requested from MPPTCL / DISCOMs. However the information from West DISCOM is not received by this office so far.

SLDC informed the submission of energy data for all renewable energy sources to CEA is mandatory requirement and the details are also required to include the same in State Energy Account. However the complete information from West Discom is not received in this office energy sources,.

ITEM NO 12 : SCADA/EMS RELATED ISSUES :

12.1 ARRANGEMENT OF INFRASTRUCTURE FOR REPORTING OF RTUS TO DUAL CONTROL CENTERS, AS PER REQUIREMENT OF MAIN SLDC AT JABALPUR AND BACKUP SLDC AT BHOPAL:-

The matter was discussed in detail and SLDC explained that the procurement of material for arranging additional data channels, Modems for both end (control centre as well as RTU end) and software configuration of RTU's is to be arranged in advance so that reporting of RTU to dual control centre may be achieved along with commissioning of backup SLDC. It was further clarified by SLDC that detailed requirement has also been send through UO NO. 198 dated 24-06-2013. SLDC specifically requested all concern to study the requirement and initiate the necessary action in the matter for which all agreed.

It was also informed by SLDC that the ABB RTUs available at Rajghat & Bansagar III HPS and 132KV Seoni, 132KV Balaghat, 220KV Katni S/s shall also required to be replaced as upgradation required for dual control centre reporting of RTU's is not possible and spare support for these RTUs is also withdrawn by the firm

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

(A) SLDC informed that the monitoring of the commissioning of new RTUs was done by WRLDC/NLDC and due to non fulfillment of targets in the matter Honorable CERC has filed an Suo Motu petition No. 56/SM/2013. Hearing of the same is scheduled on 27th June 2013. The progress of installation and commissioning of RTU's was further reviewed and it was informed by MPPTCL that so far only 32 RTU is commissioned and integrated with SCADA/EMS system. It is assured by T&C /T&P MPPTCL that the commissioning & integration of balance RTUs shall be completed shortly.

(B) Arrangement of communication channel for 132KV Waidhan and 132KV Kotma S/s was discussed .T&C representative informed that the same will be completed within a week.

(C.) The problems related with integration of RTU at 220KV Sidhi & 220KV Chindwara is also discussed and MPPTCL representative assured to sort out the issues related with these S/ss within a week time.

(C.) The matter of balance process connections of RTU commissionined is also discussed and it was informed by SLDC that at most of the locations, where RTU is commissioned by M/s Chemtrol, SOE connections is pending. It was assured by T&C representative to arrange balance process connections specially SOE connections, on priority basis.

(D.) It was informed by SLDC that RTU configuration data base is to be maintained properly so that the same may be available at the time of restoration of RTU/upgradation of RTU. It was decided to nominate officers at T&C circle level for maintenance of RTU database, as configuration and maintence

terminal has already been delivered to T&C circles. SLDC also requested to provide a copy of wiring details of RTU commissioned.

(E) It was assured by the MPPTCL to arrange the training on Calisto^{NX} RTU from the firm, on priority basis. SLDC specifically requested that configuration of RTU for dual control centre reporting may be included in the training so that RTU configuration required for backup SLDC reporting can be achieved.

12.3 MAINTENANCE OF RTU's & AVAILABILITY OF SPARES:-

MPPGCL:- It was informed by SLDC that the spare procured earlier is going to be exhausted soon & therefore procurement of spares needs to be arranged. It was assured by ED(O&M:GEN), MPPGCL to initiate the necessary action in the matter, at the earliest.

MPPTCL:- It was informed by SLDC that the spares procured earlier, specially D20 CPU has already been consumed. The CPU released from Sub Stations after dismantling of RTU has already been exhausted. Now spare CPU along with other spares eg. D20 ME CPU, D20ME rack, NSK-5 modems, transducers, CMRs etc is to be procured. It was specifically informed by SLDC that RTU at 132KV Morwa S/s, 132KV Astha S/s and 220KV Neemach S/s is not functioning because of non availability of spare CPU.

SLDC also informed that the matter has already been discussed in last three OCCM meetings, but spares has not arranged, so far. It was informed by T&C that action is being initiated for procurement of spares at the earliest.

12.4 ARRANGEMENT OF TELEMETRY FOR SINGAJI TPS:-

It was informed that channel route has already been finalised and PLCC panels has been released by MPPTCL. Further, the data list mentioning details of IO points, object addresses has already been prepared by SLDC and forwarded to MPPGCL. SLDC further requested to arrange configured VFT modem for control centre end and inform the commissioning schedule of telemetry.

Further, the matter of planning of communication channel for Singaji TPS stage-2 was also discussed and decided that the same shall be planned after finalization of evacuation path.

12.5 THE ARRANGEMENT OF DATA CHANNELS FOR REMOTE VDU INSTALLED AT GCC, DCC & CMD MPPTCL CHAMBER.

It was informed by SLDC that BSNL have laid the OFC cable upto SLDC for SLDC's requirement under FTH scheme. Therefore utilities may also approach BSNL for data channel on OFC network so that fast and reliable communication channels are available, for which all utilities agreed.

It was specifically informed by SLDC that for functioning of remote work stations from new SCADA system a high speed & reliable communication link is a prerequisite & hence SLDC again requested all concern departments to arrange the reliable high speed data channel for remote VDU.MPPGCL, MPPTCL,DISCOMS agreed for the same.

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

It was informed by SLDC that the progress of various works related to telemetry and communication, is being closely monitored by WRLDC/NLDC and **due to non fulfillment of targets in the** matter Honorable CERC has filed an **Suo Motu petition No. 56/SM/2013.** Hearing of the same is scheduled on **27th June 2013**. In view of the Honorable CERC directives, these works need to be taken up on

priority basis. Further it was informed by SLDC that satisfactorily progress in the matter is not achieved despite constant persuasion.

It was informed by SLDC that telemetry discripiency and upgradation for RTU work is still pending for Hydel Power Stations. MPPGCL assured to complete the telemetry discripiency and completion of extention of process connections of SOE at HYDEL power stations at the earliest.

It was informed by MPPTCL that completion of work for removal of telemetry discripiency and upgradation of RTU in Gwalior & Ujjain Circle is in advance stage of completion & other circles, it will be completed shortly. SLDC specifically requested to arrange completion of work at 20KV Tikamgarh, 220KV Bina, 220KV Narsingpur, 220KV Handia ,for which MPPTCL agreed to complete within a month.

Further, it was also assured by MPPTCL that action for upgradation of RTU at 220KV Sarni S/s & 220KV Pandurna which is required because of interdiscom feeders shall be initiated shortly.

12.7 LONG OUTAGE OF RTU's

SLDC informed that the RTU's at 220KV Damoh, 132KV Morwa, are not functioning since long time. CE (T&C) informed that order for installation and commissioning of new RTU at Damoh has already been placed and expected to be delivered shortly. Further, telemetry of 132KV Morwa S/s shall be normalized within next fifteen days.

SLDC further informed that in the matter of outage of RTU is monitored by SERC through quarterly MIS report hence long outage need to be avoided.

SLDC further informed that the restoration of telemetry of HPS is very difficult due to non availability of trained manpower, level meters, spares etc. Inordinate delay is being observed in restoration of telemetry of all HYDEL POWER stations. ED(O&M:GEN) assured to look into the matter and informed to depute manpower from HPS for training to SLDC/MPPTCL. Further he also assured for arrangement of level meters and spares required for restoration of telemetry of HPS.

12.8 PROVIDING ALTERNATE DATA CHANNELS & EXPRESS VOICE CHANNELS FOR RTU STATIONS:-

The matter was discussed in detail specifically for arranging alternate data channels for Hydel power stations. As voice and data channels provided through PLC for Hydel power stations are most unreliable, SLDC also requested MPPGCL to evaluate other media eg. Satellite phones from Hydel power stations to SLDC. Further it was assured by MPPGCL to look into the voice channel problems at Madikheda, Pench, Gandhisagar etc.

12.9 NON AVAILBILITY OF TELEMETRY OF M/s BLA POWER

M/s BLA power informed that the RTU & associated equipments required for telemetry along with PLCC panels required for establishment of communication channel have already been delivered and CMRs delivery is expected shortly. M/s BLA power has confirmed that the telemetry of their power Stations shall be arranged by July 2013. SLDC specifically requested to confirm the arrangement of MODEM required at control centre end for which M/s BLA power agreed.

12.10 TELEMETRY DISCRIPIENCY OF M/S JP BINA :-

It was informed by M/s JP Bina that instructions for rectification of telemetry discrepancies has already been issued to concern agencies and shall be sorted out shortly.

ITEM NO. 13. High Voltage Problems at SSGS Thermal Power Stations : Member Secretary, OCC stated that Executive Director (O&M : Gen) vide letter dtd. 07-03/GCC/ 1812 dtd. 10.06.2013 has requested to include the agenda point in the 34th OCC meeting of MP.

ATPS :-Voltages are running in the range of 230-234 KV of ATPS and that results the failure of CT's in switchyard at ATPS Chachai.

SGTPS :- At SGTPS Birsingpur switchyard the voltages are continuously running on higher side i.e. 426-430 KV due to lightly loaded line.

He further informed that STPS sarni is also facing high voltage problem

ITEM NO. 14. SUPPLEMENTARTY AGENDA OF 34TH OPERATION & COORDINATION COMMITTEE MEETING OF MP

SA-1: Deviation Settlement Mechanism and related matters, Regulations, 2013 (Draft): Member Secretary, OCC stated the Central Electricity Regulatory Commission has notified the draft CERC (Deviation Settlement Mechanism and related matters) Regulations, 2013 which is available on the Commission's website. The Commission has invited the comments/suggestions/ objections on the draft regulations by 19th July 2013. Comments/suggestions/objections received after the stipulated date in the Commissions office may not be considered while finalizing the regulations. When notified, the Deviation Settlement Mechanism and related matter Regulations, shall repeal the CERC (UI Charges and related matters), Regulations, 2009.

As the proposed regulations have direct impact on the generators and beneficiaries, the entities may go through the regulations and offer their comments if any, directly to the CERC within the stipulated time.

SA-2 Technical Minimum running of Thermal Generating Units: Member Secretary, OCC stated it is a normal practice that the generations from running thermal generating units are backed down by revising injection schedule under low load conditions to its technical minimum ex-bus generation. The technical minimum is generally considered as 70% of ex-bus installed capacity. Some of the generators have objected to the same and cited many reasons for not running the unit at 70% of its rated ex-bus capacity.

The Generating Companies have been requested to submit within 7 days the OEM's design criteria for technical minimum from the OEM's technical manual, so that the technical minimum of the generators can be defined. Till such time the 70% ex-bus rated capacity shall be considered for giving the technical minimum injection schedule under low load conditions to ensure the reliability and security of the integrated grid.

ITEM No 15 : DATE AND VENUE OF NEXT OCC MEETING : It is proposed to hold 33rd OCC meeting of Operation and Coordination Committee of MP in the third week of August 2013 at SLDC, MPPTCL, Jabalpur.

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ANNEXURE-I

PARTICIPANTS OF 34TH OCC MEETING HELD AT SLDC JABALPUR Dtd. 24.06.2013

S.No.	NAME	DESIGNATION	OFFICE	TEL. NO.	E-MAIL ADDRESS
1	P. A. R. Bende	CE	SLDC, MPPTCL, Jabalpur	9425805264	
2	K. K. Prabhakar	SE	SLDC, MPPTCL, Jabalpur	9425805267	
3	S. S. Patel	SE	SLDC, MPPTCL, Jabalpur	9425805270	
4	S. K. Gaikwad	SE	SLDC, MPPTCL, Jabalpur	9425805014	
5	J. Agasty	EE	SLDC, MPPTCL, Jabalpur	9425806822	jwagasty@gmail.com
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8	Ravi Sethi	CE(Plg&Desg.)	MPPTCL	9425805228	cbps321@yahoo.com
9	F. D. Thakur	SE	O/o CE(T&C), MPPTCL	9425805043	cetandc@yahoo.co.in
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11	M. K. Raghuvanshi	AE	O/o. CE(Plg&Desg.), MPPTCL	9425806816	cbps321@yahoo.com
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13	P. K. Saxena	SE(GCC)	MPPGCL	9425806609	segcc.mppgcl@gmail.com
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25	Vinod Kumar Singh	Manager(E)	NHDC, CO	9425952513	vinodnhdc@rediffmail.com
26	R. S. Sharma	Sr. Presidal	JP BINA POWER	9993582101	
27	Rohit Namdeo	Engineer	JP BINA POWER	9752596304	rohit.bpsclbina@gmail.com
28	Kalpesh Gosuami	Sr. Manager	INST (BLA)	8966903803	kalpeshg@bla.co.in
29	U. P. Sharma	Sr. Manager	Electrical BLA	8959592161	upsharma@bla.co.in

FREQUENCY PARTICULARS

S. No.	Particulars	Apr-13		May-13	
1	**INTEGRATED OVER AN-HOUR**				
1.1	Maximum Frequency	50.6 Hz	Between 13.00 hrs & 14.00 Hrs on 05.04.13	50.59 Hz	Between 17.00 hrs & 18.00 Hrs on 12.05.13
1.2	Minimum Frequency	49.65 Hz	Between 22.00 hrs & 23.00 Hrs on 08.04.13	49.74 Hz	Between 10.00 hrs & 11.00 Hrs on 07.05.13
1.3	Average Frequency	50.03 Hz		50.05 Hz	
2	**INSTANTANEOUS FREQUENCY**				
2.1	Maximum Frequency	50.67 Hz	AT 18.02 HRS ON 16.04.13	50.94 Hz	AT 17.34 HRS ON 12.05.13
2.2	Minimum Frequency	49.33 Hz	AT 03.03 HRS ON 09.04.13	49.25 Hz	AT 10.10 HRS ON 07.05.13

3 Percentage of time when frequency was :-

	%age of time when frequency was	Apr-13	May-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	0.15	0.03
3.5	Between 49.50 Hz and 49.7 Hz	3.09	0.93
3.6	Between 49.70 Hz and 50.2 Hz	89.76	87.05
3.7	Between 50.20 Hz and 51.0 Hz	7.00	11.99
3.8	Between 51.0 Hz AND 51.5 Hz	0.00	0
3.9	Above 51.5 Hz	0.00	0
4	No. of times frquency touched 48.80 Hz	0	0
4.1	No. of times frquency touched 48.60 Hz	0	0
4.2	No. of times frquency touched 51.0 Hz	0	0

Voltage Profile During the Month of APR- 2013

Date	Indore		Itarsi		Bina		Gwalior		Nagda		Birsingpur		Satpura		ISP	
	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
1	420	407	424	411	418	407	419	413	423	407	426	416	425	415	426	416
2	423	404	427	407	421	402	420	389	424	403	426	417	426	413	430	411
3	423	410	427	412	422	407	418	395	424	408	426	418	427	416	428	417
4	420	409	426	417	423	405	422	390	423	408	426	416	424	414	427	416
5	420	404	424	406	420	402	420	389	421	404	427	416	424	412	426	413
6	420	403	423	408	419	405	414	389	423	406	426	416	423	411	426	412
7	421	409	423	413	419	406	415	391	423	408	426	416	426	417	429	416
8	419	404	423	408	419	403	417	390	421	407	426	416	424	413	427	408
9	420	407	428	412	422	409	421	398	421	420	426	419	427	416	426	416
10	421	406	423	410	420	400	420	399	423	406	425	417	426	415	426	415
11	420	408	423	411	420	412	417	403	423	411	426	418	424	417	425	417
12	420	407	422	411	420	409	414	402	423	409	424	416	424	414	426	417
13	421	409	424	411	422	410	416	406	423	410	426	419	425	417	429	418
14	420	409	423	411	424	413	420	407	422	409	427	419	426	418	430	417
15	420	409	423	411	425	414	415	406	422	409	426	417	424	414	427	412
16	419	402	421	410	424	411	418	400	418	403	426	415	426	414	426	413
17	419	403	422	409	421	410	413	400	422	405	424	417	424	414	426	412
18	419	403	422	409	424	415	417	405	422	405	429	421	427	418	427	418
19	423	411	426	412	426	415	421	407	424	408	429	421	428	419	429	415
20	426	404	425	406	422	406	413	402	427	406	427	421	429	413	429	411
21	423	406	421	409	418	406	413	400	423	405	426	416	427	414	429	413
22	420	405	420	408	413	404	410	397	422	405	423	416	424	414	426	413
23	420	405	420	408	415	403	414	401	422	405	421	415	424	410	425	411
24	420	403	422	407	417	404	410	399	424	403	423	416	425	412	426	414
25	420	407	423	410	417	409	410	399	423	409	427	419	427	414	427	418
26	419	406	420	408	417	408	415	399	421	406	426	418	422	414	426	416
27	420	400	421	403	412	400	408	396	420	400	424	415	424	410	427	406
28	420	406	420	406	415	404	408	398	422	407	424	418	423	413	427	414
29	418	404	419	406	412	404	411	399	420	407	423	417	421	412	425	415
30	420	406	422	410	416	407	409	400	421	408	423	416	422	413	428	416
31																
Max / Min	**426**	**400**	**428**	**403**	**426**	**400**	**422**	**389**	**427**	**400**	**429**	**415**	**429**	**410**	**430**	**406**

Voltage Profile During the Month of MAY - 2013

Date	Indore		Itarsi		Bina		Gwalior		Nagda		Birsingpur		Satpura		ISP	
	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
1	419	402	420	404	417	403	412	402	422	402	424	418	422	411	429	416
2	419	402	418	406	416	408	412	401	417	403	423	418	423	410	431	416
3	421	404	422	404	421	405	415	400	421	405	424	415	423	410	427	418
4	421	404	422	404	419	407	411	403	421	405	423	416	425	413	430	418
5	421	409	423	410	419	406	412	401	421	409	424	416	424	414	427	408
6	421	406	421	407	417	404	410	393	422	407	428	416	423	412	427	411
7	421	410	423	411	418	411	413	400	423	408	430	418	423	415	429	417
8	421	405	423	409	417	408	414	402	422	406	422	416	423	414	428	419
9	420	405	421	406	420	409	415	400	423	407	421	415	423	411	429	418
10	420	407	421	409	419	410	413	402	423	409	421	416	421	413	428	419
11	422	406	423	407	426	412	417	405	424	406	424	415	424	414	429	419
12	421	406	424	405	421	404	416	410	422	407	426	416	423	411	429	421
13	417	402	421	404	418	404	410	400	419	403	421	415	421	409	430	421
14	419	404	422	408	420	407	410	399	421	404	421	415	423	412	428	419
15	421	402	421	405	420	407	413	403	423	403	421	415	423	410	430	419
16	420	405	423	410	421	412	415	403	423	407	429	419	423	413	429	418
17	420	405	423	410	420	408	412	396	423	407	430	422	424	413	431	416
18	421	406	424	411	421	409	412	401	424	407	430	417	424	415	428	421
19	421	407	424	410	424	411	413	401	423	409	424	415	426	416	428	415
20	421	407	424	410	418	407	411	395	423	409	421	415	422	413	428	417
21	420	401	420	409	417	409	411	399	423	402	424	418	423	414	429	418
22	419	404	420	406	418	407	408	396	421	404	422	416	421	412	428	416
23	419	405	423	407	421	410	412	397	421	408	421	416	422	411	427	418
24	420	403	423	410	422	412	415	399	422	404	423	418	423	411	426	417
25	421	407	425	411	422	411	413	401	422	407	424	417	424	414	427	420
26	422	409	423	413	419	411	414	402	423	410	424	417	423	415	429	419
27	419	406	423	413	417	407	413	399	421	406	422	416	421	416	426	415
28	420	404	422	409	417	402	412	394	421	405	423	414	420	411	427	417
29	421	403	423	408	418	405	415	397	422	404	421	415	421	412	428	417
30	420	403	424	409	422	408	412	398	420	402	424	416	423	412	428	416
31	421	406	424	411	425	411	416	400	421	406	430	418	423	415	428	419
Max	**422**	**401**	**425**	**404**	**426**	**402**	**417**	**393**	**424**	**402**	**430**	**414**	**426**	**409**	**431**	**408**

EHV TRANSMISSION LINES FOR THE YEAR 2013-14 (AS ON 31.05.2013)

(Rs.in Lakhs)

S. No.	NAME OF THE TRANSMISSION LINE	TYPE OF CIRCUITS	ROUTE LENGTH	CKT.KMS.	COMPLETION PROGRAMME	FUNDING AGENCY	ESTIMATED COST	PROGRESS IN %
A.	**400 KV TRANSMISSION LINES**							
1	400KV DCDS Indore (PGCIL) - Pithampur line (2x64)	DCDS	64	128	Dec-13	PFC	9551.00	60%
2	400KV DCDS Malwa TPS - Pithampur line (2x135.85)	DCDS	135.85	271.7	Sep-13	PFC	20464.00	99%
3	400KV DCDS Chhegaon - Julwania line (2x114)	DCDS	114	228	Mar-14	PFC	16088.00	44%
	Sub Total (A)		**313.85**	**627.7**			**46103.00**	
B.	**220 KV TRANSMISSION LINES**							
1	LILO of 220KV Nagda - Neemuch line for Daloda 220kV S/S. (2x4.41)	DCDS	4.41	8.82	Sep-13	PFC	555.00	88%
2	Ashta (400) - Indore - II (Jaitpura) (2x100)	DCDS	100	200	Mar-14	PFC	5603.00	33%
3	Ratlam - Daloda DCSS Line (1x72.541km)	DCSS	72.541	72.541	Jan-14	PFC	3704.00	43%
4	LILO of Itarsi - Narsinghpur 220 DCDS line at Chichali S/S. (DCDS) (2x2.06)	DCSS	2.06	4.12	Sep-13	PFC	178.00	55%
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	PFC	191.00	56%
6	220KV line from Gwalior (400kv) (PGCIL) to Gwalior (220kv) (II) (2x0.76)	DCDS	0.76	1.52	Dec-13	JICA	275.00	60%
7	220KV Berchha -Shajapur DCDS line (2x20)	DCDS	20	40	Mar-14	JICA	2674.00	1%
8	LILO of Jabalpur(Sukha) - Birsinghpur/Amarkantak DCDS line at 220kv S/S Panagar. (DCDS)	DCSS	3.541	8	Mar-14	JICA	638.00	9%
	Sub Total (B)		**205.842**	**340.061**			**13818.00**	
C.	**132 KV TRANSMISSION LINES**							
1	132kv Sidhi - Deosar DCDS line (2x50.62)	DCDS	50.62	101.24	Jun-13	ADB - II (S)	2198.00	99%
2	2nd Ckt of Satna - Pawai section for Nagod 132kv S/s (19.50)	2nd ckt	19.5	19.5	Mar-14	PFC	453.47	90%
3	Shivpuri - Mohna DCSS (1x63km)	DCSS	63	63	Sep-13	UNFUNDED-II Priority work	1963.00	54%
4	132kv Sagar - Banda line.(1x28.562)	DCSS	28.562	28.562	Sep-13	PFC	1368.00	89%
5	Mandsaur - Neemuch DCDS line (2x50.508 Kms)	DCDS	50.508	101.02	Mar-14	PFC	2410.00	62%
6	Chhatarpur - Nowgaon DCSS line (34Kms)	DCSS	34	34	Dec-13	PFC	1100.00	58%
7	LILO of 132 kv Barman - Gadarwara line for Chichli 220 KV S/s (2x14)	DCDS	14	28	Jun-13	PFC	893.00	83%
8	132kvHoshangabad -Khatpura tap to Shahganj DCSS line (1x9.630)	DCSS	9.63	9.63	Mar-14	JICA	841.00	87%
9	132kv DCDS line for Diversion of 132 kv Handiya-Nasrullaganj tap lin & second circuiting of 132 kv Handiya-Nasrullaganj line and * 132 kv DCSS Tap line for proposed 132kv S/s GOPALPUR (2x8.5+1x3.35) (GoMP)	DCDS	11.85	20.35	Apr-13	GoMP	*800	26%
10	132kv Birsinghpur -Shahdol DCSS line (1x48)	DCSS	48	48	Mar-14	UNFUNDED-II Priority work	994.00	4%
11	132kvA lot- Sitamau DCSS line (1x39.336+4x3.364)	DCDS	42.7	52.792	Mar-14	JICA	4200.00	18%
12	132kv Badod -A lot-DCSS line (1x28)	DCSS	28	28	Mar-14	JICA	1143.00	8%
13	132kv Ichhawar -Sehore DCSS line (1x35.298)	DCSS	35.298	35.298	Mar-14	JICA	1326.00	2%
14	132kv Handiya(220kv)-Satwas DCSS line (1x37)	DCSS	37	37	Sep-13	JICA	1331.00	6%
15	132kv Tikamgarh (220kv)- Digoda line (1x37)	DCSS	20	20	Oct-13	JICA	812.00	11%
16	132kv Chhatarpur (220kv)- Laundi line (1x43)	DCSS	43	43	Mar-14	JICA	1868.00	1%
17	Lilo of Balaghat -Birsa 132kv line at Baihar (DC) (2x10)	DCSS	10	20	Sep-13	JICA	482.00	19%

EHV TRANSMISSION LINES FOR THE YEAR 2013-14 **(AS ON 31.05.2013)**

(Rs.in Lakhs)

S. No.	NAME OF THE TRANSMISSION LINE	TYPE OF CIRCUITS	ROUTE LENGTH	CKT.KMS.	COMPLETION PROGRAMME	FUNDING AGENCY	ESTIMATED COST	PROGRESS IN %
18	LILO of one circuit of 132 kv Rewa(Ph-II) - PH-IV/Beohari line at proposed 132 kv s/s at Rampur Naikin (2x0.29)	DCDS	0.29	0.29	Sep-13	JICA	74.00	20%
19	LILO of 132 kv Indore - Barwaha line for Simrol KV S/s (2x2x5)	DCDS	5	20	Jun-13	PFC	1480.10	13%
20	LILO of 132 kv Indore(SZ) -Indore(Chambal) for proposed 132 KV S/s at Indore Electronic complex (2x0.4)	DCDS	0.4	0.8	Sep-13	JICA	59.00	10%
21	LILO of 132 kv Indore(SZ) -Dewas for proposed 132 KV S/s at Raukhedi (2x0.286)	DCDS	0.286	0.57	Sep-13	JICA	58.00	20%
22	LILO of 132 kv S/C Jabalpur - Damoh line at proposed 132 KV S/s at Tejgarh (2x2.5)	DCDS	2.5	5	Sep-13	JICA	127.00	15%
23	132 kv DCDS Ujjain(220 kv) -Chandrawatiganj line (2x35.42)	DCDS	35.42	70.84	Mar-14	JICA	1945.00	2%
24	132 kv DCSS Dewas-Barotha line (1x16.7)	DCSS	16.7	16.7	Dec-13	JICA	1293.00	3%
25	132 kv DCSS Gautampura-Depalpur line (1x19)	DCSS	19	19	Dec-13	JICA	661.00	4%
26	132 kv DCSS Ghatabillod-Betama line (1x16.147)	DCSS	16.147	16.147	Dec-13	JICA	798.00	2%
27	132 kv DCSS Tikamgarh (220kv)-Budhera line (1x32)	DCSS	32	32	Dec-13	JICA	1790.00	1%
28	132kv Jeerapur -Susner DCSS line (1x32)	DCSS	32	32	Mar-14	JICA	983.00	3%
29	132kv Julwaniya -Anjad DCSS line (1x23)	DCSS	23	23	Mar-14	JICA	854.00	2%
30	132kv Katra -Mauganj DCSS line (1x42.21)	DCSS	42.21	42.21	Mar-14	JICA	1703.00	1%
31	132kv Bina-220kv Khurai DCSS line (1x17.61)	DCSS	17.61	17.61	Dec-13	JICA	713.00	2%
32	132kv Nagda(220kv)- Kachrod-Jaora DCSS line (1x44.6)	DCSS	44.16	44.16	Mar-14	JICA	2268.00	4%
33	132kv lines between 220 kv Pipariya s/s & 132 kv Semari Harchand (Sohagpur s/s) .(1x38.83)	DCSS	38.83	38.83	Sep-13	JICA	1548.00	4%
34	132kv Sajapur (220kv) -Berchha DCDS line (2x35)	DCDS	35	70	Jun-14	JICA	1533.00	4%
35	132kv DCSS Chhindwara(220kv) -Bichhua DCSS line (1x26.9)	DCSS	26.9	26.9	Mar-14	JICA	1052.00	2%
36	132kv From 220kv Hosangabad -M/S Security Paper mill (SPM) ITARSI DCSS line (1x1.350)	DCSS	1.35	1.35	2013-14	Contrib.	0.00	97%
37	132kv Gudgaon-M/s Betul wind near kurku (DIST.-BETUL) DCSS line (1x24.976)	DCSS	24.976	24.976	Mar-14	Contrib.	0.00	11%
38	220kv S/s Maihar -M/s KJS Cement ltd. Amiliya (DIST.-Satna) DCDS line (2x5.60)	DCDS	5.6	11.2	Mar-14	Contrib.	0.00	67%
39	220kv S/s Anooppur -M/s MB Power ltd. Jaitahri (DIST.-Anooppur) DCSS line (1x20.10)	DCSS	20.1	20.1	Mar-14	Contrib.	0.00	10%
40	M/s Orient Green power Plant to 132kv S/s Gadarwara (DIST.-Narsinghpur) DCSS line (1x5.116)	DCSS	5.116	5.116	Mar-14	Contrib.	0.00	82%
41	220kv S/s MandiDeep -M/s Proctor & Gamble MandiDeep (DIST.-Bhpoal) DCSS line (1x9.0)	DCSS	9	9	Mar-14	Contrib.	0.00	5%
42	220kv S/s Maihar -M/sReliance Cementation maihar (DIST.-Satna) DCSS line (1x11.535)	DCSS	11.535	11.535	Mar-14	Contrib.	0.00	45%
43	Modification / Shifting of 220kv Jabalpur-Amarkantak DCDS Line due t proposed Bilgaon Medium Irrigation tank Project (2x8.04)	DCDS	8.04	16.08	Mar-14	Contrib.	0.00	22%
44	Modification / Shifting of 220kv Sukha-Birsinghpur/Amarkantak DCDS Line due to proposed Bilgaon Medium Irrigation tank Project (2x6.56)	DCDS	6.56	13.12	Mar-14	Contrib.	0.00	4%
45	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	Contrib.	0.00	20%
	Sub Total (C)		**1045.681**	**1298.209**			**42321.57**	
	Grand Total (A+B+C)		**1565.37**	**2265.97**			**102242.57**	

EHV TRANSMISSION LINES FOR THE YEAR 2013-14					**(AS ON 31.05.2013)**			
					(Rs.in Lakhs)			
S. No.	**NAME OF THE TRANSMISSION LINE**	**TYPE OF CIRCUITS**	**ROUTE LENGTH**	**CKT.KMS.**	**COMPLETION PROGRAMME**	**FUNDING AGENCY**	**ESTIMATED COST**	**PROGRESS IN %**
EHV SUB STATIONS UNDER PROGRESS DURING 2013-14				**(AS ON 31.05.2013)**				
S.No.	**NAME OF THE SUBSTATION**	**VOLTAGE RATIO (KV)**	**No.OF X-mer & Cap. (MVA)**	**EFFECTIVE CAPACITY MVA**	**COMPLETION PROGRAMME**	**FUNDING AGENCY**	**ESTIMATED COST (Rs.in Lakhs)**	**PROGRESS IN %**
A.	**400 KV SUBSTATIONS**							
1	Ashta (New S/s) (Distt. Sehore)	400/220	2x315	630	Sep-13	PFC - II	8844.00	80%
2	Julwania (New S/s) (Distt. Badwani)	400/220	2x315	630	Mar-14	PFC - II	8620.00	8%
	Sub Total (A) (400 kv)			**1260**			**17464.00**	
B.	**220 KV SUBSTATIONS**							
1	Chichli (New S/s) (Distt. Narsinghpur)	220/132	1x160	160	Oct-13	PFC	2885.00	46%
2	Jabalpur (ADDL) (Distt. Jabalpur)	220/132	1x160	160	Nov-13	UNFUNDED-Priority work	794.00	25%
	Sub Total (B) (220kv)			**320**			**3679**	
C.	**132 KV SUBSTATIONS**							
(a)	**NEW SUBSTATIONS**							
1	Mohna (Distt. Shivpuri)	132/33	1x40	40	Sep-13	GoMP	1000.00	58%
2	Deosar (Distt. Sidhi)	132/33	1x40	40	Jun-13	PFC - II	987.00	98%
3	Nowgong (Distt. Chhatarpur)	132/33	1x40	40	Sep-13	PFC - II	957.00	56%
4	Banda (Distt. Sagar)	132/33	1x40	40	Jun-13	PFC - II	957.00	95%
5	Simrol (Distt. Indore)	132/33	1x63	63	Jul-13	PFC	1146.00	27%
	Sub Total (C.a) (132kv)			**223**			**5047.00**	
(b)	**ADDITIONAL / AUG. WORKS**							
1	132kv Seondha(20-40)MVA Aug.	132/33		20	Jun-13	MPPTCL Fund	81.00	20%
2	220kv Maihar(20-40)MVA Aug.	132/33		20	May-13	MPPTCL Fund	131.00	40%
3	132kv shieopurkalan(20-40)MVA Aug.	132/33		20	Jul-13	Posed to newADB - III Loan	558.00	20%
4	132kv Gairatganj (20-40)MVA Aug.	132/33		20	Aug-13	JICA	581.00	35%
5	132kvkannod 20MVA Addl.	132/33	1x20	20	Aug-13	Posed to newADB - III Loan	148.00	50%
6	132kv Petalawad 20MVA Addl.	132/33	1x20	20	Aug-13	MPPTCL Fund	111.00	50%
7	132kv Garoth 20MVA Addl.	132/33	1x20	20	Aug-13	Posed to newADB - III Loan	474.00	70%
8	132kv Barwaha 20MVA Addl.	132/33	1x20	20	Aug-13	Consumer contributory work	0.00	40%
9	132kv Ashoknagar 40MVA Addl.	132/33	1x40	40	Aug-13	MPPTCL Fund	0.00	51%
	SUB-Total (C.b)			**200**			**2084**	
	Grand Total (A+B+C)			**2003**			**28274.00**	
Total Cost of EHV Lines and Substations under progress (A+B+C) Amount in Lac.							**130516.57**	**12.06.2013**

ANNEXURE - III

M.P POWER TRANSMISSION COMPANY LIMITED

TRANSMISSION WORKS COMPLETED DURING 2013-14 (UP TO 31.05.2013)

S. No.	NAME OF THE TRANSMISSION LINE / (FINANCED BY)	TYPE OF CIRCUITS	ROUTE LENGTH	CIRCUIT KMS.	DATE OF COMPL-ETION	DATE OF COMMI-SSIONING	ESTIMATED COST (Rs. In lacs)	TSP	SCSP	TSP / SCSP	GEN
I.	**EHV TRANSMISSION LINES**										
A.	**400 KV TRANSMISSION LINES**										
1	**NIL**		0.00	0.00	0		0	0	0	0	0
	Total (A)		**0.00**	**0.00**			**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
B.	**220 KV TRANSMISSION LINES**										
1	Diversion of 220KV Sarni- Pandurna DCDS line between location no.-3A to17 (2x2.142)	DCDS	2.14	4.28	Apr-13	02.04.2013	0	0	0	0	4.28
	Total (B)		**2.14**	**4.28**			**0.00**	**0.00**	**0.00**	**0.00**	**4.28**
C.	**132 KV TRANSMISSION LINES**										
1	132kv Tap line for 132 kv S/s GOPALPUR from 132kv Handiya-Nasrullaganj (1x3.35) (GoMP)	DCSS	3.35	3.35	Apr-13	20.04.2013	208.00	0	0	0	3.35
2	Diversion of 132 kv Sarni -Chhinwara linebetween location no.305 to 311 (*Consumer-Contribution work)(2x1.139km)	DCDS	1.14	2.28	Apr-13	16.04.2013	0	0	0	0	2.28
	Total (C)		**4.49**	**5.63**			**208.00**	**0.00**	**0.00**	**0.00**	**5.63**
	Total EHV LINES (A + B + C)		**6.63**	**9.91**			**208.00**	**0.00**	**0.00**	**0.00**	**9.91**
S. No.	**NAME OF SUBSTATION / (DISTRICT) / (FINANCED BY)**	**VOLTAGE RATIO (KV)**	**No.OF X-mer & Cap.(MVA)**	**EFFECTIVE CAPACITY MVA**	**DATE OF COMPL-ETION**	**DATE OF COMMI-SSIONING**	**ESTIMATED COST (Rs. In lacs)**	**TSP**	**SCSP**	**TSP / SCSP**	**GEN**

II.	**EHV SUB - STATIONS**										
A.	**400 KV SUBSTATIONS**										
		400/220/33	**0**	**0**			0	0	0	0	0
	Total (A) (400KV S/s)		**0**	**0**			**0**	**0**	**0**	**0**	**0**
B.	**220 KV SUBSTATIONS**										
a.	**NEW SUBSTATIONS**										
		220/132	0	0			0	0	0	0	0
	Sub Total (B.a) (220KV S/s)		0	**0**			**0**	**0**	0	0	0
b.	**ADDITIONAL TRANSFORMERS**										
	Sub Total (B.b) (220KV S/s)		**0**	**0**			**0**	**0**	**0**	**0**	**0**
c.	**Total (B) (220 kv Sub-stations)**		**0**	**0**			**0**	**0**	**0**	**0**	**0**
C.	**132 KV SUBSTATIONS**										
a.	**NEW SUBSTATIONS**										
1	GOPALPUR (Distt. Sehore) (GoMP)	**132/33**	1x40	40	Apr-13	25.04.2013	761			40	
	Sub Total (C.a) (NEW S/s)		**1**	**40**			**761**	**0**	**0**	**40**	**0**
b.	**ADDITIONAL TRANSFORMERS**										
1	40MVA Addl. Transfomer at 220kv S/s Damoh (Distt.Damoh) (ADB-II)	132/33	1x20	20	Apr-13	23.04.2013	370	0	0	20	0
2	63MVA Addl. Transfomer at 132kv S/s Marhotal (Distt.Jabalpur) ADB-II (S)	132/33	1x63	63	May-13	30.05.2013	572	0	0	63	0
	Sub Total (C.b) (132KV S/s)		**2**	**83**			**942**	**0**	**0**	**83**	**0**
c.	**AUGMENTATION OF CAPACITY**										
1	Sendhwa(Badwani) (Aug from 20 to 63 MVA) (Distt.Badwani) -ADB-II (S)	132/33	1	43	Apr-13	15.04.2013	470	43	0	0	0
2	Chhanera (Aug from 40 to 63 MVA) (Distt.Khandwa) ADB-II (S)	132/33	1	23	Apr-13	30.04.2013	571	0	0	23	0
3	Jora (Aug from 40 to 63 MVA) (DisttMorena) ADB-II (S)	132/33	1	23	Apr-13	30.04.2013	582	0	23	0	0
4	Sonkatch (Aug from 20 to 40 MVA) (Distt. Dewas) Priority work	132/33	1	20	Apr-13	18.04.2013	334	10	10	0	0
5	Manasa (Aug from 20 to 40 MVA) (Distt. Neemach) MPPTCL Fund	132/33	1	20	Apr-13	22.04.2013	450	0	20	0	0
6	Kanwan (Aug from 20 to 40 MVA) (Distt. Dhar) ADB-II (S)	132/33	1	20	Apr-13	30.04.2013	484	20	0	0	0

7	Gadarwara (Aug from 40 to 63MVA) (Distt.Narsinghpur) ADB-II (S)	132/33	1	23	May-13	16.05.2013	496	0	0	23	0
8	Jatara (Aug from 40 to 63MVA) (Distt.Tikamgarh) ADB-II (S)	132/33	1	23	May-13	15.05.2013	417	0	23	0	0
9	Alirajpur (Aug from 40 to 63MVA) (Distt.Jhabua) ADB-II (S)	132/33	1	23	May-13	15.05.2013	467	23	0	0	0
10	Bareli(Aug from 20 to 40 MVA) (Distt. Raisen) MPPTCL Fund	132/33	1	20	May-13	19.05.2013	26	10	10	0	0
	Sub Total (C.c) (132KV S/s)		**10**	**238**			**4297**	**106**	**86**	**46**	**0**
	Total C (132KV S/s)		**13**	**361**			**6000**	**106**	**86**	**169**	**0**
	Total EHV S/Stn.(A+B+C)		**13**	**361**			**6000**	**106**	**86**	**169**	**0**
III	**CAPACITOR BANKS**										
Sr.no	**NAME OF THE SUBSTATION**	**DIST.**	**RATED CAPACITY MVAR**	**EFFECTIVE CAPACITY MVAR**	**DATE OF COMPLITION**	**DATE OF COMMISSIONING**					
A	**33 KV SHUNT CAPACITORS(MVAR)**										
	Total (33 KV SHUNT CAPACITORS)		**0**	**0**			**0**				
Total Cost of Trans. Works Completed in 2013-14							**6208.00**				
	(*) : Cost in respect of Consumer-Contribution work has not been incorporated . The works has been taken into account for the purpose of calculation of increase in **Circuit -Km only.**									**12.06.2013**	

Discoms wise Average Supply Hours

PARTICULARS	East Zone		Central Zone	
	Apr-13	May-13	Apr-13	May-13
Commissinary HQ	23:55	23:57	23:31	23:36
District HQ	23:56	23:54	23:38	23:44
Tehsil HQ	23:50	23:53	23:28	23:29
Rural -Mixed	21:52	21:15	22:29	22:57
Rural -DLF	22:34	22:02	23:14	23:22
Rural -Irrigation	12:13	11:47	7:53	9:47
PARTICULARS	**West Zone**		**MP**	
	Apr-13	**May-13**	**Apr-13**	**May-13**
Commissinary HQ	23:48	23:47	23:44	23:46
District HQ	23:53	23:55	23:49	23:50
Tehsil HQ	23:32	23:33	23:38	23:39
Rural -3Phase	22:46	22:56	22:18	22:14
Rural -1Phase	23:18	23:20	22:59	22:49
Total Rural	7:58	8:16	9:39	10:09

LIST OF 33KV FEEDERS UNDER MPPKVVCL, JABALPUR

(For which group to be allocated)

JABALPUR REGION

Name of EHV Substation	Name of 33kV feeder	Date of charging of feeder
	132 KV	
132kV Amarwara	33kV Chuimuai	17.04.2013
	220KV	
220kV Pipariya	33kV Panagar	02.03.2011
220kV Seoni	33kV Kalarbaki	26.03.2013
	33kV AKVN	08.01.2013
	SAGAR REGION	
	132KV	
132kV Gourjhamer	33kV Gourjhamer	04.01.2013
	REWA REGION	
	132KV	
132kV Beohari	33kV Madwas	03.01.2012
132kV Rajmilan	33kV Khutar	07.09.2012
132kV Rewa-II	33kV Ratahara	13.09.2012
	33kV Raipur	13.09.2012
	33kV Sirmour	04.10.2012
	33kV Mohra	4.102012
	220KV	
220kV Kotar (Rewa)	33kV Semariya	22.10.2011
220kV Anuppur	33kV Anuppur	07.11.2012
	33kV Moserbear	07.11.2012
	33kV Chachai	16.01.2013
	33kV Keshwahi	16.01.2013
	33kV Shahdol-I	01.11.2012
	33kV Shahdol-II	03.01.2013

LIST OF 33KV FEEDERS UNDER MPPKVVCL, JABALPUR
(For which group to be allocated)
LIST OF 33KV FEEDERS UNDER MPPaKVVCL, INDORE
(For which group to be allocated)

INDORE REGION

Name of EHV Substation	Name of 33kV feeder	Date of charging of feeder
	132KV	
132KV Kasrawad	33KV Makadkheda	28.01.2013
132KV Moondi	33KV JalKuwan	01.04.2013
	33KV Moondi Town	06.04.2013
132KV Chhanera	33KV Khirkiya	31.01.2013

UJJAIN REGION

	132KV	
132KV Ujjain	33KV Jyoti Nagar	15.05.2013
132KV Makdon	33KV Banco (Solar Gen Plant)	16.05.2013
	33KV Gata	26.05.2013
132KV Susner	33KV Friends Salt (Solar Gen Plant)	09.04.2013
	220KV	
220KV Dewas	33KV John Deere-I	21.01.2013
	33KV John Deere-II	21.01.2013
220KV Barnagar	33KV Bangred	02.02.2013
220KV Badod	33KV M&B No.I	30.03.2013

LIST OF 33KV FEEDERS UNDER MPPKVVCL, JABALPUR

(For which group to be allocated)

BHOPAL REGION

Name of EHV Substation	Name of 33KV feeder	Date of charging of feeder
	132KV	
132KV Gudgaon	33KV Gudgaon	31.06.2012
132KV Bareli	33KV Bhopatpur	13.12.2012
132KV Bankhedi	33KV Umardha	08.02.2013
	33KV Panagar	01.12.2012
	33KV Chandon	06.10.2012
	33KV Mahalanwara	06.10.2012
132KV Harda	33KV Feeder No.I	31.01.2013
	33KV Feeder No.II	31.01.2013
132KV Multai	33KV Feeder No.I	19.02.2013
	33KV Feeder No.II	19.02.2013
132KV Ichawar	33KV Feeder	15.01.2013
132KV Shyampur	33KV Feeder	30.01.2013
132KV Pachore	33KV Karanwas	11.04.2013
132KV Ganjbasoda	33KV Banwajagir	21.01.2013
	220KV	
220KV Bairagarh	33KV Eatkhedi	18.04.2013
GWALIOR REGION		
	132KV	
132 KV Bhind	33KV Pratappura	20.10.2012
132KV Porsa	33KV Manpur	30.10.2010
132KV Shivpuri	33KV New Feeder Bay	31.12.2012
	220KV	
220KV Mehgaon	33KV Gangrakhi	20.12.2012
220KV Guna	33KV New Bay-I	31.01.2013
	33KV New Bay-II	16.02.2013

Unitwise / Stationwise Genration in MU

A. Thermal

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Stn. Name	UNIT No.	Capacity MW	Apr-13	May-13
AMARKANTAK	3	120	55.658	54.26
	4	120	56.81	60.59
	PH II	**240**	**112.47**	**114.85**
	PH III	**210**	**132.04**	**154.44**
	TOT	**450**	**244.52**	**269.29**
SATPURA	1	62.5	31.19	29.30
	2	62.5	10.74	30.45
	3	62.5	0.00	0.00
	4	62.5	12.47	22.81
	5	62.5	0.00	0.00
	PH I	**312.5**	**54.40**	**82.57**
	6	200	81.63	73.21
	7	210	101.08	102.70
	PH II	**410**	**182.705**	**175.91**
	8	210	105.945	93.87
	9	210	91.29	72.87
	PH III	**420**	**197.235**	**166.74**
	TOT	**1142.5**	**434.34**	**425.21**
SANJAY GANDHI	1	210	106.217	123.71
	2	210	109.28	117.51
	PH I	**420**	**215.49**	**241.22**
	3	210	114.88	124.86
	4	210	115.89	125.05
	PH II	**420**	**230.77**	**249.91**
	PH III	**500**	344.52	323.53
	TOT	**1340**	**790.79**	**814.66**
MPPGCL THERMAL		**2932.5**	**1469.65**	**1509.17**

AMARKANTAK POWER HOUSE-I RETIRED FROM SERVICE WEF 01.04.2009

B. Hydel

Station Name	Capacity MW	Apr-13	May-13
GANDHISAGAR	**115.0**	11.70	30.32
R.P.SAGAR	**172.0**	0.00	0.65
J.SAGAR	**99.0**	0.28	1.46
CHAMBAL	**386.0**	**11.97**	**32.42**
M.P.CHAMBAL	**193.0**	**5.99**	**16.21**
PENCH	**160.0**	20.18	17.07
M.P.PENCH	**107.0**	**13.45**	**11.38**
BARGI	**90.0**	39.93	31.02
TONS	**315.0**	115.55	121.27
BIRSINGHPUR	**20.0**	0.00	0.00
B.SGR(DEOLONDH)	**60.0**	0.00	2.22
B.SGR(SILPARA)	**30.0**	12.96	12.39
RAJGHAT	**45.0**	0.13	0.00
M.P.RAJGHAT	**22.5**	**0.07**	**0.00**
B.SGR(JINHA)	**20.0**	8.99	6.92
MADIKHEDA	**60.0**	0.30	0.13
TOTAL HYDEL	**1186.0**	**210.01**	**223.43**
MPPGCL Hydel	**915.0**	**209.74**	**221.33**
MPSEB HYDEL Share	**917.5**	**197.23**	**201.53**

C. NHDC (Ex-Bus)

Station Name	Capacity MW	Apr-13	May-13
Indira Sagar Hydel Project	1000	227.435	170.454
Omkareshwar Hydel Project	520	103.413	81.931

MP SUPPLY EXCLUDING AUXILIARY CONS.
in Million Units

Ann 4.2

S.No.	Particulars	Apr-13	May-13
1	MPSEB Thermal Availability	1310.95	1337.73
2	MPSEB Hydel Availability	194.41	198.63
3	Indira Sagar	227.45	170.23
4	Omkareshwar	103.41	81.93
5	Schedule / Drawal From Central Sector	1480.79	1625.06
6	Schedule of DVC	178.05	286.27
7	Schedule of Sujen	18.76	21.58
8	Lanco AMK	173.86	202.61
9	Sasan	2.55	0.00
10	Sardar Sarovar	152.94	143.35
11	Additional Power Purchase	0.75	0.00
12	Sale of Power	-179.84	-63.96
13	Banking of Power	-3.86	-1.13
14	Energy Exchange	0.00	0.00
15	Unschedule Interchange	-80.28	-65.63
16	Medium Term Power Purchase from CSPDCL & Balco	219.13	150.75
17	Wheeled Energy of Tawa HEG, Wind, Solar & Ascent Hydro	19.01	26.21
18	Other Imp / Exp	234.75	273.85
19	Total MPSEB Supply excl. Aux. Cons.	**4052.83**	**4387.49**
20	Average Supply per Day	135.09	141.53
21	Maximum Daily M.P. Supply	140.06	142.12
22	Minimum Daily M.P. Supply	117.19	131.05
23	Registered Demand : MW	7335	7059
24	Unrestricted Demand : MW	7376	7035

Annexue-4.3(i)

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

FIGURES IN MW

Hrs.	FREQ.	Own Generation								Schedule from												Tot Avl.	Act. Drl	UI	Intra State STOA	DEMAND MET	Load Shedding			REST. DEMAND	UNREST. DEMAND
		THER. Incl Aux	THER. Excl Aux	HYD.	ISP	OSP	Total IPPs Injection	Total CPPs Injection	Total	CSS	DVC ER	Sugen	Lanco	SSP	SEZ	Banking	Sale	Pur	Total MTOA at MP	STOA	Rihand+ Matatila-Rajghat	Total						SCH	UN SCH	TOTAL		
1:00	49.97	2042	1859	287	381	169	178	31	2904	2047	286	25	248	84	15	-5	-49	0	308	-7	7	2960	5615	2821	-138	8	5733	0	0	2904	5738	5738
2:00	50.02	2062	1877	237	343	151	180	29	2816	2032	281	25	248	84	15	-4	-66	0	308	-5	7	2925	5493	2799	-125	8	5624	0	0	2816	5621	5621
3:00	50.08	2067	1881	177	289	135	174	30	2685	2041	282	25	248	84	16	-7	-60	0	308	3	7	2946	5383	2837	-109	8	5530	0	0	2685	5517	5517
4:00	50.03	2067	1881	143	236	123	179	29	2590	2042	282	25	248	81	16	-6	-72	0	308	6	7	2937	5279	2833	-104	8	5431	0	0	2590	5426	5426
5:00	49.94	2063	1877	131	248	122	181	31	2590	2041	277	25	248	81	16	-7	-71	0	308	11	7	2935	5277	2821	-115	8	5419	0	0	2590	5429	5429
6:00	50.09	2068	1882	197	328	147	182	33	2770	2050	277	25	248	81	15	-5	-70	0	308	4	7	2940	5461	2804	-136	8	5581	0	0	2770	5566	5566
7:00	50.10	2084	1897	226	330	158	183	38	2831	2054	277	25	248	81	15	-6	-179	0	308	16	7	2845	5428	2675	-170	8	5514	22	0	2831	5498	5520
8:00	50.15	2077	1890	218	293	143	186	30	2760	2056	277	25	248	81	15	-6	-194	0	308	24	7	2840	5353	2561	-280	8	5329	22	0	2760	5304	5326
9:00	50.05	2071	1884	197	239	112	185	29	2646	2045	264	25	242	81	15	-7	-295	0	308	20	7	2706	5110	2500	-206	8	5154	22	0	2646	5146	5167
10:00	50.08	2047	1863	223	212	103	179	26	2607	1908	202	25	242	374	15	-6	-402	0	308	14	7	2686	5051	2615	-71	8	5230	10	0	2607	5216	5226
11:00	50.01	2046	1862	249	223	102	175	23	2634	1904	175	25	242	445	15	-5	-419	0	308	7	7	2703	5095	2645	-58	8	5287	22	0	2634	5286	5307
12:00	50.08	2048	1864	268	238	117	177	23	2687	1904	175	25	239	448	15	-5	-452	0	308	3	7	2665	5113	2501	-164	8	5196	22	0	2687	5184	5206
13:00	50.15	2044	1860	241	230	115	174	24	2644	1901	175	25	195	448	15	-5	-422	0	307	7	7	2652	5102	2511	-141	8	5164	20	0	2644	5141	5161
14:00	50.03	2031	1849	228	198	100	180	24	2579	1904	175	25	195	448	15	-5	-411	0	307	12	7	2672	5056	2435	-236	8	5022	20	0	2579	5017	5037
15:00	50.02	2037	1854	235	196	97	175	26	2583	1898	174	25	192	191	15	-5	-455	0	307	2	7	2351	4742	2339	-12	8	4930	8	0	2583	4927	4936
16:00	50.05	2043	1859	224	178	83	176	27	2547	1901	174	25	192	104	15	-5	-411	0	307	6	7	2315	4670	2180	-135	8	4735	20	0	2547	4728	4748
17:00	50.10	2037	1853	184	162	71	176	25	2471	1896	178	25	195	104	15	-5	-347	0	307	13	7	2388	4664	2165	-223	8	4644	20	0	2471	4630	4650
18:00	50.21	2070	1883	282	254	113	173	26	2731	1891	179	25	190	107	15	-6	-355	0	295	16	7	2364	4905	2097	-266	8	4836	20	0	2731	4805	4825
19:00	50.08	2085	1898	450	433	215	180	28	3203	2053	321	26	251	281	15	-5	-322	0	297	24	7	2947	5900	2960	13	8	6171	0	5	3203	6163	6163
20:00	50.07	2103	1913	559	602	270	180	28	3552	2046	321	25	251	458	15	-5	-302	0	298	14	7	3126	6428	3180	53	8	6740	0	11	3552	6736	6736
21:00	50.02	2107	1917	528	604	265	183	27	3524	2044	321	25	251	458	15	-5	-271	4	298	13	7	3159	6432	3074	-85	8	6606	0	22	3524	6625	6625
22:00	50.02	2085	1898	449	514	222	185	30	3298	2045	317	25	245	458	15	-4	-205	6	293	16	7	3218	6271	3143	-75	8	6450	0	0	3298	6447	6447
23:00	49.97	2069	1883	414	482	209	188	30	3206	2031	260	26	244	178	15	-5	-66	7	293	-11	7	2978	5940	2972	-6	8	6185	0	0	3206	6192	6192
24:00	49.99	2068	1882	363	451	200	189	30	3115	2034	257	26	251	88	15	-5	-68	10	299	-8	7	2905	5770	2787	-117	8	5911	0	9	3115	5923	5923
Avg.	50.06	2063	1878	280	319	148	180	28	2832	1990	246	25	233	222	15	-5	-249	1	304	8	7	2792	5397	2677	-121	8	5517	9	2	2832	5511	5520
00 TO 06 HRS.	50.02	2062	1876	195	304	141	179	30	2726	2042	281	25	248	82	15	-6	-65	0	308	2	7	2940	5418	2819	-121	8	5553	0	0	2726	5550	5550
06 TO 12 HRS.	50.08	2062	1877	230	256	123	181	28	2694	1979	228	25	243	252	15	-6	-324	0	308	14	7	2741	5192	2583	-158	8	5285	20	0	2694	5272	5292
12 TO 18 HRS.	50.10	2044	1860	232	203	96	176	25	2593	1898	176	25	193	234	15	-5	-400	0	305	10	7	2457	4856	2288	-169	8	4888	18	0	2593	4875	4893
06TO 18 HRS.	50.09	2053	1868	231	229	109	178	27	2643	1938	202	25	218	243	15	-6	-362	0	306	12	7	2599	5024	2435	-164	8	5087	19	0	2643	5073	5092
18 TO 24 HRS.	50.02	2086	1898	461	514	230	184	29	3316	2042	299	25	249	320	15	-5	-206	4	296	8	7	3055	6123	3019	-36	8	6344	0	8	3316	6347	6347

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

FIGURES IN MW

Hrs.	FREQ.		Own Generation							Schedule from													Tot Avl.	Act. Drl	UI	Intra State STOA	DEMAND MET	Load Shedding			REST. DEMAND	UNREST. DEMAND
		THER. Incl Aux	THER. Excl Aux	HYD.	ISP	OSP	Total IPPs Injection	Total CPPs Injection	Total	CSS	DVC ER	Sugen	Lanco	SSP	SEZ	Banking	Sale	Pur	Total MTOA at MP	STOA	Rihand+ Matatila-Rajghat	Total						SCH	UN SCH	TOTAL		
1:00	50.03	2062	1877	354	344	164	201	33	2972	2139	409	28	262	102	15	-2	-62	0	201	-9	10	3096	5805	2994	-102	7	5973	0	0	2972	5968	5968
2:00	50.05	2060	1874	322	267	136	203	33	2836	2145	406	28	262	102	16	-3	-60	0	201	-7	10	3100	5673	3007	-93	7	5850	0	0	2836	5840	5840
3:00	50.09	2043	1860	271	210	108	199	34	2680	2154	400	28	262	102	16	-3	-40	0	196	-2	10	3123	5541	3079	-44	7	5766	0	0	2680	5751	5751
4:00	50.15	2055	1870	240	193	96	198	34	2631	2151	396	28	262	99	16	-3	-27	0	201	6	10	3139	5509	3055	-85	7	5693	0	0	2631	5668	5668
5:00	50.05	2047	1863	218	185	89	190	33	2578	2150	396	28	262	99	16	-3	-23	0	206	11	10	3152	5468	3094	-58	7	5679	0	0	2578	5672	5672
6:00	50.22	2051	1866	243	199	103	190	30	2631	2138	398	28	262	99	16	-3	-10	0	206	19	10	3164	5533	3131	-33	7	5769	0	0	2631	5731	5731
7:00	50.16	2056	1871	224	168	88	192	31	2575	2128	392	28	262	99	15	-3	-12	0	206	16	10	3142	5455	3057	-85	7	5639	0	0	2575	5611	5611
8:00	50.21	2061	1875	223	129	69	195	32	2523	2128	384	28	262	99	16	-3	-7	0	207	16	10	3140	5401	2930	-211	7	5459	0	0	2523	5425	5425
9:00	50.08	2043	1859	203	106	58	195	32	2453	2100	358	28	262	99	15	-1	-42	0	204	14	10	3048	5239	2880	-168	7	5340	0	0	2453	5328	5328
10:00	50.04	2021	1839	223	104	47	193	31	2439	2062	337	28	262	244	15	-1	-77	0	204	10	10	3096	5272	2958	-138	7	5403	0	0	2439	5397	5397
11:00	50.08	2010	1829	245	114	55	194	31	2468	2060	319	28	262	305	15	-1	-100	0	204	4	10	3107	5313	3035	-72	7	5510	0	0	2468	5497	5497
12:00	50.07	2005	1825	267	121	62	193	30	2498	2060	326	28	262	321	15	-1	-134	0	200	0	10	3088	5323	2962	-125	7	5467	0	0	2498	5455	5455
13:00	50.14	2001	1821	251	121	58	196	32	2479	2058	326	28	262	324	15	-1	-141	0	200	0	10	3081	5298	2989	-92	7	5476	0	0	2479	5452	5452
14:00	50.05	1989	1810	227	111	55	196	34	2433	2057	332	28	259	324	15	-1	-145	0	200	1	10	3080	5253	2959	-121	7	5399	0	0	2433	5390	5390
15:00	49.99	1985	1806	245	108	53	191	34	2438	2052	353	28	259	173	15	-1	-166	0	200	-9	10	2915	5093	2925	11	7	5370	0	0	2438	5372	5372
16:00	50.06	1980	1802	274	110	55	192	33	2465	2054	359	28	259	105	15	-1	-154	0	200	-11	10	2865	5071	2820	-45	7	5292	0	0	2465	5283	5283
17:00	50.15	2000	1820	254	97	50	187	33	2442	2054	355	28	259	105	15	-1	-159	0	200	-7	10	2860	5042	2799	-61	7	5247	0	0	2442	5225	5225
18:00	50.28	2004	1824	259	162	74	181	33	2533	2073	357	28	259	102	16	-1	-144	0	204	2	10	2907	5181	2704	-203	7	5244	0	0	2533	5201	5201
19:00	50.23	2011	1830	299	295	128	185	34	2772	2131	417	28	262	276	16	0	-113	0	204	15	10	3246	5756	3195	-50	7	5975	0	0	2772	5934	5934
20:00	50.08	2028	1845	485	574	249	196	33	3382	2128	421	28	262	451	15	-1	-144	0	203	13	10	3386	6506	3352	-35	7	6741	0	0	3382	6725	6725
21:00	50.04	2032	1850	465	566	252	198	33	3363	2130	421	28	262	479	15	-1	-126	0	203	12	10	3433	6534	3291	-142	7	6662	0	0	3363	6653	6653
22:00	50.09	2022	1840	406	474	225	202	31	3179	2133	421	28	262	467	15	-1	-95	0	203	13	10	3458	6374	3306	-152	7	6491	0	0	3179	6475	6475
23:00	50.00	2027	1844	402	455	214	202	33	3149	2141	421	28	262	186	15	-1	-43	0	203	-15	10	3208	6095	3176	-32	7	6332	0	0	3149	6333	6333
24:00	50.08	2040	1857	382	402	199	203	34	3076	2140	421	28	262	102	15	-1	-50	0	203	-5	10	3126	5940	3033	-93	7	6116	0	0	3076	6101	6101
Avg.	50.10	2026	1844	291	234	112	195	32	2708	2107	380	28	262	203	15	-2	-86	0	203	4	10	3113	5570	3030	-93	7	5746	0	0	2708	5729	5729
00 TO 06 HRS.	50.10	2053	1868	275	233	116	197	33	2722	2146	401	28	262	101	16	-3	-37	0	202	3	10	3129	5588	3060	-69	7	5788	0	0	2722	5772	5772
06 TO 12 HRS.	50.11	2033	1850	231	124	63	194	31	2493	2090	353	28	262	195	15	-2	-62	0	204	10	10	3104	5334	2970	-133	7	5470	0	0	2493	5452	5452
12 TO 18 HRS.	50.11	1993	1814	252	118	58	191	33	2465	2058	347	28	260	189	15	-1	-151	0	201	-4	10	2951	5156	2866	-85	7	5338	0	0	2465	5320	5320
06TO 18 HRS.	50.11	2013	1832	241	121	60	192	32	2479	2074	350	28	261	192	15	-1	-107	0	202	3	10	3027	5245	2918	-109	7	5404	0	0	2479	5386	5386
18 TO 24 HRS.	50.09	2027	1844	407	461	211	198	33	3154	2134	421	28	262	327	15	-1	-95	0	203	5	10	3310	6201	3226	-84	7	6386	0	0	3154	6370	6370

Annexure-4.4(i)

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

FIGURES IN MW

Hrs.	FREQ.	EZONE							CZONE							WZONE						
		SCH	Demand Met	O/U DRL	SCH LS	Unsch LS	Restricted Demand	Unrestricted Demand	SCH	Demand Met	O/U DRL	SCH LS	Unsch LS	Restricted Demand	Unrestricted Demand	SCH	Demand Met	O/U DRL	SCH LS	Unsch LS	Restricted Demand	Unrestricted Demand
1:00	49.97	1836	1927	91	0	0	1929	1929	1886	1863	-23	0	0	1865	1865	2140	1943	-197	0	0	1945	1945
2:00	50.02	1798	1900	102	0	0	1899	1899	1838	1826	-12	0	0	1825	1825	2079	1897	-182	0	0	1896	1896
3:00	50.08	1769	1849	80	0	0	1845	1845	1818	1793	-25	0	0	1788	1788	2028	1889	-139	0	0	1884	1884
4:00	50.03	1744	1792	48	0	0	1791	1791	1791	1771	-19	0	0	1770	1770	1981	1867	-114	0	0	1866	1866
5:00	49.94	1744	1738	-6	0	0	1741	1741	1790	1789	-1	0	0	1792	1792	1983	1892	-91	0	0	1896	1896
6:00	50.09	1790	1656	-134	0	0	1651	1651	1834	1918	84	0	0	1912	1912	2064	2008	-55	0	0	2003	2003
7:00	50.10	1782	1435	-347	22	0	1431	1452	1830	1941	111	0	0	1935	1935	2054	2138	85	0	0	2132	2132
8:00	50.15	1762	1387	-375	22	0	1380	1402	1809	1828	19	0	0	1819	1819	2019	2114	95	0	0	2104	2104
9:00	50.05	1694	1369	-325	22	0	1367	1388	1738	1695	-43	0	0	1693	1693	1916	2089	173	0	0	2086	2086
10:00	50.08	1698	1539	-159	10	0	1535	1545	1740	1618	-122	0	0	1614	1614	1930	2073	143	0	0	2068	2068
11:00	50.01	1694	1598	-96	22	0	1598	1619	1741	1555	-187	0	0	1554	1554	1940	2134	195	0	0	2134	2134
12:00	50.08	1688	1570	-117	22	0	1567	1589	1738	1516	-222	0	0	1513	1513	1940	2109	169	0	0	2104	2104
13:00	50.15	1671	1568	-102	20	0	1561	1581	1719	1496	-223	0	0	1489	1489	1916	2099	183	0	0	2090	2090
14:00	50.03	1662	1489	-173	20	0	1488	1508	1711	1469	-242	0	0	1467	1467	1896	2064	168	0	0	2062	2062
15:00	50.02	1562	1447	-115	8	0	1447	1455	1616	1455	-162	0	0	1454	1454	1767	2028	261	0	0	2027	2027
16:00	50.05	1537	1299	-238	20	0	1297	1317	1594	1463	-131	0	0	1461	1461	1727	1972	245	0	0	1969	1969
17:00	50.10	1538	1232	-306	20	0	1228	1248	1594	1496	-98	0	0	1491	1491	1719	1916	197	0	0	1910	1910
18:00	50.21	1590	1285	-305	20	0	1277	1297	1661	1613	-48	0	0	1603	1603	1813	1938	124	0	0	1925	1925
19:00	50.08	1920	1994	75	0	0	1990	1990	1988	2019	31	0	5	2020	2020	2266	2158	-108	0	0	2153	2153
20:00	50.07	2058	2294	236	0	8	2297	2297	2139	2197	58	0	2	2195	2195	2495	2248	-246	0	0	2244	2244
21:00	50.02	2062	2289	228	0	15	2303	2303	2140	2159	19	0	7	2165	2165	2498	2157	-341	0	0	2157	2157
22:00	50.02	2020	2224	205	0	0	2223	2223	2087	2101	13	0	0	2100	2100	2414	2125	-289	0	0	2124	2124
23:00	49.97	1920	2143	224	0	0	2146	2146	1990	2022	32	0	0	2024	2024	2287	2019	-268	0	0	2022	2022
24:00	49.99	1868	2018	151	0	7	2026	2026	1927	1930	3	0	2	1933	1933	2206	1963	-243	0	0	1963	1963
Avg.	**50.06**	**1767**	**1710**	**-57**	**9**	**1**	**1709**	**1718**	**1822**	**1772**	**-49**	**0**	**1**	**1770**	**1770**	**2045**	**2035**	**-10**	**0**	**0**	**2032**	**2032**
00 TO 06 HRS.	50.02	1780	1810	30	0	0	1809	1809	1826	1827	1	0	0	1825	1825	2046	1916	-130	0	0	1915	1915
06 TO 12 HRS.	50.08	1720	1483	-237	20	0	1480	1499	1766	1692	-74	0	0	1688	1688	1966	2110	143	0	0	2105	2105
12 TO 18 HRS.	50.10	1593	1387	-207	18	0	1383	1401	1649	1499	-150	0	0	1494	1494	1806	2003	197	0	0	1997	1997
06TO 18 HRS.	50.09	1657	1435	-222	19	0	1431	1450	1708	1595	-112	0	0	1591	1591	1886	2056	170	0	0	2051	2051
18 TO 24 HRS.	50.02	1974	2161	186	0	5	2164	2164	2045	2071	26	0	3	2073	2073	2361	2112	-249	0	0	2110	2110

Annexure-4.4(ii)

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

FIGURES IN MW

Hrs.	FREQ.	EZONE							CZONE							WZONE						
		SCH	Demand Met	O/U DRL	SCH LS	Unsch LS	Restricted Demand	Unrestricted Demand	SCH	Demand Met	O/U DRL	SCH LS	Unsch LS	Restricted Demand	Unrestricted Demand	SCH	Demand Met	O/U DRL	SCH LS	Unsch LS	Restricted Demand	Unrestricted Demand
1:00	50.03	1903	2150	247	0	0	2148	2148	1955	1979	24	0	0	1977	1977	2195	1844	-350	0	0	1843	1843
2:00	50.05	1871	2114	243	0	0	2110	2110	1919	1946	27	0	0	1943	1943	2130	1790	-340	0	0	1787	1787
3:00	50.09	1840	2074	234	0	0	2068	2068	1881	1917	35	0	0	1911	1911	2074	1776	-297	0	0	1771	1771
4:00	50.15	1829	2038	209	0	0	2029	2029	1871	1889	18	0	0	1881	1881	2053	1766	-288	0	0	1758	1758
5:00	50.05	1817	2007	191	0	0	2005	2005	1860	1893	33	0	0	1890	1890	2034	1779	-255	0	0	1777	1777
6:00	50.22	1836	1859	23	0	0	1846	1846	1883	1999	117	0	0	1986	1986	2068	1911	-156	0	0	1899	1899
7:00	50.16	1815	1624	-190	0	0	1616	1616	1854	1974	120	0	0	1964	1964	2032	2040	9	0	0	2030	2030
8:00	50.21	1802	1554	-248	0	0	1544	1544	1841	1908	67	0	0	1896	1896	2003	1998	-5	0	0	1985	1985
9:00	50.08	1756	1535	-221	0	0	1531	1531	1798	1808	10	0	0	1804	1804	1945	1997	52	0	0	1993	1993
10:00	50.04	1777	1690	-87	0	0	1688	1688	1816	1743	-74	0	0	1740	1740	1977	1971	-6	0	0	1968	1968
11:00	50.08	1774	1774	0	0	0	1770	1770	1817	1726	-91	0	0	1722	1722	1985	2010	25	0	0	2005	2005
12:00	50.07	1768	1787	19	0	0	1783	1783	1814	1730	-84	0	0	1726	1726	1982	1950	-31	0	0	1946	1946
13:00	50.14	1764	1785	21	0	0	1777	1777	1806	1721	-85	0	0	1713	1713	1974	1970	-5	0	0	1961	1961
14:00	50.05	1753	1716	-37	0	0	1713	1713	1792	1714	-78	0	0	1711	1711	1958	1969	11	0	0	1966	1966
15:00	49.99	1699	1687	-13	0	0	1687	1687	1741	1712	-29	0	0	1712	1712	1887	1972	85	0	0	1972	1972
16:00	50.06	1695	1599	-96	0	0	1596	1596	1740	1740	0	0	0	1737	1737	1882	1953	72	0	0	1950	1950
17:00	50.15	1686	1527	-160	0	0	1520	1520	1732	1771	39	0	0	1764	1764	1866	1950	84	0	0	1941	1941
18:00	50.28	1723	1537	-185	0	0	1525	1525	1771	1800	29	0	0	1785	1785	1926	1907	-19	0	0	1891	1891
19:00	50.23	1900	2015	116	0	0	2002	2002	1938	1977	39	0	0	1964	1964	2171	1982	-189	0	0	1968	1968
20:00	50.08	2093	2395	302	0	0	2389	2389	2154	2245	91	0	0	2240	2240	2513	2100	-413	0	0	2096	2096
21:00	50.04	2106	2413	306	0	0	2410	2410	2167	2215	48	0	0	2212	2212	2527	2034	-493	0	0	2032	2032
22:00	50.09	2070	2354	284	0	0	2348	2348	2121	2179	57	0	0	2173	2173	2452	1959	-493	0	0	1954	1954
23:00	50.00	1983	2284	301	0	0	2284	2284	2037	2110	73	0	0	2110	2110	2336	1938	-398	0	0	1938	1938
24:00	50.08	1939	2207	268	0	0	2202	2202	1993	2039	46	0	0	2034	2034	2261	1870	-391	0	0	1865	1865
Avg.	**50.10**	**1842**	**1905**	**64**	**0**	**0**	**1900**	**1900**	**1888**	**1906**	**18**	**0**	**0**	**1900**	**1900**	**2093**	**1935**	**-158**	**0**	**0**	**1929**	**1929**
00 TO 06 HRS.	50.10	1849	2040	191	0	0	2034	2034	1895	1937	42	0	0	1931	1931	2092	1811	-281	0	0	1806	1806
06 TO 12 HRS.	50.11	1782	1661	-121	0	0	1655	1655	1823	1815	-9	0	0	1809	1809	1987	1994	7	0	0	1988	1988
12 TO 18 HRS.	50.11	1720	1642	-78	0	0	1636	1636	1764	1743	-21	0	0	1737	1737	1915	1953	38	0	0	1947	1947
06TO 18 HRS.	50.11	1751	1651	-100	0	0	1646	1646	1794	1779	-15	0	0	1773	1773	1951	1974	23	0	0	1968	1968
18 TO 24 HRS.	50.09	2015	2278	263	0	0	2272	2272	2068	2128	59	0	0	2122	2122	2377	1981	-396	0	0	1975	1975

Annexure – 5.0

System Disturbance / System Incidence :

1. **System Disturbance on 05.04.13 at 220KV S/s Shivpuri:** On dated 05.04.13 at around 11:35Hrs MP system was running normal at frequency 50.17 Hz with N-E-W grid. Prior to the fault load of 220KV S/s Sabalgarh, 132KV S/s Sheopur, 132KV S/s Vijaypur, 132KV S/s Motizeel & 132KV S/s Jora was on 220KV S/s Shivpuri. At around 11:20 Hrs, 220KV Shivpuri–Bina (PGCIL) Ckt. tripped from 220KV S/s Shivpuri end due to transient fault and at 11:40 Hrs 220 KV Shivpuri–Bina (MPPTCL) Ckt. tripped from 220 KV S/s Shivpuri end. Due to above tripping 220 KV supply at 220KV S/s Shivpuri failed. Simultaneously interruption occurred at 220KV S/s Sabalgarh, 132KV S/s Sheopur, 132KV S/s Vijaypur, 132KV S/s Motizeel & 132KV S/s Jora. There was consumer load loss due to this tripping of about 34.26 MWH for approx. 27 Min. System was normalized in due course of time.

2. **System Disturbance on 07.04.13 at 220KV S/s Shivpuri :** On dated 07.04.13 at around 14:05 Hrs MP system was running normal at frequency 49.96 Hz with N-E-W grid. Prior to the fault 220 KV Shivpuri – Bina (MPPTCL) Ckt. was under shutdown for DPR relay testing work from 14:01 Hrs. at 220 KV S/s Shivpuri and load of 220 KV S/s Sabalgarh, 132 KV S/s Sheopur, 132 KV S/s Vijaypur, 132 KV S/s Motizeel & 132 KV S/s Jora was on 220 KV S/s Shivpuri. At around 14:10 Hrs, 220KV Shivpuri – Bina (PGCIL) Ckt. tripped from both end due to transient fault resulting in failure of 220 KV supply at 220 KV S/s Shivpuri. Simultaneously interruption occurred at 220 KV S/s Sabalgarh, 132 KV S/s Sheopur, 132 KV S/s Vijaypur, 132 KV S/s Motizeel & 132 KV S/s Jora. There was consumer load loss due to this tripping of about 55.23 MWH for approx. 30 Min. System was normalized in due course of time.

3. **System Disturbance on 08.04.13 at ATPS Chachai :** On dated 08.04.13 at around 18:41 Hrs MP System was running normal at frequency 49.65 Hz with N-E-W grid. At 18:42 Hrs. “Y”–Phase CT of 220KV ATPS–Anuppur Ckt–I burst at ATPS Chachai and created the Bus fault resulting in all the running Generators (Unit no. 3 & 5) and connected 220KV and 132KV feeders tripped, resulting in 220KV Bus to be dead, 220/132 KV, 63 MVA Old Auto X-mer tripped and 132KV Bus also became dead at ATPS. Due to above tripping interruption occurred at ATPS, Railway Traction – I & II, 132KV S/s Shahdol, 132KV S/s Dindori & 132KV S/s Kotma. There was consumer load loss due to this tripping of about 85.90 MWH for approx. 60 Min. There was Generation Loss of about 300 MW & 2035 MWH. System was normalized in due course of time.

4. **System Disturbance on 12.04.13 at ATPS Chachai :** On dated 12.04.13 at around 21:25Hrs MP system was running normal at frequency 50.09 Hz with N-E-W grid. At 21:28 Hrs. “B” – Phase CT of 220KV ATPS–Jabalpur Ckt–II burst and “Y”–Phase Circuit Breaker pole of 220KV ATPS–Jabalpur Ckt–II burst and its breaker pole interrupter fallen on ground along with ‘Y’ – Phase 89C line Isolator which created the ground fault at ATPS resulting in all the running Generators (Unit no. 3, 4 & 5) and all connected 220KV and 132KV feeders to trip causing the 220KV Bus to be dead, 220/132 KV 63 MVA New & Old Auto X-mer was hand tripped and 132KV Bus also became dead at ATPS Chachai. Due to above tripping interruption occurred at ATPS, Railway Traction – I & II, 132KV S/s Shahdol, 132KV S/s Dindori & 132KV S/s Kotma. There was consumer load loss due to this tripping of about 88.81 MWH for approx. 50Min. There was Generation Loss of about 388MW & 2616MWH. System was normalized in due course of time.

5. **System Disturbance on 13.04.13 at 220KV S/s Satna (M.P): O**n dated 13.04.13 at around 00:48 Hrs MP System was running normal at frequency 50.07 Hz with N-E-W grid. At 00:51 Hrs. ‘Y’ – Phase CT of 220KV Satna–PGCIL Ckt–I failed due to transient fault on

220KV Satna–PGCIL Ckt–I which operated the Bus Differential of 220KV Main Bus–I and hence tripped all the 220KV feeders on 220KV Main Bus–I, resulting in 220KV Main Bus–I to be dead at 220KV S/s Satna. But supply was not interrupted as loas of 220KV S/s Satna & 132KV S/s Satna was managed by 132KV Satna–Maihar Ckt, 132KV Satna–Kymore Ckt, 220KV Satna–Chhatarpur Ckt. and 132KV Rewa–Rampur Bhaghelan Ckt. At 01:24 Hrs. 132KV Satna–Maihar Ckt, 132KV Satna–Kymore Ckt and 132 KV Rewa–Rampur Bhaghelan Ckt. tripped due to over load & simultaneously 132KV Chhatarpur – Bijawar Ckt also tripped on O/C from 220KV S/s Chhatarpur end. Consequently total supply failed at 220KV S/s Satna, 132KV S/s Satna, 220KV S/s Chhatarpur, 132KV S/s Khjuraho, 132KV S/s Rampur Bhaghelan, 132KV S/s Panna, 132KV S/s Pawai, 132KV S/s Nagod, 132KV S/s Majhgawan. There was consumer load loss due to this tripping of about 30 MWH for approx. 10 Min. System was normalized in due course of time.

6. **System Disturbance on 14.04.13 at ATPS Chachai :** On dated 14.04.13 at around 03:32Hrs MP system was running normal at frequency 50.21 Hz with N-E-W grid. At 03:35 Hrs. 'B'–Phase PT of 220KV Main Bus–II at ATPS Chachai burst and hit the 'Y'–Phase PT top insulator which caused it to break and its top jumper fell on the ground that directly created the bus fault, resulting in all the running Generators (Unit no.4 & 5) and all connected 220KV feeders to trip causing the 220KV Bus to be dead, 220/132 KV 63 MVA New & Old Auto X-mer was hand tripped and 132KV Bus also became dead at ATPS Chachai. Due to above tripping interruption occurred at ATPS, Railway Traction – I & II, 132KV S/s Shahdol, 132KV S/s Dindori & 132KV S/s Kotma. There was consumer load loss due to this tripping of about 72.941 MWH for approx. 57 Min. And the Generation Loss of about 300 MW & 3706.85 MWH. System was normalized in due course of time.

7. **System Disturbance on 18.04.13 at 220KV S/s Pithampur :** On dated 18.04.13 at around 15:25Hrs MP system was running normal at frequency 50.05 Hz with N-E-W grid. At 15:28 Hrs 220KV Pithampur – Indore Ckt tripped from 220KV S/s Pithampur end on indication Type–CG, Zone–I, Distance–16.4 Km, due to mal-operation of LBB the Bus Bar protection of 220KV Main Bus–I & II operated. Consequently interruption occurred at 220KV S/s Pithampur, 132KV S/s Pithampur, 132KV S/s Betma, 132KV S/s Bagdi & 132KV S/s Jamli. There was consumer load loss due to this tripping of about 61.75 MWH for approx. 30 Min. System was normalized in due course of time.

8. **System Disturbance on 28.04.13 at 220KV S/s Dewas :** On dated 28.04.13 at around 00:22Hrs MP system was running normal at frequency 50.00 Hz with N-E-W grid. At 00:25 Hrs. 'R' –Phase CT of 132 KV Bus Coupler (which was feedeing 132KV S/s Chapda) burst resulting in 220/132KV, 160MVA X–mer–I&II tripped from both sides (i.e., LV & HV Side) and all connected 132 KV feeders tripped from 132 KV side at 220KV S/s Dewas but no trippings occurred on 220KV feeders at 220KV S/s Dewas. Due to above tripping 132KV supply at 220KV S/s Dewas failed. Simultaneously interruption occurred at 132KV S/s Chapda, 132KV S/s BNP Dewas and 132KV S/s MSP Dewas. There was consumer load loss due to this tripping of about 39.124 MWH for approx. 40 Min. System was normalized in due course of time.

9. **System Disturbance on 29.04.13 at 220KV S/s Nagda :** On dated 29.04.13 at around 21:58Hrs MP system was running normal at frequency 49.89Hz with N-E-W grid. At 22:00 Hrs. 'Y' –Phase Line CT of Railway traction–I burst at 220KV S/s Nagda resulting in tripping of all 220/132KV X-mer's, 132KV Nagda–Khachrod Ckt–from 132KV S/s Khachrod end, 132KV Nagda–Ratadiya Ckt–from 132KV S/s Ratadiya end hence 132 KV supply failed at 220KV S/s Nagda, 132KV S/s Mahidpur, 132KV S/s Zarda, 132KV S/s Alot. There was consumer load loss due to this tripping of about 70MW & 30 MWH for approx. 20Min. System was normalized in due course of time.

10. **System Disturbance on 30.04.13 at ISP :** On dated 30.04.13 at around 18:18Hrs MP system was running normal at frequency 50.22Hz with N-E-W grid. On 30.04.2013, at ISP Unit no:-5 and Bus Coupler was on Permit hence all the units and feeders were on Main Bus–A. Unit no:–1, 2 & 3 were On Bar. After cancellation of permit and at the time of restoration Unit no:–5, 6, 7, 8 and 400 KV ISP–Indore Ckt–II & 400 KV ISP–Sarni Ckt were shifted to Main Bus–B. At around 18:20 Hrs. while closing the Bus-B isolator of Unit no.–7, operating rod insulator of PG–isolator of "R"–Phase was broken from the lower section (therefore it was in non-moving condition) hence PG – isolator could not fully close. Consequently heavy sparking occurred and all feeders and Units on Bar tripped. There was no consumer load loss due to this tripping. There was Generation Loss of about 323 MW & 487.86 MWH. System was normalized in due course of time.

11. **System Disturbance on 30.04.13 at 220KV S/s Barwaha & Omkareshwar HPS :** On dated 30.04.13 at around 22:30Hrs MP system was running normal at frequency 50.07Hz with N-E-W grid. At 22:35 Hrs 220KV 'B'–Phase CT of 220KV Barwaha–Indore Ckt–I Burst at 220 KV S/s Barwaha. Due to Bursting of CT Bus fault occurred at 220 KV S/s Barwaha, consequently all 220 KV feeders tripped from remote end. Simultaneously, all the generators running at OSP (Machine no. 2, 3, 4, 5) were also tripped on phase over current protection of GT's. There was no consumer load loss due to this tripping. There was Generation Loss of about 198MW & 16.5MWH. System was normalized in due course of time.

12. **SystemDisturbance on 02.05.13 at 220KV S/s Shivpuri :** On dated 02.05.13 at around 20:35Hrs MP system was running normal at frequency 50.08 Hz with N-E-W grid. At 20:40 Hrs. 'B' –Phase CT of 132 KV Bus Coupler (which was feedeing 132KV S/s Chapda) burst resulting in 220/132KV, 160MVA X–mer–I tripped from 132KV sides & 220/132KV, 160MVA X–mer–II tripped on DTOC indication and all connected 132 KV feeders tripped from 132 KV side at 220KV S/s Dewas but no trippings occurred on 220KV feeders at 220KV S/s Dewas. Due to above tripping 132KV supply at 220KV S/s Dewas failed. Simultaneously interruption occurred at 132KV S/s Chapda, 132KV S/s BNP Dewas and 132KV S/s MSP Dewas. There was consumer load loss due to this tripping of about 119.2 MWH for approx. 25 Min. System was normalized in due course of time.

13. **System Disturbance on 13.05.13 at Tons HPS:** On dated 13.05.13 at around 16:18Hrs MP system was running normal at frequency 50.02 Hz with N-E-W grid. Prior to the fault Unit No. – 3 was running. At 16:20 Hrs. when Machine no. – 3 was stopped at Tons HPS, at the same time all 220 KV feeders at Tons HPS tripped (on inspection "Y" – Phase Breaker pole of machine no. – 3 was found defective) and 220/33 KV, 20 MVA X-mer tripped on O/C & E/F indications. Consequently total supply failed at Tons HPS (including the station supply) resulting in interruption on 33 KV supply to Jawa and colony feeders.There was consumer load loss due to this tripping of about 10 MWH for approx. 04.00 Hours. System was normalized in due course of time.

14. **System Disturbance on 24.05.13 at 400KV S/s Bina (M.P):** On dated 24.05.13 at around 04:37Hrs MP system was running normal at frequency 50.18 Hz with N-E-W grid. At 04:39 Hrs. "Y" – Phase CT of 220 KV Bina – Bina Interconnector Ckt. – II burst at 400KV S/s Bina , which in turn damaged the PI of line and Auxiliary Bus side isolators and resulted in tripping of 400/220 KV, 315 MVA X-mer – I & III, 220 KV Bina – Bina (PGCIL) Ckt., 220 KV Bina – Shivpuri Ckt, 220 KV Bina – Gwalior Ckt. – I, 220 KV Bina – Gwalior Ckt. – II, 220 KV Bina – Guna Ckt – I, 220 KV Bina – Bina Interconnector – I, 220 KV Bina – Sagar Ckt – I & II, There was no consumer load loss due to this tripping. System was normalized in due course of time.

15. **System Disturbance on 30.05.13 at 220KV S/s Neemuch :** On dated 30.05.13 at around 14:18 Hrs MP System was running normal at frequency 50.10 Hz with N-E-W grid. At 14:20

Hrs. 220/132 KV, 160 MVA X-mer – I & II tripped at 220 KV S/s Neemuch consequently 132 KV Interconnector – I, 132 KV Neemuch – Manasa Ckt., 132 KV Malhargarh – Mandsour Ckt. tripped and interruption occurred at 220 KV S/s Neemuch, 132 KV S/s Neemuch, 132 KV S/s Ratangarh & 132 KV S/s Malhargarh. There was consumer load loss due to this tripping of about 13.1 MWH for approx. 13 Min. System was normalized in due course of time.

16. **System Disturbance on 30.05.13 at Omkareshwar HPS :** On dated 30.05.13 at around 17:24Hrs MP system was running normal at frequency 50.42Hz with N-E-W grid. At 17:26Hrs 220KV Omkareshwar-Julwania Ckt. tripped due to over voltage. Simultaneously all 220KV feeders and one running unit (i.e., Unit no.-1) tripped resulting in 220KV Bus at Omkareshwar HPS to be dead. There was no consumer load loss due to this tripping. There was Generation Loss of about 198MW & 23.1MWH. System was normalized in due course of time.

Format for Collecting information in regard to implementation of Recommendations of the Enquiry Committee.

FORMAT – 1 (PROTECTION AUDIT)

<table>
<tr><td>Agency for furnishing information</td><td colspan="8">Recommendation 9.1.1: There is a need to review protection schemes. This Committee concurs with recommendation of previous enquiry committees that a thorough third party protection audit need to be carried out in time bound manner. This exercise should be repeated periodically and monitored by RPCs.
Action: RPCs, CTU, STUs</td></tr>
<tr><td rowspan="8">1. RPCs (State wise)

2. CTU (Region wise)</td><td>Voltage level</td><td>Total No. of S/S in region.
(A)</td><td colspan="2">No. of S/S identified for audit.
(B)</td><td colspan="2">No. of S/S yet to be audited
(C)</td><td>Target date for completion of audit.
(D)</td><td>No. of S/S where deficiencies detected.
(E)</td></tr>
<tr><td>132 kV (where applicable).</td><td></td><td colspan="2"></td><td colspan="2"></td><td></td><td></td></tr>
<tr><td>220 kV</td><td></td><td colspan="2"></td><td colspan="2"></td><td></td><td></td></tr>
<tr><td>400 kV</td><td></td><td colspan="2"></td><td colspan="2"></td><td></td><td></td></tr>
<tr><td>765 kV</td><td></td><td colspan="2"></td><td colspan="2"></td><td></td><td></td></tr>
<tr><td>HVDC S/S</td><td></td><td colspan="2"></td><td colspan="2"></td><td></td><td></td></tr>
<tr><td>Total</td><td></td><td colspan="2"></td><td colspan="2"></td><td></td><td></td></tr>
<tr><td>Voltage level</td><td rowspan="2">Action plan(on observation of third party protection audit) finalization date/ Target date for finalizing plan
(F)</td><td colspan="2">Detail of S/S where no procurement is required for removal of deficiencies.
(G)</td><td colspan="2">Detail of S/S where procurement is required.
(H)</td><td rowspan="2">Reason/ remarks for rectification of deficiencies requiring period of more than one year.
(I)</td><td rowspan="2">Cost estimates for removal of deficiencies.
(J)</td></tr>
<tr><td></td><td>No. of S/S</td><td>Target date of removal of deficiencies</td><td>No. of S/S</td><td>Target date of removal of deficiencies</td></tr>
<tr><td>132 KV(where applicable).</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
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<tr><td>HVDC S/S</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Total</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>

FORMAT – 2 (REVIEW OF ZONE-3 PHILOSOPHY)

	Recommendation: 9.1.2.: *Till protection audit is taken up, there is need to take immediate review of zone-3 philosophy in particular. Techniques are available to modify characteristics of the relay so that it can distinguish between load encroachment and faults. These techniques and other alternatives should be explored immediately.* *Action: RPCs, CTU, STUs ; Time Frame: Immediate*			
RPC(State wise), CTU (Region wise /State wise)	Total No. of S/S at 220KV & above (132KV & above in NER states, J&K, Uttarakhand, HP, Sikkim, etc)	No. of sub-stations covered at each voltage level	No. of S/S where revised Z-III setting have been implemented	Month and year by when revised Z-III settings would be implemented at remaining S/S

FORMAT – 3 (PMU and SPS)

	Recommendation: 9.1.3.: *The application of synchro-phasor measurements from PMUs should be explored for protection systems. There is also an urgent need to deploy Special Protection System (SPS) in critical transmission elements. Also, there is need to make already approved SPS operational.* *Action: RPCs, CTU; Time Frame: 1 year*								
(A) RPC(State wise) CTU (Region wise)		Details of existing PMUs				Addl. PMUs planned to be installed.			Total No. of PMUs in the State.
	Sl. No.	No. of PMUs installed	Locations	No. of Units functional and time synchronized	Target date for making defective PMU functional	No. of PMUs	Locations	Target date for commissioning	
	1								
	2								
	3								
(B) RPC(State wise) CTU (region /	S. No.	(B) SPS already operational at present			SPS Under implementation				
		Purpose of SPS	Trigger for SPS operation	Result of SPS operations (detail of load shedding/ backing down).	Details of SPS being planned /under study			Target date of finalization of SPS	Target date of commissioning of
					Purpose	Trigger for SPS operation	Result of SPS operations		

inter-region wise)									SPS.
	1								
	2								
	3								

FORMAT – 4 (ENABLING OF UFR AND df/dt RELAY)

	Recommendation: 9.3.: *All STUs should immediately enable under frequency and df/dt based load shedding schemes. Central Commission should explore ways and means for implementation of various regulations issued under the Electricity Act, 2003. Any violation of these regulations can prove to be costly as has been the case this time. RPCs need to take up the matter for compliance. In case non-compliance persists, POSOCO should approach Central Commission.* ***Action: STUs, RPCs, POSOCO; Time Frame: Immediate***						
RPC(state wise)	**(A) State-wise details of UFR (as on dd/mm/yyyy)**						
	Total No. of UFRs installed	No. of UFRs functional	No. of UFRs non-functional	Action taken/being taken for making them functional	Month and year to complete the remedial action	Details of Addl. UFRs under implementation / planned	
						No.	Target date of commissioning
RPC(state wise)	**(B) State-wise details of df/dt relays (as on dd/mm/yyyy)**						
	Total No. of df/dt relays installed	No. of df/dt relays functional	No. of df/dt relays non-functional	Action taken/being taken	Month and year to complete the remedial action	Details of Addl. df/dt relays under implementation / planned	
						No.	Target date of commissioning
POSOCO (Petition wise)	No. and details of petitions filed with CERC for Non-compliance of various regulations, issued under the Act, by the States		Brief of petition filed in CERC		Status of petition		

F

ORMAT – 5 (REAL TIME SECURITY DESK)

	Recommendation: 9.5.2.: *NLDC and each RLDC should have one real-time security desk in all the shifts to be manned by engineer capable of carrying out TTC calculations. To facilitate this, manpower at NLDC and RLDCs need to be enhanced with regulatory support to take care of financial aspects. Till this arrangement can be firmed up, various scenarios of outages could be built, which then can be used by despatcher in real time. Faster algorithm for calculation of TTC may be adopted by the load despatchers to update it in real time under outage conditions.* ***Action: POSOCO; Time Frame: 6 months***		
POSOCO	Details of real-time security desk at each RLDC and NLDC	Details of outage scenarios built to be used by despatcher **in real time** for revising TTC calculations	Status of development of faster algorithm for real time updation of TTC calculations by load despatcher under outage conditions

FORMAT – 6 (AUDIT OF HVDC, TCSC, SVC AND PSS TUNNING)

	Recommendation: 9.9.2.: *An audit of devices such as HVDC, TCSC, SVC and PSS should be done immediately to ensure that their stability features are enabled. Further, exercise of PSS tuning should be planned and implemented. Settings of these dynamic stabilizing devices should be reviewed at appropriate intervals.* ***Action: CTU, STUs, Generators; Time Frame: 6 months***			
CTU (PGCIL)	(A) Audit of HVDC			
	Location of HVDC	Audit status (completed on dd/mm/yyyy / not completed)	Observations of the audit and the name of audit agency	Action plan with time line to remove deficiencies as per audit
CTU (PGCIL)	(B) Audit of TCSC			
	Location of TCSC	Audit status (completed on dd/mm/yyyy / not completed)	Observations of the audit and the name of audit agency	Action plan with time line to remove deficiencies as per audit
CTU (PGCIL)	(C) Audit of SVC			
	Location of SVC	Audit status (completed on dd/mm/yyyy / not completed)	Observations of the audit and the name of audit agency	Action plan with time line to remove deficiencies as per audit

	(D) Status of PSS Tuning			
RPC(state wise / CPSU wise)	Name and Location of generator identified for PSS tuning	PSS tuning status (completed on:DD/MM/YY / not completed)	Action plan with time line to complete PSS tuning	

FORMAT – 7 (VOLTAGE COLLPSE PREDICTION RELAY)

	Recommendation: 9.10.2.: Possibility of voltage collapse prediction, sensing global power system conditions derived from local measurements may be explored. **Action: RPCs ; Time Frame: 1 year**
RPC	Status of exploration of voltage collapse prediction relay

FORMAT – 8 (TELEMETRY FACILITIES)

	Recommendation: 9.15.4.: In case of existing generating stations or transmission elements without telemetry facility, the same should be put in place at the earliest. If prolonged operation without telemetry continues, POSOCO should approach Central Commission. **Action: RPCs, POSOCO; Time Frame: 6 months**			
POSOCO (Region / State/ CPSU wise)	Name and location of generating station/transmission element without telemetry facility **(A)**	Fault in the telemetry / Reason for non-availability of Telemetry **(B)**	Nature of the communication link for required telemetry in column (A) (Microwave/fiber optic/PLCC, etc) **(C)**	Action plan with time line to operationalize the required telemetry facility **(D)**

Format - 9

STATUS OF OPERATION OF POWER STATIONS UNDER FGMO / RGMO

(As on _____)

Name of Region:

Description	Total No. of units / stations in the region	Units required to operate under RGMO/ FGMO as per IEGC	Units operating under RGMO	Units operating in FGMO with manual intervention to achieve RGMO	Total No. of units under FGMO / RGMO (4+5)	Units exempted from FGMO / RGMO by CERC	Units applied to CERC for exemption / extension	Units operating with locked governors	Units whose status is not available	Remarks especially regarding entries, if any, in column (9) or (10)
-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11
No of units (CS)										
No of units (SS)										
No of units (Pvt Sector)										
No. of stations (CS)										
No. of stations (SS)										
No. of stations (Pvt Sector)										
Installed capacity CS (MW)										
Installed capacity SS (MW)										
Installed capacity PS (MW)										

CS : Central Sector; SS : State Sector; PS : Private Sector

Reasons for seeking exemption:

Reasons for seeking extension:

Annexure 9.9

M.P.P.M.C.L. JBP.
2283
16 MAY 2013

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

Ref: WR II/ Comml/ MPPMCL

Dated 16.05.2013

To,

Shri Manu Shrivastava, IAS
Managing Director,
MP Power Management Co Ltd,
Shakti Bhawan, Rampur,
Jabalpur-482008

Fax No: 0761-2661696/1444

Subject : Clubbing/diversion of gas between two or more power plants.

Dear Sir,

As you are kindly aware that Ministry of Petroleum and Natural Gas have issued guidelines on Clubbing/diversion of Gas between Power plants for a period of one year stipulating that clubbing/diversion of gas should lead to higher production of electricity as compared to the pre-clubbing arrangement. In pursuance of the same, Ministry of Power vide Notification No. 4/2/2013-Th-I dated 12.02.2013 (copy enclosed) has also issued guidelines to NTPC and GAIL stating that only that gas will be diverted for which schedule has not been given by the beneficiary on daily basis. Accordingly, GAIL has agreed to allow for diversion of unscheduled gas at 11.00 PM, i.e. after the generation schedule for the following day are issued by the RLDC. The transportation charges for the diverted gas shall be finalised with GAIL in line with the guidelines/directives of the regulator i.e., PNGRB.

It is pertinent to mention that during last year, i.e., 2012-13, the utilisation of govt. allocated Non-APM gas was only 52% at NTPC Kawas and Gandhar stations. Besides, significant amount of APM gas also remained un-utilised on account of low demand of power in the western region. Since the domestic allocated gas is economical and a limited resource, its under-utilisation in power sector may lead to diversion to other sectors such as fertiliser etc. by the Govt. of India. The implementation of the above guidelines will facilitate optimum utilisation of the available domestic gas for power generation. Besides, it will strengthen the case for seeking further allocation of domestic gas from the Govt.

In view of the above, you are requested to give your consent for implementation of the MoP Order dated 12.02.2013, as explained in the paras above.

Thanking you,

Yours faithfully

(S.N.Ganguly)
RED (WR-II)

copy to: CGM comml MPPMCL

पश्चिमी क्षेत्र - II मुख्यालय / Western Region - II Headquarter
लाभा हब, मैग्नेटो ऑफिस, लाभांडी, जी.ई.रोड, एन.एच. 6, रायपुर 492 001 (छ.ग.) दूरभाष 0771-2544500, फैक्स 0771-2544550
4th Floor, Magneto Office, Labhandi, G.E. Road, N.H. 6, Raipur 492 001 (CG). Phone : 0771-2544500, Fax : 0771-2544550
एनटीपीसी भवन, स्कोप कॉम्प्लेक्स, 7 इंस्टीट्यूशनल एरिया, लोधी रोड, नई दिल्ली - 110 003
Regd. Office : NTPC Bhawan, Scope Complex, 7 Institutional Area, Lodhi Road, New Delhi 110003

No. 4/2/2013-Th-I
Government of India
Ministry of Power
***

Shram Shakti Bhawan, Rafi Marg,
New Delhi, Dated 12.02.2013

Sub: - Clubbing / diversion of gas for NTPC gas based Stations.

In pursuance of MOP&NG communication No. L-12013/7/2012-GP dated 01.01.2013 regarding clubbing /diversion of gas between two or more power plants, Ministry of Power after considering the proposal of NTPC issues the following approval:

(i) NTPC is hereby allowed to have flexibility for diversion of APM/PMT and Non-APM gas on daily basis between Kawas & Gandhar stations in Western Region, and Anta, Auraiya, Dadri & Faridabad in Northern Region for a period of one year.

(ii) NTPC would comply with the other conditions of the above guidelines of MoP&NG.

(iii) The concerned parties are directed to enter into the required commercial arrangements, if any, for implementation of this directive with immediate effect.

(iv) Only that gas will be diverted for which schedule has not been given by beneficiary on daily basis.

(v) This order will not affect other terms and conditions in the Gas supply / transportation contracts between the parties.

(vi) This issues with the approval of the competent authority.

(D.Guha)
Under Secretary (Thermal)
Ministry of Power

To:

1. Shri A.R.Choudhury, CMD, NTPC, Scope complex, Lodhi Road, New Delhi
2. Shri B. C. Tripathi, CMD, GAIL, New Delhi
3. Shri Neeraj Mittal, Joint Secretary (Marketing), MoP&NG, Shastri Bhawan, New Delhi

Government of India
Ministry of Petroleum and Natural Gas
Room No. 216 'A' Wing, 2nd Floor
Shastri Bhawan, New Delhi-110001
☎011-23384518; 🖷 23389985; ✉arun1963@gmail.com

No.L-12013/7/2012-GP

1st January, 2013

To

1. CMD, ONGC, New Delhi.
2. CMD, GAIL(India) Ltd., New Delhi.
3. CMD, NTPC, New Delhi.
4. CMD, APTRANSCO, Hyderabad, AP.
5. MD, RIL, Mumbai.
6. Vice President, RGTIL, Mumbai.
7. MD, GSPCL, Gandhinagar, Gujarat.
8. MD, Gujarat Electricity Board, Ahmedabad.
9. MD, Gujarat State Petronet Ltd, Gandhinagar, Gujarat.
10. MD, Maharashtra State Electricity Distribution Company Ltd., Mumbai
11. MD, Delhi Transco Ltd., New Delhi.

Subject : **Clubbing/diversion of gas between two or more power plants.**

Sir,

I am directed to enclose herewith "Guidelines on Clubbing/Diversion of Gas between Power Plants" for further necessary action.

2. This issues with the approval of Minister(P&NG).

Yours faithfully,

Encl: as above

[Arunoday Goswami]
Under Secretary to the Government of India

Copy to: 1. Shri I C P Keshari, Joint Secretary(Power), Ministry of Power, Shram Shakti Bhawan, New Delhi.
2. Director(NIC), Ministry of Petroleum & Natural Gas with a request to upload the Guidelines on the Website.

[Arunoday Goswami]
Under Secretary to the Government of India

MINISTRY OF PETROLEUM AND NATURAL GAS

GUIDELINES ON CLUBBING/DIVERSION OF GAS BETWEEN POWER PLANTS

Applicable to power plants of common ownership

GP DIVISON

1/1/2013

Guidelines to enable clubbing and diversion of allocated gas between power plants of a common entity

Definition

"**Clubbing/Diversion**[1]" of natural gas would mean an arrangement whereby an entity (defined as common owner of two or more power plants) is authorised to club its 'gas allocations/supply' of two or more of its power plants and utilize it in a manner between such power plants so as to improve the PLF with corresponding increase in total generation of electricity vis a vis pre-clubbing/diversion period.

Guidelines

(a) The ownership structure of the power plants involved in clubbing/diversion must be identical;

(b) No objection from the concerned Discoms to whom the power plants are supplying electricity (pre-clubbing/diversion), will be required prior to approval of the clubbing/diversion;

(c) The clubbing/diversion, in all spells, should not be for a period of more than a year in total;

(d) Clubbing/diversion of gas and its use would be restricted between the original gas allottees and cannot be diverted to any other entity/power plant;

(e) Clubbing/diversion of gas should lead to higher production of electricity compared to pre-clubbing arrangement;

(f) The cost of the gas, so diverted, would be in accordance with the price based on the source of the diverted gas;

[1] Considering the fact that many plants are operating at low PLF due to acute shortage in availability of domestic gas leading to inefficient production of electricity, clubbing/diversion of allocated gas between two or more power plants of same entity has been allowed on the recommendations of the Ministry of Power

(g) The entity seeking clubbing/diversion would bear any additional financial liability arising from the existing and future GSA/GTA and any other swapping transaction resulting therefrom;

(h) The end-use of the diverted gas would remain the same i.e. supply of power to State Discom. No part of the electricity, so generated, can be sold outside the long-term PPA, except to the state Discom;

(i) It shall be the responsibility of the Ministry of Power to satisfy itself of the above conditions when it issues an approval for gas clubbing/diversion;

(j) Ministry of Power shall simultaneously inform Ministry of Petroleum & Natural Gas of the individual approvals issued by it;

(k) All the parties involved shall decide on the commercial modalities based on the approval on clubbing/diversion given by Ministry of Power; and

(l) Ministry of Petroleum & Natural Gas will issue any enabling instruction/clarification, if required.

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ANNEXURE – 11.1

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.
2.	132 KV S/s, Ingoria	132/33 kV Xmer, 20 MVA BHEL.
3.	132 KV S/s, Jhabua	132/33 kV Xmer, 40MVA EMCO
4.	132 KV S/s, Satya Sai	132/33 kV Xmer, 20 MVA NGEF
5.	132 KV S/s, Aron	132/33 kV Xmer, 40MVA EMCO
6.	132 KV S/s, Chhegaon	132/33 kV Xmer, 20 MVA TELK
7.	132 KV S/s, Suwasara	132 kV Suwasara Rly. Traction.
8.	132 KV S/s, Mullapura	132 kV Naikheri Rly, Traction.
9.	132 KV S/s, Panwadi	33 KV Sarangpur feeder.
10.	220 KV S/s, Nepanagar	132 KV Chegaon I (For 132KV Rly. Tract. Dongargaon-II).
11.	132 KV S/s, Bahadarpur	132kV Rly. Traction, Burhanpur I&II.
12.	132 KV S/s, Bhonra	132/33 kV Xmer, 20MVA NGEF.
13.	132 KV S/s, Chhegaon	132kV Rly. Traction, Talwadiya.
14.	33 KV Chandel	Chandel Power Station, NVDA I &II
15.	220 KV Nagda	100 MVA LV-I
16	SATPURA PH	33 KV CHP FEEDERS(MCC4)
17	SGTPS	0.4KV MANGTHAR FEEDER

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, Rewa	132/33 kV Xmer, 40 MVA NGEF.
5.	220 KV S/s, Nagda	132kV Rly. Traction, DRM, Nagda.
6.	132 KV S/s Meghnagar	132kV Rly. Traction, Bamniya.
7.	132KV S/S Morwa	132/33 KV 10MVA X-mer-II (EMCO)
8.	132KV S/S Neemach	132/33 KV 20MVA X-mer BBL
9.	220KV S/S Bhopal	132KV STDS Bhopal
10.	220KV S/S Sarni	132KV RLY. Tr. Ghoradongri
11.	132KV S/S Harda	132KV RLY. Tr. Khirkiya
12.	RAJGHAT HPS	33 KV CHANDERI

S.NO	NAME OF RTU	EXISTING MAIN CHANNEL	EXISTING ALTERNATE CHANNEL	CHANNEL TO BE REPORTED TO SLDC	PLCC LINK TO BE ESTABLISHED	MODEM TO BE REQUIRED
1	ASTHA 132	PLCC (ASTHA 132- ASHTA 220 -BPL 400	N A	ALT CNL	PLCC (ASTHA 132-ASTHA 220 -BPL 400) +WB (BPL 400 -SLDC JBP)	2
2	BAIRAGARH 220	PLCC (BAIRAGARH 220- BPL 400)	N A	ALT CNL	PLCC (BAIRAGRAH -BPL400) +WB (BPL 400- SLDC JBP0	2
3	BHOPAL 220	PLCC (BPL 220 - BPL 400)	N A	ALT CNL	WB (BPL 220- SLDC JBP)	2
4	BHOPAL 400	+WB (BPL 400)	N A	ALT CNL	WB (BPL 400- SLDC JBP)	2
5	GUNA 220	PLCC(GUNA 220 - BINA 400) +WB (BINA400)	N A	ALT CNL	PLCC(GUNA 220 - BINA 400) +WB (BINA400 - JBP SLDC)	2
6	GWALIOR 220	PLCC(GWALIOR 220 -BINA 400) +WB (BINA400)	N A	ALT CNL	WB (GWALIOR 220 - SLDC JBP)	2
7	HANDIA 220	PLCC (HANDIA 220- ITARSI 220) +WB (ITARSI220)	N A	ALT CNL	PLCC (HANDIA 220-ITARSI 220) +WB (ITARSI 220 - JBP SLDC0	2
8	ITARSI 220	+WB (ITARSI 220)	N A	ALT CNL	WB (ITARSI 220 - JBP SLDC)	2
9	MADHIKHEDA HPS	PLCC (MADHIKHEDA HPS - KARERA 132 -GWALIOR 220 -BINA 400) +WB (BINA400)	N A	ALT CNL	PLCC (MADHIKHEDA HPS-KARERA GWALIOR 220) +WB (GWALIOR 220 - SLDC JBP)	2
10	MEHGAON 220	PLCC (MEHGAON 220- MALANPUR 220 - GWALIOR 220 -BINA 400) +WB (BINA 400)	N A	ALT CNL	PLCC (MEHGAON 220- MALANPUR 220 - GWALIOR 220) +WB (GWALIOR - SLDC JBP)	2
11	MALANPUR 220	PLCC (MALANPUR 220 -GWALIOR 220 - BINA 400) +WB (BINA 400)	N A	ALT CNL	PLCC (MALANPUR 220 -GWALIOR 220) +WB (GWALIOR 220 SLDC JBP)	2
12	RAJGHAT HPS	PLCC(RAJGHAT- BINA 220- BINA 400) +WB (BINA400)	N A	ALT CNL	PLCC (RAJGHAT HPS -BINA 220) +WB (BINA 220 - SLDC JBP)	2
13	SATPURA 220 S/S	PLCC (SARNI - ITARSI 220)+WB (ITARSI220)	N A	ALT CNL	WB (SARNI 220 - SLDC JBP)	2
14	STP PH -I	PLCC (STP PH-ITARSI 220) +WB (ITARSI220)	N A	ALT CNL	PLCC (STP PH -SARNI 220) +WB (SARNI 22	2
15	STP PH -II	PLCC (STP PH-ITARSI 220) +WB (ITARSI220)	N A	ALT CNL	PLCC (STP PH -SARNI 220) +WB (SARNI 22	2
16	MANDIDEEP 220	PLCC (MANDIDEEP 220 -BPL 220-BPL 400)	N A	ALT CNL	PLCC (MANDIDEEP 220 -BPL 220) WB (BPL220-SLDC JBP)	2
17	ASTHA 400	PLCC (ASTHA 220- BPL 400)	N A	ALT CNL	PLCC (ASTHA 220-BPL 400) +WB (BPL 400 -	2
18	SHIVPURI 220	PLCC (SHIVPURI 220 -BINA 400)+WB (BINA400)	N A	ALT CNL	WB (SHIVPURI - JBP SLDC)	2
19	VIDISHA 220	PLCC (VIDISHA - BPL 400)	N A	ALT CNL	PLCC (VIDHISHA 220- BINA 220) +WB (BINA 220 -SLDC JBP)	2
20	PIPARIYA 220	PLCC (PIPARIA 220 -ITARSI 220) +WB (ITARSI220)	N A	ALT CNL	PLCC (PIPARIA 220-ITARSI 220) +WB (ITARSI 220 - SLDCJBP)	2
21	HARDA 132	PLCC (HARDA 132-HANDIA 220- ITARSI 220) +WB ITARSI 220	N A	ALT CNL	PLCC (HARDA 132-HANDIA 220- ITARSI 220) +WB (ITARSI 220 - SLDC JBP)	2
22	SARANGPUR 132	PLCC(SARANGPUR 132 -SUJALPUR 220 -BPL 400)	N A	ALT CNL	PLCC (SARANGPUR 132- SUJALPUR 220) + WB (SHUJALPUR 220 - SLDC JBP)	2
23	RAJGARH(BEORA) 220	PLCC(RAJGRAGH 220 -SUJALPUR 220 - BPL 400)	N A	ALT CNL	PLCC (RAJGRAH -SUJALPUR 220) +WB (SHUJALPUR 220 - SLDC JBP)	2
24	KHATEGAON 132	PLCC +WB (ITARSI220)	N A	ALT CNL	PLCC (KHATEGAON 132-HANDIA 220-ITARSI 220) +WB (ITARSI 220 -SLDC JBP)	2
25	SABALGARH 220	PLCC +WB (BINA400)	N A	ALT CNL	PLCC (SABALGRAH 220- SHIVPURI 220) + WB (SHIVPURI 220 - SLDC JBP)	2
26	SHEOPUR-KALAN 132	PLCC +WB (BINA400)	N A	MAIN CNL	PLCC (SHEOPUR KALAN 132-SABALGRAH 220- SHIVPURI 220)	2
27	HOSHANGABAD 220	PLCC +WB (ITARSI220)	N A	ALT CNL	PLCC (HOSHANGABAD 220 - ITARSI 220) +WB (ITARSI 220 - SLDC JBP)	2
28	PICHHORE 132	PLCC +WB (BINA400)	N A	ALT CNL	PLCC (PICHHORE -CHANDERI 220 -BINA 220) +WB (BINA 220 -SLDC JBP SLDC)	2
29	BETUL 220	PLCC +WB (ITARSI220)	N A	ALT CNL	PLCC (BETUL 220- SARNI 220) +WB (SARNI 220 - SLDC JBP)	2
30	STP -EXT PH	PLCC +WB (ITARSI220)	N A	ALT CNL	PLCC (STP PH- SARNI 220) +WB (SARNI 220 - SLDC JBP)	2

REQUIREMENT OF RTU UNDER MPPGCL FOR DIVERTING ONE CHANNEL TO SLDC JABALPUR/BACKUP SLDC **ANNEXURE-12.1**

S.NO	NAME OF RTU	EXISTING MAIN CHANNEL	EXISTING ALTERNATE CHANNEL	CHANNEL TO BE REPORTED TO	LINK TO BE ESTABLISHED	MODEM TO BE
1	AMARKANTAK TPS	PLCC	PLCC+WB(JBP220-SLDC)	ALT CNL	NOT REQUIRED	NIL
2	SGTPS	PLCC+WB AT KTN220	PLCC(SGTPS-B'PUR 220 S/S-JBP 220)+ WB	ALT CNL	WB AT SGTPS	2
3	BANSAGAR-I(TONS)	PLCC+WB AT STN220	NOT AVAILABLE	ALT CNL	PLCC(TONS-STN220)+WB	2
4	BANSAGAR-II(SILPARA)	PLCC+WB AT STN220	NOT AVAILABLE	ALT CNL	WB AT REWA 220.	2
5	BANSAGAR-III (DEOLONE)	PLCC+WB AT STN220	NOT AVAILABLE	ALT CNL	PLCC(DEOLONE-REWA)+WB AT SATNA 220	2
6	BARGI HPS	PLCC+WB AT JBP220	NOT AVAILABLE	ALT CNL	PLCC(BARGI-JBP220) +WB AT JBP 220	2
7	PENCH HPS	PLCC	PLCC+WB(JBP220)	ALT CNL	PLCC(PENCH HPS- SEONI 132-SEONI 220)+WB AT SEONI 220	2
8	STP PH -I	PLCC (STP PH-ITARSI 220) +WB (ITARSI220)	N A	ALT CNL	PLCC (STP PH -SARNI 220) +WB (SARNI 220 SLDC JBP)	2
9	STP PH -II	PLCC (STP PH-ITARSI 220) +WB (ITARSI220)	N A	ALT CNL	PLCC (STP PH -SARNI 220) +WB (SARNI 220 SLDC JBP)	2
10	GANDHI SAGAR HPS	PLCC (G'SAGAR HPS -BADOD 220 - UJJAIN 220 -JETPUA 220- INDORE 400)	N A	ALT CNL	PLCC (G'SAGAR HPS -BADOD 220 - UJJAIN 220)+WB (UJJAIN220 - JBP/BPL	2
11	JPBINA	PLCC+WB AT BINA 400	GPRS	MAIN CNL	WB AT BINA 400	1
12	O S P HPS	PLCC(OSP HPS 220 - BARWAHA 220 - INDORE 400)	N A	ALT CNL	PLCC(OSP HPS 220 - BARWAHA 220)+ WB (BARWAHA 220- JBP/BPL)	2
13	I S P HPS	PLCC (ISP HPS - INDORE 400)	N A	ALT CNL	PLCC (ISP HPS - NAGDA 400) +WB (NAGDA 400 - JBP/BPL)	2

REQUIREMENT OF RTU UNDER JABALPUR SUB_LDC FOR DIVERTING ONE CHANNEL TO BACKUP SLDC **ANNEXURE-12.1**

S.NO	NAME OF RTU	EXISTING MAIN CHANNEL	EXISTING ALTERNATE CHANNEL	CHANNEL TO BE REPORTED TO	LINK TO BE ESTABLISHED	MODEM TO BE REQUIRED
1	AMARKANTAK TPS	PLCC	PLCC+WB(JBP220-SLDC)	ALT CNL	NOT REQUIRED	NIL
2	SGTPS	PLCC+WB AT KTN220	PLCC(SGTPS-B'PUR 220 S/S-JBP 220)+ WB	ALT CNL	WB AT SGTPS	2
3	BANSAGAR-I(TONS)	PLCC+WB AT STN220	NOT AVAILABLE	ALT CNL	PLCC(TONS-STN220)+WB	2
4	BANSAGAR-II(SILPARA)	PLCC+WB AT STN220	NOT AVAILABLE	ALT CNL	WB AT REWA 220.	2
5	BANSAGAR-III (DEOLONE)	PLCC+WB AT STN220	NOT AVAILABLE	ALT CNL	PLCC(DEOLONE-REWA)+WB AT SATNA 220	2
6	BARGI HPS	PLCC+WB AT JBP220	NOT AVAILABLE	ALT CNL	PLCC(BARGI-JBP220) +WB AT JBP 220	2
7	PENCH HPS	PLCC	PLCC+WB(JBP220)	ALT CNL	PLCC(PENCH HPS- SEONI 132-SEONI 220)+WB AT SEONI 220	2
8	KATNI 400	WB AT KATNI 220	WB AT KATNI 220	ALT CNL	NOT REQUIRED	1
9	BINA 400	WB AT BINA 400	WB AT BINA 400	ALT CNL	NOT REQUIRED	1
10	SATNA 220	WB AT SATNA 220	WB AT SATNA 220	ALT CNL	NOT REQUIRED	1
11	KATNI 220	WB AT KATNI 220	WB AT KATNI 220	ALT CNL	NOT REQUIRED	1
12	BINA 220	PLCC+ WB AT BINA 400	PLCC+ WB AT BINA 400	ALT CNL	WB AT BINA 220	1
13	JABALPUR 220	WB AT JBP 220	WB AT JBP 220	ALT CNL	WB AT JBP 220	1
14	NARSINGPUR 220	PLCC+WB AT JBP 220	NOT AVAILABLE	ALT CNL	PLCC(N'PUR220-JBP220)+WB AT JBP 220	2
15	TIKAMGARH 220	PLCC+WB AT SATNA 220	NOT AVAILABLE	ALT CNL	PLCC(T'GARH220-BIJAWAR 132-CHATTAR PUR 220 -STN220) + WB AT	2
16	SAGAR 220	PLCC+WB AT BINA 400	NOT AVAILABLE	ALT CNL	PLCC(SAGAR220-BNA400)+ WB AT BINA 400	2
17	DAMOH 220	PLCC+WB AT KATNI 220	NOT AVAILABLE	ALT CNL	WB AT DAMOH 220	2
18	SUKHA 220	PLCC+WB AT JBP 220	NOT AVAILABLE	ALT CNL	PLCC(SUKHA220-JBP220)+ WB AT JBP 220	2
19	CHINDWARA 220	PLCC+WB AT JBP 220	NOT AVAILABLE	ALT CNL	WB AT C' WARA 220	2
20	CHINDWARA132/ PANDURNA 220	PLCC+WB AT JBP 220	NOT AVAILABLE	ALT CNL	PLCC(C'WARA 132-C'WARA 220)+ WB AT C' WARA 220	2

REQUIREMENT OF RTU UNDER JABALPUR SUB_LDC FOR DIVERTING ONE CHANNEL TO BACKUP SLDC **ANNEXURE-12.1**

S.NO	NAME OF RTU	EXISTING MAIN CHANNEL	EXISTING ALTERNATE CHANNEL	CHANNEL TO BE REPORTED TO	LINK TO BE ESTABLISHED	MODEM TO BE REQUIRED
21	SEONI 220	PLCC+WB AT JBP 220	NOT AVAILABLE	ALT CNL	WB AT SEONI 220	2
22	MAIHER 220	PLCC+WB AT SATNA 220	NOT AVAILABLE	ALT CNL	PLCC(MAIHER220-KTN220)+WB AT KATNI 220	2
23	SIDHI 220	PLCC+WB AT SATNA 220	NOT AVAILABLE	ALT CNL	PLCC(SIDHI220-REWA220)+ WB AT REWA 220	2
24	KOTAR 220	PLCC+WB AT SATNA 220	NOT AVAILABLE	ALT CNL	PLCC(KOTAR220-STN220)+ WB AT SATNA 220	2
25	ANUPPUR 220	PLCC+WB	NOT AVAILABLE	ALT CNL	PLCC(A'PUR220-JBP220)+ WB AT JBP 220	2
26	JPBINA	PLCC+WB AT BINA 400	GPRS	MAIN CNL	WB AT BINA 400	1
27	BIRSINGPUR 220 S/S	PLCC+WB AT JBP 220	NOT AVAILABLE	ALT CNL	PLCC(B'PUR220-SGTPS)+WB AT SGTPS	2
28	MORWA 132	PLCC	NOT AVAILABLE	ALT CNL	PLCC(MORWA132-WAIDHAN)+WB AT WAIDHAN 132	2
29	BALAGHAT 132	PLCC	NOT AVAILABLE	ALT CNL	PLCC(B'GHAT-SEONI 220)+WB AT SEONI 220	2
30	SEONI 132	PLCC	NOT AVAILABLE	ALT CNL	PLCC(SEONI 132-SEONI 220)+WB AT SEONI 220	2
31	CHATTARPUR 220	PLCC+WB AT SATNA 220	NOT AVAILABLE	ALT CNL	PLCC(C'PUR220-STN220)+WB AT SATNA 2	2
32	BHANEGAON 132	PLCC+WB AT JBP 220	NOT AVAILABLE	ALT CNL	PLCC(B'GAON132- BALAGHAT 132-SEONI 132-SEONI220)+WB AT SEONI 220	2
33	WAIDHAN 132	PLCC+WB AT JBP 220	NOT AVAILABLE	ALT CNL	WB AT WAIDHAN 132	2
34	KOTMA 132	PLCC+WB AT JBP 220	NOT AVAILABLE	ALT CNL	PLCC(KOTMA132-AMK220-JBP220)+WB AT JBP 220	2
35	AMARPATAN 132	PLCC+WB AT KATNI 220	NOT AVAILABLE	ALT CNL	PLCC(AMPTN132-MAIHAR220-KTN220)+WB AT KATNI 220	2
36	BEOHARI 132	PLCC+WB AT SATNA 220	NOT AVAILABLE	ALT CNL	PLCC (BEO132--REWA220)+WB AT REWA 220	2
						MODEM 63 NOS.

REQUIREMENT OF RTU UNDER SUB_LDC INDORE FOR DIVERTING ONE CHANNEL TO BACKUP SLDC ANNEXURE-12.1

S.NO	NAME OF RTU	EXISTING MAIN CHANNEL	EXISTING ALTERNATE CHANNEL	CHANNEL TO BE REPORTED TO SLDC /BACKUP LDC	PLCC LINK TO BE ESTABLISHED	MODEM TO BE REQUIRED
1	BARWAHA 220	PLCC (BARWAH 220 -INDORE 400)	N A	ALT CNL	WB (BARWAH 220 - JBP/BPL)	2
2	BADOD 220	PLCC (BADOD 220 -UJJAIN 220-INDORE 400)	N A	ALT CNL	PLCC (BADOD 220 -UJJAIN 220) +WB (UJJAIN220 - JBP/BPL)	2
3	DEWAS 220	PLCC (DEWAS 220- INDORE 400)	N A	ALT CNL	PLCC (DEWAS 220- INDORE 400) +WB (INDORE 400 - JBP/BPL)	2
4	GANDHI SAGAR HPS	PLCC (G'SAGAR HPS -BADOD 220 -UJJAIN 220 - JETPUA 220- INDORE 400)	N A	ALT CNL	PLCC (G'SAGAR HPS -BADOD 220 -UJJAIN 220)+WB (UJJAIN220 - JBP/BPL	2
5	INDORE 400	LOCAL	N A	ALT CNL	WB (INDORE 400 -JBP/BPL)	2
6	INDORE NZ 220	PLCC(INDORE N Z 220 -INDORE 400)	N A	ALT CNL	PLCC (INDORE N Z 220 -INDORE 400) +WB (INDORE 400 - JBP/BPL)	2
7	INDORE CHAMBLE 132	PLCC(INDORE CHAMBLE 132 -INDORE 400)	N A	ALT CNL	PLCC (INDORE CHAMBLE 132 -INDORE 400) +WB (INDORE 400 - JBP/BPL)	2
8	INDORE SZ 220	PLCC(INDORE S Z 220 -INDORE 400)	N A	ALT CNL	WB (INDORE SZ 220 - JBP/BPL)	2
9	NAGDA 400	PLCC(NAGDA 400 -INDORE 400)	N A	ALT CNL	WB (NAGDA 400 - JBP/BPL)	2
10	NAGDA 220	PLCC (NAGDA 220 - ISP HPS - INDORE 400)	N A	ALT CNL	PLCC (NAGDA 220 - NAGDA 400) +WB NAGDA 400- JBP/BPL)	2
11	NEEMUCH 220	PLCC(NEEMUCH 220- NAGDA 400 -INDORE 400)	N A	ALT CNL	PLCC(NEEMUCH 220- NAGDA 400)+WB (NAGDA 400 - JBP/BPL)	2
12	NEPANAGAR 220	PLCC(NEPANAGAR220 - BARWAHA 220 - INDORE 400)	N A	ALT CNL	PLCC(NEPANAGAR220 - CHEGAON 400)+ WB (CHEGAON 400 - JBP/BPL)	2
13	PITHAMPUR 220	PLCC(PITHAMPUR 220 -INDORE 400)	N A	ALT CNL	WB (PITHAMPUR 400 -JBP/BPL)	2
14	RATLAM 220	PLCC(RATLAM 220 -INDORE 400)	N A	ALT CNL	WB (RATLAM 220 -JBP/BPL)	2
15	SHUJALPUR 220	PLCC (SHUJALPUR 220 - BPL 400) +WB (BPL 400-INDORE 400)	N A	ALT CNL	WB (SHUJALPUR 220 - JBP/BPL)	2
16	UJJAIN 220	PLCC (UJJAIN 220-INDORE 400)	N A	ALT CNL	WB (UJJAIN 220 - JBP/BPL)	2
17	O S P HPS	PLCC(OSP HPS 220 - BARWAHA 220 - INDORE 400)	N A	ALT CNL	PLCC(OSP HPS 220 - BARWAHA 220)+ WB (BARWAHA 220- JBP/BPL)	2

REQUIREMENT OF RTU UNDER SUB_LDC INDORE FOR DIVERTING ONE CHANNEL TO BACKUP SLDC ANNEXURE-12.1

S.NO	NAME OF RTU	EXISTING MAIN CHANNEL	EXISTING ALTERNATE CHANNEL	CHANNEL TO BE REPORTED TO SLDC /BACKUP LDC	PLCC LINK TO BE ESTABLISHED	MODEM TO BE REQUIRED
18	I S P HPS	PLCC (ISP HPS - INDORE 400)	N A	ALT CNL	PLCC (ISP HPS - NAGDA 400) +WB (NAGDA 400 - JBP/BPL)	2
19	RAJGRAH 220	PLCC(RAJGARH 220- INDORE S Z 220 -INDORE 400)	N A	ALT CNL	PLCC(RAJGARH 220- INDORE S Z 220) +WB (INDORE SZ 220- JBP/BPL)	2
20	BAHADURPUR 132	PLCC(BAHADURPUR 132- NEPANAGAR220 - BARWAHA 220 - INDORE 400)	N A	ALT CNL	PLCC(BAHADURPUR 132- NEPANAGAR220 - BARWAHA 220) +WB (BARWAHA 220 - JBP/BPL)	2
21	INDORE EAST 220	PLCC(INDORE EAST 220 -INDORE 400)	N A	ALT CNL	PLCC(INDORE EAST 220 -INDORE 400) +WB (INDORE 400 -JBP/BPL)	2
22	CHEGAON 400	PLCC(CHEGAON 400 - BARWAHA 220 - INDORE 400)	N A	ALT CNL	WB (CHEGAON 400 -JBP/BPL)	2
23	NIMRANI 220	PLCC(NIMRANI 220 - BARWAHA 220 - INDORE 400)	N A	ALT CNL	PLCC(NIMRANI 220 - BARWAHA 220) +WB (BARWAHA 220- JBP/BPL)	2
24	JULWANIA 220	PLCC(JULWANIA220 - NIMRANI 220 - BARWAHA 220 - INDORE 400)	N A	ALT CNL	PLCC(JULWANIA220 - NIMRANI 220 - BARWAHA 220) + WB (BARWAHA 220 - JBP/BPL)	2
25	BADNAGAR 220	PLCC (BADNAGAR 220-INDORE 400)	N A	ALT CNL	PLCC (BADNAGAR 220-INDORE 400) +WB (INDORE 400 -JBP/BPL)	2
					MODEM	**50**

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 Discripiency 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	220/132KV TR-I	CB	FAULTY	CLOSE
6	132KV BUS	FREQUENCY	N/C	
7	132KV HJIM	CB,MW,MVAR	Telemetry not available,ProcesS connection need to be done	
8	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
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.				
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 Discripiency 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**			

List of New RTUs having requirement of alternate data channel and express voice communication channel

1.(A) New RTU being connected to SLDC Jabalpur :

Sr. No.	Name of RTU	Critical / Non Critical	Status of first data channel	Status of second data channel	Status of Express communication channel
1	Sukha 220 KV	Non critical	channel working	NA	Channel required upto nearest WB node
2	Chindwara 220 KV	Non critical	channel required	NA	NA
3	Seoni 220 KV	Non critical	channel working	NA	Channel required upto nearest WB node
4	Birsingpur 220 KV	Non critical	channel working	NA	Channel required from Birsinghpur HPS to Jabalpur WB
5	Sagar 220 KV	Critical	channel working	channel required	NA
6	Sidhi 220 KV	Non critical	channel working	NA	NA
7	Kotar 220 KV	Non critical	channel working	NA	NA
8	Chichli 220 KV	Non critical	channel required	NA	NA
9	Waidhan 132 KV	Non critical	channel required	NA	Channel required upto nearest WB node
10	Amarpatan 132 KV	Non critical	channel working	NA	NA
11	Beohari 132 KV	Non critical	channel working	NA	NA
12	Rampur Niken 132 KV	Non critical	channel required	NA	NA
13	Kotma 132 KV	Critical	channel required	channel required	Channel required upto nearest WB node
14	Benegaon 132 KV	Non critical	channel required	NA	Channel required upto nearest WB node
15	Maihar 220	Non critical	channel working	NA	NA
16	Anoopur 220	Non critical	channel required	NA	NA
17	Chhatarpur 220 KV	Non critical	channel required	NA	NA

2.(A) New RTU being connected to Sub LDC Bhopal :

1	Mandideep 220 KV	Non critical	channel working	NA	NA
2	Shivpuri 220 KV	Non critical	channel working	NA	NA
3	Astha 400 KV	Critical	channel working	channel required	NA
4	Betul 220 KV	Non critical	channel working	NA	NA
5	Pipariya 220 KV	Non critical	channel working	NA	NA
6	Harda 132 KV	Non critical	channel required	NA	NA
7	Sarangpur KV 132	Non critical	channel working	NA	NA
8	Rajgarh (Biora) 220 KV	Critical	channel working	channel required	NA
9	Sabalgarh 220 KV	Non critical	channel working	NA	NA
10	Vidisha 220 KV	Non critical	channel working	NA	NA
11	Pichhore 132 KV	Non critical	channel working	NA	Channel required upto nearest
12	Sheopurkalan 132 KV	Critical	channel working	channel required	Channel required upto nearest
13	Hoshangabad 220 KV	Non critical	channel required	NA	NA

3.(A) New RTU being connected to Sub LDC Indore :

1	Indore(EAST) 220 KV	Non critical	channel working	NA	NA
2	Chhegaon 400 KV	Critical	channel working	channel required	NA
3	Julwaniya 220 KV	Non critical	channel working	NA	NA
4	Badnagar 220 KV	Non critical	channel working	NA	NA
5	Khategaon 132 KV	Non critical	channel working	NA	NA
6	Pithampur 400 KV	Critical	channel required	channel required	NA
7	Julwaniya 400 KV	Critical	channel required	channel required	NA
8	Daloda 220 KV	Non critical	channel required	NA	NA
9	Bahadurpur 132 KV	Non critical	channel required	NA	Channel required upto nearest WB node
10	Nimarani 220 KV	Non critical	channel working	NA	NA

Note : Coloured area shows RTU station for which RTU inspection carried out earlier.