

**MINUTES OF 18TH MEETING OF OPERATION & COORDINATION COMMITTEE OF MP HELD ON
28TH January 2010 AT NHDC, BHOPAL**

The 18th meeting of Operation & Co-ordination Committee of MP was held on 28th January 2010 at NHDC, Bhopal. The list of participants is enclosed at Annexure-1.0.

The meeting was commenced after lighting of lamp by the Shri K.M.Singh, Chief Executive Director, NHPC, Shri R.P. Sharma, OSD, SLDC and Shri S. Sanyal, CE, NHDC. Addressing the participants K.M.Singh, Chief Executive Director, NHPC, put emphasis on the need for better coordination between different utilities and SLDC and expressed his views that OCC meeting is an appropriate forum to resolve the issues. Shri R.P. Sharma, OSD (SLDC) and Chairman OCC welcomed the members and participants in the 18th OCC Meeting of MP and expected that the discussions would result in better system management.

While highlighting the power situation in the MP, the OSD, SLDC expressed SLDC's concern on not performing load regulatory measures by the West DCC and continual refusal to resume the load regulatory measures in West DISCOM. He further stressed that looking to the implementation of Balancing and Settlement Code in the State, the demand side management is essentially required to be taken up by the DISCOMs in an efficient and economical manner. All the DISCOMs except WEST DISCOM is carrying out the load regulatory functions through respective DCCs, however despite repeated persuasion from SLDC, the West DISCOM has not commenced the load regulatory measures which need to be started without further delay.

The OSD, SLDC informed that during November and December 2009, the system frequency of the combined grid was within the permissible range of 49.2 to 50.3 Hz for 93.97% and 97.46% of time compared to 94.67% of time during October 2009. The net unscheduled interchange by MP during these months was -76.31 MU and -91.34 MU respectively. The frequency was below 49.2 Hz during this period for less than 1% and never touched 48.8 Hz which is a significant improvement.

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

ITEM NO. 1 : CONFIRMATION OF MINUTES

The Superintending Engineer(Open), SLDC stated that the Minutes of 17th meeting of Operation & coordination committee of MP held on 16.11.2009 at Jabalpur were posted on the SLDC website and informed to the committee members vide letter no. 07-05/SG-9B-II/2081 dated 16.12.2009. No comments have been received. The minutes of the 17th meeting of Operation & coordination committee of MP have been confirmed by the Committee.

**ITEM NO. 2 : REVIEW OF SYSTEM OPERATION DURING THE MONTH OF NOVEMBER AND
DECEMBER 2009**

2.1 Frequency Particulars

The detailed frequency particulars for the month of November and December 2009 are enclosed at Annexure-2.1. It was informed that one hour integrated average frequency during November and December 2009 was recorded 49.88 Hz and 49.81 Hz respectively. The minimum integrated frequency

over an hour was 49.34 Hz and 49.38 Hz for the respective months with the maximum integrated frequency over an hour was 50.36 Hz and 50.39 Hz. The instantaneous maximum and minimum frequency recorded for November & December 2009 was 50.58 Hz, 48.87 Hz and 50.56 Hz, 48.83 Hz respectively. The committee noted the same.

2.2 Operational Matters

2.2.1 Operational Discipline

The instances of significant violation of IEGC by the DISCOMs by overdrawing at frequency below 49.2 Hz during the month of November & December 2009 as per the SCADA logs is as detailed in the Annexure 2.2.1 in the agenda notes. It was informed that the violations may be reported to CERC by WRLDC and even CERC by way of Suo Motu petition may initiate proceedings to penalize the defaulting entity as has been done recently by CERC against GETCO. The OSD, SLDC requested all DISCOMs to maintain their drawal to avoid any violation of grid discipline. The DISCOMs have agreed to follow grid discipline.

2.3.1 Voltage Profile

Committee noted the voltage profile at some of the important 400 KV and 220 KV substations of MP during the month of November & December 2009 as enclosed at Annexure -2.3 of agenda notes.

During the month of November & December 2009, the deviation of voltage from the accepted limit on either side was recorded at following location in MP Grid.

Sr .N o.	Name of Substation	NOVEMBER 2009				DECEMBER 2009			
		Max. Voltage observed		Min. Voltage observed		Max. Voltage observed		Min. Voltage observed	
		Voltage	Date	Voltage	Date	Voltage	Date	Voltage	Date
1	Indore	-	-	-	-	-	-	-	-
2	Itarsi	428	23.11.09	-	-	428	16.12.09	-	-
3	Bina	-	-	-	-	-	-	-	-
4	Gwalior	432	12.11.09	362	14.11.09	426	30.12.09	364	23,24.12.09
5	Nagda	430	11.11.09	-	-	428	16.12.09	-	-

The problem of overvoltage conditions at Indore 400 KV s/s and Nagda 400 KV s/s was primarily due to less demand and the low voltage conditions at Gwalior 400 KV s/s was due to overdrawal by NR. In the 16th OCC meeting, the C.E.(PS), MPPTCL and OSD, SLDC had suggested that the line reactors of 400 KV Nagda–Rajgarh line may be converted to Bus reactors to utilize the same for voltage control at Nagda 400 KV s/s and desired that the Planning Cell may work out necessary modification required for the same. Planning section is again requested to take necessary action in this regard.

2.3.2 Status of Capacitor Banks in sub-transmission system

The details of capacitor bank installation on 33 & 11 KV feeders was discussed in the last OCCM and targets for completion of balance work was given by the DISCOMs. The information as furnished by the DISCOMs is as detailed below:

UTILITY	600 KVAR Capacitor Banks		1200 KVAR Capacitor Banks		Remark
	Ordered	Commissioned	Ordered	Commissioned	
East Zone	27	25	49	36	2 Nos 600 KVAR capacitors shall be commissioned by 1 ST week of Feb' 10 and 13 Nos 1200 KVAR capacitors by end of Feb'10.
West Zone	410	392	196	180	Civil work for 5 Nos 600 KVAR and 9 Nos 1200 KVAR capacitors is completed and civil work is under progress for 6 Nos 600 KVAR and 6 Nos 1200 KVAR Capacitors. West DCC representative shall submit the schedule for balance 7 Nos. 600 KVAR and 1 Nos. 1200 KVAR Capacitors.
Central Zone	-	-	588	582	Balance 6 Nos. expected to be installed by end of Feb'10.

2.4.1 Status of completion of on going Transmission Schemes being executed by MPPTCL

The committee noted the updated status of various ongoing transmission schemes for the current year as per the available information furnished by MPPTCL.

2.4.2 U/F and df/dt Relay Operation and Black start facility at HPS :

- (i) **U/F and df/dt Relay Operation:** During November and December 2009 the system frequency has not touched 48.8 Hz and there was no under frequency or df/dt operation reported during these months.
- (ii) **Defective u/f, df/dt relays :** The representative from CE(T&C), MPPTCL has informed that there are no defective u/f or df/dt relays in the system.
- (iii) **Review of df/dt scheme :** It was informed that owing to commissioning of new substations and lines some of the feeders where df/dt relays are installed no longer exists to be radial feeders and adequate load relief from df/dt relay operation is not available. A list of such feeders having df/dt relays installed was given in Annexure 2.4.2(iii) of agenda. The OSD(T&C) vide letter No. 04-04/K-OCCM/97 dated 13-01-2010 has informed that necessary review has been made and modification to df/dt scheme has been made. The SE(LD:Opn) informed the committee that the scheme still need review as df/dt relays are still on ring main feeders. S.E. (PS) proposed to install df/dt relays on EHV side of transformers to get proper relief. It was agreed that a meeting of OSD(SLDC) , CE (PS) and CE(T&C) shall be arranged at SLDC to review the df/dt relay plan and shifting of the df/dt relays falling in ring main feeders to radial feeders / EHV transformers.

2.4.3 Confirmation of Healthiness status of SERs/DRs equipment in the system

It was agreed by the MPPTCL & MPPGCL that the consolidated information regarding status of healthiness of DRs & SERs and GPS time stamping facility, shall be made available to SLDC in the first week of each month. It was also agreed that the information shall be limited to all Power Stations, All 400 KV substations, interstate EHV substations and other EHV substations that are connected to power stations or CS substations. However, the information from few substations and power stations is being

received directly by SLDC. The compiled information is also required for the OCCM of WRPC on monthly basis. A format was circulated with the agenda notes as Annexure 2.4.3 for furnishing the information duly signed by concerned officials. The representatives of MPPGCL, T&C, MPPTCL and NHDC agreed to furnish the consolidated report by 5th of every month.

2.5 Power Cuts / Load restrictions/Differential Load Shedding by DISCOMS

- (i) Details of Discom wise power cuts & regulatory measures during November and December 2009 as enclosed at Annexure 2.5 of agenda have been noted by the committee.
- (ii) **Differential Load Shedding** : SE(OPN:LD) informed that despite repeated persuasion and correspondence the hourly differential load shedding data in MW on daily basis is not being received from East and West DISCOMs to work out the unrestricted demand. The matter was also discussed in the 15th, 16th and 17th OCC meeting and DISCOMs had agreed to furnish the data. However, only Central DISCOM is furnishing the hourly load shedding data to SLDC which also includes differential load shedding data. It was requested by SLDC that the load relief data computation may be done by the DISCOMs on realistic basis taking into account the district wise/group wise load relief quantum corresponding to the LS period and East and West DCCs may start furnishing the data at the end of each shift to SLDC so that unrestricted demand computation could be made correctly. The Director, East DCC agreed to start furnishing the data to SLDC from February 2010. The OSD, SLDC told that if the same is not done the matter may be brought to the knowledge of the higher officials including CMD. West DISCOM representative expressed his difficulty in furnishing the data due to scarcity of manpower and informed that for this reason night shift has been stopped in the West DCC.

ITEM NO. 3 : OPERATIONAL PLANNING

3.1 Anticipated Power Supply Position for the Month of October-2009 to March 2009.

Demand and Availability : Details of Anticipated Demand and Source wise Availability for the period January 2010 to March-2010 has been noted by the committee. The same is enclosed as Annexure-3.1.

Demand Estimation: The DISCOMs have submitted the demand estimation data for 2010-11. However, the district wise/group wise loads are not provided. The matter was discussed in details. The East DCC was told to review the demand estimation data provided as there is 6-8% escalation over the earlier data. East DISCOM agreed to resubmit the estimation data after checks and necessary modification. TRADECO assured the DISCOMs to provide DISCOM wise availability by 1st week of February 2010. Central DISCOM agreed to submit the district wise/group wise loads by 1st week of February 2010. West DISCOM assured to compute and submit the same in the shortest possible time.

As per MPERC regulation (MPEGC), the DISCOMs have also to provide daily demand on month ahead by 25th for the next month. However, despite repeated requests, the data on daily demand on month ahead for the next month is not being received from any of the DISCOMs. The DISCOMs have been requested to furnish the data to SLDC. The OSD, SLDC told that if the data is not received from the DISCOMs, then it shall be considered that there is no change to offer and the previous data shall be taken for demand estimation and other purposes.

3.2 Generating Units under planned outage and proposed maintenance programme-

The committee noted that as per information received from MPPGCL, there will be no generating units under planned outage during the period January 2010 to March 2010 except 120 MW unit 4 at Amarkantak TPS.

The representative of ISP informed that they will start planned outage of machines one by one for 15 days commencing from March 2010.

3.3 Proposed shutdown programme of Transmission lines / Transformers -

The proposed maintenance programme for the period 16th January to 15th March-2010 was discussed in the meeting and found in order.

3.4 Long Outages of transmission elements :

The transmission elements as detailed below are under long outages.

S N	Line/Transformer/Breaker/ Reactor etc under long outage	Outage date	Reason	Expected date of restoration.
1	63 MVAR Bus-I Reactor at Satpura TPS	24.05.2005	Damage of all three limbs along with reactor tank	Estimate approval is under progress.
2	Tie Breaker of 315 MVA, 400/220 KV X'mer -II at 400 KV Bina S/S	23.10.2008	Gas Leakage from PIR	The replacement to defective parts have been received. The work shall be completed by February end. (Breaker put into service on 4th February 2010)

OSD, SLDC has expressed the need of restoration of Bus reactor at Satpura TPS before onset of monsoon to control the high voltage problems and ensure safety of transmission equipments. The progress of the same shall be reviewed in the next OCC meeting.

ITEM NO. 4 : OPERATIONAL STATISTICS FOR THE MONTH OF NOVEMBER AND DECEMBER 2009.

The details of actual generation, schedule from Central Sector, demand etc. as given in Annexure 4.1 to 4.5 of the agenda of 18th OCC meeting has been noted by the Committee.

ITEM NO. 5 : SYSTEM DISTURBANCE IN MP FOR THE MONTH OF NOVEMBER AND DECEMBER 2009

There was no significant system disturbance reported during the period Nov & Dec 2009.

ITEM NO. 6 : REVIEW OF SYSTEM OPERATION & MANAGEMENT

6.1 Progress of functioning of Discom Control Centre (DCC)

Despite constant persuasion from SLDC, the West DISCOM has not taken up the load management functions. OSD, SLDC informed that MPERC has implemented the Balancing & Settlement code in the state from 1st November 2009 and all three DISCOMs have come under intrastate ABT regime and now it is the prime responsibility of each DISCOM to comply with the Balancing and Settlement code, hence load management function by West DCC is a must. The West DISCOM representative informed that due to shortage of manpower. The West DISCOM representatives were told to adopt Central DCC manpower model for carrying out RTC shift and other off line activities of DCC and deploy adequate staff accordingly. The OSD, SLDC informed that in case West DISCOM fail to start performing the load management function SLDC shall have no option but to report the matter to MPERC.

6.2 PREPAREDNESS OF MPPGCL FOR IMPLEMENTATION OF BALANCING & SETTLEMENT CODE -

The matter of establishing full fledged ABT monitoring cells at thermal power stations and providing adequate communication facility at thermal and hydel power stations was discussed in the last two OCC Meetings. It was desired that MPPGCL should establish the ABT monitoring cells at thermal power stations and submit its report to SLDC in this regard before the OCC meeting for discussion. However MPPGCL has not submitted the compliance report to SLDC. MPPGCL representative requested SLDC to frame guidelines for deployment of manpower in ABT monitoring cells. OSD, SLDC told that the manpower assessment may be done directly by GENCO and it would not be proper for SLDC to frame any guidelines for the same. MPPGCL has assured to submit the report by 1st week of February 2010.

6.3 ABT METER DATA COLLECTION & COMMUNICATION TO SLDC –

The difficulties being faced by SLDC in preparing the State UI pool account has been discussed. The SE(LD:Opn) told the participants that as per MPERC Balancing & Settlement Code, 2009 enforced w.e.f. 1st November 2009, State Energy Account and State Energy UI Account are to be prepared by SLDC as per the provisions of Balancing & Settlement Code. The respective Companies i.e. MPPTCL & MPPGCL have already designated the authorized officers for downloading ABT meter data and checking for its completeness & correctness and communication to SLDC. However due to non availability of number of ABT meters data from the various T&C Circles, SLDC was not in a position to prepare the State UI pool account for the month of November 2009 even in the first week of January 2010. The designated officers are required to download the ABT meter data installed at all the interface points between G-T, T-D & G-D on fortnightly basis on 1st & 16th of every month and communicate to SLDC positively by 3rd and 18th of the month after ensuring the correctness & completeness of the data. The SLDC gave observation/suggestions as detailed below :

1. One AE/EE may be authorized at T&C circle level for maintaining details of ABT meters installed under their jurisdiction and they should inform SE / EE ABT SLDC immediately regarding any change by his own. Names of Engineer to be conveyed to SLDC.
2. It is observed that polarity / CTR of some of the ABT meters are found changed without informing SLDC. Even some ABT meters replaced without knowledge of SLDC. In future, any change in ABT meter, equipments, polarity, CTR etc. should be done with intimation to SLDC.
3. In future, installation of ABT meter should be ensured before charging of transformers / HT consumer feeder so that energy transferred through these interface points could be taken in State Energy Accounting.

4. ABT meters have not been installed at some of the interface points such as Barman, Jamli, 220 KV Nagda, Ingoria, Jetpura, Sanawad, Arnikalan etc. Arrangement may be made for immediate installation of ABT meters.
5. ABT meters have not been installed at external coal handling plant of STPS by MPPGCL resulting un account of Aux conspm.
6. ABT meters data of all the interface points is not being furnished to SLDC regularly by the T&C, power stations and Discoms, every fortnightly.
7. It is observed that readings of some of Open Access Customers (OAC) are not being furnished regularly by Discoms. It may please be noted that non-availability of readings would have direct impact on financial aspects of Discoms.

OSD, SLDC told the MPPTCL representative to explore the possibility of online ABT meter data automation so that meter data availability problem could be addressed. He also desired that CE(T&C) and OSD(O&M:Gen) office should act as nodal offices for ABT meter data and should ensure that the same is made available to SLDC by 3rs & 18th of the month, the NHDC should also do the same. The suggestion of T&C circle Bhopal for having two email IDs for meter data emailing is accepted which will make it possible to download data from other email ID in case of problem with other email server.

6.4 REQUISITION OF KAWAS & GANDHAR RLNG–

It was informed that since 1st week of January 2010, the system frequency has gone below 49.2 Hz on several occasions and is running below 49.5 Hz for considerable time. During the low frequency regime, East & West DISCOMs have overdrawn from the grid considerably. The variable charges of the Kawas RLNG and Gandhar RLNG is about Rs. 3.60/- and Rs. 3.47 per unit respectively (rates for 9th Jan 2010), whereas the UI charges at frequency 49.2 Hz is Rs. 7.35 per unit. The DISCOMs therefore, need to continuously study the system parameters and decide whether to avail the entitlement of Kawas and Gandhar RLNG power. The system frequency is dependent on many factors and in real time the frequency may be different from that forecasted a day ahead and hence in order to make balance between availability and demand of the concerned DISCOM, they are required to evaluate the requirement in the real time (same day). The scheduling of RLNG power from Kawas and Gandhar, both on day ahead as well as same day, may therefore be decided by the DISCOMs in consultation with TRADECO keeping in view the financial implications. DISCOMs agreed to look into the matter.

ITEM NO 7 : SCADA/EMS RELATED ISSUES :

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

The SE o/o ED (T&P-PMU), MPPTCL informed that price bid opening for RTU's would be done in February 2010 and bid evaluation for PLCC equipment is under progress.

7.2 MAINTENANCE OF TELEMETERING EQUIPMENTS AT EHV STATIONS AND POWER STATIONS :

The maintenance of Remote Terminal Units installed in MPPTCL and MPPGCL power stations have to be finalized by the respective companies. MPPGCL and MPPTCL representatives have informed that the AMC offers have been submitted by M/s. HAIL, Pune and the same is under consideration. SE(LD:Opn) requested MPPGCL and MPPTCL to expedite the same.

7.3 DISCREPANCY IN TELEMETERED VALUES RECEIVED FROM DIFFERENT EHV S/S & POWER STATIONS :-

The SE(LD:Opn) told that discrepancy in telemetered values from Power Stations & S/s is brought to the notice of the concerned officials from time to time. Though the action is taken for restoration of some of the parameters, many telemetered values are still not received correctly in SCADA system or are not extended / configured in the telemetry equipments in the field. The list of faulty telemetered values/process connections is detailed in annexure-7.3(i) & 7.3(ii) attached with agenda of the meeting. MPPGCL and MPPTCL may pay attention to remove the discrepancy in the telemetered values so that correct real time data is available which is necessary for real time monitoring.

7.4 UPGRADATION OF EXISTING RTUS :-

As upgradation of existing RTUs is the necessity for reliable and efficient system operation, the real time data of new additions to the grid elements should be available in the SCADA system. Accordingly in May 2008 the testing circles were advised by the Planning and T&C section to submit the details of the existing RTU substation taking into account the ongoing and proposed schemes. However, only Indore, Ujjain and Bhopal T&C circles had submitted the data and despite repeated reminders by CE(T&C), other T&C Circles have not submitted the details.

SE(LD:Opn) has told that the S.E. o/o CE(T&C), MPPTCL had assured in the 17th OCC meeting that the information from Jabalpur, Satna, Gwalior and Sagar testing circles shall be obtained and compiled for all testing circles for working out the requirement for upgradation of the existing RTUs within 15 days i.e. by the end of November 2009. However, the required information is not made available to SLDC so far.

The excessive delay of over 20 months in gathering information from testing circles is a serious matter and hence the T&C MPPTCL has been told to give specific target dates to the testing circles to submit the information. The same shall be reviewed in the next OCC meeting.

7.5 SHIFTING OF OPGW IN PROPOSED DIVERTED ROUTE FROM 220 KV JABALPUR TO 400 KV SUKHA S/S

The representatives from Planning, MPPTCL informed that the order for procurement of OPGW cable has been placed and the OPGW shifting shall be done at the time of route diversion.

ITEM NO. 8: OTHER ISSUES :

8.1 ISP/OHP Availability factor on 22nd January 2010:

NHDC representative raised the issue of calculating the availability factor of ISP and OHP on 22nd January 2010 when as per requirement of District Administration on the eve of Narmada Jayanti Festival, less number of machines were run during evening peak hours to maintain constant water flow in the downstream of OHP though all the machines were available. SLDC assured the NHDC that their request would be considered on the basis of facts.

8.2 Maintenance of OHP-Burwaha PLCC equipments at 220 KV Burwaha substation :

NHDC pointed out that they have installed the PLCC equipments for OHP-Burwaha section at both ends and the same at 220 KV Burwaha s/s have been handed over to MPPTCL. However, in the event of any problem the substation officials insist OHP, NHDC for repair of the faulty modules, whereas the same is required to be done by MPPTCL. SLDC clarified that as per MPEGC the utilities are responsible to provide communication facilities at their respective substations and hence the maintenance of the same may be decided by the utilities. The matter was discussed and T&C representative agreed to look into the matter.

ITEM No. 9 : DATE AND VENUE OF NEXT OCC MEETING ::

It is proposed to hold 19th meeting of Operation and Coordination Committee of MP tentatively in last week of April 2010 at SLDC, Jabalpur. Exact date & venue will be intimated later on.

Annexure-I

LIST OF PARTICIPANTS OF 18TH OCC MEETING OF MP HELD ON 28TH JANUARY 2010

Sr.No.	Name S/Shri	Desgn.	Company
1	R.P. Sharma	OSD & Chairman, OCC	SLDC, Jabalpur
2	P.A.R. Bende	S.E.(Opn.) & Member Secy., OCC	
3	K.M. Singh	Chief Executive Director	NHDC, Bhopal
4	S. Sanyal	Chief Engineer (PM&C)	
5	Anurag Seth	Sr, Manager	
6	Ashish Joshi	Dy. Manager	
7	Anurag Gupta	Asstt. Manager (E)	
8	Y. Narsimha Rao	Engineer (E)	
9	Vinod Kumar Singh	DM(E)	
10	S.S. Nigam	SE (PS)	Power System, MPPTCL
11	R. Chakarborty	EE (PS)	
12	A.K. Das	SE	Planning, MPPTCL
13	P. Panwalkar	EE	T&C, MPPTCL
14	R.K. Gupta	EE	
15	Suryabali	AGM (LRM)	Tradeco, MPPTCL
16	Subhash Deshpande	EE	MPPGCL
17	Girish Dixit	AE	
18	Shyamji Tiwari	Director	MPPuKVVCL, Jabalpur
19	Ashok Nikose	EE	
20	Rajeev Keskar	AGM	MPMKVVCL, Bhopal
21	S. J. Marathe	AEE	
22	R. H. Buchade	SE	MPPaKVVCL, Indore
23	M.K. Jaitwal	ASE	Sub LDC, Indore
24	Pradeep Sachan	EE	Sub LDC, Bhopal
25	Manish Sharma	DM(E)	NHDC, OHPS
26	Jeevan Ram	Manager(PEE)	NHDC, ISPS
27	Santosh Kumar	Engineer(E)	

FREQUENCY PARTICULARS

S. No.	Particulars	Nov-09		Dec-09	
1 INTEGRATED OVER AN-HOUR					
1.1	Maximum Frequency	50.36 Hz	Between 02.00 hrs & 03.00 Hrs on 23.11.09	50.39 Hz	Between 0300 Hrs & 0400 Hrs on 31.12.09
1.2	Minimum Frequency	49.34 Hz	Between 09.00 hrs & 10.00 Hrs on 03.11.09	49.38 Hz	Between 09.00 hrs & 10.00 Hrs on 13.12.09
1.3	Average Frequency	49.88 Hz		49.81 Hz	
2 INSTANTANEOUS FREQUENCY					
2.1	Maximum Frequency	50.58 Hz	AT 14.09 HRS ON 22.11.09	50.56 Hz	AT 03.23 HRS ON 13.12.09
2.2	Minimum Frequency	48.87 Hz	AT 13.40 HRS ON 28.11.09	48.83 Hz	AT 17.42 HRS ON 15.12.09

3 Percentage of time when frequency was :-

		Nov-09	Dec-09
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	0.45	0.52
3.4	Between 49.20 Hz and 49.5 Hz	7.87	14.13
3.5	Between 49.50 Hz and 49.8 Hz	30.34	39.06
3.6	Between 49.80 Hz and 50.2 Hz	51.68	40.23
3.7	Between 50.20 Hz and 50.3 Hz	4.08	4.04
3.8	Between 50.30 Hz and 51.0 Hz	5.58	2.02
3.9	Above 51.0 Hz	0.00	0
4.1	No. of times frequency touched 48.80 Hz	0	0
4.2	No. of times frequency touched 48.60 Hz	0	0
4.3	No. of times frequency touched 51.0 Hz	0	0

Violation by Discoms at Frequency >= 49.20 Hz : November 2009

Date / TIME	FRQ	CENTRAL DISCOM			EAST DISCOM			WEST DISCOM		
		SCH	DRL	O/D	SCH	DRL	O/D	SCH	DRL	O/D
2:10:00	49.12	1499	1421	-78	1181	1182	0	1863	1935	72
2:10:15	49.18	1490	1422	-68	1174	1211	37	1851	1766	-85
2:11:15	49.2	1448	1344	-104	1141	1166	25	1799	1958	160
3:09:15	49.2	1480	1353	-127	1166	1398	232	1839	1855	16
3:09:45	49.13	1482	1503	20	1168	1133	-35	1842	1923	81
3:14:45	49.2	1426	1285	-141	1123	923	-201	1771	1918	147
6:22:15	49.14	1799	1590	-210	1418	1683	265	2236	1945	-290

Violation by Discoms at Frequency >= 49.20 Hz : December 2009

5:10:15	49.01	1597	1319	-278	1268	1139	-129	1832	1924	92
12:14:45	49.15	1507	1199	-308	1196	1223	27	1728	2143	415
13:09:15	49.14	1720	1327	-394	1366	1303	-63	1973	2212	238
14:09:30	49.11	1795	1307	-488	1426	1470	45	2059	2255	196
14:13:45	49.19	1515	1332	-183	1203	1071	-132	1738	1695	-44
15:17:15	49.1	1725	1498	-225	1370	1108	-260	1978	2023	47
15:17:45	49.17	1806	1577	-228	1434	1219	-215	2071	2067	-4
25:11:00	49.16	1624	1301	-323	1290	1341	51	1863	2016	153
29:07:45	49.19	1720	1600	-120	1366	1366	0	1973	1871	-102
29:08:45	49.13	1734	1560	-174	1377	1315	-62	1988	2051	62

Voltage Profile During the Month of November 2009

Date	Indore		Itarsi		Bina		Gwalior		Nagda	
	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
1	419	402	424	407	419	391	421	386	426	405
2	419	387	426	404	420	391	420	387	424	398
3	417	396	424	405	419	394	424	387	424	397
4	417	391	421	400	410	394	415	383	421	392
5	419	394	426	404	419	389	420	389	424	394
6	419	399	427	409	423	401	424	390	427	400
7	419	394	424	403	419	397	423	393	426	399
8	417	396	421	400	416	390	425	380	424	400
9	419	393	424	397	418	384	428	389	426	396
10	421	399	423	404	414	393	421	377	425	400
11	422	395	425	397	420	387	425	373	430	399
12	424	396	427	402	421	390	432	386	426	402
13	421	397	423	402	421	389	431	383	426	400
14	420	390	425	397	418	391	423	362	427	396
15	419	398	426	406	423	404	425	395	425	406
16	421	402	427	409	422	413	426	390	426	406
17	415	395	421	403	417	392	422	389	421	397
18	418	397	421	413	415	394	423	380	421	402
19	417	398	422	406	415	389	422	382	421	401
20	417	398	422	406	415	389	422	382	421	401
21	420	393	427	400	419	393	424	382	425	397
22	419	387	423	395	417	390	424	381	424	392
23	420	392	428	400	422	393	422	381	425	396
24	416	391	420	398	416	389	417	369	423	396
25	413	390	417	396	415	388	415	363	420	394
26	418	381	423	391	416	388	421	373	426	389
27	420	389	426	399	415	388	419	371	427	393
28	420	393	427	399	421	387	425	366	424	394
29	419	395	424	401	414	390	420	389	424	397
30	417	394	423	400	410	388	416	375	424	397
Max / Min	424	381	428	391	423	384	432	362	430	389

Voltage Profile During the Month of December 2009

Date	Indore		Itarsi		Bina		Gwalior		Nagda	
	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
1	419	396	423	404	415	393	418	378	424	400
2	419	398	423	406	413	391	414	366	426	402
3	417	394	423	402	415	390	416	380	423	397
4	418	401	424	408	414	393	418	381	425	403
5	419	402	424	406	414	398	419	378	426	405
6	420	400	423	407	415	402	422	398	425	403
7	417	397	421	404	415	394	420	394	424	399
8	421	397	424	402	412	393	418	371	427	403
9	420	397	421	402	413	388	417	374	424	399
10	418	400	421	407	415	400	418	381	424	404
11	419	397	424	399	412	384	418	384	425	402
12	418	399	424	403	416	397	413	371	424	401
13	418	399	421	402	407	394	412	378	423	401
14	419	397	423	400	410	393	412	375	426	401
15	419	400	422	401	409	394	414	382	425	405
16	424	402	428	404	416	397	414	374	428	406
17	421	400	427	404	411	397	413	373	426	403
18	424	399	428	405	415	392	414	370	427	398
19	423	399	428	405	414	397	414	380	426	404
20	418	402	424	406	419	397	415	370	424	402
21	417	396	420	403	410	393	409	367	423	398
22	417	392	420	402	401	393	406	371	425	400
23	416	395	419	400	409	388	406	364	424	400
24	416	392	418	397	407	386	407	364	424	400
25	417	395	420	400	411	388	406	364	426	401
26	419	396	423	399	412	394	408	371	427	404
27	418	395	425	403	416	391	417	372	427	401
28	416	395	420	402	407	392	408	377	423	401
29	419	394	424	400	416	382	410	369	414	395
30	418	395	422	400	411	389	426	403	426	403
31	416	393	423	399	413	387	406	371	424	403

ANNEXURE 2.4.2(iii).

LIST OF TRANSMISSION ELEMENTS SUBMITTED BY T&C ON WHICH df/dt RELAY ARE INSTALLED AND THE PRESENT SCENARIO

SN	Name of substation	Name of feeders/Xmers	Details of df/dt relay	Date of Commissioning	Setting	Remark
1	220 KV S/S JABALPUR	132 KV Damoh	MAKE-HBB	06.06.2002	B ELE. 49 Hz	The line is in Ring main
2	220 KV S/S JABALPUR	132 KV MANERI	TYPE-FCX 103B/1		DF/DT 0.2 Hz/Sec.	WORKING
3	220 KV S/S JABALPUR	132 KV SHRINAGAR	SL.NO. IB-3-34-0050			The line is in ring main with 220 KV Narsinghpur s/s
4	220 KV S/S NARSINGHPUR	160 MVA X'mer(132 KV incoming I & II)	ABB Type-FCX 103b, Sl. No. MO70236	01.08.07	TIMEDELAY 0.132 msec.	WORKING
5	220 KV S/S BINA	132 KV Ganj BASODA	ABB	21.11.06	49.9 Hz.	Working.
6	220 KV S/S BINA	132 KV SIRNOJ	ABB	21.11.06	49.9 Hz.	Working. However, shall be in ring main when 132 KV Sironj-Maksudanganj line is charged.
7	220 KV S/S SATNA	132 KV PANNA	ABB	20.09.06	49.9 Hz.	WORKING
8	132 KV S/S MAIHAR	132 KV AMARPATAN	ABB	24.08.07	49.9 Hz.	KEPT OUT OF CIRCUIT AS PER NEW PLAN.
9	220 KV S/S BIRSINGHPUR	132 KV UMARIYA	ABB	19.08.07	49.9 Hz.	KEPT OUT OF CIRCUIT AS PER NEW PLAN
10	220 KV S/S SILPARA	132 KV SIDHI	ABB	14.02.05	49.9 Hz., 0.4 Hz/Sec	In ring main. RELAY SHOULD BE SHIFTED AT 132 KV s/s Mauganj at 220 KV SIDHI S/S.
11	220 KV S/S SILPARA	132 KV MANGAWAN			49.9 Hz., 0.4 Hz/Sec	WORKING
12	132 KV LALGHATI	40 MVA X'mer Incomer No. 1	ABB/FCX 103b-13 No. 101-34-661	02.12.06	DF/DT Base Freq 49.9 Hz.	WORKING
13	132 KV LALGHATI	40 MVA X'mer Incomer No. 2			Rate of change 0.1 Hz/Sec.	WORKING
14	132 KV LALGHATI	40 MVA X'mer Incomer No. 3			Rate of change 0.1 Hz/Sec.	WORKING
15	132 KV S/S MEHGAON	132 KV MEHGAON	ABB	27.06.04	BASE FREQ,49.0 Rate of Change 04	mentioned as working. However, there is no such feeder.
16	132 KV S/S MEHGAON	132 KV BHIND	ABB		BASE FREQ,49.0 Rate of Change 04	WORKING
17	132 KV S/S MEHGAON	132 KV SEONDHA	ABB		BASE FREQ,49.0 Rate of Change 05	Working. However, this will come in ring main when 132 KV SEONDHA-LAHAR feeder is charged.

18	132 KV S/S MEHGAON	132 KV RON	ABB		BASE FREQ,49.0 Rate of Change 06	Working. However, this will come in ring main when 132 KV SEONDHA-LAHAR feeder is charged.
19	220 KV S/S GUNA	132 KV RAGHOGARH	ABB	25.09.06	49.9, 0.142/5, w.e.f. 01.07.09	The line is LILO at Bhonra. THIS WILL BE IN RING MAIN ON CHARGING OF 132 KV RAGHOGARH-RAJGARH LINE.
20	220 KV S/S GUNA	132 KV 40MVA X'mer-i,ii, iii	ABB	27.05.08	49.9, (0.2Hz/Sec), wef 01.07.09	WORKING IN RADIAL MODE.
21	132 KV S/S ARON		ABB	23.06.09		No details have been given for the feeder on which the relay is installed.
22	132 KV S/S BHONRA		ABB	23.06.09		No details have been given for the feeder on which the relay is installed.
23	132 KV S/S MAKSUDANGARG		ABB	24.06.09		No details have been given for the feeder on which the relay is installed.
24	220 KV S/S NIMRANI	132 KV Incoming	DF/DT RELAY	21.05.05	49.2Hz/Sec)	KEPT OUT OF SERVICE AS PER NEW PLAN.
25	220 KV SOUTH-ZONE S/S IN	132KV GHATABILLOD	DF/DT RELAY MAKE-ABB, SINGLE STAGE S.N. M-07-0247 TY-FCX103B/1	30.06.08		THIS COMES UNDER RING MAIN WITH DHAR 132 KV S/S.
26	220 KV S/S RAJGARH	132 KV INTERCONNECTER-I	ABB	07.01.06	BASE FREQ 49.9 Hz Rate 0.4 Hz/sec	WORKING
27	220 KV S/S RAJGARH	132 KV INTERCONNECTER-II	DOUBLE STAGE		BASE FREQ 49.9 Hz Rate 0.4 Hz/sec	WORKING
28	220 KV S/S RAJGARH	132 KV DHAR	S.N. M97/24/0442		BASE FREQ 49.9 Hz Rate 0.4 Hz/sec	THIS CKT. IS IN RING MAIN WITH 132 KV DHAR- SZ Indore, TAPPED AT GHATABILLOD.
29	132 KV S/S KUKSHI	132 KV I/C-I&II OF 40 MVA X'mer No. I&II, 132 KV Alirajpur feeder	ABB	30.06.08	BASE FREQ 49.9 Hz Rate 0.4 Hz/sec	WORKING.
30	220 KV S/S JULWANIYA	132 KV SENDHWA (PENSEMAL)	ABB		BASE FREQ-49.9 Hz, RATE-0.4 HZ/S	WORKING
31	220 KV S/S UJJAIN	132 KV TARANA	ABB	06.07.07	49.9 Hz	WORKING
32	220 KV S/S BARNAGAR	132 KV KANWAN	ABB	04.10.06	49.9 Hz	WORKING

33	220 KV S/S BARNAGAR	132 KV DEPALPUR	ABB			THE CKT. SHALL COME UNDER RING MAIN ON COMMISSINING OF 132 KV INDORE-II-DEJALPUR D/C.
34	220 KV S/S BARNAGAR	132 KV GOTAMPURA	ABB			WORKING
35	220 KV S/S DEWAS	132 KV CHAPDA	ABB		49.9 Hz, 0.2 Hz/Sec.	WORKING
36	220 KV S/S DEWAS	20+63MVA X'mer	ABB		0.1 Hz/Sec. 49.9 Hz.	WORKING
37	220 KV S/S RATLAM	132KV JAORA-I	ABB	3.11.06	49.9,0.1Hz/Sec), 01.07.09	BOTH ARE IN RING MAIN WITH 132 KV Daloda-Mandsaur-Malhargarh-Neemuch link.
38	221 KV S/S RATLAM	132KV JAORA-II	ABB	3.11.06	49.9,0.1Hz/Sec), 01.07.09	
39	222 KV S/S RATLAM	132KV SAILANA	ABB	3.11.06	49.9,0.1Hz/Sec), 01.07.09	THIS IS A RADIAL FEEDER.
40	400 KV S/S NAGDA	220 KV NEEMUCH CKT. I&II	ABB	23.09.06	49.9 Hz 0.1 Hz/sec	IS IN RING MAIN AS SUPPLY TO 132 KV NEEMUCH S/S WILL BE AVAILABLE FROM RATLAM AND GANDHISAGAR.

The list of feeders as reported by POWER SYSTEM Cell

1	220 KV s/s Jabalpur	132 KV Patan				No more a radial feeder as interconnected with Damoh s/s.
2	220 KV Shujalpur	132 KV Pachhore				Interconnected with 220 KV Rajgarh.
3	220 KV s/s Shivpuri	40 MVA Transformer				

Note : The feeders shown in bold face letters are not radial feeders and hence need review for df/dt relay plan.

HEALTHINESS OF SEQUENCE OF EVENT RECORDERS AND DISTURBANCE RECORDERS

SN	NAME OF POWER STATION/SUBSTATION	Name of Feeder	Details of SERs / DRs	Status	Time stamping whether provided GPS Synchronised	REMARK
1	ATPS					
2	SGTPS					
3	STPS					
4	BARGI HPS					
5	GANDHISAGAR HPS					
6	PENCH HPS					
7	BANSAGAR-I (TONS) HPS					
8	BANSAGAR-II (SILPARA) HPS					
9	BANSAGAR-III (DEVLOND) HPS					
10	BANSAGAR-IV (ZINNA) HPS					
11	RAJGHAT HPS					
12	MADHIKHEDA HPS					
13	BIRSINGHPUR HPS					
14	INDIRASAGAR HPS					
15	OMKARESHWAR HPS					
16	400 KV S/S BHOPAL					
17	400 KV S/S BINA					
18	400 KV S/S INDORE					
19	400 KV S/S NAGDA					

HEALTHINESS OF SEQUENCE OF EVENT RECORDERS AND DISTURBANCE RECORDERS

SN	NAME OF POWER STATION/SUBSTATION	Name of Feeder	Details of SERs / DRs	Status	Time stamping whether provided GPS Synchronised	REMARK
20	220 KV S/S RAJGARH					
21	220 KV S/S ITARSI					
22	220 KV S/S SATNA					
23	220 KV S/S GWALIOR					
24	220 KV S/S SEONI					
25	220 KV S/S SUKHA					
26	220 KV S/S NEPANAGAR					
27	220 KV PITHAMPUR					
28	220 KV NIMRANI					
29	220 KV BURWAHA					
30	220 KV JULWANIA					
31	220 KV BADOD					
32	220 KV PANDHURNA					
33	220 KV MALANPUR					
34	220 KV MEHGAON					
35	220 KV KATNI					
36	220 KV DAMOH					
37	220 KV SAGAR					
38	220 KV TIKAMGARH					

HEALTHINESS OF SEQUENCE OF EVENT RECORDERS AND DISTURBANCE RECORDERS

SN	NAME OF POWER STATION/SUBSTATION	Name of Feeder	Details of SERs / DRs	Status	Time stamping whether provided GPS Synchronised	REMARK
39	220 KV HOSHANGABAD					
40	220 KV BIRSINGHPUR					
41	220 KV REWA					
42	220 KV SIDHI					
43	132 KV WAIDHAN					
44	132 KV MORWA					
45	132 KV KOTMA					
46	132 KV BALAGHAT					
47	132 KV BANEGAON					
48	132 KV KARERA					
49	132 KV PICHHORE					
50	132 KV BINA					
51	132 KV GAROTH					
52	132 KV SUWASARA					
53	132 KV MANASA					
54	132 KV LAKHNADAUN					
55	132 KV SEONI					
56	132 KV JABALPUR					

Discoms wise Average Supply Hours

PARTICULARS	East Zone		Central Zone		West Zone		MP	
	Nov-09	Dec-09	Nov-09	Dec-09	Nov-09	Dec-09	Nov-09	Dec-09
Commissinary HQ	22:31	22:40	23:25	23:14	23:19	23:12	23:01	22:55
District HQ	21:41	20:11	22:31	21:09	21:44	20:32	21:57	20:32
Tehsil HQ	18:35	17:04	19:48	16:37	19:04	17:35	19:07	17:05
Rural -3Phase	11:41	8:32	12:58	10:29	9:00	7:00	11:20	8:43
Rural -1Phase	2:53	2:05	3:06	2:35	3:53	3:09	3:15	2:33
Total Rural	14:34	10:37	16:04	13:04	12:53	10:09	14:35	11:16

Anticipated Average Availability at MP Periphery: 2009-10

Figures in MW

Particulars	Jan-10					Feb-10					Mar-10				
	0 to 06	06 to 12	12 to 18	18 to 24	Energy in MU	0 to 06	06 to 12	12 to 18	18 to 24	Energy in MU	0 to 06	06 to 12	12 to 18	18 to 24	Energy in MU
Thermal (R-5)	1993	1993	1993	1993	1483	1975	1975	1975	1975	1327	1975	1975	1975	1975	1469
Hydel	30	0	10	420	86	0	0	10	330	57	0	0	10	310	60
CSS	1651	1651	1651	1651	1228	1567	1567	1567	1567	1053	1646	1646	1646	1646	1225
ISP	520	115	115	690	268	520	120	120	690	244	200	150	150	150	121
SSP	200	100	100	450	158	200	100	100	450	143	170	0	0	250	78
Omkareshwar	250	100	100	300	140	250	100	100	300	126	90	50	50	100	54
DVC	75	75	75	75	56	75	75	75	75	50	75	75	75	75	56
Total	4719	4034	4044	5579	3418	4587	3937	3947	5387	3000	4156	3896	3906	4506	3062
Avg Unres. Demand	6400	6300	5900	6900		5800	5700	5400	6400		5200	5000	4800	5800	

\$r.No	DESCRIPTION	status	telemetry value at SLDC	actual value at site
RTU name BHOPAL 400 KV S/S				
OLD ISSUE 3		NEW ISSUE 2	ATTENDED 0	
1	400/220 KV TRANSFORMER 3	OLTC	N/C	5
2	400/220 KV TRANSFORMER 3	CB	FAULTY	CLOSE
3	BHOPAL 220 KV –SHUJALPUR I	CB	FAULTY	CLOSE
4	400/220 KV TRANSFORMER 2	CB	FAULTY	CLOSE
5	400 KV TIE BREKAR 3	CB	FAULTY	CLOSE
RTU name BHOPAL 220 KV S/S				
OLD ISSUE 9		NEW ISSUE 0	ATTENDED 6	
1	BHOPAL132 KV-CHAMBLE I	CB	FAULTY	CLOSE
2	BHOPAL132 KV- CHAMBLE II	CB	FAULTY	CLOSE
3	220 KV TRB	CB	FAULTY	OPEN
RTU name PIPARIA 132 KV S/S				
OLD ISSUE 1		NEW ISSUE 0	ATTENDED 0	
1	132/33 KV TRANSFORMER 1	OLTC	N/C	4
RTU name SARNI 220 KV S/S				
OLD ISSUE 2		NEW ISSUE	ATTENDED 0	
1	SARNI-SATPURA TPS 220 KV	CB	FAULTY	CLOSE
2	SARNI 220 KV TRB	CB	FAULTY	CLOSE
RTU name BAIRAGARH 220 KV S/S				
OLD ISSUE 5		NEW ISSUE 9	ATTENDED 0	
1	220 KV BUS 1	VOLTAGE	127	225
2	220 KV TRB	CB	FAULTY	OPEN
3	BAIRAGRAH 220KV-LALGHATI II	CB	FAULTY	CLOSE
4	220/132 KV TRANSFORMER 1	CB	FAULTY	CLOSE
5	132/33 XMER	OLRC	17	10
6	220 KV BUS	FREQUENCY	N/C	49.78
7	BAIRAGRAH 132 KV BHOPAL NEW	CB	NOT AVAILABLE	CLOSE
8	BAIRAGRAH 132 KV BHOPAL NEW	MW	NOT AVAILABLE	19
9	BAIRAGRAH 132 KV BHOPAL NEW	MVAR	NOT AVAILABLE	8
10	220/132 XMER (160MVA) NEW	CB	NOT AVAILABLE	CLOSE
11	220/132 XMER (160MVA) NEW	MW	NOT AVAILABLE	30
12	220/132 XMER (160MVA) NEW	MVAR	NOT AVAILABLE	10
13	132/33 XMER (20 MVA) NEW	CB	NOT AVAILABLE	CLOSE
14	132/33 XMER (20 MVA) NEW	MW	NOT AVAILABLE	6
15	132/33 XMER (20 MVA) NEW	MVAR	NOT AVAILABLE	5
RTU Name HANDIA 220 KV S/S				
OLD ISSUE 8		NEW ISSUE 2	ATTENDED 0	
1	HANDIA –ITARSI 220 KV	MW	0	20
2	HANDIA –ITARSI 220 KV	MVAR	0	10
3	HANDIA –BARWAHA 220 KV	MW	2	15
4	HANDIA –BARWAHA 220 KV	MVAR	0	10
5	HANDIA –ITARSI 220 KV	CB	FAULTY	CLOSE
6	HANDIA –BURWAHA 220 KV	CB	FAULTY	CLOSE
7	220 KV TRB	CB	FAULTY	CLOSE

8	MEHGAON 132 KV RON	CB	FAULTY	CLOSE
9	132 KV BUS TRANSFER	CB	FAULTY	OPEN
10	132 KV INTERCONNECTOR	CB	FAULTY	CLOSE
RTU Name MALANPUR 220 KV S/S				
OLD ISSUE 3 NEW ISSUE 0 ATTENDED 0				
1	132/33 KV TRANSFORMER 4	CB	FAULTY	CLOSE
2	220 KV BUS COUPLER I	CB	FAULTY	CLOSE
3	220 KV BUS COUPLER II	CB	FAULTY	CLOSE
RTU Name MEHGAON 220 KV S/S				
OLD ISSUE 8 NEW ISSUE 0 ATTENDED 0				
1	220 KV BUS TRANSFER	CB	FAULTY	OPEN
2	220/132 KV TRANSFERMER	CB	FAULTY	CLOSE
3	MEHGAON 22KV- MALANPUR	CB	FAULTY	CLOSE
4	MEHGAON 22KV- AURIYA	CB	FAULTY	CLOSE
5	220/132 KV TRANSFERMER (132 KVSIDE)	CB	FAULTY	CLOSE
6	MEHGAON 132 KV RON	CB	FAULTY	CLOSE
7	132 KV BUS TRANSFER	CB	FAULTY	OPEN
8	132 KV INTERCONNECTOR	CB	FAULTY	CLOSE
RTU name GWALIOR 220 KV S/S				
OLD ISSUE 7 NEW ISSUE 0 ATTENDED 0				
1	132/33 KV TRANSFORMER 4	OLTC	N/C	9
2	132/33 KV TRANSFORMER 5	OLTC	N/C	9
3	GWALIOR 132 KV-BANMORE	CB	FAULTY	CLOSE
4	132 KV TRB	CB	FAULTY	OPEN
5	GWALIOR 132 KV-TRACTION I	CB	FAULTY	CLOSE
6	GWALIOR 132 KV-TRACTION II	CB	FAULTY	CLOSE
7	220/132 XMER I(132KV SIDE)	CB	FAULTY	CLOSE
RTU name GUNA 220 KV S/S				
OLD ISSUE 5 NEW ISSUE 0 ATTENDED 0				
1	220/132 KV TRANSFORMER	OLTC	N/C	3
2	220 KV BUS 2	VOLTAGE	N/C	227
3	220 KV TRB	CB	FAULTY	OPEN
4	220/132 XMER NEW	CB	NOT AVAILABLE	CLOSE
5	220/132 XMER NEW	MW	NOT AVAILABLE	30
6	220/132 XMER NEW	MVAR	NOT AVAILABLE	5

Sr.No	DESCRIPTION	status	telemetry value at SLDC	actual value at site
RTU name Boregaon 132 KV S/S				
OLD ISSUE 2 NEW ISSUE 0 ATTENDED 0				
1	132/33 KV TRANSFORMER	OLTC	N/C	5
2	132/33 KV TRANSFORMER	CB	FAULTY	CLOSE
RTU name Chindwada 132 KV S/S				
OLD ISSUE 3 NEW ISSUE 0 ATTENDED 0				
1	132 KV TRB	CB	FAULTY	OPEN
2	132/33 KV TRANSFORMER 2	OLTC	17	5
3	132/33 KV TRANSFORMER 2	CB	FAULTY	CLOSE
RTU name Pandurna 220 KV S/S				
OLD ISSUE 3 NEW ISSUE 0 ATTENDED 2				

1	220/132 KV TRANSFORMER	OLTC	N/C	4
RTU name Narsingpur 220 KV S/S				
OLD ISSUE 9		NEW ISSUE 1	ATTENDED	0
1	220/132 KV TRANSFORMER 1	OLTC	N/C	7
2	220/132 KV TRANSFORMER 2	OLTC	N/C	5
3	132/33 KV TRANSFORMER 1	OLTC	N/C	6
4	NARSINGPUR220 KV-ITARSI 1 &2	MW	NOT AVAILABLE	
5	NARSINGPUR220 KV-ITARSI 1 &2	MVAR	NOT AVAILABLE	
6	NARSINGPUR220 KV-ITARSI 1& 2	CB	NOT AVAILABLE	
7	220/132 KV TRANSFORMER 2	MW	NOT AVAILABLE	
8	220/132 KV TRANSFORMER 2	MVAR	NOT AVAILABLE	
9	220/132 KV TRANSFORMER 2	CB	NOT AVAILABLE	
10	220 KV TRB	CB	FAULTY	OPEN
RTU name Jabalpur 220 KV S/S				
1	220/132 KV TRANSFORMER 1	CB	FAULTY	CLOSE
2	220/132 KV TRANSFORMER 2	CB	FAULTY	CLOSE
3	220 KV TRB	CB	FAULTY	OPEN
4	132 KV TRB	CB	FAULTY	OPEN
5	JABALPUR 132 KV- MADHOTAL	CB	FAULTY	CLOSE

Sr.No	DESCRIPTION	status	telemetry value at SLDC	actual value at site
RTU name Satna 220 KV S/S				
OLD ISSUE 8		NEW ISSUE 0	ATTENDED	1
1	220/132 KV TRANSFORMER 2	OLTC	N/C	7
2	132/33 KV TRANSFORMER 1	OLTC	N/C	7
3	132/33 KV TRANSFORMER 2	OLTC	N/C	7
4	SATNA 220KV-SATNA PGCIL 2	CB	OPEN	CLOSE
5	SATNA 132 KV-PANNA	CB	FAULTY	CLOSE
6	SATNA 132 KV INTERCONNECTOR 2	CB	FAULTY	CLOSE
7	SATNA TONS PH 200 KV I	CB	FAULTY	CLOSE
RTU name Satna 132 KV S/S				
OLD ISSUE 2		NEW ISSUE 0	ATTENDED	0
1	132/33 KV TRANSFORMER 1	OLTC	N/C	6
2	132 KV TRB	CB	FAULTY	OPEN
RTU name Morwa 132 KV S/S				
OLD ISSUE 3		NEW ISSUE 0	ATTENDED	0
1	MORWA 132KV-WAIDHAN	CB	FAULTY	CLOSE
2	132/33 KV TRANSFORMER 1	OLTC	N/C	7
3	132/33 KV TRANSFORMER 2	OLTC	N/C	7
Sr.No	DESCRIPTION	status	telemetry value at SLDC	actual value at site
RTU name -Indore 400 KV S/S				
OLD ISSUE 3		NEW ISSUE 0	ATTENDED	0
1	INDORE -ISP 400 KV II	CB	OPEN	CLOSE
2	INDORE -UJJAIN 220 KV	CB	OPEN	CLOSE

3	INDORE –DEWAS 220 KV	CB	OPEN	CLOSE
RTU Name INDORE NZ 220 KV S/S				
OLD ISSUE 6		NEW ISSUE 6	ATTENDED 0	
1	220 KV BUS 2	VOLTAGE	0	227
2	160 MVA XMER 1	OLTC	6	8
3	40 MVA XMER	OLTC	4	5
4	220 KV TRB	CB	FAULTY	OPEN
5	220 KV BUS COUPLER	CB	FAULTY	OPEN
6	STN. XMER	CB	FAULTY	CLOSE
7	220/132 XMER NEW	CB	NOT AVAILABLE	CLOSE
8	220/132 XMER NEW	MW	NOT AVAILABLE	48
9	220/132 XMER NEW	MVAR	NOT AVAILABLE	10
10	132/33 XMER NEW	CB	NOT AVAILABLE	CLOSE
11	132/33 XMER NEW	MW	NOT AVAILABLE	16
12	132/33 XMER NEW	MVAR	NOT AVAILABLE	5
RTU Name INDORE CHAMBLE132 KV S/S				
OLD ISSUE 5		NEW ISSUE 0	ATTENDED 0	
1	63 MVA XMER	OLTC	8	17
2	20 MVA XMER	OLTC	8	17
3	40 MVA XMER	OLTC	8	17
4	20 MVA XMER	CB	FAULTY	CLOSE
5	CHAMBLE132 KV-INDORE N.ZONE II	CB	FAULTY	CLOSE
RTU name -Indore S.ZONE 220 KV S/S				
OLD ISSUE 9		NEW ISSUE 1	ATTENDED 0	
1	160 MVA TRANSFORMER	OLTC	17	11
2	3X40 MVA TRANSFORMER I	OLTC	1	16
3	3X40 MVA TRANSFORMER II	OLTC	15	16
4	40 MVA TRANSFORMER I	OLTC	9#	11
5	40 MVA TRANSFORMER II	OLTC	17	4
6	160 MVA TRANSFORMER	CB	OPEN	CLOSE
7	IND S/Z TO CAT -1	CB	OPEN	CLOSE
8	IND S/Z TO CHAMBLE	CB	OPEN	CLOSE
9	3X40 MVA TRANSFORMER II(132KV SIDE)	CB	OPEN	CLOSE
10	IND S/Z TO UJJAIN	CB	FAULTY	CLOSE
RTU name Pitampur 220 KV S/S				
OLD ISSUE 7		NEW ISSUE 3	ATTENDED 0	
1	220 KV TRB	CB	FAULTY	OPEN
2	PITAMPUR 220 KV-RATLAM	CB	FAULTY	CLOSE
3	132/33 KV TRANSFORMER 2	OLTC	N/C	8
4	132/33 KV TRANSFORMER 3	OLTC	N/C	11
5	PITAMPUR 132 KV-HML	CB	FAULTY	OPEN
6	132 KV TRB	CB	FAULTY	OPEN
7	132 KV BUS COUPLE	CB	FAULTY	OPEN
8	132/33 KV TRANSFORMER 1	CB	OPEN	CLOSE
9	132/33 KV TRANSFORMER 2	CB	OPEN	CLOSE
10	132/33 KV TRANSFORMER 3	CB	OPEN	CLOSE
RTU name Burwaha 220 KV S/S				
OLD ISSUE 8		NEW ISSUE 1	ATTENDED 0	

1	160 MVA XMER	OLTC	17	3
2	3X40 MVA XMER	OLTC	17	3
3	63 MVA XMER	OLTC	17	4
4	220 KV BUS COUPLER	CB	FAULTY	OPEN
5	220 /132 KV TRANSFORMER 1	CB	FAULTY	CLOSE
6	220 /132 KV TRANSFORMER 2 (132 KV SIDE)	CB	FAULTY	CLOSE
7	220 /132 KV TRANSFORMER2 (132 KV SIDE)	CB	FAULTY	CLOSE
8	BURWAHA 132KV-CHEGAON	CB	FAULTY	CLOSE
9	BURWAHA 220 KV NIMRANI	CB	FAULTY	CLOSE

RTU name Nepanagar 220 KV S/S

OLD ISSUE 5		NEW ISSUE 3	ATTENDED 0	
1	160 MVA XMER	OLTC	1	9
2	3X40 MVA XMER	OLTC	17	15
3	63 MVA XMER	OLTC	17	5
4	220 KV TRB	CB	FAULTY	OPEN
5	NEPA –CHEGAON 132 KV	CB	FAULTY	CLOSE
6	132/33 XMER (20 MVA) NEW	CB	NOT AVAILABLE	CLOSE
7	132/33 XMER (20 MVA) NEW	MW	NOT AVAILABLE	15
8	132/33 XMER (20 MVA) NEW	MVAR	NOT AVAILABLE	5

Sr.No	DESCRIPTION	status	telemetry value at SLDC	actual value at site
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RTU name -Bina 400 KV S/S

OLD ISSUE 5		NEW ISSUE 0	ATTENDED 0	
1	BINA400 KV-BINA PGCIL I	CB	FAULTY	CLOSE
2	BINA 220 KV-SHIVPURI 2	CB	OPEN	CLOSE
3	BINA 220 KV-GWALIOR 2	CB	OPEN	CLOSE
4	BINA 220 KV- GUNA 1	CB	FAULTY	CLOSE
5	400/220 KV XMER III	CB	FAULTY	CLOSE

RTU name -Bina 220 KV S/S

OLD ISSUE 3		NEW ISSUE 1	ATTENDED 0	
1	BINA 132 KV-SAGAR	CB	FAULTY	CLOSE
2	BINA 132 KV-PICHORE	CB	FAULTY	CLOSE
3	220/132 KV TRANSFORMER 2 (132 KV SIDE)	CB	FAULTY	CLOSE
4	BINA 220 KV BHOPAL	CB	FAULTY	CLOSE

Sr.No	DESCRIPTION	status	telemetry value at SLDC	actual value at site
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RTU name -NAGDA 400 KV S/S

OLD ISSUE 7		NEW ISSUE 0	ATTENDED 0	
1	400/220 KV ICT I	OLTC	17	9
2	400/220 KV ICT II	OLTC	N/C	7
3	400/220 KV ICT III	OLTC	N/C	7
4	NGD –BINA 400 I & II	CB	NOT AVAILABLE	
5	NGD –RAJGRAH 400 I & II	CB	NOT AVAILABLE	
6	NGD –DEHGAON 400 I & II	CB	NOT AVAILABLE	
7	400/220 KV XMER 3	CB	NOT AVAILABLE	

RTU name NAGDA 220 KV S/S

OLD ISSUE 8		NEW ISSUE 11	ATTENDED 0	
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1	125 MVA TRANSFORMER	OLTC	9#	8
2	160 MVA TRANSFORMER	OLTC	17	12
3	40 MVA TRANSFORMER -II	OLTC	17	5
4	125 MVA TRANSFORMER (132KV)	CB	FAULTY	CLOSE
5	125 MVA TRANSFORMER	CB	OPEN	CLOSE
6	220 KV BUS COUPLER	CB	FAULTY	OPEN
7	220 KV BUS INTERCONNECTOR I & II	CB	FAULTY	CLOSE
8	160 MVA TRANSFORMER	CB	FAULTY	CLOSE
9	220/132 XMER NEW	CB	NOT AVAILABLE	CLOSE
10	220/132 XMER NEW	MW	NOT AVAILABLE	40
11	220/132 XMER NEW	MVAR	NOT AVAILABLE	15
12	220/33 XMER NEW	CB	NOT AVAILABLE	CLOSE
13	220/33 XMER NEW	MW	NOT AVAILABLE	10
14	220/33 XMER NEW	MVAR	NOT AVAILABLE	2
15	NAGDA 132 KV GRASIM	CB	NOT AVAILABLE	CLOSE
16	NAGDA 132 KV GRASIM	MW	NOT AVAILABLE	5
17	NAGDA 132 KV GRASIM	MVAR	NOT AVAILABLE	0
18	220/132 XMER (132 SIDE)	CB	FAULTY	CLOSE
19	NAGDA132KV RATADIYA	CB	FAULTY	CLOSE
RTU name DEWAS 220 KV S/S				
OLD ISSUE 9 NEW ISSUE 6 ATTENDED 0				
1	BUS COUPLER 132 KV	CB	FAULTY	OPEN
2	DEWAS IC II	CB	FAULTY	OPEN
3	132 /33 KV TRANSFORMER 1	OLTC	N/C	8
4	132/33 KV TRANSFORMER 2	OLTC	N/C	7
5	220/132 KV TRANSFORMER 1	OLTC	N/C	7
6	220/132 KV TRANSFORMER 2	OLTC	N/C	7
7	DEWAS 220 KV -INDORE EAST	CB	FAULTY	CLOSE
8	DEWAS 220 KV -INDORE 400KV S/S	CB	FAULTY	CLOSE
9	DEWAS 132 KV -CHAPDA	CB	FAULTY	CLOSE
10	220/132 XMER NEW	CB	NOT AVAILABLE	CLOSE
11	220/132 XMER NEW	MW	NOT AVAILABLE	55
12	220/132 XMER NEW	MVAR	NOT AVAILABLE	10
13	132/33 XMER NEW	CB	NOT AVAILABLE	CLOSE
14	132/33 XMER NEW	MW	NOT AVAILABLE	25
15	132/33 XMER NEW	MVAR	NOT AVAILABLE	5
RTU name UJJAIN 220 KV S/S				
OLD ISSUE 9 NEW ISSUE 0 ATTENDED 0				
1	3X40 MVA TRANSFORMER	OLTC	5	11
2	220/132 KV TRANSFORMER 4	OLTC	N/C	6
3	160 MVA TRANSFORMER	OLTC	N/C	9
4	UJJAIN220 KV -JETPURA II	CB	FAULTY	CLOSE
5	63 MVA TRANSFORMER	CB	FAULTY	CLOSE
6	3X40 MVA TRANSFORMER (132 KV SIDE)	CB	FAULTY	CLOSE
7	UJJAIN220 KV -NAGDA 2	CB	FAULTY	CLOSE
8	UJJAIN220 KV -BADOD 1	CB	FAULTY	CLOSE
9	UJJAIN 132 KV -GHOSLA	CB	FAULTY	CLOSE
RTU name SHUJALPUR 220 KV S/S				

OLD ISSUE 8		NEW ISSUE 3	ATTENDED	0
1	160 MVA TRANSFORMER -I	OLTC	2	10
2	20 MVA TRANSFORMER	OLTC	10	5
3	160 MVA TRANSFORMER II	CB	FAULTY	CLOSE
4	160 MVA TRANSFORMER II (132 KV SIDE)	CB	FAULTY	CLOSE
5	20 MVA TRANSFORMER	CB	OPEN	CLOSE
6	132 KV BUS COUPLE	CB	FAULTY	OPEN
7	2X33 MVAR CAPACITOR BANK	CB	FAULTY	CLOSE
8	SHUJALPUR 220 KV-BHOPAL 2	CB	FAULTY	CLOSE
9	220/132 XMER NEW	CB	NOT AVAILABLE	CLOSE
10	220/132 XMER NEW	MW	NOT AVAILABLE	30
11	220/132 XMER NEW	MVAR	NOT AVAILABLE	5
RTU name SHAJAPUR132 KV S/S				
OLD ISSUE 2		NEW ISSUE 2	ATTENDED	0
1	132/33 KV TRANSFORMER 1	OLTC	N/C	9
2	SHAJAPUR 132 KV-PANWADI	CB	FAULTY	OPEN
3	132 KV BUS	VOLTAGE	0	130
4	132 KV BUS COUPLE	CB	FAULTY	OPEN
RTU name RATLAM 220 KV S/S				
OLD ISSUE 4		NEW ISSUE 8	ATTENDED	0
1	132/33 KV TRANSFORMER 2	OLTC	N/C	7
2	RATLAM 132 KV-MEGHNAGAR	MW	26	36
3	220 KV TRB	CB	FAULTY	OPEN
4	RATLAM 132 KV-TRACTION 2	CB	FAULTY	CLOSE
5	RATLAM -BADNAGAR	CB	FAULTY	CLOSE
6	RATLAM - NAGDA 2 NEW	CB	NOT AVAILABLE	CLOSE
7	RATLAM - NAGDA 2 NEW	MW	NOT AVAILABLE	10
8	RATLAM - NAGDA 2 NEW	MVAR	NOT AVAILABLE	5
9	RATLAM - SAILANA NEW	CB	NOT AVAILABLE	CLOSE
10	RATLAM - SAILANA NEW	MW	NOT AVAILABLE	8
11	RATLAM - SAILANA NEW	MVAR	NOT AVAILABLE	5
12	RATLAM 132 KV-KHACHROD	CB	FAULTY	CLOSE
RTU name NEEMUCH 220 KV S/S				
OLD ISSUE 4		NEW ISSUE 2	ATTENDED	0
1	220/132 KV TRANSFORMER 1	OLTC	N/C	7
2	220/132 KV TRANSFORMER 2	OLTC	N/C	8
3	NEEMUCH 132 KV INTER CONNECTOR II	CB	FAULTY	CLOSE
4	220 KV MAIN BUS	VOLTAGE	97	230
5	NEEMUCH 132 KV UDEYPUR	CB	FAULTY	CLOSE
6	132 KV BUS COUPLER	CB	FAULTY	CLOSE

RTU NAME- Amarkanatak Thermal Power Station

Annexure 7.3(ii)

S.N	Description		Telemetred value at site	Telemetred value at SLDC
		OLD ISSUES- 24	NEW ISSUES- 0	ATTENDED- 0
1	ATPS 220 KV- Jabalpur	CB	CLOSE	FAULTY
2	ATPS 220/6.6 KV Stn Xmer II	CB	CLOSE	FAULTY
3	ATPS 220/132 KV Xmer 1(132kv)	CB	CLOSE	OPEN
4	ATPS 220/132KV Xmer 4 (132KV)	CB	CLOSE	OPEN

5	ATPS220KV-SIDHI	MW	89 MW	75 MW
6	ATPS220KV-SIDHI	MVAR	10 MVAR	29 MVAR
7	ATPS220KV-BRS220 III	MW	20 MW	29 MW
8	GENERATOR 5	CB	CLOSE	N/C
9	ATPS220KV-Rewa	CB	CLOSE	N/C
10	ATPS220KV-BRS220 III	CB	CLOSE	N/C
11	ATPS 220/6.6 KV Stn Xmer A	CB	CLOSE	N/C
12	ATPS 220/6.6 KV Stn Xmer B	CB	CLOSE	N/C
13	ATPS 220/6.6 KV Stn Xmer A	MW	10	75
14	ATPS 220/6.6 KV Stn Xmer A	MVAR	5	0
15	ATPS 220/6.6 KV Stn Xmer B	MW	10	75
16	ATPS 220/6.6 KV Stn Xmer B	MVAR	5	0
17	ATPS132/33 KV ICT 5	CB	CLOSE	FAULTY
18	ATPS132 KV 220/132 KV ICT -I	MW	30 MW	22 MW
19	ATPS 132 KV Bus -1	VOLTAGE	134 KV	127 KV
20	ATPS132 KV-Waidhan	CB	close	FAULTY
21	132/33 KV TRANSFORMER 4	OLTC	6	N/C
22	132/33 KV TRANSFORMER 5	OLTC	6	N/C
23	GENERATOR 5 GT	MW		N/C
24	GENERATOR 5 GT	MVAR		N/C

RTU NAME- Birsingpur Thermal Power Station

	OLD ISSUES- 11	NEW ISSUES 0	ATTENDED	0
1	BRS220 GEN 1	CB	CLOSE	FAULTY
2	BRS 220KV TRB	CB	OPEN	FAULTY
3	BRS220 KV IC 1	MW	117 MW	2 MW
4	BRS220 KV IC 1	MVAR	10 MVAR	0 MVar
5	BRS 400 GENERATOR#5	CB	CLOSE	FAULTY
6	BRS 400/220 KV ICT	CB	CLOSE	FAULTY
7	BRS 400 BUS COUPLER	CB	CLOSE	FAULTY
8	BRS 400 BUS CUM TIE BKR.	CB	OPEN	FAULTY
9	BRS 400 DAMOH (PG) LINE-1	CB	CLOSE	FAULTY
10	BRS 400 MAIN BUS 1 VOLTS	VOLTS		N/C
11	BRS 400 MAIN BUS 1 FREQ	HZ		N/C

RTU NAME- Satpura Thermal Power Station -I

	OLD ISSUES- 10	NEW ISSUES- 0	ATTENDED- 0	
1	STPS PH I Stn Xmer I I I	CB	CLOSE	FAULTY
2	STPS PH I BUSCOUPLER I	CB	OPEN	FAULTY
3	STPS PH I TRB I	CB	OPEN	FAULTY
4	STPS PH I TRB II	CB	OPEN	FAULTY
5	STPS PH 2 GENERATOR 6 (GT)	MVAR	20	N/C
6	STPS PH 2 GENERATOR 7 (GT)	MVAR	15	N/C
7	STPS PH 2 MAIN BUS 1	VOLTAGE	229	N/C
8	STPS PH 2 MAIN BUS 1	FREQ.	49.46	N/C
9	STPS PH 2 MAIN BUS 2	VOLTAGE	228	N/C
10	STPS PH 2 MAIN BUS 2	FREQ.	49.44	N/C

RTU NAME- Madhikheda hydel Power Station

	OLD ISSUES- 9	NEW ISSUES- 0	ATTENDED- 0	
1	GENERATOR 1	CB	OPEN	FAULTY
2	GENERATOR 2	CB	OPEN	FAULTY
3	GENERATOR 3	CB	OPEN	FAULTY
4	Madhikheda 132 Kv- Karera I	CB	OPEN	FAULTY
5	Madhikheda 132 Kv- Karera I I	CB	OPEN	N/C
6	Madhikheda 132 Kv- Karera I	MW	10	0

7	Madhikheda 132 Kv- Karera I	MVAR	5	0
8	Madhikheda 132 Kv- Karera II	MW	10	0
9	Madhikheda 132 Kv- Karera II	MVAR	5	0
RTU NAME- Tons hydel Power Station				
OLD ISSUES- 5 NEW ISSUES- 0 ATTENDED- 0				
1	STN. XMER	MW	2	0
2	STN. XMER	MVAR	10	0
3	GENERATOR 2	CB	OPEN	faulty
4	GENERATOR 3	CB	OPEN	faulty
5	BUSCOUPLER	CB	OPEN	faulty
RTU NAME- Bargi hydel Power Station				
OLD ISSUES- 3 NEW ISSUES- 0 ATTENDED- 0				
1	BARGI 132 KV –JABALPUR 2	CB	Close	faulty
2	GENERATOR 1	CB	OPEN	transit
3	STN. XMER	CB.	OPEN	Faulty
RTU NAME- Pench hydel Power Station				
OLD ISSUES- 1 NEW ISSUES- 0 ATTENDED- 0				
1	GENERATOR 2	CB	open	transit
RTU NAME- Gandhi sagar hydel Power Station				
OLD ISSUES- 7 NEW ISSUES- 2 ATTENDED- 4				
1	132 KV BUS COUPLER	CB	OPEN	CLOSE
2	GENERATOR I	CB	OPEN	CLOSE
3	GENERATOR V	CB	OPEN	FAULTY
4	132/33 KV XMER	OLTC	9	6
5	132/33 KV XMER	CB	CLOSE	FAULTY
RTU NAME- Rajghat hydel Power Station				
OLD ISSUES- 7 NEW ISSUES- 0 ATTENDED- 0				
1	RAJGHAT132 KV-LALITPUR	MW	N/C	5
2	RAJGHAT132 KV-LALITPUR	MVAR	N/C	5
3	RAJGHAT132 KV-LALITPUR	CB	FAULTY	OPEN
4	GENERATOR I	CB	FAULTY	OPEN
5	GENERATOR II	CB	FAULTY	OPEN
6	GENERATOR III	CB	FAULTY	OPEN
7	132 KV BUS	VOLTAGE	N/C	129