

A Brief Report on Demand Crash in Madhya Pradesh and Chhattisgarh

In the afternoon hours of 21th May 2016 heavy rains prevailed in eastern part of Madhya Pradesh and Chhattisgarh demand crashed by around 1200MW and 1000 MW.

Western Regional demand gradually reduced from about 41300 MW to 38900 MW due to rains and further reduced during evening hours (17:00 HRS-18:00 HRS) to 36000 MW as normal trend.

No Generating units tripped, No power interruption took place.

Several lines tripped on fault which are mentioned below-

Sr. No	Element Name	Voltage Level	Outage		Revival		Reason / Remarks
			Date	Time	Date	Time	
1	Jabalpur(PS)-Bina(PG)-III	765 kV	21-05-2016	14:51	21-05-2016	16:09	Y PHASE FAULT
2	220KV BIRSINGHPUR-JABALPUR-I	220 kV	21-05-2016	15:07	*	*	Tower Collapse/TOWER COLLAPSE AT LOCATION 42 &43
3	DAMOH-SAGAR-S/C	220 kV	21-05-2016	15:15	*	*	Tower Collapse/TRIPPED ON R PHASE FAULT; TOWER COLLAPSE AT LOCATIONS 50 & 51
4	DAMOH(MP)-SAGAR -S/C	220 kV	21-05-2016	15:15	*	*	Tower Collapse/TOWER COLLAPSE AT LOCATIONS 50 & 51
5	Dharamjaygarh(PG)-Jabalpur(PS)-III	765 kV	21-05-2016	15:16	21-05-2016	17:04	B PHASE FAULT
6	220KV BIRSINGHPUR-JABALPUR-II	220 kV	21-05-2016	15:25	*	*	Tower Collapse/TOWER COLLAPSE AT LOCATION 42 &43
7	RAIPUR-WARDHA-I	400 kV	21-05-2016	15:48	21-05-2016	16:35	B PHASE FAULT
8	RAIPUR-WARDHA FSC-1 FSC	400 kV	21-05-2016	15:48	*	*	OUT ALONG WITH LINE ON B PHASE FAULT; REMAINED OUT DUE TO DAMAGE OF SUPPORT INSULATOR OF DAMPING RESISTOR
9	Korba(W) Ext-BHILAI(KHEDAMARA)-I	400 kV	21-05-2016	16:03	21-05-2016	17:58	B PHASE FAULT
10	Dharamjaygarh(PG)-New Ranchi(PG)-II	765 kV	21-05-2016	16:04	*	*	Y PHASE FAULT
11	KORBA(NTPC)-BHILAI-II	400 kV	21-05-2016	16:04	21-05-2016	16:04	R-Phase Auto Recloser Successful
12	KORBA(NTPC)-BHILAI-I	400 kV	21-05-2016	16:06	21-05-2016	17:14	R PHASE FAULT
13	Raipur PS(Durg)-Dharamjaygarh(PG)-S/C	765 kV	21-05-2016	16:13	21-05-2016	17:14	B PHASE FAULT
14	Dharamjaygarh(PG)-New Ranchi(PG)-I	765 kV	21-05-2016	16:14	21-05-2016	18:03	R PHASE FAULT
15	RAIPUR-DURG-I	400 kV	21-05-2016	16:32	21-05-2016	18:01	TRIPPED AT DURG END ONLY ON Y-PH-B-PH FAULT
16	BHILAI(KHEDAMARA)-RAITA-III	400 kV	21-05-2016	16:33	21-05-2016	18:14	B PHASE FAULT AT RAITA END AND B TO Y PHASE FAULT AT BHILAI END
17	RAIPUR-DURG-II	400 kV	21-05-2016	16:41	*	*	Y TO B PHASE FAULT
18	JPL_extn(TAMNAR)-TAMNAR(PS)-III	400 kV	21-05-2016	16:50	21-05-2016	17:40	Y TO B PHASE FAULT
19	Dharamjaygarh-Bilaspur-S/C	765 kV	21-05-2016	16:51	21-05-2016	16:51	Y-Phase Auto Recloser Successful
20	Tamnar PS(Raigarh) 240MVAR BR	765 kV	21-05-2016	16:55	*	*	Differential protection operated
21	RKM-RAIGARH-I	400 kV	21-05-2016	16:57	21-05-2016	18:43	R PHASE FAULT
22	KATNI-BIRSINGPUR-II	400 kV	21-05-2016	17:59	21-05-2016	19:34	TRIPPED ON OVER VOLTAGE
23	DAMOH-KATNI-I	400 kV	21-05-2016	17:59	21-05-2016	20:22	TRIPPED ON OVER VOLTAGE
24	RAIGARH-IBPL-I	400 kV	21-05-2016	18:02	21-05-2016	20:15	B-PH FAULT
25	Satna(PG)-Gwailor(PG)-II	765 kV	21-05-2016	18:12	21-05-2016	19:36	B-PHASE FAULT
26	Satna(PG)-Gwailor(PG)-I	765 kV	21-05-2016	18:12	21-05-2016	19:29	Y-PH FAULT
27	SATNA-SASAN-2 240MVAR LR @SATNA	765 kV	21-05-2016	19:36	*	*	REF OPERATED
28	Sasan-Satna(PG)-II	765 kV	21-05-2016	19:36	*	*	B-PH FAULT; REF OPERATED ON L/R AT SATNA
29	Gwailor (PG)-Jaipur (Phagi)-II	765 kV	21-05-2016	20:22	21-05-2016	21:06	TRIPPED AT JAIPUR ONLY ON R-PH FAULT; A/R SUCCESSFUL AT GWALIOR
30	Bina(PG)-Gwailor(PG)-III	765 kV	21-05-2016	20:33	*	*	B-PH-Y-PH FAULT

Actions taken-

1. Generation has been backed down at all the ISGS stations and Vindhyachal Unit-7(500 MW) was taken out on RSD by NTPC.
2. Trail charge attempted on all the lines tripped on fault to ensure system reliability. However the following lines could not restored as per the reasons shown against.

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4	220KV BIRSINGHPUR-JABALPUR-II	220 kV	21-05-2016	15:25	*	*	Tower Collapse/TOWER COLLAPSE AT LOCATION 42 &43
5	Dharamjaygarh(PG)-New Ranchi(PG)-II	765 kV	21-05-2016	16:04	*	*	Y PHASE FAULT, Trial charged twice: first time tripped due to LR Current setting problem at Dharamjaygarh end and second time due to Over voltage tripping at remote end third trial charging is being attempted.
6	Sasan-Satna(PG)-II	765 kV	21-05-2016	19:36	*	*	B-PH FAULT; REF OPERATED ON L/R AT SATNA, Jumper open at Loc: 374.
7	Bina(PG)-Gwailor(PG)-III	765 kV	21-05-2016	20:33	*	*	B-PH-Y-PH FAULT, Loc: 614 (Suspension) partial damaged, above K-frame
8	Tamnar PS(Raigarh) 240MVAR BR	765 kV	21-05-2016	16:55	*	*	Differential protection operated

3. No critical loading observed. However the loading on 765kV Sasan-Vindhyachal PS-S/c line is in the order of 1930MW. In case of further line tripping from Sasan, SPS will operate as per design, tripping one unit at Sasan. Sasan was alerted to ensure to keep SPS in service.

Details of relay indication are being compiled from the utilities.