



Power System Operation Corporation Limited

Western regional Load Dispatch Centre

FLASH REPORT

WRLDC/April-2017/GD1/13-04-2017

Incident: Tripping of ICTs at Kolhapur and Karad.

1. Date and Time: 13/04/2017 09:35 hrs

2. Antecedent Conditions

1. Frequency:

Event	Frequency(Hz)	Time(hh:mm:ss)
Pre incident	50.02	09:35:50
Post Incident	50.20	09:36:07

2. Reason for Tripping:

All ICTs at Kolhapur and Karad tripped due to Back-up O/C protection leading to islanding of 220 kV network in Karad and Kolhapur area which resulted in tripping of several 220 kV lines.

3. Areas Affected By Disturbance: No generation loss reported. Load loss of around 1800 MW

4. Elements affected:

Feeder/ICT	Tripping time (hh:mm)	Restoration time(hh:mm)	Remarks
ICT-1@Kolhapur	09:35	10:03	Trans Overload Stage -2 Trip, Trans overloaded, stage -1 Alarm, Breaker AC supply fail
ICT-2@Kolhapur	09:35	11:07	Back up o/c and E/f Protection optd. Trip ckt faulty, Br AC supply fail
ICT-3@Kolhapur	09:35	10:15	Back up o/c and E/f Protection optd. Trip ckt faulty, Br AC supply fail

ICT-1@Karad	09:35	11:58	Back up o/c and E/f Protection optd. Trip ckt faulty, Br AC supply fail
ICT-2@Karad	09:35	10:20	Back up o/c and E/f Protection optd. Trip ckt faulty, Br AC supply fail
ICT-3@Karad	09:35	10:23	Back up o/c and E/f Protection optd. Trip ckt faulty, Br AC supply fail
220 kV Talandge Chikkodi	09:35	11:16	Kolhapur 220 kV Bus dead due to tripping of ICTs
220 kV Mudsingi Chikkodi	09:35	11:25	Kolhapur 220 kV Bus dead due to tripping of ICTs

5. Generation Affected:

Nil

6. Actions Taken:

Load loss resulted in huge under-drawal of Maharashtra. This resulted in frequency rising upto 50.20 Hz. Maharashtra was advised to reduce the Hydro generation quickly.

Voltage in Southern Maharashtra had risen. The status of reactors in the region was reviewed. No reactors in the region were taken into service as voltages were in reasonable limits.

All ICTs were restored and load was gradually increased on each ICTs.

Talandge Chikkodi and Mudsingi Chikkodi were normalized at 11:16 hrs and 11:25 hrs respectively.

7. Change in Line flows:

Line	Before Incident	After incident
765 kV Raichur Solapur D/C	1600	1900
400 kV Kolhapur Kudgi D/C	-100	420
400 kV Solapur Kolhapur	500	230
400 kV Alkud Kolhapur	450	180
400 kV Solapur Karad	290	120
765 kV Wardha Aurangabad Q/C	4800	4480
765 kV Aurangabad Solapur D/C	3300	2940

8. Current Status:

All feeders were restored though there was some delay in restoration of certain elements. Talandge Chikkodi and Mudsingi Chikkodi which had tripped from Maharashtra end only due to bus of Kolhapur and Mudsingi becoming dead were normalized at 11:16 hrs and 11:25 hrs respectively.



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9. Further action required:

The exact reason for tripping of the ICTs (Back-up O/C protection as reported) is not clear. SLDC Kalwa is requested to furnish flash and detailed reports including relay indications, DR, and EL at the earliest.

The points of islanding of 220 kV network in the area are not known. SLDC Kalwa is requested to explain the details.

K Muralikrishna

(Shift Charge Manager)