

C.E. (System Control Centre),

REPORT ON SYSTEM DISTURBANCE / PLANT FAILURE

Power Station: Upper Kotmale Power Station

Date: 2021.01.31

Time: 06:52 hrs

1. Failure at a Glance:

At about 06:46:03 hrs, Unit No 01 - Lockout Relay for Non-Emergency Stop activated due lack of Shaft Seal Cooling Water Flow indication and at 06:52:11, Unit No 01 was tripped.

2. Pre-fault condition:

Generators -@ 06:45:00

Unit No.	MW	MVAr	Voltage kV	AVR on/off	Governor	Remarks
01	74.0	1.8	13.59	On	Auto	AGC Mode
02	-	-	-	-	-	-

Transmission Lines -@ 06:45:00

Transmission Line	MW	MVAr	A	kV
Kotmale line 01	40.5	1.3	94	222.6
Kotmale line 02	40.2	-0.5	95	222.1

(b). Nature of failure:

Equipment	Auto/Main trip	Time of tripping	Indications/Remarks
Unit No 1	Auto	06:52:11	Tripped due to Non-Emergency Stop Activation


3. Restoration

Equipment	Restored time
Generator #1	-

4. Brief description of incident by Operations Engineer:

At about 06:46:02 hrs, Unit 1 shaft seal cooling water low indication appeared and at 06:46:03 hrs, 86-5 lockout relay was activated in Unit No 1 which was in operation with a load of 75 MW under AGC Frequency control mode. It initiated a typical stop sequence of the Unit No 1 and tripped at 06:52:11 hrs.

Power supply of the flow meter which is used to measure the shaft seal cooling water flow was interrupted due to failure of the static switch No 2 of Unit 1 in underground DC distribution panel. Then, shaft seal cooling water flow low was detected and hence 86-5 non-emergency relay was activated.


Eng. U.S. Dunukedeniya
EE(O) Upper Kothmale P.S.
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Electrical Engineer (Operations)

5. Remedial actions taken to avoid reoccurrence of such failure / [EE (EM) / EE (C&I) / ME's note]:

Due to the failure of static switch, an inverter module and two 230/100 V transformers were burnt out. Inverter is replaced with a spare and the cause of the failure of the static switch needs to be investigated.


Eng. W.B.C. Perera
E.E. (M)

Two transformers were damaged during the fault. They supply power to the creep detector, Paustock pressure strain gauge amplifier and the synchronizer. Since the synchronizer is not functioning, unit could not be synchronized. The MCCBs protecting the circuit have not tripped at the proper time. This has to be investigated and the Hf has to be replaced.

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EE (EM) / EE (C&I) / ME



6. Remarks

NO1 machine has been re-energized to A/M. In 31st Jan.

Eng. N.D. Subasinghe
Electrical Engineer
(Control & Instrumentation)
Upper Kothmale Power Station

Investigation on faults of inverter 1 and static switch 2 is on progress. Lines from SS2 to burnt transformer have been checked, no faults found. It is suspected that malfunction of inverter 1 came to first SS2 transformer due to high voltage.

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Chief Engineer - Upper Kothmale Power Station
Copy: DGM (MC) - f.i. Pl.

Eng. Rasitha Peiris
Chief Engineer
Upper Kothmale Power Station

Date: 01/02/01