

::TAMIL NADU GENERATION AND DISTRIBUTION CORPORATION LIMITED::

Office of the Director/Distribution,
TANGEDCO,
Chennai - 600002.

Memo.No.CE/P&C/SE/D/P&C/E4/A3/F.Teek/D. 10 /14 dt 1 .07.2014

Sub: Fire Accident to 33/11KV, 16 MVA Power Transformer-2 at Chetpet SS –
Non opening of Transformer HV Breaker – Guidelines issued – Regarding.

On 05.06.2014 the 11KV Kilpauk feeder had tripped on Instantaneous Earth fault Protection and the Breaker had opened correctly. Subsequently after 1.19 secs the "Pressure Relief Trip" and "Bucholtz Trip" had operated in the 33/11KV , 16MVA Power Transformer-2 but the Transformer HV Breaker failed to open and the Transformer LV Breaker had opened belatedly (1.043 secs). This has caused a heavy fire in the Transformer which was completely burnt. All 33KV, 11KV feeder power cables and control cables near the transformer were also burnt. This incident had not only damaged the Transformer but also all feeder cables, thus preventing immediate supply restoration.

Even though the protection relays acted correctly Breaker's sluggishness in opening caused the problem.

The Chairman has reviewed this incident and instructed to issue guidelines to the MRT and Maintenance wing to avoid this sort of damages. Hence the following guidelines are issued.

- 1) All Protective Relays of feeder/Transformer, etc has to be tested for its accuracy and operation periodically.
- 2) Very old and defective Relays may be arranged to be replaced with state-of-the-art Numerical Relays.
- 3) Protection Trip is to be checked for all feeders and Transformers by actual simulation of the Relay and ensuring instantaneous opening of the Breaker without any abnormal time delay.
- 4) Proper grading and coordination of Relays to be done between feeders, Transformers and Remote end feeder Relays for correct fault isolation taking in to consideration of the substation fault level.
- 5) Breaker close/open time has to be checked periodically and timings should be recorded. If timings found high necessary rectification of the Breaker to be done for immediate fault isolation.

- 6) DGA tests on Transformer to be done at R&D Lab for assessing the Transformer's healthiness.
- 7) Transformer OLTC oil should be changed as per the schedule or based on BDV of oil.
- 8) Earth Resistance to be checked and maintained periodically.
- 9) Battery and Battery charger to be given utmost importance and maintenance to be done regularly.
- 10) Exposed power/control cables in trench near Transformers may be arranged to be covered to avoid spreading of fire from Transformer hot oil spillage/fire.

The above points may be followed strictly by the MRT/O&M wing so as to avoid damages to the expensive equipments like Power Transformer, Power Cables, etc.

The receipt of the memo may be acknowledged.

R.S. Alagappan
17/12/2014
(R.S.ALAGAPPAN) 5/11
Chief Engineer/P&C/Chennai
For DIRECTOR/DISTRIBUTION

To

All Superintending Engineers/EDC

Copy submitted to Chairman's Table .

Copy to all Chief Engineers/Distribution.