

Subject: 220KV Transmission Line Earth Fault & its Consequences

Executive summary:

Transmission line faults are very common, and especially Earth fault which happens over 80% of the time. Transmission lines are well protected against all types of faults by the use of state of art Protection relays. These relays are expensive compared to other protection relays.

Why this note? Ever imagined that an uncleared Earth fault in a 220KV Transmission line can burn out a control room of a Hydro station? Very difficult to believe isn't ?

Occurrence in Brief:

On 18th February 2016, around 1600hrs, newly commissioned 220KV Shimoga Talguppa line tripped due to Earth fault. There was a delay in the fault getting cleared. This resulted in fault current entering the Sharavathi Hydro power station & the Control Equipment caught fire, bringing 1000MW of hydro power to standstill. All Equipments present in the CR got damaged.

Even though the cause of fire is not brought out, one can surmise that the Earthing for the newly commissioned Transmission line was not proper. This might have resulted in the voltage rise of the panels in CR, resulting in the fire.

News item in TOI was the closest in reporting the cause of fire. The rest attributed the fire due to Electric Short circuit.

“Power cable snaps in Sharavathi hydro project; havoc in Karnataka

Sandeep Moudgal | TNN | Feb 20, 2016, 05.51 PM IST

BENGALURU: Already facing water crisis, the fire which engulfed the power station of the Sharavathi hydro project has left Karnataka reeling under a power crisis for the next four to five months.

Result: The state is short of 2,500 MW.

The fire which engulfed the power station on February 18 has seen the state face a crisis on 1,275 MW. The main cause for the fire is the earthing fault in the Sharavathi-Talaguppa power line which was installed 10 days ago.”



The damage cost is estimated to 600crores, ABB Switzerland is roped in to set right the CR equipment. As on date 2 units are back in service. There are 10 units of 100MW each.

Foot Note:

Time and again we have seen the havoc played by improper earthing, and lightning protection. Unfortunately our regulators are also not serious on this issue. Till such time the regulators become serious on this neglected topic, “ **Happy Electrical Fires** “

Compiled by:

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