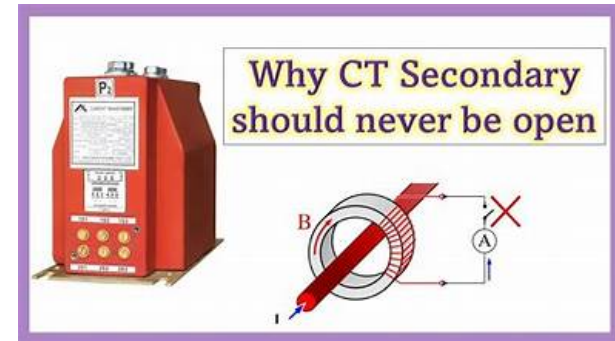




Safety Message of the Day for IMEA Members



The safety risks of open CT secondary circuits Safety Message

Current Instrument Transformers (CTs) play a vital role in electrical systems for accurate current measurement. They provide a safe and practical means to step down high currents for monitoring and control purposes. However, leaving the secondary circuit of CTs open can lead to potentially dangerous consequences. When the secondary circuit of a CT is open, it means there is no load or external circuit connected to the secondary winding. In this state, the CT experiences a condition of no current flow in its secondary winding. Consequently, the secondary winding behaves as a primary winding, producing a high voltage across its terminals. This voltage is directly proportional to the primary current.

Safety risks and hazards

The presence of high voltage in an open secondary circuit poses significant safety risks. First and foremost, it represents an electrocution hazard to anyone in close proximity to the open circuit terminals. The exposed high voltage can potentially cause severe electric shocks, leading to injuries or even fatalities.

Additionally, the insulation materials used in CTs are designed to withstand normal operating voltages but may not be capable of handling the excessively high voltages present during open circuit conditions. This can lead to insulation breakdown, resulting in arc flashes or electrical insulation failure. The resulting equipment damage and system downtime can have substantial financial implications.