

## Lesson Learned

### Protection Shields for Generator Step-up Transformers

**Primary Interest Groups**

Generator Owners (GOs)

Transmission Owners (TOs)

**Problem Statement**

A phase-to-ground fault ruptured a generator step-up (GSU) transformer's tank and started a fire. The flames caused the GSU transformer to discharge oil onto an adjacent transformer, resulting in the second unit also catching fire.

**Details**

The event occurred at a generating plant where a phase-to-ground fault on a GSU transformer resulted in the transformer failing and caused the generating unit to trip offline. As a result of the transformer failure, the tank ruptured and fire erupted at the transformer, which caused oil to leak. The oil leaking from the transformer carried over onto an adjoining GSU transformer, resulting in a fire at the second transformer and tripping its corresponding generating unit. The end result was both GSU transformers' protective devices were needed to clear the faults and their corresponding generating unit tripped offline.

**Corrective Actions**

None to date.

**Lesson Learned**

When two GSUs from separate generating units are installed adjacent to one another, the entity should install some form of shield between the two such that if one transformer ruptures due to fire, fault, etc. and begins to discharge oil, fire will not result at the adjacent transformer due to spewing oil. Taking this appropriate action will prevent the adjacent GSU transformer and its corresponding generator from tripping offline.

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