North American Transmission FORUM

Community *Confidentiality* *Candor* *Commitment*

NATF Redacted Operating Experience Report

Substation Incident Involving Hot Stick Equipment

About NATF Redacted Operating Experience (OE) Reports

North American Transmission Forum (NATF) operating experience reports highlight positive or negative transmission (reliability or resiliency) experiences worth sharing for learning opportunities or potential trending. The overall goal is to help each other learn without experiencing the same issues first-hand. This sharing originates confidentially within the NATF membership.

Redacted operating experience reports are posted on the NATF public website to allow the NATF and its members to more broadly share information, especially safety-related alerts and learnings, with contractors and other utilities to benefit the industry at large.

The NATF member company that submitted the initial restricted distribution OE report for this topic/event has approved the NATF to issue this redacted OE report.

Topic

Substation Incident Involving Hot Stick Equipment

Description

An Apprentice Technician placed a meter at the bus four-hole pad connection where the U-shaped clamp would easily fit. While obtaining a measurement, the amp probe was positioned too close to the 13.2kV bus support structure which allowed "A" Phase of the 13.2kV bus to flash to ground through the amp probe. This produced a phase to ground fault that quickly turned into a sustained three phase fault.

Lessons Learned

1. Apprentices were working without the oversight of a Journeyman Technician.
2. Substation Technician Training Program did not include the use of Hot Stick Equipment or the application of Minimum Approach Distances.
3. The company was aware of the potential failure of the Circuit Switcher latching device, but did not prioritize maintenance accordingly.
4. Communications from the stunned Apprentice to the System Operator(s) were ambiguous and misleading. The Apprentice's extreme calm masked the urgency and scope of the event.
5. The System Operator(s) did not properly respond to phrases used by the Apprentice that would otherwise suggest a catastrophic failure of some type.

Actions Taken (or to be taken)

- Reinforce the requirement of Journeyman Technicians providing Apprentice oversight
- Enhance Substation Technician Training Program to include the use of Hot Stick Equipment
- Review and update maintenance procedure as needed
- Enhance System Operator communication training to include discussions on this event

Extent of Condition

N/A

Reference: NATF-OER-363