

# NATF Redacted Operating Experience Report

## 345/138 kV Grounding Incident

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## Topic

345/138 kV Grounding Incident

## Description

During switching on 345 kV & 138 kV buses at one of our substations, the bus had 3 of the 4 breakers tied to it. The final breaker to tie to the bus was the transformer low-side 138 kV breaker. Upon closing the tie breaker, the transformer overall differential relay and the transformer 138 kV lead differential relay tripped and re-opened the tie breaker. Upon investigation, grounds were found installed on the transformer low-side bus, which had been left by another crew for a different job.

## Lessons Learned

1. Error Prevention Tools
  - Error-likely situations must be managed properly by recognizing traps and utilizing error-prevention tools.
2. HP Tools – Job Briefing, Self-Check, and Peer Check
  - During pre-energization preparation, a walkdown of the entire circuit to be energized needs to be performed.
3. HP Tools – Questioning Attitude
  - Need to ask, “Have all grounds been removed?” Then need to verify.
4. HP Tools – Placekeeping
  - Maintain one crew leader for entire project, or manage with a proper turnover process.
  - Locations of all grounds need to be tracked.

## Actions Taken

1. Developed an installed-grounds tracking sheet/method/process.
2. Plan to keep leadership continuity throughout the entire project when possible.
3. Adjusting process to perform walkdown of entire circuit prior to energization.

## Extent of Condition

The condition exists whenever/wherever grounds are installed to safely work on the equipment.