

# NATF Redacted Operating Experience Report

## 115 kV Motor Operated Air Break Switch Failure

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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.

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## Topic

115 kV Motor Operated Air Break Switch Failure

## Description

A transmission project crew was performing switching to isolate a 115 kV motor operated air break switch (MOAB) for maintenance. The switching involved having the crew manually open an adjacent 115 kV MOAB (figure 1) as a clearance point because the switch could not be operated remotely due to a weak radio signal.

While opening the switch, an unintentional arc occurred. Crew members at the base of the pole moved away and were not injured—this is attributed to the crew’s adherence to personal protective equipment (PPE) standards and the pre-job briefing that outlined an escape plan prior to operating the switch (identified this as a positive observation). This event had no impact on system operations.

## Event Analysis and Lessons Learned

A post-event laboratory analysis revealed that all three vacuum interrupters on the 115 kV MOAB had defective vacuum bottles. This was identified as the causal factor for the event.

The event analysis identified the following contributing factors:

1. The 115 kV MOAB was not properly aligned and adjusted, preventing the vacuum bottles from operating as designed.
2. The 115 kV MOAB had been motor operated an unknown number of times with visible arcing.
3. Opening the MOAB manually extended the arc duration.

## Actions Taken

1. Included a vendor representative in the event investigation.
2. Updated the 8-year testing/maintenance cycle to include vacuum bottle testing and switch alignment.
3. Inspected other locations with single vacuum bottles on manual switches and scheduled necessary repairs.

## Extent of Condition

Multiple locations include MOAB switches.



Figure 1. Photo of affected MOAB switch