

NERC

NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Outage Initiation Codes

November 2021

RELIABILITY | RESILIENCE | SECURITY



- This is not the Initiating cause code
- The Outage Initiation Codes describe where an Automatic Outage was initiated on the power system.
 - Element-Initiated Outage
 - An Automatic Outage of a TADS Element that is initiated on or within the TADS Element that is outaged.
 - Other Element-Initiated Outage
 - An Automatic Outage of an TADS Element that is initiated by another TADS Element and not by the TADS Element that is outaged. (Note: Only used for TADS Elements)
 - AC Substation-Initiated Outage
 - An Automatic Outage of a TADS Element that is initiated on or within AC Substation facilities. (Note: By the definition of “AC Substation” in Section A, Protection System Equipment is not part of the AC Substation; it is therefore included in “Protection System-Initiated Outage.” Only used for TADS Element.)

- **AC/DC Terminal-Initiated Outage**
 - An Automatic Outage of a TADS Element that is initiated on or within AC/DC Terminal facilities. (Note: By the definition of “AC/DC Terminal” in Section A, Protection System Equipment is not part of the DC Terminal; it is therefore included in “Protection System-Initiated Outage.” Only used for TADS Element.)
- **Protection System-Initiated Outage**
 - An Automatic Outage of a TADS Element that is initiated on or within the Protection System. (Note: This includes Automatic Outages due to the failure of a Protection System element initiated by protection equipment (including, but not limited to: incorrect protection settings, wiring errors, miscoordination, Protection System related Human Error, etc.) causing the protection system to misoperate. Only used for TADS Element.)
- **Other Facility-Initiated Outage**
 - An Automatic Outage that is initiated on or within other facilities. “Other facilities” include any facilities not includable in any other Outage Initiation Code. (Note: An Automatic Outage initiated on a Transformer that is not a TADS Element is considered an AC Substation or an AC/DC Terminal-Initiated Outage since the Transformer would be considered part of an AC Substation or AC/DC Terminal.)

Outage Initiation Code Examples

- **Example 1**

- A Transformer, which is an Element, is outaged. Is its outage an Element-Initiated Outage or an AC Substation-Initiated Outage? It depends. If the outage initiated on or within the Element (e.g., an internal fault or a cracked insulator that caused a fault), the outage is Element-Initiated, even though the Transformer is in a Substation. However, if the Transformer outage was not due to the Transformer itself but due, for example, to a failed circuit breaker, it is AC Substation-Initiated.

- **Example 2**

- An AC Circuit, which is an Element, has an outage that was initiated by a non-TADS Element AC Circuit. The Element outage is Other Facility-Initiated.

- **Example 3**

- An AC Circuit Outage was initiated by an Element Transformer outage. The AC Circuit Outage is Other Element-Initiated.

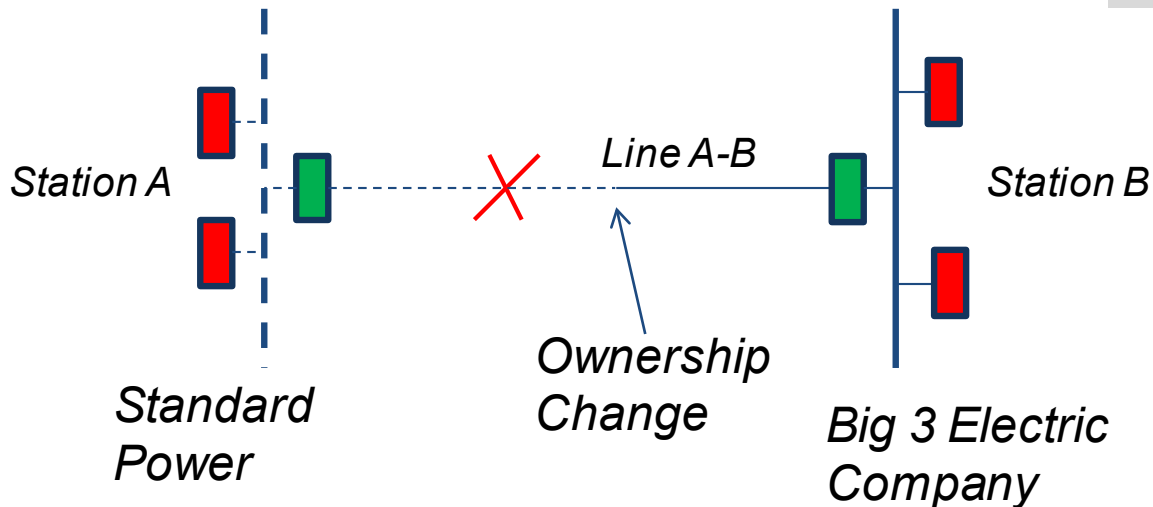
- **Example 4**

- An AC Circuit Outage was initiated by an non-Element Transformer outage. The AC Circuit Outage is Other Facility-Initiated.

A fault on an AC Circuit

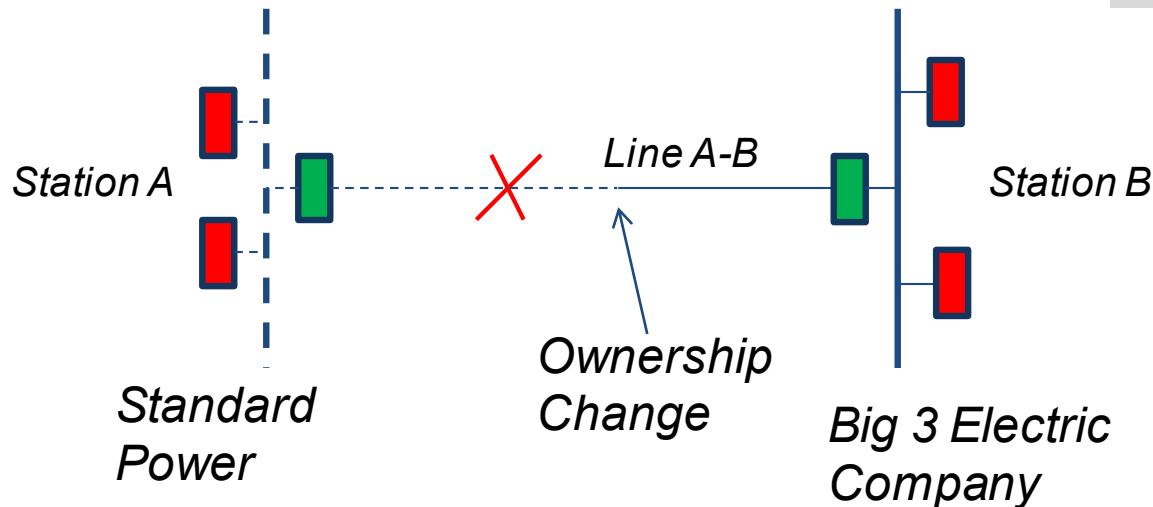
- Big 3 Electric is responsible for reporting outages on Line A-B.
- A fault occurred in Standard Power section of line.
- What is the Outage Initiation Code for Line A-B?

- A. Element-Initiated
- B. Other Element-Initiated
- C. AC Substation-Initiated
- D. Protection System Initiated
- E. Other Facility Initiated
- F. None of the above



A fault on an AC Circuit

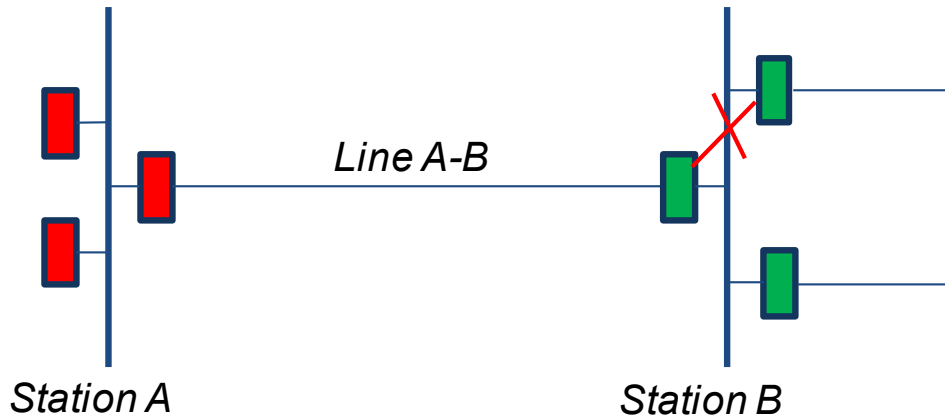
- Big 3 Electric is responsible for reporting outages on Line A-B.
- A fault occurred in Standard Power section of line.
- What is the Outage Initiation Code for Line A-B?



- A. Element-Initiated**
- B. Other Element-Initiated
- C. AC Substation-Initiated
- D. Protection System Initiated
- E. Other Facility Initiated
- F. None of the above

Bus Fault

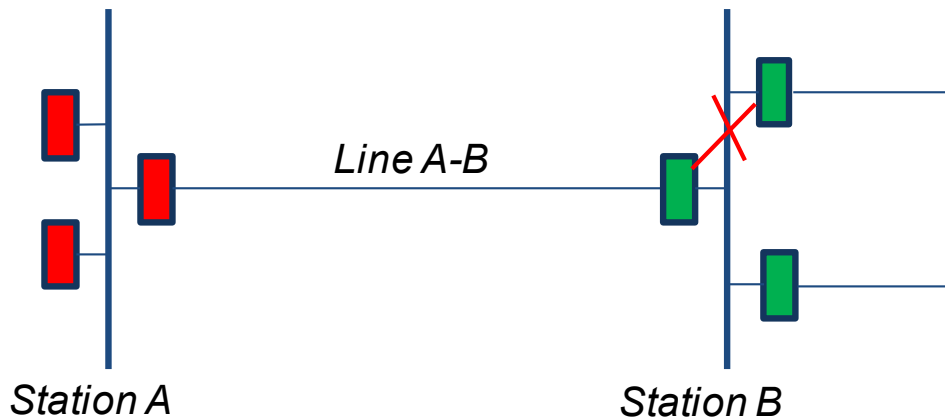
- A fault occurs on the bus at Station B.
- What is the Outage Initiation Code for Line A-B?



- A. Element-Initiated
- B. Other Element-Initiated
- C. AC Substation-Initiated
- D. Protection System Initiated
- E. Other Facility Initiated
- F. None of the above

Bus Fault

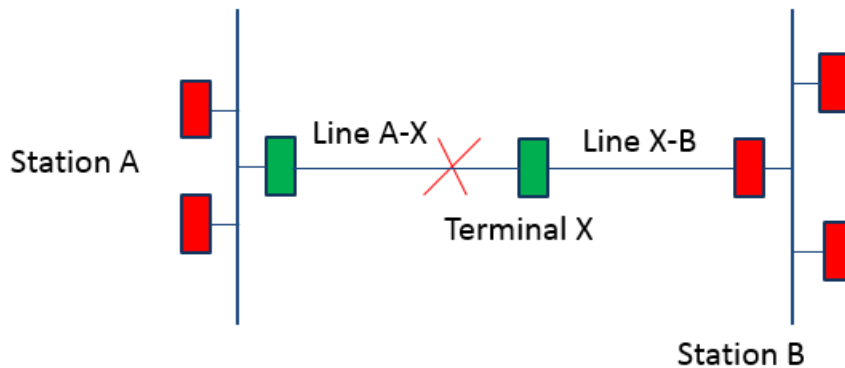
- A fault occurs on the bus at Station B.
- What is the Outage Initiation Code for Line A-B?



- A. Element-Initiated
- B. Other Element-Initiated
- C. AC Substation-Initiated**
- D. Protection System Initiated
- E. Other Facility Initiated
- F. None of the above

A fault on AC Circuit 'A-X'

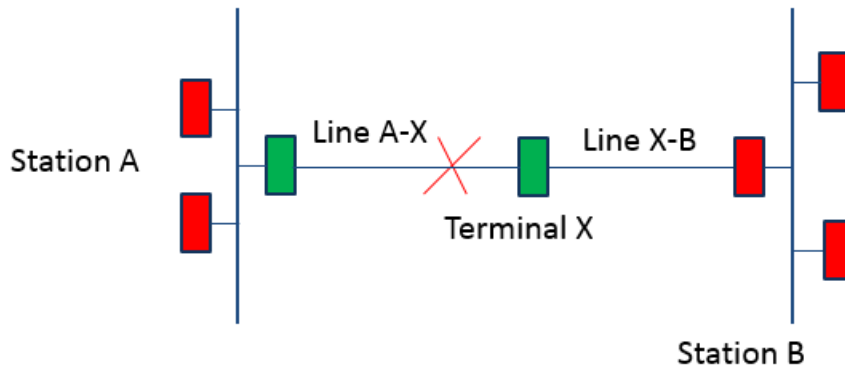
- What is the Outage Initiation Code for **Line X-B**?



- A. Element-Initiated
- B. Other Element-Initiated
- C. AC Substation-Initiated
- D. Protection System Initiated
- E. Other Facility Initiated
- F. None of the above

A fault on AC Circuit 'A-X'

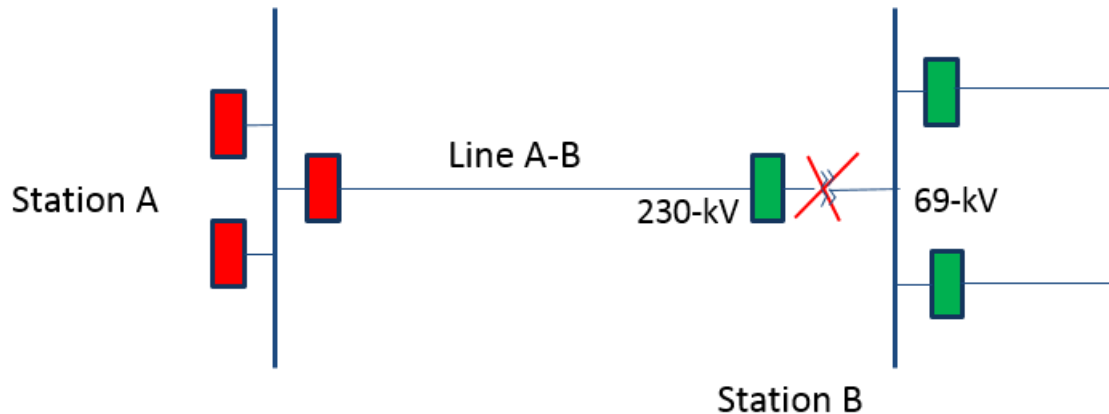
- What is the Outage Initiation Code for **Line X-B**?



- A. Element-Initiated
- B. Other Element-Initiated**
- C. AC Substation-Initiated
- D. Protection System Initiated
- E. Other Facility Initiated
- F. None of the above

Non-element Transformer Fault

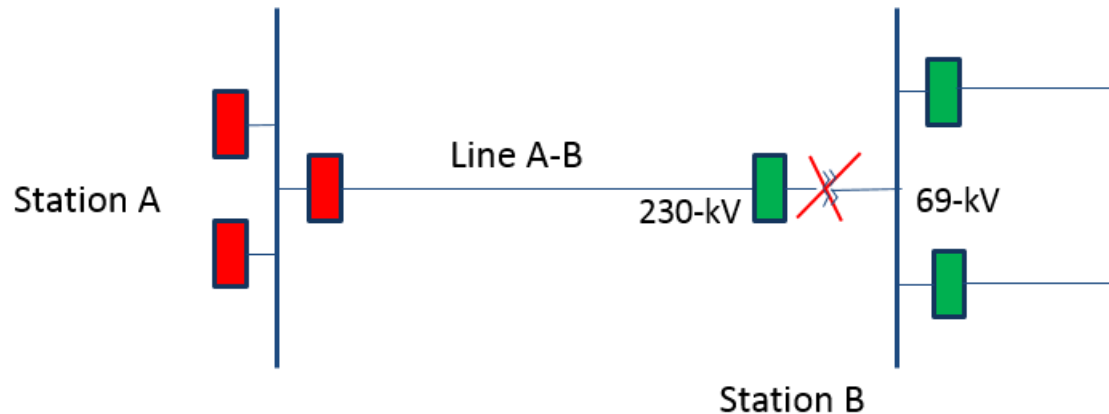
- A fault inside the non-element 230/69-kV Transformer at Station B.
- What is the Outage Initiation Code for 230-kV Line A-B?



- A. Element-Initiated
- B. Other Element-Initiated
- C. AC Substation-Initiated
- D. Protection System Initiated
- E. Other Facility Initiated
- F. None of the above

Non-element Transformer Fault

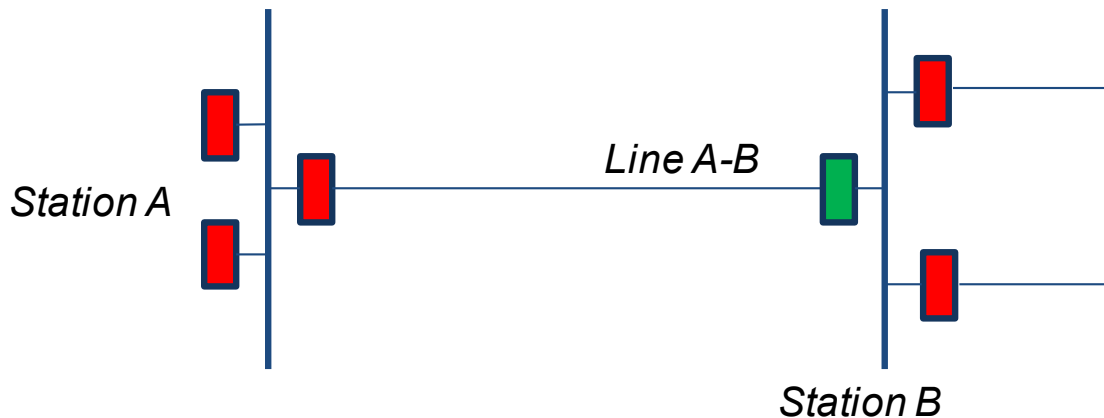
- A fault inside the non-element 230/69-kV Transformer at Station B.
- What is the Outage Initiation Code for 230-kV Line A-B?



- A. Element-Initiated
- B. Other Element-Initiated
- C. AC Substation-Initiated
- D. Protection System Initiated
- E. Other Facility Initiated**
- F. None of the above

Human Error

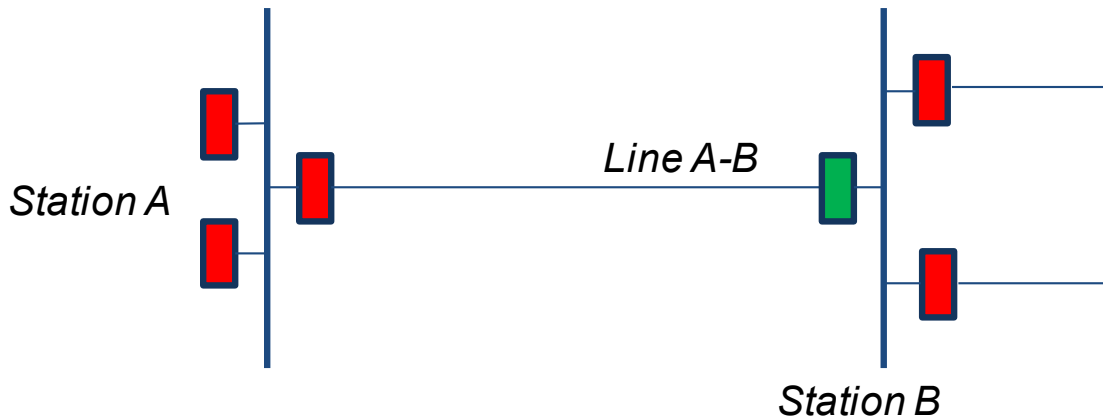
- An employee turns the wrong handle and accidentally opens the breaker at Station B on Line A-B.
- What is the Outage Initiation Code for Line A-B



- A. Element-Initiated
- B. Other Element-Initiated
- C. AC Substation-Initiated
- D. Protection System Initiated
- E. Other Facility Initiated
- F. None of the above

Human Error

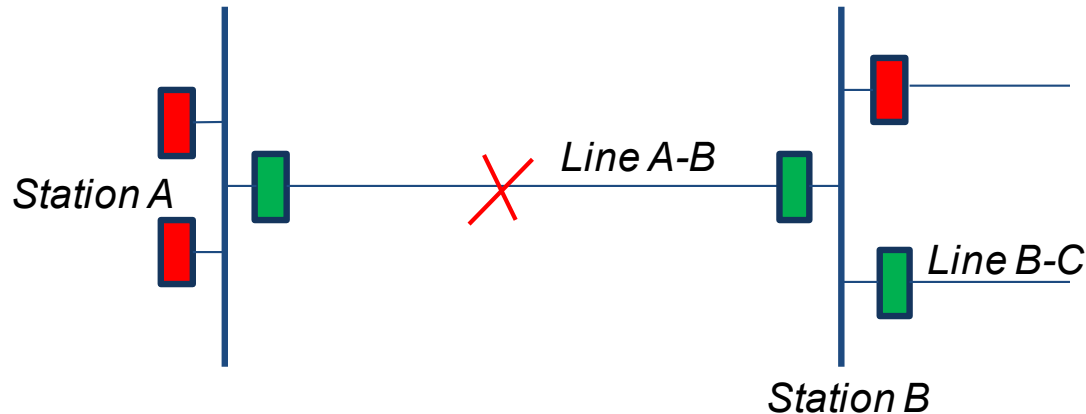
- An employee turns the wrong handle and accidentally opens the breaker at Station B on Line A-B.
- What is the Outage Initiation Code for Line A-B



- A. Element-Initiated
- B. Other Element-Initiated
- C. AC Substation-Initiated
- D. Protection System Initiated
- E. Other Facility Initiated
- F. None of the above

A fault occurs on Line A-B

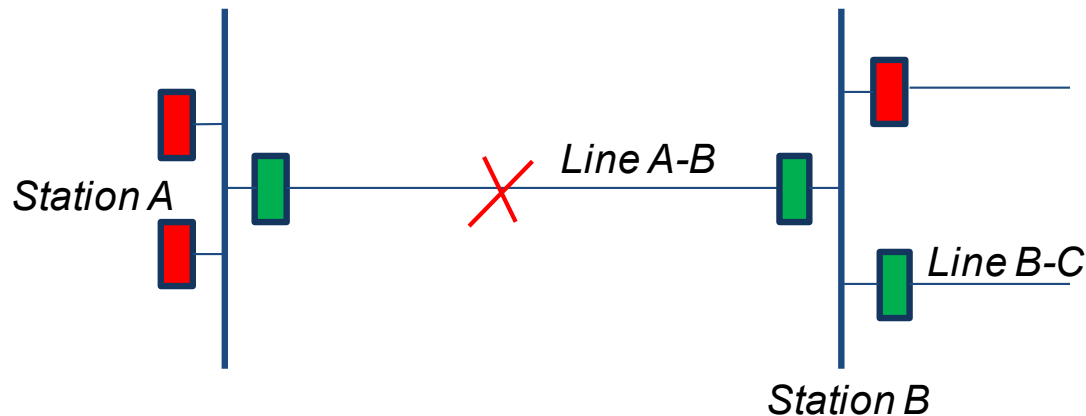
- The breaker on Line B-C erroneously opens due to relays having the wrong settings.
- What is the Outage Initiation Code for Line B-C?



- A. Element-Initiated
- B. Other Element-Initiated
- C. AC Substation-Initiated
- D. Protection System Initiated
- E. Other Facility Initiated
- F. None of the above

A fault occurs on Line A-B

- The breaker on Line B-C erroneously opens due to relays having the wrong settings.
- What is the Outage Initiation Code for Line B-C?



- A. Element-Initiated
- B. Other Element-Initiated
- C. AC Substation-Initiated
- D. Protection System Initiated**
- E. Other Facility Initiated
- F. None of the above

A stylized map of North America is centered on the page. The map is divided into three horizontal color bands: a light purple band at the top covering Canada, a dark blue band in the middle covering the United States, and a light grey band at the bottom covering Mexico. The text "Questions and Answers" is overlaid on the dark blue band.

Questions and Answers

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