

Appendix B

FRCC regional application of the term “transmission Protection Systems”

This is a clarification of the FRCC regional application of the term “transmission Protection Systems” as used in the PRC -series Reliability Standards. Since it is impractical to document every situation for Protection Systems, examples are provided for general clarification.

Protection Systems, as defined by this Appendix B, are included in the definition of “transmission Protection Systems” for application of NERC PRC-series Reliability Standards.

- Protection Systems included in the application of the term “transmission Protection Systems”:
 - Protection Systems that detect faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trips an interrupting device that interrupts current supplied directly from a BES Element.

The following examples are provided for clarification of the definition of “transmission Protection Systems”.

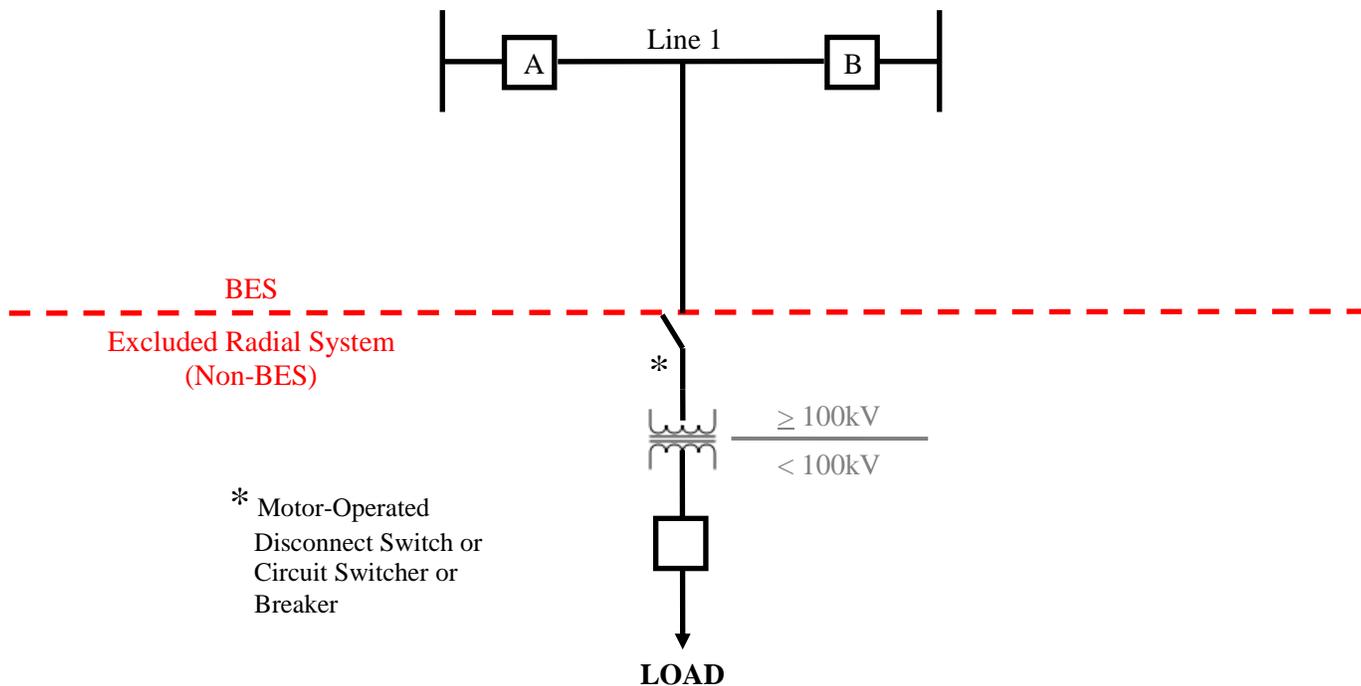
In general, a two step process is followed:

1. Identify which Elements are considered BES
2. Determine which Protection Systems detect faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the Bulk Electric System (BES) and trip an interrupting device that interrupts current supplied directly from a BES Element.

Note: Isolation/disconnect switches are omitted in these examples (i.e., breaker disconnects, transformer isolation, etc.) except where such switches are relevant to operation of transmission Protection Systems.

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Example One:

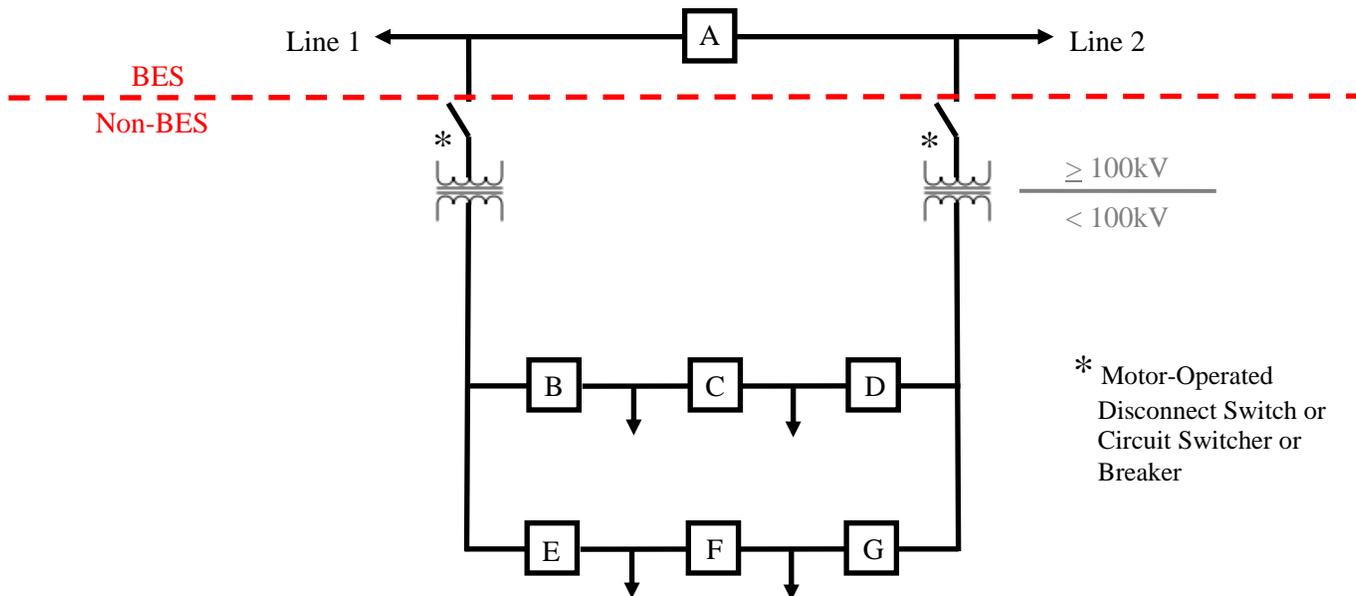


In this example:

- Circuit breakers 'A' and 'B' and Transmission Line 1 are part of the BES.
- Protection Systems for Transmission Line 1 including the radial tap are “transmission Protection Systems.”
- The transformer and associated switches are not part of the BES.
- Protection Systems for the transformer are not “transmission Protection Systems” because the transformer is not a BES Element.

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Example Two:

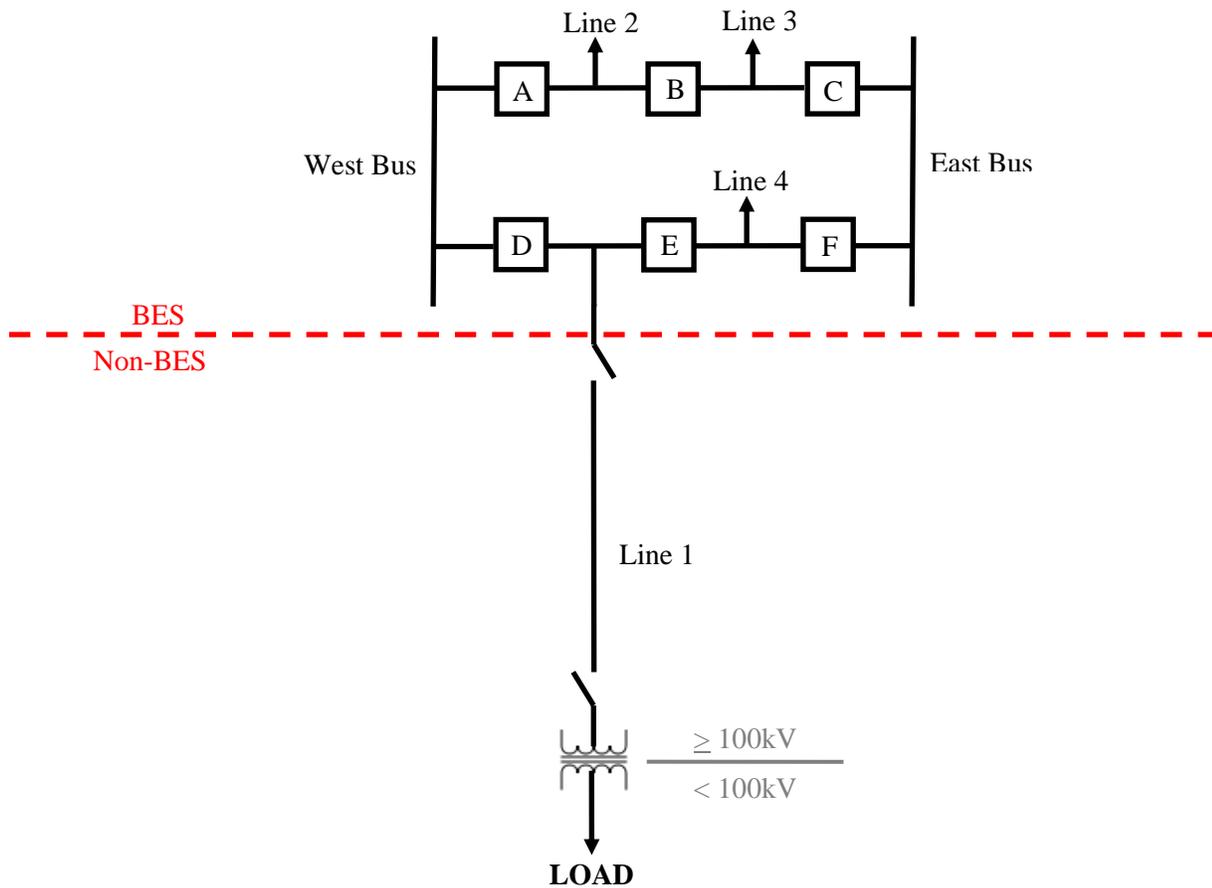


In this example:

- Circuit breaker 'A' and Transmission Lines 1 & 2 are part of the BES.
- The transformers and associated switches are not part of the BES.
- Protection Systems for Transmission Lines 1 & 2 are “transmission Protection Systems”.
- Protection Systems for the transformer are not “transmission Protection Systems” because the transformer is not a BES Element.

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Example Three:

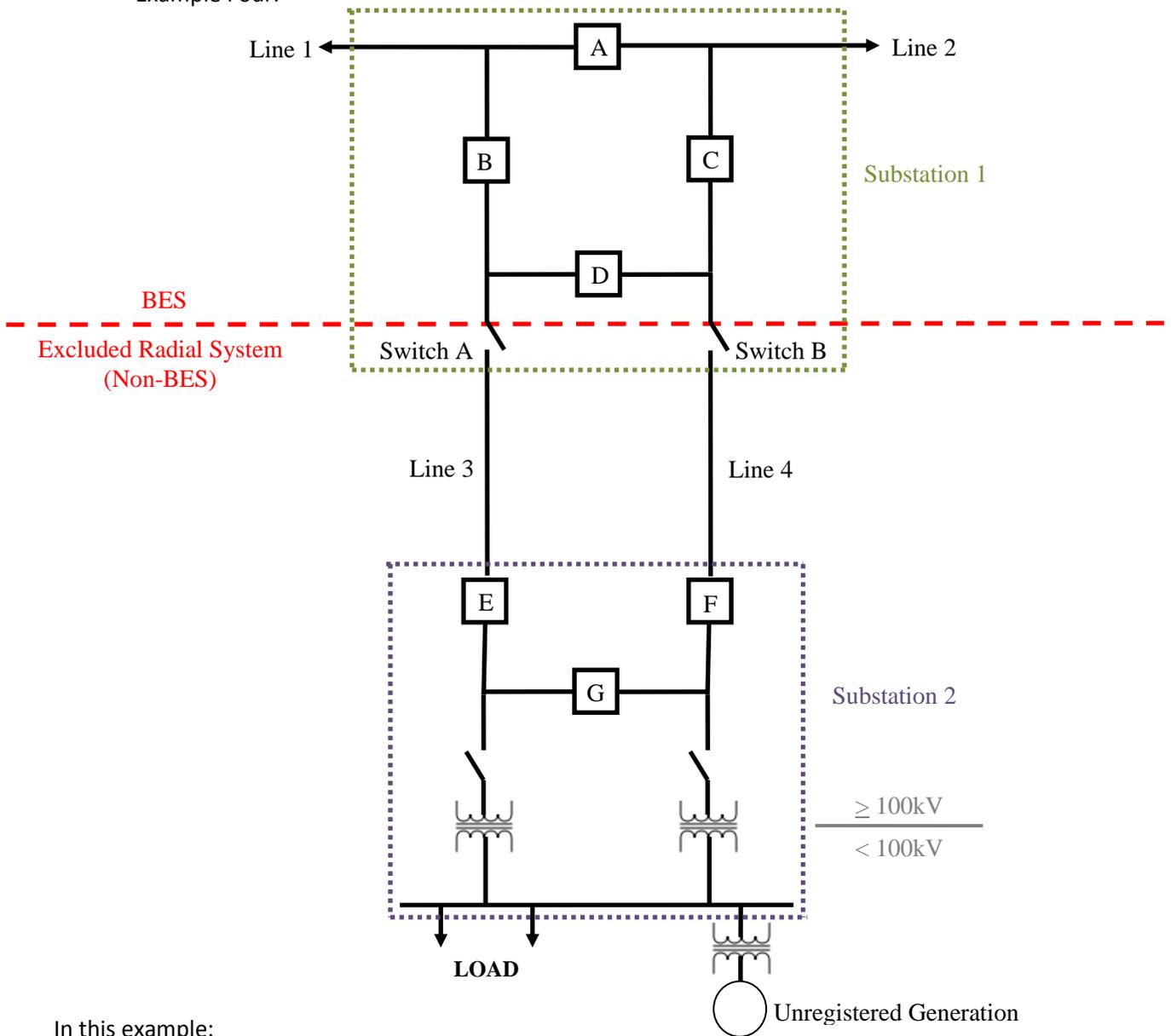


In this example:

- Lines 2, 3 and 4 and the substation, including the East and West bus, are part of the BES.
- Line 1, including the transformer and the associated switches, is radial and not part of the BES.
- The Protection System for the bus/line between breakers D and E and the associated tap is a “transmission Protection System.”
- Protection Systems for the transformer are not “transmission Protection Systems” because the transformer is not a BES Element.

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• Example Four:



In this example:

- Transmission Lines 1 & 2 and circuit breakers A, B, C and D are part of the BES.
- Circuit breakers ‘E’, ‘F’ and ‘G’, Transmission Lines 3 & 4 and the transformers are not part of the BES.
- The Protection Systems for the bus sections between breakers B and D and breakers C and D including the bus sections connecting to the source side of Switch A and Switch B are “transmission Protection Systems.”