

Southern California Edison
2023-WMPs – 2023-WMPs

DATA REQUEST SET M G R A - S C E - 0 0 3

To: MGRA
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Job Title: Consulting Engineer
Received Date: 5/3/2023

Response Date: 5/8/2023

Question 03:

On p. 845, The mitigations Distribution Open Phase Detection (DOPD) and High Impedance (Hi-Z) Relays are estimated to have no more than 2% reduction in ignition risk for all risk drivers.

- a. Please explain the discrepancies with previous sections where these technologies are presented as mature and reliable mitigations for various types of risk driver.
- b. Please explain why DOPD would have only a 2% effectiveness in reducing ignition risk for connector damage or failure or conductor damage or failure.
- c. Please explain why Hi-Z would have a 2% effectiveness for vegetation contact, conductor damage or failure, or connection device damage or failure

Response to Question 03:

a. Please explain the discrepancies with previous sections where these technologies are presented as mature and reliable mitigations for various types of risk driver.

SCE does not agree with MGRA's statement that there are "discrepancies" regarding how these technologies are presented in the WMP, as SCE has discussed Distribution Open Phase Detection (DOPD) and High Impedance (Hi-Z) Relay technologies consistently in the WMP.

b. Please explain why DOPD would have only a 2% effectiveness in reducing ignition risk for connector damage or failure or conductor damage or failure.

SCE established the mitigation effectiveness (ME) for DOPD in the WMP based on the anticipated effectiveness of the technology across the various drivers that cause conductor separations, which can lead to ignitions from wire-down events. SCE reviewed historical ignition data to understand the overall frequency of the events for which DOPD could be effective and used this percentage (2%) as the measure of DOPD's effectiveness for each of the aforementioned drivers, including the connection device damage or failure and conductor damage or failure drivers. The ME value for DOPD is also influenced by SCE's application of DOPD to only mainline conductor, which is larger and less prone to separation (and subsequent wire-down events) than smaller tapline conductors. Additionally, DOPD does not reduce the risk of incandescent particle ignitions that may also be associated with conductor separations and connection failures. SCE is continuing to refine and improve this emerging technology along with the ME values.

c. Please explain why Hi-Z would have a 2% effectiveness for vegetation contact, conductor damage or failure, or connection device damage or failure

The Hi-Z Relay ME values for vegetation contact, conductor damage or failure, and connection device damage or failure drivers are primarily based on engineering judgment about the rate of occurrence of Hi-Z faults and the associated ignition events that might be avoided with Hi-Z Relay operations. For example, vegetation contact events may directly cause Hi-Z faults. On the other hand, connection device and conductor failures may indirectly cause Hi-Z faults, by resulting in downed conductors which in turn can cause Hi-Z faults. The engineering judgment that assigned 2% to these ignition drivers accounts for these factors for the Hi-Z Relay technology capabilities. SCE is continuing to refine and improve this emerging technology along with the ME values.