

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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Received Date: 5/3/2023

Response Date: 5/8/2023

Question 02:

Please provide an additional column for the Mitigation Effectiveness Values table that represents a combination of Covered Conductor and REFCL.

Response to Question 02:

SCE continues to build its understanding of the combined effectiveness of covered conductor (CC) and Rapid Earth Fault Current Limiter (REFCL). As one approach to estimate the combined mitigation effectiveness, SCE considers the effectiveness of covered conductor to establish the remaining risk once CC is applied, then evaluates the effectiveness of REFCL to this remaining risk. The REFCL mitigation effectiveness is strongly correlated to the potential for single line to ground faults. SCE's approach for each driver considers the phase to ground fault ratio relationship to be the same between covered conductor and bare wire systems, and develops mitigation effectiveness values to the remaining risk following CC application. Based on this approach, the following mitigation effectiveness values are estimated and presently used by SCE as an input for evaluating the combination of CC and REFCL applications for distribution system ignition drivers. SCE notes these are estimates and subject to continued evaluation, including through field validation of REFCL installations and performance over the coming years. Please see Section 7.1.4.2 of SCE's WMP for additional discussion on the use of covered conductor alongside REFCL and other mitigations.

Driver Type	Subdriver Type	CC/REFCL ME
D-CFO	Veg. contact- Distribution	85%
D-CFO	Animal contact- Distribution	96%
D-CFO	Balloon contact- Distribution	99%
D-CFO	Vehicle contact- Distribution	85%
D-CFO	Unknown contact - Distribution	90%
D-UNK	Unknown - Distribution	82%
D-CFO	Other contact from object - Distribution	88%
D-WTW	Wire-to-wire contact / contamination- Distribution	99%
D-EFF	Anchor / guy damage or failure - Distribution	70%

D-EFF	Conductor damage or failure — Distribution	95%
D-EFF	Connection device damage or failure - Distribution	95%
D-EFF	Connector damage or failure- Distribution	95%
D-EFF	Crossarm damage or failure - Distribution	65%
D-EFF	Fuse damage or failure - Distribution	31%
D-EFF	Insulator and brushing damage or failure - Distribution	95%
D-EFF	Lightning arrester damage or failure- Distribution	50%
D-EFF	Other - Distribution	57%
D-EFF	Pole damage or failure - Distribution	40%
D-EFF	Recloser damage or failure - Distribution	9%
D-EFF	Splice damage or failure — Distribution	95%
D-EFF	Tie wire damage or failure - Distribution	50%
D-EFF	Voltage regulator / booster damage or failure - Distribution	50%
D-CTM	Contamination - Distribution	30%
D-EFF	Capacitor bank damage or failure- Distribution	1%
D-EFF	Switch damage or failure- Distribution	2%
D-EFF	Transformer damage or failure - Distribution	88%
D-EFF	Tap damage or failure - Distribution	50%
D-EFF	Sectionalizer damage or failure - Distribution	70%
D-OTH	All Other- Distribution	50%
D-UTW	Utility work / Operation - Distribution	25%
D-VAN	Vandalism / Theft - Distribution	1%