

Southern California Edison
R.18-10-007 – SB 901

DATA REQUEST SET A b r a m s - S C E - 0 0 1

To: Abrams
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Job Title: Senior Manager
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Response Date: 3/7/2019

Question 22: Please, provide all reports and correspondence with contractors, vendors, insurers, reinsurers and company investors relative to the need or planned execution of the wires down detection projects from January, 2015 to today.

Response to Question 22:

SCE objects to the question to the extent it calls for the production of reports and correspondence protected by the attorney-client privilege and/or attorney work product doctrine, as it is overly broad and unduly burdensome to the extent it seeks “records of all reports and correspondence,” and beyond the scope of this proceeding (which is scoped to examine SCE’s 2019 Wildfire Management Plan and not historical data from 2015). Notwithstanding these objections, SCE responds as follows.

SCE has explored various options for detecting energized down conductors for advancing the safety of the electric system. A brief summary of the significant projects or evaluations are listed below in relation to the current status of SCE projects:

High Impedance (HiZ) Relays: Installation of high impedance relay offerings from two industry leading substation relay vendors to monitor performance between the two suppliers. Numerous high impedance faults were reported by the relays; however, SCE was not able to correlate actual faulted conditions with the reported events, concluding the relays were producing nuisance alarms. Each vendor has multiple algorithms for detecting the high impedance fault, and one of the algorithms did not exhibit the same nuisance alarming as the others. Review of the HiZ relay detection capabilities identified that faults below the 10-20 amp level would not be detected by these relays. This functional limitation of the HiZ relay capabilities would only allow a portion of the faults which are not presently detected with traditional protection to have the opportunity for detection. The initial trials have been successfully completed, and led to a small quantity of additional installations to further explore one of the manufacturer’s technology offerings.

Spread Spectrum Time Domain Reflectometry (SSTDR): SCE began evaluating this technology with a national laboratory research institute. This technology transmits a signal onto the energized circuit which reflects off of circuit end points and other impedance changes on the line. The reflections are analyzed for changes in the circuitry and in test environments have shown to be able to detect energized down wire conditions. SCE is presently working on a plan for testing this technology on a distribution circuit for further evaluation of the system.

Meter Alarming Down Energized Conductor (MADEC): SCE continues to refine the use of Smart Meters for detecting energized down conductors. Following the installation of Smart Meters that

provided the ability for alarming and monitoring, updates were made to the meter files to report voltage events in near real time. These voltage events are now being used with a machine learning algorithm for notifying SCE operators of potential down-wire conditions. SCE has been utilizing these alarms to dispatch patrols and recently has also started using these alarms to de-energize circuitry where the alarming identifies a suspected energized down wire.