PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

April 11, 2017

Melvin Stark
Manager, Maintenance and Inspections
Southern California Edison (SCE)
3 Innovation Way
Pomona, CA 91768

SUBJECT: Notice of Violation

Mr. Stark:

On behalf of the Electric Safety and Reliability Branch of the California Public Utilities Commission, Koko Tomassian of my staff conducted an investigation of an electric incident that occurred on August 1, 2015, near Desert Knoll Avenue and Valle Vista Road in Twentynine Palms. REDACTED , REDACTED , and REDACTED were riding off-road vehicles when REDACTED struck an energized low-hanging SCE 12 kV conductor. REDACTED and REDACTED sustained burns injuries, consistent with conductor contact, while attempting to assist REDACTED

GO 95, Rule 31.1, Design, Construction, and Maintenance, states in part:

> *Electrical supply and communication systems shall be designed, constructed, and maintained for their intended use, regard being given to the conditions under which they are to be operated, to enable the furnishing of safe, proper, and adequate service.*

Our investigation revealed that the 12 kV conductor was supported by an insulator on a crossarm on SCE pole number 43502S. The crossarm failed and broke, causing a piece of the crossarm and the insulator to fall to the ground. This caused the 12 kV overhead conductor to fall down and become suspended less than 8 feet above the ground.

Crossarms should be designed, installed, and maintained properly to prevent failure during conditions that are normal to the area where they are installed. Although prior to the incident the city of Twentynine Palms was experiencing thunderstorms, the weather condition, which was normal to the area, should not have caused a properly designed, installed, and maintained crossarm to break. Therefore, SCE is in violation of GO 95, Rules 31.1, for failing to ensure that the crossarm was capable of withstanding conditions normal to the area.

GO 95, Rule 48, Replacement, states in part:

> *Structural members and their connection shall be designed and constructed so that the structures and parts thereof will not fail or be seriously distorted at any load less than their maximum working loads (developed under the current construction arrangements*

with loadings as specified in Rule 43) multiplied by the safety factors in Rule 44. Values used for the strength of material shall comply with the safety factors specified in Rule 44.

Utilities should design, install, and construct crossarms so that they do not fail or become seriously distorted at any load less than their maximum working load multiplied by the safety factor in Rule 44. A safety factor of 1.33 (per GO 95, Rule 44) at a reference wind pressure of 13 lbf/ft^2 (per GO 95, Rule 43), corresponds to a wind speed of 82.2 mph. This implies that the crossarm should have been designed and maintained to withstand wind speeds up to 82.2 mph. In a letter dated February 24, 2016, SCE indicated that, per its consultant, wind gusts just prior to the incident reached approximately 70 mph. Data provided by the National Weather Service showed that the highest wind gusts at the time of the incident were 40 mph. Nonetheless, the crossarm failed at wind speed less than 82.2 mph. Therefore, SCE is in violation of GO 95, Rule 48, for failing to ensure that its crossarm did not fail or become seriously distorted at a load that was less than the maximum working load multiplied by the safety factor in Rule 44.

GO 95 Rule 37, Column E, Case 4, Minimum Clearances of Wires above Railroads, Thoroughfares, Buildings, Etc., states in part:

Clearance between overhead conductors, guys, messengers or trolley span wires and tops of rails, surfaces of thoroughfares or other generally accessible areas across, along or above which any of the former pass; also clearances between conductors, guys, structures, or other objects, shall not be less than those set forth in Table 1, at a Temperature of 60°F and no wind…

Above ground supply conductors of 750-22,500 volts should be installed along thoroughfares in rural districts or across other areas capable of being traversed by vehicles or agricultural equipment with a minimum above ground clearance of 25 feet. At the time of the incident, the 12 kV overhead conductor had an above ground clearance less than 8 feet. Therefore, SCE is in violation of GO 95, Rule 37, for failing to ensure that its 12 kV overhead conductor maintained at least a 25 foot above ground clearance along a thoroughfare capable of being traversed by vehicles.

GO 95, Rule 31.1, Design, Construction, and Maintenance, states in part:

Electrical supply and communication systems shall be designed, constructed, and maintained for their intended use, regard being given to the conditions under which they are to be operated, to enable the furnishing of safe, proper, and adequate service.

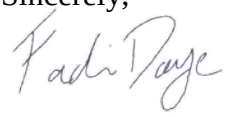
GO 95, Rule 51.6-A, High Voltage Marking of Poles, states in part:

Poles which support line conductors of more than 750 volts shall be marked with high voltage signs. This marking shall consist of a single sign showing the words "HIGH VOLTAGE", or pair of signs showing the words "HIGH" and "VOLTAGE", not more than six (6) inches in height with letters not less than 3 inches in height. A pair of signs may be stacked to a height of no more than 12 inches. Such signs shall be of weather and corrosion–resisting material, solid or with letters cut out therefrom and clearly legible.

Pole number 43501S, which supported one end of the 12 kV conductor, had a damaged high voltage sign on the side of the crossarm facing the incident location. Pole number 43502S, which supported the other end of the conductor, was missing a high voltage sign on both sides of the crossarm. Therefore, SCE is in violation of GO 95, Rules 31.1 and 51.6-A for having broken or missing high voltage signs on poles numbered 43501S and 43502S at the time of the incident.

Please advise me no later than May 12, 2017, of corrective measures taken by your company to remedy the above identified violations. If you have any questions, you can contact Koko Tomassian at (213) 576-7099 or koko.tomassian@cpuc.ca.gov.

Sincerely,



Fadi Daye, P.E.
Program and Project Supervisor
Electric Safety and Reliability Branch
Safety and Enforcement Division
California Public Utilities Commission

Cc: Elizaveta Malashenko, Director, Safety and Enforcement Division
Lee Palmer, Deputy Director, Office of Utility Safety, SED, CPUC
Charlotte TerKeurst, Program Manager, Electric Safety and Reliability Branch
Koko Tomassian, P.E., Utilities Engineer, Electric Safety and Reliability Branch