STATE OF CALIFORNIA
EDMUND G. BROWN JR., *Governor*

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

April 13, 013

SA2013-001

Cory Mitsui
Manager, Operations and Engineering
San Diego Gas and Electric
5488 Overland Avenue
San Diego, CA 92123

SUBJECT: Audit of SDG&E's Beach Cities District Substation Facilities

Dear Mr. Mitsui:

On behalf of the Safety and Enforcement Branch of the California Public Utilities Commission, Ben Brinkman, Derek Fong, Richard Kyo, and Zelalem Ewnetu conducted an audit of San Diego Gas and Electric's (SDG&E's) electric substation facilities in the Beach Cities District from February 11 to February 15, 2013. The audit included a review of SDG&E's maintenance records and inspections of SDG&E's facilities.

During the audit, we identified violations of General Order 174. A copy of the audit summary itemizing the violations is enclosed. As part of a new risk-based audit protocol for substations, the summary also includes recommendations.

Please advise me no later than May 24, 2013, by electronic or hard copy, of all corrective measures taken by SDG&E to remedy and prevent such violations.

If you have any questions concerning this audit you can contact Ben Brinkman of my staff at (213) 576-7093 or Benjamin.Brinkman@cpuc.ca.gov.

Sincerely,

Raymond G. Fugere, P.E.
Program and Project Supervisor
Electric Safety and Reliability Branch
Consumer Protection and Safety Division

Enclosure: Audit Summary

CC: Ben Brinkman, Senior Utilities Engineer, CPUC

Audit Summary

Company: SDG&E
Location: Electric Substation System, Beach Cities District
Audit: Substation
Date: February 11 - 15, 2013

Violations

Records

SDG&E is missing a December 2012 inspection checklist for a gas circuit breaker at the Mission Substation. SDG&E's Operations and Engineering Manager explained that in January 2013, SDG&E changed the transformer from a gas filled model to a vacuum breaker (Mitsubishi Vacuum Breaker, Equipment #993114). Anticipating this change, office staff prematurely removed the gas breaker inspection form and replaced it with a vacuum inspection form in November 2012. In December 2012, the substation inspector correctly noted that the inspection form was for the new breaker while the old breaker was still in use. Because of this, it appears the inspector failed to fill out any specific inspection form for the old breaker in December 2012.

Field Portion

1.	**Structure ID / Location:**	Transformer Bank 30, Kyocera Substation
	Previous SDG&E Visit Details:	November 1, 2012
	Date of CPUC Inspection:	February 15, 2013
	Explanation of Violation(s):	
	Transformer Mounting GO 174, Rule 31, states in part: *Each Operator shall establish, update as needed, and follow an Inspection Program.* SDG&E's Inspection Program Practice, Document 510.012, Section 4.2.1, states in part: *Corrective action, which requires attention, is turned in by the inspector as a result of an item identified in one of the above inspections.* The new transformer at Kyocera sub needs mounting brackets in case of seismic activity. SDG&E did not note this on the inspection report.	

2.	**Structure ID / Location:**	Point Loma Substation
	Previous SDG&E Visit Details:	December 10, 2012
	Date of CPUC Inspection:	February 15, 2013
	Explanation of Violation(s):	
	Vegetation GO 174, Rule 31, states in part: *Each Operator shall establish, update as needed, and follow an Inspection Program.* SDG&E's Inspection Program Practice, Document 510.012, Section 4.2.1, states in part: *Corrective action, which requires attention, is turned in by the inspector as a result of an item identified in one of the above inspections.* Excessive vegetation on substation fence requires attention. SDG&E did not note this on the inspection report.	

3.	**Structure ID / Location:**	Substation Back Fence, Point Loma Substation
	Previous SDG&E Visit Details:	December 10, 2012
	Date of CPUC Inspection:	February 15, 2013
	Explanation of Violation(s):	
	Hazard Signs GO 174, Rule 31, states in part: *Each Operator shall establish, update as needed, and follow an Inspection Program.* SDG&E's Inspection Program Practice, Document 510.012, Section 4.2.1, states in part: *Corrective action, which requires attention, is turned in by the inspector as a result of an item identified in one of the above inspections.* Vegetation on Point Loma substation back fence covers warning signage. SDG&E did not note this on the inspection report.	

4.	**Structure ID / Location:**	Main Gate, Mission Substation
	Previous SDG&E Visit Details:	November 27, 2012
	Date of CPUC Inspection:	February 14, 2013
	Explanation of Violation(s):	
	Security Barrier GO 174, Rule 31, states in part: *Each Operator shall establish, update as needed, and follow an Inspection Program.* SDG&E's Inspection Program Practice, Document 510.012, Section 4.2.1, states in part: *Corrective action, which requires attention, is turned in by the inspector as a result of an item identified in one of the above inspections.* Broken barbed wire strand on top of main gate requires repair.	

5.	**Structure ID / Location:**	Substation General, Point Loma Substation
	Previous SDG&E Visit Details:	November 27, 2012
	Date of CPUC Inspection:	February 15, 2013
	Explanation of Violation(s):	
	Erosion in Facility GO 174, Rule 31, states in part: *Each Operator shall establish, update as needed, and follow an Inspection Program.* SDG&E's Inspection Program Practice, Document 510.012, Section 4.2.1, states in part: *Corrective action, which requires attention, is turned in by the inspector as a result of an item identified in one of the above inspections.* The December 10, 2012 detailed inspection report does not note the major erosion on the hillside within the substation. SED notes that SDG&E plans to perform a major re-build of this substation.	

Recommendations

SED recommends that SDG&E:

- Add a comment field to inspection checklists to allow inspectors to add detail,
- Evaluate standing water in secondary containment after rains, and remove as necessary,
- Consider developing and documenting standard minimum guidelines for identification, classification, monitoring and repair of inspection items such as insulation or bushing contamination and equipment oil leaks,
- Perform regular or selected civil inspection of rusted equipment support structures,
- Ensure that "attractive" expensive material, even that stored in bins, is not left in the substation unnecessarily but moved to secure storage areas[1],
- Perform random or selected soil resistivity and/or fall of potential testing of substations.

[1] During field inspection SED staff noticed some expensive replacement parts and materials left in bins at substations after work on those substations was completed. The material was not readily visible to potential vandals, but should be moved to central, non-energized storage locations if possible.