STATE OF CALIFORNIA ARNOLD SCHWARZENEGGER, *Governor*

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

December 15, 2008

Mr. Brian Costello, MS R77CSE
Sierra Pacific Power Company
P.O. Box 10100
Reno, NV 89520

CPUC File No: EA2008-14

SUBJECT: Electric Audit of Sierra Pacific Power's North Tahoe and Truckee areas

On behalf of the Utilities Safety and Reliability Branch of the California Public Utilities Commission, Aimee Dalusong and I conducted an Electric Audit of Sierra Pacific Power's North Tahoe and Truckee regions from 6/9/08 to 6/13/08. The audit included a review of your records for the period of 1998-2007.

During the inspection, we identified violations of one or more General Orders. A copy of the audit summary itemizing the violations is enclosed. In addition, we found some of the same violations and concerns during this audit that were noted during the previous Electric audit performed on June 5-9, 2006 by Jadwindar Singh, Dennis Lee, and Steve Espinal. For each violation or concern previously cited, we have noted this in the audit findings, and Sierra Pacific Power's response to that audit.

Please advise me of all corrective measures taken by the Utility regarding the above violations within 90 days of receiving this letter. Please provide the electronic or hard copy records showing the correction date for each violation.

If you have any questions, please contact me at (415) 703-1817.

Sincerely,

Paul Penney

Paul Penney
Utilities Engineer
Utilities Safety and Reliability Branch
Consumer Protection and Safety Division

Enclosure: Appendix A
(1) Scope of the Audit
(2) GO165 Records Review
(3) GO95/128 Field Findings
(4) Recommendations

CC: Aimee Dalusong

APPENDIX A

(1) Scope of the Audit

This audit of the electric distribution system in the North Tahoe and Truckee regions was conducted to assess Sierra Pacific Power's (SPP) compliance with General Order 165, as well as General Orders 95 and 128. The audit included a review of overhead and underground circuit patrols and detailed inspections for the years 1998 to 2007. Also included was a review of open and closed tags (Issues) generated as a result of the patrols and detailed inspections.

We also interviewed SPP personnel about processes and procedures related to intrusive inspections of wood poles, tree trimming, circuit mapping changes, closing tags, and the database transition from an Access based application to an in house web based application, and now to the Maximo Asset Management application. We also discussed electric incident reporting for incidents that meet criteria defined in Decision 06-04-055.

(2) GO165 Records Review

2.1 SPP indicated during the audit that some inspection records kept on its Access based inspection application were lost and unrecoverable. We must, however, treat any gap in documenting detailed inspections and patrols as a violation.

During the GO165 portion of the audit, the following violations were found while reviewing electronic and paper records for patrols and detailed inspections. We also found circuits that will become violations if detailed inspections are not completed by the end of 2008. Both categories are listed below.

Note: While poles themselves need to be patrolled and detailed inspected per GO165 inspection intervals[1], SPP associates equipment such as capacitors, transformers, etc., with the poles that hold them. Therefore, we treated electronic pole counts as evidence that circuits were completely inspected per overhead detailed inspection requirements (i.e. once every 5 years) for all the categories of equipment listed in the GO165 table.

2.1.1 Circuit 214: The circuit was last Inspected in 2003. It includes overhead facilities. Electronic records indicate 57 poles were inspected in 2002, but only 7 inspected in 2003. The circuit is scheduled for inspection in 2008. All 57 poles should have been inspected by the end of 2007. The 5-year overhead detailed inspection cycle for the circuit was missed.

2.1.2 Circuit 32: The circuit was last Inspected in 2008. It includes overhead facilities. Electronic records indicate 757 poles were inspected in 1999, and there are paper records for 2006. The 5-year inspection cycle for the circuit was missed between 1999 and 2006.

2.1.3 Circuit 42: The circuit was last Inspected in 2007. It includes overhead, pad mounted, & underground facilities. There are both electronic and paper records for 2000 and 2006. The 5-year inspection cycle for the overhead facilities on the circuit was missed between 2000 and 2006.

2.1.4 Circuit 4201: The circuit was last Inspected in 2007. It includes overhead, pad mounted, & underground facilities. There is a large discrepancy in the number of poles inspected in the years 2001 (569 poles)[2], 2003 (66 poles), and 2007 (211 poles)[3]. There is also a discrepancy in Pad Mounted (PM) transformers inspected in the years 2000 (0 PM transformers), 2003 (0 PM

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1 For example, "Wood poles which have passed intrusive inspection" should be intrusively inspected once every 20 years.

2 The count includes poles with circuit 4201 only and poles having both 4201 and other circuits: 4201 – 625 & 650; 4201 & 4202; 4201 & 5200; 4201 & 650.

3 The count includes poles with circuit 4201only and circuit 4201 & 650.

transformers), and 2007 (74 PM transformers). The 5-year inspection cycle was apparently missed for part of the circuit because of the large discrepancy in pole counts for the years cited above. The 5-year inspection cycle was also apparently missed for PM transformers on this circuit.

2.1.5 Circuit 4202: The circuit was last Inspected in 2007. It includes overhead, pad mounted, & underground facilities. There is a large discrepancy in the number of poles inspected in the years 2000 (719 poles), 2003 (0 poles), 2006 (532 poles). The 5-year inspection cycle for the overhead circuit was missed between 1999 and 2006.

2.1.6 Circuit 5100: The circuit was last Inspected in 2007. It includes overhead facilities. There is a discrepancy in the number of poles inspected in the years 2000 (116 poles), 2006 (81 poles), and 2007 (4 poles). The circuit apparently missed its 5-year inspection cycle between the years 2000 and 2006.

2.1.7 Circuit 5200: The circuit was last Inspected in 2008. It includes overhead, pad mounted, & underground facilities. There is a large discrepancy in the number of poles inspected in the years 1998 (1 pole), 1999 (1707 poles), 2000 (4 poles), 2003 (9 poles), and 2007 (804 poles). A number of poles apparently missed their 5-year inspection cycle between 1999 and 2007.

2.1.8 Circuit 5201: The circuit was last Inspected in 2007. It includes overhead, pad mounted, & underground facilities. There is large discrepancy in poles inspected in the years 1998 (880 poles), 2003 (1 pole), and 2007 (1052 poles). A number of poles apparently missed their 5-year inspection cycle between 1998 and 2007. Four subsurface transformers were inspected in 2007 but not in previous years; they apparently missed their 3-year inspection cycle.

2.1.9 Circuit 7200: The circuit was last Inspected in 2006. It includes overhead, pad mounted and underground facilities. Poles were inspected each year as follows: 2000 (168 poles), 2003 (132 poles), 2005 (3 poles), and 2007 (3 poles). The spreadsheet indicates that SPP will be in violation of GO165 if all poles on this circuit are not inspected by the end of 2008. However, SPP has scheduled this circuit to be inspected in 2010.

2.1.10 Circuit 7200 and other circuits. Some poles have circuit 7200, and other circuits also supported on them. The spreadsheet indicates these poles were inspected in 2005, but no inspections were done prior to this. SPP is in violation of the 5-year inspection cycle.

2.1.11 Circuit 7201: The circuit was last Inspected in 2007. It includes overhead and pad mounted facilities. The poles inspected for the following years are: 2000 (168 poles), 2003 (132 poles), 2005 (3 poles), and 2007 (3 poles). The spreadsheet indicates that SPP will be in violation of GO165 if all poles on this circuit are not inspected by the end of 2008. But SPP has scheduled this circuit to be inspected in 2010.

2.1.12 Circuit 7201 and other circuits. Some poles have circuit 7201, and other circuits also supported on them. The spreadsheet indicates these poles were inspected in 2005, but no inspections were done prior to this. SPP is in violation of the 5-year inspection cycle.

2.1.13 Circuit 7203: The circuit was last inspected in 2008. It includes overhead, pad mount and underground facilities. Poles were inspected in each year as follows: 1998 (214 poles), 2003 (1 pole), and 2008 (2 poles). Pad Mount Transformers were inspected in each year as follows: 1998 (41), 2003 (0), and 2008 (0). Both the overhead circuit and Pad Mount Transformers missed their 5-year inspection cycles.

2.1.14 Circuit 7300: The circuit was last inspected in 2007. It includes overhead, pad mount and underground facilities. Pad mounted transformers were inspected in each year as follows: 2000 (2), 2002 (1), and 2003 (54), but there are no inspections indicated after this. SPP would need to complete inspection of the transformers by the end of 2008 to meet the 5-year inspection cycle for GO165.

2.1.15 Circuit 7400: The circuit was last inspected in 2008. It includes overhead and pad mount facilities. Poles were inspected in each year as follows: 2002 (690 poles), 2007 (10 poles), and 2008 (1320 poles). A large portion of the circuit apparently missed its 5-year inspection cycle.

2.1.16 Circuit 7700: The circuit was last inspected in 2003. It includes overhead and padmount facilities. Poles were inspected in each year as follows: 2000 (78 poles), and 2003 (40 poles). The circuit will miss its 5-year inspection cycle if not inspected by the end of 2008. However, the circuit is scheduled for inspection in 2009.

2.1.17 Circuit 7900: The circuit was last inspected in 2002. It includes overhead, pad mount and underground facilities. 142 poles, 16 pad mounted transformers, and 28 junction enclosures were

inspected in 2002. There were no inspections for any other year. All the above mentioned facilities missed their 5-year inspection cycles, which should have been inspected by 2007.

2.1.18 Circuit 8100: The circuit was last inspected in 2007. It includes pad mount and underground facilities. Pad mount and underground facilities were inspected in 2001; facilities were inspected again in 2007. All facilities missed their 5-year inspection cycles. One subsurface switch missed is 3-year inspection cycle.

2.1.19 Circuit 8300: The circuit was last inspected in 2007. It includes overhead, pad mount and underground facilities. Poles were inspected in each year as follows: 2001 (5 poles), and 2007 (66 poles). The overhead circuit and pad mounted facilities missed their 5-year inspection cycle.

2.1.20 Circuit 8400/8500: The circuit was last inspected in 2003. It includes pad mount and underground facilities. Pad Mount Transformers were inspected in each year as follows: 2002 (116) and 2003 (4). The transformers missed their 5-year inspection cycle; all pad mounted transformers should have been inspected by the end of 2007.

2.1.21 Circuit 8700: The circuit was last inspected in 2007. It includes overhead, pad mount and underground facilities. Pad Mount Transformers were inspected in each year as follows: 2000 (19) and 2007 (0). The transformers apparently missed their 5-year inspection cycles.

2.2 SPP personnel indicated during the audit that they have a small number of underground facilities, but the facilities are detail inspected once every five years. This is a violation of GO165, which requires a detailed inspection once every three years.

During the previous audit, SPP was cited for not doing underground inspections once every three years. For example, circuit 2300 had no three year subsurface inspections done prior to 2005/2006. SPP's response was:

> ***"...Procedures are being reviewed and will be updated to address the inspection/recordkeeping issue. We are implementing new database program which should greatly enhance our recordkeeping."***

For detailed inspections, please ensure that SPP personnel inspect underground facilities once every three years.

2.3 While reviewing patrolling records, SPP personnel indicated that they do not document issues found during patrols. This is a violation of GO165, which states:

> *"For all inspections, within a reasonable period, company records shall specify the circuit, area, or equipment inspected, the name of the inspector, the date of the inspection, and any problems identified during each inspection,* as well as the scheduled date of corrective action."

Please ensure that SPP personnel document issues identified during patrols.

2.4 We found instances in SPP's computerized maintenance inspection records (the 2007 repaired records provided by SPP) that did not document either the nature of the work to be done, and/or the work that was actually completed. This is a violation of GO165, which states:

> *"For all inspections, within a reasonable period, company records shall specify the circuit, area, or equipment inspected, the name of the inspector, the date of the inspection, and any problems identified during each inspection, as well as the scheduled date of corrective action. For detailed and intrusive inspections, companies shall also rate the condition of inspected equipment. Upon completion of corrective action, company records will show the nature of the work, the date, and the identity of persons performing the work."*

An example follows for one of the computerized inspection records provided by SPP. It uses generalized "condition codes" to identify the problem found during the inspections. However, some condition codes are too general, such as the "Tree Condition" listed below. This could be any number of problems, and the nature of the problem may not be readily apparent to the person sent out to repair it. Other condition codes are more specific, such as "Guys/Guards Broken/Loose".

G.O. 165 Inspection			
District:	N. Tahoe	**City, State:**	Tahoe City, CA
Substation:	Tahoe City	**Circuit Number:**	5201
Location Desc:	61 Tahoma Way, Tahoe City		
Map Number:		**Equipment ID:**	100108
Equipment Loc:	OH	**Wire Phase:**	2 Phase
Type:	Lateral	**Unit of Type:**	Pole
Inspection Type:	5-Year Detailed	**Contractor:**	-
Inspected By:	Bartolomei, Harry	**Inspection Date:**	04/02/2007
Inspection Status:	Repaired	**Repair Priority:**	Resources Permitting
AB Chance Present:	No	**Test Date:**	
Construction Type:	• Crossarm • Double Deadend • Down Guy • Open Wire Secondary • Span Guy	**Condition Codes:**	• Guys/Guards Broken/Loose • Tree Condition
Joint Utility:		**Assoc. Equipment:**	
Comments:			

A similar observation was also made during the last inspection in 2006 (Item H from that report). The observation was made for the Maintenance Inspection Form. SPP's response was:

> ***"...We will review and add as appropriate required detail to the Maintenance Inspection Form. We will also review whether the existing form can be used to capture the nature of the corrective work."***

SPP provided a copy if it's "Maintenance Inspection Form" (Updated: 3/7/2007), and the form does have a section for Notes and Comments. The inspectors should provide comments where appropriate to clarify the condition codes.

Whether SPP uses the computerized maintenance records as its permanent record, or the hand written Maintenance Inspection form as its permanent record, the specific nature of the problem, and the nature of the work that corrected the problem should be identified in the records.

2.5 While reviewing the repair priority options, we found a category indicating "Resources Permitting." This category does not provide a specific date for correction of the problems identified during the inspection (i.e. GO95/128 violations or other issues), and is a violation of GO165, which states:

> *"For all inspections, within a reasonable period, company records shall specify the circuit, area, or equipment inspected, the name of the inspector, the date of the inspection, and any problems identified during each inspection, as well as the scheduled date of corrective action..."*

A similar observation was also made during the last inspection in 2006 (Item G from that report). SPP's response was:

"...We are reviewing the appropriateness of the four priorities we currently use. The database will be programmed to generate a specific date for the corrective action."

From the above example, the detailed inspection was done on 4/2/2007, and the repair priority was assigned "Resources Permitting," with no apparent specific date associated with the category.

2.6 While reviewing requirements for intrusive inspections, we inquired about the category in the GO165 table listed as "Wood Poles over 15 years which have not been subject to intrusive inspection." As indicated in the table, wood poles greater than 15 years in age must be intrusively inspected within 10 years. GO165 was adopted on March 31, 1997. Therefore, all poles in the above category should have been inspected as of the date of this audit. According to SPP personnel, they estimate that >90% of poles have been intrusively inspected. SPP should develop and implement a plan to QA circuits to ensure that all poles greater than 15 years in age are intrusively inspected as soon as possible. Please provide us with a plan for doing this.

(3) GO95 and GO128 Inspection Field Notes

The field portion of the audit was conducted on June 12th and 13th, 2008, and consisted of doing a Quality Assurance (QA) check of 20 completed tags (issues) on June 12th, and a QA check of underground and pad mounted facilities on circuit 8200 on June 13th. The field observations for the two days are in two separate attachments to this letter.

Where issues are identified from our field observations on June 12th and 13th, please update us on what remedial action SPP will take, or has taken to repair the issues. Also, for each facility identified in the June 13th field check, please provide the computerized records showing when the facility was last inspected prior to our audit, and the problems identified by the SPP inspector during the inspection. Please provide the records in the same format shown above in the example of SPP's computerized record.

(4) Recommendations

a) To the extent possible, schedule and complete patrols and detailed inspections during the months with no snow. This will allow maximum opportunity to identify issues that might be hidden because of snow, or may not be evident due to snow loading.
b) Consider developing a QA process to account for discrepancies in facility tallies. This can be done by providing a count of each facility type broken down by underground, padmount, and overhead facilities each time a detailed inspection is done on a circuit. Then resolve any discrepancies in the counts.
c) Consider developing a QA process for field verifying repaired tags to ensure that repairs meet GO95/128 requirements and Sierra Pacific Power's own standards.
d) While reviewing 2007 repaired tags (issues), we found a "No Action Required" Repair Priority along with an Inspection Status of "Repaired" on 18 tags. This appears to be inconsistent, since there is no repair requirement if no action is required. We suggest SPP modify the database to not allow for this option.