

December 30, 2011

Ms. Kimberly D. Bose
Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, DC 20426

**Re: NERC Full Notice of Penalty regarding Sacramento Municipal Utility District,
FERC Docket No. NP12-_-000**

Dear Ms. Bose:

The North American Electric Reliability Corporation (NERC) hereby provides this Notice of Penalty¹ regarding Sacramento Municipal Utility District (SMUD), NERC Registry ID# NCR05368,² in accordance with the Federal Energy Regulatory Commission's (Commission or FERC) rules, regulations and orders, as well as NERC Rules of Procedure including Appendix 4C (NERC Compliance Monitoring and Enforcement Program (CMEP)).³

SMUD is a community-owned electric utility that encompasses Sacramento County and parts of Placer County in northern California. The purpose of SMUD is to provide public electric power to the Sacramento region. SMUD's offices are in East Sacramento, California. SMUD gets its electricity from various sources, both self-generated and purchased. SMUD buys and sells electricity (both energy and capacity) through arrangements with the California Independent System Operator (CAISO), the Western Systems Power Pool and the Northern California Power Pool.

¹ *Rules Concerning Certification of the Electric Reliability Organization; and Procedures for the Establishment, Approval, and Enforcement of Electric Reliability Standards* (Order No. 672), III FERC Stats. & Regs. ¶ 31,204 (2006); *Notice of New Docket Prefix "NP" for Notices of Penalty Filed by the North American Electric Reliability Corporation*, Docket No. RM05-30-000 (February 7, 2008). See also 18 C.F.R. Part 39 (2011). *Mandatory Reliability Standards for the Bulk-Power System*, FERC Stats. & Regs. ¶ 31,242 (2007) (Order No. 693), *reh'g denied*, 120 FERC ¶ 61,053 (2007) (Order No. 693-A). See 18 C.F.R § 39.7(c)(2).

² NERC Compliance Enforcement Authority (NERC CEA) confirmed that SMUD was included on the NERC Compliance Registry as a Distribution Provider (DP), Generator Operator (GOP), Generator Owner (GO), Load Serving Entity (LSE), Planning Authority (PA), Purchasing-Selling Entity (PSE), Resource Planner (RP), Transmission Operator (TOP), Transmission Owner (TO), Transmission Planner (TP), Transmission Service Provider (TSP) on June 17, 2007. As a TOP, SMUD is subject to the requirements of NERC Reliability Standards PER-002-0, PRC-005-1, TOP-001-1, TOP-004-1, and COM-002-2.

³ See 18 C.F.R § 39.7(c)(2).

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The six violations⁴ covered in this Notice of Penalty were discovered during a Compliance Investigation (CI) NERC0009CVI which stemmed from an event that occurred on December 26, 2008. At that time SMUD experienced loss of substation DC control voltage supply at its Orangevale (ORV) substation (Event). The Event involved three SMUD Substations: Orangevale, Elverta, and Foothills. Five SMUD 230 kV transmission lines interconnect ORV to the bulk power system (BPS). Local system conditions on the day of the Event had one of these five 230 kV lines initially out of service for scheduled maintenance (Elverta-Foothills), and a second line was scheduled for an outage (Lake-ORV). The local Balancing Authority (BA) Area was otherwise in a normal operations state prior to the Event, and the system was operating nominally. The BPS area known as “North of Path 15” (NP15), which includes the SMUD BA Area, did not have any unusual weather or system conditions prior to the Event.

At 7:12 a.m.,⁵ SMUD experienced an alarm at ORV indicating low voltage on the DC batteries by which the substation’s protective relays and control circuits are powered. Maintenance personnel dispatched to the site investigated and attempted to identify and correct the source of the alarm. They were not immediately able to do so. The voltage decline of the batteries continued. Shortly after 10:12 a.m., SMUD determined that the output of the single battery charger unit that served as supply for the batteries had become inadequate. Cycling of the charger offline and then back on was ineffective to correct the station battery voltage decline, indicating a problem and failure of the charger. Correction of this problem by replacing the charger with a spare was initiated.

By 10:27 a.m., SMUD was receiving additional alarms from ORV arising from the insufficient DC battery voltage level. From these alarms and other information coming in from ORV, SMUD determined that the substation had inadequate DC battery voltage to operate its protective relays and control circuits. SMUD personnel responsible for operation of the BPS facilities at ORV, SMUD’s Power Systems Operator (PSO), recognized that removing ORV from the BPS⁶ was the appropriate responsive action in the absence of protection system coverage of ORV.⁷ Personnel at the site were unable to provide the PSO an indication of when adequate DC battery voltage level might be restored.

NCEA found that, as of no later than 10:27 a.m., the BPS in the vicinity of ORV had entered an unknown operating state because without adequate DC battery voltage, ORV’s protection systems could not be counted upon to operate as intended in the event of a fault, or other protected condition; also, ORV’s

⁴ For purposes of this document, each violation at issue is described as a “violation,” regardless of its procedural posture and whether it was a possible, alleged or confirmed violation.

⁵ All times are in Pacific Standard Time (PST) unless otherwise indicated.

⁶ *I.e.* fully disconnecting it from the BPS in order to de-energize its (unprotected) facilities.

⁷ In a 10:27 a.m. call with personnel on site at ORV, the PSO indicated that he was “going to have to open these lines up if we have no protection [at ORV].”

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control circuits might not respond to local or remote commands. NCEA concluded that continued connection of ORV to the BPS while the substation was in this condition represented a risk of unknown scope and magnitude to BPS reliability, and that to correct this risk, SMUD should have immediately removed ORV from the BPS, as SMUD's PSO had recognized. SMUD did not disconnect ORV from the BPS at that time or at any later point in the Event.

At 10:51 a.m., SMUD called its (then) Reliability Coordinator, the California-Mexico Reliability Coordinator (CMRC), to notify of the situation at ORV, including that the service status of ORV's protection systems was uncertain (*i.e.*, the systems might not operate in the event of a fault in their zone of protection). After reviewing the situation and potential options, SMUD determined that interim modification of relay settings at the Elverta substation would allow it to keep ORV energized so that it could maintain local station service during the battery charger replacement. This would also allow SMUD to keep the Foothill substation, then radially-connected to ORV, in service to continue supplying customer load usually served by Foothill plus additional load that SMUD could transfer to Foothill from ORV.

SMUD made the relay setting changes at the Elverta substation, completing them at 11:54 a.m. SMUD successfully transferred some ORV load to the Foothill substation, but approximately 110 MW of ORV load was still shed, affecting approximately 58,700 customers for about 31 minutes.

NCEA determined the duration of this Event to be at least one hour and twenty-seven minutes on December 26, 2008, from the point at 10:27 a.m. that SMUD determined and recognized the BPS reliability risk impact of the loss of adequate DC battery voltage supply at ORV, until 11:54 a.m. when the interim relay setting changes at the Elverta substation were completed to remove that risk.

This Notice of Penalty is being filed with the Commission because NCEA and SMUD have entered into a Settlement Agreement to resolve all outstanding issues arising from NCEA's determination and findings of the violations of COM-002-2 R2, PER-002-0 R1, PRC-005-1 R2, TOP-001-1 R1, TOP-001-1 R2 and TOP-004-1 R4. According to the Settlement Agreement, SMUD neither admits nor denies the violations, but has agreed to the assessed penalty of one hundred thousand dollars (\$100,000), in addition to other remedies and actions to mitigate the instant violations and facilitate future compliance under the terms and conditions of the Settlement Agreement. Accordingly, the violations identified as NERC Violation Tracking Identification Numbers NCEA200900102, NCEA200900103, NCEA200900104, NCEA200900105, NCEA200900106, and NCEA200900107 are being filed in accordance with the NERC Rules of Procedure and the CMEP.

Statement of Findings Underlying the Violations

This Notice of Penalty incorporates the findings and justifications set forth in the Settlement Agreement executed on December 22, 2011, by and between NCEA and SMUD, included as Attachment a. The details of the findings and basis for the penalty are set forth in the Settlement Agreement and herein. This Notice of Penalty filing contains the basis for approval of the Settlement Agreement by the NERC Board of Trustees Compliance Committee (NERC BOTCC). In accordance with Section 39.7 of the Commission’s regulations, 18 C.F.R. § 39.7 (2011), NERC provides the following summary table identifying each violation of a Reliability Standard resolved by the Settlement Agreement, as discussed in greater detail below.

Region	Registered Entity	NOC ID	NERC Violation ID	Reliability Std.	Req. (R)	VRF	Total Penalty (\$)
NCEA	Sacramento Municipal Utility District	1120	NCEA200900102	COM-002-2	2	Medium	100,000
			NCEA200900103	PER-002-0	1	High	
			NCEA200900104	PRC-005-1	2	High ⁸	
			NCEA200900105	TOP-001-1	1	High	
			NCEA200900106	TOP-001-1	2	High	
			NCEA200900107	TOP-004-1	4	High	

NCEA200900102 COM-002-2 R2

The purpose statement of Reliability Standard COM-002-2 provides: “To ensure Balancing Authorities, Transmission Operators, and Generator Operators have adequate communications and that these communications capabilities are staffed and available for addressing a real-time emergency condition. To ensure communications by operating personnel are effective.”

⁸ PRC-005-1 R2 has a “Lower” VRF; R2.1 and R2.2 each have a “High” VRF. During a final review of the standards subsequent to the March 23, 2007 filing of the Version 1 VRFs, NERC identified that some standards requirements were missing VRFs; one of these include PRC-005-1 R2.1. On May 4, 2007, NERC assigned PRC-005 R2.1 a “High” VRF. In the Commission’s June 26, 2007 Order on Violation Risk Factors, the Commission approved the PRC-005-1 R2.1 “High” VRF as filed. Therefore, the “High” VRF was in effect from June 26, 2007. In the context of this case, NCEA determined that the violation related to both R2.1 and R2.2, and therefore a “High” VRF is appropriate.

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COM-002-2 R2 provides: “Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall issue directives in a clear, concise, and definitive manner; shall ensure the recipient of the directive repeats the information back correctly; and shall acknowledge the response as correct or repeat the original statement to resolve any misunderstandings.”

COM-002-2 R2 has a “Medium” Violation Risk Factor (VRF) and a “Severe” Violation Severity Level (VSL). The subject violation applies to SMUD’s TOP function.

NCEA found that there were a number of instances during the Event when SMUD TOP personnel did not comply with COM-002-2 R2. Examples of noncompliance include:

- At 11:01 a.m., the SMUD Power Systems Operator (PSO) issued a directive to the Distribution Systems Operator (DSO) to immediately offload load from ORV. The PSO did not (i) issue this directive in a clear, concise and definitive manner, (ii) ensure that the DSO repeated the information back correctly or (iii) repeat the original directive, after the DSO did not repeat it back, as required by COM-002-2 R2.
- At 11:04 a.m., the DSO called the PSO back to reaffirm the directive given at 11:01 a.m. During this conversation, the PSO again did not ensure that the DSO repeated the information back and did not acknowledge the DSO understood the directive.
- At 11:38 a.m. and 11:46 a.m., when directing switching to substation personnel at ORV, the PSO did not consistently issue directives in a definitive manner or ensure the directives were repeated back correctly to resolve any misunderstandings.⁹

NCEA determined the durations of these violations to be during the Event on December 26, 2008 when SMUD operated its portion of the BPS around ORV in an unknown operating state for at least one hour and twenty-seven minutes.

NCEA determined that this violation posed a minimal and not a serious or substantial risk to the reliability of the BPS because in the event that this violation resulted in some incident or event on the system, it is most likely that the impact would be limited to the local vicinity of SMUD’s own system facilities and not widespread within the Western Interconnection. During the Event, the failure to issue compliant directives did not contribute to extending the duration or the severity of the impact of the Operating Emergency on the reliability of the BPS.

⁹ Full transcripts of the above conversations are attached to the Settlement Agreement as COM-002-2 R2 Exhibit 1.

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NCEA200900103 PER-002-0 R1

The purpose statement of Reliability Standard PER-002-0 provides: “Each Transmission Operator and Balancing Authority must provide their personnel with a coordinated training program that will ensure reliable system operation.”

PER-002-0 R1 provides: “Each Transmission Operator and Balancing Authority shall be staffed with adequately trained operating personnel.”

PER-002-0 R1 has a “High” VRF and a “Lower” VSL. The subject violation applies to SMUD’s TOP function.

During the Event, at 10:17 a.m., the PSO contacted a SMUD maintenance planner colleague to question him about a re-closer status change the PSO had observed, but not caused, on the Energy Management System (EMS) supervisory control and data acquisition (SCADA), on the Orangevale/White Rock 230 kV circuit breaker (#5722) at ORV. This conversation progressed into a broader, approximately 10-minute discussion regarding the operation, purpose and control action precedence of the “Local” and “Remote” control switches implemented by SMUD in its standard circuit breaker supervisory control switching and indicator scheme.

Although the conversation revolved around the specific switches and indication at ORV, the conversation illustrated that the PSO had inadequate knowledge and understanding of this standard SMUD SCADA control scheme. An entity’s SCADA control schemes are material to the operation and control of its BPS equipment and facilities (*e.g.*, circuit breakers and substations), and thereby material to ensuring reliable BPS system operation. NCEA found that the PSO’s inadequate knowledge and understanding of this standard SMUD BPS facility control system scheme indicated that he was not adequately trained. NCEA determined that SMUD incurred the subject violation because the PSO was an operating staff member for SMUD’s performance of its TOP responsibilities, but this exchange between the PSO and the planner during the Event indicated that the PSO was not adequately trained as required by PER-002-0 R1.

NCEA determined the duration of these violations to be from June 18, 2007 when the Standard became mandatory and enforceable through March 25, 2009 when SMUD mitigated the violation.

NCEA determined that this violation posed a minimal risk and not serious or substantial risk to the reliability of the BPS. Specifically, while the potential scope of impact of this PSO’s inadequate training was broad within SMUD, the number and class or size (230 kV or lower voltage) of SMUD’s BPS

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substations and transmission lines overall are relatively small within the portion of the Western Interconnection in the vicinity of SMUD's BPS facilities. In the event that this violation resulted in some incident or event on the system, it is most likely that the impact would be limited to the local vicinity of SMUD's own system facilities and not widespread within the Western Interconnection.

NCEA200900104 PRC-005-1 R2

The purpose statement of Reliability Standard PRC-005-1 provides: "To ensure all transmission and generation Protection Systems^[10] affecting the reliability of the Bulk Electric System (BES) are maintained and tested." [Footnote added].

PRC-005-1 R2 provides:

Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall provide documentation of its Protection System maintenance and testing program and the implementation of that program to its Regional Reliability Organization^[11] on request (within 30 calendar days). The documentation of the program implementation shall include:

R2.1. Evidence Protection System devices were maintained and tested within the defined intervals.

R2.2. Date each Protection System device was last tested/maintained.

[Footnote added].

PRC-005-1 R2 has a "High" VRF and a "Severe" VSL. The subject violation applies to SMUD's TOP function.

At the time of the Event, SMUD's protection system maintenance and testing program included SMUD's *Transmission Maintenance Inspection Plan (TMIP)* and *Protective System Routine Maintenance Guideline* which together outlined the intervals and procedures for maintaining and testing relay protection systems including relays, potential transformers, current transformers and DC supply.

¹⁰ The NERC Glossary of Terms Used in Reliability Standards defines Protection System as "Protective relays, associated communication systems, voltage and current sensing devices, station batteries and DC control circuitry."

¹¹ Consistent with applicable FERC precedent, the term "Regional Reliability Organization" in this context refers to ReliabilityFirst.

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Applicable sections of the TMIP required that BPS substation batteries be inspected bi-monthly on all main, supervisory, and telecommunication battery systems, by SMUD's field technicians. The inspection was to include visual inspection and testing for terminal voltage, float voltage and temperature, and the corrective maintenance interval directed for all equipment was "as needed." SMUD's program also required that once field technicians completed tests, the results were to be uploaded and stored in an (electronic) data storage area shared with SMUD's maintenance planners, who were then to review the test results and determine corrective action required, if any, on a quarterly basis. On the basis of this information, NCEA found that the testing and maintenance interval for ORV's batteries in SMUD's protection system maintenance and testing program was "quarterly" because this is the frequency at which the test data was reviewed and any required corrective maintenance was determined and thereafter undertaken.

SMUD indicated that the electrician assigned to ORV did not maintain the routine battery system test cycle throughout 2008. Testing immediately prior to the event consisted of the following:

- Complete battery test on June 11, 2008. The test results recorded a "Fail" for one cell (#16) in the Main battery string.
- Complete battery test on August 24, 2008. The test results recorded reduced, "Warning" level voltage level, only, on all cells in the Main battery string.
- On September 15, 2008, battery terminal voltage testing was attempted; however, the voltage meter being used displayed an error message. The test meter was suspected to be faulty, and further testing was discontinued. The test report included data for only five of the Main battery string's 60 batteries and was therefore incomplete and inadequate.
- On November 24, 2008, a complete set of battery terminal voltage testing was completed; however, the test meter generated multiple error messages and had to be reset multiple times. The test results for the November test indicated: one cell "Failed" in one sixty battery string; all cells "Failed" for the second battery string.

When the SMUD maintenance planners conducted their third quarter review of ORV's batteries, for the period July through September 2008, the August 24 and September 15 results had not yet been uploaded to the shared data storage area and only the June 11, 2008 field testing results were considered. Responding only to that data, the planners determined and directed corrective maintenance limited only to (i) correcting a loose connection on the one "Failed" cell (#16) found in the June 11 test and (ii) equalization of the battery string; this work was completed prior to the November 24 testing. The planners' review and resulting directives for corrective action for ORV's batteries were inadequate because the August 24 and September 15 test data were not included in the review nor addressed in the resulting corrective action they directed. SMUD did not validly undertake or

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complete its required third quarter review of ORV's batteries because the test data reviewed was incomplete, with the result that SMUD did not detect and take appropriate corrective action to address the batteries' declining voltage before the Event. NCEA found that this constituted SMUD not maintaining and testing these batteries within the applicable three-month defined interval directed by SMUD's protection system maintenance and testing program, and thereby SMUD violated PRC-005-1 R2.

NCEA determined the duration of the violation to be from October 1, 2008, after the applicable three-month defined interval was missed, through December 26, 2008, when SMUD mitigated the instant violation.

NCEA determined that this violation posed a minimal risk and not serious or substantial risk to the reliability of the BPS. Specifically, a fault occurring on BPS equipment at ORV during the Event (or preceding it) would likely not have produced cascading outages or other similar effects on the BPS because the facilities involved (the transmission lines and other BPS equipment at and interconnecting the Orangevale, Elverta and Foothill substations) are of lesser significance to the reliability of the BPS in the area. Further, none of the BPS elements involved in the event are listed as elements of a WECC Path or Nomogram. In the event that this violation resulted in some incident or event on the system, it is most likely that the impact would be limited to the local vicinity of SMUD's own system facilities and not widespread within the Western Interconnection.

NCEA200900105 TOP-001-1 R1

The purpose statement of Reliability Standard TOP-001-1 provides: "To ensure reliability entities have clear decision-making authority and capabilities to take appropriate actions or direct the actions of others to return the transmission system to normal conditions during an emergency."

TOP-001-1 R1 provides: "Each Transmission Operator shall have the responsibility and clear decision-making authority to take whatever actions are needed to ensure the reliability of its area and shall exercise specific authority to alleviate operating emergencies."

TOP-001-1 R1 has a "High" VRF and a "Severe" VSL. The subject violation applies to SMUD's TOP function.

SMUD's PSO did not exercise specific authority to alleviate an operating emergency during the Event. The Operating Emergency encountered during the Event was the exposure of the BPS to the potential impacts of a fault or other similar incident/occurrence for which protection systems at ORV were implemented, while those protection systems could not be counted upon to properly and reliably

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operate. At the same time, SMUD had uncertain capability to control or operate the BPS equipment and facilities at the substation.

NCEA determined that the action required of SMUD to correct the Operating Emergency during the Event was disconnection of ORV from the BPS at least until adequate protection system coverage was restored for the substation. SMUD's PSO did not take this action, thereby failing to exercise specific authority to alleviate the Operating Emergency.

NCEA determined the duration of this violation to be during the Event on December 26, 2008.

NCEA determined that this violation posed a moderate risk but not serious or substantial risk to the reliability of the BPS. Specifically, leaving ORV connected to the BPS during the Operating Emergency left the BPS in the vicinity of ORV in an unknown operating state during the Event because it was not clear what would happen on the BPS at or around ORV if a fault occurred that would have required a response from ORV's BPS protection systems. The BPS elements involved in the Event (the transmission lines and other BPS equipment at and interconnecting the Orangevale, Elverta and Foothill substations) are of relatively lesser significance to the reliability of the BPS in the area. None of them are listed as elements of a WECC Path or Nomogram. Nevertheless, ORV is a networked substation¹² on the system, and the MVA loading on the subject 230 kV lines and other relevant equipment at ORV (capacitors on the 69 kV bus): (i) provide MW and/or MVAr to other SMUD 230 kV substations and plants, (ii) are SMUD's interconnections to others' adjacent portions of the BPS, and (iii) serve the 69 kV distribution feeder lines fed from the substation.

If a fault had occurred at ORV during the Event, it is unlikely that BPS impacts would have been widespread throughout the Western Interconnection, but outages or cascading losses may have occurred beyond the local vicinity of SMUD's system. The load shedding associated with this Event was unavoidable; accordingly, during the Event there was no actual impact to the BPS attributable to this violation.

NCEA200900106 TOP-001-1 R2

TOP-001-1 R2 provides: "Each Transmission Operator shall take immediate actions to alleviate operating emergencies including curtailing transmission service or energy schedules, operating equipment (e.g., generators, phase shifters, breakers), shedding firm load, etc."

¹² A networked substation is interconnected with multiple other BPS substations instead of radially fed from one other such substation.

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TOP-001-1 R2 has a “High” VRF and a “Severe” VSL. The subject violation applies to SMUD’s TOP function.

The Operating Emergency encountered during the Event was the exposure of the BPS to the potential impacts of a fault or other similar incident/occurrence for which protection systems at ORV were implemented, while those protection systems could not be counted upon to operate properly and reliably. Also, SMUD had uncertain capability to control or operate the BPS equipment and facilities at the substation. SMUD violated TOP-001-1 R2 because its personnel did not take immediate action, including operating equipment and shedding firm load, to alleviate the Operating Emergency.

By no later than 10:27 a.m., SMUD’s PSOs understood that all of the 230 kV BPS lines going into ORV needed to be opened to de-energize the substation because it had no protection. This action was not immediately taken; instead, the PSOs first consulted with a SMUD System Protection and Control (SPAC) associate protection engineer shortly thereafter, at 10:31 a.m., to get clarification on what would occur if there were a fault at ORV.¹³ The SPAC engineer was unable to provide assurance that ORV was adequately protected in its present situation. NCEA consequently found that, at no later than this point, the PSOs should have taken the action that they had earlier determined was necessary and which had now also been confirmed by consultation with SPAC: disconnect ORV Substation from the BPS by opening all of the 230 kV lines into the substation. The PSOs did not take this action at this time and thereby failed to take immediate action to alleviate an operating emergency, in violation of TOP-001-1 R2.

SMUD’s PSOs also subsequently decided to keep ORV connected to the BPS throughout the Event. This was done so that (i) ORV could continue to radially supply SMUD’s Foothill substation from its 230 kV bus and (ii) station service power would be maintained at ORV for maintenance personnel replacing the failed battery charger. NCEA did not find that the decision not to disconnect RV was made for BPS reliability reasons, nor did NCEA find that it contributed to maintaining or improving the state of the reliability of the BPS at the time. On the contrary, not disconnecting ORV from the BPS extended the time period over which the BPS was at risk from the situation at ORV. NCEA consequently concluded that SMUD’s PSOs should have taken the action already determined necessary after the 10:31 a.m. consultation with SPAC: full isolation and de-energization of ORV Substation from the BPS. The PSOs did not take this action, thereby again failing to take immediate action to alleviate an operating emergency, in violation of TOP-001-1 R2.

¹³ Protective relaying at other substations at the remote ends of the 230 kV lines coming into ORV might have provided ORV with adequate, albeit backup level, protection against faults in/at ORV. The SPAC engineer was unable to provide assurance to PSO that this was the case.

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Concurrent with developments that eventually resulted in SMUD's PSOs' decision not to disconnect ORV from the BPS, the PSOs also engaged SMUD distribution personnel to offload customer load, from ORV to other substations, while ORV remained connected to the BPS, to minimize customer outages and service disruption. At 11:01 a.m., a SMUD PSO directed SMUD's DSOs to start offloading from ORV because the 230 kV lines into the substation might be opened. At 11:17 a.m., PSO contacted DSO to advise that disconnection of ORV was imminent. At 11:18 a.m., DSO contacted PSO to acquire additional time to undertake the offloading. SMUD's PSOs did not initiate opening ORV's 230 kV lines, or any of its equipment supplying ORV's 69 kV feeder lines, until 11:38 a.m. by which time the decision was or had also been made to keep ORV connected to the BPS. NCEA did not find that the PSO's delays in opening the 230 kV lines, or any equipment supplying ORV's 69 kV feeder lines, were for BPS reliability reasons. NCEA also did not find that they contributed to maintaining or improving the state of the reliability of the BPS at the time. On the contrary, these delays exacerbated the severity and extended the time period over which the BPS was at risk from the situation at ORV. NCEA found that the risk to the BPS would have been fully and immediately removed had SMUD opened all of ORV's 230 kV lines subsequent to the SPAC consultation at 10:31 a.m. Having decided to leave ORV connected, SMUD could have reduced the severity of the risk to the BPS if feeder busses at ORV had been timely de-energized without the delay taken to offload the 69 kV lines first. Because SMUD's PSOs failed to take either action immediately, to alleviate the Operating Emergency, SMUD violated TOP-001-1 R2.

NCEA determined the duration of this violation to be during the Event on December 26, 2008.

NCEA determined that this violation posed a moderate risk but not serious or substantial risk to the reliability of the BPS. Specifically, leaving ORV connected to the BPS during the Operating Emergency left the BPS in the vicinity of ORV in an unknown operating state during the Event because it was not clear what would happen on the BPS at or around ORV if a fault occurred that would have required a response from ORV's BPS protection systems. The BPS elements involved in the Event (the transmission lines and other BPS equipment at and interconnecting the Orangevale, Elverta and Foothill substations) are of relatively lesser significance to the reliability of the BPS in the area. None of them are listed as elements of a WECC Path or Nomogram. Nevertheless, ORV is a networked substation on the system and the MVA loading on the subject 230 kV lines and other relevant equipment at ORV (capacitors on the 69 kV bus): (i) provide MW and/or MVAr to other SMUD 230 kV substations and plants, (ii) are SMUD's interconnections to others' adjacent portions of the BPS, and (iii) serve the 69 kV distribution feeder lines fed from the substation. The load shedding associated with this Event was unavoidable; accordingly during the Event there was no actual impact to the BPS attributable to this violation.

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NCEA200900107 TOP-004-1 R4

The purpose statement of Reliability Standard TOP-004-1 provides: “To ensure that the transmission system is operated so that instability, uncontrolled separation, or cascading outages will not occur as a result of the most severe single Contingency and specified multiple Contingencies.”

TOP-004-1 R4 provides: “If a Transmission Operator enters an unknown operating state (i.e. any state for which valid operating limits have not been determined), it will be considered to be in an emergency and shall restore operations to respect proven reliable power system limits within 30 minutes.”

TOP-004-1 R4 has a “High” VRF and a “Severe” VSL. The subject violation applies to SMUD’s TOP function.

At 10:27 a.m. on December 26, 2008, SMUD determined that its ORV substation had inadequate DC battery voltage to ensure proper and reliable operation of the substation’s protective relays and control circuits. Operating system parameters and RTU (Remote Terminal Unit) data to the EMS (supplying the operators’ displays) regarding the state of the substation and the loading on the surrounding lines was known at all times. The SCADA system RTUs are on a different power system (the telecommunication batteries at 48V DC) than the impacted 125 DC main battery system supplying the relays, and were unaffected by this event. This allowed the operators to constantly know the current state of the system during the event. NCEA concluded that beginning no later than 10:27 a.m., the BPS in the vicinity of SMUD, both within and external to SMUD’s service area, was in an unknown operating state per TOP-004-1 R4. Specifically, at this time the BPS at and around ORV entered a state for which valid operating limits had not been determined. SMUD was the TOP responsible for operation of the facility (ORV substation) that was causing the BPS to be in the unknown operating state; therefore, SMUD was the BPS reliability entity responsible to return the BPS to a known operating state within 30 minutes pursuant to TOP-004-1 R4. SMUD did not do so and therefore violated TOP-004-1 R4.

At 11:54 a.m., SMUD completed implementation of interim revised relay settings at the Elverta substation. This action concurrently: (i) restored adequate protection system coverage of ORV; (ii) returned the BPS to a known operating state; and (iii) terminated SMUD’s violation of TOP-004-1 R4.

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NCEA determined the duration of the violation to be 57 minutes during the Event on December 26, 2008,¹⁴ which is the 1 hour 27 minutes Event duration (from 10:27 a.m. to 11:54 a.m.) less the 30 minutes allowed by the Standard.

NCEA determined that this violation posed a moderate risk but not serious or substantial risk to the reliability of the BPS. Specifically, leaving ORV connected to the BPS during the Operating Emergency left the BPS in the vicinity of ORV in an unknown operating state during the Event because it was not clear what would happen on the BPS at or around ORV if a fault occurred that would have required a response from ORV's BPS protection systems. The BPS elements involved in the Event (the transmission lines and other BPS equipment at and interconnecting the Orangevale, Elverta and Foothill substations) are of relatively lesser significance to the reliability of the BPS in the area. None of them are listed as elements of a WECC Path or Nomogram. Nevertheless, ORV is a networked substation on the system and the MVA loading on the subject 230 kV lines and other relevant equipment at ORV (capacitors on the 69 kV bus): (i) provide MW and/or MVARs to other SMUD 230 kV substations and plants, (ii) are SMUD's interconnections to others' adjacent portions of the BPS, and (iii) serve the 69 kV distribution feeder lines fed from the substation. The load shedding associated with this Event was unavoidable; accordingly during the Event there was no actual impact to the BPS

Regional Entity's Basis for Penalty

According to the Settlement Agreement, NCEA has assessed a penalty of one hundred thousand dollars (\$100,000) for the referenced violations. In reaching this determination, NCEA considered the following factors:

- 1) Since the Event, SMUD has invested over \$1.17 million in designing and installing redundant measures in its backup systems in its various substations, which it completed on February 26, 2010. In addition, in the September 23, 2010 audit by the Western Electricity Coordinating Council (WECC), there were no instances of non-compliance with the standards at issue in this agreement based on the evidence reviewed;
- 2) To complete mitigation for its violation of TOP-004-1, SMUD agreed that within ninety (90) days of execution of this agreement, SMUD will have all employees involved in power operations, including but not limited to power system operators, supervisors and all control room personnel, successfully complete the training it has supplied and identified to NCEA as "SMUD's NERC0009CVI Training." Successful completion by these employees will include: completing all coursework included in the documentation; any ancillary courses identified in the coursework; and receipt of a score of 80% or higher on the final exam conducted on the materials;

¹⁴ The Settlement Agreement's Disposition Document incorrectly lists the duration date as December 26, 2007.

- 3) The violations constituted SMUD's first occurrence of violations of the subject NERC Reliability Standards;¹⁵
- 4) SMUD was prepared to submit a Self-Report, for violation of PRC-005-1 R2, to WECC in January 2009, shortly after the Event, while the investigation was still underway. Immediately subsequent to NERC clarifying that Self-Reports can be submitted before an investigation is complete, SMUD submitted the Self-Report to WECC contemporaneously with its completed Mitigation Plan for this violation;
- 5) SMUD was cooperative throughout the compliance enforcement process;
- 6) SMUD had a compliance program at the time of the violation which NCEA considered a mitigating factor. Over the course of the investigation, NERC's CI Team staff determined that the SMUD Internal Compliance Program (ICP) was sufficiently designed to promote a culture of compliance within the organization and ensure compliance with the reliability standards. A Reliability Steering Committee consisting of Management is responsible for overseeing and ensuring that the Planning, Procedures, Projects, Tasks and Training programs are implemented to meet or exceed NERC Standards. A Reliability Standards Working Committee is responsible for implementation and documentation of the work processes related to Standards and other functional elements;
- 7) There was no evidence of any attempt to conceal a violation nor evidence of intent to do so;
- 8) NCEA determined that the violations did not pose a serious or substantial risk to the reliability of the BPS, as discussed above; and

¹⁵SMUD does have violations of Standards which were not considered the same or similar as the instant Standards. A Settlement Agreement covering a violation of IRO-STD-006-0 WR1 for SMUD (NOC-966) was filed with FERC under NP12-5-000 on November 30, 2011. On December 30, 2011, FERC issued an order stating it would not engage in further review of the Notice of Penalty. A Settlement Agreement covering violations of EOP-001-0 R4, FAC-001-0 R1, R2, R3, FAC-003-1 R1, PRC-017-0 R1, TPL-002-0 R1, and TPL-003-0 R1 for SMUD (NOC-267) was filed with FERC under NP10-29-000 on December 30, 2009. On January 29, 2010, FERC issued an order stating it would not engage in further review of the Notice of Penalty. A Settlement Agreement covering violations of TOP-002-2 R16, IRO-004-1 R4, BAL-002-0 R4, and IRO-STD-006-0 WR1 for SMUD (NOC-475) was filed with FERC under NP10-106-000 on May 3, 2010. On May 28, 2010, FERC issued an order stating it would not engage in further review of the Notice of Penalty. On October 14, 2009, NERC submitted an Omnibus filing under NP10-2-000 which addressed violations for certain registered entities including violations of CIP-001-1 R1 and CIP-004-1 R2 for SMUD. On November 13, 2009, FERC issued an order stating it would not engage in further review of the violations addressed in the Omnibus Notice of Penalty. On September 13, 2010, NERC submitted an Omnibus II filing under NP10-160-000 which addressed violations for certain registered entities including a violation of WECC Regional Reliability Standard VAR-STD-002a-1 for SMUD. On October 13, 2010, the FERC issued a notice of no further review of this violation and the proposed penalty. A Settlement covering violations of CIP-002-1 R1, R2 and R3, CIP-003-1 R1 and R4, CIP-004-1 R2, R3 and R4, CIP-005-1 R1, R2, R3 and R4, CIP-006-1 R2, and CIP-007-1 R2, R4 and R5 for SMUD (NOC-958) was filed with FERC on November 30, 2011 under NP12-4-000. On December 30, 2011, FERC issued a notice of no further review of this violation and the assessed penalty.

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- 9) NCEA reported that there were no other mitigating or aggravating factors or extenuating circumstances that would affect the assessed penalty.

After consideration of the above factors, NCEA determined that, in this instance, the penalty amount of one hundred thousand dollars (\$100,000) is appropriate and bears a reasonable relation to the seriousness and duration of the violations.

Status of Mitigation Plan¹⁶

NCEA did not request and SMUD did not submit formal Mitigation Plans for NCEA200900102 COM-002-2R2, NCEA200900103 PER-002-0 R1, NCEA200900105 TOP-001-1 R1, NCEA200900106 TOP-001-1 R2, or NCEA200900107 TOP-004-1 R4. Alternatively and in advance of receiving notification from NERC of the subject violation, SMUD performed the mitigation activities noted herein as part of its internal compliance and operator training plan. SMUD indicated completion of the subject mitigation in its response, dated February 14, 2011, to an NCEA information request dated January 18, 2011. SMUD did submit a formal Mitigation Plan for NCEA200900104 PRC-005-1 R2.

NCEA200900102 COM-002-2R2

SMUD reported that in 2009, it clarified and trained all operators on procedure GNN 014, entitled *Communication and Coordination During Normal Operations*, to emphasize that PSO operators will exercise 3-part communications. The training emphasized the requirement that: (1) the system operator issue directives in a clear, concise and definitive manner; (2) the recipient of the directive repeat the information back correctly; and (3) the system operator acknowledge the response as correct. SMUD also indicated that it continues to provide this updated training as part of its normal training cycle.

SMUD further reported that on February 3, 2010, SMUD Compliance Staff attended a WECC Compliance Users Group (CUG) meeting, during which WECC staff gave an "Evidence Presentation" that covered COM-002 and 3-part communication. This information was disseminated within SMUD via its ICP; specifically, SMUD Compliance Staff discussed this information with the PSOs who are responsible for issuing directives, and also with SMUD LSE, PSE, and DP staff to emphasize that, as recipients of a directive, they are required to repeat back any instructions they have been issued.

SMUD certified on February 14, 2011 that the above mitigation activities were completed on February 4, 2010. As evidence of completion of its mitigation activities, SMUD submitted the following:

¹⁶ See 18 C.F.R § 39.7(d)(7).

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1. GNN_014: This procedure outlines PSO communications using the processes outlined in COM-002. This procedure also addresses a protocol to initiate a contingency risk assessment panel to proactively address PSO/DSO coordination involving bulk electric system conditions/configurations that may impact distribution reliability;
2. COM-002 3 –way Communication Reminder 2-4-2010.msg: This email outlines what 3-part communication is and the importance of using it in all directives; and
3. COM-002-2 RSAW and Evidence: This document outlines evidence related to the issuance of directives. It includes GNN 10, GNE 11 and GNN 14, all of which are procedures on when and how directives should be issued.

NCEA200900103 PER-002-0 R1

SMUD reported that in February 2009, it conducted refresher training for its PSOs on the topic of re-closer cut-out switches and a discussion of how automatic re-closers are used at SMUD. SMUD indicated that it applied for and received continuing education (CE) credits from NERC for this training.

SMUD certified on February 14, 2011 that the above mitigation activities were completed on March 25, 2009. As evidence of completion of its mitigation activities, SMUD submitted the following:

1. Application for NERC CE Credit: This document provided direct evidence of training related to the violation. It outlines the training provided as well as dates held; and
2. PER-002-0 RSAW and Evidence: This document provides documentation of the education provided to system operators that address the deficiencies outlined in the investigation. Initial training as well as continuous training documents were provided and reviewed.

NCEA200900104 PRC-005-1 R2

SMUD's Mitigation Plan to address its violation of PRC-005-1 R2 was submitted to NCEA on July 1, 2009 with a proposed completion date of March 27, 2009. The Mitigation Plan was accepted by NCEA on July 28, 2009 and approved by NERC on August 6, 2009. The Mitigation Plan for this violation is designated as MIT-08-1849 and was submitted as non-public information to FERC on August 6, 2009 in accordance with FERC orders.

SMUD's Mitigation Plan detailed the actions taken to mitigate the issue and prevent recurrence:

1. By March 16, 2009, SMUD instituted a standardized¹⁷ and higher voltage alarm set point (125 volts) for the Low Voltage DC alarm at ORV and all of SMUD's other 21 substations. Alarming for High Voltage conditions was also added. These changes provide SMUD earlier detection

¹⁷ SMUD's submittal of the subject mitigation plan as a "completed plan" constituted SMUD certification of completion of the plan on the date of submittal of the plan.

and notification in real-time via its EMS in the event that a battery system problem is developing;

2. SMUD upgraded DC voltage systems at its bulk substations, including new DC voltage relays, DC battery chargers, and adding portable redundant DC battery chargers at each substation. As a result of the upgrade, SMUD has both a standard design and standardized equipment for monitoring and maintaining the DC voltage systems for their protection and communication systems. Additionally, SMUD has invested over \$1 million in designing and installing redundant measures in its backup systems in its various substations, which it completed on February 26, 2010; and
3. SMUD revised and improved its TMIP, including the following key items:
 - a. Added specific steps to procedures in place to remove ambiguities if test results were inconsistent;
 - b. Developed specific procedures for on-site technicians to interpret results from battery tests and substation reads. A problem test report is addressed immediately versus previous practice of delayed cycle of review;
 - c. Required maintenance planners and engineers to review all test reports and monthly station reads within 30 days;
 - d. Use SAP to issue notifications for corrective work on batteries and to track the completion of any maintenance and corrective actions on battery systems;
 - e. The TMIP now also requires Battery Charger charging current level testing when station battery testing is performed; and
 - f. Enhanced the procedures for troubleshooting battery and charger systems.

SMUD certified on July 1, 2009¹⁸ that the above Mitigation Plan requirements were completed on March 27, 2009. As evidence of completion of its Mitigation Plan, SMUD submitted the following:

1. Battery Charger Replacement Project 3-8-2010: This document outlines, by substation, what remedial steps were taken and what equipment related to the battery charging system was replaced and/or enhanced;
2. Training Materials and Records: This is a record of the attendees and materials used in a lesson learned training to deal with battery failure at substations;

¹⁸ SMUD's submittal of the subject Mitigation Plan as a "completed plan" constituted SMUD certification of completion of the plan on the date of submittal of the plan.

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3. TP6601 TMIP: This document outlines the frequency and steps for maintaining the battery system at the substations in addition to other equipment located at various facilities; and
4. PRC-005-1 RSAW and Evidence: This document contains, among other information, details on the transmission maintenance and inspection plan in relation to the battery systems at the facilities including maintenance intervals and review processes.

NCEA verified SMUD's completion of the Mitigation Plan, in preparation for the Settlement Agreement. The Agreement document also constitutes NCEA's verification notice to SMUD regarding the subject mitigation.

NCEA200900105 TOP-001-1 R1 & NCEA200900106 TOP-001-1 R2

SMUD reported that in February 2009, it created a "Lessons Learned" training document from the Event to remind its PSOs of their responsibilities and authorities as TOP and BA during emergency conditions, in particular with respect to taking direct and timely action, up to and including shedding firm load if required, to prevent or alleviate system operating limit violations.

SMUD further reported that also in 2009 it clarified its procedure GNE 001, entitled *System Emergency Procedure Authority*, to emphasize that DSOs were to promptly adhere to all directives issued by the PSO with respect to dropping firm system load. Language was also added to the procedure to further reinforce that the PSO will either shed load as required or direct the DSO to shed load as needed to relieve an emergency condition.

SMUD certified on February 14, 2011 that the above mitigation activities were completed on March 25, 2009. As evidence of completion of its mitigation activities, SMUD submitted the following:

1. Application for NERC CE Credit: This document provided direct evidence of training related to the violation. It outlines the training provided as well as dates held;
2. Training Materials and Records: This is a record of the attendees and materials used in a "lessons learned" training to deal with battery failure at substations;
3. GNE_001: This is an updated policy clearly delineating the authority and responsibility of the PSO in an emergency situation, including the authority to shed firm load; and
4. TOP-001-1 RSAW and Evidence: This document outlines all of the policies and procedures that define the responsibility and authority of the PSO in an emergency, including the GNE_001 procedure.

NCEA200900107 TOP-004-1 R4

1. SMUD reported that it provides continuous training to its PSOs to recognize different cues that may be indicative of emergency conditions; training modules it uses on this topic include those

entitled “Maintaining Situational Awareness-Emergency Operations” and “Restoring Situation Awareness-Emergency Awareness.” In May 2009, training included coursework entitled “5 Principals of Human Performance”, from the California Electric Training Advisory Committee (CETAC). In May 2010, training was conducted on coursework entitled “Importance of Situational Awareness.” SMUD reported that the noted situational awareness training was provided to all of SMUD’s PSOs, and specifically provided NCEA training record transcripts evidencing that all of the PSOs on shift at the time of the Orangevale event had taken this training.

2. SMUD also reported that in 2009, it clarified its procedure GNE 001, entitled *System Emergency Procedure Authority*, to emphasize that DSOs shall promptly drop firm system load if/when so directed by the PSO. Language was also added which further reinforced that the PSO can directly shed load if/as required, or direct the DSO to do so, to relieve the emergency condition.
3. Lastly SMUD reported to NCEA that it has developed and will be requiring all employees involved in power operations to complete additional coursework specifically related to the Event and the subject violation of TOP-004-1 R4. The new coursework prepared is currently designated/entitled “SMUD’s NERC0009CVI Training.” by SMUD.

SMUD certified on February 14, 2011 that the above mitigation activities were completed on March 25, 2009. As evidence of completion of its mitigation activities, SMUD submitted the following:

1. SMUD responses to NERC questions: SMUD indicated to NCEA that it provides continuous training to recognize different cues that alert PSO to emergency conditions including “Maintaining Situational Awareness-Emergency Operations” and “Restoring Situation Awareness-Emergency Awareness.” In May 2009, CETAC training included “5 Principals of Human Performance.” In May 2010, training was held on “Importance of Situational Awareness.” The situational awareness training was provided to all of SMUD’s PSO’s;
2. PSO Training Transcript.pdf: In addition to the training provided to all PSOs, this document shows the training on point taken by the PSO involved in this event. It documents the courses taken (by descriptive name) and dates taken both prior and subsequent to the event.
3. TOP-004-2 RSAW and Evidence: SMUD has provided procedure PSE 107 as part of the evidence. This document outlines operating procedures for returning the system to a known operating state within 20 minutes.
4. SMUD NERC0009CVI Training: SMUD reported that it has developed additional training materials and a program for all power systems operators to participate in that is specific to the events outlined in this agreement. The training identifies the issues, mistakes and alternative actions that could have been taken during the event.

Statement Describing the Assessed Penalty, Sanction or Enforcement Action Imposed¹⁹

Basis for Determination

Taking into consideration the Commission's direction in Order No. 693, the NERC Sanction Guidelines and the Commission's July 3, 2008, October 26, 2009 and August 27, 2010 Guidance Orders,²⁰ the NERC BOTCC reviewed the Settlement Agreement and supporting documentation during December 2011. The NERC BOTCC approved the Settlement Agreement, including NCEA's assessment of a hundred thousand dollar (\$100,000) financial penalty against SMUD and other actions to facilitate future compliance required under the terms and conditions of the Settlement Agreement. In approving the Settlement Agreement, the NERC BOTCC reviewed the applicable requirements of the Commission-approved Reliability Standards and the underlying facts and circumstances of the violations at issue.

In reaching this determination, the NERC BOTCC considered the following factors:

1. the violations constituted SMUD's first occurrence of violations of the subject NERC Reliability Standards;²¹
2. SMUD self-reported the violation of PRC-005-1 R2;
3. SMUD was cooperative throughout the compliance enforcement process;
4. SMUD had an ICP at the time of the violation which NCEA considered a mitigating factor;
5. there was no evidence of any attempt to conceal a violation nor evidence of intent to do so;
6. NCEA determined that the violations did not pose a serious or substantial risk to the reliability of the BPS, as discussed above; and
7. NCEA reported that there were no other mitigating or aggravating factors or extenuating circumstances that would affect the assessed penalty.

¹⁹ See 18 C.F.R. § 39.7(d)(4).

²⁰ *North American Electric Reliability Corporation*, "Guidance Order on Reliability Notices of Penalty," 124 FERC ¶ 61,015 (2008); *North American Electric Reliability Corporation*, "Further Guidance Order on Reliability Notices of Penalty," 129 FERC ¶ 61,069 (2009); *North American Electric Reliability Corporation*, "Notice of No Further Review and Guidance Order," 132 FERC ¶ 61,182 (2010).

²¹ See *supra* n.15 for a detailed descriptions of SMUD's prior violations of Reliability Standards which were not considered the same or similar as the instant violations.

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For the foregoing reasons, the NERC BOTCC approved the Settlement Agreement and believes that the assessed penalty of one hundred thousand dollars (\$100,000) is appropriate for the violations and circumstances at issue, and is consistent with NERC's goal to promote and ensure reliability of the BPS.

Pursuant to 18 C.F.R. § 39.7(e), the penalty will be effective upon expiration of the 30 day period following the filing of this Notice of Penalty with FERC, or, if FERC decides to review the penalty, upon final determination by FERC.

Attachments to be Included as Part of this Notice of Penalty

The attachments to be included as part of this Notice of Penalty are the following documents:

- a) Settlement Agreement by and between NCEA and SMUD executed December 22, 2011, included as Attachment a;
 - a. SMUD COM-002-2 R2 included as Attachment 1 to the Settlement Agreement.

A Form of Notice Suitable for Publication²²

A copy of a notice suitable for publication is included in Attachment b.

²² See 18 C.F.R § 39.7(d)(6).

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Notices and Communications: Notices and communications with respect to this filing may be addressed to the following:

<p>Gerald W. Cauley President and Chief Executive Officer 3353 Peachtree Road NE Suite 600, North Tower Atlanta, GA 30326-1001 (404) 446-2560</p> <p>David N. Cook* Senior Vice President and General Counsel North American Electric Reliability Corporation 1325 G Street, N.W. Suite 600 Washington, DC 20005 (202) 400-3000 david.cook@nerc.net</p> <p>Sean Bodkin* Compliance Enforcement Coordinator North American Electric Reliability Corporation 1325 G Street NW, Suite 600 Washington, DC 20005 (202) 400-3000 sean.bodkin@nerc.net</p> <p>*Persons to be included on the Commission’s service list are indicated with an asterisk. NERC requests waiver of the Commission’s rules and regulations to permit the inclusion of more than two people on the service list.</p>	<p>Rebecca J. Michael* Associate General Counsel for Corporate and Regulatory Matters Sonia C. Mendonça* Attorney North American Electric Reliability Corporation 1325 G Street, N.W. Suite 600 Washington, DC 20005 (202) 400-3000 rebecca.michael@nerc.net sonia.mendonca@nerc.net</p> <p>James Leigh-Kendall* Manager Reliability Compliance and Coordination Sacramento Municipal Utility District 6201 S Street, Mailstop B320 Sacramento, CA 95817 (916) 732-5357 jleighk@smud.org</p>
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Conclusion

NERC respectfully requests that the Commission accept this Notice of Penalty as compliant with its rules, regulations and orders.

Respectfully submitted,

/s/ Rebecca J. Michael

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and Regulatory Matters
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cc: Sacramento Municipal Utility District
NERC Compliance Enforcement Authority

Attachments

Attachment a

**Settlement Agreement by and between NCEA
and SMUD executed December 22, 2011**

SETTLEMENT AGREEMENT

OF

North American Electric Reliability Corporation - Compliance Enforcement

AND

Sacramento Municipal Utility District

I. INTRODUCTION

1. Staff of the North American Electric Reliability Corporation - Compliance Enforcement (“NCEA”) and the Sacramento Utility District (“SMUD”) enter into this Settlement Agreement (“Settlement Agreement”) to resolve all outstanding issues arising from a preliminary and non-public assessment resulting in NCEA’s determination and findings, pursuant to the North American Electric Reliability Corporation (“NERC”) Rules of Procedure, of violations¹ of NERC Reliability Standards COM-002-2 Requirement 2 (R2), PER-002-0 R1, PRC-005-1 R2, TOP-001-1 R1, TOP-001-1 R2 and TOP-004-1 R4 for which SMUD is responsible.
2. SMUD neither admits nor denies the violations of the aforementioned NERC Reliability Standards and has agreed to the proposed penalty of One Hundred Thousand Dollars (\$100,000) dollars to be assessed to SMUD, in addition to other remedies and mitigation actions to mitigate the instant alleged violations and facilitate future compliance under the terms and conditions of the Settlement Agreement.

II. STIPULATION

3. The facts stipulated herein are stipulated solely for the purpose of resolving, between SMUD and NCEA, the matters discussed herein and do not constitute stipulations or admissions for any other purpose. The attached Disposition Document is incorporated herein in its entirety. SMUD and NCEA hereby stipulate and agree to the following:

¹ For purposes of this document, each violation at issue is described as a “violation,” regardless of its procedural posture and whether it was a possible, alleged or confirmed violation.

Background

4. See the attached Disposition Document for a description of SMUD and for summaries of the system event during which NCEA alleges the subject NERC Reliability Standards violations occurred. As noted therein, SMUD incurred the violations identified below during the course or in association with the Loss of Substation DC Control Voltage Supply Event that occurred on Friday, December 26, 2008.

Violations of NERC Reliability Standard Requirement PER-002-0 R1

5. See Attachment A to the Disposition Document for the description of the violations.

Violations of NERC Reliability Standard Requirement PRC-005-1 R2

6. See Attachment B to the Disposition Document for the description of the violations.

Violations of NERC Reliability Standard Requirement TOP-001-1 R1

7. See Attachment C to the Disposition Document for the description of the violations.

Violations of NERC Reliability Standard Requirement TOP-001-1 R2

8. See Attachment D to the Disposition Document for the description of the violations.

Violations of NERC Reliability Standard Requirement TOP-004-1 R4

9. See Attachment E to the Disposition Document for the description of the violations.

Violations of NERC Reliability Standard Requirement COM-002-2 R2

10. See Attachment F to the Disposition Document for the description of the violations.

III. PARTIES' SEPARATE REPRESENTATIONS

STATEMENT OF NCEA AND SUMMARY OF FINDINGS

11. NCEA finds that SMUD incurred the violations listed above for the reasons indicated in the violations' respective attachments attached to the Disposition Document.
12. NCEA agrees that this agreement is in the best interest of the parties and in the best interest of bulk power system reliability.

STATEMENT OF SMUD

13. SMUD admits that the facts set forth and agreed to by the parties for purposes of this Agreement but neither admits nor denies that they constitute violations of NERC Reliability Standards COM-002-2 Requirement 2 (R2), PER-002-0 R1, PRC-005-1 R2, TOP-001-1 R1, TOP-001-1 R2 and TOP-004-1 R4.
14. SMUD has agreed to enter into this Settlement Agreement with NCEA to avoid extended litigation with respect to the matters described or referred to herein, to avoid uncertainty, and to effectuate a complete and final resolution of the issues set forth herein. SMUD agrees that this agreement is in the best interest of the parties and in the best interest of maintaining a reliable electric infrastructure.

IV. MITIGATING ACTIONS, REMEDIES AND SANCTIONS

15. As noted in the Attachments SMUD has generally completed successful mitigation of the violations addressed herein. NERC specifically notes that SMUD has invested over \$1 million in designing and installing redundant measures in its backup systems in its various substations, which it completed on February 26, 2010. In addition, in the September 23, 2010 audit by the Western Electricity Coordinating Council (WECC), there were no instances of non-compliance with the standards at issue in this agreement based on the evidence reviewed. With respect and to complete mitigation for its violation of TOP-004-1S MUD agrees that within ninety (90) days of execution of this agreement, SMUD will have all employees involved in power operations, including but not limited to power system operators, supervisors and all control room personnel successfully complete the training it has supplied and identified to NCEA as "SMUD's NERC0009CVI Training". Successful completion by these employees will include, but is not limited to: completing all coursework included in the documentation; any ancillary courses identified in the coursework; receipt of a score of 80% or higher on the final exam conducted on the materials. SMUD will provide documentation showing successful completion of this mitigation within the defined timeframe, to NERC's satisfaction, within one hundred and twenty (120) days of the execution of this agreement.
16. In order to facilitate NCEA's need to communicate the status and provide accountability for obligations under the terms of this Settlement Agreement, SMUD will provide updates as requested by NCEA. SMUD will submit these status updates to NCEA in accordance with the confidentiality provisions of Section 1500 of the NERC Rules of Procedure.
17. It is understood that NERC staff shall audit the progress of the any outstanding remedies included in this Agreement, by activities including, but not limited to site

inspection, interviews, or requests for other documentation to validate progress and/or completion of the remedies of this Agreement. NCEA shall reasonably coordinate audits and information requests with the SMUD related to this Agreement.

18. NCEA staff also considered the specific facts and circumstances of the violations and SMUD's actions in response to the violations in determining a proposed penalty that meets the requirement in Section 215 of the Federal Power Act that "[a]ny penalty imposed under this section shall bear a reasonable relation to the seriousness of the violation and shall take into consideration the efforts of SMUD to remedy the violation in a timely manner."² The factors considered by NCEA Staff in the determination of the appropriate penalty are set forth in the Disposition Document.
19. Based on the above factors, as well as the mitigation actions and preventative measures taken, and based on penalty, mitigation actions, and preventative measures, SMUD shall pay the monetary penalty of One Hundred Thousand Dollars (\$100,000) to North American Electric Reliability Corporation, via wire transfer to NERC within twenty days after the Agreement is either approved by the Federal Energy Regulatory Commission or by operation of law.
20. Failure to make a timely penalty payment or to comply with any of the terms and conditions agreed to herein, or any other conditions of this Settlement Agreement, shall be deemed to be either an admission to the same alleged violations that initiated this Settlement and/or additional violation(s) and may subject SMUD to new or additional enforcement, penalty or sanction actions in accordance with the NERC Rules of Procedure.
21. If SMUD does not make the monetary penalty payment above at the times agreed by the parties, interest payable to NERC will begin to accrue pursuant to the Commission's regulations at 18 C.F.R. § 35.19(a)(2)(iii) from the date that payment is due, in addition to the penalty specified above. SMUD shall retain all rights to defend against such additional enforcement actions in accordance with NERC Rules of Procedure.

V. ADDITIONAL TERMS

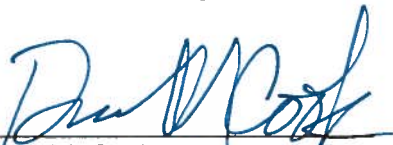
22. The signatories to the Settlement Agreement agree that they enter into the Settlement Agreement voluntarily and that, other than the recitations set forth herein, no tender, offer or promise of any kind by any member, employee, officer, director, agent or representative of NERC or SMUD has been made to induce the signatories or any other party to enter into the Settlement Agreement.

² 16 U.S.C. § 824o(e)(6).

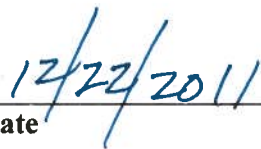
23. NCEA shall report the terms of all settlements of compliance matters to NERC. NERC will review the settlement for the purpose of evaluating its consistency with other settlements entered into for similar violations or under other, similar circumstances. Based on this review, NERC will either approve the settlement or reject the settlement and notify NCEA and SMUD of changes to the settlement that would result in approval. If NERC rejects the settlement, NERC will provide specific written reasons for such rejection and NCEA will attempt to negotiate a revised settlement agreement with SMUD including any changes to the settlement specified by NERC. If a settlement cannot be reached, the enforcement process shall continue to conclusion. If NERC approves the settlement, NERC will (i) report the approved settlement to the Commission for the Commission's review and approval by order or operation of law and (ii) publicly post this Settlement Agreement.
24. This Settlement Agreement shall become effective upon the Commission's approval of the Settlement Agreement by order or operation of law as submitted to it or as modified in a manner acceptable to the parties.
25. SMUD agrees that this Settlement Agreement, when approved by NERC and the Commission, shall represent a final settlement of all matters set forth herein and SMUD waives its right to further hearings and appeal, unless and only to the extent that SMUD contends that any NERC or Commission action on the Settlement Agreement contains one or more material modifications to the Settlement Agreement. NERC reserves all rights to initiate enforcement, penalty or sanction actions against SMUD in accordance with the NERC Rules of Procedure in the event that SMUD fails to comply with any mitigation plan or compliance program agreed to in this Settlement Agreement. In the event SMUD fails to comply with any of the stipulations, remedies, sanctions or additional terms, as set forth in this Settlement Agreement, NERC may initiate enforcement, penalty, or sanction actions against SMUD to the maximum extent allowed by the NERC Rules of Procedure, up to the maximum statutorily allowed penalty. Except as otherwise specified in this Settlement Agreement, SMUD shall retain all rights to defend against such enforcement actions, also according to the NERC Rules of Procedure.
26. SMUD consents to the use of NCEA's determinations, findings, and conclusions set forth in this Agreement for the purpose of assessing the factors, including the factor of determining the company's history of violations, in accordance with the NERC Sanction Guidelines and applicable Commission orders and policy statements. Such use may be in any enforcement action or compliance proceeding undertaken by NERC and/or any Regional Entity; provided, however, that SMUD does not consent to the use of the specific acts set forth in this Settlement Agreement as the sole basis for any other action or proceeding brought by NERC and/or any Regional Entity, nor does SMUD consent to the use of this Settlement Agreement by any other party in any other action or proceeding.

27. Each of the undersigned warrants that he or she is an authorized representative of the entity designated, is authorized to bind such entity and accepts the Settlement Agreement on the entity's behalf.
28. The undersigned representative of each party affirms that he or she has read the Settlement Agreement, that all of the matters set forth in the Settlement Agreement are true and correct to the best of his or her knowledge, information and belief, and that he or she understands that the Settlement Agreement is entered into by such party in express reliance on those representations, provided, however, that such affirmation by each party's representative shall not apply to the other party's statements of position set forth in Section III of this Settlement Agreement.
29. The Settlement Agreement may be signed in counterparts.
30. This Settlement Agreement is executed in duplicate, each of which so executed shall be deemed to be an original.

Agreed to and accepted:



David N. Cook
Senior Vice President and General Counsel
North American Electric Reliability Corporation

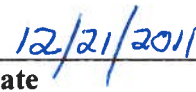


Date

DF
(before)



Michael Gianunzio
Chief Legislative and Regulatory Affairs Officer
Sacramento Municipal Utility District



Date

DISPOSITION OF VIOLATION¹
INFORMATION COMMON TO INSTANT VIOLATIONS
Dated December 21, 2011

REGISTERED ENTITY	NERC REGISTRY ID	NOC#
Sacramento Municipal Utility District (SMUD)	NCR05368	NOC-XX
REGIONAL ENTITY		
NERC Compliance Enforcement (NCEA)		

I. REGISTRATION INFORMATION

ENTITY IS REGISTERED FOR THE FOLLOWING FUNCTIONS:

BA	DP	GO	GOP	IA	LSE	PA	PSE	RC	RP	RSG	TO	TOP	TP	TSP
X	X	X	X		X	X	X				X	X	X	X
06/17/2007	06/17/2007	06/17/2007	06/17/2007		06/17/2007	06/17/2007	06/17/2007				06/17/2007	06/17/2007	06/17/2007	06/17/2007

DESCRIPTION OF THE REGISTERED ENTITY

Sacramento Municipal Utility District (SMUD) is a community owned electric utility that encompasses Sacramento County and parts of Placer County in northern California. The purpose of SMUD is to provide public electric power to the Sacramento region.

SMUD's offices are in East Sacramento, California. SMUD gets its electricity from various sources, both self-generated and purchased. SMUD buys and sells electricity (both energy and capacity) through arrangements with the California Independent System Operator (CAISO), the Western Systems Power Pool and the Northern California Power Pool.

DESCRIPTION OF THE RELEVANT SYSTEM EVENT

On Friday, December 26, 2008, SMUD experienced loss of substation DC control voltage supply at its Orangevale (ORV) substation (Event). The Event involved three SMUD Substations: Orangevale, Elverta, and Foothills.

Five (5) SMUD 230 kV transmission lines interconnect ORV to the Bulk Power System. Local system conditions on the day of the Event had one of these five 230 kV lines

¹ For purposes of this document and attachments hereto, each violation at issue is described as a "violation," regardless of its procedural posture and whether it was a possible, alleged or confirmed violation.

initially out of service for scheduled maintenance (Elverta-Foothills) and a second line was scheduled for an outage (Lake-ORV). The local Balancing Authority Area was otherwise in a normal operations state prior to the Event and the system was operating nominally. The BPS area known as “North of Path 15” (NP15), which includes the SMUD Balancing Authority Area, did not have any unusual weather or system conditions prior to the Event.²

At 07:12³ SMUD experienced an alarm at ORV indicating low voltage on the (DC) batteries by which the substation’s protective relays and control circuits are powered. The alarm would not reset. Maintenance personnel dispatched to the site investigated and attempted to identify and correct the source of the alarm. They were not immediately able to do so. The voltage decline of the batteries continued.

Shortly after 10:12 SMUD determined that the output of the single battery charger unit that served as supply for the batteries had become inadequate. Cycling of the charger offline and then back on was ineffective to correct the station battery voltage decline, indicating a problem and failure of the charger. Correction of this problem by replacement with a spare replacement charger was initiated. The replacement charger had to be transported to site before it could be installed and placed into service.

By 10:27 SMUD was receiving additional alarms from ORV arising from the insufficient DC battery voltage level. From these alarms and other information coming in from ORV SMUD determined that the substation had inadequate DC battery voltage to operate its protective relays and control circuits. While one apparent cause of this situation was the failed battery charger DC grounding of the relays’ or control circuits’ wiring, due to recent rain, was also suspected and personnel at site were attempting to find, isolate and correct this potential problem. SMUD personnel responsible for operation of the Bulk Power System (BPS) facilities at ORV - *i.e.* SMUD’s Power Systems Operator (PSO) – recognized that removing ORV from the BPS⁴ was the appropriate responsive action in the absence of protection system coverage of ORV⁵. Personnel at site were unable to provide the PSO an indication of when adequate DC battery voltage level might be restored.

NCEA found that as of no later than 10:27 the BPS in the vicinity of ORV had entered an unknown operating state because without adequate DC battery voltage ORV’s protection systems could not be counted upon to operate as intended in the event of a fault, or other protected condition, for which they were implemented; also, ORV’s control circuits might not respond to local or remote commands. NCEA concluded that continued connection of ORV to the BPS while the substation was in this condition represented a risk of unknown scope and magnitude to BPS reliability, and that to correct this risk

² SMUD Final Incident Report – ORV Outage Report 12-26-2008 and CAISO Generation Statistics for December 26, 2008.

³ All times (i) in 24-hour format and (ii) PST unless otherwise indicated.

⁴ *i.e.* fully disconnecting it from the BPS in order to de-energize its (unprotected) facilities

⁵ In a 10:27 call with personnel on site at ORV the PSO indicated that he was “going to have to open these lines up if we have no protection [at ORV].”

SMUD should have immediately removed ORV from the BPS, as SMUD’s PSO had recognized. SMUD did not disconnect ORV from the BPS at that time or at any later point in the Event.

At 10:51 , SMUD called its (then) Reliability Coordinator, the California-Mexico Reliability Coordinator (CMRC) to notify of the situation at ORV, including that the service status of ORV’s protection systems was uncertain (*i.e.* the systems might not operate in the event of a fault in their zone of protection).

After reviewing the situation and potential options, SMUD determined that interim modification of relay settings at the Elverta substation would allow it to keep ORV energized so that it could maintain local station service during the battery charger replacement. This would also allow SMUD to keep the Foothill substation, then radially-connected to ORV, in service to continue supplying customer load usually served by Foothill plus additional load that SMUD could transfer to Foothill from ORV. SMUD made the relay setting changes at Elverta, completing them at 11:54. SMUD successfully transferred some ORV load to Foothills, but approximately 110 MW of ORV load was still shed affecting approximately 58,700 customers for about 31 minutes.

NCEA determined that SMUD operated its portion of the BPS around ORV in an unknown operating state for at least one hour and twenty-seven minutes *i.e.* from the point, at 10:27, that SMUD determined and recognized the BPS reliability risk impact of the loss of adequate DC battery voltage supply at ORV, until 11:54 when the interim relay setting changes at Elverta were completed to remove that risk.

NERC investigated this event under Compliance Investigation (CI) NERC0009CVI.

IS THERE A SETTLEMENT AGREEMENT YES NO

WITH RESPECT TO THE VIOLATION(S), REGISTERED ENTITY

NEITHER ADMITS NOR DENIES IT (SETTLEMENT ONLY) YES
 ADMITS TO IT YES
 DOES NOT CONTEST IT (INCLUDING WITHIN 30 DAYS) YES

WITH RESPECT TO THE ASSESSED PENALTY OR SANCTION, REGISTERED ENTITY

ACCEPTS IT/ DOES NOT CONTEST IT YES

II. PENALTY INFORMATION

TOTAL ASSESSED PENALTY OR SANCTION OF DOLLAR PENALTY FOR NUMBER OF VIOLATIONS INCLUDED IN THE NOCV/SA VIOLATIONS OF RELIABILITY STANDARDS.

\$100,000

(1) REGISTERED ENTITY'S COMPLIANCE HISTORY

PREVIOUSLY FILED VIOLATIONS OF ANY OF THE INSTANT RELIABILITY STANDARD(S) OR REQUIREMENT(S) THEREUNDER
YES NO

LIST VIOLATIONS AND STATUS

ADDITIONAL COMMENTS

PREVIOUSLY FILED VIOLATIONS OF OTHER RELIABILITY STANDARD(S) OR REQUIREMENTS THEREUNDER
YES NO

LIST VIOLATIONS AND STATUS

On September 13, 2010, NERC submitted Notice of Penalty (NOP) NP10-160-000 (Omnibus II filing) which included proposed resolution of a violation by SMUD of WECC Regional reliability standard VAR-STD-002a-1 (WECC), including assessment of a financial penalty of \$35,000. On October 13, 2010, the Federal Energy Regulatory Commission (FERC) issued a notice of no further review of this violation and the proposed penalty.

On May 3, 2010, NERC submitted a filing under NP10-106-000 which addressed a violation for this registered entity for violations of TOP-002-2 R16.1, BAL-002-0 R4, IRO-004-1 R4 and IRO-STD-006-0 WR1 with an assessed penalty of \$9,900. On May 28, 2010, FERC issued a notice of no further review of the violations and the assessed penalty became effective as an operation of law.

On December 30, 2009, NERC submitted a filing under NP10-29-000 which addressed violations for this registered entity for violations of EOP-001-0 R4, FAC-001-1 R1, FAC-001-1 R3, FAC-003-1 1, PRC-017-0 R1, TPL-002-0 R1 and TPL-003-0 R1 with an assessed penalty of \$65,000. On January 29, 2010, FERC issued a notice of no further review of the violations and the assessed penalty became effective as an operation of law.

On October 14, 2009, NERC submitted an Omnibus filing under NP10-2-000 which addressed a violation for this registered entity for a violation of CIP-001-1 R1 with an assessed penalty of \$0. On November 13, 2009, FERC issued a notice

of no further review of this violation and the assessed penalty became effective as an operation of law.

ADDITIONAL COMMENTS

(2) THE DEGREE AND QUALITY OF COOPERATION BY THE REGISTERED ENTITY (IF THE RESPONSE TO FULL COOPERATION IS "NO," THE ABBREVIATED NOP FORM MAY NOT BE USED.)

FULL COOPERATION YES NO
IF NO, EXPLAIN

(3) THE PRESENCE AND QUALITY OF THE REGISTERED ENTITY'S COMPLIANCE PROGRAM

IS THERE A DOCUMENTED COMPLIANCE PROGRAM
YES NO UNDETERMINED
EXPLAIN

Over the course of the investigation, NERC's CI Team staff determined that the SMUD Internal Compliance Program (ICP) was sufficiently designed to promote a culture of compliance within the organization and ensure compliance with the reliability standards. NCEA accepted the CI Team's assessment as provided.

EXPLAIN SENIOR MANAGEMENT'S ROLE AND INVOLVEMENT WITH RESPECT TO THE REGISTERED ENTITY'S COMPLIANCE PROGRAM, INCLUDING WHETHER SENIOR MANAGEMENT TAKES ACTIONS THAT SUPPORT THE COMPLIANCE PROGRAM, SUCH AS TRAINING, COMPLIANCE AS A FACTOR IN EMPLOYEE EVALUATIONS, OR OTHERWISE.

A Reliability Steering Committee consisting of Management is responsible for overseeing and ensuring that the Planning, Procedures, Projects, Tasks and Training programs are implemented to meet or exceed NERC Standards.

A Reliability Standards Working Committee is responsible for implementation and documentation of the work processes related to Standards and other functional elements.

(4) ANY ATTEMPT BY THE REGISTERED ENTITY TO CONCEAL THE VIOLATION(S) OR INFORMATION NEEDED TO REVIEW, EVALUATE OR INVESTIGATE THE VIOLATION.

YES NO
IF YES, EXPLAIN

(5) ANY EVIDENCE THE VIOLATION(S) WERE INTENTIONAL (IF THE RESPONSE IS "YES," THE ABBREVIATED NOP FORM MAY NOT BE USED.)

YES NO
IF YES, EXPLAIN

(6) ANY OTHER MITIGATING FACTORS FOR CONSIDERATION

YES NO
IF YES, EXPLAIN

SMUD was prepared to submit a self-report, for violation of PRC-005-1 R2, to WECC in January 2009, shortly after the Event, while investigation was still underway. Immediately subsequent to NERC clarifying that self-reports can be submitted before an investigation is complete SMUD submitted the self-report to WECC, in July 2009. Contemporaneous with submitting this self-report SMUD also submitted its (completed) mitigation plan⁶ for this violation.

SMUD, on its own initiative, beginning in January 2009 and completed in February 2010, implemented a capital improvement project to upgrade the battery systems at all twenty-two (22) of its bulk power substations at a cost of approximately \$1.17 million dollars. SMUD also improved its transmission maintenance and inspection program (TMIP) to address potential inadequacies discovered during the CI.

SMUD proactively enhanced its training program to address issues in communication, including technical training as well as training on issuing and understanding directives and 3-part communication techniques.

In 2009 SMUD clarified the authority of the PSO during emergencies through numerous internal communications.

Also in 2009 SMUD conducted additional training for the PSOs in recognizing and acting on system cues to emergency conditions.

⁶ This mitigation plan was accepted by WECC and NERC and was assigned mitigation plan tracking ID MIT-08-1849 by NERC.

(7) ANY OTHER AGGRAVATING FACTORS FOR CONSIDERATION

YES NO
IF YES, EXPLAIN

(8) ANY OTHER EXTENUATING CIRCUMSTANCES

YES NO
IF YES, EXPLAIN

OTHER RELEVANT INFORMATION:

NOTICE OF ALLEGED VIOLATION AND PROPOSED PENALTY OR
SANCTION ISSUED

DATE: OR N/A

SETTLEMENT DISCUSSIONS COMMENCED

DATE: OR N/A

NOTICE OF CONFIRMED VIOLATION ISSUED

DATE: OR N/A

SUPPLEMENTAL RECORD INFORMATION

DATE(S) OR N/A

REGISTERED ENTITY RESPONSE CONTESTED

FINDINGS PENALTY BOTH NO CONTEST

HEARING REQUESTED

YES NO

DATE

OUTCOME APPEAL REQUESTED

DISPOSITION OF VIOLATION

Dated December 21, 2011

NERC TRACKING NO. NCEA200900103 REGIONAL ENTITY TRACKING NO. N/A

I. VIOLATION INFORMATION

RELIABILITY STANDARD	REQUIREMENT(S)	SUB-REQUIREMENT(S)	VRF(S)	VSL(S)
PER-002-0	R1		High	Lower

VIOLATION APPLIES TO THE FOLLOWING FUNCTIONS:

BA	DP	GO	GOP	IA	LSE	PA	PSE	RC	RP	RSG	TO	TOP	TP	TSP
												X		

PURPOSE OF THE RELIABILITY STANDARD AND TEXT OF RELIABILITY STANDARD AND REQUIREMENT(S)/SUB-REQUIREMENT(S)

The purpose statement of PER-002-0 provides *“Each Transmission Operator and Balancing Authority must provide their personnel with a coordinated training program that will ensure reliable system operation.”*

PER-002-0 R1 provides:

“Each Transmission Operator [TOP] and Balancing Authority [BA] shall be staffed with adequately trained operating personnel.”

VIOLATION DESCRIPTIONS

At 10:17,¹ the PSO contacted a SMUD maintenance planner colleague to question him about a re-closer status change the PSO had observed, but not caused, on the EMS SCADA, on the Orangevale/White Rock 230 kV circuit breaker (#5722) at ORV. This conversation progressed into a broader ~10 minute discussion regarding the operation, purpose and control action precedence of the “Local” and “Remote” control switches implemented by SMUD in its standard circuit breaker supervisory control switching and indicator scheme. Although the conversation revolved around the specific switches and indication at ORV the conversation illustrated that the PSO had inadequate knowledge and understanding of this standard SMUD SCADA control scheme. An entity’s SCADA control schemes are material to the operation and control of its BPS equipment and facilities (e.g. circuit breakers and substations), and thereby material to ensuring reliable BPS system operation. NCEA found that the PSO’s inadequate knowledge and understanding of this standard SMUD BPS facility control system scheme indicated that he was not adequately trained. NCEA determined that SMUD incurred the subject violation because the PSO was an operating staff member for SMUD’s performance of its TOP responsibilities, but this exchange between the PSO and the planner during the Event indicated that the PSO was not adequately trained as required by PER-002-0 R1.

RELIABILITY IMPACT STATEMENTS - POTENTIAL AND ACTUAL

This violation posed minimal risk to the reliability of the BPS and did not pose a serious or substantial risk to the BPS.

The potential scope of impact of this PSO’s inadequate training was broad within SMUD because the scheme with which the PSO was not adequately familiar was implemented throughout SMUD’s BPS facilities. However the number and class or size (i.e. 230 kV or lower voltage) of SMUD’s BPS substations and transmission lines overall are relatively small within the portion of the Western Interconnection in the vicinity of SMUD’s BPS facilities. In the event that this violation resulted in some incident or event on the system it is most likely that the impact would be limited to the local vicinity of SMUD’s own system facilities and not widespread within the Western Interconnection.

II. DISCOVERY INFORMATION

METHOD OF DISCOVERY

- SELF-REPORT
- SELF-CERTIFICATION
- COMPLIANCE AUDIT
- COMPLIANCE VIOLATION INVESTIGATION
- SPOT CHECK

¹ All times (i) in 24-hour format and (ii) PST unless otherwise indicated

COMPLAINT
 PERIODIC DATA SUBMITTAL
 EXCEPTION REPORTING

DURATION DATE(S) **June 18, 2007²**

DATE DISCOVERED BY OR REPORTED TO REGIONAL ENTITY **N/A**

IS THE VIOLATION STILL OCCURRING YES NO
 IF YES, EXPLAIN

REMEDIAL ACTION DIRECTIVE ISSUED YES NO
 PRE TO POST JUNE 18, 2007 VIOLATION YES NO

III. MITIGATION INFORMATION

FOR FINAL ACCEPTED MITIGATION PLAN:

MITIGATION PLAN NO. **N/A**
 DATE SUBMITTED TO REGIONAL ENTITY **N/A**
 DATE ACCEPTED BY REGIONAL ENTITY **N/A**
 DATE APPROVED BY NERC **N/A**
 DATE PROVIDED TO FERC **N/A**

IDENTIFY AND EXPLAIN ALL PRIOR VERSIONS THAT WERE ACCEPTED OR REJECTED, IF APPLICABLE

N/A

MITIGATION PLAN COMPLETED YES ³ NO

EXPECTED COMPLETION DATE **N/A**
 EXTENSIONS GRANTED **N/A**
 ACTUAL COMPLETION DATE **March 25, 2009**

DATE OF CERTIFICATION LETTER **February 14, 2011⁴**
 CERTIFIED COMPLETE BY REGISTERED ENTITY AS OF **March 25, 2009**

DATE OF VERIFICATION LETTER **N/A⁵**

² NCEA has assumed a start date of June 18, 2007, which is the date this standard became mandatory and enforceable. This assumption is based on no additional evidence being presented that demonstrates training on this issue after this date.

³ NCEA did not request and SMUD did not submit a formal mitigation plan for this violation. Alternatively and in advance of receiving notification from NERC of the subject violation SMUD performed the mitigation activities noted herein as part of its internal compliance and operator training plan.

⁴ SMUD indicated completion of the subject mitigation in its response, dated February 14, 2011, to NCEA to an NCEA information request dated January 18, 2011.

VERIFIED COMPLETE BY REGIONAL ENTITY AS OF N/A⁶

ACTIONS TAKEN TO MITIGATE THE ISSUE AND PREVENT
RECURRENCE

SMUD reported that in February 2009, it conducted refresher training for its PSOs on the topic of re-closer cut-out switches and a discussion of how automatic re-closers are used at SMUD. SMUD indicated that it applied for and received continuing education (“CE”) credits from NERC for this training.

LIST OF EVIDENCE REVIEWED BY REGIONAL ENTITY TO EVALUATE
COMPLETION OF MITIGATION PLAN OR MILESTONES (FOR CASES IN
WHICH MITIGATION IS NOT YET COMPLETED, LIST EVIDENCE
REVIEWED FOR COMPLETED MILESTONES)

Application for NERC CE Credit:

This document provided direct evidence of training related to the violation. It outlines the training provided as well as dates held.

PER-002-0 RSAW and Evidence:

This document provides documentation of the education provided to system operators that address the deficiencies outlined in the investigation. Initial training as well as continuous training documents were provided and reviewed.

EXHIBITS:

SOURCE DOCUMENT

N/A

MITIGATION PLAN

N/A

CERTIFICATION BY REGISTERED ENTITY

N/A

VERIFICATION BY REGIONAL ENTITY

N/A

⁵ NCEA verified SMUD’s completion of the mitigation noted herein, in preparation for this settlement agreement. The agreement document also constitutes NCEA’s verification notice to SMUD regarding the subject mitigation.

⁶ *See id.*

DISPOSITION OF VIOLATION

Dated December 21, 2011

NERC TRACKING NO. NCEA200900104 REGIONAL ENTITY TRACKING NO. N/A

I. VIOLATION INFORMATION

RELIABILITY STANDARD	REQUIREMENT(S)	SUB-REQUIREMENT(S)	VRF(S)	VSL(S)
PRC-005-1	R2		High	Severe

VIOLATION APPLIES TO THE FOLLOWING FUNCTIONS:

BA	DP	GO	GOP	IA	LSE	PA	PSE	RC	RP	RSG	TO	TOP	TP	TSP
												X		

PURPOSE OF THE RELIABILITY STANDARD AND TEXT OF RELIABILITY STANDARD AND REQUIREMENT(S)/SUB-REQUIREMENT(S)

The purpose statement of PRC-005-1 provides *“To ensure all transmission and generation Protection Systems affecting the reliability of the Bulk Electric System (BES) are maintained and tested.”*

PRC-005-1 R2 provides:

“Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall provide documentation of its Protection System maintenance and testing program and the implementation of that program to its Regional Reliability Organization on request (within 30calendar days). The documentation of the program implementation shall include:

R2.1. Evidence Protection System devices were maintained and tested within the defined intervals.

R2.2. Date each Protection System device was last tested/maintained.”

VIOLATION DESCRIPTIONS

NCEA found that SMUD violated PRC-005-1 R2 because SMUD did not maintain and test the battery system at ORV within the defined intervals directed by SMUD's protection system maintenance and testing program.

At the time of the Event, SMUD's protection system maintenance and testing program included SMUD's *Transmission Maintenance Inspection Plan* (TMIP) and *Protective System Routine Maintenance Guideline* which together outlined the intervals and procedures for maintaining and testing relay protection systems including relays, potential transformers, current transformers and DC supply. Applicable sections of the TMIP¹ required that bulk power system substation batteries be inspected bi-monthly on all Main, Supervisory, and Telecommunication battery systems, by SMUD's field technicians. The inspection was to include visual inspection and testing for terminal voltage, float voltage and temperature, and the corrective maintenance interval directed for all equipment was "as needed". SMUD's program also required that once field technicians completed tests the results were to be uploaded and stored in an (electronic) data storage area shared with SMUD's maintenance planners, who were then to review the test results and determine corrective action required, if any, on a quarterly (*i.e.* every three months) basis. On the basis of this information NCEA found that the testing and maintenance interval for ORV's batteries in SMUD's protection system maintenance and testing program was "quarterly" because this is the frequency at which the test data was reviewed and any required corrective maintenance was determined and thereafter undertaken.

SMUD indicated that the electrician assigned to ORV did not maintain the routine battery system test cycle throughout 2008². Testing immediately prior to the event consisted of the following:

- Complete battery test on June 11, 2008. The test results recorded a "Fail"³ for one cell (#16) in the Main battery string.
- Complete battery test on August 24, 2008. The test results recorded reduced, "Warning"⁴ level voltage level, only, on all cells in the Main battery string.
- On September 15, 2008, battery terminal voltage testing was attempted; however the voltage meter being used displayed an error message. The test meter was suspected to be faulty and further testing was discontinued. The test report included data for only 5 of the Main battery string's 60 batteries and was therefore incomplete and inadequate.
- On November 24, 2008 a complete set of battery terminal voltage testing was completed. However, the test meter generated multiple error messages and had to be reset multiple times. The test results for the November test indicated: one

¹ Sections 4, 6 and 10.

² Section C.4 SMUD Mitigation Plan MIT-08-1849 submitted by SMUD to WECC and approved by NERC Aug 6, 2009.

³ The cell's voltage was measured at or below 2.05 Volts DC (VDC).

⁴ The cells' voltages were measured to be below 2.15 VDC but at or above 2.05 VDC.

cell “Failed” in one sixty battery string; all cells “Failed” for the second battery string.

When the SMUD maintenance planners conducted their third quarter review of ORV’s batteries, for the period July through September, 2008, the August 24 and September 15 results had not yet been uploaded to the shared data storage area and only the June 11, 2008 field testing results were considered. Responding only to that data, the planners determined and directed corrective maintenance limited only to (i) correcting a loose connection on the one “Failed” cell (#16) found in the June 11 test and (ii) equalization of the battery string; this work was completed prior to the November 24 testing⁵. The planners’ review and resulting directives for corrective action for ORV’s batteries were inadequate because the August 24 and September 15 test data were not included in the review nor addressed in the resulting corrective action they directed.

SMUD did not validly undertake or complete its required third quarter review of ORV’s batteries because the test data reviewed was incomplete (*i.e.* did not include the August and September test results) with the result that SMUD did not detect and take appropriate corrective action to address the batteries’ declining voltage before the Event. NCEA found that this constituted SMUD not maintaining and testing these batteries within the applicable three-month defined interval directed by SMUD’s protection system maintenance and testing program, and thereby SMUD violated PRC-005-1 R2.

RELIABILITY IMPACT STATEMENTS - POTENTIAL AND ACTUAL

For the purposes of the present settlement agreement NCEA considers that the subject violation of PRC-005-1 R2 by SMUD posed minimal risk to the reliability but not serious or substantial risk to the BPS:

- The violation produced risk to the reliability of the BPS both during the Event and for some period, of unknown duration, preceding the Event⁶.
- The violation produced significant risk to the reliability of the local BPS in the vicinity⁷ of ORV. A fault occurring on BPS equipment at ORV during the Event (or preceding it as discussed above) would likely not have produced cascading outages or other similar effects on the BPS because the facilities involved (*e.g.* the transmission lines and other BPS equipment at and interconnecting the Orangevale, Elverta and Foothill substations) are of lesser significance to the

⁵ SMUD Final Incident Report – ORV Outage Report 12-26-2008.

⁶ SMUD’s incident report indicates that the issues with ORV’s batteries (low voltage) and their battery charger (failed unit) first manifested themselves by problems/alarms experienced when SMUD’s PSOs remotely opened a 230 kV breaker at ORV at 7:12. As the charger was failing/failed and battery voltage was already low by this time any other control or protective relaying action (*e.g.* opening or tripping of a breaker), and particularly multiple actions over a short period, undertaken or occurring earlier at ORV may not have been successful. Accordingly with respect to ORV NERC found that the subject violation produced risk to BPS reliability both during the event and for an indeterminate time before the problems were discovered at ORV at the onset of the Event.

⁷ *i.e.* SMUD’s own facilities (BPS and distribution) and those of its neighbors close to ORV

reliability of the BPS in the area *i.e.* none of the BPS elements involved in the event are listed as elements of a WECC Path⁸ or Nomogram.

- Determination of the risk to BPS reliability of the present violation should consider whether the performance lapses by SMUD’s personnel identified herein were with respect only to ORV or also contemporaneously occurred with respect to any of SMUD’s other substations. While SMUD indicated that the same employee who had not followed the testing cycle at ORV also had similar responsibilities for two other substations⁹, this aspect of the scope of present violation was not investigated by the CVI team because WECC was including it as an element of their CMEP audit of SMUD being conducted in 2010. The results of WECC’s audit are not available for consideration in this settlement; this aspect of the present violation is therefore not considered by NCEA in this settlement.

With respect to actual impact NCEA notes that the occurrence of and the load shedding associated with the Event are directly attributable to this violation. Had SMUD tested and maintained the ORV batteries pursuant to its protection system maintenance and testing program the Event and its associated load shedding would not have occurred.

II. DISCOVERY INFORMATION

METHOD OF DISCOVERY

- | | |
|------------------------------------|---|
| SELF-REPORT | <input type="checkbox"/> |
| SELF-CERTIFICATION | <input type="checkbox"/> |
| COMPLIANCE AUDIT | <input type="checkbox"/> |
| COMPLIANCE VIOLATION INVESTIGATION | <input type="checkbox"/> |
| SPOT CHECK | <input type="checkbox"/> |
| COMPLAINT | <input type="checkbox"/> |
| PERIODIC DATA SUBMITTAL | <input type="checkbox"/> |
| EXCEPTION REPORTING | <input checked="" type="checkbox"/> ¹⁰ |

DURATION DATE(S) October 1, 2008 to December 26, 2008¹¹

DATE DISCOVERED BY OR REPORTED TO REGIONAL ENTITY N/A

IS THE VIOLATION STILL OCCURRING YES NO
IF YES, EXPLAIN

⁸ A listing of WECC Paths and Nomograms is available in Attachment A to WECC Regional Reliability Standard TOP-STD-007-0.

⁹ SMUD Final Incident Report – ORV Outage Report 12-26-2008.

¹⁰ SMUD reported the Event to WECC pursuant to NERC Reliability Standard EOP-004. It also submitted a self-report for the subject violation to WECC on July 1, 2009. NCEA has considered SMUD’s July 2009 self-report as warranting mitigating credit.

¹¹ Lacking knowledge of SMUD’s schedule for the 3rd Quarter review of ORV’s battery test data NCEA has deemed that the violation began on the first business weekday following the end of the third quarter of 2008 *i.e.*, Wednesday October 1, 2008.

REMEDIAL ACTION DIRECTIVE ISSUED YES NO
PRE TO POST JUNE 18, 2007 VIOLATION YES NO

III. MITIGATION INFORMATION

FOR FINAL ACCEPTED MITIGATION PLAN:

MITIGATION PLAN NO. **MIT-08-1849**
DATE SUBMITTED TO REGIONAL ENTITY **July 1, 2009**
DATE ACCEPTED BY REGIONAL ENTITY **July 28, 2009**
DATE APPROVED BY NERC **August 6, 2009**
DATE PROVIDED TO FERC **August 6, 2009**

IDENTIFY AND EXPLAIN ALL PRIOR VERSIONS THAT WERE ACCEPTED OR REJECTED, IF APPLICABLE

N/A

MITIGATION PLAN COMPLETED YES NO

EXPECTED COMPLETION DATE **March 27, 2009**
EXTENSIONS GRANTED **N/A**
ACTUAL COMPLETION DATE **March 27, 2009**

DATE OF CERTIFICATION LETTER **July 1, 2009¹²**
CERTIFIED COMPLETE BY REGISTERED ENTITY AS OF **July 1, 2009**

DATE OF VERIFICATION LETTER **N/A¹³**
VERIFIED COMPLETE BY REGIONAL ENTITY AS OF **N/A¹⁴**

ACTIONS TAKEN TO MITIGATE THE ISSUE AND PREVENT RECURRENCE

1.B y March 16, 2009, SMUD instituted a standardized¹⁵ and higher voltage alarm set point (125 volts) for the Low Voltage DC alarm at ORV and all of SMUD's other 21 substations. Alarming for High Voltage conditions was also added. These changes provide SMUD earlier detection and

¹² SMUD's submittal of the subject mitigation plan as a 'completed plan' constituted SMUD certification of completion of the plan on the date of submittal of the plan.

¹³ NCEA verified SMUD's completion of the mitigation noted herein, in preparation for this settlement agreement. The agreement document also constitutes NCEA's verification notice to SMUD regarding the subject mitigation

¹⁴ See previous footnote

¹⁵ Alarm set points previously varied between substations; at the time of the Event the setting at ORV was 109 Volts, a point that SMUD determined allowed the battery system to degrade to a critical level after failure of the battery charger.

notification in real-time via its EMS in the event that a battery system problem is developing.

2. SMUD upgraded DC voltage systems at its bulk substations, including new DC voltage relays, DC battery chargers, and adding portable redundant DC battery chargers at each substation. A result of the upgrade is that SMUD has both a standard design and standardized equipment for monitoring and maintaining the DC voltage systems for their protection and communication systems. Additionally, SMUD has invested over \$1 million in designing and installing redundant measures in its backup systems in its various substations, which it completed on February 26, 2010.
3. SMUD revised and improved its transmission maintenance and inspection program (TMIP), including the following key items:
 - a. Added specific steps to procedures in place to remove ambiguities if test results were inconsistent.
 - b. Developed specific procedures for on-site technicians to interpret results from battery tests and substation reads. A problem test report is addressed immediately versus previous practice of delayed cycle of review.
 - c. Maintenance planners and engineers review all test reports and monthly station reads within 30 days.
 - d. Use SAP to issue notifications for corrective work on batteries and to track the completion of any maintenance and corrective actions on battery systems.
 - e. TMIP now also requires Battery Charger charging current level testing when station battery testing is performed.
 - f. Enhanced the procedures for troubleshooting battery and charger systems.

LIST OF EVIDENCE REVIEWED BY REGIONAL ENTITY TO EVALUATE COMPLETION OF MITIGATION PLAN OR MILESTONES (FOR CASES IN WHICH MITIGATION IS NOT YET COMPLETED, LIST EVIDENCE REVIEWED FOR COMPLETED MILESTONES)

Battery Charger Replacement Project 3-8-2010:

This document outlines, by substation, what remedial steps were taken and what equipment related to the battery charging system was replaced and/or enhanced.

Training Materials and Records:

This is a record of the attendees and materials used in a lesson learned training to deal with battery failure at substations.

TP6601 TMIP:

Attachment B to Disposition Document

This is the Transmission Maintenance and Inspection plan (TMIP). This document outlines the frequency and steps for maintaining the battery system at the substations in addition to other equipment located at various facilities.

PRC-005-1 RSAW and Evidence:

This document contains, among other information, details on the TMIP in relation to the battery systems at the facilities including maintenance intervals and review processes.

EXHIBITS:

SOURCE DOCUMENT

N/A

MITIGATION PLAN

MIT-08-1849

CERTIFICATION BY REGISTERED ENTITY

N/A

VERIFICATION BY REGIONAL ENTITY

N/A

DISPOSITION OF VIOLATION

Dated December 21, 2011

NERC TRACKING NO. NCEA200900105 REGIONAL ENTITY TRACKING NO. N/A

I. VIOLATION INFORMATION

RELIABILITY STANDARD	REQUIREMENT(S)	SUB-REQUIREMENT(S)	VRF(S)	VSL(S)
TOP-001-1	R1		High	Severe

VIOLATION APPLIES TO THE FOLLOWING FUNCTIONS:

BA	DP	GO	GOP	IA	LSE	PA	PSE	RC	RP	RSG	TO	TOP	TP	TSP
												X		

PURPOSE OF THE RELIABILITY STANDARD AND TEXT OF RELIABILITY STANDARD AND REQUIREMENT(S)/SUB-REQUIREMENT(S)

The purpose statement of TOP-001-1 provides *“To ensure reliability entities have clear decision-making authority and capabilities to take appropriate actions or direct the actions of others to return the transmission system to normal conditions during an emergency.”*

TOP-001-1 R1 provides:

“Each Transmission Operator shall have the responsibility and clear decision-making authority to take whatever actions are needed to ensure the reliability of its area and shall exercise specific authority to alleviate operating emergencies.”

VIOLATION DESCRIPTIONS

SMUD violated TOP-001-1 R1 because SMUD's Power Systems Operator (PSO) did not exercise his/her specific authority to alleviate an operating emergency during the Event.

The operating emergency (Operating Emergency) encountered during the Event and associated with this violation, was the exposure of the BPS to the potential impacts of a fault or other similar incident/occurrence for which protection systems at ORV were implemented, while those protection systems could not be counted upon to properly and reliably operate. Also and at the same time, SMUD had uncertain capability to control or operate the BPS equipment and facilities at the substation.

As discussed further in this settlement agreement regarding violation TOP-001-1 R2, NCEA determined that the action required of from SMUD to correct the Operating Emergency during the Event was disconnection of ORV from the BPS at least until adequate protection system coverage was restored for the substation. SMUD's PSO did not take this action, thereby failing to exercise his/her specific authority to alleviate the Operating Emergency and incurring the present violation of TOP-001-1 R1 for SMUD.

RELIABILITY IMPACT STATEMENTS - POTENTIAL AND ACTUAL

This violation posed moderate risk to the reliability of the BPS but did not pose a serious or substantial risk to the BPS.

Leaving ORV connected to the BPS during the Operating Emergency left the BPS in the vicinity of ORV in an unknown operating state during the Event because it was not clear what would happen on the BPS at or around ORV if a fault occurred that ORV's BPS protection systems were implemented to respond to. The BPS elements involved in the Event (*e.g.*, the transmission lines and other BPS equipment at and interconnecting the Orangevale, Elverta and Foothill substations) are of relatively lesser significance to the reliability of the BPS in the area. None of them are listed as elements of a WECC Path¹ or Nomogram. Nevertheless ORV is a networked substation² on the system and the MVA loading on the subject 230 kV lines and other relevant equipment at ORV (*e.g.* capacitors on the 69 kV bus) provide MW and/or MVAr to other SMUD 230 kV substations and plants, and SMUD's interconnections to others' adjacent portions of the BPS, in addition to serving the 69 kV distribution feeder lines fed from the substation.

If a fault had occurred at ORV during the Event it is unlikely that BPS impacts would have been widespread throughout the Western Interconnection. Nevertheless outages or cascading may have occurred beyond the local vicinity of SMUD's system.

¹ A listing of WECC Paths and Nomograms is available in Attachment A to WECC Regional Reliability Standard TOP-STD-007-0.

² *i.e.* interconnected with multiple other BPS substations versus radially fed from one other such substation.

The load shedding associated with this Event was unavoidable; accordingly during the Event there was no actual impact to the BPS attributable to this violation.

II. DISCOVERY INFORMATION

METHOD OF DISCOVERY

- SELF-REPORT
- SELF-CERTIFICATION
- COMPLIANCE AUDIT
- COMPLIANCE VIOLATION INVESTIGATION
- SPOT CHECK
- COMPLAINT
- PERIODIC DATA SUBMITTAL
- EXCEPTION REPORTING

DURATION DATE(S) **1 day (December 26, 2008)**

DATE DISCOVERED BY OR REPORTED TO REGIONAL ENTITY **N/A**

IS THE VIOLATION STILL OCCURRING YES NO
 IF YES, EXPLAIN

REMEDIAL ACTION DIRECTIVE ISSUED YES NO
 PRE TO POST JUNE 18, 2007 VIOLATION YES NO

III. MITIGATION INFORMATION

FOR FINAL ACCEPTED MITIGATION PLAN:

MITIGATION PLAN NO. **N/A**
 DATE SUBMITTED TO REGIONAL ENTITY **N/A**
 DATE ACCEPTED BY REGIONAL ENTITY **N/A**
 DATE APPROVED BY NERC **N/A**
 DATE PROVIDED TO FERC **N/A**

IDENTIFY AND EXPLAIN ALL PRIOR VERSIONS THAT WERE ACCEPTED OR REJECTED, IF APPLICABLE
N/A

MITIGATION PLAN COMPLETED YES ³ NO

³ NCEA did not request and SMUD did not submit a formal mitigation plan for this violation. Rather, in advance of receiving notification from NERC of the subject violation, SMUD performed the mitigation activities noted herein as part of its internal compliance and operator training plan.

EXPECTED COMPLETION DATE N/A
EXTENSIONS GRANTED N/A
ACTUAL COMPLETION DATE **March 25, 2009**

DATE OF CERTIFICATION LETTER **February 14, 2011**⁴
CERTIFIED COMPLETE BY REGISTERED ENTITY AS OF March 25, 2009

DATE OF VERIFICATION LETTER: N/A⁵
VERIFIED COMPLETE BY NCEA AS OF N/A⁶

ACTIONS TAKEN TO MITIGATE THE ISSUE AND PREVENT RECURRENCE

SMUD reported that in February 2009, it created a “Lessons Learned” training document from the Event to remind its PSOs of their responsibilities and authorities as TOP and BA during emergency conditions, in particular with respect to taking direct and timely action, up to and including shedding firm load if required, to prevent or alleviate system operating limit violations.

SMUD further reported that also in 2009 it clarified its procedure GNE 001, entitled “*System Emergency Procedure Authority*”, to emphasize that its Distributions System Operators (DSOs) were to promptly adhere to all directives issued by the PSO with respect to dropping firm system load. Language was also added to the procedure to further reinforce that the PSO will either shed load as required or direct the DSO to shed load as needed to relieve an emergency condition.

LIST OF EVIDENCE REVIEWED BY REGIONAL ENTITY TO EVALUATE COMPLETION OF MITIGATION PLAN OR MILESTONES (FOR CASES IN WHICH MITIGATION IS NOT YET COMPLETED, LIST EVIDENCE REVIEWED FOR COMPLETED MILESTONES)

Application for NERC CE Credit:

This document provided direct evidence of training related to the violation. It outlines the training provided as well as dates held.

Training Materials and Records:

This is a record of the attendees and materials used in a lessons learned training to deal with battery failure at substations.

GNE_001:

⁴ SMUD indicated completion of the subject mitigation in its response, dated February 14, 2011, to NCEA to an NCEA information request dated January 18, 2011.

⁵ NCEA verified SMUD’s completion of the mitigation noted herein, in preparation for this settlement agreement. The agreement document also constitutes NCEA’s verification notice to SMUD regarding the subject mitigation.

⁶ See *id.*

Attachment C to Disposition Document

This is an updated policy clearly delineating the authority and responsibility of the PSO in an emergency situation, including the authority to shed firm load.

TOP-001-1 RSAW and Evidence:

This document outlines all of the policies and procedures that define the responsibility and authority of the PSO in an emergency, including the GNE_001 procedure.

EXHIBITS:

SOURCE DOCUMENT

N/A

MITIGATION PLAN

N/A

CERTIFICATION BY REGISTERED ENTITY

N/A

VERIFICATION BY REGIONAL ENTITY

N/A

DISPOSITION OF VIOLATION

Dated December 21, 2011

NERC TRACKING NO. NCEA200900106 REGIONAL ENTITY TRACKING NO. N/A

I. VIOLATION INFORMATION

RELIABILITY STANDARD	REQUIREMENT(S)	SUB-REQUIREMENT(S)	VRF(S)	VSL(S)
TOP-001-1	R2		High	Severe

VIOLATION APPLIES TO THE FOLLOWING FUNCTIONS:

BA	DP	GO	GOP	IA	LSE	PA	PSE	RC	RP	RSG	TO	TOP	TP	TSP
												X		

PURPOSE OF THE RELIABILITY STANDARD AND TEXT OF RELIABILITY STANDARD AND REQUIREMENT(S)/SUB-REQUIREMENT(S)

The purpose statement of TOP-001-1 provides *“To ensure reliability entities have clear decision-making authority and capabilities to take appropriate actions or direct the actions of others to return the transmission system to normal conditions during an emergency.”*

TOP-001-1 R2 provides:

“Each Transmission Operator [TOP] shall take immediate actions to alleviate operating emergencies including curtailing transmission service or energy schedules, operating equipment (e.g., generators, phase shifters, breakers), shedding firm load, etc...”

VIOLATION DESCRIPTIONS

The operating emergency (Operating Emergency) encountered during the Event was the exposure of the BPS to the potential impacts of a fault or other similar incident/occurrence for which protection systems at ORV were implemented, while those protection systems could not be counted upon to properly and reliably operate. Also and at the same time, SMUD had uncertain capability to control or operate the BPS equipment and facilities at the substation. SMUD violated TOP-001-1, R2 because its personnel did not take immediate action, including operating equipment and shedding firm load, to alleviate the Operating Emergency:

1. By no later than 10:27¹ SMUD's Power Systems Operators² (PSOs) understood that all of the 230 kV BPS lines going into ORV needed to be opened to de-energize the substation because it had no protection³. This action was not immediately taken; instead the PSOs first consulted with a SMUD System Protection and Control (SPAC) associate protection engineer shortly thereafter, at 10:31, to get clarification of what would occur if there was a fault at ORV⁴. The SPAC engineer was unable to provide assurance that ORV was adequately protected in its present situation. NCEA consequently found that, at no later than this point, the PSOs should have taken the action that they had earlier determined was necessary and which had now also been confirmed by consultation with SPAC: disconnect ORV Substation from the BPS by opening all of the 230 kV lines into the substation. The PSOs did not take this action at this time and thereby failed to take immediate action to alleviate an operating emergency, in violation of TOP-001-1 R2.
2. Further to failing to immediately disconnect ORV from the BPS as discussed above, SMUD's PSOs also subsequently decided to keep ORV connected to the BPS throughout the Event. This was done so that (i) ORV could continue to radially supply another SMUD substation, Foothill, from its 230 kV bus and (ii) station service power would be maintained at ORV for maintenance personnel replacing the failed battery charger. NCEA did not find that the decision not to disconnect RV was made for BPS reliability reasons nor did NCEA find that it contributed to maintaining or improving the state of the reliability of the BPS at the time. On the contrary not disconnecting ORV from the BPS extended the time period over which the BPS was at risk from the situation at ORV. NCEA consequently again in this instance concluded that SMUD's PSOs should have taken the action already determined necessary after the 10:31 consultation with SPAC: full isolation and de-energization of ORV Substation from the BPS. The

¹ All times (i) in 24-hour format and (ii) PST unless otherwise indicated.

² SMUD's PSOs are responsible for performing SMUD's TOP function.

³ 8-1_PSO Written Transcripts.pdf, dated May 12, 2009.

⁴ Protective relaying at other substations at the remote ends of the 230 kV lines coming into ORV might have provided ORV with adequate, albeit backup level, protection against faults in/at ORV. The SPAC engineer was unable to provide assurance to PSO that this was the case.

PSOs did not take this action, thereby again failing to take immediate action to alleviate an operating emergency, in violation of TOP-001-1 R2.

3. Concurrent with developments that eventually resulted in SMUD's PSOs' decision not to disconnect ORV from the BPS the PSOs also engaged SMUD distribution personnel to offload customer load, from ORV to other substations, while ORV remained connected to the BPS, to minimize customer outages and service disruption. At 11:01, a SMUD PSO directed SMUD's Distribution Systems Operators (DSOs) to start offloading from ORV because the 230 kV lines into the substation might be opened. At 11:17, PSO contacted DSO to advise that disconnection of ORV was imminent. At 11:18, DSO contacted PSO to acquire additional time to undertake the offloading. SMUD's PSOs did not initiate opening ORV's 230 kV lines, or any of its equipment supplying ORV's 69 kV feeder⁵ lines, until 11:38 by which time the decision was or had also been made to keep ORV connected to the BPS. NCEA did not find that the PSO's delays to opening the 230 kV lines, or any equipment supplying ORV's 69 kV feeder lines, were for BPS reliability reasons. NCEA also did find that they contributed to maintaining or improving the state of the reliability of the BPS at the time. ,On the contrary these delays exacerbated the severity and extended the time period over which the BPS was at risk from the situation at ORV. As and for the reasons discussed above NCEA found that the risk to the BPS would have been fully and immediately removed had SMUD opened all of ORV's 230 kV lines subsequent to the SPAC consultation at 10:31. However, having decided to leave ORV connected SMUD could have reduced the severity of the risk to the BPS if feeder busses at ORV had been timely de-energized without the delay taken to offload the 69 kV lines first. Because SMUD's PSOs failed to take either action⁶, immediately, to alleviate the Operating Emergency, SMUD violated TOP-001-1 R2.

RELIABILITY IMPACT STATEMENTS - POTENTIAL AND ACTUAL

This violation posed moderate risk to the reliability of the BPS but did not pose a serious or substantial risk.

Leaving ORV connected to the BPS during the Operating Emergency left the BPS in the vicinity of ORV in an unknown operating state during the Event because it was not clear what would happen on the BPS at or around ORV if a fault occurred that ORV's BPS protection systems were implemented to respond to. The BPS elements involved in the Event (*e.g.*, the transmission lines and other BPS equipment at and interconnecting the Orangevale, Elverta and Foothill substations) are of relatively lesser significance to the

⁵ *i.e.* either of ORV's two 230 kV busses; either of ORV's two 230/69kV transformers; either of ORV's two 69 kV "feeder" busses; any of the circuit breakers connecting any of the feeder lines to the 69 kV busses.

⁶ *i.e.* disconnect ORV fully from the BPS or de-energize all facilities or equipment not required to continue supply to Foothill or maintain station service.

reliability of the BPS in the area. None of them are listed as elements of a WECC Path⁷ or Nomogram. Nevertheless, ORV is a networked substation⁸ on the system and the MVA loading on the subject 230 kV lines and other relevant equipment at ORV (e.g., capacitors on the 69 kV bus) provide MW and/or MVAr to other SMUD 230 kV substations and plants, and SMUD's interconnections to others' adjacent portions of the BPS, in addition to serving the 69kV distribution feeder lines fed from the substation.

If a fault had occurred at ORV during the Event it is unlikely that BPS impacts would have been widespread throughout the Western Interconnection. Nevertheless outages or cascading may have occurred beyond the local vicinity of SMUD's system.

The load shedding associated with this Event was unavoidable; accordingly during the Event there was no actual impact to the BPS attributable to this violation.

II. DISCOVERY INFORMATION

METHOD OF DISCOVERY

- | | |
|------------------------------------|-------------------------------------|
| SELF-REPORT | <input type="checkbox"/> |
| SELF-CERTIFICATION | <input type="checkbox"/> |
| COMPLIANCE AUDIT | <input type="checkbox"/> |
| COMPLIANCE VIOLATION INVESTIGATION | <input checked="" type="checkbox"/> |
| SPOT CHECK | <input type="checkbox"/> |
| COMPLAINT | <input type="checkbox"/> |
| PERIODIC DATA SUBMITTAL | <input type="checkbox"/> |
| EXCEPTION REPORTING | <input type="checkbox"/> |

DURATION DATE(S) **1 day (December 26, 2008)**

DATE DISCOVERED BY OR REPORTED TO REGIONAL ENTITY N/A

IS THE VIOLATION STILL OCCURRING YES NO
 IF YES, EXPLAIN

REMEDIAL ACTION DIRECTIVE ISSUED YES NO
 PRE TO POST JUNE 18, 2007 VIOLATION YES NO

III. MITIGATION INFORMATION

FOR FINAL ACCEPTED MITIGATION PLAN:

⁷ A listing of WECC Paths and Nomograms is available in Attachment A to WECC Regional reliability standard TOP-STD-007-0.

⁸ i.e. interconnected with multiple other BPS substations versus radially fed from one other such substation

MITIGATION PLAN NO. N/A
DATE SUBMITTED TO REGIONAL ENTITY N/A
DATE ACCEPTED BY REGIONAL ENTITY N/A
DATE APPROVED BY NERC N/A
DATE PROVIDED TO FERC N/A

IDENTIFY AND EXPLAIN ALL PRIOR VERSIONS THAT WERE ACCEPTED OR REJECTED, IF APPLICABLE

N/A

MITIGATION PLAN COMPLETED YES ⁹ NO

EXPECTED COMPLETION DATE N/A
EXTENSIONS GRANTED N/A
ACTUAL COMPLETION DATE **March 25, 2009**

DATE OF CERTIFICATION LETTER **February 14, 2011**¹⁰
CERTIFIED COMPLETE BY REGISTERED ENTITY AS OF **March 25, 2009**

DATE OF VERIFICATION LETTER: N/A¹¹
VERIFIED COMPLETE BY NCEA AS OF: N/A¹²

ACTIONS TAKEN TO MITIGATE THE ISSUE AND PREVENT RECURRENCE

SMUD reported that in February 2009, it created a “Lessons Learned” training document from the Event to remind its PSOs of their responsibilities and authorities as TOP and BA during emergency conditions, in particular with respect to taking direct and timely action, up to and including shedding firm load if required, to prevent or alleviate system operating limit violations

SMUD further reported that also in 2009 it clarified its procedure GNE 001, entitled “*System Emergency Procedure Authority*”, to emphasize that its Distributions System Operators (DSOs) were to promptly adhere to all directives issued by the PSO with respect to dropping firm system load. Language was also added to the procedure to further reinforce that the PSO will either shed load as required or direct the DSO to shed load as needed to relieve an emergency condition.

⁹ NCEA did not request and SMUD did not submit a formal mitigation plan for this violation. Rather, in advance of receiving notification from NERC of the subject violation, SMUD performed the mitigation activities noted herein as part of its internal compliance and operator training plan.

¹⁰ SMUD indicated completion of the subject mitigation in its response, dated February 14, 2011, to NCEA to an NCEA information request dated January 18, 2011.

¹¹ NCEA verified SMUD’s completion of the mitigation noted herein, in preparation for this settlement agreement. The agreement document also constitutes NCEA’s verification notice to SMUD regarding the subject mitigation.

¹² See *id.*

LIST OF EVIDENCE REVIEWED BY REGIONAL ENTITY TO EVALUATE COMPLETION OF MITIGATION PLAN OR MILESTONES (FOR CASES IN WHICH MITIGATION IS NOT YET COMPLETED, LIST EVIDENCE REVIEWED FOR COMPLETED MILESTONES)

Application for NERC CE Credit:

This document provided direct evidence of training related to the violation. It outlines the training provided as well as dates held.

Training Materials and Records:

This document provides documentation of the education provided to system operators that address the deficiencies outlined in the investigation. Initial training as well as continuous training documents were provided and reviewed. This includes a 'lessons learned' regarding this Event.

GNE_001:

This is an updated policy clearly delineating the authority and responsibility of the PSO in an emergency situation, including the authority to shed firm load

TOP-001-1 RSAW and Evidence:

This document outlines all of the policies and procedures that define the responsibility and authority of the PSO in an emergency, including GNE 003, 008 and 009, all of which outline load shedding procedures in emergencies. Also included is OP-014, an operations plan for load shedding in emergencies.

EXHIBITS:

SOURCE DOCUMENT

N/A

MITIGATION PLAN

N/A

CERTIFICATION BY REGISTERED ENTITY

N/A

VERIFICATION BY REGIONAL ENTITY

N/A

DISPOSITION OF VIOLATION**Dated December 21, 2011**

NERC TRACKING NO.	REGIONAL ENTITY TRACKING NO.
NCEA200900107	N/A

I. VIOLATION INFORMATION

RELIABILITY STANDARD	REQUIREMENT(S)	SUB-REQUIREMENT(S)	VRF(S)	VSL(S)
TOP-004-1 ¹	R4		High	Severe

VIOLATION APPLIES TO THE FOLLOWING FUNCTIONS:

BA	DP	GO	GOP	IA	LSE	PA	PSE	RC	RP	RSG	TO	TOP	TP	TSP
												X		

PURPOSE OF THE RELIABILITY STANDARD AND TEXT OF RELIABILITY STANDARD AND REQUIREMENT(S)/SUB-REQUIREMENT(S)

The purpose statement of TOP-004-1 provides *“To ensure that the transmission system is operated so that instability, uncontrolled separation, or cascading outages will not occur as a result of the most severe single Contingency and specified multiple Contingencies.”*

TOP-004-1 R4 provided:

“If a Transmission Operator [TOP] enters an unknown operating state (i.e. any state for which valid operating limits have not been determined), it will be considered to be in an emergency and shall restore operations to respect proven reliable power system limits within 30 minutes.”

¹ Reliability Standard TOP-004-1 was in effect from June 18, 2007 until January 22, 2009 when TOP-004-2 became effective.

VIOLATION DESCRIPTIONS

At 10:27 PST on Friday, December 26, 2008, SMUD determined that its ORV substation had inadequate DC battery voltage to ensure proper and reliable operation of the substation's protective relays and control circuits². Operating system parameters and RTU (Remote Terminal Unit) data to the EMS (supplying the operators' displays) regarding the state of the substation and the loading on the surrounding lines was known at all times. The SCADA system RTU's are on a different power system (The telecommunication batteries at 48VDC) than the impacted 125 DC main battery system supplying the relays, and were unaffected by this event. This allowed the operators to constantly know the current state of the system during the event. NCEA concluded that beginning no later than at this point in time the bulk power system (BPS) in the vicinity of SMUD, both within and external to SMUD's service area, was in an unknown operating state per TOP-004-1 R4. Specifically, at this time the BPS at and around ORV entered a state for which valid operating limits had not been determined. SMUD was the TOP responsible for operation of the facility (ORV substation) that was causing the BPS to be in the unknown operating state; therefore SMUD was the BPS reliability entity responsible to return the BPS to a known operating state within 30 minutes pursuant to TOP-004-1 R4. SMUD did not do so and therefore violated TOP-004-1 R4.

At 11:54 PST, SMUD completed implementation of interim revised relay settings at the Elverta substation. This action concurrently: (i) restored adequate protection system coverage of ORV; (ii) returned the BPS to a known operating state; and (iii) terminated SMUD's violation of TOP-004-1 R4.

RELIABILITY IMPACT STATEMENTS - POTENTIAL AND ACTUAL

This violation posed moderate risk to the reliability of the BPS and did not pose a serious or substantial risk to the BPS.

The operating emergency (Operating Emergency) encountered during the Event was the exposure of the BPS to the potential impacts of a fault or other similar incident/occurrence for which protection systems at ORV were implemented, while those protection systems could not be counted upon to properly and reliably operate. Leaving ORV connected to the BPS during the Operating Emergency left the BPS in the vicinity of ORV in an unknown operating state during the Event because it was not clear what would happen on the BPS at or around ORV if a fault occurred that ORV's BPS protection systems were implemented to respond to. The BPS elements involved in the Event (*e.g.* the transmission lines and other BPS equipment at and interconnecting the Orangevale, Elverta and Foothill substations) are of relatively lesser significance to the reliability of the BPS in the area. None of them are listed as elements of a WECC Path³

² 8-1_PSO Written Transcripts.pdf, dated May 12, 2009.

³ A listing of WECC Paths and Nomograms is available in Attachment A to WECC Regional Reliability Standard TOP-STD-007-0.

or Nomogram. Nevertheless, ORV is a networked substation⁴ on the system and the MVA loading on the subject 230 kV lines and other relevant equipment at ORV (e.g. capacitors on the 69 kV bus) provide MW and/or MVAr to other SMUD 230 kV substations and plants, and SMUD's interconnections to others' adjacent portions of the BPS, in addition to serving the 69 kV distribution feeder lines fed from the substation.

If a fault had occurred at ORV during the Event it is unlikely that BPS impacts would have been widespread throughout the Western Interconnection. Nevertheless outages or cascading may have occurred beyond the local vicinity of SMUD's system.

The load shedding associated with this Event was unavoidable; accordingly during the Event there was no actual impact to the BPS attributable to this violation.

II. DISCOVERY INFORMATION

METHOD OF DISCOVERY

- SELF-REPORT
- SELF-CERTIFICATION
- COMPLIANCE AUDIT
- COMPLIANCE VIOLATION INVESTIGATION
- SPOT CHECK
- COMPLAINT
- PERIODIC DATA SUBMITTAL
- EXCEPTION REPORTING

DURATION DATE(S) 57 minutes on December 26, 2007⁵

DATE DISCOVERED BY OR REPORTED TO REGIONAL ENTITY N/A

IS THE VIOLATION STILL OCCURRING YES NO
 IF YES, EXPLAIN

REMEDIAL ACTION DIRECTIVE ISSUED YES NO
 PRE TO POST JUNE 18, 2007 VIOLATION YES NO

III. MITIGATION INFORMATION

FOR FINAL ACCEPTED MITIGATION PLAN:

MITIGATION PLAN NO. N/A

DATE SUBMITTED TO REGIONAL ENTITY N/A

⁴ i.e. interconnected with multiple other BPS substations versus radially fed from one other such substation
⁵ Determined as 1 hour 27 minutes event duration (from 10:27 to 11:54) less the 30 minutes allowed by TOP-004-1 R4 for TOP to comply.

DATE ACCEPTED BY REGIONAL ENTITY N/A
DATE APPROVED BY NERC N/A
DATE PROVIDED TO FERC N/A

IDENTIFY AND EXPLAIN ALL PRIOR VERSIONS THAT WERE ACCEPTED OR REJECTED, IF APPLICABLE
N/A

MITIGATION PLAN COMPLETED YES ⁶ NO

EXPECTED COMPLETION DATE N/A
EXTENSIONS GRANTED N/A
ACTUAL COMPLETION DATE March 25, 2009

DATE OF CERTIFICATION LETTER February 14, 2011⁷
CERTIFIED COMPLETE BY REGISTERED ENTITY AS OF March 25, 2009

DATE OF VERIFICATION LETTER: N/A⁸
VERIFIED COMPLETE BY NCEA AS OF N/A⁹

ACTIONS TAKEN TO MITIGATE THE ISSUE AND PREVENT RECURRENCE

SMUD reported that it provides continuous training to its PSOs to recognize different cues that may be indicative of emergency conditions; training modules it uses on this topic include those entitled “Maintaining Situational Awareness-Emergency Operations” and “Restoring Situation Awareness-Emergency Awareness”. In May 2009, training included coursework entitled “5 Principals of Human Performance”, from the California Electric Training Advisory Committee (CETAC). In May 2010, training was conducted on coursework entitled “Importance of Situational Awareness”. SMUD reported that the noted situational awareness training was provided to all of SMUD’s PSO’s, and specifically provided NCEA training record transcripts evidencing that all of the PSOs on shift at the time of the Orangevale event had taken this training.

SMUD also reported that in 2009, it clarified its procedure GNE 001, entitled “System Emergency Procedure Authority”, to emphasize that DSOs shall promptly drop firm system load if/when so directed by the PSO. Language was also added

⁶ NCEA did not request and SMUD did not submit a formal mitigation plan for this violation. Rather, in advance of receiving notification from NERC of the subject violation, SMUD performed mitigation activities noted herein as part of its internal compliance and operator training plan. Also, additional mitigation activities, noted herein, are to be completed as part of this Settlement Agreement.

⁷ SMUD indicated completion of the subject mitigation in its response, dated February 14, 2011, to NCEA to an NCEA information request dated January 18, 2011.

⁸ NCEA verified SMUD’s completion of the mitigation noted herein, in preparation for this settlement agreement. The agreement document also constitutes NCEA’s verification notice to SMUD regarding the subject mitigation.

⁹ See *id.*

which further reinforced that the PSO can directly shed load if/as required, or direct the DSO to do so, to relieve the emergency condition.

Lastly SMUD reported to NCEA that it has developed and will be requiring all employees involved in power operations to complete additional coursework specifically related to the Event and the subject violation of TOP-004-1 R4. The new coursework prepared is currently designated/entitled "SMUD's NERC0009CVI Training." by SMUD. As noted (and required) in Part IV of the parent Settlement Agreement of this attachment SMUD will have all employees involved in power operations, including but not limited to power system operators, supervisors and all control room personnel, successfully complete this new additional training within 90 days of the execution of the Settlement Agreement.

LIST OF EVIDENCE REVIEWED BY REGIONAL ENTITY TO EVALUATE COMPLETION OF MITIGATION PLAN OR MILESTONES (FOR CASES IN WHICH MITIGATION IS NOT YET COMPLETED, LIST EVIDENCE REVIEWED FOR COMPLETED MILESTONES)

SMUD responses to NERC questions:

SMUD indicated to NCEA that it provides continuous training to recognize different cues that alert PSO to emergency conditions including "Maintaining Situational Awareness-Emergency Operations" and "Restoring Situation Awareness-Emergency Awareness". In May 2009, California Electric Training Advisory Committee (CETAC) training included "5 Principals of Human Performance". In May 2010, training was held on "Importance of Situational Awareness". The situational awareness training was provided to all of SMUD's PSO's.

PSO Training Transcript.pdf :

In addition to the training provided to all PSOs, this document shows the training on point taken by the PSO involved in this event. It documents the courses taken (by descriptive name) and dates taken both prior and subsequent to the event.

TOP-004-2 RSAW and Evidence:

SMUD has provided procedure PSE 107 as part of the evidence. This document outlines operating procedures for returning the system to a known operating state within 20 minutes.

SMUD NERC0009CVI Training:

SMUD reported that it has developed additional training materials and a program for all power systems operators to participate in that is specific to the events outlined in this agreement. The training identifies the issues, mistakes and alternative actions that could have been taken during the event.

EXHIBITS:

SOURCE DOCUMENT

N/A

MITIGATION PLAN

N/A

CERTIFICATION BY REGISTERED ENTITY

N/A

VERIFICATION BY REGIONAL ENTITY

N/A

DISPOSITION OF VIOLATION

Dated December 21, 2011

NERC TRACKING NO. NCEA200900102 REGIONAL ENTITY TRACKING NO. N/A

I. VIOLATION INFORMATION

RELIABILITY STANDARD	REQUIREMENT(S)	SUB-REQUIREMENT(S)	VRF(S)	VSL(S)
COM-002-2	R2		Medium	Severe

VIOLATION APPLIES TO THE FOLLOWING FUNCTIONS:

BA	DP	GO	GOP	IA	LSE	PA	PSE	RC	RP	RSG	TO	TOP	TP	TSP
												X		

PURPOSE OF THE RELIABILITY STANDARD AND TEXT OF RELIABILITY STANDARD AND REQUIREMENT(S)/SUB-REQUIREMENT(S)

The purpose statement of COM-002-2 provides *“To ensure Balancing Authorities, Transmission Operators, and Generator Operators have adequate communications and that these communications capabilities are staffed and available for addressing a real-time emergency condition. To ensure communications by operating personnel are effective.”*

COM-002-2 R2 provides:

“Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall issue directives in a clear, concise, and definitive manner; shall ensure the recipient of the directive repeats the information back correctly; and shall acknowledge the response as correct or repeat the original statement to resolve any misunderstandings.”

VIOLATION DESCRIPTIONS

NCEA found that there were a number of instances during the Event when SMUD TOP personnel did not comply with COM-002-2, R2; for example:

- At 11:01 PST, the SMUD Power Systems Operator (PSO) issued a directive to the Distribution Systems Operator (DSO) to immediately offload load from ORV. The PSO did not (i) issue this directive in a clear, concise and definitive manner, (ii) ensure that the DSO repeated the information back correctly or (iii) repeat the original directive, after the DSO did not repeat it back, as required by COM-002-2 R2.
- At 11:04 PST, the DSO called the PSO back to reaffirm the directive given at 1101 PST. During this conversation the PSO again did not ensure that the DSO repeated the information back and did not acknowledge the DSO understood the directive.
- At 11:38 PST, and 1146 PST when directing switching to substation personnel at ORV the PSO did not consistently issue directives in a definitive manner or ensure the directives were repeated back correctly to resolve any misunderstandings. This shortcoming could have resulted in misunderstandings that in turn could have produced switching errors and possibly compromise to the safety of field personnel.

[Transcripts of the above conversation attached hereto as COM-002-2 R2 Exhibit 1]

RELIABILITY IMPACT STATEMENTS - POTENTIAL AND ACTUAL

The operating emergency (Operating Emergency) encountered during the Event was the exposure of the BPS to the potential impacts of a fault or other similar incident/occurrence for which protection systems at ORV were implemented, while those protection systems could not be counted upon to properly and reliably operate. Violation of COM-002-2 R2 by SMUD during the event posed minimal risk but not a serious or substantial risk to the reliability of the BPS because failure to issue COM-002-2 R2-compliant directives did not contribute to extending the duration or the severity of the impact of the Operating Emergency¹ on the reliability of the BPS during the Event.

II. DISCOVERY INFORMATION

¹ The operating emergency was the exposure of the BPS to the potential impacts of a fault or other similar incident/occurrence for which protection systems at ORV were implemented, while those protection systems could not be counted upon to properly and reliably operate due to the low battery supply voltage at ORV brought on by the battery charger failure.

METHOD OF DISCOVERY

- SELF-REPORT
- SELF-CERTIFICATION
- COMPLIANCE AUDIT
- COMPLIANCE VIOLATION INVESTIGATION
- SPOT CHECK
- COMPLAINT
- PERIODIC DATA SUBMITTAL
- EXCEPTION REPORTING

DURATION DATE(S) **1 day (December 26, 2008)**

DATE DISCOVERED BY OR REPORTED TO REGIONAL ENTITY **N/A**

IS THE VIOLATION STILL OCCURRING YES NO
 IF YES, EXPLAIN

REMEDIAL ACTION DIRECTIVE ISSUED YES NO
 PRE TO POST JUNE 18, 2007 VIOLATION YES NO

III. MITIGATION INFORMATION

FOR FINAL ACCEPTED MITIGATION PLAN:

MITIGATION PLAN NO. **N/A**
 DATE SUBMITTED TO REGIONAL ENTITY **N/A**
 DATE ACCEPTED BY REGIONAL ENTITY **N/A**
 DATE APPROVED BY NERC **N/A**
 DATE PROVIDED TO FERC **N/A**

IDENTIFY AND EXPLAIN ALL PRIOR VERSIONS THAT WERE ACCEPTED OR REJECTED, IF APPLICABLE
N/A

MITIGATION PLAN COMPLETED YES ² NO

EXPECTED COMPLETION DATE **N/A**
 EXTENSIONS GRANTED **N/A**
 ACTUAL COMPLETION DATE **February 4, 2010**

DATE OF CERTIFICATION LETTER **February 14, 2011³**

² NCEA did not request and SMUD did not submit a formal mitigation plan for this violation. Rather, in advance of receiving notification from NERC of the subject violation, SMUD performed the mitigation activities noted herein as part of its internal compliance and operator training plan.

CERTIFIED COMPLETE BY REGISTERED ENTITY AS OF **February 4, 2010**

DATE OF VERIFICATION LETTER: N/A⁴
VERIFIED COMPLETE BY NCEA AS OF N/A⁵

ACTIONS TAKEN TO MITIGATE THE ISSUE AND PREVENT RECURRENCE

SMUD reported that in 2009, it clarified and trained all operators on procedure GNN 014, entitled "*Communication and Coordination During Normal Operations*", to emphasize that PSO operators will exercise 3-way communications. The training emphasized the requirement that (1) the system operator issue directives in a clear, concise and definitive manner; (2) the recipient of the directive repeat the information back correctly; and (3) the system operator acknowledged the response as correct. SMUD also indicated that it continues to provide this updated training as part of its normal training cycle.

SMUD further reported that on February 3, 2010, SMUD Compliance Staff attended a WECC Compliance Users Group (CUG) meeting, during which WECC staff gave an "Evidence Presentation" that covered COM-002 and 3-way communication. This information was disseminated within SMUD via its Internal Compliance Program (ICP); specifically, SMUD Compliance Staff discussed this information with the PSOs who are responsible for issuing directives, and also with SMUD LSE, PSE, and DP staff to emphasize that, as recipients of a directive, they are required to repeat back any instructions they have been issued.

LIST OF EVIDENCE REVIEWED BY REGIONAL ENTITY TO EVALUATE COMPLETION OF MITIGATION PLAN OR MILESTONES (FOR CASES IN WHICH MITIGATION IS NOT YET COMPLETED, LIST EVIDENCE REVIEWED FOR COMPLETED MILESTONES)

GNN_014:

This procedure outlines PSO communications using the processes outlined in COM-002. This procedure also addresses a protocol to initiate a contingency risk assessment panel to proactively address PSO/DSO coordination involving bulk electric system conditions / configurations that may impact distribution reliability

COM-002 3 –way Communication Reminder 2-4-2010.msg:

This email outlines what 3-part communication is and the importance of using it in all directives.

³ SMUD indicated completion of the subject mitigation in its response, dated February 14, 2011, to NCEA to an NCEA information request dated January 18, 2011.

⁴ NCEA verified SMUD's completion of the mitigation noted herein, in preparation for this settlement agreement. The agreement document also constitutes NCEA's verification notice to SMUD regarding the subject mitigation.

⁵ See *id.*

COM-002-2 RSAW and Evidence:

This document outlines evidence related to the issuance of directives. It includes GNN 10, GNE 11 and GNN 14, all of which are procedures on when and how directives should be issued.

EXHIBITS:

SOURCE DOCUMENT

N/A

MITIGATION PLAN

N/A

CERTIFICATION BY REGISTERED ENTITY

N/A

VERIFICATION BY REGIONAL ENTITY

N/A

SMUD COM-002-2 R2

1 [REDACTED]: Right. Well, what's happening
2 is the batteries are failing out there. They got a
3 ground.

4 [REDACTED]: Uh-huh.

5 [REDACTED]: So we're losing all of our
6 protection out there.

7 [REDACTED]: Okay.

8 [REDACTED]: So what we need to have you do
9 is start off-loading all the load off of -- coming
10 out of Orangevale.

11 [REDACTED]: The whole sub? Both banks?

12 [REDACTED]: Right.

13 [REDACTED]: All right. We're going to have
14 to talk to the engineer.

15 [REDACTED]: Because we may end up having
16 to dump all the lines coming into Orangevale.

17 [REDACTED]: All right. You did starting
18 now?

19 [REDACTED]: Yeah.

20 [REDACTED]: Okay. It's going to take a
21 while. We've got to separate troubleshooters out
22 there, spread them out.

23 [REDACTED]: Okay.

24 [REDACTED]: Okay.

25 [REDACTED]: Okay. This is [REDACTED]?

1 [REDACTED]: No, no. [REDACTED].
2 [REDACTED]: [REDACTED]? What's your last name,
3 [REDACTED]?
4 [REDACTED]: [REDACTED].
5 [REDACTED]: [REDACTED]. Okay, [REDACTED]. Thank
6 you.
7 [REDACTED]: Uh-huh.
8 [REDACTED]: Bye.
9 (End of 1101_12_26.wav file.)
10 ---cOo---
11 (Beginning of 1104_12_26.wav file.)
12 [REDACTED]: SMUD Ops. This is [REDACTED].
13 [REDACTED]: [REDACTED], this is [REDACTED] next door.
14 [REDACTED]: Yeah.
15 [REDACTED]: Hey, who's out there at
16 Orangevale right now?
17 [REDACTED]: I got [REDACTED] out there
18 and --
19 [REDACTED]: [REDACTED], (inaudible).
20 [REDACTED]: -- [REDACTED] -- [REDACTED].
21 [REDACTED]: Okay. Who's making the call to
22 have to unload the Orangevale, the whole banks --
23 both banks?
24 [REDACTED]: Well, I got [REDACTED] in here
25 right now. I got SPAC in here.

1 [REDACTED]: Okay. So what's the risk:
2 We're going to lose the lines or we're going to lose
3 the banks or -- what's --

4 [REDACTED]: We're going to, yeah, pretty
5 much lose everything into Orangevale. We've got no
6 protection on any of the 230 lines or the banks out
7 there right now.

8 [REDACTED]: So what you're saying is you
9 need to dump Orangevale off your lines.

10 [REDACTED]: Well, offload what we can, and
11 then we're trying to decide how we're going to feed
12 into it. Because we may feed into it from Carmichael
13 to Orangevale.

14 [REDACTED]: Okay. Well -- okay. What I'm
15 getting at is I have a -- a bank out at Lake right
16 now.

17 [REDACTED]: Right.

18 [REDACTED]: So -- so I'm might not sure if I
19 can unload all of Orangevale. So what --

20 [REDACTED]: Okay.

21 [REDACTED]: What's -- so I'm getting at is
22 what is our -- what's our risk? What are we going to
23 lose? Are we going -- is the 60 [sic] lines going to
24 open or --

25 [REDACTED]: Yeah.

1 [REDACTED]: The six lines are open under
2 (inaudible) voltage aware?

3 [REDACTED]: Well, we're going to. I mean
4 you're going to lose -- both the banks are --

5 [REDACTED]: Okay. So your 230 lines are
6 going to open --

7 [REDACTED]: Right.

8 [REDACTED]: -- to Orangevale.

9 [REDACTED]: All of them, yeah.

10 [REDACTED]: Okay.

11 [REDACTED]: That's the potential right
12 now.

13 [REDACTED]: Okay.

14 [REDACTED]: And that's why I'm just saying
15 get as much of it off the --

16 [REDACTED]: So you're --

17 [REDACTED]: -- lines as you can.

18 [REDACTED]: -- letting us know so we can get
19 some load off. And so if we do end up dumping it,
20 we're just not losing as much people.

21 [REDACTED]: Yeah. I just -- yeah, I need
22 to get you to offload as much as you can before we
23 end up dumping it because that may be what we're
24 going to do right now.

25 [REDACTED]: Okay.

1 [REDACTED]: All right?

2 [REDACTED]: All right. We're going to do
3 what we can.

4 [REDACTED]: Okay. Thanks.

5 (End of 1104_12_26.wav file.)

6 [REDACTED]
7 [REDACTED]
8 [REDACTED] [REDACTED] [REDACTED]
9 [REDACTED] [REDACTED] [REDACTED]
10 [REDACTED] [REDACTED] [REDACTED]
11 [REDACTED] [REDACTED]
12 [REDACTED] [REDACTED]
13 [REDACTED] [REDACTED] [REDACTED]

[REDACTED]
[REDACTED] [REDACTED] [REDACTED] [REDACTED]
[REDACTED] [REDACTED] [REDACTED]
[REDACTED] [REDACTED] -- [REDACTED]
18 [REDACTED]
[REDACTED] [REDACTED] [REDACTED]
[REDACTED] [REDACTED] [REDACTED] [REDACTED]
[REDACTED] [REDACTED]
[REDACTED] [REDACTED]
[REDACTED] [REDACTED] [REDACTED]
[REDACTED] [REDACTED] [REDACTED]
[REDACTED] [REDACTED] [REDACTED]

1

[REDACTED]

2

[REDACTED] -- [REDACTED] [REDACTED] [REDACTED]

3

[REDACTED] -- [REDACTED]

4

[REDACTED] [REDACTED]

5

[REDACTED] [REDACTED] [REDACTED]

6

[REDACTED]

7

[REDACTED] [REDACTED] [REDACTED]

8

[REDACTED]

9

[REDACTED]

10

[REDACTED]

11

[REDACTED] [REDACTED]

12

[REDACTED] [REDACTED]

13

[REDACTED] [REDACTED]

14

[REDACTED] [REDACTED]

15

[REDACTED] [REDACTED]

16

[REDACTED] [REDACTED]

17

[REDACTED] [REDACTED]

18

[REDACTED]

19

[REDACTED]

20

(Beginning of 1138_12_26.wav file.)

21

UNIDENTIFIED SPEAKER: I [REDACTED] hate that.

22

You know? (Inaudible.) They [REDACTED] every step of the

23

way.

24

[REDACTED]: Orangevale. This is [REDACTED].

25

[REDACTED]: [REDACTED], this is [REDACTED], PSO.

1 Okay. We're going to have to get off of the
2 banks and some of the lines out there --

3 ██████████: Okay.

4 ██████████: -- since we have no
5 protection, and it doesn't look like we're going to
6 get it back for another hour or so.

7 ██████████: Yeah.

8 ██████████: So what I need you to do there
9 is open CB5702.

10 ██████████: Okay. Open 5702.

11 ██████████: Okay.

12 ██████████: Yep. I'll do that. Let me
13 get -- I got to find it. Let me get back to you.
14 You want to stay on the line or do you want me to
15 call you back?

16 ██████████: Well, yeah, because we're
17 going to shed all of it. What I'm trying to do here
18 is I'm going to unload the banks --

19 ██████████: Yep.

20 ██████████: -- take the banks off. And
21 then what they want to do is try and create a -- a
22 loop from Elverta to Foothill to try and prevent
23 losing Foothill, also.

24 ██████████: Okay.

25 ██████████: And then we're going to have

1 to open the Carmichael line -- Carmichael/Orangevale.

2 [REDACTED]: Okay. And this is bank, what,
3 2?

4 [REDACTED]: This is bank 1 and 2.

5 [REDACTED]: Bank 1 and 2.

6 [REDACTED]: The bank 1 first.

7 [REDACTED]: Okay.

8 (Unintelligible background conversation.)

9 UNIDENTIFIED SPEAKER: (Inaudible) [REDACTED] at
10 work. I guess -- I guess there's some kind of report
11 that CMRC says we need to fill out for shedding this
12 load.

13 [REDACTED]: Are you guys doing anything
14 out there? Hang on a minute. Are you guys doing
15 anything? Hey, [REDACTED]. [REDACTED].

16 [REDACTED]: Okay.

17 [REDACTED]: Are you guys doing anything
18 out there to --

19 [REDACTED]: Yeah. [REDACTED] --

20 [REDACTED]: The relays are going to normal
21 here.

22 [REDACTED]: They're going to normal? It
23 shouldn't because there's only -- their breakers are
24 still open -- the DC breakers. And they're still
25 sitting at -- (inaudible) -- at 49 volts on the DC.

1 But as I'm looking at it --

2 [REDACTED]: Yeah, and my

3 Elverta/Orangevale line, L11PA relay status went to
4 normal.

5 [REDACTED]: Okay. Let me run and check
6 something real quick on the battery.

7 [REDACTED]: And enunce- --

8 [REDACTED]: Because I just noticed, yeah,
9 the little LED lights --

10 [REDACTED]: Yeah.

11 [REDACTED]: -- in the backs of the 101
12 handles --

13 [REDACTED]: Yeah.

14 [REDACTED]: -- just all got brighter.

15 [REDACTED]: Okay.

16 [REDACTED]: Let me see something.

17 [REDACTED]: I'm having him check because
18 these are going to normal right here. And he said
19 the LED lights have gotten brighter. So --

20 UNIDENTIFIED SPEAKER: Okay. All right.

21 Well, maybe we can -- we can save it yet.

22 (Unintelligible background conversation.)

23 UNIDENTIFIED SPEAKER: [REDACTED] load, man.

24 (Unintelligible background conversation.)

25 UNIDENTIFIED SPEAKER: (Inaudible) put those

1 bright lights when we're out there. We're supposed
2 to do that, or you guys are supposed to do that?

3 [REDACTED]: Yeah, the battery volts are
4 still in the tank, so --

5 [REDACTED]: Is it?

6 [REDACTED]: Yeah.

7 [REDACTED]: Well, then, we need to
8 continue on, then.

9 [REDACTED]: Okay. So I'm going to -- the
10 full line's too short, so I'm going to open 5702.

11 [REDACTED]: That's correct.

12 [REDACTED]: I'll be right back.

13 (Unintelligible background conversation.)

14 UNIDENTIFIED SPEAKER: We should have them
15 open up those feeder breakers, too.

16 Hey, [REDACTED]? [REDACTED]?

17 [REDACTED]: Yeah.

18 UNIDENTIFIED SPEAKER: Do me a favor. We
19 need to get those 69kV breakers open as well. Yeah.
20 Now, can you have DSO just --

21 (Unintelligible background conversation.)

22 [REDACTED]: 5702 already has a green handle
23 on it. Do you want me to go out and physically check
24 if it's open?

25 (Unintelligible background conversation.)

1 UNIDENTIFIED SPEAKER: I got them open right
2 now (inaudible).

3 (Unintelligible background conversation.)

4 [REDACTED]: Okay. I don't think -- I
5 don't know if they have control over them, though.
6 We don't have control over our breakers, so how would
7 they have control over theirs?

8 (Unintelligible background conversation.)

9 [REDACTED]: Hello?

10 [REDACTED]: Well, you got them all on the
11 banks.

12 UNIDENTIFIED SPEAKER: But I don't have
13 anything down there.

14 [REDACTED]: No, I'm -- I'm still
15 showing --

16 [REDACTED]: Flow?

17 [REDACTED]: Yeah. And I still show flow
18 on the banks. So --

19 [REDACTED]: Okay.

20 [REDACTED]: -- do you -- do you want to
21 just do the -- give it an open signal there on the
22 handle even if it has --

23 [REDACTED]: All right.

24 (Unintelligible background conversation.)

25 UNIDENTIFIED SPEAKER: (Inaudible) shedding.

1 Because we got these WECC prelim and WECC follow-up
2 reports. Should I close them -- huh?

3 (Unintelligible background conversation.)

4 [REDACTED]: You got it that time because
5 the power transferred.

6 [REDACTED]: Okay.

7 [REDACTED]: I'm just laughing because
8 everything went dark here and I went, "Ah, [REDACTED]."

9 [REDACTED]: No, that's true that we're
10 going to go in the dark here now, too.

11 [REDACTED]: Not you, the transfer kicked
12 in. So -- yeah.

13 [REDACTED]: Okay. That was 75 megawatts
14 there.

15 (Unintelligible background conversation.)

16 [REDACTED]: Okay. (No audible response.)

17 [REDACTED]: Which -- which bank? I -- I
18 mean we're taking the bank off. So there's station
19 service there, there's station service there.

20 UNIDENTIFIED SPEAKER: Yep.

21 (Unintelligible background conversation.)

22 [REDACTED]: For station service? No,
23 they're right there, [REDACTED]. They're both right there.
24 So if we take these out, we're -- we're not going
25 to -- they're not taking a portable generator.

1 They're not going to be able to do [REDACTED] out there.

2 UNIDENTIFIED SPEAKER: They can -- they don't
3 have any remote control. They just did the bank?

4 UNIDENTIFIED SPEAKER: One bank away.

5 [REDACTED]: We did.

6 UNIDENTIFIED SPEAKER: Yeah. Did you open up
7 the high side?

8 [REDACTED]: Yeah, we opened the high side.

9 [REDACTED]: Hey, [REDACTED]?

10 UNIDENTIFIED SPEAKER: [REDACTED] is going to be --
11 if you take out that second half (in audible) not
12 going to have any station power out there.

13 [REDACTED]: Yeah. I mean so we'll never
14 get this thing back --

15 UNIDENTIFIED SPEAKER: Okay. Well --

16 [REDACTED]: -- without a portable
17 generator.

18 UNIDENTIFIED SPEAKER: So they need to open
19 the -- the -- low side (inaudible) bank 2. And --
20 and they're doing it manually and locally. They're
21 on the phone with the guy out there.

22 [REDACTED]: Okay. Are you still there?

23 [REDACTED]: Yeah, I'm there. Yeah, we're
24 okay. The lights are up, you know.

25 [REDACTED]: Well, my concern is if we take

1 out bank 2 --

2 [REDACTED]: Bank 2?

3 [REDACTED]: -- we won't have any --

4 [REDACTED]: Have anything.

5 [REDACTED]: Right. And then you guys
6 won't be able to do anything out there. We'll never
7 get this thing back without a portable generator in.

8 [REDACTED]: Right. So --

9 [REDACTED]: Is somebody opening the low
10 side breakers there? Is somebody helping you out?

11 [REDACTED]: Yeah, the tech. But -- was --
12 he's -- they're not backing them up. Yeah, they open
13 and closed 6806 and -- but if you give me a lift and
14 we'll go through them, and we'll go out there and
15 open them.

16 [REDACTED]: Okay. 6834. Okay. Somebody
17 just opened 6838.

18 [REDACTED]: 6838?

19 [REDACTED]: Somebody did. I don't know if
20 somebody else is working with them out there.

21 [REDACTED]: Let me -- I'll go kick the door
22 open. But I don't think so.

23 (Unintelligible background conversation.)

24 (Pause in recording.)

25 [REDACTED]: They're out there with a phone

1 in their ear.

2 [REDACTED]: Okay.

3 [REDACTED]: So they're talking to somebody,
4 [REDACTED], opening the breakers and switches. So...

5 [REDACTED]: All right. Yeah, we need to
6 get all the low-side breakers open there. So...

7 [REDACTED]: Okay. I'm going to leave
8 [REDACTED] on the phone, and I'm going to go out there.
9 Okay?

10 [REDACTED]: Okay. It looks like they are
11 popping them right now. 6834 and 6818 is the -- the
12 last two that need to be opened.

13 [REDACTED]: All right. I'll make sure, and
14 I'll call you back.

15 [REDACTED]: Okay. Thanks.

16 [REDACTED]: Sure.

17 (End of 1138_12_26.wav file.)

18 [REDACTED]
19 [REDACTED]
20 [REDACTED] [REDACTED]
21 [REDACTED] [REDACTED] --
[REDACTED] [REDACTED]
[REDACTED] [REDACTED]
[REDACTED] [REDACTED]
[REDACTED] [REDACTED]

1 (Beginning of 1146_12_26.wav file.)
2 [REDACTED]: SMUD Ops. This is [REDACTED].
3 [REDACTED]: Yeah, [REDACTED], it's [REDACTED].
4 [REDACTED]: Hey, [REDACTED]
5 [REDACTED]: Yep.
6 [REDACTED]: Okay. There at Orangevale, I
7 need to have you open 230kV CB5734.
8 [REDACTED]: 5734.
9 [REDACTED]: That's on the
10 Orangevale/Carmichael line.
11 [REDACTED]: Okay. I'll get right to it.
12 [REDACTED]: You can't reach it?
13 (Pause in recording.)
14 [REDACTED]: Yeah.
15 (Unintelligible background conversation.)
16 [REDACTED]: Okay. Yeah, I've been trying
17 to print them out and clear them as we go here.
18 [REDACTED]: We got no operation. So give
19 me a minute. I'm going to check the DC breaker, see
20 if it's off line, and then I'll try it again.
21 [REDACTED]: Okay. I'm going to open the
22 other end, then.
23 [REDACTED]: Okay.
24 [REDACTED]: Let's see.
25 (Pause in recording.)

1 [REDACTED]: Yeah, the DC was off. Did you
2 want me to try it?

3 [REDACTED]: Yeah, go ahead.

4 (Pause in recording.)

5 [REDACTED]: Nope, we got nothing.

6 [REDACTED]: Nothing?

7 [REDACTED]: Nope. We got no lights now,
8 and the breaker's on and --

9 [REDACTED]: Okay.

10 [REDACTED]: -- no run.

11 [REDACTED]: I'm going to open --

12 [REDACTED]: 5734, correct?

13 [REDACTED]: 5734.

14 [REDACTED]: Yep.

15 [REDACTED]: That's correct.

16 [REDACTED]: Yep.

17 [REDACTED]: Nothing.

18 [REDACTED]: Nothing.

19 [REDACTED]: Okay.

20 [REDACTED]: So...

21 [REDACTED]: Okay. I got the other end
22 open now.

23 [REDACTED]: Okay.

24 [REDACTED]: And failed to operate, huh?

25 [REDACTED]: Yep.

1 [REDACTED]: Okay. Give me an update --

2 [REDACTED]: Okay.

3 [REDACTED]: -- you know, what's going on
4 there.

5 [REDACTED]: All right.

6 [REDACTED]: Let's see. And [REDACTED] is still
7 trying to figure out --

8 [REDACTED]: Yeah, he's still trying to do
9 the 69 and get that done. And then --

10 [REDACTED]: If you could, I'm -- I'm
11 indicating the circuit switchers going to the cap
12 banks there --

13 [REDACTED]: Yeah.

14 [REDACTED]: -- are closed.

15 [REDACTED]: Okay.

16 [REDACTED]: And I need to get those
17 open --

18 [REDACTED]: Open.

19 [REDACTED]: -- if I could.

20 [REDACTED]: Okay. I'll tell them.

21 [REDACTED]: And that's No. 682 and 684. I
22 don't know why they're indicating closed, but...

23 [REDACTED]: 682 and 684.

24 [REDACTED]: That's correct.

25 [REDACTED]: I'll have them give you a call.

Attachment b
Notice of Filing

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Sacramento Municipal Utility District

Docket No. NP12-____-000

NOTICE OF FILING
December 30, 2011

Take notice that on December 30, 2011, the North American Electric Reliability Corporation (NERC) filed a Notice of Penalty regarding Sacramento Municipal Utility District in the NERC Compliance Enforcement Authority region.

Any person desiring to intervene or to protest this filing must file in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 CFR 385.211, 385.214). Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Any person wishing to become a party must file a notice of intervention or motion to intervene, as appropriate. Such notices, motions, or protests must be filed on or before the comment date. On or before the comment date, it is not necessary to serve motions to intervene or protests on persons other than the Applicant.

The Commission encourages electronic submission of protests and interventions in lieu of paper using the "eFiling" link at <http://www.ferc.gov>. Persons unable to file electronically should submit an original and 14 copies of the protest or intervention to the Federal Energy Regulatory Commission, 888 First Street, N.E., Washington, D.C. 20426.

This filing is accessible on-line at <http://www.ferc.gov>, using the "eLibrary" link and is available for review in the Commission's Public Reference Room in Washington, D.C. There is an "eSubscription" link on the web site that enables subscribers to receive email notification when a document is added to a subscribed docket(s). For assistance with any FERC Online service, please email FERCOnlineSupport@ferc.gov, or call (866) 208-3676 (toll free). For TTY, call (202) 502-8659.

Comment Date: [BLANK]

Kimberly D. Bose,
Secretary