

137 FERC ¶ 61,176
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Jon Wellinghoff, Chairman;
Philip D. Moeller, John R. Norris,
and Cheryl A. LaFleur.

PacifiCorp

Docket No. IN11-6-000

ORDER APPROVING STIPULATION AND CONSENT AGREEMENT

(Issued December 1, 2011)

1. The Commission approves the attached Stipulation and Consent Agreement (Agreement) between the Office of Enforcement (Enforcement), the North American Electric Reliability Council (NERC) and PacifiCorp. This order is in the public interest because it resolves the investigation of PacifiCorp regarding its compliance with Commission-approved Reliability Standards.¹ The investigation examined possible violations of the NERC Reliability Standards by PacifiCorp related to its functions as a Balancing Authority and Transmission Operator surrounding a disturbance in the Western Interconnection that originated in the state of Utah on February 14, 2008 (the disturbance). PacifiCorp agreed to pay a civil penalty of \$3,925,000, allocated equally between the United States Treasury and NERC.

2. PacifiCorp also agreed to complete a set of Reliability Enhancement Measures set forth in the Agreement. These measures will enhance and continue to ensure compliance with the Reliability Standards. PacifiCorp will also make semi-annual compliance reports to Enforcement and NERC staff for a period of up to two years.

I. Background

3. As relevant here, in addition to serving load in Utah through its Rocky Mountain Power division, PacifiCorp serves as Balancing Authority for PacifiCorp's East Balancing Authority Area (PacifiCorp East), which includes Utah, southeast Idaho, and western Wyoming, and serves as a Transmission Operator. On March 16, 2007, the

¹ Section 215 of the Federal Power Act provides the Commission the authority to approve and enforce the Reliability Standards. 16 U.S.C. § 824o (2006); *see also* 18 C.F.R. § 40.2(a) (2011) (requiring compliance with the Reliability Standards).

Commission approved the Reliability Standards applicable to those reliability functions,² which had been submitted by NERC, pursuant to section 215 of the Federal Power Act.³ These standards became mandatory and enforceable within the contiguous United States on June 18, 2007.

4. The investigation centered on the February 14, 2008 disturbance, which originated when a “fault” (short circuit) occurred on a transformer at PacifiCorp’s Huntington generation plant in Utah. The fault triggered an immediate loss of approximately 2,800 MW of generation across PacifiCorp East and, ultimately, PacifiCorp’s shedding of approximately 183 MW of firm load in Utah.

5. The disturbance began at the Huntington generation plant, which is owned and operated by PacifiCorp and consists of two coal-fired units, Huntington units #1 and #2, that have a combined output of 897 MW. At 09:12,⁴ a transformer fire suppression system on the Huntington unit #1 generator step-up transformer improperly operated due to a circuit board malfunction. The fire suppression system released water over the transformer. This resulted in a single line to ground fault at 09:15, which evolved into a two-phase to ground fault. The local protection system at Huntington detected the fault and sent a trip signal through a common Huntington lockout relay, which failed to operate. Because the Huntington lockout relay failed, the protection system at Huntington did not clear the fault. This failure to clear led to operation of the remote backup system protection which cleared the fault by de-energizing four 345 kV lines, which resulted in the loss of the four lines.

6. The resulting voltage and frequency fluctuations triggered the loss of additional power plants resulting in a total amount of generation lost of approximately 2,800 MW or about half of the total PacifiCorp East load at the time. The disturbance exceeded the most severe single Contingency under PacifiCorp’s contingency planning, which was 568 MW.

7. Immediately after the start of the disturbance, PacifiCorp’s Area Control Error (ACE) decreased from approximately 70 MW to approximately -2,371 MW. ACE is the measure of the power balance on the interties between Balancing Authority Areas and indicates whether a Balancing Authority is “leaning on the Interconnection.” In normal

² *Mandatory Reliability Standards for the Bulk-Power System*, Order No. 693, FERC Stats. & Regs. ¶ 31,242, order on reh’g, Order No. 693-A, 120 FERC ¶ 61,053 (2007).

³ 16 U.S.C. § 824o (2006).

⁴ All times herein are Mountain Standard Time using a 24-hour clock.

operations, ACE is maintained at or near zero. A significant, continuing negative ACE means a Balancing Authority is leaning on the Interconnection by using the resources from other Balancing Authorities to maintain its own operations.

8. In response to the disturbance, at approximately 09:17, the Balancing and Interchange operator requested the activation of 2,404 MW of shared reserves from the Northwest Power Pool (NWPP) Reserve Sharing Group. Because of delivery constraints on two transmission paths, the loss of the four 345 kV lines, and overloads on four transmission paths, PacifiCorp initially received only approximately 230 MW of reserve sharing deliveries. As transmission path overloads were resolved, more reserves were delivered into PacifiCorp East.

9. Concurrent with requesting reserves from the NWPP Reserve Sharing Group, PacifiCorp brought on available internal generation in PacifiCorp East and requested load curtailments from interruptible customers. PacifiCorp also sought to purchase additional power from outside its Balancing Authority Area, but not for delivery in the hour ending 10:00.

10. Within 15 minutes of the disturbance, PacifiCorp returned frequency to a normal operating range of 59.95 Hz, reduced flow to within SOLs, and restored system voltages to within normal operating parameters. Approximately 45 minutes after the start of the disturbance, at 10:00, PacifiCorp's ACE returned to zero primarily because purchased power deliveries arrived into the system at the top of the hour. But, at that time, PacifiCorp was still dependent on the NWPP Reserve Sharing Group deliveries to maintain its ACE and had no operating or contingency reserves. Per the NWPP agreement, reserve sharing support ended automatically one hour after the start of a disturbance. Therefore, at 10:15, with Reserve Sharing Group deliveries at 1,001 MW, these deliveries automatically terminated. As a result, PacifiCorp's ACE went from around zero to - 515 MW.

11. By 10:18, PacifiCorp's ACE had fallen further, to - 752 MW, at which time PacifiCorp's Balancing and Interchange Operator made a second request for NWPP reserve sharing for 500 MW. This 500 MW reserve request normally would have been in place for sixty minutes until 11:18. But the operator discontinued reserve sharing based on a mistaken concern regarding PacifiCorp's right to make a second request for reserve sharing: the operator initially reduced reserve sharing at 10:25 and terminated it at 10:44.

12. At approximately 10:43, PacifiCorp started to shed firm load, shedding approximately 183 MW of firm load in approximately fourteen minutes, which helped restore its ACE at 10:57. The load shedding affected approximately 74,000 customers in the service area of Rocky Mountain Power, with an average outage of 25 minutes. PacifiCorp terminated further firm load shedding at 10:57, as purchases for the top of the

hour started to ramp into the system. PacifiCorp started restoration at 11:09. At approximately 11:31, all but 123 customers were restored. The remaining 123 customers were restored at 13:13.

II. Investigation

13. To examine whether PacifiCorp complied with the Reliability Standards, Enforcement staff opened a non-public, preliminary investigation into the cause and events surrounding the disturbance.⁵ Contemporaneously, NERC opened a parallel, non-public Compliance Violation Investigation. Commission staff and NERC coordinated their investigations.

14. Enforcement and NERC determined that PacifiCorp violated 23 different requirements of 15 Reliability Standards within the following groups of Reliability Standards. The Balancing (BAL) group of Reliability Standards addresses balancing resources and demand to maintain interconnection frequency.⁶ The Transmission Operations (TOP) group of Reliability Standards covers the responsibilities and decision-making authority for reliable operations.⁷ The Emergency Procedures (EOP) group of Reliability Standards addresses preparation for emergencies and necessary actions during emergencies and system restoration.⁸ The Protection and Control (PRC) group of Reliability Standards covers a range of protection system-related topics,⁹ including maintenance and testing of protection systems. Finally, the Personnel Performance, Training and Qualifications (PER) group of Reliability Standards addresses operating personnel responsibility, authority, training, and qualifications.¹⁰

15. The Reliability Standards set forth the parameters that a Balancing Authority and Transmission Operator, such as PacifiCorp, must monitor and address to ensure the reliability of the Balancing Authority Area and the Interconnection following a disturbance. Area Control Error, or ACE, is one those parameters. Enforcement and

⁵ That investigation also resulted in a separate stipulation and consent agreement with the Western Electricity Coordinating Council related to the Reliability Coordinator function. The Commission approved that agreement on July 7, 2011. *Western Electricity Coordinating Council*, 136 FERC ¶ 61,020.

⁶ Order No. 693 at P 305.

⁷ *Id.* P 1567.

⁸ *Id.* P 541.

⁹ *Id.* P 1418.

¹⁰ *Id.* P 1324.

NERC concluded that PacifiCorp did not ensure it was operating reliably because it did not restore its ACE within fifteen minutes of the Reportable Disturbance as required by BAL-002-0, Requirement R4. Because PacifiCorp did not restore its ACE to zero until forty-five minutes after the start of the disturbance, Enforcement and NERC determined that PacifiCorp violated BAL-002-0, Requirement R4. Enforcement and NERC concluded that, during this forty-five minute period, PacifiCorp leaned on the Interconnection using the resources from other Balancing Authorities to maintain its own operations. Enforcement and NERC also determined that PacifiCorp again violated BAL-002-0, Requirement R4, during the 10:00 hour.

16. Enforcement and NERC determined that PacifiCorp's failure to take further action such as obtaining more resources or shedding firm load as a last resort in the hour ending 10:00 resulted in several additional violations of Reliability Standard requirements, specifically, EOP-003-1, Requirement R1; TOP-001-1, Requirements R2 and R8; and EOP-002-2, Requirements R1, R5, R6, and R7.

17. Enforcement and NERC also determined that PacifiCorp violated two Reliability Standards requiring a Balancing Authority to restore operating reserves and contingency reserves: WECC BAL-STD-002-0, Requirement WR1, which requires restoration of operating reserves within 60 minutes; and BAL-002-0, Requirement R6, which requires restoration of contingency reserves within 90 minutes after the end of the fifteen-minute, Disturbance Recovery Period.

18. Enforcement and NERC determined that PacifiCorp committed one violation related to its preparedness for an emergency of the type it experienced on February 14, 2008: a violation of EOP-003-1, Requirement R8, which requires a Transmission Operator or Balancing Authority to "be capable of implementing the load shedding in a timeframe adequate for responding to the emergency." Enforcement and NERC concluded that PacifiCorp, as Balancing Authority, was incapable at the time of the disturbance of shedding firm load in a timeframe adequate for responding to an emergency.

19. Enforcement and NERC determined that PacifiCorp committed five violations of the Reliability Standards related to the authority, responsibility and training of its operating personnel, which were related to the disturbance. Two of these violations related to a Managing Director's directive to an operator to "hold off" on firm load shedding in the ten o'clock hour: a violation of PER-001-0, Requirement R1, for the lack of independent authority for the operator to shed firm load; and a violation of EOP-002-0, Requirement R7, for the delay caused in shedding firm load. Two of the violations were of the same requirement, EOP-002-0, Requirement R1, first, for failing to exercise authority to alleviate the emergency and, second, for PacifiCorp's separation of the Balancing Authority's function into two divisions, which, in these circumstances, led to

inadequate performance of its Balancing Authority responsibilities. The fifth violation, a violation of PER-002-0, Requirement R1, related to PacifiCorp's failure to have adequately-trained operating personnel.

20. Enforcement and NERC also determined that PacifiCorp violated two requirements of the Reliability Standards because it did not implement its own emergency plans: EOP-001-0, Requirement R3, and EOP-002-2, Requirement R2.

21. Further, Enforcement and NERC determined that PacifiCorp violated three requirements of TOP-004-1 related to system planning in the operations time frame: Requirements R1, R2 and R4. Each of these violations arose from PacifiCorp's failure prior to the disturbance to incorporate into its operations planning the unavailability of the uninterruptible power supply units for two generating units.

22. PacifiCorp self-reported certain violations of the PRC standards to the Western Electricity Coordinating Council (WECC), in its Regional Entity function, prior to the disturbance and was in the process of implementing approved mitigation plans at the time of the disturbance. Enforcement and NERC reviewed these self-reports and determined that PacifiCorp violated five requirements in the PRC standards related to protection system maintenance and testing: PRC-005-1, Requirement R2; PRC-STD-005, Requirement WR1; PRC-008-0, Requirement R2; PRC-011-0, Requirement R2; and PRC-017-0, Requirement R2. Enforcement and NERC concluded that PacifiCorp's maintenance management system was deficient in three areas: failure to adequately verify the data when it converted from one maintenance plan database to another; failure to oversee and control data entry and changes made to the database; and failure to provide adequate managerial controls and oversight of the maintenance system. These deficiencies led to missing data and inaccurate maintenance cycles. In addition, Enforcement and NERC found deficiencies with the documentation related to maintenance and testing of PacifiCorp's protection systems. Enforcement and NERC also determined that PacifiCorp violated PRC-005-1, Requirement R2 with respect to the Huntington lockout relay, the failure of which was a key factor in the disturbance.

III. Stipulation And Consent Agreement

23. Under the Agreement, PacifiCorp agrees to pay a \$3,925,000 civil penalty. This amount is to be paid in a manner that reflects the dual nature of this investigation which both Commission staff and NERC staff conducted. Accordingly, the penalty shall be apportioned and paid equally between the United States Treasury and NERC. PacifiCorp does not admit or deny that its actions constituted violations of the Reliability Standards or that it committed any violations of the Reliability Standards.

IV. Determination Of The Appropriate Civil Penalty

24. In arriving at an appropriate civil penalty, Commission staff considered the serious nature of the disturbance, the harm caused by the firm load shedding, and the risk of harm posed to the Western Interconnection. Staff also considered PacifiCorp's remedial efforts following the disturbance, such as its implementation of increased load shedding capability. Under the Agreement, PacifiCorp commits to continuing these efforts. PacifiCorp also committed to improving its training and procedures with respect to BAL-002-0, Requirement R4, to ensure its operating personnel operate to meet the 15-minute deadline for ACE restoration set forth therein. PacifiCorp shall also make semi-annual reports to Enforcement and NERC staff for one-year on its compliance with the agreement and the Reliability Standards, with the option of a second year of reporting at Enforcement and NERC's discretion.

25. The Commission concludes that the penalty and other sanctions set forth in the Agreement are a fair and equitable resolution of this matter and are in the public interest, as they reflect the nature and seriousness of PacifiCorp's conduct, and recognize the company-specific considerations as stated above and in the attached Agreement.

26. We conclude that the civil penalty, reliability enhancement measures, and the semi-annual compliance monitoring reports specified in the Agreement are fair and equitable, and in the public interest.

The Commission orders:

The attached Stipulation and Consent Agreement is hereby approved without modification.

By the Commission. Commissioner Spitzer is not participating.

(S E A L)

Kimberly D. Bose,
Secretary.

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

PacifiCorp

) Docket No. IN11-06-000

STIPULATION AND CONSENT AGREEMENT

I. INTRODUCTION

1. Staff of the Office of Enforcement (Enforcement) of the Federal Energy Regulatory Commission (Commission), staff of the North American Electric Reliability Corporation (NERC), and PacifiCorp enter into this Stipulation and Consent Agreement (Agreement) to resolve a non-public investigation conducted by Enforcement and staff of the Office of Electric Reliability of the Commission pursuant to Part 1b of the Commission's regulations, 18 C.F.R. Part 1b (2011), and by NERC pursuant to the NERC Compliance Monitoring and Enforcement Program. The investigation examined possible violations of the NERC Reliability Standards¹ by PacifiCorp related to its functions as a Balancing Authority and Transmission Operator surrounding a disturbance in the Western Interconnection that originated in the state of Utah on February 14, 2008 (the disturbance). Unless otherwise specified, capitalized terms in this Agreement have the meanings specified in the NERC Glossary of Terms Used in Reliability Standards (NERC Glossary).

II. STIPULATED FACTS

Enforcement, NERC and PacifiCorp hereby stipulate to the following:

A. Background

2. On February 14, 2008, the disturbance occurred in the Western Interconnection originating in PacifiCorp's East Balancing Authority Area, which includes Utah, southeast Idaho, and western Wyoming and for which PacifiCorp is the Balancing Authority (PacifiCorp East). The disturbance originated when a "fault" (short circuit) occurred on a transformer at PacifiCorp's Huntington generation plant in Utah. The fault triggered an immediate loss of approximately 2,800 MW of generation across PacifiCorp East and, ultimately, PacifiCorp's shedding of approximately 183 MW of firm load.

¹ Section 215 of the Federal Power Act provides the Commission the authority to approve and enforce the Reliability Standards. 16 U.S.C. § 824o (2006); *see also* 18 C.F.R. § 40.2(a) (2011) (requiring compliance with the Reliability Standards).

Following the disturbance, Enforcement staff opened a non-public, preliminary investigation into the cause and events surrounding the disturbance. Contemporaneously, NERC opened a parallel, non-public Compliance Violation Investigation. Commission staff and NERC coordinated their investigations.

3. The Huntington generation plant, where the disturbance began, consists of two coal-fired units, Huntington units #1 and #2, which have a combined output of 897 MW and is owned and operated by PacifiCorp. The plant supplied its output onto the Bulk Power System primarily via four 345 kV transmission lines that co-terminate on the Huntington 345 kV bus.

4. At 09:12,² a transformer fire suppression system on the Huntington unit #1 generator step-up transformer improperly operated due to a circuit board malfunction. The fire suppression system released water over the transformer. This resulted in a single line to ground fault at 09:15, which evolved into a two-phase to ground fault. The local protection system at Huntington detected the fault and sent a trip signal through a common Huntington lockout relay, which failed to operate. Because the Huntington lockout relay failed, the protection system at Huntington did not clear the fault. This failure to clear led to operation of the remote backup system protection which cleared the fault by de-energizing the four 345 kV lines, which resulted in the loss of the four lines.

5. The resulting voltage and frequency fluctuations triggered the loss of three additional power plants: three coal-fired units at the Hunter plant in Utah with a combined output of 1220 MW; three natural gas-fueled units at the Lake Side combined-cycle plant in Utah with a combined output of 567 MW; and the Long Hollow wind farm in Wyoming with an output of 105 MW. The total amount of generation lost was approximately 2,800 MW or about half of the total PacifiCorp East load at the time. The disturbance exceeded the most severe single Contingency under PacifiCorp's contingency planning, which was 568 MW.

6. The magnitude and duration of the fault caused voltage excursions within the PacifiCorp East system. The loss of the four 345 kV lines and a large amount of generation caused four other transmission paths to load above their system operating limit (SOL) ratings, including Path C. Frequency declined to a low of 59.76 hertz (Hz) during the fault and recovered to within the acceptable 59.964 Hz within fifteen minutes.

7. PacifiCorp lost approximately 300 MW of load within 10 minutes of the disturbance due to impacts of the disturbance. Of this, approximately 40 MW was firm

² All times herein are Mountain Standard Time using a 24-hour clock.

load served from the Huntington Substation; the balance of the 300 MW was due to large interruptible load curtailments at industrial facilities in the Salt Lake area.

1. PacifiCorp's Response to the Disturbance

8. PacifiCorp coordinated its recovery effort mainly from the office of its Grid Operations division in PacifiCorp's Portland Control Center. Within the Grid Operations office, the PacifiCorp East and West transmission operators sit at two desks near the Balancing and Interchange desk and an empty, "back-up" desk. This area is referred to as the "Arena," and the primary PacifiCorp personnel responding to the disturbance operated from there during the course of the disturbance. These personnel included the PacifiCorp East Grid Operator; the PacifiCorp West Grid Operator; the Balancing and Interchange Operator; and the Director of Grid Operations. Each of the foregoing was NERC-certified. PacifiCorp's Managing Director of System Operations also was in the Arena, arriving after the disturbance started. He was not NERC-certified.

9. Immediately after the start of the disturbance, PacifiCorp's Area Control Error (ACE) decreased from approximately 70 MW to approximately -2,371 MW. ACE is the measure of the power balance on the interties between Balancing Authority Areas and indicates whether a Balancing Authority is "leaning on the Interconnection." In normal operations, ACE is maintained at or near zero. A significant, continuing negative ACE means a Balancing Authority is leaning on the Interconnection by using the resources from other Balancing Authorities to maintain its own operations.

10. In response to the disturbance, at approximately 09:17, the Balancing and Interchange operator requested the activation of 2,404 MW of shared reserves from the Northwest Power Pool (NWPP) Reserve Sharing Group. Delivery of such reserves to the PacifiCorp East system was constrained by two transmission paths: Path C and the Pavant-Gonder path. The day of the disturbance, Path C was derated to a maximum path flow of 460 MW north-to-south. The Pavant-Gonder path was also limited to a maximum path flow of 235 MW west-to-east. Because of these limits, the loss of the four 345 kV lines and overloads on four transmission paths, PacifiCorp initially received only approximately 230 MW of reserve sharing deliveries. As transmission path overloads were resolved, more reserves were delivered into PacifiCorp East. PacifiCorp was only able to receive a maximum of 1,001 MW of its request for 2,404 MW. Even if Path C had not been limited, the maximum reserves that could have been delivered by the Reserve Sharing Group totaled 1,600 MW on the day of the disturbance and, thus, the full 2,404 MW requested by PacifiCorp could not have been delivered on the day of the disturbance.

11. Concurrent with requesting reserves from the NWPP Reserve Sharing Group, PacifiCorp brought on available internal generation in PacifiCorp East and requested load curtailments from interruptible customers. PacifiCorp also sought to purchase additional

power from outside its Balancing Authority Area. But, while Grid Operations personnel in the Arena understood that such purchases included those for immediate supply, the traders in the Commercial and Trading division (C&T) made purchases only for the next hour and later. PacifiCorp did not attempt to make any intra-hour purchases for delivery in the hour ending at 10:00 (HE10). The Western Interconnection lacks a structured intra-hour market.

12. Within 15 minutes of the disturbance, PacifiCorp returned frequency to a normal operating range of 59.95 Hz, reduced flow to within SOLs, and restored system voltages to within normal operating parameters. Staff and NERC are not aware of any reports of adverse effects on neighboring or remote systems or of exceedances of SOLs or Interconnection Reliability Operating Limits (IROLs) on other systems.

13. At 09:46, more than 31 minutes after the start of the disturbance, the Reliability Coordinator for the Pacific Northwest Security Coordinator directed PacifiCorp to “recover your ACE, and if the only option is to drop load, then we need to drop load.” PacifiCorp responded by requesting additional load curtailment from a large industrial load customer of approximately 90 MW. Despite the continuing negative ACE, PacifiCorp did not shed firm load at this time because it believed that the system remained stable and approximately 1,000 MW would begin ramping in at 9:50.

14. During the event, PacifiCorp was in frequent communication with the Reliability Coordinator. Prior to 10:00, PacifiCorp did not request the Reliability Coordinator to issue an Energy Emergency Alert and did not request emergency assistance from other Balancing Authorities; however, PacifiCorp did request assistance from the NWPP under the reserve sharing program.

15. At 10:00, approximately 45 minutes after the start of the disturbance, PacifiCorp’s ACE returned to zero primarily because purchased power deliveries arrived into the system at the top of the hour. Also at 10:00, the Reliability Coordinator issued an Energy Emergency Alert – an EEA-2, which the Reliability Coordinator terminated three minutes later after a request from PacifiCorp. But, at that time, PacifiCorp was still dependent on the NWPP Reserve Sharing Group deliveries to maintain its ACE and had no operating or contingency reserves. Per the NWPP agreement, reserve sharing support ended automatically one hour after the start of a disturbance. Therefore, at 10:15, with Reserve Sharing Group deliveries at 1,001 MW, these deliveries automatically terminated. As a result, PacifiCorp’s ACE went from around zero to – 515 MW.

16. By 10:18, PacifiCorp’s ACE had fallen further, to – 752 MW, at which time PacifiCorp made a second request for NWPP reserve sharing for 500 MW. This 500 MW reserve request normally would have been in place for sixty minutes until 11:18. But the Balancing and Interchange operator discontinued reserve sharing based on a mistaken concern regarding PacifiCorp’s right to make a second request for reserve sharing under

the circumstances. He initially reduced reserve sharing at 10:25 and terminated it at 10:44.

17. At 10:33, the PacifiCorp East Grid Operator alerted the foremen at the Salt Lake Dispatch Center to prepare for firm load shedding. At approximately 10:43, they were instructed to shed 300 MW of firm load and thereafter initiated retail load shedding by opening 70 distribution circuits via SCADA. But, of the 300 MW requested, PacifiCorp was only able to shed approximately 183 MW of firm load in approximately fourteen minutes. PacifiCorp's shedding of 183 MW helped restore its ACE at 10:57. As a result, PacifiCorp decided it was not necessary to shed the full 300 MW originally requested.

18. The load shedding affected approximately 74,000 customers in the service area of Rocky Mountain Power, with an average outage of 25 minutes. PacifiCorp terminated further firm load shedding at 10:57, as purchases for the top of the hour started to ramp into the system. PacifiCorp started restoration at 11:09. At approximately 11:31, all but 123 customers were restored. The remaining 123 customers were restored at 13:13.

III. VIOLATIONS

19. Enforcement and NERC determined that PacifiCorp violated 23 different requirements of 15 Reliability Standards,³ outlined below.

A. PacifiCorp's Response on February 14, 2008

20. Enforcement and NERC determined that PacifiCorp violated 10 requirements related to its operational response to the February 14, 2008 disturbance. The Reliability Standards set forth the parameters that a Balancing Authority and Transmission Operator, such as PacifiCorp, must monitor and address to ensure the reliability of the Balancing Authority Area and the Interconnection following a disturbance. Area Control Error, or ACE, is one those parameters.

21. Enforcement and NERC concluded that PacifiCorp did not ensure it was operating reliably because it did not restore its ACE within fifteen minutes of the Reportable Disturbance as required by BAL-002-0, Requirement R4. At 09:16, ACE changed from above zero to -2,371 MW. This amount of MW change constituted a Reportable Disturbance for PacifiCorp for purposes of applying BAL-002-0, Requirement R4,

³ In settling this case, Enforcement staff recognized that "the regional Reliability Standards will not result in duplicative penalties resulting from the same non-compliance event." *Order Approving Regional Reliability Standards for the Western Interconnection and Directing Modifications*, 119 FERC ¶ 61,260 at P 40 (2007). See PP 31-32.

because it was an “event that cause[d] an ACE change greater than or equal to 80% of a Balancing Authority’s... most severe contingency.”⁴ Because PacifiCorp East’s most severe single contingency was 568 MW, a Reportable Disturbance occurred when its ACE declined below - 455 MW.

22. BAL-002-0, Requirement R4 requires a Balancing Authority to meet the Disturbance Recovery Criterion, which requires a “Balancing Authority [to] return its ACE to zero if its ACE just prior to the Reportable Disturbance was positive or equal to zero” and to do so within the default Disturbance Recovery Period of fifteen minutes. Thus, in these circumstances, Enforcement and NERC determined that PacifiCorp had fifteen minutes to restore ACE to zero.⁵

23. Because PacifiCorp did not restore its ACE to zero until forty-five minutes after the start of the disturbance, Enforcement and NERC determined that PacifiCorp violated BAL-002-0, Requirement R4. Enforcement and NERC concluded that, during this forty-five minute period, PacifiCorp leaned on the Interconnection using the resources from other Balancing Authorities to maintain its own operations. Enforcement and NERC determined that PacifiCorp again violated BAL-002-0, R4, during the 10:00 hour. After reserve sharing ended, PacifiCorp East’s ACE changed to – 752 MW at 10:18. It did not return to zero until 10:56, after PacifiCorp had shed firm load.

24. Enforcement and NERC determined that PacifiCorp’s failure to take additional action such as obtaining additional resources or shedding firm load as a last resort in HE10 resulted in several additional violations of Reliability Standard requirements. EOP-003-1, Requirement R1 explicitly requires a Transmission Operator or Balancing Authority operating with insufficient generation to shed customer load after taking all

⁴ NERC Glossary.

⁵ Enforcement and NERC concluded that BAL-002-0 Requirement R4 applies any time there is a Reportable Disturbance regardless of the number or type of contingencies and that this requirement is not altered by the Additional Compliance Information in Section D.1.4 of BAL-002-0. In Order No. 693, in which the Commission approved this standard, among others, the Commission emphasized that compliance was determined by the requirements, not other parts of a Reliability Standard: “while Measures and Levels of Non-Compliance provide useful guidance to the industry, compliance will in all cases be measured by determining whether a party met or failed to meet the Requirement given the specific facts and circumstance of its use, ownership or operation of the Bulk-Power System.” *Mandatory Reliability Standards for the Bulk-Power System*, Order No. 693, FERC Stats. & Regs. ¶ 31,242, at P 253, *order on reh’g*, Order No. 693-A, 120 FERC ¶ 61,053 (2007).

other available remedial steps. The remedial steps taken by PacifiCorp were not sufficient to timely resolve its severely deficient ACE. In light of its circumstances, by not shedding firm customer load after taking all other remedial steps, Enforcement and NERC determined that PacifiCorp violated this requirement. Due to the persistent deficient ACE, Enforcement and NERC concluded that, in the words of that requirement, PacifiCorp “risk[ed] an uncontrolled failure of components or cascading outages of the Interconnection.”

25. Two requirements of TOP-001-1 explicitly include firm load shedding as an action to take in the circumstances faced by PacifiCorp. TOP-001-1, Requirement R2, requires the Transmission Operator to take action to alleviate operating emergencies, including firm load shedding. PacifiCorp faced an operating emergency on February 14, 2008, and, as set out above, it could not alleviate timely the operating emergencies without firm load shedding. Because it did not shed firm load before 10:00, Enforcement and NERC determined that PacifiCorp violated TOP-001-1, Requirement R2. TOP-001-1, Requirement R8, requires the Balancing Authority and Transmission Operator to take action to restore the Real and Reactive Power balance,⁶ request emergency assistance, and, if that is not sufficient, to implement firm load shedding. Because PacifiCorp did not request emergency assistance from the Reliability Coordinator and did not implement firm load shedding in the nine o’clock hour, Enforcement and NERC determined that PacifiCorp violated this requirement.

26. Because PacifiCorp failed to take sufficient corrective action, Enforcement and NERC determined that PacifiCorp also violated EOP-002-2, Requirement R1 which requires the Balancing Authority to “take whatever actions are needed to ensure the reliability of its [Balancing Authority Area] and shall exercise specific authority to alleviate capacity and energy emergencies.” As discussed above, from 09:15 to 10:00, PacifiCorp experienced a capacity and energy emergency that Enforcement and NERC concluded threatened the reliability of its Balancing Authority Area, as evidenced by the significant ACE deficiency and lack of reserves. As such, under this requirement and in these circumstances, Enforcement and NERC concluded that PacifiCorp should have exercised its authority to alleviate the emergency by taking additional action, such as shedding firm load as a last resort.

27. Enforcement and NERC determined that PacifiCorp’s failure to take all available actions to restore its ACE for a period of forty-five minutes from 09:15 until 10:00 led to violations of several other requirements of EOP-002-2. Enforcement and NERC determined that PacifiCorp’s failure to shed firm load as a last resort to restore its ACE violated EOP-002-2, Requirement R5 which requires a “deficient Balancing Authority

⁶ Real and Reactive Power balance is matching power supply to load.

[to] only use the assistance provided by the Interconnection’s frequency bias for the time needed to implement corrective actions.” By not shedding any firm load before 10:00 and thereby remaining more deficient in ACE for a longer time, Enforcement and NERC concluded that PacifiCorp used the assistance provided by the frequency bias, i.e., leaned on the Interconnection, for longer than needed to implement available corrective action, in violation of that requirement.

28. Enforcement and NERC also determined that PacifiCorp’s failure to act to restore ACE violated EOP-002-2, Requirement R6. This requirement requires a Balancing Authority that cannot comply with the Disturbance Control Standard to immediately implement remedies, including requesting emergency assistance from other Balancing Authorities (R6.4); declaring an Energy Emergency through its Reliability Coordinator (R6.5); and reducing load, through procedures such as public appeals, voltage reductions, curtailing interruptible loads and firm loads (R6.6). Enforcement and NERC concluded that PacifiCorp did not perform the full list of remedies in Requirement R6, although it did curtail interruptible load and, after 10:00, did work with the Reliability Coordinator to declare Energy Emergency Alerts and, thereby, did request emergency assistance.

29. If the remedies set forth in Requirement 6 are not sufficient or cannot be timely implemented, EOP-002-2, Requirement R7 requires a Balancing Authority to “shed firm load without delay to return its ACE to zero.” Enforcement and NERC determined that PacifiCorp violated this requirement because it did not shed firm load as a last resort to return its ACE to zero within the fifteen-minute Disturbance Recovery Period and, further, did not request the Reliability Coordinator to issue an Energy Emergency Alert before 10:00 as required by EOP-002-2, Requirement R7, and the attachment to that standard.

30. Two Reliability Standards require that a Balancing Authority have sufficient operating reserves and contingency reserves available: WECC BAL-STD-002-0, Requirement WR1, and BAL-002-0, Requirement R6. Enforcement and NERC determined that PacifiCorp violated Requirement WR1(d) of BAL-STD-002-0, under which operating reserves⁷ must be restored within 60 minutes after initial use. PacifiCorp initiated use of operating reserves at 09:20 and did not restore those operating reserves until 11:00.

31. Because PacifiCorp did not restore contingency reserves within the 90 minute Contingency Reserve Restoration Period, Enforcement and NERC determined that

⁷ In WECC, operating reserves consist of four components: (1) Regulating Reserve; (2) contingency reserves; (3) Additional reserve for interruptible imports; and (4) Additional reserve for on-demand obligations. WECC BAL-STD-002-0 (WR1(a)).

PacifiCorp violated BAL-002-0, Requirement R6.2.⁸ PacifiCorp was required to restore its contingency reserves by 11:00, 90 minutes after the end of the fifteen-minute Disturbance Recovery Period, pursuant to Requirement R6.2. PacifiCorp did not restore its contingency reserves by the end of the Contingency Reserve Restoration Period. At 11:00, PacifiCorp's contingency reserves were zero.⁹

B. Preparedness for Emergency Operations

32. Enforcement and NERC determined that PacifiCorp committed one violation related to its preparedness for an emergency of the type it experienced on February 14, 2008, a violation of EOP-003-1, Requirement R8. Enforcement and NERC concluded that PacifiCorp, as Balancing Authority, was incapable at the time of the disturbance of shedding firm load in a timeframe adequate for responding to an emergency. At 10:33, PacifiCorp's Grid Operations personnel alerted personnel at the Salt Lake Dispatch Center to be prepared to shed firm load. At 10:44, Grid Operations personnel directed the Salt Lake Dispatch Center to drop 300 MW of load. But, PacifiCorp was able to shed only 183 MW of load in approximately fourteen minutes. Therefore, Enforcement and NERC determined that PacifiCorp violated EOP-003-1, Requirement R8, which requires a Transmission Operator or Balancing Authority to "be capable of implementing the load shedding in a timeframe adequate for responding to the emergency." Load shedding was ultimately halted at 10:57 because PacifiCorp's ACE was restored and as such, PacifiCorp determined that further load shedding was not required.

C. Authority, Responsibility and Training of Operating Personnel

33. Enforcement and NERC determined that PacifiCorp violated five requirements of the Reliability Standards related to the authority, responsibility and training of its operating personnel which were related to the disturbance. Enforcement and NERC determined that PacifiCorp violated PER-001-0, Requirement R1, when the Managing Director of System Operations directed operating personnel to "hold off" on shedding

⁸ See note 3 above.

⁹ Both the Reliability Standards and the Northwest Power Pool Agreement state that a Balancing Authority must restore its own contingency reserves without reliance on a reserve sharing group. See BAL-002-0, R6 ("A Balancing Authority... shall fully restore its contingency reserves.") (emphasis added); NWPP Reserve Sharing Program, FERC Rate Schedule 55 for Reserve Energy Service, Section H(1)(4), Docket No. ER06-239-000, p. 21 (filed Nov. 22, 2005) ("Requesting Participants are expected to restore their Contingency Reserve availability as promptly as practicable, but in no event longer than 60 minutes from the initiating event.")

firm load. PER-001-0, Requirement R1 requires operating personnel to have independent authority: “Each Transmission Operator and Balancing Authority shall provide operating personnel with the responsibility and authority to implement real-time actions to ensure the stable and reliable operation of the Bulk Electric System.” This includes the independent authority to shed firm load to ensure reliability.

34. At approximately 10:40, PacifiCorp decided to shed firm load. But, before the PacifiCorp East Grid Operator could give the directive to shed firm load, the Managing Director told him to “hold off” for five minutes to allow him to inform the customer service organization and executive management of the load shedding. Because of the Managing Director’s directive, PacifiCorp delayed firm load shedding. Enforcement and NERC concluded that the Managing Director should not have been involved in the timing and implementation of load shedding because he was not actively monitoring the system and was not NERC-certified.

35. By directing operating personnel to “hold off” for another five minutes, the Managing Director caused unwarranted delay of the firm load shedding. Enforcement and NERC determined that this delay also violated EOP-002-0, Requirement R7, which requires the “shedding of firm load without delay to return [a Balancing Authority’s] ACE to zero.”¹⁰

36. Further, Enforcement and NERC concluded that the Balancing and Interchange Operator on duty did not take sufficient action within his authority to address the disturbance properly and did not understand the tools and options available to him. Enforcement and NERC determined that his actions and omissions violated EOP-002-2, Requirement R1, which requires a Balancing Authority to exercise its authority to alleviate an energy and capacity emergency,¹¹ and PER-002-0, Requirement R1, which requires a Balancing Authority to be staffed by adequately trained personnel.

37. The Balancing and Interchange Operator was responsible for directing recovery from Disturbance Control Standard contingencies using the NWPP Reserve Sharing Program. Enforcement and NERC concluded that the Balancing and Interchange Operator was neither aware of how the reserve sharing program worked nor of the limitation on how much reserves could be delivered to PacifiCorp. In response to the loss of generation of approximately 2,800 MW, the Balancing and Interchange Operator

¹⁰ As noted above, Enforcement and NERC also determined that PacifiCorp violated this same requirement for other reasons. *See supra* at P 29.

¹¹ As noted above, Enforcement and NERC also determined that PacifiCorp violated this same requirement for other reasons. *See supra* at P 26.

entered a request at 09:18 for 2,404 MW of reserves. Even under unconstrained conditions, PacifiCorp East could receive only up to 1,600 MW of NWPP reserves; on the day of the disturbance, it could receive much less due to path derates and system operating conditions. Nonetheless, the Balancing and Interchange Operator expected that PacifiCorp would receive the full amount of requested reserves. Further, the Balancing and Interchange Operator did not know that PacifiCorp was entitled to a second reserve sharing request under the reserve sharing agreement because generation failed to come on line.

38. The Balancing and Interchange Operator's unfamiliarity with the reserve sharing agreement demonstrates that he was not adequately trained for the position of Balancing Authority operator. NERC and Enforcement determined that this failure violated PER-002-0, Requirement R1, which requires the Balancing Authority to "be staffed with adequately trained operating personnel."

39. Enforcement and NERC also concluded that PacifiCorp's separation of its Balancing Authority function responsibilities between its Grid Operations division and its Commercial and Trading division led PacifiCorp to inadequately perform its Balancing Authority function during the disturbance; specifically, PacifiCorp failed to purchase power for delivery in HE10 to address its significant generation losses and resulting ACE deficiency. The Balancing and Interchange operator in the Grid Operations division did not have the ability to purchase energy and should have directed the traders in C&T that intra-hour purchases for immediate delivery were required. For their part C&T personnel told Grid Operations personnel that energy was coming into the system, but did not clearly communicate that it was purchased for HE11. This misunderstanding led the Balancing and Interchange Operator to expect erroneously the delivery of energy before 10:00. Because the separation of the Balancing Authority function prevented the Balancing and Interchange Operator from fulfilling his Balancing Authority responsibilities, Enforcement and NERC determined that PacifiCorp violated EOP-002-2, Requirement R1¹² because the Balancing and Interchange Operator was unable to "exercise [his] specific authority to alleviate capacity and energy emergencies."

D. Emergency Plans

40. Enforcement and NERC determined that PacifiCorp violated two requirements of the Reliability Standards because it did not implement its own emergency plans. PacifiCorp's C&T Energy Shortage Process plan contains a step to contact the California Independent System Operator (CAISO) to appeal for assistance. But PacifiCorp did not

¹² As noted above, Enforcement and NERC also found that PacifiCorp violated this same requirement for other reasons. *See supra* at PP 26, 36.

make this appeal. By not implementing a step in its own emergency plan, Enforcement and NERC concluded that PacifiCorp did not avail itself of a potential source of energy during a time when it was significantly short of energy. Enforcement and NERC also found that PacifiCorp failed to curtail schedules and retail load as set out in the same plan. Enforcement and NERC determined that these failures violated both EOP-001-0, Requirement R3, and EOP-002-2, Requirement R2, which both require implementation of emergency plans. EOP-001-0, Requirement R3 requires a Balancing Authority and Transmission Operator to “implement a set of plans to mitigate operating emergencies on the transmission system.” EOP-002-2, Requirement R2 requires a Balancing Authority to “implement its capacity and energy emergency plan.”

E. System Planning: Operations Time Frame

41. Enforcement and NERC determined that PacifiCorp violated three requirements of TOP-004-1 related to system planning in the operations time frame: Requirements R1, R2 and R4. The uninterruptible power supply (UPS) units for the Hunter units #1 and #2 are used for input power supply security and conditioning for boiler and other control systems on these units. These UPS units were not in service around the time of the disturbance, and were not reported to be out of service. The Hunter unit #1 UPS was out for at least one week and Hunter unit #2 UPS was out of service for over five months. Without these UPS units, the risk increased that a fault could produce a voltage swing at Hunter station sufficient to trip Hunter units #1 and #2 off-line. This increased risk was not considered in PacifiCorp’s contingency analysis, causing PacifiCorp to operate its system and determine its system operating limits as if these UPS units were continuously in service. Enforcement and NERC concluded that because PacifiCorp did not incorporate this risk into its operations planning and did not either verify or modify its SOLs and IROLs (Interconnection Reliability Operating Limits), PacifiCorp did not know if the SOLs and IROLs were valid. Therefore, PacifiCorp was not operating within its SOLs and IROLs, which Enforcement and NERC determined violated TOP-004-0, Requirement R1. For the same reason, Enforcement and NERC determined that PacifiCorp did not “operate so that instability” would not occur, as required by TOP-002-0, Requirement R2. Furthermore, because PacifiCorp did not conduct such studies and validate or adjust its operations accordingly, it operated the Bulk Electric System for multiple weeks in an unknown operating state, that is, “a state for which valid operating limits have not been determined,” as defined in TOP-004-0, Requirement R4. By operating in an unknown state for multiple weeks, Enforcement and NERC determined that PacifiCorp violated TOP-004-0, Requirement R4, which considers operation in an unknown operating state an emergency and requires restoration of operations to within limits within 30 minutes.

F. Protection System

42. PacifiCorp self-reported certain violations of the PRC standards to WECC prior to the disturbance and was in the process of implementing approved mitigation plans at the time of the disturbance. Enforcement and NERC reviewed these self-reports and determined that PacifiCorp violated five requirements in the PRC standards related to protection system maintenance and testing: PRC-005-1, Requirement R2 (twice); PRC-STD-005, Requirement WR1; PRC-008-0, Requirement R2; PRC-011-0, Requirement R2; and PRC-017-0, Requirement R2.

43. Enforcement and NERC concluded that PacifiCorp's maintenance management system was deficient in three areas: failure to adequately verify the data when it converted from one maintenance plan database to another; failure to oversee and control data entry and changes made to the database; and failure to provide adequate managerial controls and oversight of the maintenance system. These deficiencies led to missing data and inaccurate maintenance cycles. In addition, Enforcement and NERC found deficiencies with the documentation related to maintenance and testing of PacifiCorp's protection systems.

44. As a result, Enforcement and NERC determined that PacifiCorp violated the following requirements:

- PRC-005-1, Requirement R2, which requires that “each Transmission Operator 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....”
- WECC-PRC-STD-005-1, Requirement WR1, which requires that “All bulk power transmission elements included as part of the transmission facilities impacting each of the transmission paths listed in Attachment A – WECC Table 2 shall be inspected and maintained...,” which applies to PacifiCorp facilities on three paths: Path C, TOT-2B and Bridger West.
- PRC-008-0, Requirement R2, which requires that the “Transmission Owner and Distribution Provider with an [Under Frequency Load Shedding] program... shall implement its [Under Frequency Load Shedding] equipment maintenance and testing program.”
- PRC-011-0, Requirement R2, which requires that “The Transmission Owner and Distribution Provider that owns a [Under Voltage Load Shedding] system shall provide documentation of its [Under Voltage Load Shedding] equipment maintenance and testing program and the implementation of that [Under Voltage

Load Shedding] equipment maintenance and testing program to its Regional Reliability Organization....”

- PRC-017-0, Requirement R2, which requires that “The Transmission Owner, Generator Owner, and Distribution Provider that owns [a Special Protection System] shall provide documentation of [its maintenance and testing] program and its implementation to the appropriate Regional Reliability Organizations....”

45. PacifiCorp had self-reported violations of four of these five PRC requirements prior to the standards becoming mandatory on June 18, 2007, and PacifiCorp had immediately undertaken mitigation plans for the violations. Following an audit, WECC initiated an investigation into each of these four PRC standards and one additional PRC standard, but PacifiCorp could not verify its compliance with these five PRC standards. In January 2008, PacifiCorp subsequently certified that it had completed the tasks set forth in those mitigation plans and was in compliance with the applicable PRC standard. Following the disturbance, the Western Electricity Coordinating Council’s Regional Entity function (WECC RE) initiated an investigation of PacifiCorp’s compliance with these requirements, which was referred to the Commission and made part of the overall investigation of PacifiCorp. Enforcement and NERC found that, although PacifiCorp had completed the tasks set forth in the mitigation plans, the January 2008 certifications were inaccurate insofar as they represented that PacifiCorp was in compliance with the relevant PRC standard. Thus, Enforcement and NERC determined that PacifiCorp was in violation of each of the five PRC requirements.

46. In March 2008, PacifiCorp self-reported anew violations of these five PRC standards, and submitted new mitigation plans. PacifiCorp completed each of the five mitigation plans in March, April and July of 2008, which WECC approved in September and October of 2008.

47. Enforcement and NERC also determined that PacifiCorp violated PRC-005-1, Requirement R2 with respect to the Huntington lockout relay, whose failure was a key factor in the disturbance. PRC-005-1, Requirement R2, requires “documentation of its Protection System maintenance and testing program and the implementation of that program to its Regional Reliability Organization....” But, Enforcement and NERC concluded that PacifiCorp could not provide documentation to show that the Huntington Lockout Relay had been tested either individually or as part of end-to-end testing of a protection system package.

IV. REMEDIES AND SANCTIONS

48. For purposes of settling any and all civil and administrative disputes arising from Enforcement’s and NERC’s investigation, PacifiCorp accepts the facts as stipulated above, but neither admits nor denies Enforcement and NERC’s determinations that the

facts set forth herein constitute violations by PacifiCorp of the Federal Power Act, Commission rules or regulations or the NERC and WECC Reliability Standards. In resolution hereof, PacifiCorp agrees to undertake the following obligations.

A. Civil Penalty

49. PacifiCorp shall pay a civil penalty in the amount of \$3.925 million, divided equally between the United States Treasury and NERC, within 10 days of the Commission's issuance of an order approving this Agreement without modification or condition.

B. Reliability Enhancement Measures Already Completed

50. PacifiCorp has undertaken substantial efforts to address concerns identified during its own internal review following the event in addition to those concerns identified by Enforcement and NERC during the course of this investigation. PacifiCorp represents that it completely or partially addressed the findings of this investigation in advance of finalization of settlement by completing the following reliability enhancement measures:

- a. Implemented enhancements to improve operator situational awareness, including:
 - i. Enhancing operating displays used by the transmission operators to provide better overall situational awareness of critical transmission system parameters,
 - ii. Installing a Dispatch Training Simulator for the PacifiCorp transmission system to increase scenario application realism, and
 - iii. Implementing an Energy Management System contingency analysis program that automatically reviews the real time status of the transmission system for reliability issues under potential contingency events and is available at all times to operators and support personnel to evaluate risks associated with possible next events;
- b. Created a redundant and independent control room, adjacent to the real time operating main control center arena, for use during disturbances and system events by support personnel and management to monitor, coordinate and provide additional awareness of the event, while not interfering with the real time operators' activities, and instituted access controls to the operating room;

- c. Instituted annual energy emergency drills involving Grid Operations and C&T, including a focus on the disturbance control standard and training on use of the load shedding programs and emergency operating procedures;
- d. Incorporated an enhanced load curtailment program functionality into the Energy Management System to increase the automation available to more rapidly execute firm load shedding for PacifiCorp East and PacifiCorp West , when the circumstances require;
- e. Implemented an enhanced training program for management and operating personnel on new operating procedures, control room operations, operator authority and independence, balancing authority division of responsibilities, and emergency response, including annual training on the NWPP reserve sharing program requirements, emergency operating procedures and communication protocols;
- f. Adopted new operating procedures which clarify the responsibilities of the Transmission Grid Operator, Balance/Interchange Operator, C&T personnel, and the Region Dispatcher regarding recovery efforts for the restoration period following a significant event, including responding to directives when issued and ensuring independent authority requirements;
- g. Modified operating procedures to allow Grid Operations personnel the ability to direct C&T to procure intra-hour energy (if available) from a third party in an emergency or, if that option is not available, to directly procure intra-hour energy from a third party in an emergency (where the procurement of intra-hour energy is possible);
- h. Modified communications protocols to clarify Standards of Conduct requirements during emergencies;
- i. Reviewed grid operations staffing levels and responsibilities to improve efficiency and effectiveness, including addition of a shift supervisor oversight function to audit operating personnel performance and evaluate each individual operator's knowledge and competency;
- j. Adopted an operating procedure and annual training to address operations planning and compliance with TOP-004 to ensure required information is provided by the generation plants (e.g. UPS systems and other material outage information) to Grid Operations and to ensure operational planning includes the impacts of outages of equipment reported by generation plants;
- k. Supporting efforts underway in the Western Interconnection to develop intra-hour energy and transmission products; and
- l. In addition to these operational measures, PacifiCorp has made substantial financial commitments to enhance the reliability of its own system and the

Bulk Power System in the Western Interconnection, including a major transmission expansion plan called Energy Gateway that will significantly increase new transmission capacity and reliability for the Western Interconnection, including the first Extra High Voltage high capacity AC transmission lines into Wyoming and Utah.

C. Other Reliability Enhancement Measures

51. In addition to the foregoing reliability enhancement measures, PacifiCorp agrees to:
- a. Improve and implement training and procedures to ensure its operating personnel operate to meet the 15-minute deadline for ACE restoration set forth in BAL-002-0, Requirement R4, within six months of the Effective Date of this Agreement;¹³
 - b. Engage a third party auditor to conduct an independent audit of PacifiCorp's maintenance program and documentation showing compliance with the requirements set forth in PRC-005, PRC-008, PRC- 011, PRC-017 and WECC-PRC-STD-005 within six months of the Effective Date of this Agreement;
 - c. Develop a communications protocols for operating personnel to ensure adherence to independent authority requirements within six months of the Effective Date of this Agreement;
 - d. Improve annual frequency response and, when the Commission approves any new requirement establishing a frequency response requirement for Balancing Authorities, adhere to that requirement;
 - e. Adhere to any new approved NERC or WECC reliability standards regarding transmission system planning and/or protection systems performance which address single points of failure.
52. PacifiCorp shall make semi-annual reports to Enforcement and NERC staff for one year following the Effective Date of this Agreement. The first semi-annual report shall be submitted no later than ten days after the end of the second calendar quarter after the quarter in which the Effective Date of this Agreement falls. The second report shall be submitted six months thereafter. PacifiCorp shall: (1) advise Enforcement and NERC staff whether possible violations of the Reliability Standards by PacifiCorp have

¹³ Nothing in this Agreement limits PacifiCorp's right to initiate or support any modification or interpretation of BAL-002-0, R4, or any of the other reliability standards referenced herein.

occurred, to the extent any such violations have not already been self-reported;
(2) provide a detailed update of the reliability enhancement measures set forth in paragraphs 50 and 51 above, previously completed or instituted in the applicable period; and (3) include an affidavit executed by an officer of PacifiCorp that the compliance reports are true and accurate.

53. Upon request by Enforcement and NERC staff, PacifiCorp shall provide all documentation supporting its reports, including the reports and recommendations of any external consultants. After the receipt of the second semi-annual report, Enforcement and NERC may, at their sole discretion, require PacifiCorp to submit semi-annual reports for one additional year.

V. TERMS OF CONSENT AGREEMENT

54. The Effective Date of this Agreement shall be the date on which the Commission issues an order approving this Agreement without modification or condition.

55. Unless the Commission issues an order approving the Agreement in its entirety and without modification or condition, the Agreement shall be null and void and of no effect whatsoever, and neither Enforcement, NERC, nor PacifiCorp shall be bound by any provision or term of the Agreement, unless otherwise agreed in writing by Enforcement, NERC and PacifiCorp.

56. The parties shall treat the Agreement as confidential until approved by each party and the Commission issues an order approving the Agreement without modification or condition. The Agreement shall be made public only after the Commission's approval without modification or condition.

57. All information and documents provided by PacifiCorp to the Commission and/or NERC as part of the investigation and/or the settlement of the investigation were submitted on a confidential basis and are not information and documents that would normally be disclosed to the public. Aside from the public release of the Agreement after the Commission issues an order approving the Agreement in its entirety and without modification or condition, no information or documents pertaining to the investigation shall be disclosed publicly by the Commission or NERC, except as required by law.

58. The Agreement binds PacifiCorp and its agents, successors and assigns. The Agreement does not create or impose any additional or independent obligations on PacifiCorp, or any affiliated entity, its agents, officers, directors or employees, other than the obligations identified in Section IV of this Agreement.

59. In connection with the payment of the civil penalty provided for herein, PacifiCorp agrees that the Commission's order approving the Agreement without

modification or condition shall be a final order assessing a civil penalty under the Federal Power Act, 16 U.S.C. § 792, *et seq.*, as amended. PacifiCorp further waives rehearing of any Commission order approving the Agreement without modification or condition, and judicial review by any court of any Commission order approving the Agreement without modification or condition. PacifiCorp also waives any rights of appeals provided by the NERC Rules of Procedure.

60. Commission approval of this Agreement without modification or condition shall fully, irrevocably, and unconditionally release PacifiCorp, its agents, officers, directors and employees, both past and present, and any successor in interest to PacifiCorp from, and forever bar the Commission and NERC from bringing against PacifiCorp and its agents, officers, directors and employees, both past and present, and any successor in interest to PacifiCorp, any and all direct and/or indirect administrative, civil, criminal or other claims or liability (whether or not known) arising out of, related to, or connected with the event or the investigation. In further consideration for this release, PacifiCorp represents that it is not aware of any material facts concerning the event that were not disclosed to Enforcement and NERC during the investigation and which might reasonably be considered to be a violation of any Reliability Standard. Upon the Effective Date of this Agreement, Enforcement's and NERC's investigation of PacifiCorp shall terminate.

61. Failure to make a timely payment or to comply with any other provision of this Agreement shall be deemed a violation of a final order of the Commission issued pursuant to the Federal Power Act and may subject PacifiCorp to additional action under the enforcement and penalty provisions of the Federal Power Act.

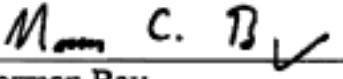
62. If PacifiCorp does not make the payment above at or before the time agreed by the parties, interest on the portion payable to the United States Treasury will begin to accrue and be payable to the United States Treasury, pursuant to the Commission's regulations at 18 C.F.R. § 35.19(a)(2)(iii), from the date that payment is due. Similarly, interest on the portion payable to NERC will begin to accrue at the rate set forth in the same regulations from the date payment is due.

63. The signatories to the Agreement agree that they enter into the 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 Enforcement, NERC, or PacifiCorp has been made to induce the signatories or any other party to enter into the Agreement.

64. 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 Agreement on the entity's behalf.

65. The undersigned representative of PacifiCorp affirms that he or she read the Agreement, that all of the matters set forth in the Agreement are true and correct to the best of his or her knowledge, information and belief, and that he or she understands that the Agreement is entered into by Enforcement and NERC in express reliance on those representations.

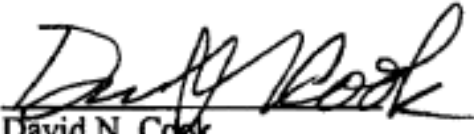
66. The Agreement may be signed in counterparts.


Norman Bay
Director, Office of Enforcement
Federal Energy Regulatory Commission

Date: 11/10/11


R. Patrick Reiten
Chief Executive Officer & President,
Pacific Power, PacifiCorp

Date: 10/28/11


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

Date: 11/3/2011