

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

**NORTH AMERICAN ELECTRIC)
RELIABILITY CORPORATION) Docket No. NP10-18-000**

**RESPONSE OF THE
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION AND
WESTERN ELECTRICITY COORDINATING COUNCIL
TO THE COMMISSION'S JANUARY 11, 2010 LETTER ORDER REQUESTING
DATA AND DOCUMENTS**

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January 26, 2010

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INFRASTRUCTURE INFORMATION HAVE BEEN REDACTED FROM THIS
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ATTACHMENTS:

I. INTRODUCTION

The North American Electric Reliability Corporation (“NERC”) and the Western Electricity Coordinating Council (“WECC”) respectfully submit this Response to the Federal Energy Regulatory Commission’s (“FERC” or the “Commission”) January 11, 2010 Request for Data and Documents (“January 11 Data and Document Request”) in the above captioned proceeding,¹ regarding NERC's November 13, 2009 Notice of Penalty filing regarding Turlock Irrigation District (“Turlock”) in the WECC Region. The Notice of Penalty pertains to an eighty-thousand dollar (\$80,000) settlement agreed to by WECC and Turlock for violations of Reliability Standards TPL-001-0 Requirement (R) 1, TPL-002-0 R1, TPL-003-0 R1 and TPL-004-0 R1, as well as FAC-003-1 R2, COM-002-2 R2, PER-002-0 R3 and VAR-001-1 R3. The January 11 Data and Document Request seeks additional data from NERC and WECC to help FERC Staff with its analysis of the November 13, 2009 Notice of Penalty filing. This filing responds to the January 11 Data and Document Request seeking supplemental documentation to ensure that sufficient facts and evidence are provided in support of the Notice of Penalty regarding Turlock filed with the Commission on November 13, 2009. Where readily available, Turlock and Modesto Irrigation District (“Modesto”) provided additional information to WECC in support of this response.

¹ *North American Electric Reliability Corporation*, 130 FERC ¶ 62,022 (2010) (“January 11 Data and Document Request”).

II. NOTICES AND COMMUNICATIONS

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

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III. RESPONSES TO THE JANUARY 11 ORDER

Information set forth in Non-public Attachments B, C, D, E, F, G and I to the instant filing includes privileged and confidential information and critical energy infrastructure information as defined by the Commission's regulations at 18 C.F.R. Part 388 and orders, as well as NERC Rules of Procedure including the NERC Uniform Compliance Monitoring Enforcement Program ("CMEP") Appendix 4C to the Rules of Procedure. Specifically, the information pertains to proprietary or business design information, including a Regional Entity's

investigative files as well as design and other information related to vulnerabilities of critical energy infrastructure information, that is not publicly available. Accordingly, the information set forth in Non-public Attachments B, C, D, E, F, G and I have been redacted from the public filing. In accordance with the Commission's Rules of Practice and Procedure, 18 C.F.R. § 388.112, a non-public version of the information redacted from the public filing is being provided under separate cover. NERC requests that the confidential, non-public information be provided special treatment in accordance with the above regulation.

A. Request #1: With respect to the loss of load experienced by Turlock and Modesto

Irrigation District (Modesto) on August 29th, 2007:

- a. *Identify the service (geographical) area affected by the load shedding (i.e., city, county, etc.). Provide a copy of a geographical map showing the affected areas.***

Response: Load was shed throughout both the Turlock and the Modesto service areas. A map of the Turlock service area showing the affected area, entitled *TID Boundary.jpg*, is included in Attachment A. Also included in Attachment A is a general map of the Modesto service area titled *mid-map.pdf*.

- b. *State the total megawatt hours (MWh) of load lost, including MWs and duration. Break down the total MWh of load lost by areas (e.g., by county, and within the Turlock and Modesto service areas, etc.).***

Response: In the Turlock service area within Stanislaus County, 73 MW of load was lost for eleven minutes and 93 MW of load was lost for sixty- two minutes. With respect to Modesto, see the response to Request #1(c) provided by Modesto below. According to Modesto, it did not calculate the MWh to any finer degree than what was provided in its response to Request #1(c).

- c. *State the total number of customer accounts lost. Break down the total accounts lost by class of customers (i.e., residential, commercial, industrial, agricultural, etc.).***

Response: Modesto lost between 22,000 and 26,000 customers and Turlock lost 13,133 customers. Because the customers lost in Turlock were located throughout the service territory, it is assumed that the breakdown between the customer classes impacted by the outage is approximately the same as the breakdown for all of Turlock's customers.

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Therefore, the breakdown of Turlock customers affected by this outage was assumed by Turlock to be the following:

Residential: 9,470 Customers
Commercial: 914 Customers
Industrial: 105 Customers
Agricultural: 462 Customers
Municipal: 153 Customers
Lighting: 1,993 Customers
Other: 36 Customers

Total: 13,133 Customers

According to Modesto, the breakdown of the Modesto customers that were affected is:

Pacific Time	Load Change (MW)	Residential	Commercial	Industrial	Agriculture
13:53	-81	13,662	2,481	25	266
14:18	-35	5,190	943	9	101
14:32	+12	3,304	600	7	64
14:38	-22	3,595	653	6	70

Note: At 14:45 Pacific time the 230 kV Westley-Parker line was back in service, allowing Modesto to close approximately 30 feeder circuit breakers (12 kV) manually through the System Control and Data Acquisition (“SCADA”) computer. By the time of 14:57 Pacific time on August 29, 2007, Modesto had all load restored to service.

d. State or estimate, explaining the basis for the estimate, the total number of individual persons affected by the load shedding (which can be different from the total number of accounts).

Response: According to Turlock, it assumed, for purposes of this response, that the number of persons impacted by the outage was equal to the number of customer accounts, except it assumed that three individuals live in each residence and each business employs five employees. Using this approach, the total number of Turlock individual persons affected by load shedding would be 35,729, based on the following:

$$9470 \text{ (residential customers)} \times 3 = 28,410$$

$$914 \text{ (commercial customers)} \times 5 = 4,570$$

$$\text{Other customers (industrial, agricultural, municipal, lighting, other)} = 2,749$$

$$28,410 + 4,570 + 2,749 = 35,729$$

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According to Modesto's EIA reports, it lost 26,000 customers. However, Modesto believes its total number of metered customer accounts was closer to 22,000. Therefore, estimating 2.6 people for each customer account produces a range of approximately 57,200 to 67,600 individuals affected by the load shedding.

e. Provide a breakdown of the restoration of lost load, including:

1. The number (or percentage) of MWs restored per hour. Break down the restored MWs per hour by areas.

Response Turlock stated that the duration of the August 29, 2007 outage was one hour and thirteen minutes. During the first hour of the outage, no load was restored. During the next thirteen minutes after the first hour, all load (93 MW) was restored. Modesto stated that it does not keep statistics addressing this information. See also the response to Request #1(c) provided by Modesto above for information that is available.

2. The number (or percentage) of customer accounts restored per hour. Breakdown the restored customer accounts by class of customers.

Response: Turlock stated that the duration of the August 29, 2007 outage was one hour and thirteen minutes. During the first hour of the outage no customers were restored. During the next thirteen minutes after the first hour, all customers were restored. In the Turlock area, 13,133 customers were restored. As discussed above in the response to Request #1(c), the assumed breakdown in customer class is as follows:

Residential: 9,470 Customers
Commercial: 914 Customers
Industrial: 105 Customers
Agricultural: 462 Customers
Municipal: 153 Customers
Lighting: 1,993 Customers
Other: 36 Customers

Modesto stated that it does not keep statistics addressing this information. See also the response to Request #1(c) provided by Modesto above for information that is available.

f. Of the customer accounts affected by the load shedding, state the number of accounts that utilized back-up generation during the load shedding. Break down the total number by customer class.

Response: According to Turlock, this information is unknown. Turlock does not maintain such information from its customers in the ordinary course of business. Therefore, Turlock does not have any records regarding whether or not its customers utilized back-up generation during the outage.

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According to Modesto, a precise number is unknown; however, Modesto provided a rough estimate of 10 customers to WECC in response to this request.

g. Provide the average retail revenue (price) per MWh for each affected customer class for the month of August 2007.

Response: According to Turlock, the average retail revenue per MWh for each affected customer class for the month of August 2007 is as follows:

Residential: \$129.55
Commercial: \$116.88
Industrial: \$93.91
Agricultural: \$97.23
Municipal: \$77.45
Lighting: \$145.45
Other: \$382.36

According to Modesto, using its system average 2007 rate, the average retail revenue was \$100.00 per MWh.

B. Request #2: Provide each notification or report pursuant to Reliability Standard EOP-004-1, on Form OE-417, or in any other document or communication relating to the loss of load experienced by Turlock or Modesto on August 29, 2007, Turlock's or Modesto's restoration of lost load, any assistance rendered to Turlock or Modesto by other entities, or any system conditions in the Turlock or Modesto service areas or within the California Independent System Operator footprint relating to the August 29, 2007 outage.

Response: According to Turlock, no other entities rendered assistance to Turlock. Pre-disturbance system conditions were normal. The August 29, 2007 outage did not cause loss of load or any other similar system condition within the California Independent System Operator footprint. In support of this response, see the following documents in Non-public Attachment B: (i) *WECC Preliminary Disturbance Report TID 2007 08 30.pdf* and *NERC_EOP-004-1_Form_Rev2.pdf*; and (ii) the U.S. Department of Energy form *OE-417*, (iii)-(iv) U.S. Department of Energy forms *EIA-417R*, (v)-(vi) *NERC Standard EOP-004-1 System Disturbance*, and (vii) the joint Final Abbreviated System Disturbance Report study for the Westley line outages and load shedding on August 29, 2007 titled *DOCS_n208177_v1_Final_Report.pdf*.

C. Request #3: Provide a geographical map of Modesto and Turlock showing the facilities subject to the August 29, 2007 vegetation-related outage and any photographs or other records relating to the outage.

Response: See *TID Boundary.jpg* in Attachment A and C, in addition to other photographs and maps that are included in the Public and Non-Public versions of Attachment C. According to

Modesto, Modesto advised WECC that it does not have photos or a geographical map of the facilities subject to the August 29, 2007 outage, but did provide a general map of its geographic area in its response to Request #1(a) in Attachment A. See also the WECC response to Request #5 below.

D. Request #4: Provide a one-line diagram of the Westley-Walnut and Westley-Parker 230 kV transmission lines subject to the August 29, 2007 outage and related facilities.

Response: See *CONTRO~1.pdf* in Non-public Attachment D.

E. Request #5: Provide information and documents received during WECC's review of the August 27, 2007 outage.

Response: The event in question occurred on August 29, 2007. It appears the above reference to August 27, 2007 is an error. Therefore, responses to this question are provided with respect to the August 29, 2007 outage. See Non-public Attachment E for copies of all WECC investigative files and documentation pertaining to the August 29, 2007 outage.

F. Request #6: Provide documentation regarding Turlock's Transmission Vegetation Management Plan and its implementation from (a) before August 29, 2007 and (b) after August 29, 2007, including any records relating to vegetation trimming after August 29, 2007.

Response: See *TID 230 kV Transmission Vegetation Management Program.pdf* included in Non-public Attachment F.

For subpart (a), see the following documents in Non-public Attachment F:
TID Detailed Discussion of NERC Standard FAC-003-1.doc
2006 Inspection Reports.pdf
2007 Inspection Reports.pdf
Blue Tags.pdfs

For subpart (b), see the following documents in Non-public Attachment F:
TID Detailed Discussion of NERC Standard FAC-003-1.doc
August 29 Patrol.pdf
August 30 Patrol.pdf
August 30 Patrol Blue Tags.pdf
Additional Blue Tags.pdf

G. Request #7: Provide documentation regarding Turlock's internal investigation of the August 29, 2007 outage and the disciplinary action that resulted from the investigation.

Response: Turlock reviewed photos, inspection reports, blue tags and interviewed the person who inspected the line during the last inspections. Additional information is set forth in Non-public Attachment E.

One document relating to the referenced disciplinary action that is not included in this response is the written reminder given to the Turlock employee which was removed from the record in accordance with Turlock's disciplinary program, as discussed below. However, the following describes in detail the written reminder and its role in the disciplinary action associated with this outage.

When the internal investigation was concluded, Turlock determined that the Line Department Manager had inspected the line as required but failed to note any tree clearance issues in the area of the August 29, 2007 incident. Turlock has a Positive Discipline Program ("PDP"). The PDP is well documented and there are three levels of formal discipline. Pursuant to Turlock's PDP, the employee was given a written reminder for this incident which is the second level of formal discipline. In substance, the written reminder included:

- The date of the employee/supervisor discussion
- Documentation of that discussion
- The offense that resulted in the written reminder
- Acknowledgement of the employee's commitment and need to change
- Signature of the employee and supervisor

A written reminder remains active for 12 months. At the end of those 12 months, if the employee has corrected the problem and accomplished all the tasks listed in the written reminder, the written reminder is deactivated. Deactivation results in the written reminder being removed from the supervisor's file as well as the employee's personnel file in Human Resources. Accordingly, the written reminder associated with this outage is no longer available, but Turlock affirms that it contained the information that is described above.

H. Request #8: Provide documentation Turlock provided to WECC to demonstrate completion of Mitigation Plan MT-07-1699 relating to Reliability Standard FAC-003-1.

Response: See the following documents included in Non-public Attachment G:

Mitigation Plan Completion Form.pdf
August 29 Patrol.pdf
August 30 Patrol.pdf
August 30 Patrol Blue Tags.pdf
Additional Blue Tags.pdf
Training.pdf
Disciplinary Action.pdf

I. Request #9: Provide documentation concerning Turlock's Internal Compliance Program.

Response: See the following documents included in Attachment H:

1. *070711 Internal Compliance Program.pdf*. This version was in effect at the time of the August 29, 2007 outage.
2. *090925 Internal Compliance Program rev. 2.pdf*. This version is currently in effect.

J. Request #10: Provide information relating to Turlock's ability to pay the \$80,000 penalty or if or how it could recover a penalty amount from its customers.

Response: According to Turlock, Turlock is a relatively small, non-profit irrigation district and not an investor owned utility. It is public power and is essentially owned by the customers in its service area. Revenues collected in excess of its costs are used to maintain low rates for its ratepayers.

K. Request #11: Provide information including a detailed explanation of the tripping scheme that caused the Westley-Parker 230 kV line to trip out of service in response to the tree touch. Please include the substation configuration at Westley and Parker.

Response: The Turlock protection engineer conducted a relay investigation and produced a report of this investigation for this outage. A copy of this report, *August 29th, 2007 WECC relay report.pdf*, is included in Non-public Attachment I, which also includes drawings showing the substation configuration at Westley and Parker. WECC subject matter experts also investigated the relay operations, as documented in *TID Interview Notes 2-11-08_TM.doc*, included in Non-public Attachment I.

L. Request #12: Provide information related to the transfer of load to the 115 kV system and Turlock's and Modesto's Energy Management Systems automatic firm load shed, including an explanation as to whether this incident was considered by WECC or NERC to be an N-2 contingency. If so, please explain in detail what made this a N-2 contingency, including defining both contingencies. If not, provide all record information concerning NERC and/or WECC's consideration of the applicability of Reliability Standard TPL-002.

Response: Turlock and Modesto plan for the loss of both 230 kV lines from the Westley Switchyard because both of these lines are located on the same towers. Losing two lines located on the same set of towers is considered an N-2 contingency according to NERC Standard TPL-002. Both of these lines were lost during the August 29, 2007 outage.

At the time of the August 29, 2007 outage, Turlock's and Modesto's plans for this outage were to have their respective Energy Management Systems automatically shed enough load such that the remaining 115 kV interties to both the Modesto and Turlock service territories would not

overload and cause a cascading outage. During the August 29, 2007 outage, both of their Energy Management Systems operated as planned and the 115 kV intertie lines remained energized.

M. Request #13: Provide information relating to any other BES transmission lines lost due to this incident, including information on any special protection systems or remedial action schemes that activated and the specific contingency that caused their activation.

Response: Turlock stated that no other BES transmission lines were lost due to this event. Turlock further stated that, as explained in the response to Request #12, the outage caused the loss of the 230 kV feed to Turlock and that contingency activated the Energy Management System to automatically shed load to prevent overload on Turlock's 115 kV intertie. This was the only automated scheme that operated and no other special protection systems or remedial action schemes were involved.

IV. CONCLUSION

The North American Electric Reliability Corporation and the Western Electricity Coordinating Council respectfully request that the Commission accept this filing as compliant with the January 11, 2010 Data and Document Request.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that I have served a copy of the foregoing document upon all parties listed on the official service list compiled by the Secretary in this proceeding.

Dated at Washington, D.C. this 26th day of January, 2010.

/s/ Rebecca J. Michael

Rebecca J. Michael

*Attorney for North American Electric
Reliability Corporation*

Attachment A

Non-public Attachment B

[This Attachment contains Privileged and Confidential Information and Critical Energy Infrastructure Information that have been removed from this public version.]

Attachment C

Non-public Attachment C

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Non-public Attachment D

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Non-public Attachment F

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Non-public Attachment G

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Attachment H

Non-public Attachment I

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