

# NERC

NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

June 24, 2009  
Ms. Kimberly Bose  
Secretary  
Federal Energy Regulatory Commission  
888 First Street, N.E.  
Washington, D.C. 20426

Re: NERC Notice of Penalty regarding U.S. Army Corps of Engineers-  
Omaha District, FERC Docket No. NP09-\_-000

Dear Ms. Bose:

The North American Electric Reliability Corporation (NERC) hereby provides this Notice of Penalty<sup>1</sup> regarding the U.S. Army Corps of Engineers-Omaha District, NERC Registry ID: NCR00978,<sup>2</sup> 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)).<sup>3</sup>

U.S. Army Corps of Engineers-Omaha District (COE-OD) self-certified on October 23, 2007 non-compliance with Reliability Standards FAC-009-1, Requirement (R) 1 and R2; and PRC-005-1, R1 and R2 for six of its Generators. This Notice of Penalty is being filed with the Commission because, based on information from Midwest Reliability Organization (MRO), COE-OD does not dispute the violations and the proposed penalty of zero dollars (\$0) to be assessed to COE-OD.<sup>4</sup> Accordingly, the violations identified as NERC Violation Tracking Identification Numbers MRO200700014, MRO200700015, MRO200700017, MRO200700018 respectively, are Confirmed Violations, as that term is defined in the NERC Rules of Procedure and the CMEP.

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<sup>1</sup> *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 (2008). *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).

<sup>2</sup> MRO confirmed that U.S. Army Corps of Engineers-Omaha District was included on the NERC Compliance Registry as of May 30, 2007 and was subject to the requirements of the NERC Reliability Standards set forth herein.

<sup>3</sup> See 18 C.F.R. § 39.7(c)(2).

<sup>4</sup> Although COE—Omaha has not raised a jurisdictional issue in this case, COE-Tulsa has asserted that the COE is not subject to mandatory Reliability Standards under Section 215 of the Federal Power Act in NOC-052, filed contemporaneously with this notice of penalty. For the reasons stated in NOC-052, the COE is subject to mandatory Reliability Standards and enforcement under Section 215.

**Statement of Findings Underlying the Violations**

This Notice of Penalty incorporates the findings and justifications set forth in the Notice of Confirmed Violation and Proposed Penalty or Sanction (NOCV) issued on April 16, 2008, and the Supplemental Record Information letters issued on October 9, 2008 and November 7, 2008 by MRO. The details of the findings and basis for the penalty are set forth herein. This Notice of Penalty filing contains the basis for approval of this Notice of Penalty 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 (2007), NERC provides the following summary table identifying each Reliability Standard violated by COE-OD.

Region	Registered Entity	NOC ID	NERC Violation ID	Reliability Std.	Req. (R)	VRF	Total Penalty (\$)
MRO	COE-OD	NOC058	MRO200700014	FAC-009-1	1	MEDIUM	\$0
MRO	COE-OD	NOC058	MRO200700015	FAC-009-1	2	MEDIUM	
MRO	COE-OD	NOC058	MRO200700017	PRC-005-1	1	HIGH	
MRO	COE-OD	NOC058	MRO200700018	PRC-005-1	2	HIGH	

FAC-009-1 requires a registered entity to establish and communicate facility ratings and ensure that these facility ratings are determined based on an established methodology or methodologies. FAC-009-1, R1 specifically obligates a Generator Owner such as COE-OD to establish Facility Ratings for solely and jointly owned Facilities that are consistent with the associated Facility Ratings Methodology. During the 2007 annual self-certification, COE-OD self-certified non-compliance with FAC-009-1, R1 because, although it had an internally approved Facilities Rating methodology, the methodology was not fully compliant with the specific requirements set forth in the Reliability Standard. COE-OD noted that, for fiscal year 2007, COE-OD funded engineering efforts to complete facilities ratings in response to the mandatory standards on four (4) of its six (6) generation stations by January 1, 2008, and the ratings were completed on schedule. COE-OD noted that, because the facilities were not documented in the format required by the Facility Ratings Methodology, COE-OD was non-compliant with the Reliability Standard. COE-OD further self-certified that a pending budget request for the remaining 2 facilities prevented compliance with FAC-009-1, R1 for these two facilities. FAC-009-1, R1 has a “Medium” Violation Risk Factor (“VRF”). MRO determined to exercise its discretion for this violation that occurred in 2007, and to assess no penalty for the violation of this requirement of the referenced Reliability Standard. MRO found that COE-OD had a Facility Ratings Methodology in place, although it did not comply with all aspects of the referenced Reliability Standard. In addition, because COE-OD has had a Facility Ratings methodology, and the design and construction of the facilities was fully coordinated with the Transmission Operator/Transmission Owner, MRO found that this violation was not a violation that put bulk power system reliability at serious or substantial risk.

FAC-009-1, R2 requires a Generator Owner such as COE-OD to provide Facility Ratings for its solely and jointly owned Facilities that are existing Facilities, new Facilities, for modifications to existing Facilities and for re-ratings of existing Facilities to its associated Reliability Coordinator(s), Planning Authority(ies), Transmission Planner(s), and Transmission Operator(s)

as scheduled by such requesting entities. During the 2007 annual self-certification, COE-OD reported non-compliance with Reliability Standard FAC-009-1, R2. Because COE-OD did not have a compliant facilities rating methodology in accordance with FAC-009-1, R1, it was unable to provide these Facility Ratings to the Reliability Coordinator, Planning Authority, Transmission Provider, Transmission Owner, and/or Transmission Operator, as required in Reliability Standard FAC-009-1, R2. FAC-009-1, R2 has a “Medium” VRF. MRO determined to exercise its discretion for this violation, and to assess no penalty for this violation. MRO found that, while COE-OD had a Facility Ratings Methodology in place, it did not meet the specific requirements in accordance with this Reliability Standard. Because COE-OD had a methodology in place and did not have any unfilled requests by the Reliability Coordinator, Planning Authority, Transmission Planner, and/or Transmission Operator, MRO found that this violation did not put bulk power system reliability at serious or substantial risk.

PRC-005-1 requires that all generation Protection Systems affecting the reliability of the Bulk Electric System be maintained and tested. PRC-005-1, R1 specifically requires each Generator Owner that owns a generation Protection System to have a Protection System maintenance and testing program for Protection Systems that affect the reliability of the Bulk Electric System in place that includes: 1) the maintenance and testing system and their basis, and 2) a summary of maintenance and testing procedures.

During the 2007 annual self-certification, COE-OD reported non-compliance with PRC-005-1, R1, because, although it had a program for testing and maintenance, the basis of the program was not adequately identified and testing procedures were not completely documented. COE-OD reported that, although testing and maintenance were being conducted according to the existing program, the program documentation was deficient and therefore did not satisfy R1 of the Standard. At the time of the self-certification, COE-OD provided copies of two program documents describing its Protective System Maintenance and Testing Program; undated Chapter 07 entitled “Hydropower” and an April 30, 2001 document entitled “Hydropower Test and Evaluation Function.” COE-OD explained that these documents had not been revised or updated to reflect the referenced requirement of the NERC Reliability Standards.

PRC-005-1, R1 has a “High” VRF. MRO determined to exercise its discretion for this violation, and to assess no penalty for this violation. MRO reviewed two program documents describing COE-OD’s Protective System Maintenance and Testing Program and determined that the violation was a documentation deficiency, because the existing documents did not contain the required elements of PRC-005-1, R1. On February 5, 2008, COE-OD submitted a Mitigation Plan and included the Omaha District Standard Operating Procedure PRC-005-1 effective February 1, 2008, which included the required elements of the applicable Reliability Standard. Upon its review of this Operating Procedure, MRO verified that this revised document included the required elements of PRC-005-1, R1. Accordingly, MRO determined that the violation did not put bulk power system reliability at serious or substantial risk and assessed no penalty, because COE-OD had a program for testing and maintenance, but the basis of the program was not adequately identified and testing procedures were not completely documented.

PRC-005-1, R2 requires each Generator Owner that owns a generation Protection System to provide documentation of its Protection System maintenance and testing program and the

implementation of that program to its Regional Reliability Organization on request (within 30 calendar days). R2 further states that the Generator Owner that owns a generation Protection System must provide: 1) Evidence Protection System devices were maintained and tested within the defined intervals, and 2) The date each Protection System device was last tested/maintained.

During the 2007 annual self-certification, COE-OD reported non-compliance with PRC-005-1, R2, because not all facilities were current with the testing schedules and there were instances where testing documentation was inadequate or incomplete. Although COE-OD provided additional information stating that testing and maintenance of protection systems was occurring, it was not completed by the date the annual self-certification was due. In this case, MRO considered that, although a request for the testing and maintenance schedules was not made by the regional reliability organization, COE-OD could not have provided the test records had they been asked for them because the facts of the case demonstrate that the entity was behind on its relay testing. Specifically, MRO found that testing and maintenance were being conducted but that COE-OD was not current with its testing schedules and in some instances the testing documentation was inadequate or incomplete. COE-OD operates 6 facilities; 2 of which were behind schedule for some devices. Approximately 58 devices (24 at one facility and 34 at the other facility) representing 5% of COE-OD's 1,099 Protection Devices were not maintained and tested on schedule.

PRC-005-1, R2 has a "High VRF. MRO determined to exercise its discretion and assess no penalty for this violation because maintenance and testing required by this Reliability Standard was being conducted, but was behind schedule for a small percentage of devices at two facilities. The violations occurred during 2007 and COE-OD operated under approved Mitigation Plans to correct the violations, which were completed on time. Therefore, penalties that would have accrued during the period the Mitigation Plans were in place were held in abeyance and were ultimately obviated due to timely completion of the Mitigation Plans. As a result, MRO determined that the violation did not put bulk power system reliability at serious or substantial risk.

MRO determined that the violation by COE-OD of FAC-009-1, R1 and R2, and PRC-005-1, R1 and R2 began on June 18, 2007, the mandatory and effective date of the applicable NERC reliability standards. MRO determined that COE-OD was fully compliant with Reliability Standards PRC-005-1, R1 as of February 5, 2008, PRC-005-1, R2 as of May 1, 2008 and FAC-009-1, R1 and R2 as of June 30, 2008.

### **Status of Mitigation Plans<sup>5</sup>**

COE-OD submitted three Mitigation Plans to address the referenced violations on February 5, 2008. Mitigation Plan MIT-07-0449 (for violations MRO200700014 and MRO 200700015 – FAC-009-1, R1 and R2), was accepted by MRO on March 17, 2008, was approved by NERC on March 20, 2008, and was submitted to FERC as non-public information on March 20, 2008, in accordance with FERC orders.

COE-OD identified the cause of the violations of FAC-009, R1 and R2 in Mitigation Plan MIT-07-0449 as a result of COE-OD's failure to complete Facility Ratings reports for four Missouri River Main Stem power plants (Gavins Point, Fort Randall, Big Bend, and Oahe power plants). COE-OD reported that the required reports were in draft form at the time it filed its Mitigation Plan but were awaiting review by project staff. Additionally, COE-OD reported that work had recently been initiated on reports for the remaining two power plants. COE-OD stated in its Mitigation Plan that all violations of FAC-009-1 would be rectified when COE-OD prepared the final versions of the Facility Ratings reports and would then provide them to the Western Area Power Administration. COE-OD certified completion of the Mitigation Plan on June 30, 2008. MRO reviewed the Facility Rating Methodology submitted by COE-OD for all six of its Generators and verified that COE-OD was fully compliant with the Mitigation Plan on June 30, 2008.

Mitigation Plan MIT-07-0450 (for violation MRO200700017—PRC-005-1, R1) was accepted by MRO on March 17, 2008, was approved by NERC on March 20, 2008, and was submitted to FERC as non-public information on March 20, 2008, in accordance with FERC orders.

In Mitigation Plan MIT-07-0450, COE-OD certified that COE-OD has a program for testing and maintenance of protection systems, but that the program did not cover all systems identified in the NERC criteria, the basis of the program was not adequately identified, and complete documentation of the testing procedures were not available. COE-OD developed a revised protective system maintenance and testing program as required by PRC-005-1, R1 in its Mitigation Plan, and it certified, on February 5, 2008, completion of this Mitigation Plan as of February 5, 2008, when the revised Program document became effective. On April 21, 2008, MRO reviewed the revised Protection System Maintenance and Testing Program documentation COE-OD submitted in support of its Certification of Completion, and verified that the Mitigation Plan was completed.

Mitigation Plan MIT-07-0451 (for violation MRO200700018), was accepted by MRO on March 17, 2008, was approved by NERC on March 20, 2008, and was submitted to FERC as non-public information on March 20, 2008, in accordance with FERC orders.

In Mitigation Plan MIT-07-0451, COE-OD stated that four of its facilities (Fort Peck, Garrison, Big Bend and Gavins Point) were currently in compliance with PRC-005-1, R2, but that the remaining two facilities (Oahe and Fort Randall) were behind schedule for some devices. In order to comply with the Reliability Standards, COE-OD stated that the Maintenance and

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<sup>5</sup> See 18 C.F.R § 39.7(d)(7).

Operations supervisors at all six generating stations would inventory all protective system maintenance and testing requirements for incorporation into a unified tracking system and would document that system, along with current status, and upload it to the MRO-CDMS prior to May 1, 2008. COE-OD further indicated that it would provide verification that maintenance and testing was on schedule by June 30, 2008, thereby bringing itself into compliance with the requirement of PRC-005-1 R2. COE-OD certified completion of the Mitigation Plan on June 30, 2008. MRO utilized a random sampling program and requested testing and maintenance records for certain identified elements at each of the six facilities. On March 16, 2009, MRO reviewed the maintenance and test records and verified the Mitigation Plan was complete.

### **Statement Describing the Proposed Penalty, Sanction or Enforcement Action Imposed<sup>6</sup>**

#### **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 Guidance Order, the NERC BOTCC reviewed the NOCV and supporting documentation on February 8, 2009. The BOTCC approved the assessment of a zero dollar (\$0) penalty against COE-OD based upon MRO's findings and determinations, the NERC BOTCC's review of 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: (1) the violations occurred in 2007, were reported in 2007, and were corrected in 2007 and 2008. While the violations occurred during 2007, COE-OD operated under approved Mitigation Plans through 2008 to correct the violations, which were completed on time. Therefore, penalties that would have accrued during the period the Mitigation Plans were in place were held in abeyance and were ultimately obviated due to timely completion of the Mitigation Plans; (2) the violations of PRC-005 were a failure to perform the action required by the Reliability Standard because the registered entity was testing its system protection devices, but was behind schedule on approximately 5% of the required devices; (3) the violations were a failure to appropriately document, as required by the Reliability Standards, the Facilities Ratings Methodology and the distribution Protection System and Maintenance Testing Program; (4) this was the first offense by COE-OD of the referenced Reliability Standards and their requirements; (5) there were no repetitive violations by COE-OD and COE-OD took corrective action to self-certify and mitigate the non-compliance; (6) COE-OD was cooperative in the violation investigation by MRO and did not contest MRO's confirmation of the violation and the proposed penalty; (7) the violations were deemed by MRO not to be violations that put bulk power system reliability at serious or substantial risk because, while deficient, there were documented Facility Ratings methodology and testing and maintenance programs in place; and (8) the Mitigation Plans were completed as verified by MRO.

Therefore, NERC believes that the proposed zero dollar penalty is appropriate and consistent with NERC's goal to ensure reliability of the bulk power system.

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<sup>6</sup> See 18 C.F.R § 39.7(d)(4).

Pursuant to Order No. 693, the penalty will be effective upon expiration of the thirty (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 Included as Part of the Notice of Penalty**

The attachments included as part of the Notice of Penalty are the following documents and material:

1. 2007 Self-Certification Worksheet, Corps of Engineers, dated October 23, 2007, included as Attachment a;
2. Mitigation Plan Submittal Form, MR0200700014 and MR0200700015, dated February 5, 2008, included as Attachment b;
3. Mitigation Plan Submittal Form, MR0200700017 and Certification of Completion, including Omaha District Standard Operating Procedure PRC-005-1, dated February 5, 2008, included as Attachment c;
4. Mitigation Plan Submittal Form, MR0200700018, dated February 5, 2008, included as Attachment d;
5. Verification of Completion of Mitigation Plan from MRO, dated April 21, 2008 (MRO 200700017), included as Attachment e;
6. Omaha District Mitigation Milestone Report, dated May 1, 2008, included as Attachment f;
7. Certification of Completion of Mitigation Plans from COE-OD (for MRO200700014, MRO200700015, and MRO200700018), dated June 30, 2008, included as Attachment g; and
8. Verification of Completion of Mitigation Plans (MRO200700014, MRO200700015, and MRO200700018) from MRO, included as Attachment h.

### **A Form of Notice Suitable for Publication**

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

## Notices and Communications

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

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David N. Cook\*  
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\*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.

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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,

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David N. Cook  
Vice President and General Counsel  
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cc: U.S. Army Corps of Engineers-Omaha District  
Midwest Reliability Organization

Attachment(s)

## **Attachment a**

# **Self-Certification Report of Corps of Engineers dated October 23, 2007**

**Compliance Data Management System**  
**2007 Self-Certification Worksheet**  
**Corps of Engineers**

<u>STANDARD</u>	FAC-009-1 R1	Establish and Communicate Facility Ratings		
<u>RESPONSIBLE FOR COMPLYING</u>	Yes	<u>RECEIVED_DATE</u>	10/23/2007	
	<u>DUE DATE</u>	10/24/2007	<u>COMPLIANCE LEVEL</u>	NC Level 3
	<u>MP DUE DATE</u>	11/23/2007	<u>SC_STATUS</u>	Submitted

NOT\_RESPONSIBLE\_REASON

MEMBER\_COMMENTS

<p>Explanation of the noncompliance:  Ratings for all qualifying Omaha District facilities are not documented in the format consistent with the Facility Ratings Methodology (FAC-008-1).</p>
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MEMBER\_CONTACT

<p>Gary A. Hinkle, P.E.  U.S. Army Corps of Engineers  106 S. 15th St.  Omaha, NE 68102</p>
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\*\*\*\*\* End of Report \*\*\*\*\*

# Compliance Data Management System 2007 Self-Certification Worksheet

## Corps of Engineers

<u>STANDARD</u>	FAC-009-1 R2	Establish and Communicate Facility Ratings	
<u>RESPONSIBLE FOR COMPLYING</u>	Yes	<u>RECEIVED_DATE</u>	10/23/2007
	<u>DUE DATE</u>	10/24/2007	<u>COMPLIANCE LEVEL</u>
			NC Level 3
	<u>MP DUE DATE</u>	11/23/2007	<u>SC_STATUS</u>
			Submitted

NOT RESPONSIBLE REASON

MEMBER COMMENTS

Explanation of noncompliance:  
 The facility rating documents are not ready to be submitted to the RC, PA, TO, TOP in the format consistent with the Facility Ratings Methodology (FAC-008-1).

MEMBER CONTACT

Gary A. Hinkle, P.E.  
 U.S. Army Corps of Engineers  
 106 S. 15th St.  
 Omaha, NE 68102

# Compliance Data Management System 2007 Self-Certification Worksheet

## Corps of Engineers

<u>STANDARD</u>	PRC-005-1 R1	Transmission and Generation Protection System Maintenance and Testing		
<u>RESPONSIBLE FOR COMPLYING</u>	Yes	<u>RECEIVED_DATE</u>	10/23/2007	
	<u>DUE DATE</u>	10/24/2007	<u>COMPLIANCE LEVEL</u>	NC Level 3
	<u>MP DUE DATE</u>	11/23/2007	<u>SC_STATUS</u>	Submitted

NOT RESPONSIBLE REASON

MEMBER COMMENTS

Explanation of noncompliance:  
 The Omaha District Corps of Engineers has a program for testing and maintenance of protection systems; however the basis for the program is not adequately identified and complete documentation of the testing procedures are not available.

MEMBER CONTACT

Gary A. Hinkle, P.E.  
 U.S. Army Corps of Engineers  
 106 S. 15th St.  
 Omaha, NE 68102

**Compliance Data Management System**  
**2007 Self-Certification Worksheet**  
**Corps of Engineers**

<u>STANDARD</u>	PRC-005-1 R2	Transmission and Generation Protection System Maintenance and Testing		
<u>RESPONSIBLE FOR COMPLYING</u>	Yes	<u>RECEIVED_DATE</u>	10/23/2007	
	<u>DUE DATE</u>	10/24/2007	<u>COMPLIANCE LEVEL</u>	NC Level 3
	<u>MP DUE DATE</u>	11/23/2007	<u>SC_STATUS</u>	Submitted

NOT\_RESPONSIBLE\_REASON

MEMBER\_COMMENTS

<p>Explanation of noncompliance:          Not all Omaha District Corps of Engineer facilities are current with their protective system testing schedules and there are cases where documentation is inadequate or incomplete.</p>
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MEMBER\_CONTACT

<p>Gary A. Hinkle, P.E.          U.S. Army Corps of Engineers          106 S. 15th St.          Omaha, NE 68102</p>
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\*\*\*\*\* End of Report \*\*\*\*\*

**Omaha District Corps of Engineers**  
**NERC SELF CERTIFICATION**  
**Request for Additional Information**  
**20 December 2007**

FAC-009-1 R1 Establish and Communicate Facility Ratings:  
NON COMPLIANT LEVEL 3 Facility ratings provided were not developed consistent with the facility rating methodology

Explanation of noncompliance:

Ratings for all qualifying Omaha District facilities are not documented in the format consistent with the Facility Ratings Methodology (FAC-008-1).

Reliability impact:

There is minimal impact on the interconnection as a result of this noncompliance. The Corps has worked with Western Area Power Administration for many years to ensure an understanding of the ratings of our facilities.

Mitigating Factors:

Each Omaha District Corps of Engineer's facility receives an annual Uniform Rating of Generating Equipment (URGE) test in accordance with the accreditation requirements of MAPP. This was last supplied in September 2007. The Omaha District Corps of Engineers operates six hydroelectric power plants on the Missouri River. At this time, four of the six facility rating documents are prepared for review.

Information on the facilities that have not had been rated in a format consistent with the Facility Ratings Methodology.

FORT PECK:

The Fort Peck Power plant is located in eastern Montana near the town of Glasgow. Fort Peck has five hydroelectric generating units with the following ratings:

Units 1: 43.5 MW

Units 2: 18.25 MW (Under a long term outage for generator rewind)

Units 3: 43.5 MW

Units 4: 40 MW

Units 5: 40 MW

These ratings have been in place for many years and are not overstated. We have many past examples where (given adequate lake levels) the units have of sustained operation at 15% above these ratings. Persistent drought conditions have resulted in lake levels more than 30 feet below normal and as such the latest URGE rating for these facilities is well below the nameplate rating. Lake levels are not expected to improve markedly for several years.

GARRISON:

The Garrison Power plant is located in central North Dakota near the town of Riverdale. It has five hydroelectric generating units that have recently had the turbine and generator replaced. The generator step-up transformers are scheduled for replacement over the next five years; however, until the transformers are replaced the original unit ratings will be used for the facility rating. The original units have the following ratings:

Units 1: 109 MW

Units 2: 109 MW

Units 3: 109 MW

Units 4: 95 MW

Units 5: 95 MW

These ratings have been in place for many years and are not overstated. We have many past examples where (given adequate lake levels) the units have of sustained operation above these ratings. Persistent drought conditions have resulted in lake levels more than 30 feet below normal and as such the latest URGE rating for these facilities is well below the nameplate rating. Lake levels are not expected to improve markedly for several years.

The rehabbed turbine generators have ratings of Units 1-3 at 121.6 MW; Units 4-5 at 109.25 MW. These ratings have not been demonstrated at nameplate under actual conditions due to low lake levels and limitation of the Generator step-up transformers.

Plan to become compliant.

The Omaha District has a completed Facility Ratings Methodology as prepared by the Corps' Hydro Design Center. In fiscal year 2007, the Omaha District funded engineering efforts to complete facility ratings on four of our hydroelectric generating stations. These facility rating documents are currently undergoing internal review process and are scheduled for completion by 1 January 2008. These documents will then be provided to Western Area Power Administration (RC, PA, TP, TOP) for review. A budget request for \$12,000 has been identified in fiscal year 2008 (1 October 2007 - 30 September 2008 )for completion of the remaining two generating stations. The Omaha District Corps of Engineers is a federal agency under the Department of the Army. Our agency receives annual appropriations as approved by Congress. To date we have not received an appropriation and are operating under a "Continuing Resolution Authority" that mandates agencies spend at a minimum level (salary and critical need purchases only). It is expected that appropriation bills will be passed in January although this does not guarantee that the funding levels will be adequate to fund the engineering work identified as part of the facility ratings. Regardless, completing the facility ratings for Fort Peck and Garrison are a priority and are scheduled for completion by 13 June 2008.



PRC-005-1 Transmission and Generation Protection System Maintenance and Testing

R1. NON COMPLIANT LEVEL 3: Documentation of the maintenance and testing program provided was incomplete, and records indicate implementation of the documented portions of the maintenance and testing program did not occur within the identified intervals. Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall have a Protection System maintenance and testing program for Protection Systems that affect the reliability of the BES. The program shall include:

- 1.1. Maintenance and testing intervals and their basis.
- 1.2. Summary of maintenance and testing procedures.

Explanation of noncompliance:

The Omaha District Corps of Engineers has a program for testing of protection systems identified in the Northwestern Division Regulation 1130-2-7 dated 30 April 2001 (See Attached 1130-2-7.pdf). More specific test and maintenance requirements are identified in the Omaha District Operation & Maintenance Management Manual last updated in 2006 (See Attached Chapter\_07.doc). These maintenance programs were not created or revised in response to the NERC compliance program. While I believe the testing intervals in the programs are very conservative and are likely based on manufacturers' recommendations, the basis for the test intervals is not adequately identified in either standard. Furthermore these standards do not adequately address all the components of protection systems, specifically instrument transformers and communications systems. The summary of maintenance and testing procedures has not been adequately reviewed for completeness ensuring we are auditably compliant with the NERC program. The programs also do not differentiate between ancillary protection systems and those that affect the BES.

Reliability impact:

Impact to the system is minimal. The Omaha District Corps of Engineers tests and maintains protection systems according to maintenance & testing program. Efforts are underway locally and at a Division level to improve the existing regulations by including the requirements of the NERC compliance program.

Mitigating Factors:

The Omaha District Corps of Engineers has programs in place for maintenance and testing of protective systems. Testing and maintenance of protection systems is occurring at all projects. Areas where the testing and maintenance programs do not meet NERC Compliance standards are being identified and a District NERC implementation team is currently incorporating improvements.

Plan to become compliant.

The Omaha District Corps of Engineers will strengthen the policies and procedures used to test and document protective systems. A District NERC implementation team is implementing revised policies to include quarterly reports, document tracking, training, and internal review spot checks. I expect this to be complete by June 2008.

PRC-005-1 Transmission and Generation Protection System Maintenance and Testing

R2. NON COMPLIANT LEVEL 3: Documentation of the maintenance and testing program provided was incomplete, and records indicate implementation of the documented portions of the maintenance and testing program did not occur within the identified intervals.

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 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.

Explanation of noncompliance:

Our relay test program was not at an auditable point on October 24 and is not at a 100% auditable point today. We certified the following on the October 24<sup>th</sup> self certification: "Not all Omaha District Corps of Engineers facilities are current with their protective system testing schedules and there are cases where documentation is inadequate or incomplete." This was based on having an incomplete audit of the current test status of all relays and knowledge that there are some relays past due according to the pre-June 18<sup>th</sup> 2007 test schedules.

Since the October 24<sup>th</sup> self certification, the majority of the relay test dates have been gathered although we still have an incomplete audit. The summary of testing indicates that the majority of the relays have been tested according to the existing schedules requiring a two year test cycle for electromechanical relays and a five year cycle for microprocessor based relays.

It is my understanding that NERC requires registered entities to maintain protective system maintenance and testing according to the entities documented program and that compliance with this program is required from a start date of June 18<sup>th</sup>, 2007. With that as the standard, our power plants have developed and maintained test schedules using the same test intervals but with a start date of June 18, 2007. Our relay test program is on track to meet that schedule.

Reliability impact:

Impact to the system is minimal. The maintenance and testing of protection systems is occurring and up to date at many of the facilities. Efforts are being made to get all relay testing current with prescribed maintenance schedules.

Mitigating Factors:

The Omaha District Corps of Engineers has programs in place for maintenance and testing of protective systems. Testing and maintenance of protection system is occurring at all projects and is up to date or near up to date at most facilities. Facilities whose testing and maintenance programs for protection systems failed to meet standards have been identified and a District NERC implementation team is

implementing improvements. Internal review of protective system maintenance and testing is a component.

Plan to become compliant.

The Omaha District Corps of Engineers will strengthen the policies and procedures used to test and document protective systems. A District NERC implementation team has been identified to implement new or revised policies to include quarterly reports, document tracking, training, and internal review spot checks. A review of the status of all protective relay test results is a component.

*Gary A. Hinkle, P.E.*

U.S. Army Corps of Engineers

106 S. 15th St.

Omaha, NE 68102

(402) 221-4684, fax (402) 221-4230

E-mail: [gary.a.hinkle@usace.army.mil](mailto:gary.a.hinkle@usace.army.mil)

**Attachment b**

**Mitigation Plan Submittal Form (MRO200700014  
and MRO200700015) dated February 5, 2008**



## Mitigation Plan Submittal Form

Date this Mitigation Plan is being submitted: 5 February 2008

If the mitigation described in this plan has already been completed:

- Check this box  and
- Provide the Date of Completion of the Mitigation Plan:

### Section A: Compliance Notices

- Section 6.2 of the NERC CMEP<sup>1</sup> sets forth the information that must be included in a Mitigation Plan. The Mitigation Plan must include:
  - (1) The Registered Entity's point of contact for the Mitigation Plan, who shall be a person (i) responsible for filing the Mitigation Plan, (ii) technically knowledgeable regarding the Mitigation Plan, and (iii) authorized and competent to respond to questions regarding the status of the Mitigation Plan. This person may be the Registered Entity's point of contact described in Section 2.0.
  - (2) The Alleged or Confirmed Violation(s) of Reliability Standard(s) the Mitigation Plan will correct.
  - (3) The cause of the Alleged or Confirmed Violation(s).
  - (4) The Registered Entity's action plan to correct the Alleged or Confirmed Violation(s).
  - (5) The Registered Entity's action plan to prevent recurrence of the Alleged or Confirmed violation(s).
  - (6) The anticipated impact of the Mitigation Plan on the bulk power system reliability and an action plan to mitigate any increased risk to the reliability of the bulk power-system while the Mitigation Plan is being implemented.
  - (7) A timetable for completion of the Mitigation Plan including the completion date by which the Mitigation Plan will be fully implemented and the Alleged or Confirmed Violation(s) corrected.
  - (8) Implementation milestones no more than three (3) months apart for Mitigation Plans with expected completion dates more than three (3) months from the date of submission. Additional violations could be determined for not completing work associated with accepted milestones.
  - (9) Any other information deemed necessary or appropriate.
  - (10) The Mitigation Plan shall be signed by an officer, employee, attorney or other authorized representative of the Registered Entity, which if applicable, shall be the person that signed the Self-Certification or Self Reporting submittals.
- This submittal form may be used to provide a required Mitigation Plan for review and approval by MRO and NERC.

<sup>1</sup> "Uniform Compliance Monitoring and Enforcement Program of the North American Electric Reliability Corporation;" a copy of the current version approved by the Federal Energy Regulatory Commission is posted on NERC's website.



- The Mitigation Plan shall be submitted to the regional entity(ies) and NERC as confidential information in accordance with Section 1500 of the NERC Rules of Procedure.
- This Mitigation Plan form may be used to address one or more related violations of one Reliability Standard. A separate mitigation plan is required to address violations with respect to each additional Reliability Standard, as applicable.
- If the Mitigation Plan is approved by MRO and NERC, a copy of this Mitigation Plan will be provided to the Federal Energy Regulatory Commission in accordance with applicable Commission rules, regulations and orders.
- MRO or NERC may reject Mitigation Plans that they determine to be incomplete or inadequate.
- Remedial action directives also may be issued as necessary to ensure reliability of the bulk power system.

## **Section B: Registered Entity Information**

B.1 Identify your organization:

Company Name: U.S. Army Corps of Engineers, Omaha District

Company Address: 106 S. 15th Street<sup>2</sup>

NERC Compliance Registry ID: NCR00978

B.2 Identify the individual in your organization who will serve as the Contact to MRO regarding this Mitigation Plan. This person shall be technically knowledgeable regarding this Mitigation Plan and authorized to respond to MRO regarding this Mitigation Plan.

Name: Gary A. Hinkle

Title: Reliability Compliance Project Manager

Email: gary.a.hinkle@usace.army.mil

Phone: (402) 221-4684

## **Section C: Identity of Reliability Standard Violations Associated with this Mitigation Plan**

This Mitigation Plan is associated with the following violation(s) of the reliability standard listed below:

C.1 Standard: FAC-009-1; R1 & R2

<sup>2</sup> Address Valid until April 2008 (possibly later). New Address will be 1616 Capitol Ave, Ste 9000



C.2 Requirement(s) violated and violation dates:  
*[Enter information in the following Table]*

NERC Violation ID # [if known]	MRO Violation ID # [if known ]	Requirement Violated (e.g. R3.2)	Violation Date <sup>(*)</sup>
MRO200700014		R1	24 Oct 2007
MRO200700015		R2	24 Oct 2007

(\*) Note: The Violation Date shall be: (i) the violation occurred; (ii) the date that the violation was self-reported; or (iii) the date that the violation has been deemed to have occurred on by MRO. Questions regarding the date to use should be directed to the MRO.

C.3 Identify the cause of the violation(s) identified above:

Facility Ratings Reports consistent with FAC-008-1 methodology are in draft form for four Missouri River Main Stem power plants. Work has recently been initiated on reports for the remaining two power plants.

The Omaha District's Engineering Division prepared draft Facility Ratings Reports in 2007 for the Gavins Point, Fort Randall, Big Bend, and Oahe power plants. Comments have been made on the Big Bend Report, but have not been incorporated as of the date of this Mitigation Plan. The other three reports are awaiting review by project staff.

C.4 *[Optional]* Provide any relevant additional information regarding the violations associated with this Mitigation Plan:

None

## **Section D: Details of Proposed Mitigation Plan**

### **Mitigation Plan Contents**

D.1 Identify and describe the action plan, including specific tasks and actions that your organization is proposing to undertake, or which it undertook if this Mitigation Plan has been completed, to correct the violations identified above in Part C.2 of this form:

Violation of FAC-009-1 will be rectified when Corps of Engineers' personnel prepare Facility Ratings Reports for Garrison and Fort Peck and all pertinent comments on the draft reports are incorporated into final reports. They will then be provided to the Western Area Power Administration (RC, PA, TP, TOP) for review.



Check this box  and proceed to Section E of this form if the mitigation as described in this plan, as set forth in Part D.1, has already been completed; otherwise respond to Part D.2, D.3 and, optionally, Part D.4, below.

**Mitigation Plan Timeline and Milestones**

D.2 Provide the timetable for completion of the Mitigation Plan, including the completion date by which the Mitigation Plan will be fully implemented and the violations associated with this Mitigation Plan are corrected:

See table in D.3 for milestones and dates. The Corps will be fully compliant with FAC-009-1 by 30 June 2008.

D.3 Enter Milestone Activities, with completion dates, that your organization is proposing for this Mitigation Plan:

Milestone Activity	Proposed Completion Date* (shall not be more than 3 months apart)
Submit four facility reports (Oahe, Big Bend, Fort Randall, and Gavins Point) to Western Area Power Administration	29 Feb 2008
Submit four facility reports (Oahe, Big Bend, Fort Randall, and Gavins Point) to MRO	28 Mar 2008
Submit final two reports (Fort Peck and Garrison) to Western	6 Jun 2008
Submit final two reports (Fort Peck and Garrison) to MRO	30 Jun 2008

(\*) Note: Implementation milestones no more than three (3) months apart for Mitigation Plans with expected completion dates more than three (3) months from the date of submission. Additional violations could be determined for not completing work associated with accepted milestones.

[Note: Provide your response here; additional detailed information may be provided as an attachment as necessary]

**Additional Relevant Information (Optional)**

D.4 If you have any relevant additional information that you wish to include regarding the mitigation plan, milestones, milestones dates and completion date proposed above you may include it here:

None





## Section E: Interim and Future Reliability Risk

Check this box  and proceed and respond to Part E.2 and E.3, below, if the mitigation as described in this plan, as set forth in Part D.1, has already been completed.

### Abatement of Interim BPS Reliability Risk

- E.1 While your organization is implementing the Mitigation Plan proposed in Part D of this form, the reliability of the Bulk Power System may remain at higher risk or be otherwise negatively impacted until the plan is successfully completed. To the extent they are, or may be, known or anticipated: (i) identify any such risks or impacts; and (ii) discuss any actions that your organization is planning to take or is proposing as part of the Mitigation Plan to mitigate any increased risk to the reliability of the bulk power system while the Mitigation Plan is being implemented:

There is minimal impact on the interconnection as a result of noncompliance. The Corps has worked with the Western Area Power Administration for many years to ensure an understanding of facility ratings. The design and construction of the facilities, in particular the connection to the power grid, was fully coordinated with the Western Area Power Administration (the RC, PA, TP, and TOP for the facilities).

### Prevention of Future BPS Reliability Risk

- E.2 Describe how successful completion of the Mitigation Plan as laid out in Part D of this form will prevent or minimize the probability that your organization incurs further violations of the same or similar reliability standards requirements in the future:

Completion of the items discussed in Section D will make the Corps of Engineers, Omaha District fully compliant with the requirements of FAC-009-1. Annual Uniform Rating of Generating Equipment (URGE) tests will continue in accordance with the accreditation requirements of MAPP.

- E.3 Your organization may be taking or planning other action, beyond that listed in the Mitigation Plan, as proposed in Part D.1, to prevent or minimize the probability of incurring further violations of the same or similar standards requirements listed in Part C.2, or of other reliability standards. If so, identify and describe any such action, including milestones and completion dates:

None



## Section E: Authorization

An authorized individual must sign and date this Mitigation Plan Submittal Form. By doing so, this individual, on behalf of your organization:

- a) Submits the Mitigation Plan, as laid out in Section D of this form, to [mco@midwestreliability.org](mailto:mco@midwestreliability.org) for acceptance by MRO and approval by NERC, and
- b) If applicable, certifies that the Mitigation Plan, as laid out in Section D of this form, was completed (i) as laid out in Section D of this form and (ii) on or before the date provided as the 'Date of Completion of the Mitigation Plan' on this form, and
- c) Acknowledges:
  1. I am Commander of the U.S. Army Corps of Engineers, Omaha District.
  2. I am qualified to sign this Mitigation Plan on behalf of the Corps of Engineers.
  3. I have read and understand the Corps of Engineer's obligations to comply with Mitigation Plan requirements and ERO remedial action directives as well as ERO documents, including, but not limited to, the NERC Rules of Procedure, including Appendix 4(C) (Compliance Monitoring and Enforcement Program of the North American Electric Reliability Corporation" (NERC CMEP)).
  4. I have read and am familiar with the contents of the foregoing Mitigation Plan.
  5. The Corps of Engineers agrees to be bound by, and comply with, the Mitigation Plan, including the timetable completion date, as approved by MRO and approved by NERC.

Authorized Individual Signature

Name (Print): COLONEL David C. Press

Title: Commander, U.S. Army Corps of Engineers, Omaha District

Date: 5 February 2008

*This signature page must be submitted to the MRO.  
It can be scanned and sent electronically to [mco@midwestreliability.org](mailto:mco@midwestreliability.org),  
or printed and faxed to: MRO Compliance Office at 651.855.1712.*



**Section F: Comments and Additional Information**

This information is being provided on a voluntary basis and this submission does not constitute entity registration by the United States Army Corps of Engineers.

Please direct any questions regarding completion of this form to:

Riaz Islam  
Midwest Reliability Organization  
Tel: 651-855-1734  
e-mail: r.islam@midwestreliability.org

## **Attachment c**

# **Mitigation Plan Submittal Form (MRO200700017) and Certification of Completion, including Omaha District Standard Operating Procedure PRC-005-1, dated February 5, 2008**



## Mitigation Plan Submittal Form

Date this Mitigation Plan is being submitted: 5 February 2008

If the mitigation described in this plan has already been completed:

- Check this box  and
- Provide the Date of Completion of the Mitigation Plan: 05 February 2008

### Section A: Compliance Notices

- Section 6.2 of the NERC CMEP<sup>1</sup> sets forth the information that must be included in a Mitigation Plan. The Mitigation Plan must include:
  - (1) The Registered Entity's point of contact for the Mitigation Plan, who shall be a person (i) responsible for filing the Mitigation Plan, (ii) technically knowledgeable regarding the Mitigation Plan, and (iii) authorized and competent to respond to questions regarding the status of the Mitigation Plan. This person may be the Registered Entity's point of contact described in Section 2.0.
  - (2) The Alleged or Confirmed Violation(s) of Reliability Standard(s) the Mitigation Plan will correct.
  - (3) The cause of the Alleged or Confirmed Violation(s).
  - (4) The Registered Entity's action plan to correct the Alleged or Confirmed Violation(s).
  - (5) The Registered Entity's action plan to prevent recurrence of the Alleged or Confirmed violation(s).
  - (6) The anticipated impact of the Mitigation Plan on the bulk power system reliability and an action plan to mitigate any increased risk to the reliability of the bulk power-system while the Mitigation Plan is being implemented.
  - (7) A timetable for completion of the Mitigation Plan including the completion date by which the Mitigation Plan will be fully implemented and the Alleged or Confirmed Violation(s) corrected.
  - (8) Implementation milestones no more than three (3) months apart for Mitigation Plans with expected completion dates more than three (3) months from the date of submission. Additional violations could be determined for not completing work associated with accepted milestones.
  - (9) Any other information deemed necessary or appropriate.
  - (10) The Mitigation Plan shall be signed by an officer, employee, attorney or other authorized representative of the Registered Entity, which if applicable, shall be the person that signed the Self-Certification or Self Reporting submittals.
- This submittal form may be used to provide a required Mitigation Plan for review and approval by MRO and NERC.

<sup>1</sup> "Uniform Compliance Monitoring and Enforcement Program of the North American Electric Reliability Corporation;" a copy of the current version approved by the Federal Energy Regulatory Commission is posted on NERC's website.



- The Mitigation Plan shall be submitted to the regional entity(ies) and NERC as confidential information in accordance with Section 1500 of the NERC Rules of Procedure.
- This Mitigation Plan form may be used to address one or more related violations of one Reliability Standard. A separate mitigation plan is required to address violations with respect to each additional Reliability Standard, as applicable.
- If the Mitigation Plan is approved by MRO and NERC, a copy of this Mitigation Plan will be provided to the Federal Energy Regulatory Commission in accordance with applicable Commission rules, regulations and orders.
- MRO or NERC may reject Mitigation Plans that they determine to be incomplete or inadequate.
- Remedial action directives also may be issued as necessary to ensure reliability of the bulk power system.

## **Section B: Registered Entity Information**

B.1 Identify your organization:

Company Name: U.S. Army Corps of Engineers, Omaha District

Company Address: 106 S. 15<sup>th</sup> Street<sup>2</sup>  
Omaha NE 68102

NERC Compliance Registry ID: NCR00978

B.2 Identify the individual in your organization who will serve as the Contact to MRO regarding this Mitigation Plan. This person shall be technically knowledgeable regarding this Mitigation Plan and authorized to respond to MRO regarding this Mitigation Plan.

Name: Gary A. Hinkle

Title: Reliability Compliance Project Manager

Email: gary.a.hinkle@usace.army.mil

Phone: (402) 221-4684

## **Section C: Identity of Reliability Standard Violations Associated with this Mitigation Plan**

This Mitigation Plan is associated with the following violation(s) of the reliability standard listed below:

C.1 Standard: PRC-005-1; R1

<sup>2</sup> Address valid until April 2008 (possibly later); New address will be 1616 Capitol Ave, Ste 9000



C.2 Requirement(s) violated and violation dates:

NERC Violation ID # [if known]	MRO Violation ID # [if known ]	Requirement Violated (e.g. R3.2)	Violation Date <sup>(*)</sup>
MRO200700017		R1	24 Oct 2007

(\*) Note: The Violation Date shall be: (i) the violation occurred; (ii) the date that the violation was self-reported; or (iii) the date that the violation has been deemed to have occurred on by MRO. Questions regarding the date to use should be directed to the MRO.

C.3 Identify the cause of the violation(s) identified above:

**PRC-005-1; R1.** The U.S. Army Corps of Engineers, Omaha District has a program for testing and maintenance of protection systems; however, the program does not cover all systems identified in NERC criteria, the basis for the program is not adequately identified, and complete documentation of the testing procedures are not available.

C.4 Provide any relevant additional information regarding the violations associated with this Mitigation Plan:

The U.S. Army Corps of Engineers, Omaha District uploaded our revised protective system maintenance program to the MRO-CDMS on 05 February 2008.

**Section D: Details of Proposed Mitigation Plan**

**Mitigation Plan Contents**

D.1 Identify and describe the action plan, including specific tasks and actions that your organization is proposing to undertake, or which it undertook if this Mitigation Plan has been completed, to correct the violations identified above in Part C.2 of this form:

**PRC-005; R1.** The U.S. Army Corps of Engineers, Omaha District has established a revised protective system maintenance & testing program according to NERC requirements. We believe this program addresses all the requirements listed in the Reliability Standard Audit Worksheet (RSAW) for PRC-005; R1. This policy is dated 5 February 2008 and has been uploaded to the Midwest Electric Reliability Organization's (MRO) Compliance Data Management System (CDMS). This is an interim program for use by the Omaha District Corps of Engineers to remain in effect until superseded by a Division wide program currently under development.



NERC  
NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

*Check this box  and proceed to Section E of this form if the mitigation as described in this plan, as set forth in Part D.1, has already been completed; otherwise respond to Part D.2, D.3 and, optionally, Part D.4, below.*





## Interim and Future Reliability Risk

Check this box  and proceed and respond to Part E.2 and E.3, below, if the mitigation as described in this plan, as set forth in Part D.1, has already been completed.

### Prevention of Future BPS Reliability Risk

- E.1 Describe how successful completion of the Mitigation Plan as laid out in Part D of this form will prevent or minimize the probability that your organization incurs further violations of the same or similar reliability standards requirements in the future:

The U.S. Army Corps of Engineers, Omaha District has established a revised protective system maintenance & testing program according to NERC requirements. We believe this program addresses all the requirements listed in the Reliability Standard Audit Worksheet (RSAW) for PRC-005; R1.

- E.2 Your organization may be taking or planning other action, beyond that listed in the Mitigation Plan, as proposed in Part D.1, to prevent or minimize the probability of incurring further violations of the same or similar standards requirements listed in Part C.2, or of other reliability standards. If so, identify and describe any such action, including milestones and completion dates:

The US Army Corps of Engineers; Northwestern Division is in the process of revising the hydropower test and evaluation program; Appendix A to Northwest Division Regulation NWDR 1130-2-7. This regulation will comply with NERC PRC-005 requirements for the maintenance and testing of protective systems.



**Section E: Authorization**

An authorized individual must sign and date this Mitigation Plan Submittal Form. By doing so, this individual, on behalf of your organization:

- a) Submits the Mitigation Plan, as laid out in Section D of this form, to [mco@midwestreliability.org](mailto:mco@midwestreliability.org) for acceptance by MRO and approval by NERC, and
- b) If applicable, certifies that the Mitigation Plan, as laid out in Section D of this form, was completed (i) as laid out in Section D of this form and (ii) on or before the date provided as the 'Date of Completion of the Mitigation Plan' on this form, and
- c) Acknowledges:
  - 1. I am Commander of the U.S. Army Corps of Engineers, Omaha District.
  - 2. I am qualified to sign this Mitigation Plan on behalf of the Corps of Engineers.
  - 3. I have read and understand the Corps of Engineer's obligations to comply with Mitigation Plan requirements and ERO remedial action directives as well as ERO documents, including, but not limited to, the NERC Rules of Procedure, including Appendix 4(C) (Compliance Monitoring and Enforcement Program of the North American Electric Reliability Corporation" (NERC CMEP)).
  - 4. I have read and am familiar with the contents of the foregoing Mitigation Plan.
  - 5. The Corps of Engineers agrees to be bound by, and comply with, the Mitigation Plan, including the timetable completion date, as approved by MRO and approved by NERC.

**Authorized Individual Signature**

Name (Print): COLONEL David C. Press  
Title: Commander, U.S. Army Corps of Engineers, Omaha District  
Date: 5 February 2008

*This signature page must be submitted to the MRO.  
It can be scanned and sent electronically to [mco@midwestreliability.org](mailto:mco@midwestreliability.org),  
or printed and faxed to: MRO Compliance Office at 651-855-1712.*



## **Section F: Comments and Additional Information**

This information is being provided on a voluntary basis and this submission does not constitute entity registration by the United States Army Corps of Engineers.

Please direct any questions regarding completion of this form to:

Riaz Islam  
Midwest Reliability Organization  
Tel: 651-855-1734  
e-mail: [r.islam@midwestreliability.org](mailto:r.islam@midwestreliability.org)

# Omaha District - Standard Operating Procedure

## Missouri River Main Stem Projects

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### OMAHA DISTRICT-PRC-005-1 Transmission and Generation Protection System Maintenance and Testing

#### Overview

The purpose of this requirement is to ensure all transmission and generation Protection Systems affecting the reliability of the Bulk Electric System (BES) are maintained and tested.

Protective relays have been described as silent sentinels, and do not generally demonstrate their performance until a fault or other power system problem requires that they operate to protect power system elements, or even the entire Bulk Electric System. Lacking faults or system problems, the protection systems may not operate for extended periods. A misoperation - a false operation of a protection system or a failure of the protection system to operate when needed - can result in equipment damage, personnel hazards, and wide area disturbances or unnecessary customer outages. A maintenance or testing program is used to determine the performance and availability of protection systems.

Each generating facility of the Omaha District has an in-house maintenance crew that is responsible for the maintenance and testing of all protective systems of that facility. The basis for testing of the protection systems is a time based maintenance (TBM) program outlined by NWDR 1130-2-7 and the Omaha District Operations and Maintenance Management Manual. However, NERC requirements mandate testing and maintenance of protective systems currently not covered by either of these publications. Therefore this SOP will give guidance to the Project offices on what is required to meet the new NERC testing and maintenance requirements until NWDR 1130-2-7 and the Omaha District Operations and Maintenance Management Manual can be updated.

#### Requirements

**R1.** Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall have a Protection System maintenance and testing program for Protection Systems that affect the reliability of the BES. The program shall include:

**R1.1.** Maintenance and testing intervals and their basis.

**R1.2.** Summary of maintenance and testing procedures.

**R2.** 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

# Omaha District - Standard Operating Procedure

## Missouri River Main Stem Projects

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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.

### Measures

**M1.** Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System that affects the reliability of the BES, shall have an associated Protection System maintenance and testing program as defined in Requirement 1.

**M2.** Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System that affects the reliability of the BES, shall have evidence it provided documentation of its associated Protection System maintenance and testing program and the implementation of its program as defined in Requirement 2.

### Compliance

#### **1. Compliance Monitoring Process**

##### **1.1. Compliance Monitoring Responsibility**

Regional Reliability Organization.

##### **1.2. Compliance Monitoring Period and Reset Time Frame**

One calendar year.

##### **1.3. Data Retention**

The Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System, shall retain evidence of the implementation of its Protection System maintenance and testing program for three years. The Compliance Monitor shall retain any audit data for three years.

##### **1.4. Additional Compliance Information**

The Transmission Owner and any Distribution Provider that owns a transmission Protection System and the Generator Owner that owns a

## Omaha District - Standard Operating Procedure Missouri River Main Stem Projects

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generation Protection System, shall each demonstrate compliance through self-certification or audit (periodic, as part of targeted monitoring or initiated by complaint or event), as determined by the Compliance Monitor.

### 2. Levels of Non-Compliance

**2.1. Level 1:** Documentation of the maintenance and testing program provided was incomplete as required in R1, but records indicate maintenance and testing did occur within the identified intervals for the portions of the program that were documented.

**2.2. Level 2:** Documentation of the maintenance and testing program provided was complete as required in R1, but records indicate that maintenance and testing did not occur within the defined intervals.

**2.3. Level 3:** Documentation of the maintenance and testing program provided was incomplete, and records indicate implementation of the documented portions of the maintenance and testing program did not occur within the identified intervals.

**2.4. Level 4:** Documentation of the maintenance and testing program, or its implementation, was not provided.


### Guidance

Each Power Plant Operation and Maintenance Supervisor will be responsible for maintaining the documentation listed in Appendix A, and assuring that the maintenance and testing of the facility protection systems is performed as listed in Appendix B.

### Version History

Version	Change	By	Date
1.0	Original	RMG	1 Feb 2008

### Approval

Approved By	Signature	Date
OMAHA DISTRICT Reliability Compliance Program Manager		1 Feb 2008

Omaha District - Standard Operating Procedure  
Missouri River Main Stem Projects

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# Omaha District - Standard Operating Procedure Missouri River Main Stem Projects

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## Appendix A Documentation

1. Each Project shall maintain a spread sheet of all current generator and transmission line protective relays and equipment. The spread sheet shall indicate the last test date and the next scheduled test date for each relay or piece of equipment. For an example see Attachment 1. The Project shall keep this spreadsheet current and send it to the Omaha District NERC Reliability Compliance Project Manager. (CENWO-OD-TM)
2. Each Project will develop a summary sheet for each item of the protective system. This sheet will list the location or system, number, description of the protective device, test to be preformed, and the frequency of these tests. For an example see Attachment 2.
3. Each project will set up a maintenance schedule for completing the testing and maintenance required in Appendix B. Preventative maintenance work orders will be created in FEMS for the equipment, assuring that the frequency of the maintenance and testing is met. A priority I will be given to all of these work orders. Job plans will be detailed to assure all NERC requirements are being met.
4. Each Project will set up a file in the master file system labeled NERC PRC-005-1. In this file will be five subfolders. They will be labeled:

- Relay testing
- Voltage and Current Sensing Devices
- Functional Tests
- Station Batteries
- Summary Sheet

These folders with the exception of "Summary Sheet" will be used to file hard copies of the completed work orders. This will provide the documentation that the testing is being performed. In addition, a copy of the relay testing spread sheet referenced in paragraph 1, will be filed quarterly in the "Relay Testing" folder. The actual relay and functional test sheets can be filed in these folders or in another location at the discretion of each Project. The Omaha District Internal Review office will conduct audits to verify documentation of the Protective Relay Test Program.

The "Summary Sheet" folder will contain a current protective system summary sheet referenced in paragraph 2. It will also contain a copy of the protective system schedule referenced in paragraph 3.

5. All records are to be retained for a period of three years beyond the test frequency. For example the test frequency for electromechanical protective relays is every two years. Thus the retention of those records would be five years.



# Omaha District - Standard Operating Procedure Missouri River Main Stem Projects

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## Appendix B Maintenance and Testing

The testing and maintenance identified in this section is required by NERC. Completing the testing and maintenance within the specified test periods is mandatory. NERC maintenance and testing requirements identifies the following categories in a Protective System. Each one will be addressed separately. The categories are:

- Protective relays
- Current and voltage sensing devices
- Communication Systems
- Station Batteries / DC Control Circuitry

Table I is included to provide a quick reference of the testing and maintenance test period frequencies.

### Protective Relays

All electromechanical and solid state protective relays will be tested and calibrated on a two year cycle per NWDR 1130-2-7 and the Omaha District Operations and Maintenance Management Manual. Tests to be performed on each relay will be based upon the relay setting criteria, manufacturer's recommendations and guidance from Omaha District Operations Division Maintenance Engineering Section. Maintenance will be performed when a relay is found to be out of calibration and requiring repair. Relay testing and maintenance will be performed when ever there is a relay misoperation.

For micro-processor based relays, time based routine testing at regular intervals is not performed with the exception of the self diagnostic check. The condition of the relays is observed by reviewing all relay operations and self diagnostics of the relays.

Documentation of relay tests will be in accordance with Appendix A.

### Current and Voltage Sensing Devices

NERC requires that the voltage and current sensing devices for the protective systems be tested and maintained. This is not covered by either NWDR 1130-2-7 or the Omaha District Operations and Maintenance Management Manual. The Omaha District will use the comparison by redundant systems methodology for verifying the voltage and current sensing devices at its facilities. This method is approved by NERC Protection System Maintenance Technical Reference, Appendix D. Each Project will be responsible for identifying each current and voltage source for their protective system and preparing a

## Omaha District - Standard Operating Procedure Missouri River Main Stem Projects

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job plan for comparing current and voltages of redundant systems. The frequency of this testing will be every seven years.

The following procedure will be used for testing these devices.

**Current Transformers:** Current transformers are located in switchgear near circuit breakers or within the circuit breakers themselves. Because of overlapping relay protection, there are current transformers on both sides of the breakers. To test the current transformers, secondary current readings will be taken from the current transformers on each side of the breakers and compared to each other. Where the current transformer ratios are different, calculations will be made to check the accuracy of one transformer to the other.

Maintenance is only required when the current readings between the two current transformers are out of the accuracy range of the transformers. In this case, testing will be initiated to identify which current transformer is not reading correctly and therefore recommended for repair or replacement.

**Voltage Transformers:** Voltage transformers are located at the generating units and in the switchyards.

At the generators voltage comparisons can be done between the metering potential transformer and regulating potential transformer. Readings should be within the accuracy ratings on the transformers.

In the switchyards there is rarely a redundant voltage transformer to compare. Because the voltage transformers of the different transmission lines are located very close to each other with virtually no line loss, the voltage readings from one transmission line to the next should be the same. To meet the requirements of this standard, we will compare the secondary voltage readings between transmission lines to verify the switchyard voltage sensing devices. Voltage readings should be within the accuracy rating of the transformers.

Maintenance is only required when the voltage readings between the two potential transformers or devices are out of the accuracy range of the transformers. In this event, burden testing will be done to find out which potential device is not reading correctly and be recalibrated. Potential transformers that are out of their accuracy range will have to be repaired or replaced.

### Communication Systems

The analog communications channels used for high speed protective relaying are monitored on a continuous basis. The protective relays or external tone equipment are

## Omaha District - Standard Operating Procedure Missouri River Main Stem Projects

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equipped with alarm outputs for indication of channel troubles. These alarms provide instantaneous indications to the power plant operator of communications channel problems.

The digital communications channels used by mirrored-bit relaying schemes over fiber optics or digital microwave are monitored constantly by the relaying and communications termination equipment. Alarm outputs are identified for this equipment and provide instantaneous indications to the power plant operator of communications channel problems. Level alignment is no longer required by nature of the equipment.

### Station Batteries / DC Control Circuitry

Each Project will perform testing and maintenance on station batteries as directed by the Omaha District Operation and Maintenance Management Manual, section 7, paragraph 7-12.

Protective Systems Table 1

Protective System Section	Function	Test Period
Electromechanical and Solid State Protective Relays	Testing	Every two years.
	Maintenance	When found out of calibration or after a misoperation.
Microprocessor Based Protective Relays	Testing	Reviewing all relay operations and self diagnostics of the relays.
	Maintenance	When found out of calibration or after a misoperation.
Current and Voltage Sensing Devices	Testing	Every seven years.
	Maintenance	As needed.
Protective System Communication Systems	Testing	Not required.
	Maintenance	When there is a power plant alarm for this point.
Station Batteries	Testing and Maintenance	Monthly/Quarterly/Annually



## ATTACHMENT 2

Location or System	Number	Description	Tests	Frequency
Generator 2	59G	Generator Overvoltage Relay	Minimum Pickup	Biannual
Yankton Jct. Line	KD10	Directional Distance	3 Phase Reach	Biannual
			Phase to Phase Reach	Biannual
			3 Phase Maximum Torque	Biannual
			Phase to Phase Maximum Torque	Biannual
Fort Thompson Line		Protective Relays DC Circuits	Functional Test	Biannual

**Attachment d**

**Mitigation Plan Submittal Form  
(MRO200700018) dated February 5, 2008**



## Mitigation Plan Submittal Form

Date this Mitigation Plan is being submitted: 5 February 2008

If the mitigation described in this plan has already been completed:

- Check this box  and
- Provide the Date of Completion of the Mitigation Plan:

### Section A: Compliance Notices

- Section 6.2 of the NERC CMEP<sup>1</sup> sets forth the information that must be included in a Mitigation Plan. The Mitigation Plan must include:
  - (1) The Registered Entity's point of contact for the Mitigation Plan, who shall be a person (i) responsible for filing the Mitigation Plan, (ii) technically knowledgeable regarding the Mitigation Plan, and (iii) authorized and competent to respond to questions regarding the status of the Mitigation Plan. This person may be the Registered Entity's point of contact described in Section 2.0.
  - (2) The Alleged or Confirmed Violation(s) of Reliability Standard(s) the Mitigation Plan will correct.
  - (3) The cause of the Alleged or Confirmed Violation(s).
  - (4) The Registered Entity's action plan to correct the Alleged or Confirmed Violation(s).
  - (5) The Registered Entity's action plan to prevent recurrence of the Alleged or Confirmed violation(s).
  - (6) The anticipated impact of the Mitigation Plan on the bulk power system reliability and an action plan to mitigate any increased risk to the reliability of the bulk power-system while the Mitigation Plan is being implemented.
  - (7) A timetable for completion of the Mitigation Plan including the completion date by which the Mitigation Plan will be fully implemented and the Alleged or Confirmed Violation(s) corrected.
  - (8) Implementation milestones no more than three (3) months apart for Mitigation Plans with expected completion dates more than three (3) months from the date of submission. Additional violations could be determined for not completing work associated with accepted milestones.
  - (9) Any other information deemed necessary or appropriate.
  - (10) The Mitigation Plan shall be signed by an officer, employee, attorney or other authorized representative of the Registered Entity, which if applicable, shall be the person that signed the Self-Certification or Self Reporting submittals.
- This submittal form may be used to provide a required Mitigation Plan for review and approval by MRO and NERC.

<sup>1</sup> "Uniform Compliance Monitoring and Enforcement Program of the North American Electric Reliability Corporation;" a copy of the current version approved by the Federal Energy Regulatory Commission is posted on NERC's website.



- The Mitigation Plan shall be submitted to the regional entity(ies) and NERC as confidential information in accordance with Section 1500 of the NERC Rules of Procedure.
- This Mitigation Plan form may be used to address one or more related violations of one Reliability Standard. A separate mitigation plan is required to address violations with respect to each additional Reliability Standard, as applicable.
- If the Mitigation Plan is approved by MRO and NERC, a copy of this Mitigation Plan will be provided to the Federal Energy Regulatory Commission in accordance with applicable Commission rules, regulations and orders.
- MRO or NERC may reject Mitigation Plans that they determine to be incomplete or inadequate.
- Remedial action directives also may be issued as necessary to ensure reliability of the bulk power system.

### **Section B: Registered Entity Information**

B.1 Identify your organization:

Company Name: U.S. Army Corps of Engineers, Omaha District

Company Address: 106 S. 15<sup>th</sup> Street<sup>2</sup>

Omaha NE 68102

NERC Compliance Registry ID: NCR00978

B.2 Identify the individual in your organization who will serve as the Contact to MRO regarding this Mitigation Plan. This person shall be technically knowledgeable regarding this Mitigation Plan and authorized to respond to MRO regarding this Mitigation Plan.

Name: Gary A. Hinkle P.E.

Title: Reliability Compliance Project Manager

Email: gary.a.hinkle@usace.army.mil

Phone: (402) 221-4684

### **Section C: Identity of Reliability Standard Violations Associated with this Mitigation Plan**

This Mitigation Plan is associated with the following violation(s) of the reliability standard listed below:

C.1 Standard: PRC-005-1; R2

<sup>2</sup> Address valid until April 2008 (possibly later). New address will be 1616 Capitol Ave, Ste 9000





C.2 Requirement(s) violated and violation dates:

NERC Violation ID # [if known]	MRO Violation ID # [if known]	Requirement Violated (e.g. R3.2)	Violation Date <sup>(*)</sup>
MRO200700018		R2	24 Oct 2007

(\*) Note: The Violation Date shall be: (i) the violation occurred; (ii) the date that the violation was self-reported; or (iii) the date that the violation has been deemed to have occurred on by MRO. Questions regarding the date to use should be directed to the MRO.

C.3 Identify the cause of the violation(s) identified above:

**PRC-005; R2.** During our October 2007 self certification we certified "Not all Omaha District Corps of Engineers facilities are current with their protective system testing schedules and there are cases where documentation is inadequate or incomplete." Since the October 24<sup>th</sup> self certification, the Omaha District Corps of Engineers has documented the current status of the protection system testing and maintenance activities and determined that four facilities (Fort Peck, Garrison, Big Bend and Gavins Point) are currently in compliance with the standards. Two facilities are behind schedule. As of 31 January 2008 Oahe is 19% complete (36 of 181 relays tested) and Fort Randall is 19% complete (46 of 241 relays tested). To be on schedule these facilities should be at or above 33% complete as of 31 January 2008.

C.4 [Optional] Provide any relevant additional information regarding the violations associated with this Mitigation Plan:

None

**Section D: Details of Proposed Mitigation Plan**

**Mitigation Plan Contents**

D.1 Identify and describe the action plan, including specific tasks and actions that your organization is proposing to undertake, or which it undertook if this Mitigation Plan has been completed, to correct the violations identified above in Part C.2 of this form:

The Maintenance & Operations supervisors at all six generating stations are required to inventory all protective system maintenance and testing requirements for incorporation into a unified tracking system. This system will be documented with current status and uploaded to the MRO-CDMS prior to 1 May 2008.

The Maintenance & Operations supervisors at the Fort Randall and Oahe generating stations have identified schedules that will allow them to catch-up on their testing backlog and will be compliant by 30 June 2008. Verification that protective system



testing and maintenance is on schedule and documented will be posted to the protective system maintenance & testing system and uploaded to the MRO-CDMS prior to 30 June 2008. Compliance is based on reaching a 55% completion of all required testing and maintenance by 30 June 2008. This is based on two year test schedules for most equipment.

Check this box  and proceed to Section E of this form if the mitigation as described in this plan, as set forth in Part D.1, has already been completed; otherwise respond to Part D.2, D.3 and, optionally, Part D.4, below.

**Mitigation Plan Timeline and Milestones**

D.2 Provide the timetable for completion of the Mitigation Plan, including the completion date by which the Mitigation Plan will be fully implemented and the violations associated with this Mitigation Plan are corrected:

The Mitigation Plan shall be fully implemented and NERC violation resolved prior to 30 June 2008.

D.3 Enter Milestone Activities, with completion dates, that your organization is proposing for this Mitigation Plan:

Milestone Activity	Proposed Completion Date* (shall not be more than 3 months apart)
Verification that all test & maintenance requirements are established and scheduled in a standard system that can be tracked and verified per NERC requirements. This system will be documented with current status and uploaded to the MRO-CDMS.	1 May 2008
Verification that protective system testing and maintenance is on schedule and being documented. The protective system maintenance & testing system will be documented with current status and uploaded to the MRO-CDMS. At this point the mitigation plan will be fully implemented and the NERC violation resolved.	30 Jun 2008

(\* Note: Implementation milestones no more than three (3) months apart for Mitigation Plans with expected completion dates more than three (3) months from the date of submission. Additional violations could be determined for not completing work associated with accepted milestones.



**Additional Relevant Information (Optional)**

D.4 If you have any relevant additional information that you wish to include regarding the mitigation plan, milestones, milestones dates and completion date proposed above you may include it here:

None

**Section E: Interim and Future Reliability Risk**

Check this box  and proceed and respond to Part E.2 and E.3, below, if the mitigation as described in this plan, as set forth in Part D.1, has already been completed.

**Abatement of Interim BPS Reliability Risk**

E.1 While your organization is implementing the Mitigation Plan proposed in Part D of this form, the reliability of the Bulk Power System may remain at higher risk or be otherwise negatively impacted until the plan is successfully completed. To the extent they are, or may be, known or anticipated: (i) identify any such risks or impacts; and (ii) discuss any actions that your organization is planning to take or is proposing as part of the Mitigation Plan to mitigate any increased risk to the reliability of the bulk power system while the Mitigation Plan is being implemented:

Reliability Risks to the Bulk Power System: There is an increased risk of a misoperation or false operation of a protection system that can result in equipment damage, personnel hazards, and wide area system disturbances. This mitigation plan incorporates an aggressive schedule to ensure the generating stations quickly catch-up with their test program.

Actions to Mitigate Risks: I believe our two year relay test interval is very conservative and limits the exposure to misoperations. During the incorporation of this mitigation procedure, our facilities will immediately incorporate the corrective actions as appropriate from any relay misoperation report on all like systems.

**Prevention of Future BPS Reliability Risk**

E.2 Describe how successful completion of the Mitigation Plan as laid out in Part D of this form will prevent or minimize the probability that your organization incurs further violations of the same or similar reliability standards requirements in the future:



This implementation plan and the newly created standard operating procedures (SOPs) have created renewed emphasis on relay testing and protective system maintenance at all six of the Omaha District generating facilities. Completion of the items discussed in Section D will make the Corps of Engineers, Omaha District fully compliant with the requirements of PRC-005-1.

- E.3 Your organization may be taking or planning other action, beyond that listed in the Mitigation Plan, as proposed in Part D.1, to prevent or minimize the probability of incurring further violations of the same or similar standards requirements listed in Part C.2, or of other reliability standards. If so, identify and describe any such action, including milestones and completion dates:

Since the creation of the NERC standards the Omaha District has purchased new and much improved relay testing software. The ease of use for this software has already increased efficiency of relay testing within the District.

### **Section F: Authorization**

An authorized individual must sign and date this Mitigation Plan Submittal Form. By doing so, this individual, on behalf of your organization:

- a) Submits the Mitigation Plan, as laid out in Section D of this form, to [mco@midwestreliability.org](mailto:mco@midwestreliability.org) for acceptance by MRO and approval by NERC, and
- b) If applicable, certifies that the Mitigation Plan, as laid out in Section D of this form, was completed (i) as laid out in Section D of this form and (ii) on or before the date provided as the 'Date of Completion of the Mitigation Plan' on this form, and
- c) Acknowledges:
  1. I am Commander of the U.S. Army Corps of Engineers, Omaha District.
  2. I am qualified to sign this Mitigation Plan on behalf of the Corps of Engineers.
  3. I have read and understand the Corps of Engineer's obligations to comply with Mitigation Plan requirements and ERO remedial action directives as well as ERO documents, including, but not limited to, the NERC Rules of Procedure, including Appendix 4(C) (Compliance Monitoring and Enforcement Program of the North American Electric Reliability Corporation" (NERC CMEP)).
  4. I have read and am familiar with the contents of the foregoing Mitigation Plan.



5. The Corps of Engineers agrees to be bound by, and comply with, the Mitigation Plan, including the timetable completion date, as approved by MRO and approved by NERC;

Authorized Individual Signature

Name (Print): COLONEL David C. Press  
Title: Commander, U.S. Army Corps of Engineers, Omaha District  
Date: 5 February 2008

*This signature page must be submitted to the MRO.  
It can be scanned and sent electronically to [mco@midwestreliability.org](mailto:mco@midwestreliability.org),  
or printed and faxed to: MRO Compliance Office at 651.855.1712.*



## Section G: Comments and Additional Information

You may use this area to provide comments or any additional relevant information not previously addressed in this form.

This information is being provided on a voluntary basis and this submission does not constitute entity registration by the United States Army Corps of Engineers.

Please direct any questions regarding completion of this form to:

Riaz Islam  
Midwest Reliability Organization  
Tel: 651-855-1734  
e-mail: [r.islam@midwestreliability.org](mailto:r.islam@midwestreliability.org)

**Attachment e**

**Verification of Completion of Mitigation Plan  
from MRO, dated April 21, 2008  
(MRO200700017)**

**From:** Riaz Islam  
**Sent:** Monday, April 21, 2008 4:36 PM  
**To:** 'gary.a.hinkle@usace.army.mil'  
**Cc:** mco@midwestreliability.org  
**Subject:** Corps of Engineers - Post June 18 Violation

Hello Gary,

MRO compliance office has reviewed the verification data you provided earlier and validated the completion of the following Mitigation Plan.

- PRC-005-1 R1 (NERC Violation Id - MRO200700017)

We have closed this mitigation plan that you submitted in 2007. We will also notify NERC of the completion of this mitigation plan. Thanks again for participating in the NERC/MRO Compliance Program.

Let me know if you have any questions. Thanks

Riaz Islam  
Engineer  
Midwest Reliability Organization (MRO)  
Roseville, MN 55113-1127  
(651)-855-1734

Central Facsimile (651) 855-1712

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## **Attachment f**

# **Omaha District Mitigation Milestone Report, dated May 1, 2008**

## Hinkle, Gary A NWO

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**From:** Hinkle, Gary A NWO  
**Sent:** Thursday, May 01, 2008 4:10 PM  
**To:** 'Riaz Islam'  
**Subject:** Omaha District Mitigation Milestone MRO200700018

**Attachments:** Omaha District Mitigation Milestone Report MRO200700018.pdf



Omaha District  
Mitigation Mile...

Reference mitigation plan MRO200700018 submitted by the U.S. Army Corps of Engineers, Omaha District; NERC Compliance Registry ID: NCR00978.

Attached is the milestone reporting requirement for PRC-005-1, R2 mitigation plan. The attached adobe file serves as verification that protective system test & maintenance requirements are established and scheduled in a standard system that can be tracked and verified per NERC requirements.

The Corps of Engineers, Omaha District has taken an inventory of the protective system maintenance and testing requirements at each of its six generating stations. This information has been confirmed with current status and due dates for each component into a unified tracking system. The system has been updated with data taken from automated or manual test programs and entered and tracked on excel spreadsheets. This information has been uploaded to the 2008 MRO-CDMS.

If you have any questions or require additional information regarding this mitigation reporting requirements, please contact Gary Hinkle at (402) 995-2495.

Gary A. Hinkle, P.E.  
U.S. Army Corps of Engineers  
106 S. 15th St.  
Omaha, NE 68102  
(402) 221-4684, fax (402) 995-2495  
E-mail: gary.a.hinkle@usace.army.mil



	Yankton Junction		
Line Relays	Last Tested	Due	Days Past Due Date
121Z 12Z1	6/22/2004	12/31/2008	
167G CRC	6/10/2004	12/31/2008	
87L CPD	6/21/2004	12/31/2008	
127 CV	6/9/2004	12/31/2008	
121Z1 A-B GCX	8/3/2000	12/31/2008	
121Z2 B-C GCX	8/3/2000	12/31/2008	
121Z3 C-A GCX	8/3/2000	12/31/2008	
121X SAM	6/10/2004	12/31/2008	
179 SGR12	6/9/2004	12/31/2008	
125X CV	6/9/2004	12/31/2008	
125 CI	6/9/2004	12/31/2008	

	Spirit Mound		
Line Relays	Last Tested	Due	Days Past Due Date
121Z1 KD-10	6/27/2000	12/31/2008	
121 Z2 KD-10	6/27/2000	12/31/2008	
121Z3 KD-11	6/27/2000	12/31/2008	
179X SGR-12	4/9/2008	6/30/2010	
179Z TD-5	4/8/2008	6/30/2010	
150 KC-2	4/9/2008	6/30/2010	
25/27V CVE-1	4/4/2008	6/30/2010	
167G CRC	4/9/2008	6/30/2010	
121T TD4	4/8/2008	12/31/2008	

	Bloomfield		
Line Relays	Last Tested	Due	Days Past Due Date
121Z1 KD-10	10/10/1996	12/31/2008	
121 Z2 KD-10	10/10/1996	12/31/2008	
121CX KD-11	10/10/1996	12/31/2008	
121Z3 KD-11	10/10/1996	12/31/2008	
150FD KC-2	8/2/2007	9/30/2009	
167G IRD9	10/6/2004	12/31/2008	
185 KA-4	10/1/2004	12/31/2008	
167CG KRD-4	8/2/2007	9/30/2009	
121T TD-4	8/1/2007	9/30/2009	
179 SGR-12	7/31/2007	12/31/2008	

	Belden		
Line Relays	Last Tested	Due	Days Past Due Date
179TD	5/16/2006	12/31/2008	
179 SGR-12	5/11/2006	12/31/2008	
125-127	5/18/2006	12/31/2008	
167G IRD9	5/16/2006	12/31/2008	
121T TD-4	5/16/2006	12/31/2008	
121-Z3 KD41	7/29/2003	12/31/2008	
121-Z2 KD	7/29/2003	12/31/2008	
121-Z1 KD	7/29/2003	12/31/2008	

Generator 1 Instrument Transformers		Last Tested	Due	Days Past Due Date
Generator Neutral CT	Ground Back-up 64G	NONE	12/31/2008	
Generator Neutral CT A,B,C	Generator Differential 87G N	NONE	12/31/2008	
Generator Breaker CT A,B,C	Generator Differential 87G	NONE	12/31/2008	
Regulator PT A,B,C	Regulating Voltage	NONE	12/31/2008	
Metering & Synchronizing PT A,B,C	Metering Voltage	NONE	12/31/2008	
Relay & Metering CT A,B,C	Relay & Metering Current	NONE	12/31/2008	
Generator Breaker CT A,B,C	Transformer Differential	NONE	12/31/2008	
Transformer CT A,B,C	Transformer Differential	NONE	12/31/2008	
Station Service CT A,B,C	Transformer Differential	NONE	12/31/2008	
Transformer CT Ext. SS A,B,C	Transformer Differential	NONE	12/31/2008	
Station Service Relay & Met CT A,B,C	Transformer #1 Relay & Metering	NONE	12/31/2008	
Exterior Station Service CT A,B,C	Exterior Station Service Overcurrent	NONE	12/31/2008	
Running Bus & Metering PT	Bus and Metering	NONE	12/31/2008	
Exterior Station Service PT A,B,C	Transformer T4 North Bank	NONE	12/31/2008	
Exterior Station Service CT A,B,C	Transformer T4 North Bank	NONE	12/31/2008	
Exterior Station Service CT A,B,C	Transformer T5 South Bank	NONE	12/31/2008	
Exterior Station Service PT A,B,C	Transformer T5 South Bank	NONE	12/31/2008	
Buss CT A,B,C	Ground Fault Relay	NONE	12/31/2008	

Generator 2 Instrument Transformers		Last Tested	Due	Days Past Due Date
Generator Neutral CT	Ground Back-up 64G	NONE	12/31/2008	
Generator Neutral CT A,B,C	Generator Differential 87G N	NONE	12/31/2008	
Generator Breaker CT A,B,C	Generator Differential 87G	NONE	12/31/2008	
Regulator PT A,B,C	Regulating Voltage	NONE	12/31/2008	
Metering & Synchronizing PT A,B,C	Metering Voltage	NONE	12/31/2008	
Relay & Metering CT A,B,C	Relay & Metering Current	NONE	12/31/2008	
Generator Breaker CT A,B,C	Transformer Differential	NONE	12/31/2008	
Transformer CT A,B,C	Transformer Differential	NONE	12/31/2008	
Station Service CT A,B,C	Transformer Differential	NONE	12/31/2008	
Transformer CT Ext. SS A,B,C	Transformer Differential	NONE	12/31/2008	
Station Service Relay & Met CT A,B,C	Transformer #1 Relay & Metering	NONE	12/31/2008	
Exterior Station Service CT A,B,C	Exterior Station Service Overcurrent	NONE	12/31/2008	
Running Bus & Metering PT	Bus and Metering	NONE	12/31/2008	
Buss CT A,B,C	Ground Fault Relay	NONE	12/31/2008	

Generator 3 Instrument Transformers		Last Tested	Due	Days Past Due Date
Generator Neutral CT	Ground Back-up 64G	NONE	12/31/2008	
Generator Neutral CT A,B,C	Generator Differential 87G N	NONE	12/31/2008	
Generator Breaker CT A,B,C	Generator Differential 87G	NONE	12/31/2008	
Regulator PT A,B,C	Regulating Voltage	NONE	12/31/2008	
Metering & Synchronizing PT A,B,C	Metering Voltage	NONE	12/31/2008	
Relay & Metering CT A,B,C	Relay & Metering Current	NONE	12/31/2008	
Generator Breaker CT A,B,C	Transformer Differential	NONE	12/31/2008	
Transformer CT A,B,C	Transformer Differential	NONE	12/31/2008	

Buss CT A,B,C	Ground Fault Relay	NONE	12/31/2008	
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PCB 462 Instrument Transformers		Last Tested	Due	Days Past Due Date
CT Phase A,B,C	Relaying CT	NONE	12/31/2008	
CT Phase A,B,C	Metering CT	NONE	12/31/2008	
Buss CT A,B,C	Ground Fault Relay	NONE	12/31/2008	
CT Phase A,B,C	PCB 462 CT	NONE	12/31/2008	

PCB 562 Instrument Transformers		Last Tested	Due	Days Past Due Date
CT Phase A,B,C	Relaying CT	NONE	12/31/2008	
CT Phase A,B,C	Metering CT	NONE	12/31/2008	
Buss CT A,B,C	Ground Fault Relay	NONE	12/31/2008	
PT Phase A,B,C	Belden Line Potential Device	NONE	12/31/2008	

PCB 662 Instrument Transformers		Last Tested	Due	Days Past Due Date
CT Phase A,B,C	Relaying CT	NONE	12/31/2008	
CT Phase A,B,C	Metering CT	NONE	12/31/2008	
Buss CT A,B,C	Ground Fault Relay	NONE	12/31/2008	
PT Phase A,B,C	Yankton Junction Line Potential Device	NONE	12/31/2008	

PCB 762 Instrument Transformers		Last Tested	Due	Days Past Due Date
CT Phase A,B,C	Relaying CT	NONE	12/31/2008	
CT Phase A,B,C	Metering CT	NONE	12/31/2008	
Buss CT A,B,C	Ground Fault Relay	NONE	12/31/2008	
PT Phase A,B,C	Spirit Mound Line Potential Device	NONE	12/31/2008	

PCB 862 Instrument Transformers		Last Tested	Due	Days Past Due Date
CT Phase A,B,C	Relaying CT	NONE	12/31/2008	
CT Phase A,B,C	Metering CT	NONE	12/31/2008	
Buss CT A,B,C	Ground Fault Relay	NONE	12/31/2008	
PT Phase A,B,C	Bloomfield Line Potential Device	NONE	12/31/2008	

Bus Instrument Transformers		Last Tested	Due	Days Past Due Date
Main Bus CCVT, C Phase only	Main Bus Potential device	NONE	12/31/2008	
Transfer Bus CCVT, A Phase only	Transfer Bus Potential device	NONE	12/31/2008	



Fort Randall Protection System Mitigation Maintenance and Testing Compliance

5/1/2008

This document tracks the current state of the relay testing program at Fort Randall. All relays listed below at Fort Randall are currently electrical mechanical type which are required to be tested every two years during unit maintenance. Microprocessor based are tested every five years and will be highlighted in blue when installed.

Generator Relays	Unit 1			Unit 2			Unit 3			Unit 4		
	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date
COH (87GR)	3/20/2008	3/31/2008		2/6/2008	3/31/2008		9/30/2005	12/31/2008		11/30/2006	12/31/2008	
COV "A" Phase (51G)	3/20/2008	3/31/2008		2/12/2008	3/31/2008		9/30/2005	12/31/2008		11/30/2006	12/31/2008	
COV "B" Phase (51G)	3/20/2008	3/31/2008		2/12/2008	3/31/2008		9/30/2005	12/31/2008		11/30/2006	12/31/2008	
COV "C" Phase (51G)	3/24/2008	3/31/2008		2/12/2008	3/31/2008		9/30/2005	12/31/2008		11/30/2006	12/31/2008	
SA1 (87G)	3/12/2008	3/31/2008		2/5/2008	3/31/2008		9/30/2005	12/31/2008		11/30/2006	12/31/2008	
SV (51)	3/20/2008	3/31/2008		2/11/2008	3/31/2008		9/30/2005	12/31/2008		11/30/2006	12/31/2008	
SSV-T (59)	3/20/2008	3/31/2008		2/11/2008	3/31/2008		9/30/2005	12/31/2008		11/30/2006	12/31/2008	
STV	3/12/2008	3/31/2008		2/7/2008	3/31/2008		9/30/2005	12/31/2008		11/30/2006	12/31/2008	
ITE-40	3/13/2008	3/31/2008		2/7/2008	3/31/2008		9/30/2005	12/31/2008		11/30/2006	12/31/2008	
ITE-48Q	3/18/2008	3/31/2008		2/7/2008	3/31/2008		9/30/2005	12/31/2008		11/30/2006	12/31/2008	
HFA	3/12/2008	3/31/2008		2/5/2008	3/31/2008		9/30/2005	12/31/2008		11/30/2006	12/31/2008	
PJV	3/12/2008	3/31/2008		2/5/2008	3/31/2008		9/30/2005	12/31/2008		11/30/2006	12/31/2008	
NAM (62BF)	3/25/2008	3/31/2008	NA				9/30/2005	12/31/2008	NA			



PV6 Main Buss "A" Phase (87)	NA			4/16/2008	6/30/2008							
PV6 Main Buss "B" Phase (87)	NA			4/17/2008	6/30/2008							
PV6 Main Buss "C" Phase (87)	NA			4/17/2008	6/30/2008							
PV6 Aux. Buss "A" Phase (87)	NA			4/2/2008	6/30/2008							
PV6 Aux. Buss "B" Phase (87)	NA			4/3/2008	6/30/2008							
PV6 Aux. Buss "C" Phase (87)	NA			4/16/2008	6/30/2008							

LINE RELAYS	Gregory Line			Mount Vernon Line			O'Neill Line			Yankton Junction Line		
	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date
KD Zone 1 (21)	2/5/2008	6/30/2008		N/A			NA			NA		
KD Zone 2 (21)	2/5/2008	6/30/2008		N/A			NA			NA		
KD Zone 3 (21)	2/14/2008	6/30/2008		N/A			NA			NA		
KD10 Zone 1 (21)	NA			2/27/2008	6/30/2008		NA			9/1/2002	6/30/2008	
KD10 Zone 2 (21)	NA			2/27/2008	6/30/2008		NA			9/1/2002	6/30/2008	
KD11 Zone 3 (21)	NA			2/28/2008	6/30/2008		NA			9/1/2002	6/30/2008	
KD4 Zone 1 (21)	NA			N/A			8/1/2002	6/30/2008		NA		
KD4 Zone 2 (21)	NA			N/A			8/1/2002	6/30/2008		NA		
KD41 Zone 3 (21)	NA			N/A			8/1/2002	6/30/2008		NA		
KC2 (50)	NA			N/A			NA			10/1/2002	6/30/2008	
CRC (67G)	3/5/2008	6/30/2008		3/5/2008	6/30/2008		3/11/2008	6/30/2008		3/11/2008	6/30/2008	
TD-4 (21T)	4/24/2008	6/30/2008		4/24/2008	6/30/2008		4/24/2008	6/30/2008		4/24/2008	6/30/2008	
TD-5 (79Y)	NA			9/1/2002	6/30/2008		NA			10/1/2002	6/30/2008	
TR-3 (84)	9/1/2002	6/30/2008		NA			8/1/2002	6/30/2008		NA		
TR (194)	NA			9/1/2002	6/30/2008		NA			2/1/2003	6/30/2008	
CV-7 (27L)	9/1/2002	6/30/2008		NA			NA			NA		
CV-7A (27B)	9/1/2002	6/30/2008		NA			NA			NA		
CVE (25)	3/6/2008	6/30/2008		NA			NA			NA		
CVE-1 (25 & 27 LB)	NA			3/10/2008	6/30/2008		NA			3/26/2008	6/30/2008	
LJS (25 & 27 LB)	NA			NA			8/1/2002	6/30/2008		NA		
SGR12 (79)	9/1/2002	6/30/2008		9/1/2002	6/30/2008		8/1/2002	6/30/2008		2/1/2003	6/30/2008	
SX (194X)	9/1/2002	6/30/2008		9/1/2002	6/30/2008		8/1/2002	6/30/2008		2/1/2003	6/30/2008	
SG (194X)	NA			NA			8/1/2002	6/30/2008		2/1/2003	6/30/2008	

LINE RELAYS	Lake Platte Line			Fort Thompson Line			Sioux City Line			Kelly Line		
	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date
KD4 Zone 1 (21)	2/1/2003	12/31/2008		N/A			NA			NA		
KD4 Zone 2 (21)	2/1/2003	12/31/2008		N/A			NA			NA		
KD10 Zone 1 (21)	NA			9/6/2007	3/31/2008		NA			NA		
KD10 Zone 2 (21)	NA			9/20/2007	3/31/2008		NA			NA		
KD11 Zone 3 (21)	1/1/2006	12/31/2008		12/17/2007	3/31/2008		NA			NA		
KC2 (50)	NA			12/18/2007	3/31/2008		NA			NA		

IRDB1 (67G)	2/1/2003	12/31/2008		12/20/2007	3/31/2008		NA			NA		
KRO (67GC)	2/1/2003	12/31/2008		N/A			NA			NA		
TD-4 (21T)	1/1/1993	12/31/2008		8/28/2007	3/31/2008		NA			NA		
TR-3 (94)	9/1/1989	12/31/2008		12/26/2007	3/31/2008		NA			NA		
CHC11 Main (50)	5/1/1999	12/31/2008		1/3/2007	3/31/2008		12/1/1992	12/31/2008		NA		
CHC11 Main (50)	5/1/1999	12/31/2008		1/2/2007	3/31/2008		12/1/1992	12/31/2008		NA		
TT-12 (94A)	4/1/1990	12/31/2008		NA			NA			NA		
TT17 (85)	NA			12/20/2007	3/31/2008		NA			NA		
SGR12 (79)	8/1/1988	12/31/2008		12/20/2007	3/31/2008		NA			NA		
SX (79X)	6/1/1993	12/31/2008		12/20/2007	3/31/2008		NA			NA		
HGA (62)	4/1/1990	12/31/2008		12/20/2007	3/31/2008		NA			NA		
BE1 Main (50BF)	NA			NA			NA			9/1/1999	12/31/2008	
BE1 Aux. (50BF)	NA			NA			NA			9/1/1999	12/31/2008	



CT's		12/31/2010			12/31/2010			12/31/2010			12/31/2010
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SWITCHYARD INSTRUMENT TRANSFORMERS	115 KV Switchyard OCB 962			115 KV Switchyard OCB 1662			115 KV Switchyard OCB 1666			115 KV Switchyard OCB 1762		
	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date
CT's		12/31/2010			12/31/2010			12/31/2010			12/31/2010	

SWITCHYARD INSTRUMENT TRANSFORMERS	115 KV Switchyard OCB 1862			115 KV Switchyard OCB 1866			115 KV Switchyard OCB 1962			230 KV Switchyard Kelly Line		
	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date
CT's		12/31/2010			12/31/2010			12/31/2010			12/31/2011	

SWITCHYARD INSTRUMENT TRANSFORMERS	230 KV Switchyard OCB 1982			230 KV Switchyard OCB 1986			230 KV Switchyard OCB 1182			230 KV Switchyard OCB 1186		
	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date
CT's		12/31/2011			12/31/2011			12/31/2011			12/31/2011	

SWITCHYARD INSTRUMENT TRANSFORMERS	230 KV Switchyard OCB 2182			230 KV Switchyard OCB 2186			230 KV Switchyard OCB 1282			230 KV Switchyard OCB 1286		
	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date
CT's		12/31/2011			12/31/2011			12/31/2011			12/31/2011	

SWITCHYARD INSTRUMENT TRANSFORMERS	230 KV Switchyard OCB 2282			230 KV Switchyard OCB 2286			230 KV Switchyard OCB 2382			230 KV Switchyard OCB 2386		
	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date
CT's		12/31/2011			12/31/2011			12/31/2011			12/31/2011	

SWITCHYARD INSTRUMENT TRANSFORMERS	230 KV Switchyard OCB 1382			230 KV Switchyard OCB 1386			230 KV Switchyard OCB 2482			230 KV Switchyard OCB 2486		
	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date
CT's		12/31/2011			12/31/2011			12/31/2011			12/31/2011	

SWITCHYARD INSTRUMENT TRANSFORMERS	230 KV Switchyard OCB 2682			230 KV Switchyard OCB 2686								
	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date						
CT's		12/31/2011			12/31/2011							

Big Bend Protection System Mitigation Maintenance and Testing Compliance

5/1/2008

This document tracks the current state of the relay testing program at Big Bend. All relays at Big Bend are currently electrical mechanical type which are required to be tested every two years during unit maintenance. Microprocessor based are tested every five years and will be highlighted in blue when installed.

Generator Relays	Unit 1			Unit 2			Unit 3			Unit 4		
	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date
40 KLF (1 per unit)	11/21/2005	12/31/2008		4/11/2007	6/30/2009		3/20/2008	3/31/2010		3/5/2007	3/31/2009	
46 (1 per unit)	3/13/2007	3/31/2009		4/10/2007	6/30/2009		3/18/2008	3/31/2010		3/1/2007	3/31/2009	
51A (1 per unit)	5/8/2006	6/30/2008		4/9/2007	6/30/2009		3/17/2008	3/31/2010		2/28/2007	3/31/2009	
51C (1 per unit)	5/8/2006	6/30/2008		5/31/2007	6/30/2009		3/17/2008	3/31/2010		3/12/2007	3/31/2009	
51-27 (1 per unit)	12/5/2006	12/31/2008		4/10/2007	6/30/2009		3/19/2008	3/31/2010		3/13/2007	3/31/2009	
59 (1 per unit)	12/5/2006	12/31/2008		4/10/2007	6/30/2009		3/19/2008	3/31/2010		2/28/2007	3/31/2009	
64G (1 per unit)	12/5/2006	12/31/2008		4/10/2007	6/30/2009		3/19/2008	3/31/2010		3/13/2007	3/31/2009	
64GY (1 per unit)	3/1/2006	3/31/2008		4/10/2007	6/30/2009		3/19/2008	3/31/2010		3/1/2007	3/31/2009	
64GZ (1 on units 1, 3, 5, 7)	12/5/2006	12/31/2008		N/A			3/19/2008	3/31/2010		N/A		
87G (1 per unit)	2/6/2007	3/31/2009		4/7/2007	6/30/2009		3/24/2008	3/31/2010		3/12/2007	3/31/2009	
TK-2 (1 per unit)	11/21/2005	12/31/2008		4/11/2007	6/30/2009		3/19/2008	3/31/2010		3/12/2007	3/31/2009	
TK-48 (1 per unit)	11/21/2005	12/31/2008		4/11/2007	6/30/2009		3/19/2008	3/31/2010		3/12/2007	3/31/2009	
<b>Exciter Relays</b>												
48E (1 per unit)	5/4/2005	6/30/2008		4/24/2003	6/30/2008		5/4/2006	6/30/2008		12/5/2007	12/31/2009	
50/51 A phase (1 per unit)	4/27/2005	6/30/2008		4/13/2004	6/30/2008		3/29/2005	6/30/2008		1/31/2008	3/31/2010	
50/51 B phase (1 per unit)	3/27/2006	3/31/2008		4/13/2004	6/30/2008		3/29/2005	6/30/2008		1/31/2008	3/31/2010	
50/51 C phase (1 per unit)	4/22/2006	6/30/2008		4/13/2004	6/30/2008		1/29/2008	3/31/2010		1/31/2008	3/31/2010	
59F (1 per unit)	5/9/2005	6/30/2008		4/12/2004	6/30/2008		1/29/2008	3/31/2010		12/5/2007	12/31/2009	

Generator Relays	Unit 5			Unit 6			Unit 7			Unit 8		
	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date
40 KLF (1 per unit)	11/20/2006	12/31/2008		8/29/2007	9/30/2009		11/7/2006	12/31/2008		10/11/2007	12/31/2009	
46 (1 per unit)	10/4/2006	12/31/2008		8/28/2007	9/30/2009		10/18/2006	12/31/2008		10/10/2007	12/31/2009	
51A (1 per unit)	11/21/2006	12/31/2008		8/28/2007	9/30/2009		11/6/2006	12/31/2008		10/9/2007	12/31/2009	
51C (1 per unit)	11/21/2006	12/31/2008		8/28/2007	9/30/2009		11/6/2006	12/31/2008		10/9/2007	12/31/2009	
51-27 (1 per unit)	11/20/2006	12/31/2008		8/28/2007	9/30/2009		11/6/2006	12/31/2008		10/11/2007	12/31/2009	
59 (1 per unit)	11/20/2006	12/31/2008		8/28/2007	9/30/2009		11/6/2006	12/31/2008		10/29/2007	12/31/2009	
64G (1 per unit)	11/20/2006	12/31/2008		8/28/2007	9/30/2009		11/6/2006	12/31/2008		10/11/2007	12/31/2009	
64GY (1 per unit)	11/20/2006	12/31/2008		8/28/2007	9/30/2009		11/6/2006	12/31/2008		10/10/2007	12/31/2009	
64GZ (1 on units 1, 3, 5, 7)	11/20/2006	12/31/2008		N/A			11/7/2006	12/31/2008		N/A		
87G (1 per unit)	11/20/2006	12/31/2008		8/29/2007	9/30/2009		11/7/2006	12/31/2008		10/10/2007	12/31/2009	
TK-2 (1 per unit)	11/20/2006	12/31/2008		8/29/2007	9/30/2009		11/7/2006	12/31/2008		10/11/2007	12/31/2009	
TK-4B (1 per unit)	11/20/2006	12/31/2008		8/28/2007	9/30/2009		11/7/2006	12/31/2008		10/11/2007	12/31/2009	
<b>Exciter Relays</b>												
46E (1 per unit)	12/6/2007	12/31/2009		9/5/2007	9/30/2009		10/17/2005	12/31/2008		10/16/2007	12/31/2009	
50/51 A phase (1 per unit)	12/7/2007	12/31/2009		9/4/2007	9/30/2009		10/12/2005	12/31/2008		10/15/2007	12/31/2009	
50/51 B phase (1 per unit)	12/7/2007	12/31/2009		9/4/2007	9/30/2009		10/17/2005	12/31/2008		10/15/2007	12/31/2009	
50/51 C phase (1 per unit)	12/7/2007	12/31/2009		9/4/2007	9/30/2009		10/10/2005	12/31/2008		10/15/2007	12/31/2009	
59F (1 per unit)	12/7/2007	12/31/2009		9/4/2007	9/30/2009		10/18/2005	12/31/2008		10/10/2007	12/31/2009	

Transformer Relays	Transformer 1			Transformer 2			Transformer 3			Transformer 4		
	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date
87T a (1 per x/mr)	2/14/2006	9/30/2008		2/13/2006	9/30/2008		2/7/2005	9/30/2008		2/15/2006	9/30/2008	
87T b (1 per x/mr)	2/14/2006	9/30/2008		2/13/2006	9/30/2008		2/8/2005	9/30/2008		2/15/2006	9/30/2008	
87T c (1 per x/mr)	2/14/2006	9/30/2008		2/13/2006	9/30/2008		2/8/2005	9/30/2008		2/15/2006	9/30/2008	
27 (1 per x/mr)	2/14/2006	9/30/2008		2/13/2006	9/30/2008		1/1/2001	9/30/2008		2/15/2006	9/30/2008	
64T (1 per x/mr)	2/14/2006	9/30/2008		2/13/2006	9/30/2008		1/1/2001	9/30/2008		2/15/2006	9/30/2008	
82T (1 per x/mr)	2/14/2006	9/30/2008		2/13/2006	9/30/2008		1/1/2001	9/30/2008		2/15/2006	9/30/2008	



Line Relays	Line 1			Line 2		
	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date
Channel A transfer trip (1 per line)	1/1/2000	12/31/2008	2214	1/1/2000	12/31/2008	
Channel B transfer trip (1 per line)	1/1/2000	12/31/2008	2214	1/1/2000	12/31/2008	

Generator Instrument Transformers	Testing Dates		
	Last Tested	Due	Days Past Due Date
Generator 1 PT's & CT's	1/1/2001	5/9/2008	
Generator 2 PT's & CT's	1/1/2001	12/31/2008	
Generator 3 PT's & CT's	3/25/2008	12/31/2008	
Generator 4 PT's & CT's	2/4/2008	12/31/2008	
Generator 5 PT's & CT's	1/1/2001	9/30/2008	
Generator 6 PT's & CT's	1/1/2001	12/31/2008	
Generator 7 PT's & CT's	1/1/2001	11/4/2008	
Generator 8 PT's & CT's	1/1/2001	12/31/2008	
<b>Transformer Instrument Transformers</b>			
Transformer 1 CT's	1/1/2001	5/9/2008	
Transformer 2 CT's	3/25/2008	12/31/2008	
Transformer 3 CT's	1/1/2001	11/4/2008	
Transformer 4 CT's	2/4/2008	12/31/2008	

Transmission Line Instrument Transformers	Last Tested	Due	Days Past Due Date
Line 1 CCPD original	1/1/2001	12/31/2008	
Line 2 CCPD original	1/1/2001	12/31/2008	
Line 1 CCVT new (not in service)	1/1/2003	12/31/2008	
Line 2 CCVT new (not in service)	1/1/2003	12/31/2008	

Oahe Protection System Mitigation Maintenance and Testing Compliance

5/1/2008

This document tracks the current state of the relay testing program at Oahe. Most relays at Oahe are currently electrical mechanical type which are required to be tested every two years during unit maintenance. Microprocessor based are tested every five years and will be highlighted in blue when installed.

Generator Relays	Unit 1			Unit 2			Unit 3			Unit 4		
	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date
87G a	11/7/2007	12/31/2009		4/12/2007	6/30/2009		12/12/2007	12/31/2009		11/1/2007	12/31/2009	
87G b	11/15/2007	12/31/2009		4/12/2007	6/30/2009		12/12/2007	12/31/2009		11/1/2007	12/31/2009	
87G c	11/15/2007	12/31/2009		4/12/2007	6/30/2009		12/12/2007	12/31/2009		11/1/2007	12/31/2009	
51G a	11/5/2007	12/31/2009		4/12/2007	6/30/2009		12/12/2007	12/31/2009		10/30/2007	12/31/2009	
51G c	11/5/2007	12/31/2009		4/12/2007	6/30/2009		12/12/2007	12/31/2009		10/30/2007	12/31/2009	
51V b	11/6/2007	12/31/2009		4/12/2007	6/30/2009		12/12/2007	12/31/2009		10/30/2007	12/31/2009	
64G	3/26/2008	3/31/2010		3/3/2008	3/31/2010		12/12/2007	12/31/2009		12/6/2007	12/31/2009	
46	3/26/2008	3/31/2010		4/16/2008	6/30/2010		3/17/2008	3/31/2010		4/9/2008	6/30/2010	
59	3/26/2008	3/31/2010		4/9/2008	6/30/2010		12/12/2007	12/31/2009		4/9/2008	6/30/2010	
59-1X		12/31/2008			12/31/2008			12/31/2008			12/31/2008	
<b>Exciter Relays</b>												
59G		12/31/2008			12/31/2008			12/31/2008			12/31/2008	
46E		12/31/2008			12/31/2008			12/31/2008			12/31/2008	
50/51E		12/31/2008			12/31/2008			12/31/2008			12/31/2008	

Generator Relays	Unit 5			Unit 6			Unit 7		
	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date
87G a	4/8/2008	6/30/2010		3/19/2008	3/31/2010		4/7/2008	6/30/2010	
87G b	4/8/2008	6/30/2010		3/19/2008	3/31/2010		4/7/2008	6/30/2010	
87G c	4/8/2008	6/30/2010		3/19/2008	3/31/2010		4/7/2008	6/30/2010	
51G a	12/11/2007	12/31/2009		3/17/2008	3/31/2010		1/2/2008	3/31/2010	
51G c	12/11/2007	12/31/2009		3/17/2008	3/31/2010		1/2/2008	3/31/2010	
51V b	12/11/2007	12/31/2009		3/19/2008	3/31/2010		3/20/2008	3/31/2010	
64G	12/10/2007	12/31/2009		3/17/2008	3/31/2010		3/20/2008	3/31/2010	
46	4/8/2008	6/30/2010		3/17/2008	3/31/2010		4/7/2008	6/30/2010	
59	12/10/2007	12/31/2009		3/17/2008	3/31/2010		3/20/2008	3/31/2010	
59-1X		12/31/2008			12/31/2008			12/31/2008	
<b>Exciter Relays</b>									
59G		12/31/2008			12/31/2008			12/31/2008	
46E		12/31/2008			12/31/2008			12/31/2008	
50/51E		12/31/2008			12/31/2008			12/31/2008	

Transformer Relays	Transformer 1/PH Line 1/Bus Differential			Transformer 2/PH Line 2			Transformer 3/PH Line 3/Transfer OCB			Transformer 4/PH Line 4		
	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date
87T a	3/31/2008	4/30/2010		4/1/2008	6/30/2010		11/28/2000	12/31/2002		12/11/2000	12/31/2002	
87T b	4/1/2008	6/30/2010		4/1/2008	6/30/2010		11/30/2000	1/31/2003		12/12/2000	12/31/2002	
87T c	4/1/2008	6/30/2010		4/1/2008	6/30/2010		12/6/2000	12/31/2002		1/15/2000	3/31/2002	
27T1	4/3/2008	6/30/2010		NA			NA			NA		
51TN	3/27/2008	3/31/2010		3/18/2008	3/31/2010		1/9/2001	3/31/2003		1/4/2001	3/31/2003	
27	3/27/2008	3/31/2010		3/18/2008	3/31/2010		8/2/2001	9/30/2003		8/6/2001	9/30/2003	
87BD a	1/22/2001	3/31/2003		NA			NA			NA		
87BD b	2/4/2001	3/31/2003		NA			NA			NA		
87BD c	1/22/2001	3/31/2003		NA			NA			NA		
27T2	NA			NA			3/6/1998	3/31/2000		NA		

Line Relays	Fort Thompson #1			Fort Thompson #2			Fort Thompson #3			Fort Thompson #4		
	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date
21a	1/10/2008	3/31/2010		1/15/2008	3/31/2010		2/20/2008	3/31/2010		2/25/2008	3/31/2010	
21b	1/10/2008	3/31/2010		1/15/2008	3/31/2010		2/20/2008	3/31/2010		2/25/2008	3/31/2010	
21c	1/10/2008	3/31/2010		1/15/2008	3/31/2010		2/20/2008	3/31/2010		2/25/2008	3/31/2010	
21X	4/14/2008	6/30/2010		4/14/2008	6/30/2010		4/15/2008	6/30/2010		4/15/2008	6/30/2010	
94A	4/16/2008	6/30/2010		4/16/2008	6/30/2010		4/16/2008	6/30/2010		4/16/2008	6/30/2010	
79	12/10/1998	6/30/2008		11/2/2000	6/30/2008		11/2/2000	6/30/2008		4/23/2008	6/30/2010	
67G	8/1/2000	6/30/2008		8/10/2000	6/30/2008		8/2/2000	6/30/2008		8/13/2000	6/30/2008	
50	6/2/2001	6/30/2008		7/23/2001	6/30/2008		7/2/2001	6/30/2008		7/10/2001	6/30/2008	
94L		12/31/2008			12/31/2008			12/31/2008			12/31/2008	
79X		12/31/2008			12/31/2008			12/31/2008			12/31/2008	
79Y		12/31/2008			12/31/2008			12/31/2008			12/31/2008	

Irv Simmons			
Line Relays	Last Tested	Due	Days Past Due Date
21-z1	12/10/2001	9/30/2008	
21-z2	12/12/2001	9/30/2008	
21-z3	12/13/2001	9/30/2008	
21T	10/23/2000	9/30/2008	
67G	9/5/2000	9/30/2008	
67PG	9/25/2000	9/30/2008	
50	6/7/2001	9/30/2008	
94A	7/31/2001	9/30/2008	
94B	8/1/2001	9/30/2008	
79	10/17/2000	9/30/2008	
68	12/20/2001	9/30/2008	
94L1		9/30/2008	

Pierre			
Line Relays	Last Tested	Due	Days Past Due Date
SEL 311 C		12/31/2008	
SEL 321		12/31/2008	

Eagle Butte				Sully Buttes			
Line Relays	Last Tested	Due	Days Past Due Date	Line Relays	Last Tested	Due	Days Past Due Date
21a	6/7/1998	9/30/2008		21-z1	12/8/2001	12/31/2008	
21b	4/11/2000	9/30/2008		21-z2	12/10/2001	12/31/2008	
21c	4/11/2000	9/30/2008		21-z3	10/2/2001	12/31/2008	
21X	10/2/2000	9/30/2008		67GB	8/28/2000	12/31/2008	
67G	9/15/1998	9/30/2008		68	11/28/2001	12/31/2008	
79	11/1/2000	9/30/2008		21X	10/11/2000	12/31/2008	
27L	2/8/2000	9/30/2008		79	11/9/2000	12/31/2008	
27B-2		9/30/2008		50	7/23/2001	12/31/2008	
25-2	2/2/2000	9/30/2008		94L		12/31/2008	
				79Y		12/31/2008	
				79Z		12/31/2008	
				67PG	8/23/2000	12/31/2008	
				94A	8/7/2001	12/31/2008	
				85	9/6/2001	12/31/2008	

New Underwood			
Line Relays	Last Tested	Due	Days Past Due Date
SEL 2020		12/31/2008	
SEL 311C		12/31/2008	
SEL 421		12/31/2008	

Autotransformer & Transfer OCB			
	Last Tested	Due	Days Past Due Date
87AT a		12/31/2008	
87AT b		12/31/2008	
87AT c		12/31/2008	
50-51 a		12/31/2008	
50N		12/31/2008	
50-51 c		12/31/2008	
67G		12/31/2008	
64AT		12/31/2008	
86AT		12/31/2008	
50-51ATN		12/31/2008	
21X		12/31/2008	
21 a		12/31/2008	
21 b		12/31/2008	
21 c		12/31/2008	

Autotransformer Tertiary			
	Last Tested	Due	Days Past Due Date
50-51AT a	1/9/2001	12/31/2008	
50-51AT b	1/9/2001	12/31/2008	
50-51AT c	1/10/2001	12/31/2008	
50-51 a	11/22/2000	12/31/2008	
50N	1/22/1998	12/31/2008	
50-51 c	12/27/1995	12/31/2008	

Grounding Transformer			
	Last Tested	Due	Days Past Due Date
50-51GT a	1/15/2000	12/31/2008	
50-51GT b	2/5/1998	12/31/2008	
50-51GT c	2/5/1998	12/31/2008	
50-51GTN	2/9/1998	12/31/2008	
50-51GTNX		12/31/2008	

Bus Section	Section #1			Section #3			Section #5		
	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date
87 a	3/28/2001	12/31/2008		3/28/2001	12/31/2008		6/15/1999	12/31/2008	
87 b	3/28/2001	12/31/2008		3/29/2001	12/31/2008		6/19/2001	12/31/2008	
87 c	3/28/2001	12/31/2008		4/10/2001	12/31/2008		7/2/2001	12/31/2008	

Generator Instrument Transformers	Generator 1			Generator 2			Generator 3			Generator 4		
	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date
PT's and CCPD's		12/31/2008			12/31/2008			12/31/2008			12/31/2008	

Generator Instrument Transformers	Generator 5			Generator 6			Generator 7		
	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date
PT's and CCPD's		12/31/2008			12/31/2008			12/31/2008	

Transformer Instrument Transformers	Transformer 2			Transformer Bank 3			Transformer Bank 4		
	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date
PT's		12/31/2008			12/31/2008			12/31/2008	

Switchyard Instrument Transformers	115 KV Switchyard Main Bus			115 KV Switchyard Irv Simmons Line			115 KV Switchyard Eagle Butte Line		
	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date
PT's and CCPD's		12/31/2008			12/31/2008			12/31/2008	

Switchyard Instrument Transformers	115 KV Switchyard Pierre Line			230 KV Switchyard Main Bus #1, #3, #5			230 KV Switchyard Aux. Bus			230 KV Switchyard Sully Buttes Line		
	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date
PT's and CCPD's		12/31/2008			12/31/2008			12/31/2008			12/31/2008	

Switchyard Instrument Transformers	230 KV Switchyard Fl. Thomp #1 Line			230 KV Switchyard Fl. Thomp #2 Line			230 KV Switchyard Fl. Thomp #3 Line			230 KV Switchyard Fl. Thomp #4 Line		
	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date
PT's and CCPD's		12/31/2008			12/31/2008			12/31/2008			12/31/2008	

Switchyard Instrument Transformers	230 KV Switchyard New Underwood Line			230 KV Switchyard Auto-Transformer Bank		
	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date
PT's and CCPD's		12/31/2008			12/31/2008	

Garrison Protection System Mitigation Maintenance and Testing Compliance

5/1/2008

This document tracks the current state of the relay testing program at Garrison. The generator and transformer relays at Garrison have been converted from electro-mechanical to microprocessor based relays. Testing of these relays consists of initial install testing, with subsequent functionality testing by pulsing the output contacts every two years during unit maintenance outages with periodic reviews of self diagnostic analysis tests. All electro-mechanical relays are tested every two years.

Gen & Xfmr Relays	Unit 1			Unit 2			Unit 3		
	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date
* SEL-300G Gen Relay	8/29/2007	9/30/2012		10/3/2007	12/31/2012		9/26/2007	9/30/2012	
* SEL-587 Gen Differential	8/29/2007	9/30/2012		10/3/2007	12/31/2012		9/26/2007	9/30/2012	
* SEL-387E Xfmr Differential	8/29/2007	9/30/2012		10/3/2007	12/31/2012		9/26/2007	9/30/2012	

Gen & Xfmr Relays	Unit 4			Unit 5		
	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date
* SEL-300G Gen Relay	4/23/2008	6/30/2013		4/9/2008	6/30/2013	
* SEL-587 Gen Differential	4/23/2008	6/30/2013		4/9/2008	6/30/2013	
* SEL-387E Xfmr Differential	4/23/2008	6/30/2013		4/9/2008	6/30/2013	

\* Microprocessor based. Functionality is tested on these relays during the unit biennial maintenance outage as part of the unit annunciation and relay functional test by pulsing the output contacts.

Unit Voltage Regulators	Unit 1			Unit 2			Unit 3		
	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date
Current Balance IJC	11/15/2006	12/31/2008		11/17/2006	12/31/2008		11/17/2006	12/31/2008	
Overcurrent IFC A	11/14/2006	12/31/2008		11/14/2006	12/31/2008		11/15/2006	12/31/2008	
Overcurrent IFC B	11/14/2006	12/31/2008		11/14/2006	12/31/2008		11/15/2006	12/31/2008	
Overcurrent IFC C	11/14/2006	12/31/2008		11/14/2006	12/31/2008		11/15/2006	12/31/2008	
Static Over/Excit STV V/HZ	11/15/2006	12/31/2008		11/15/2006	12/31/2008		11/15/2006	12/31/2008	

Unit Voltage Regulators	Unit 4			Unit 5		
	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date
Current Balance IJC	12/28/2006	12/31/2008		12/28/2006	12/31/2008	
Overcurrent IFC A	12/29/2006	12/31/2008		12/29/2006	12/31/2008	
Overcurrent IFC B	12/29/2006	12/31/2008		12/29/2006	12/31/2008	
Overcurrent IFC C	12/29/2006	12/31/2008		12/29/2006	12/31/2008	
Static Over/Excit STV V/HZ	1/10/2007	3/31/2009		1/10/2007	3/31/2009	

Autotransformer Relays	Date Last Tested	Due	Days Past Due Date
87AT BDD A	01/09/07	3/31/2009	
87AT BDD B	01/09/07	3/31/2009	
87AT BDD C	01/09/07	3/31/2009	
51AT IAC A	1/8/2007	3/31/2009	
51AT IAC C	1/8/2007	3/31/2009	

Bus Differential	115 KV Bus Differential			230 KV Bus Differential		
	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date
87B1 PVD A	2/7/2008	3/31/2010		NA		
87B1 PVD B	2/12/2008	3/31/2010		NA		
87B1 PVD C	2/12/2008	3/31/2010		NA		
87B2 PVD A	NA			2/14/2008	3/31/2010	
87B2 PVD B	NA			2/14/2008	3/31/2010	
87B2 PVD C	NA			2/19/2008	3/31/2010	
87B3 PVD A	NA			2/19/2008	3/31/2010	
87B3 PVD B	NA			2/20/2008	3/31/2010	
87B3 PVD C	NA			2/20/2008	3/31/2010	



Line Relays	Wm J Neal			Beulah			Jamestown		
	Date Last Tested	Due	Days Past Due Date	Date Last Tested	Due	Days Past Due Date	Date Last Tested	Due	Days Past Due Date
150A CHC	NA			NA			11/27/2006	12/31/2008	
150M CHC	NA			NA			12/6/2006	12/31/2008	
150 CHC Fault Dectector	NA			NA			5/6/2008	6/30/2010	
125 CVE	NA			1/8/2007	3/31/2009		NA		
121-Z1 CEY	1/29/2008	3/31/2010		1/24/2008	3/31/2010		3/18/2008	3/31/2010	
121-Z2 CEY	1/29/2008	3/31/2010		1/24/2008	3/31/2010		3/19/2008	3/31/2010	
121-Z3 CEB	1/29/2008	3/31/2010		1/28/2008	3/31/2010		3/19/2008	3/31/2010	
127L CV7	NA			1/8/2007	3/31/2009		NA		
168 CEB	NA			NA			3/20/2008	3/31/2010	
179 HGA	12/19/2006	12/31/2008		1/8/2007	3/31/2009		NA		
125 IJS	12/18/2006	12/31/2008		NA			NA		
167G JBCG	3/5/2008	3/31/2010		3/16/2008	3/31/2010		3/5/2008	3/31/2010	
194A NAA Gen Drop	NA			NA			5/6/2008	6/30/2010	
121 X RPM	NA			NA			5/6/2008	6/30/2010	
121X SAM	12/8/2006	12/31/2008		1/8/2007	3/31/2009		NA		
127X SAM	12/8/2006	12/31/2008		NA			NA		
179 SGR-12	NA			NA			5/6/2008	6/30/2010	
179Z SX Fault SEL	NA			NA			5/6/2008	6/30/2010	
185 TT-12	NA			NA			12/6/2006	12/31/2008	

Line Relays	Mallard			Snake Creek			Leland Olds		
	Date Last Tested	Due	Days Past Due Date	Date Last Tested	Due	Days Past Due Date	Date Last Tested	Due	Days Past Due Date
150A CHC	NA			NA			11/27/2006	12/31/2008	
150M CHC	NA			NA			11/27/2006	12/31/2008	
125 CVE	12/8/2006	12/31/2008		NA			NA		
127L CV7	2/5/2008	3/31/2010		NA			NA		
* GECOPTIMO	NA			NA			4/21/1994	NA	NA
* GE DLP 3511	NA			NA			4/21/1994	NA	NA
167G IRD9	12/8/2006	12/31/2008		1/8/2007	3/31/2009		NA		
150 KC2	12/18/2006	12/31/2008		NA			NA		
121-Z1 KD4	NA			1/9/2007	3/31/2009		NA		
121-Z2 KD4	NA			1/9/2007	3/31/2009		NA		
121-Z1 KD10	12/14/2006	12/31/2008		NA			NA		
121-Z2 KD10	12/14/2006	12/31/2008		NA			NA		
121-Z3 KD11	12/15/2006	12/31/2008		NA			NA		
179 SGR-12	12/19/2006	12/31/2008		NA			NA		
121 TD4	NA			1/8/2007	3/31/2009		NA		
121X TD-4	12/18/2006	12/31/2008		NA			NA		

Line Relays	Bismarck		
	Date Last Tested	Due	Days Past Due Date
* SEL-421	10/1/2005	12/31/2010	
* SEL-311C	10/1/2005	12/31/2010	

\* Microprocessor based relay. No testing after initial install. Checks of relays consist of a review of all relay operations and self diagnostic analysis. Maintenance is performed when found out of calibration or after a misoperation.

Fort Peck Protection System Mitigation Maintenance and Testing Compliance

5/1/2008

This document tracks the current state of the relay testing program at Fort Peck. All electrical mechanical relays at Fort Peck are currently tested every two years. Microprocessor based relays ("SEL" prefix) are tested every five years.

Generator Relays PP1	Unit 1			Unit 2			Unit 3		
	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date
87G CFD (A PHASE)	11/29/2006	12/31/2008		11/29/2006	12/31/2008		12/13/2006	12/31/2008	
87G CFD (B PHASE)	11/29/2006	12/31/2008		11/29/2006	12/31/2008		12/13/2006	12/31/2008	
87G CFD (C PHASE)	11/29/2006	12/31/2008		12/6/2005	12/31/2008		12/13/2006	12/31/2008	
51V COV-9	12/11/2006	12/31/2008		12/4/2005	12/31/2008		12/19/2006	12/31/2008	
59 IAV	12/7/2006	12/31/2008		12/4/2006	12/31/2008		12/18/2006	12/31/2008	
46 INC	12/11/2006	12/31/2008		11/30/2006	12/31/2008		12/19/2006	12/31/2008	
51G IAC (A PHASE)	12/6/2006	12/31/2008		11/30/2006	12/31/2008		12/14/2006	12/31/2008	
51G IAC (C PHASE)	12/6/2006	12/31/2008		11/30/2006	12/31/2008		12/14/2006	12/31/2008	
59A SV-1	12/6/2006	12/31/2008		12/6/2006	12/31/2008		1/4/2007	3/31/2009	
40 CEH	12/11/2006	12/31/2008		11/30/2006	12/31/2008		12/18/2006	12/31/2008	
64F DGF	12/11/2006	12/31/2008		12/4/2006	12/31/2008		12/19/2006	12/31/2008	
87GR IAC	12/6/2006	12/31/2008		12/4/2006	12/31/2008		12/14/2006	12/31/2008	

Generator Relays PP2	Unit 4			Unit 5		
	Last Tested	Due	Days Past Due Date	Last Tested	Due	Days Past Due Date
40 KLF	1/3/2007	3/31/2009		1/3/2007	3/31/2009	
51 CO-8 (A Phase)	12/19/2006	12/31/2008		1/4/2007	3/31/2009	
51 CO-8 (C Phase)	12/19/2006	12/31/2008		1/4/2007	3/31/2009	
87R CO-2	1/4/2007	3/31/2009		1/4/2007	3/31/2009	
87G SA-1	10/17/2007	12/31/2008		11/8/2007	12/31/2009	
51V COV-8	12/19/2007	12/31/2009		1/3/2007	3/31/2009	
59 IAV	1/4/2007	3/31/2009		1/4/2007	3/31/2009	
46 INC	12/27/2006	12/31/2008		1/3/2007	3/31/2009	
59A Voltage Relay Unit 4&5	4/22/2008	6/30/2010		NA		

**Transformer Relays**

Transformer A	Date Last Tested	Due	Days Past Due Date
87TA BDD Phase A	8/1/2006	9/30/2008	
87TA BDD Phase B	8/1/2006	9/30/2008	
87TA BDD Phase C	8/1/2006	9/30/2008	
51TA IAC Phase A	4/10/2007	6/30/2009	
51TA IAC Phase B	5/23/2007	6/30/2009	
51TA IAC Phase C	5/23/2007	6/30/2009	

Transformer B	Date Last Tested	Due	Days Past Due Date
51 CO-8 A Phase	1/9/2007	3/31/2009	
51 CO-8 C Phase	1/9/2007	3/31/2009	
51R CO-9	1/9/2007	3/31/2009	
27B IAV 54E Undervoltage	6/20/2007	6/30/2009	
87 CA-6	7/27/2006	9/30/2008	

161 KV Autotransformer	Date Last Tested	Due	Days Past Due Date
SEL 387	8/11/2003	9/30/2008	
SEL 387	8/11/2003	9/30/2008	

230/115KV Autotransformer	Date Last Tested	Due	Days Past Due Date
64 CO-9 Overcurrent/Ground	7/9/2006	9/30/2008	
87 HU-1 Phase A	7/18/2006	9/30/2008	
87 HU-1 Phase B	7/18/2006	9/30/2008	
87 HU-1 Phase C	7/18/2006	9/30/2008	

Unit 4 Transformer	Date Last Tested	Due	Days Past Due Date
87 HU (A Phase)	7/19/2007	9/30/2009	
87 HU (B Phase)	7/19/2007	9/30/2009	
87 HU (C Phase)	7/19/2007	9/30/2009	
64 CO-9	7/19/2007	9/30/2009	

**Transformer Relays**

Bank 3	Date Last Tested	Due	Days Past Due Date
51T3 IAC Phase A	5/22/2007	6/30/2009	
51T3 IAC Phase B	5/22/2007	6/30/2009	
51T3 IAC Phase C	5/22/2007	6/30/2009	
<b>Bank 4</b>			
51T3 IAC Phase A	5/23/2007	6/30/2009	
51T3 IAC Phase B	5/23/2007	6/30/2009	
51T3 IAC Phase C	5/23/2007	6/30/2009	

Transformers 3 & 4	Date Last Tested	Due	Days Past Due Date
87T-4 BDD Phase A	8/2/2006	9/30/2008	
87T-4 BDD Phase B	8/7/2006	9/30/2008	
87T-4 BDD Phase C	8/7/2006	9/30/2008	

Bank 2	Date Last Tested	Due	Days Past Due Date
87T2 BDD Phase A	8/1/2006	9/30/2008	
87T2 BDD Phase B	8/2/2006	9/30/2008	
87T2 BDD Phase C	8/2/2006	9/30/2008	
51T2 IAC Phase A	5/23/2007	6/30/2009	
51T2 IAC Phase C	5/23/2007	6/30/2009	

Transformer 5	Date Last Tested	Due	Days Past Due Date
51 T5 Over Current	1/24/2008	3/31/2010	
87 T5	1/24/2008	3/31/2010	

Unit 5 Transformer	Date Last Tested	Due	Days Past Due Date
87 HU (A Phase)	7/19/2007	9/30/2009	
87 HU (B Phase)	7/19/2007	9/30/2009	
87 HU (C Phase)	7/19/2007	9/30/2009	
64 CO-9	7/19/2007	9/30/2009	

Line Relays

115KV Line #1 Poplar Line	Date Last Tested	Due	Days Past Due Date
SEL 221F	10/21/2005	12/31/2010	
SEL 321	11/1/2005	12/31/2010	

69KV Whately	Date Last Tested	Due	Days Past Due Date
SEL 221F	9/13/2000	12/31/2008	
SEL 321	9/17/2001	12/31/2008	

115KV Line #2 Dawson Line	Date Last Tested	Due	Days Past Due Date
SEL 221F	7/6/2000	12/31/2008	
SEL 321	7/10/2000	12/31/2008	

230KV BUS	Date Last Tested	Due	Days Past Due Date
87 PVD Phase A	8/28/2006	9/30/2008	
87 PVD Phase B	8/28/2006	9/30/2008	
87 PVD Phase C	8/28/2006	9/30/2008	

13.8KV	Date Last Tested	Due	Days Past Due Date
54B IAC	8/8/2006	9/30/2008	

Line Relays

230KV Dawson Line	Date Last Tested	Due	Days Past Due Date
SEL 221F	3/15/2001	12/31/2008	
SEL 321	3/12/2001	12/31/2008	

34.5 Wolf Point	Date Last Tested	Due	Days Past Due Date
51GB-5 Over Current	1/23/2008	3/31/2010	
50/51G L5	1/23/2008	3/31/2010	
TD-5 2V	1/23/2008	3/31/2010	
59L5 NGV 23B	1/23/2008	3/31/2010	

161KV Richardson Coulee	Date Last Tested	Due	Days Past Due Date
SEL 221F	11/3/2003	12/31/2008	
SEL 321	11/10/2003	12/31/2008	
BE1-81	2/13/2008	3/31/2010	

West Frequency	Date Last Tested	Due	Days Past Due Date
BE1-81	2/13/2008	3/31/2010	

East Frequency	Date Last Tested	Due	Days Past Due Date
BE1-81	2/13/2008	3/31/2010	

## **Attachment g**

**Certification of Completion of Mitigation Plans  
for COE-OD (MRO200700014, MRO200700015  
and MRO200700018), dated June 30, 2008**

-----Original Message-----

From: Hinkle, Gary A NWO [mailto:Gary.A.Hinkle@usace.army.mil]  
Sent: Monday, June 30, 2008 2:34 PM  
To: Riaz Islam  
Subject: Mitigation Completion Status - US Army Corps of Engineers, Omaha District (NERC ID - NCR00978)

Riaz,

Please consider this email confirmation that the US Army Corps of Engineers, Omaha District (NERC ID - NCR00978) has completed mitigation plans and is fully compliant with the following NERC Standard/Requirement(s).

FAC-009-1 R1 (NERC ID - MRO200700014)

FAC-009-1 R2 (NERC ID - MRO200700015)

PRC-005-1 R2 (NERC ID - MRO200700018)

I will follow this email with two additional emails containing the documentation for these mitigation plans.

Please contact me if you have any questions regarding this matter.

Thank you,

Gary A. Hinkle, P.E.  
U.S. Army Corps of Engineers, Omaha District  
1616 Capitol Avenue  
Omaha, NE 68102-4901  
Phone (402) 995-2495, Fax (402) 995-2454  
E-mail: gary.a.hinkle@usace.army.mil

-----Original Message-----

From: Riaz Islam [mailto:R.Islam@MidwestReliability.org]  
Sent: Monday, June 16, 2008 5:25 PM  
To: Hinkle, Gary A NWO  
Cc: mco@midwestreliability.org; Bryan, Karl A NWD  
Subject: Mitigation Completion Status  
Importance: High

Hello Gary,

This is a friendly reminder of the following mitigation plans that you submitted in 2007 with the completion date of 6/30/2008.

FAC-009-1 R1 (NERC ID - MRO200700014)

FAC-009-1 R2 (NERC ID - MRO200700015)

PRC-005-1 R2 (NERC ID - MRO200700018)

The completion date is approaching in two (2) weeks and as you complete the mitigation the MRO Compliance Office requires an email confirmation stating that you have completed the mitigation plan and fully compliant to the abovementioned NERC Standard/Requirement(s).

Please contact the MRO Compliance Office ([mco@midwestreliability.org](mailto:mco@midwestreliability.org)) if you have any questions regarding this letter and/or the mitigation plan(s).



## **Attachment h**

### **Verification of Completion of Mitigation Plans from MRO (MRO200700014, MRO200700015 and MRO200700018)**



Date: June 24, 2009

To: Colonel David C. Press  
Commander  
USACE-Omaha District  
106 S 15th Street  
Omaha, NE 68102

Re: MRO Verification of Mitigation Plan Completion: MRO200700014,  
MRO200700015 and MRO200700018

Dear Colonel Press,

MRO completed its review on March 16, 2009, of evidence of completion and compliance provided by Corps of Engineers, Omaha District (COE-OD) for the mitigation plans addressing the above violations.

Through the annual self certification process, COE-OD reported non-compliance with Standard FAC-009-1, Requirement 1 and Requirement 2 on October 23, 2007 (MRO200700014 and MRO200700015). COE-OD indicated that it had an approved facilities rating methodology. In fiscal year 2007, COE-OD funded engineering efforts to complete facilities ratings on 4 of its 6 generation stations by January 1, 2008. The ratings were completed on schedule. COE-OD further indicated that a budget request was pending to complete the facilities ratings on the remaining 2 facilities by mid June 2008. COE-OD reported that Facility Ratings were not available to be provided in the format consistent with the established facilities rating methodology. As noted above, COE-OD had drafted Facilities Ratings for 4 of its 6 generating stations, but the documents were being reviewed internally and were not yet available to be communicated to the RC, PA, TP and TOP.

Also through the Self Certification process, COE-OD reported non-compliance with Standard PRC-005-1, Requirement 2 (MRO200700018). COE-OD reported that not all facilities were current with the testing schedules and there were instances where testing documentation was inadequate or incomplete.

**COE-OD provided the following supporting evidence:**

RELIABILITY STANDARD FAC-009-1, R1 and R2: COE-OD provided its Facility Rating Methodology as well as facility ratings for all 6 of its qualifying facilities.

RELIABILITY STANDARD PRC-005-1, R2: At the time of the self certification, COE-OD indicated that it was not current with testing schedules and in some instances the testing documentation was inadequate or incomplete. Subsequently, COE-OD provided its testing and maintenance schedule for all six of its facilities. MRO utilized a random sampling program and requested testing and maintenance records for certain identified elements at each of the six facilities. Although not all elements were identified in the Program documentation in place at the time of the self certification, MRO verified with





COE-OD that the required testing and maintenance was being conducted. As COE-OD self certified, the testing documentation is incomplete and/or inadequate. However, in discussing the nature of the violation with COE-OD, its prior practice and course of dealing, as well as COE-OD's understanding of requirements in the NERC Reliability Standards, MRO is satisfied that COE-OD was conducting the required maintenance and testing. Additionally, MRO reviewed the documents provided in response to the random sample request for maintenance and test records and verified that COE-OD is conducting and documenting the testing and maintenance required by Reliability Standard PRC-005-1, R2.

MRO's review of the documents provided by COE-OD shows that COE-OD has established Facility Ratings for its solely and jointly owned Facilities that are consistent with the associated Facility Ratings Methodology as required by Reliability Standard FAC-009-1, R1. Additionally, MRO's review of the documents provided shows that COE-OD has the ability to provide the Facility Ratings upon request of the RC, PA, TP and TOP as required by Reliability Standard FAC-009-1, R2.

Finally, MRO has verified with COE-OD that the required maintenance and testing was being conducted at the time of the self certification, but that COE-OD was behind schedule and was not maintaining adequate and complete documentation. COE-OD has corrected this violation and is currently maintaining adequate, complete, and satisfactory documentation to satisfy the requirements of Reliability Standard PRC-005-1, R2.

The evidence submitted by COE-OD meets the requirements of NERC RELIABILITY STANDARDS FAC-009-1, R1 and R2; and PRC-005-1, R2 as of June 30, 2008.

Sincerely,

A handwritten signature in black ink that reads "James D. Burley".

James D. Burley  
Manager of Enforcement and Mitigation

cc: Gary Hinkle, COE-OD  
Tim Kucey, NERC  
Holly Hawkins, NERC



**Attachment i**

**Notice of Filing**

UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

U.S. Army Corps of Engineers – Omaha District

Docket No. NP09-\_\_\_\_-000

NOTICE OF FILING  
June 24, 2009

Take notice that on June 24, 2009, the North American Electric Reliability Corporation (NERC) filed a Notice of Penalty regarding U.S. Army Corps of Engineers – Omaha District in the Midwest Reliability Organization 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](mailto:FERCOnlineSupport@ferc.gov), or call (866) 208-3676 (toll free). For TTY, call (202) 502-8659.

Comment Date: [BLANK]

Kimberly D. Bose,  
Secretary