



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
1600 EAST LAMAR BLVD
ARLINGTON, TEXAS 76011-4511

April 10, 2012

EA-12-023

David J. Bannister, Vice President
and Chief Nuclear Officer
Omaha Public Power District
Fort Calhoun Station FC-2-4
P.O. Box 550
Fort Calhoun, NE 68023-0550

SUBJECT: FINAL SIGNIFICANCE DETERMINATION OF RED FINDING AND NOTICE OF VIOLATION, NRC INSPECTION REPORT 05000285/2012010, FORT CALHOUN STATION

Dear Mr. Bannister:

This letter provides the final significance determination of the preliminary Red finding discussed in our previous communication dated March 12, 2012, which included NRC Inspection Report 05000285/2011014 (ADAMS Accession No. ML12072A128). The finding involved a deficient modification, inadequate maintenance of the safety-related 480 Vac electrical distribution system, and a failure to maintain in effect all provisions of the approved fire protection program.

In your letter dated March 22, 2012 (ML12083A036), you indicated that Omaha Public Power District accepted the characterization of the Red finding, and that you declined your opportunity to discuss this issue in a Regulatory Conference or to provide a written response.

After considering the information developed during the inspection, the NRC has concluded that the finding is appropriately characterized as Red, high safety significance. The NRC has also concluded that the failure to ensure that the 480 Vac electrical power distribution system design requirements were properly implemented and maintained through proper maintenance, modification, and design activities along with the failure to implement and maintain in effect all provisions of the fire protection program are violations of NRC requirements, as cited in the attached Notice of Violation (Notice). The circumstances surrounding the violations were described in detail in NRC Inspection Report 05000285/2011014. In accordance with the NRC Enforcement Policy, the Notice is considered an escalated enforcement action because it is associated with a Red finding.

You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. If you have additional information that you believe the NRC should consider, you may provide it in your response to the Notice. The NRC review of your response to the Notice will also determine whether further enforcement action is

D. Bannister

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necessary to ensure compliance with regulatory requirements.

Fort Calhoun Station is currently shutdown and in the oversight process described by Inspection Manual Chapter 0350, "Oversight of Reactor Facilities in a Shutdown Condition Due to Significant Performance and/or Operational Concerns." Therefore, follow up inspection activities related to this finding will be incorporated as part of the Manual Chapter 0350 inspection process.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction.

Sincerely,



Elmo E. Collins
Regional Administrator

Docket: 50-285
License: DPR-40

Enclosure:
Notice of Violation

Electronic Distribution for Fort Calhoun

NOTICE OF VIOLATION

Omaha Public Power District
Fort Calhoun Station

Docket No.: 50-285
License No.: DPR-40
EA-12-023

During an NRC inspection conducted from September 12, 2011, to February 29, 2012, violations of NRC requirements were identified. In accordance with the NRC Enforcement Policy, the violations are listed below:

- A. 10 CFR Part 50, Appendix B, Criterion III, "Design Control," requires, in part that: (1) design changes, including field changes, be subject to design control measures commensurate with those applied to the original design; (2) measures be established to assure that applicable regulatory requirements and the design basis for safety-related structures, systems and components are correctly translated into specifications, drawings, procedures, and instructions; and (3) these measures assure that appropriate quality standards are specified and included in design documents and that deviations from such standards are controlled.

Contrary to the above requirement, from November 2009 to June 7, 2011, the licensee failed to ensure that design changes were subject to design control measures commensurate with those applied to the original design; failed to assure that applicable regulatory requirements and the design basis for safety-related structures, systems, and components were correctly translated into drawings, procedures, and instructions; and failed to ensure that these measures assured that appropriate quality standards were specified and included in the design documents. Specifically, design reviews, work planning and instructions for a modification to install new 480 Vac load center breakers failed to ensure that the cradle adapter assemblies had low resistance connections with the switchgear bus bars by establishing a proper fit and requiring low resistance connections to assure that design basis requirements were maintained.

- B. 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures be established to assure that conditions adverse to quality such as failures, defective material and equipment, and nonconformances are promptly identified and corrected. In the case of significant conditions adverse to quality, the measures shall assure that the cause of the condition is determined and corrective action taken to preclude repetition.

Contrary to the above requirement, from May 22, 2008, to June 7, 2011, the licensee failed to assure that the cause of the significant condition adverse to quality was determined and corrective action was taken to preclude repetition. Specifically, the licensee failed to ensure that their preventative maintenance program for the safety-related 480 Vac electrical power distribution system was adequate to ensure proper cleaning of conductors, proper torquing of bolted conductor or bus bar connections, and adequate inspection guidance for abnormal connection temperatures. In 2008, the licensee identified that preventative maintenance procedure EM-PM-EX-1200,

"Inspection and Maintenance of Model AKD-5 Low Voltage Switchgear," was less than adequate as a result of a root cause analysis for the failure of bus-tie breaker BT-1B3A to close on demand and loss of bus 1B3A. The licensee categorized this failure as a significant condition adverse to quality. The analysis concluded that breaker BT-1B3A had high resistance connections which occurred as a result of both procedure deficiencies and inadequate implementation resulting in the failure to remove dirt and hardened grease from electrical connections. The licensee implemented corrective actions to address these procedural deficiencies; however the corrective actions were inadequate to prevent high resistance connections in load center 1B4A due to the presence of hardened grease and oxidation. The procedure did not contain adequate guidance for torquing bolted connections or measuring abnormal connection temperatures due to loose electrical connections in the bus compartment of the switchgear.

- C. License Condition 3.D, "Fire Protection Program," requires, in part, that the licensee implement and maintain in effect all provisions of the approved Fire Protection Program as described in the Updated Safety Analysis Report and as approved in NRC safety evaluation reports. Section 9.11.1 of the Updated Safety Analysis Report describes the fire protection system design basis and states, in part, that the design basis of the fire protection systems includes commitments to 10 CFR Part 50, Appendix R, Section III.G. "Fire protection of safe shutdown capability," Section III.G.1.a., requires, in part, that fire protection features be provided for structures, systems, and components important to safe shutdown, and that these features be capable of limiting fire damage so that one train of systems necessary to achieve and maintain hot shutdown conditions is free of fire damage.

Contrary to the above requirement, from November 2009, to June 7, 2011, the licensee failed to implement and maintain in effect all provisions of the approved Fire Protection Program. Specifically, the licensee failed to ensure that design reviews for electrical protection and train separation of the 480 Vac electrical power distribution system were adequate to ensure that a fire in load center 1B4A would not adversely affect operation of redundant safe shutdown equipment in load center 1B3A, such that one train of systems necessary to achieve and maintain hot shutdown conditions were free of fire damage. Combustion products from the fire in load center 1B4A migrated across normally open bus-tie breaker BT-1B4A into the non-segregated bus duct, shorting all three electrical phases. The non-segregated bus ducting electrically connected load center 1B4A with the Island Bus 1B3A-4A and, through normally closed bus-tie breaker BT-1B3A, to the redundant safe shutdown train.

These violations are associated with a Red Significance Determination Process finding.

Pursuant to the provisions of 10 CFR 2.201 Omaha Public Power District is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001 with a copy to the Regional Administrator, Region IV, and a copy to the NRC Resident Inspector at Fort Calhoun Station, within 30 days of the date of the letter transmitting this Notice (Notice of Violation). This reply should be clearly marked as a "Reply to a Notice of Violation; EA-12-023" and should include for

each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken, and (4) the date when full compliance will be achieved. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice, an order or a Demand for Information may be issued as to why the license should not be modified, suspended, or revoked, or why such other action as may be proper should not be taken. Where good cause is shown, consideration will be given to extending the response time.

If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

Because your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>, to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

Dated this 10th day of April 2012.

Electronic distribution by RIV:
 Regional Administrator (Elmo.Collins@nrc.gov)
 Deputy Regional Administrator (Art.Howell@nrc.gov)
 DRP Director (Kriss.Kennedy@nrc.gov)
 DRP Deputy Director (Troy.Pruett@nrc.gov)
 DRS Director (Anton.Vegel@nrc.gov)
 DRS Deputy Director (Tom.Blount@nrc.gov)
 Senior Resident Inspector (John.Kirkland@nrc.gov)
 Resident Inspector (Jacob.Wingebach@nrc.gov)
 Branch Chief, DRP/F (Jeff.Clark@nrc.gov)
 Senior Project Engineer, DRP/F (Rick.Deese@nrc.gov)
 Project Engineer, DRP/F (Chris.Smith@nrc.gov)
 FCS Administrative Assistant (Berni.Madison@nrc.gov)
 Public Affairs Officer (Victor.Dricks@nrc.gov)
 Public Affairs Officer (Lara.Uselding@nrc.gov)
 Acting Branch Chief, DRS/TSB (Ryan.Alexander@nrc.gov)
 Project Manager (Lynnea.Wilkins@nrc.gov)
 RITS Coordinator (Marisa.Herrera@nrc.gov)
 Regional Counsel (Karla.Fuller@nrc.gov)
 Congressional Affairs Officer (Jenny.Weil@nrc.gov)
 OEmail Resource

Inspection Reports/MidCycle and EOC Letters to the following:
 ROPreports

Only inspection reports to the following:
 RIV/ETA: OEDO (Michael.McCoppin@nrc.gov)
 DRS/TSB STA (Dale.Powers@nrc.gov)

R:\REACTORS\FCS\FCS 2012010-NOV

ADAMS ML

ADAMS: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes		<input checked="" type="checkbox"/> SUNSI Review Complete		Reviewer Initials: STG	
Category B.1		<input checked="" type="checkbox"/> Publicly Available		<input checked="" type="checkbox"/> Non-Sensitive	
Category A.		<input type="checkbox"/> Non-publicly Available		<input type="checkbox"/> Sensitive	
KEYWORD:					
SRI:DRS/EB2	C:DRS/EB2	SRA:DRS	C:DRP/F	0350 Panel Chair	
SGraves	GMiller	DLoveless	JClark	TPruett	
<i>E-GBM</i>	<i>TPU</i>	<i>DPH</i>	<i>J</i>	<i>J</i>	
<i>3/27/12</i>	<i>3/27/12</i>	<i>3/27</i>	<i>3/28/12</i>	<i>3/29/12</i>	
D:DRS	RIV/ACES	OE	Regional Counsel	DRA	
AVegel	HGepford	GGulla	KFuller	AHowell	
<i>NV</i>	<i>HG</i>	<i>E-RLK</i>	<i>K</i>	<i>A</i>	
<i>3/30/12</i>	<i>3/30/12</i>	<i>3/30/12</i>	<i>3/29/12</i>	<i>3/30/12</i>	
RA					
ECollins					
<i>EC</i>					
<i>4/10/2012</i>					