



Monticello Nuclear Generating Plant  
2807 W County Road 75  
Monticello, MN 55362

February 17, 2011

L-MT-11-012  
10 CFR 50.73

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

Monticello Nuclear Generating Plant  
Docket No. 50-263  
Renewed License No. DPR-22

LER 2011-002, ESF Actuation due to Failed Power Supply

The Licensee Event Report (LER) for this occurrence is attached.

Summary of Commitments

This letter contains no new commitments and no revisions to existing commitments.

A handwritten signature in black ink, appearing to read 'Timothy J. O'Connor', written over a large, faint, stylized signature.

Timothy J. O'Connor  
Site Vice President, Monticello Nuclear Generating Plant  
Northern States Power - Minnesota

Enclosure

cc: Administrator, Region III, USNRC  
Project Manager, Monticello, USNRC  
Resident Inspector, Monticello, USNRC

**LICENSEE EVENT REPORT (LER)**

(See reverse for required number of digits/characters for each block)

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects.resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0066), Office of Management and Budget, Washington, DC 20503. If a means used to impose an Information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

<b>1. FACILITY NAME</b> Monticello Nuclear Generating Plant	<b>2. DOCKET NUMBER</b> 05000 263	<b>3. PAGE</b> 1 OF 3
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**4. TITLE**  
ESF Actuation due to Failed Power Supply

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
12	20	2010	2011	002	00	02	17	2011	FACILITY NAME	DOCKET NUMBER
										05000
										05000

<b>9. OPERATING MODE</b>  1	<b>11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §:</b> (Check all that apply)									
<b>10. POWER LEVEL</b>  100%	<input type="checkbox"/>	20.2201(b)	<input type="checkbox"/>	20.2203(a)(3)(i)	<input type="checkbox"/>	50.73(a)(2)(i)(C)	<input type="checkbox"/>	50.73(a)(2)(vii)	<input type="checkbox"/>	50.73(a)(2)(viii)(A)
	<input type="checkbox"/>	20.2201(d)	<input type="checkbox"/>	20.2203(a)(3)(ii)	<input type="checkbox"/>	50.73(a)(2)(ii)(A)	<input type="checkbox"/>	50.73(a)(2)(viii)(B)	<input type="checkbox"/>	50.73(a)(2)(ix)(A)
	<input type="checkbox"/>	20.2203(a)(1)	<input type="checkbox"/>	20.2203(a)(4)	<input type="checkbox"/>	50.73(a)(2)(ii)(B)	<input type="checkbox"/>	50.73(a)(2)(ix)(A)	<input type="checkbox"/>	50.73(a)(2)(x)
	<input type="checkbox"/>	20.2203(a)(2)(i)	<input type="checkbox"/>	50.36(c)(1)(i)(A)	<input type="checkbox"/>	50.73(a)(2)(iii)	<input checked="" type="checkbox"/>	50.73(a)(2)(iv)(A)	<input type="checkbox"/>	73.71(a)(4)
	<input type="checkbox"/>	20.2203(a)(2)(ii)	<input type="checkbox"/>	50.36(c)(1)(ii)(A)	<input type="checkbox"/>	50.73(a)(2)(iv)(A)	<input type="checkbox"/>	50.73(a)(2)(v)(A)	<input type="checkbox"/>	73.71(a)(5)
	<input type="checkbox"/>	20.2203(a)(2)(iii)	<input type="checkbox"/>	50.36(c)(2)	<input type="checkbox"/>	50.73(a)(2)(v)(B)	<input type="checkbox"/>	50.73(a)(2)(v)(C)	<input type="checkbox"/>	OTHER
	<input type="checkbox"/>	20.2203(a)(2)(iv)	<input type="checkbox"/>	50.46(a)(3)(ii)	<input type="checkbox"/>	50.73(a)(2)(v)(C)	<input type="checkbox"/>	50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A	
	<input type="checkbox"/>	20.2203(a)(2)(v)	<input type="checkbox"/>	50.73(a)(2)(i)(A)	<input type="checkbox"/>	50.73(a)(2)(v)(D)				
<input type="checkbox"/>	20.2203(a)(2)(vi)	<input type="checkbox"/>	50.73(a)(2)(i)(B)							

**12. LICENSEE CONTACT FOR THIS LER**

NAME Steven K. Speight	TELEPHONE NUMBER (Include Area Code) 763.271.7636
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**13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT**

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
B	IL	CAP	ATC Nuclear	Y					

<b>14. SUPPLEMENTAL REPORT EXPECTED</b>	<b>15. EXPECTED SUBMISSION DATE</b>	MONTH	DAY	YEAR
O YES (If yes, complete 15. EXPECTED SUBMISSION DATE).      ⊙ NO				

**ABSTRACT** (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

At 0357 December 20, 2010, with the plant in Mode 1 operating at 100% reactor power, the 'A' division Fuel Pool/Reactor Building Exhaust Plenum Primary Power Supply failed. The failure resulted in upscale trips on both the Fuel Pool and Reactor Building Ventilation Plenum radiation monitors. This condition resulted in closure of the Group II Primary Containment Isolation Valves (PCIV), isolation of Secondary Containment (SCT), initiation of the Standby Gas Treatment System (SBGT), and a transfer of the Control Room Ventilation (CRV) and Control Room Emergency Filtration (CREF) systems to the High Radiation Mode. Conditions and Required Actions were entered for Technical Specification 3.3.6.2 (SCT Instrumentation), 3.3.7.1 (CREF Instrumentation), and 3.4.5 (RCS Leakage Detection - CAM). Radiation levels were verified to be normal in the affected areas. Isolation signals were reset and Secondary Containment ventilation systems were restored to a normal lineup. Repairs to the power supply were complete within the allowed completion times. All systems functioned properly and there were no human performance errors associated with this event.

**LICENSEE EVENT REPORT (LER)  
CONTINUATION SHEET**

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		2011	- 002	- 00	

**EVENT DESCRIPTION**

At 0357 December 20, 2010, with the plant in Mode 1 operating at 100% reactor power, the 'A' division Fuel Pool/Reactor Building Exhaust Plenum Radiation Monitor (IL) primary power supply (RJX) failed.

The failure resulted in upscale trips on both the Fuel Pool and Reactor Building Ventilation Plenum Radiation Monitors. This condition resulted in closure of the Group II Primary Containment Isolation Valves (PCIV), isolation of Secondary Containment (SCT), initiation of the Standby Gas Treatment System (SBGT), and a transfer of the Control Room Ventilation (CRV) and Control Room Emergency Filtration (CREF) systems to the High Radiation Mode. Action statements were entered for Technical Specification 3.3.6.2 (SCT Instrumentation), 3.3.7.1 (CREF Instrumentation), and 3.4.5 (RCS Leakage Detection - CAM). Radiation levels were verified to be normal in the affected areas. Isolation signals were reset and secondary containment and control room ventilation/filtration systems were restored to a normal lineup. All systems functioned properly and there were no human performance errors associated with this event.

Investigation identified "A" Fuel Pool/Reactor Building Exhaust Plenum Radiation Monitor meters were reading downscale. An acrid odor was noted around the back panel of the associated power supply. Further investigation revealed that the -24 Vdc module of the power supply had failed.

The failed power supply, Model # 112C2235G012/ST, was manufactured by ATC Nuclear. While the failure resulted in the meter reading downscale, it also resulted in one downscale and one upscale trip of the system. The system is designed to actuate on one upscale trip or two downscale trips.

At approximately 1548 on December 20, 2010, the Fuel Pool/Reactor Building Exhaust Plenum Radiation Monitor power supply was replaced and power restored.

**EVENT ANALYSIS**

The event is reportable to the NRC under 10 CFR 50.73(a)(2)(iv) – System Actuation. It is considered a valid actuation since the system is designed to actuate on one upscale trip or two downscale trips. It affected primary containment isolation valves in more than one system. There were no actual high radiation level conditions present to cause a trip. The site made an event notification to the NRC on December 20, 2010.

This event is not a Safety System Functional Failure.

The issue was reviewed for Part 21 implications and determined to not be reportable.

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**SAFETY SIGNIFICANCE**

There were no nuclear, radiological or industrial safety significant consequences related to this event.

The Monticello risk assessment group reviewed the event for risk impact. Since there was no negative impact on any of the systems that directly or indirectly support critical safety functions that protect the reactor core, there was no significant impact on the risk of core damage from this inadvertent ESF actuation. Since the features that were actuated functioned to isolate portions of containment, there was no negative impact on the risk of a Large Early Release.

**CAUSE**

The cause for the failure of the High Voltage Power Supply was due to the failure of the C20 Tantalum Capacitor on the output of the -24 vdc module. The capacitor failure was due to a manufacturing defect and occurred approximately six days after installation.

**CORRECTIVE ACTION**

Corrective actions are being tracked in the Corrective Action Program.

1. Radiation levels were verified to be normal in the affected areas.
2. The failed power supply was replaced and the monitoring system restored within the allowed completion time.
3. Isolations signals were reset and Secondary Containment ventilation systems were restored to a normal lineup.

An extent of condition evaluation revealed only one other identical power supply installed; the power supply for the 'B' division Fuel Pool/Reactor Building Exhaust Plenum Radiation Monitor. Prior to installation, this power supply was extensively bench tested for over 300 hrs and has been in service since December 2, 2010 without issue. Its capacitors were checked and verified to be from a different lot, therefore there are no other concerns from this equipment failure.

**PREVIOUS SIMILAR EVENTS**

The "B" power supply in the same system suffered a failure in the high voltage power supply on May 12, 2010. This was an older model with a different manufacturer and the failure did not result in an upscale trip or any system actuations/isolations. However, as an outcome of the extent of condition determination, the site replaced the existing "A" power supply with the new model, which subsequently failed.