



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

August 12, 2013

L-MT-13-069
10 CFR 50.73

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

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

LER 2013-004 "Loss of Normal Off-Site Power as a Result of Switchgear Fault"

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

Summary of Commitments

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

Mark A. Schimmel
Site Vice-President, Monticello Nuclear Generating Plant
Northern States Power Company-Minnesota

Enclosure

cc: Regional Administrator, Region III, USNRC
Project Manager, Monticello Nuclear Generating Plant, USNRC
Resident Inspector, Monticello Nuclear Generating Plant, USNRC

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MRK

NRC FORM 366 U.S. NUCLEAR REGULATORY COMMISSION (10-2010)				APPROVED BY OMB NO. 3150-0104				EXPIRES 10/31/2013			
LICENSEE EVENT REPORT (LER) (See reverse for required number of digits/characters for each block)								Estimated burden per response to comply with this mandatory information 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 FOIA/Privacy Section (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 (3150-0104), 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.			
1. FACILITY NAME Monticello Nuclear Generating Plant				2. DOCKET NUMBER 05000 - 263		3. PAGE 1 OF 3					
4. TITLE Loss of Normal Off-Site Power as a Result of Switchgear Fault											
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	
6	13	13	2013	- 004	- 00	8	12	2013	FACILITY NAME	DOCKET NUMBER	
9. OPERATING MODE 4			11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)								
10. POWER LEVEL 0%			<input type="checkbox"/> 20.2201(b) <input type="checkbox"/> 20.2203(a)(3)(i) <input type="checkbox"/> 50.73(a)(2)(i)(C) <input checked="" type="checkbox"/> 50.73(a)(2)(vii) <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)(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)(viii)(B) <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 type="checkbox"/> 50.73(a)(2)(ix)(A) <input type="checkbox"/> 20.2203(a)(2)(ii) <input type="checkbox"/> 50.36(c)(1)(ii)(A) <input checked="" type="checkbox"/> 50.73(a)(2)(iv)(A) <input type="checkbox"/> 50.73(a)(2)(x) <input type="checkbox"/> 20.2203(a)(2)(iii) <input type="checkbox"/> 50.36(c)(2) <input type="checkbox"/> 50.73(a)(2)(v)(A) <input type="checkbox"/> 73.71(a)(4) <input type="checkbox"/> 20.2203(a)(2)(iv) <input type="checkbox"/> 5.46(a)(3)(ii) <input checked="" type="checkbox"/> 50.73(a)(2)(v)(B) <input type="checkbox"/> 73.71(a)(5) <input type="checkbox"/> 20.2203(a)(2)(v) <input type="checkbox"/> 50.73(a)(2)(i)(A) <input checked="" type="checkbox"/> 50.73(a)(2)(v)(C) <input type="checkbox"/> OTHER <input type="checkbox"/> 20.2203(a)(2)(vi) <input type="checkbox"/> 50.73(a)(2)(i)(B) <input checked="" type="checkbox"/> 50.73(a)(2)(v)(D) Specify in Abstract below or in NRC Form 366A								
12. LICENSEE CONTACT FOR THIS LER											
NAME Carrie Fosaaen, Licensing Engineer						TELEPHONE NUMBER (Include Area Code) 763-295-1357					
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		
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
14. SUPPLEMENTAL REPORT EXPECTED							15. EXPECTED SUBMISSION DATE				
<input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE)							<input checked="" type="checkbox"/> NO				
ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)							MONTH	DAY	YEAR		
<p>On June 13, 2013, at 14:31, the 2R Auxiliary Transformer unexpectedly locked-out resulting in a loss of normal offsite power. The lockout occurred due to a three phase arc fault in the 13.8kV switchgear to 11 bus. The 1R Transformer, Alternate power supply to station loads, was out of service at the time of the event. Essential loads were transferred automatically to the backup 4kV 1AR Transformer.</p> <p>Emergency Diesel Generators started automatically as a result of the Loss of Normal Off-Site Power, but were not loaded as offsite power was available to the essential loads through 1AR Transformer. They were then shut down rendering them inoperable until the Fast Start capability was reset. The loss of normal off-site power caused a Group II Containment Isolation signal resulting in the loss of shutdown cooling.</p> <p>No conclusive evidence has been found that would explain the cause of the 13.8kV arc fault; however, the most likely cause of the arc fault was a result of multiple, independent conditions. Operations was able to stabilize the plant, reset the containment isolation and restore shutdown cooling.</p> <p>Immediate Actions taken following the event: The 13.8kV room was quarantined until equipment investigation was complete. The 1AR Transformer, Emergency Diesel Generators and switchyard were protected under the Protected Equipment Program. The 1R Transformer was returned to service providing 4kV power.</p>							N/A	N/A	N/A		

NRC FORM 366A (10-2010)	LICENSEE EVENT REPORT (LER) CONTINUATION SHEET	U.S. NUCLEAR REGULATORY COMMISSION
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1. FACILITY NAME	2. DOCKET	6. LER NUMBER		3. PAGE
Monticello Nuclear Generating Plant	05000-263	YEAR	SEQUENTIAL NUMBER	REV NO.
		2013	- 004	- 00
				2 OF 3

NARRATIVE

EVENT DESCRIPTION

The Monticello Nuclear Generating Plant (MNGP) was in Mode 4, cold shutdown at 0% power with a full scram inserted on June 13, 2013. The 1R Transformer [XFMR], alternate normal supply to station loads was isolated for maintenance. As part of the Extended Power Uprate (EPU), the condensate pumps and motors were replaced and buses 11 and 12 [BU] were upgraded from 4kV to 13.8kV to support the larger equipment. Plant personnel performed a loading test of the 12 Condensate Pump [P] at 14:31:15 with the intent to close the pump motor breaker [BKR] for a couple seconds to initiate pump rotation. The control switch was taken to start and the motor breaker closed. Approximately two seconds later, the control switch was taken to stop and the motor breaker opened. At this moment an arc fault occurred in the 13.8kV feeder bus bar for the breaker acting as the 2R Transformer source to 11 bus 13.8kV supply. This caused the lockout of the station 2R Transformer and loss of normal off-site power. The 3N4 breaker opened, as designed, to protect the 2R Transformer and other equipment, from the arc fault current damage. Essential 4kV safety buses [EA] 15 and 16 were automatically transferred to the station auxiliary 1AR Transformer as the 1R Transformer was out of service. The loss of power resulted in a Group II Containment Isolation signal. Secondary Containment [JM] isolated, Standby Gas Treatment [BH] and Control Room Emergency Filtration initiated, and the Group II Containment Isolation Valves closed. The closing of the Group II Valves caused a loss of shutdown cooling for the reactor [RCT] and Spent Fuel Pool (SFP). Emergency Diesel Generators (EDG) [DG] actuated as expected at 14:31:21 but did not load, as offsite power was available to the essential buses from the 1AR Transformer. At 14:52 the decision was made to shut down both EDG's manually via the emergency method rendering them inoperable until the Fast Start [LC] capability was reset. The decision to shut down the EDG's as a precaution due to the alarms was made without ensuring proper procedure adherence. The duty crew performed a local shutdown of 11 and 12 EDG's in Emergency Conditions and then followed steps to restore them to auto start status. They were declared operable at 15:55. During the event, the reactor temperature and the SFP had no significant rise in temperature.

Operations stabilized the plant, reset the containment isolation and restored shutdown cooling within 58 minutes from the start of the event. SFP cooling was restored 92 minutes after the start of the event.

The 13.8kV room was quarantined until equipment investigation was complete. The 1AR Transformer, both EDG's, and switchyard were protected under the Protected Equipment Program.

EVENT ANALYSIS

This event is reportable under 10 CFR 50.73(a)(2)(iv)(A) for valid actuation of Emergency AC Electrical Power Systems due to the essential bus transfer and valid actuation of the EDG's, a Group II Containment Isolation Signal, and the actuation of Emergency Service Water [BI] systems that do not normally run. This event is also being reported under 10 CFR 50.73(a)(2)(v),(B),(C) and (D), as a Condition that could have Prevented the Fulfillment of the Safety Function to Remove Residual Heat, Control the release of radioactive material, and Mitigate the consequences of an accident since both EDG's were rendered inoperable due to the emergency shutdown. The event is considered a Safety System Functional Failure. Common-cause Inoperability of Independent Trains is being reported under 10 CFR 50.73(a)(2)(vii) since both EDG's were inoperable as a result of operator action.

SAFETY SIGNIFICANCE

A Condition That Could Have Prevented the Fulfillment of the Safety Function to Remove Residual Heat,

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Monticello Nuclear Generating Plant		05000-263	YEAR	SEQUENTIAL NUMBER	REV NO.	3 OF 3
			2013	- 004	- 00	
NARRATIVE						
<p>Control the release of radioactivity material, and Mitigate the consequences of accident occurred when MNGP's EDG's were manually shutdown via emergency method.</p> <p>When the EDG's were shut down via the emergency method, it rendered them inoperable for approximately one hour leaving the site without a credited source of AC off-site power should the 1AR Transformer have failed. Site procedures contain instructions for checking EDG's following an auto start however, this procedure was not retrieved during the event which should have averted the situation.</p>						
CAUSE						
<p>No conclusive evidence has been found that would explain the cause of the 13.8kV arc fault; however, the most likely cause of the arc fault was a result of multiple, independent conditions. These conditions that could have caused the arc include the presence of foreign material or debris, an unexpected high frequency voltage transient on the 13.8kV system, a gap in the insulating boot due to missing tie wraps on phases A and B with a contributing cause being a lack of formal documented decision making process for complex changes involving multiple integrated design changes.</p> <p>Shutting down the EDG's and causing them to be inoperable for a short period of time was due to a vague procedural note that led to confusion regarding EDG indications and alarms when the EDG's are started automatically. Not all appropriate procedures were referenced during the event.</p>						
CORRECTIVE ACTIONS						
<p>All operators involved with the EDG decision making process, which rendered them inoperable, were suspended from performing licensed duties until the investigation concluded. All operations individuals received training which included the details of the event, lessons learned, system operation, procedures, operating experience and operator fundamentals. Hard Cards for checking EDG's after an auto-start have been developed and placed locally at the EDG's. Alarm Response Procedures were updated to include specific guidance that explains the alarm statuses following an emergency start of the EDG's.</p> <p>An Operational Decision Making Issue evaluation was performed to ensure separate Transformers supplied the 13.8kV loads and 4kV loads until all loads were tested on the 13.8kV system. No testing of the 13.8kV loads took place until a time that both the 1R and 2R Transformers were returned to service. The breaker in which the arc fault occurred was inspected and the current Transformers were tested. Damaged components were replaced under vendor oversight. The 2R Transformer was inspected, tested, and the manufacturer reviewed all results before the Transformer was returned to service. All breakers and switchgear on buses 11 and 12 were also removed and inspected. The Site Margin Management process will be used to evaluate 13.8kV switchgear margin for high-frequency transient overvoltage.</p>						
PREVIOUS SIMILAR EVENTS						
<p>There have been no similar events in the last 3 years.</p>						
ADDITIONAL INFORMATION						
<p>Energy industry identification system (EIS) codes are identified in the text within brackets [xx].</p>						