March 31, 2008

L-MT-08-019
10 CFR Part 50.73

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

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

LER 2008-001, "Non-Conservative High Energy Line Break Analysis Discovered During Extended Power Uprate Review"

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

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

For T. O'Connor

Timothy J. O'Connor
Site Vice President, Monticello Nuclear Generating Plant
Nuclear Management Company, LLC

Enclosure

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

NRC FORM 366 (9-2007) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 EXPIRES 8-31-2010

Estimated burden per response to comply with this mandatory information collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to bjs1@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 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.

LICENSEE EVENT REPORT (LER)

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

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
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TITLE (4) Non-Conservative High Energy Line Break Analysis Discovered during Extended Power Uprate Review

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER 05000
01	31	2008	2008	– 001	– 00	03	31	2008	FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	1
POWER LEVEL (10)	100

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply) (11)

	20.2201(b)		20.2203(a)(3)(ii)	X	50.73(a)(2)(ii)(B)		50.73(a)(2)(ix)(A)
	20.2201(d)		20.2203(a)(4)		50.73(a)(2)(iii)		50.73(a)(2)(x)
	20.2203(a)(1)		50.36(c)(1)(i)(A)		50.73(a)(2)(iv)(A)		73.71(a)(4)
	20.2203(a)(2)(i)		50.36(c)(1)(ii)(A)		50.73(a)(2)(v)(A)		73.71(a)(5)
	20.2203(a)(2)(ii)		50.36(c)(2)		50.73(a)(2)(v)(B)		OTHER Specify in Abstract below or in NRC Form 366A
	20.2203(a)(2)(iii)		50.46(a)(3)(ii)		50.73(a)(2)(v)(C)		
	20.2203(a)(2)(iv)		50.73(a)(2)(i)(A)		50.73(a)(2)(v)(D)		
	20.2203(a)(2)(v)		50.73(a)(2)(i)(B)		50.73(a)(2)(vii)		
	20.2203(a)(2)(vi)		50.73(a)(2)(i)(C)		50.73(a)(2)(viii)(A)		
	20.2203(a)(3)(i)		50.73(a)(2)(ii)(A)		50.73(a)(2)(viii)(B)		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Ron Baumer	763-295-1357

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX		CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX

SUPPLEMENTAL REPORT EXPECTED (14)			EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
	YES (If yes, complete EXPECTED SUBMISSION DATE).	X NO				

ABSTRACT

On January 31, 2008 during a review of the High Energy Line Break (HELB) calculations for the plant's Extended Power Uprate (EPU) project, it was determined that the existing HELB calculations failed to consider the actuation of the fire sprinklers in the condenser bay and the resultant flooding impact on the lower Division 1 4kV equipment. The station had previously installed a flood barrier near the 4kV Switchgear room door therefore present operability was not impacted. The station determined that prior to the installation of the barrier, there was a potential for the loss of the lower Division 1 4kV equipment. This LER addresses the past operability impact. The cause of the event was a failure to consider the impact of the fire sprinklers. Corrective actions taken or planned are: the flood barrier will remain in place and a revision of the affected HELB calculations will be performed.

LICENSEE EVENT REPORT (LER)

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TEXT *(If more space is required, use additional copies of NRC Form 366A)* **(17)**

Event Description

On January 31, 2008, Monticello Nuclear Generating Plant (MNGP) personnel discovered during a review of the Extended Power Uprate (EPU) High Energy Line Break (HELB) calculations that the station had not considered the impact of the actuation of fire sprinklers [SPRNK] in the existing HELB calculations. Since the station had a flood barrier installed outside the lower Division 1 4kV [EC] switchgear room, current operability of the plant was not affected. However, for the plant conditions which existed prior to installation of the HELB barrier outside the 4KV switchgear room, the issue is reportable under 50.73(a)(2)(ii)(B) "Any event or condition that resulted in the nuclear power plant being in an unanalyzed condition that significantly degrades plant safety."

The station conducted a review of information related to NRC requirements and guidance as well as correspondence applicable to High Energy Line Breaks (HELB). Based on this review, it was determined that without the HELB barrier in place to protect the Division I 4KV room, the plant would be in an unanalyzed condition for the following HELB events in the condenser room: a feedwater [SJ] pump [PMP] discharge line break, a condensate [SD] (feedwater suction line) break, or a Main Steam [SB] line break in the condenser room. Without the barrier in place the additional volume of water from the fire suppression system causes the flood level within the Division I 4KV room to reach a level which renders the equipment within that room inoperable.

Event Analysis

The station determined there was no current operability concern and therefore the event was not reportable under 10 CFR 50.72. However, due to past operability concerns (the condition existed from November 29, 2001 to present), the event is reportable under 50.73(a)(2)(ii) (B) "Any event or condition that resulted in the nuclear power plant being in an unanalyzed condition that significantly degrades plant safety," and a Licensee Event report is required for this event.

The event is not considered a safety system functional failure.

Safety Significance

The Probabilistic Risk Assessment (PRA) group performed an evaluation of the risk of core damage attributable to floodwater resulting from actuation of the condenser bay sprinkler system upon a HELB event that exceeds temperatures at which the sprinkler heads activate. This assessment is intended to address past risk associated with the postulated HELB events,

therefore the flood barrier erected outside of the lower 4KV switchgear room is assumed not to exist.

It was determined that a HELB frequency of 2.60 E-02/yr (one HELB event every 39 years) would be required to result in a CDF increase of 1.00 E-06/yr for the scenario of interest. Since an annual increase in core damage probability of 1.00 E-06 is considered to be very small as reflected in guidance provided by RG 1.174, the frequency of the HELB break(s) of concern must therefore be greater than 2.60 E-02/yr to be considered more than a very small risk impact. Since the Monticello plant and the commercial nuclear industry as a whole do not observe HELB events in general at or near this frequency, a reasonable conclusion can be drawn, that the additional CDF risk attributable to the vulnerability of division I 4KV switchgear to HELB events described above, is very small.

Combined flow resulting from the HELB and fire sprinkler activation was determined to be bounded by a large fire protection system break modeled in the PRA. Review of quantification results related to the postulated HELB scenario show that the flooding, unless detected and suppressed early, generally fails the lower 4KV equipment as well as offsite power, leaving #12 EDG [DG] as the only remaining major power source to supply division II equipment. Failure of #12 EDG due to any of a wide array of causes will result in a station blackout (SBO), and limited capability to provide long term core cooling to prevent melting of the core. Even with a SBO, however, adequate core cooling can be accomplished through the use of HPCI [BJ] and/or RCIC [BN] for short term (several hours) high pressure injection followed by either manual operation of RCIC or depressurization with low pressure injection of fire water (recovered from the sprinkler activation diversion). Both long term RCIC operation and fire water injection are dependent on long term decay heat removal capability for success.

In conclusion, the risk of core damage attributable to floodwater resulting from actuation of the condenser bay sprinkler system upon a HELB event that exceeds temperatures at which the sprinkler heads would actuate is considered to be very small.

Cause

MNGP calculations of record for HELB did not model the actuation of the fire water sprinklers in the condenser room when the condenser room exceeded 165 deg F during a postulated HELB. The sprinkler actuation adds to the liquid water volume emptied into the condenser room following a HELB. This extra liquid volume in the condenser room is enough to have exceeded the maximum allowable postulated water level of 3.75" in the lower 4 kV switchgear room.

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TEXT *(If more space is required, use additional copies of NRC Form 366A)* **(17)**

Corrective Action

The applicable HELB calculations will be revised to reflect the new data.

Failed Component Identification

None

Previous Similar Events

MNGP LER 263-2000-004: An analysis of a high energy line break (HELB) on the 911ft elevation of the Turbine Building indicated flooding of the Division I 4kV switchgear room and possible loss of the Division I 4kV switchgear. The analysis indicated that the peak flood level on the 911ft elevation of the Turbine Building Division I 4kV switchgear room would cause a loss of Division I 4kV power. With an assumed loss of offsite power, Division II Emergency Diesel Generator was considered the worst case single active failure. Therefore, this event could potentially result in loss of the station AC power from both divisions of the 4kV distribution system. Modifications were installed to prevent water from entering the Division I 4kV switchgear room.