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10 CFR 50.73

August 16, 2010
BW100082

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

Braidwood Station, Unit 2
Facility Operating License No. NPF-77
NRC Docket No. STN 50-457

Subject: Licensee Event Report 2010-002-00 – Containment Spray Pump Suction Valve Failed to Close Resulting in an Unanalyzed Plant Condition due to Procedure Error

The enclosed Licensee Event Report (LER) is being submitted in accordance with 10 CFR 50.73, "Licensee event report system," paragraph (a)(2)(ii)(B), as an unanalyzed condition. This condition was identified on June 17, 2010, and involved an unanalyzed condition when a containment spray pump suction valve failed to return to its normally closed position following surveillance testing. The potential safety significance of this condition is being assessed and will be documented in a supplement to this LER.

10 CFR 50.73(a) requires an LER to be submitted within 60 days following discovery of the event. Therefore, this report is being submitted by August 16, 2010.

There are no regulatory commitments contained in this letter. Should you have any questions concerning this submittal, please contact Mr. Ronald Gaston, Regulatory Assurance Manager, at (815) 417-2800.

Respectfully,



Amir Shahkarami
Site Vice President
Braidwood Station

Enclosure: LER 2010-002-00

cc: NRR Project Manager – Braidwood Station
Illinois Emergency Management Agency – Division of Nuclear Safety
US NRC Regional Administrator, Region III
US NRC Senior Resident Inspector (Braidwood Station)

JE22
NRR

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 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@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.

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4. TITLE
Containment Spray Pump Suction Valve Failed to Close Resulting in an Unanalyzed Plant Condition due to Procedure Error

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
06	17	2010	2010	002	00	08	16	2010	Braidwood Station Unit 1	05000456
									FACILITY NAME	DOCKET NUMBER
									N/A	N/A

9. OPERATING MODE 1	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)									
10. POWER LEVEL 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"/> 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 checked="" 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 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"/> 50.46(a)(3)(ii)	<input 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 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 type="checkbox"/> 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A							

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME Ronald Gaston, Regulatory Assurance Manager	TELEPHONE NUMBER (Include Area Code) (815) 417-2800
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13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	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 <input checked="" type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input type="checkbox"/> NO	15. EXPECTED SUBMISSION DATE MONTH: 02 DAY: 10 YEAR: 2011
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ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On June 17, 2010, containment spray pump suction valve 2CS009B was successfully stroked full open during a surveillance test, however during restoration failed to stroke fully closed. The valve was subsequently manually restored to the normally closed position.

It was determined that a bypass flow path would exist if a safety injection occurred with both suction from the refueling water storage tank (RWST) and the emergency core cooling system sump open. This alignment provides an increased flow rate of the RWST to the containment sump, and was potentially not bounded by an existing analysis of an SI8812 valve failing open. Therefore, this condition created a potentially unanalyzed condition when 2CS009B failed to fully close. This is applicable to both trains of containment spray (train A and train B) and to both Unit 1 and Unit 2.

The direct cause of this event was that the procedure was not properly evaluated for an unanalyzed plant condition due to the process controls, standards, and license conditions at the time of development. Corrective actions include revising the surveillance tests for the containment spray sump isolation valves. This action is complete.

There were no actual safety consequences impacting plant or public safety as a result of the event. This condition is being reported in accordance with 10 CFR 50.73(a)(2)(ii)(B) for being in an unanalyzed condition that significantly degraded plant safety. The potential safety significance is being assessed and will be reported in a supplement to this report.

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NARRATIVE

A. Plant Operating Conditions Before The Event:

Event Date:	June 17, 2010	Event Time:	0519 CST
Unit: 2	MODE: 1	Reactor Power:	100 percent
Unit 2 Reactor Coolant System (RC) [AB]:	Normal operating temperature and pressure		

B. Description of Event:

No additional structures, systems, or components were inoperable at the start of this event that contributed to the event.

On June 17, 2010, surveillance testing was being performed on the containment spray (CS) [BE] pump suction valve 2CS009B.

The 2CS009B valve is interlocked with the associated emergency core cooling system (ECCS) [BR\BQ] sump valve 2SI8811B. To open the 2CS009B, the 2SI8811B must be open. Opening the 2SI8811B to satisfy the interlock requirements would allow the refueling water storage tank (RWST) to drain into the containment ECCS sump when the 2CS009B was stroked open with the associated RWST suction valves 2CS001B and 2SI8812B in their normally open position. To prevent a draining of the RWST into the Containment ECCS sump, the surveillance installs jumpers in the 2CS009B control circuit to bypass the 2SI8811B interlock and leave the 2SI8811B valve closed.

The 2CS009B was stroked from full closed to full open for surveillance testing. The valve was successfully stroked open meeting all acceptance criteria in accordance with the procedure. On subsequent restoration to the normally closed position, the valve failed to complete the entire stroke. The control board indicated dual position for 2CS009B. An equipment operator (EO) and electrical maintenance technician in the area indicated that the valve stopped shortly after being energized in the closed direction. When 2CS009B failed to close, the valve was declared inoperable. The 2B CS train was already inoperable for a planned work window. An 8 hour notification was made per 10CFR 50.72(b)(3)(ii)(B) Unanalyzed Condition when valve 2CS009B failed to close. The valve was subsequently manually restored to the normally closed position.

During review of this event, it was determined that a bypass flow path would exist if a safety injection occurred with both suctions from the RWST (valves 2CS001B and 2SI8812B) and the containment ECCS sump (valve 2SI8811B) open. This alignment provides an increased flow rate of the RWST to the containment sump. This bypass condition is established in the surveillance by installing jumpers to defeat the 2CS009B valve opening interlocks. This bypass flow path was potentially not bounded by an existing analysis of a SI8812 valve failing open. Therefore, this condition created a potentially unanalyzed condition when 2CS009B failed to fully close. This condition is applicable to both trains of CS (train A and train B) and to both Unit 1 and Unit 2. This condition is being reported in accordance with 10 CFR 50.73(a)(2)(ii)(B) for being in an unanalyzed condition that significantly degraded plant safety.

C. Cause of Event

A review of the historic data associated with the surveillance was performed. The original surveillance revision was developed and implemented in 1986, and has always involved installing jumpers in the 1/2CS009A/B control circuit to bypass the associated 1/2SI8811A/B interlock and leave the 1/2SI8811A/B valve closed. During this timeframe, Braidwood was under construction and fuel had not arrived on-site. A 50.59 evaluation was not performed for this surveillance, as the Technical Specifications and the Updated Final Safety Analysis Report were preliminary

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NARRATIVE

documents and had not been approved. During subsequent revisions following commercial operation, the 50.59 evaluations for the procedure revisions only discussed the specific procedure changes and did not review the entire surveillance. Further, the 50.59 evaluation process was historically not as rigorous as the current revision.

The direct cause of this event was that the procedure was not properly evaluated for an unanalyzed plant condition due to the process controls, standards, and license conditions at the time of development. The root cause of the event is currently under evaluation. A supplement to this report will be provided with the conclusions of this evaluation.

D. Safety Consequences:

There were no actual safety consequences to this condition.

When 1/2CS009A/B and 1/2CS001A/B are open at the same time, this condition creates a potentially unanalyzed plant condition if a safety injection occurs during that time period. When an RWST Lo-2 level is reached, the containment sump isolation valves 1/2SI8811A and B open automatically. This alignment provides an increased flow rate of the RWST to the containment sump. This loss of borated water supply during the injection phase for the emergency core cooling systems would hinder further actions assumed in the plant analysis to prevent core damage.

An evaluation is being performed to determine the impact to the plant. A supplement to this report will be provided with the conclusions of this evaluation and the associated risk impact.

E. Corrective Actions:

The corrective actions include revising the surveillance tests for the containment spray sump isolation valves to add a step for 1/2CS009A/B valve stroke time testing to close the associated 1/2CS001A/B valve before stoking 1/2CS009A/B – complete.

F. Previous Occurrences:

There has been one previous, similar event identified at the Braidwood Station:

- Licensee Event Report 2009-003-00 – Drain Procedure for ECCS Suction Line Creates Unanalyzed Condition Due to Inadequate Configuration Requirements

G. Component Failure Data:

<u>Manufacturer</u>	<u>Nomenclature</u>	<u>Model</u>	<u>Mfg. Part Number</u>
N/A	N/A	N/A	N/A