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Byron Station
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10 CFR 50.73

May 29, 2012
Byron Ltr 2012 – 0062
File # 1.10.0101

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

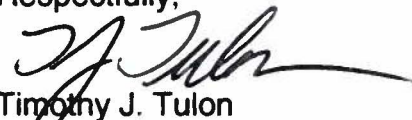
Byron Station, Unit 1
Facility Operating License No. NPF-37
NRC Docket No. STN 50-454

Subject: Licensee Event Report 2012-002-00, "One Train of Containment Cooling System Inoperable Longer Than Allowed by Technical Specifications Due to Inadequate Work Instructions"

The enclosed Licensee Event Report (LER) is being submitted in accordance with 10 CFR 50.73, "Licensee event report system," paragraph (a)(2)(i)(B), as a condition prohibited by Technical Specifications and paragraph (a)(2)(v)(B), as an event or condition that could have prevented fulfillment of a safety system. The LER involves the inadvertent inoperability of a Unit 1 Containment Cooling train due to failing to re-install an internal access panel in a cooling plenum.

There are no regulatory commitments contained in this letter. Should you have any questions concerning this submittal, please contact Mr. David Gudger, Regulatory Assurance Manager, at (815) 406-2800.

Respectfully,



Timothy J. Tulon
Site Vice President
Byron Station

Enclosure: LER Number 454-2012-002-00

NRC FORM 366 <small>(10-2010)</small>		U.S. NUCLEAR REGULATORY COMMISSION		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 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 Byron Station, Unit 1				2. DOCKET NUMBER 05000454		3. PAGE 1 OF 3								
4. TITLE One Train of Containment Cooling System Inoperable Longer Than Allowed by Technical Specifications Due to Inadequate Work Instructions														
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				
04	21	11	2012 - 002 - 00			05	29	2012	N/A					
9. OPERATING MODE <div style="text-align: center; font-size: 24px;">1</div>			11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check all that apply)											
10. POWER LEVEL <div style="text-align: center; font-size: 24px;">100</div>			<input type="checkbox"/> 20.2201(b) <input type="checkbox"/> 20.2201(d) <input type="checkbox"/> 20.2203(a)(1) <input type="checkbox"/> 20.2203(a)(2)(i) <input type="checkbox"/> 20.2203(a)(2)(ii) <input type="checkbox"/> 20.2203(a)(2)(iii) <input type="checkbox"/> 20.2203(a)(2)(iv) <input type="checkbox"/> 20.2203(a)(2)(v) <input type="checkbox"/> 20.2203(a)(2)(vi)			<input type="checkbox"/> 20.2203(a)(3)(i) <input type="checkbox"/> 20.2203(a)(3)(ii) <input type="checkbox"/> 20.2203(a)(4) <input type="checkbox"/> 50.36(c)(1)(i)(A) <input type="checkbox"/> 50.36(c)(1)(ii)(A) <input type="checkbox"/> 50.36(c)(2) <input type="checkbox"/> 50.46(a)(3)(ii) <input type="checkbox"/> 50.73(a)(2)(i)(A) <input checked="" type="checkbox"/> 50.73(a)(2)(i)(B)			<input type="checkbox"/> 50.73(a)(2)(i)(C) <input type="checkbox"/> 50.73(a)(2)(ii)(A) <input type="checkbox"/> 50.73(a)(2)(ii)(B) <input type="checkbox"/> 50.73(a)(2)(iii) <input type="checkbox"/> 50.73(a)(2)(iv)(A) <input type="checkbox"/> 50.73(a)(2)(v)(A) <input checked="" type="checkbox"/> 50.73(a)(2)(v)(B) <input type="checkbox"/> 50.73(a)(2)(v)(C) <input type="checkbox"/> 50.73(a)(2)(v)(D)			<input type="checkbox"/> 50.73(a)(2)(vii) <input type="checkbox"/> 50.73(a)(2)(viii)(A) <input type="checkbox"/> 50.73(a)(2)(vii)(B) <input type="checkbox"/> 50.73(a)(2)(ix)(A) <input type="checkbox"/> 50.73(a)(2)(x) <input type="checkbox"/> 73.71(a)(4) <input type="checkbox"/> 73.71(a)(5) <input type="checkbox"/> OTHER		
12. LICENSEE CONTACT FOR THIS LER														
FACILITY NAME David T. Gudger, Regulatory Assurance Manager									TELEPHONE NUMBER (Include Area Code) 815-406-2800					
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					
14. SUPPLEMENTAL REPORT EXPECTED						15. EXPECTED SUBMISSION DATE			MONTH	DAY	YEAR			
<input checked="" type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE)						<input type="checkbox"/> NO			08	22	2012			
ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)														
<p>On March 29, 2012, an inspection was in progress for a water leak inside containment that was causing elevated containment sump levels. The inspection involved looking for leaks within the Reactor Coolant Fan Coolers (RCFC) plenums. At 1217 hours, Technical Specifications (TS) 3.6.6, "Containment Spray and Cooling Systems," Condition C was entered for the 1A Containment Cooling (VP) train and mechanics proceeded to remove the 1A Reactor Containment Fan Cooler (RCFC) plenum access panel to inspect within plenum for leaks. During the inspection, an interior access panel (4 by 6 feet) was discovered not to be installed, as required. Shift supervisor was immediately notified and the 1A VP train remained in TS 3.6.6 Condition C pending resolution. The interior panel and plenum access panels were replaced and TS 3.6.6 Condition C exited at 1308 hours on March 29, 2012. The function of this interior panel is to ensure all containment air is directed across the Essential Service Water (SX) coils for cooling. During accident conditions, this opening would allow some of the air to bypass the cooling coils and consequently, not be cooled. An investigation revealed the interior panel was removed on March 15, 2011, during Unit 1's refueling outage for maintenance activities, and was inadvertently not re-installed on April 15, 2011, after maintenance completion. The cause of the event was inadequate level of details in the work package that removed and re-installed the RCFC access panels. Corrective actions include providing unique equipment identification number for each RCFC panel and to include this information on the model work package used for future RCFC panel/s removal.</p>														

LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET

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NARRATIVE

NRC FORM 366 (10-2010)

Background

The Containment Cooling System (VP) [BK] consists of two trains. Each VP train consists of two Reactor Containment Fan Coolers (RCFCs). Specifically, Train A of VP System consists of the A and C RCFCs and Train B consists of B and D RCFCs. There are two sets of cooling coils in each RCFC; One set of coils receive cooling water from the non safety-related Chilled Water (WO) [KM] System and the second set of coils receives cooling water from the safety-related Essential Service Water (SX) [BI] System. Upon receipt of an engineered safeguard signal, SX to the WO condensers is isolated and WO cooling is lost. The RCFCs only receive their cooling water from the SX system, accordingly.

A. Plant Operating Conditions Before the Event:

Unit 1 was in Mode 1 — Power Operations at approximately 100% power.

Reactor Coolant System (RC) [AB] was at normal operating temperature and pressure. No structures, systems, or components were inoperable at the start of this event that contributed to the event.

B. Description of Event

On March 29, 2012, an inspection was in progress for a water leak inside containment that was causing elevated containment sump levels. Part of this inspection involved looking for possible leakage coming from the SX coils within the RCFC's plenums. To accomplish this, each RCFC plenum access panel needed to be removed in order to access the SX coils section for inspection. At 1217 hours, Technical Specifications (TS) 3.6.6, "Containment Spray and Cooling Systems," Condition C was entered for the 1A VP train and mechanics proceeded to remove the 1A RCFC plenum access panel. At approximately 1234 hours, during the inspection for the leak, an interior access panel (4 by 6 feet) was discovered not installed, as required. The panel was tied off to an adjacent panel. The Shift supervisor was immediately notified. The condition was entered into the corrective action program and the 1A VP train remained in TS 3.6.6 Condition C pending resolution. The interior panel and plenum access panels were replaced and TS 3.6.6 Condition C exited at 1308 hours on March 29, 2012.

The function of this interior panel is to ensure all containment air is directed across the SX coils for cooling. During accident conditions, when WO cooling is lost to the WO coils, this opening would allow some of the air to bypass the SX coils over to the WO coils and, consequently, not be cooled.

An investigation revealed the interior panel was removed on March 15, 2011 for maintenance, during Unit 1's spring 2011 refueling outage, and inadvertently not re-installed on April 15, 2011, after maintenance completion. Due to the existence of this bypass flow path, the 1A RCFC was considered inoperable when interior panel was not installed.

The 1A VP train was inoperable for longer than allowed by TS 3.6.6 Condition C and Limiting Condition for Operations (LCO) 3.0.4 was initially inadvertently violated at 0315 hours on April 21, 2011, when Unit 1 entered Mode 4 in returning to power after the spring 2011 refueling outage and after returning to power after a March 2012 maintenance outage. Therefore, this event is reportable to the NRC in accordance with 10CFR 50.73(a)(2)(i)(B) as a condition prohibited by TS. In addition, the 1B VP train was also taken inoperable for maintenance on four occasions during this time period for approximately 30 collective hours which also makes it reportable to the NRC in accordance with 10 CFR 50.73 (a)(2)(v)(B) as an event or condition that could have prevented fulfillment of a safety function.

**LICENSEE EVENT REPORT (LER)
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NARRATIVE

C. Cause/s of the Event

The cause was determined to be an inadequate level of details in the work package for the March 15, 2011, removal of the 1A RCFC panels. The work package generically stated to remove panels and did not specifically identify each panel to be removed and reinstalled. A separate work crew re-installing the panels on April 19, 2011, did not recognize the interior panel was removed and, therefore only re-installed the plenum access panel.

Contributing causes include insufficient drawing details concerning the panels in terms of number of panels and locations and the panels not having unique equipment identifier.

D. Safety Significance

There were no actual safety consequences as a result of the diminished cooling capacity of the 1A VP train. The 1B VP train was operable during this period except for four occasions; on August 31, 2011, for approximately 20 hours, December 29, 2011 for approximately 8 hours, March 29, 2012 for 26 minutes and March 29, 2012 for 33 minutes. During these periods both Unit 1 CS trains were operable. An engineering analysis is being pursued to determine the potential significance of the diminished cooling capability of the 1A RCFC. The results of the analysis will be provided in a supplement to this report.

E. Corrective Actions

The remaining RCFC plenums in Unit 1 were inspected and all other internal panels were found properly installed. Unit 2 RCFC plenums will be inspected in the next refueling outage.

The RCFC panels will be given unique equipment identifiers and each panel will be labeled accordingly.

The drawings will be revised to reflect equipment identification for the RCFC panels.

The model work package for the RCFC panel removal will be revised to include instructions for each panel to be removed and re-installed; to include their unique identification number.

F. Previous Occurrences

No previous events were identified at Byron Station in previous three years.