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1CAN041101

April 11, 2011

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

Subject: Licensee Event Report 50-313/2011-001-00
Arkansas Nuclear One – Unit 1
Docket No. 50-313
License No. DPR-51

Dear Sir or Madam:

In accordance with 10CFR 50.73(a)(2)(i)(B), enclosed is the subject report concerning a violation of Technical Specifications due to the failure to enter the appropriate Technical Specification or complete the associated required actions prior to the appropriate completion time when the associated emergency switchgear room chillers were out of service.

There are no new commitments contained in this submittal. Should you have any questions concerning this issue, please contact me.

Sincerely,

Original signed by Stephenie L. Pyle

SLP/bws

Enclosure: Licensee Event Report 50-313/2011-001-00

cc: Mr. Elmo Collins
Regional Administrator
U. S. Nuclear Regulatory Commission
Region IV
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Arlington, TX 76011-4125

NRC Senior Resident Inspector
Arkansas Nuclear One
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NRC FORM 366 (10-2010)		U.S. NUCLEAR REGULATORY COMMISSION		APPROVED BY OMB: NO. 3150-0104 EXPIRES: 10/31/2013 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.	
LICENSEE EVENT REPORT (LER) (See reverse for required number of digits/characters for each block)					
1. FACILITY NAME Arkansas Nuclear One – Unit 1			2. DOCKET NUMBER 05000313		3. PAGE 1 OF 4
4. TITLE Violation of Technical Specification Due to the Failure to Enter the Appropriate Technical Specification or Complete the Associated Required Action Prior to the Appropriate Completion Time					
5. EVENT DATE		6. LER NUMBER		7. REPORT DATE	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.
02	14	2011	2011 – 001 – 00		04 11 2011
				8. OTHER FACILITIES INVOLVED	
				FACILITY NAME	
				DOCKET NUMBER	
				FACILITY NAME	
				DOCKET NUMBER	
9. OPERATING MODE <div style="text-align: center; font-size: 1.2em;">1</div>		11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: <i>(Check all that apply)</i>			
10. POWER LEVEL <div style="text-align: center; font-size: 1.2em;">100</div>		<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 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 checked="" type="checkbox"/> 50.73(a)(2)(i)(B) <input type="checkbox"/> 50.73(a)(2)(v)(D)			
12. LICENSEE CONTACT FOR THIS LER					
FACILITY NAME Stephenie L. Pyle Acting Manager, Licensing				TELEPHONE NUMBER <i>(Include Area Code)</i> 479-858-4710	
13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT					
CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	
14. SUPPLEMENTAL REPORT EXPECTED <input type="checkbox"/> YES <i>(If yes, complete 15. EXPECTED SUBMISSION DATE)</i> <input checked="" type="checkbox"/> NO				15. EXPECTED SUBMISSION DATE	
				MONTH	DAY
				N/A	N/A
				YEAR	N/A
ABSTRACT <i>(Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)</i>					
<p>During the period beginning January 22, 2008 until January 4, 2011, Arkansas Nuclear One Unit 1 (ANO-1) periodically implemented compensatory measures during maintenance or failure of Emergency Switchgear Chillers (VCH-4A, VCH-4B), Battery Room Unit Coolers (VUC-14A, VUC-14C), or Switchgear Room Unit Coolers (VUC-2B, VUC-2D). During some of these instances, compliance with Technical Specification (TS) 3.8.4, "DC Sources – Operating" and TS 3.8.9, "Distribution Systems – Operating" was not met. ANO-1 1 did not enter or remain in the appropriate TS for an inoperable system, subsystem, train or component when all the necessary attendant non-technical specification support equipment that are required for the system, subsystem, train, component or device to perform its specified safety function are also capable of performing their support function. VCH-4A or B individually have not been shown to be capable of supporting 100% of the room cooling requirements of both trains of vital switchgear when one of the chillers is out of service without implementing additional compensatory actions. Therefore, reliance on the opposite train chiller alone is not sufficient to maintain all cooling requirements of the affected train's vital switchgear. A misapplication of industry guidance resulted in the use of non-safety related unit coolers and additional compensatory measures as an acceptable alternative. Currently, TS LCO compliance is maintained when the switchgear room cooling is removed from service.</p>					

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

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NARRATIVE**A. Plant Status**

At the time this condition was identified, Arkansas Nuclear One, Unit 1 (ANO-1) was operating at ~100% heat balance power.

B. Event Description

During the NRC 4th Quarter Resident Inspection, the inspectors identified a non-cited violation of Technical Specifications (TS) due to failure to enter the appropriate TS or complete the associated required action prior to the appropriate completion time when the associated emergency chillers were out of service. Specifically, ANO-1 did not enter the appropriate TS for an inoperable system, subsystem, train or component when the necessary attendant non-technical specification support equipment was not capable of performing their support function. The inspectors determined that not entering the appropriate TS when the emergency switchgear room chillers or applicable room cooling units were not available to provide the TS support function for TS emergency switchgear equipment was a performance deficiency.

Original design specifications for the ANO-1 emergency switchgear room cooling arrangement were based on hand calculations of switchgear room known heat loads. Since implementation of the 1977-1979 design changes that installed this equipment, more robust software modeling of the switchgear rooms and associated heat load calculations have identified previously unrecognized heat loads in these areas. As these heat load calculations have evolved, certain additional procedurally controlled compensatory actions have been implemented to ensure continued switchgear room cooling functionality under accident conditions (LOCA with loss of offsite power) for as long as 30 days post accident, and to provide full capacity cooling to both Red and Green switchgear areas in the event that one emergency train of cooling is out of service for maintenance. In December, 2009, ANO-1 implemented a revision to the "Battery and Switchgear Emergency Cooling System" operating procedures that introduced the use of the non-safety related VUC-13A/B "Battery Room Normal Cooling Units" as contingency measures during emergency switchgear room cooling equipment maintenance. The use of VUC-13A/B was justified by an engineering change to a calculation that provided analysis for compensatory measures used to maintain certain ANO-1 switchgear rooms temperatures acceptable for the most limiting qualification temperatures for equipment located within those rooms. Additional compensatory measures implemented during the subject time period included manual action to open doors or dampers in specified switchgear areas and were validated using software modeling analysis.

During the subject time frame, upon failure of the switchgear room coolers, ANO-1 has entered the applicable TS for the switchgear room equipment and upon establishing compensatory measures to establish cooling, exited the TS. The compensatory measures were additionally utilized when taking a single emergency switchgear chiller train out of service for maintenance. Because the chillers were not originally designed to provide two trains of 100% redundant cooling, guidance used for justifying these alternate compensatory measures was inappropriately applied.

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C. Apparent Causes

The VUC-13A/B unit coolers were originally considered by ANO-1 to be acceptable for compensatory emergency use, based on the fact that they were powered from on-site emergency power. A misapplication of industry guidance led to the belief that with proper Engineering analysis, the method of crediting the VUC-13A/B was an acceptable alternative compensatory measure.

Because the chillers were not originally designed to provide two trains of 100% redundant cooling, these non-qualified components should not have been used to replace functions performed by qualified components and the guidance used for justifying these alternate compensatory measures was inappropriately applied.

D. Corrective Actions

ANO-1 has ceased reliance on the non-safety related VUC-13 unit coolers and the additional subject compensatory measures previously outlined in plant operating procedures. Technical Specification LCO compliance is being maintained whenever the switchgear room cooling is removed from service. Based on Engineering evaluation; the inverters and associated DC equipment remain operable even when associated emergency chilled water equipment is inoperable up to 8 hours post accident. Additionally, ANO-1 is in the process of developing appropriate actions to address time periods when a non-TS room cooling subsystem is out-of-service considering its impact on TS-required equipment.

E. Safety Significance

A Probabilistic Risk Assessment risk analysis has shown that the increase in risk of ANO-1 operation with one emergency switchgear room chiller out of service beyond the TS 8-hour completion time and within the window of any maintenance or failures of Emergency Switchgear Chillers, during the period of January 22, 2008 until January 4, 2011, is insignificant and considered acceptable. Additionally, considering the fact that compensatory measures were implemented during the time that the TS action statements were exceeded, the significance of this event is considered to be minimal.

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F. Basis For Reportability

10 CFR 50.73(a)(2)(i)(B) - "Any operation or condition which was prohibited by the plant's Technical Specifications except when:

- (1) The Technical Specification is administrative in nature;
- (2) The event consisted solely of a case of a late surveillance test where the oversight was corrected, the test was performed, and the equipment was found to be capable of performing its specified safety functions; or
- (3) The Technical Specification was revised prior to discovery of the event such that the operation or condition was no longer prohibited at the time of discovery of the event."

G. Additional Information

There have been no previous similar events reported by ANO.

Energy Industry Identification System (EIIIS) codes are identified in the text as [XX].