



**Entergy
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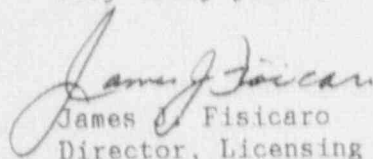
U. S. Nuclear Regulatory Commission
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SUBJECT: Arkansas Nuclear One - Unit 2
Docket No. 50-368
License No. NPF-6
Licensee Event Report 50-368/91-010-00

Gentlemen:

In accordance with 10CFR50.73(a)(2)(i)(B), attached is the subject report concerning inadequate vendor information that resulted in containment purge isolation valves not having been adequately tested thereby violating Technical Specifications.

Very truly yours,


James J. Fisicaro
Director, Licensing

JJF/TFS/kdr
Attachment

cc: Regional Administrator
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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Arkansas Nuclear One, Unit Two

DOCKET NUMBER (2) PAGE (3)
050003 6181 OF 04

TITLE (4) Inadequate Vendor Information Results In Containment Purge Isolation Valves Not Having Been Adequately Tested For Leakage Thereby Violating Technical Specifications.

EVENT DATE (5)			LER NUMBER (6)		REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)																																															
Month	Day	Year	Sequential Number	Revision Number	Month	Day	Year	Facility Names	Docket Number(s)																																														
0	4	91	010	00	0	5	03		050003																																														
<p>OPERATING MODE (9) 5 THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)</p> <table border="1"> <tr> <td>POWER LEVEL (10)</td> <td>050</td> <td>20.402(b)</td> <td>20.405(a)(1)(i)</td> <td>20.405(a)(1)(ii)</td> <td>20.405(a)(1)(iii)</td> <td>20.405(a)(1)(iv)</td> <td>20.405(a)(1)(v)</td> <td>20.405(c)</td> <td>50.36(c)(1)</td> <td>50.35(c)(2)</td> <td>50.73(a)(2)(i)</td> <td>50.73(a)(2)(ii)</td> <td>50.73(a)(2)(iii)</td> <td>50.73(a)(2)(iv)</td> <td>50.73(a)(2)(v)</td> <td>50.73(a)(2)(vi)</td> <td>50.73(a)(2)(vii)(A)</td> <td>50.73(a)(2)(vii)(B)</td> <td>50.73(a)(2)(x)</td> <td>73.71(b)</td> <td>73.71(c)</td> <td>Other (Specify in Abstract below and in Text, NRC Form 366A)</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>										POWER LEVEL (10)	050	20.402(b)	20.405(a)(1)(i)	20.405(a)(1)(ii)	20.405(a)(1)(iii)	20.405(a)(1)(iv)	20.405(a)(1)(v)	20.405(c)	50.36(c)(1)	50.35(c)(2)	50.73(a)(2)(i)	50.73(a)(2)(ii)	50.73(a)(2)(iii)	50.73(a)(2)(iv)	50.73(a)(2)(v)	50.73(a)(2)(vi)	50.73(a)(2)(vii)(A)	50.73(a)(2)(vii)(B)	50.73(a)(2)(x)	73.71(b)	73.71(c)	Other (Specify in Abstract below and in Text, NRC Form 366A)																							
POWER LEVEL (10)	050	20.402(b)	20.405(a)(1)(i)	20.405(a)(1)(ii)	20.405(a)(1)(iii)	20.405(a)(1)(iv)	20.405(a)(1)(v)	20.405(c)	50.36(c)(1)	50.35(c)(2)	50.73(a)(2)(i)	50.73(a)(2)(ii)	50.73(a)(2)(iii)	50.73(a)(2)(iv)	50.73(a)(2)(v)	50.73(a)(2)(vi)	50.73(a)(2)(vii)(A)	50.73(a)(2)(vii)(B)	50.73(a)(2)(x)	73.71(b)	73.71(c)	Other (Specify in Abstract below and in Text, NRC Form 366A)																																	

LICENSEE CONTACT FOR THIS LER (12)

Name	Telephone Number
Thomas F. Scott, Nuclear Safety and Licensing Specialist	Area Code 501 964-5000

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

Cause	System	Component	Manufacturer	Reportable to NRCDS	Cause	System	Component	Manufacturer	Reportable to NRCDS

SUPPLEMENT REPORT EXPECTED (14)

EXPECTED SUBMISSION DATE (15)	Month	Day	Year

☐ Yes (If yes, complete Expected Submission Date) ☒ No
ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

During an inspection originated by Nuclear Regulatory Commission Information Notice 88-73, "Direction - Dependent Characteristics of Containment Purge Valves", ANO discovered that both the containment purge supply and exhaust inside isolation valves were installed such that they were less likely to seat when pressurized from the containment side. The purge system design does not provide for testing these valves from the containment side during local leak rate tests. The valves were tested for seat leakage during a containment integrated leak rate test performed in April 1991. The purge supply inside isolation valve leaked excessively. Leakage from the purge exhaust inside isolation valve was satisfactory. Two isolation valves in each line outside containment were tested and demonstrated satisfactory leak rates. A Technical Specification waiver of compliance was requested and approved to allow operating mode changes with existing conditions until an amendment can be approved. The two outside isolation valves in each line were deactivated in the shut position. A Technical Specification amendment is being evaluated to eliminate requirements for testing the inside containment valves. The feasibility of replacing or rotating the existing inside containment valves will be evaluated. There have been no similar events reported as Licensee Event Reports.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		Sequential		Revision				
Arkansas Nuclear One, Unit Two		Year	Number					
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TEXT (If more space is required, use additional NRC Form 366A's) (17)

A. Plant Status

At the time of this event, Arkansas Nuclear One Unit 2 (ANO-2) was in cold shutdown (Mode 5) with Reactor Coolant System (RCS) [AB] temperature at approximately 123 degrees Fahrenheit and pressure at approximately 54.3 psia. An Integrated Leak Rate Test (ILRT) of the containment building [NH] was in progress. There were no inoperable structures, systems, or components at the start of the event that contributed to the event.

B. Event Description

As part of ANO's follow-up actions to Nuclear Regulatory Commission (NRC) Information Notice 88-73, "Direction - Dependent Characteristics of Containment Purge Valves", ANO discovered by a physical examination in late March 1991 that the tapered seats of both the containment purge system [VA] supply and exhaust inside isolation valves were installed such that they were less likely to seat when pressurized from the containment side.

Previous Local Leak Rate Tests (LLRT) of the purge isolation valves have been conducted by pressurizing between the inside and outside containment isolation valves. The use of this test method was based upon information supplied by the valve manufacturer indicating that the valves were capable of sealing when pressurized in either direction. The configuration of the valve seats caused this test method to apply pressure to the two inside containment valves in a direction tending to seat them more firmly.

Due to the containment purge system design, the only test method of pressurizing the containment side of the inside valves is during an ILRT. However, previous ILRTs would not have detected leakage by the inside valves because the outside isolation valves were also shut during the test. There are two outside isolation valves in both the containment purge supply and exhaust lines. During the ILRT, vent valves between the inside and outside containment purge supply and exhaust valves were opened to measure leakage past the inside valves. At approximately 1700 hours on April 7, 1991, it was determined that the inside purge supply containment isolation valve was leaking excessively, approximately 1.5 times the maximum allowable leakage rate (La). This resulted in the valve being declared inoperable. The inside containment purge exhaust valve did not leak excessively.

The purge isolation valves are Model 9220, 54 inch butterfly valves manufactured by Fisher Controls Company (manufacturer code F130).

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

C. Root Cause

The root cause of this condition is inadequate design information from the valve manufacturer. This information resulted in the inside containment purge isolation valves being tested in a configuration such that non-conservative leak rates were obtained.

D. Corrective Action

The corrective action for the root cause of this condition was inspection of the containment purge isolation valves per NRC Information Notice 88-73. This inspection was completed.

The ILRT was successfully completed to verify containment integrity with the purge supply line having a vent path between the two outboard valves and the purge exhaust line having a vent path between containment and the first outboard valve.

To allow an operating mode change with the existing condition i.e., both inside valves inoperable, a temporary waiver of compliance from the provisions of ANO-2 Technical Specification (TS) Limiting Condition for Operation 3.0.4 for 120 days was requested from and approved by the NRC.

The two outside isolation valves in each purge line were deactivated in the shut position to provide redundant isolation.

An evaluation of the requirement for the inside containment purge isolation valves will be performed. If results of this evaluation indicate that an adequate basis exists to eliminate the requirement, an appropriate TS amendment request will be developed and submitted.

An Engineering evaluation of the feasibility of either replacing or rotating the existing inside containment purge isolation valves will be performed. This activity is estimated to be complete by November 1, 1991.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

E. Safety Significance

ANO-2 TS 3.6.1.6 restricts operation of the containment purge system isolation valves to Modes 5 and 6 (cold shutdown and refueling) only. Prior LLRTs have verified acceptable leakage rates of the first outside isolation valve in each line. Additionally, although the second outside isolation valve in each line was not previously leak tested to prove its isolation capability, they have normally been maintained closed during plant conditions when containment integrity was required and would have provided an additional level of isolation for these penetrations. Since the ACTION requirement of TS 3.6.3.1(b) allows operation for an unlimited period of time if a containment penetration is isolated by use of at least one deactivated automatic valve secured in the isolation position, prior operation in this configuration is judged to have little safety significance.

F. Basis For Reportability

ANO-2 TS 4.6.3.1.4 requires that a leak rate test be performed on containment purge supply and exhaust isolation valves to verify that leakage is within the limits of TS 4.6.1.2 prior to exceeding conditions requiring containment integrity. The test performed on April 7, 1991, was the first valid test of the inside containment purge supply and exhaust isolation valves. Previous operation without having properly tested these valves is an operation prohibited by Technical Specifications. Additionally, having changed operating modes during previous periods of operation with an inoperable purge isolation valve is a condition prohibited by TS 3.0.4. Operations prohibited by Technical Specifications are reportable pursuant to 10CFR50.73(a)(2)(i)(B).

G. Additional Information

There have been no previous events involving inadequate vendor information affecting containment isolation capability reported as License Event Reports.

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