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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 50-368/91-016-00

Gentlemen:

In accordance with 10CFR50.73(a)(2)(i)(B) enclosed is the subject report concerning a fire barrier penetration.

Very truly yours,

James J. Fisicaro

James J. Fisicaro
Director, Licensing

JJF/TFS/mmg
Enclosure
cc: Regional Administrator
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U. S. Nuclear Regulatory Commission
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NRC Form 366
(6-89)

U.S. Nuclear Regulatory Commission
Approved OMB No. 3150-0104
Expires: 4/30/92

LICENSEE EVENT REPORT (LER)

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TITLE (4) Degraded Fire Barrier Caused By Unsealed Penetration Resulted From Inadequate Administrative Controls During Plant Construction

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
Month	Day	Year	Year	Sequential Number	Revision Number	Month	Day	Year	Facility Names	Docket Number(s)
										0 5 0 0 0
0 9	2 4	9 1	9 1	-- 0 1 6	-- 0 0	1 0	1 8	9 1		0 5 0 0 0

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	1 0 0	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	Other (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	X 50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

Name	Telephone Number (Area Code)
Thomas F. Scott, Nuclear Safety and Licensing Specialist	5 0 1 9 6 4 - 5 0 0 0

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

Cause	System	Component	Manufacturer	Reportable to NPRDS		Cause	System	Component	Manufacturer	Reportable to NPRDS	

SUPPLEMENT REPORT EXPECTED (14)	EXPECTED SUBMISSION DATE (15)	Month	Day	Year
Yes (If yes, complete Expected Submission Date) X No				

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On September 24, 1991, while performing a corrective maintenance activity identified during the previous Technical Specification surveillance inspection, Plant Modifications personnel identified a fire barrier penetration which was not properly sealed. The penetration between the floor of the South Emergency Diesel Generator Room and the overhead of a corridor outside of the Sample Room was filled with rags instead of grout. The root cause for this event was determined to be inadequate administrative controls during plant construction to ensure that rags used for damming material when applying an epoxy coating to the floor were removed when no longer required. The penetration being painted at the top used it to appear like the rest of the floor slab and made the condition difficult to detect. Upon discovery, a fire watch was posted. The penetration has been properly sealed with grout. Current administrative controls have been evaluated to be sufficient to prevent recurrence of this condition. Although the fire barrier was degraded, no significant safety concern existed since adequate fire detection, suppression equipment, and the availability of Fire Brigade personnel provided significant protection against the spread of a fire.

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

A. Plant Status

At the time this condition was discovered, Arkansas Nuclear One Unit 2 (ANO-2) was operating at 100% power (Mode 1) with Reactor Coolant System (RCS) [AB] temperature at 580 degrees and pressure 2250 psig.

B. Event Description

On September 24, 1991, a fire barrier penetration was identified as being degraded. The penetration (number 2093-01-0037) is located between the floor of the South Emergency Diesel Generator (EDG) [EK] Room and the overhead of a corridor outside of the Sample Room in the Unit 2 Auxiliary Building [NF]. The penetration had been inspected in October 1990 as part of the eighteen month Technical Specification surveillance of fire barriers. Although the penetration was evaluated and judged to be in a satisfactory condition, a job request was initiated on November 29, 1990 by ANO maintenance personnel who conducted the inspection. The job request recommended removal of debris from the bottom side of the penetration. The inspector had evaluated the penetration to be satisfactory based on its appearing to be grouted when viewed from the top. As a result of this job request, a Construction Work Package (CWP) was prepared and authorized. Plant Modification personnel performing the CWP discovered on September 24, 1991 that the penetration was filled with rags instead of grout. It had been painted on the upper surface which made it appear like the rest of the floor slab.

C. Root Cause

In 1984 a complete walkdown and inspection of plant fire barriers was performed as part of a fire barrier upgrade project initiated as a result of Appendix R to 10CFR50. Also, four Technical Specification surveillance inspection procedures have been performed since the initial inspection. Because of the multiple coats of epoxy and paint on the upper surface of the barrier, the actual penetration was visually indistinguishable from the rest of the barrier and thus was assumed to have been grouted.

The condition of this penetration being filled with rags instead of grout is believed to have been present since original plant construction. Examination of the rags removed from the deficient seal revealed that the floor had been painted on multiple occasions. During construction, a self-leveling epoxy precoat was utilized to cover imperfections in the concrete prior to painting. Prior to application of the epoxy, all openings were required to be sealed so that the precoat would not run down through the openings to the elevation below.

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

Craft personnel who did the precoat installation used rags to seal off the opening until the coating cured. Since there were inadequate administrative controls in the work control process at that time to ensure that the rags were removed, they were forgotten and left in place until recently discovered from the bottom side. The rags were not identified during previous inspections due to a combination of inadequacies in the fire barrier inspection program (which have been identified and corrected) and the physical arrangement of the lower side of the penetration.

D. Corrective Actions

A fire watch was posted at the deficient barrier upon discovery.

The penetration has been sealed with grout.

The deficient condition occurred during the initial implementation of the penetration seal program when there were few procedures to control deficiencies such as this. Procedure 1000.120, "ANO Fire Barrier Watch Program", a procedure that did not exist at the time when this deficiency occurred, was subsequently initiated to control breached fire barriers until they are properly sealed. This procedure currently requires that when breaching a fire barrier, a Fire Barrier Watch Record form is required. The Control Room Shift Supervisor then performs the following:

1. Authorizes the Fire Watch supervisor to post a fire watch and to sign and date the Watch Record form indicating such,

2. ensures that a Job Request has been initiated to repair the seal and logs the number on the form,

3. signs and files the completed form in the Fire Barrier Watch Record Book maintained in the control room.

The fire barrier watch remains in effect until the fire barrier is restored. Upon restoration of the fire barrier, the supervisor in charge of the restoration must complete the Fire Barrier Watch termination portion of the Watch Record form in the control room. The Control Room Shift Supervisor must then concur with the action taken to restore the barrier, sign the termination portion of the Watch Record form and notify the Fire Watch Supervisor to terminate the Fire Watch. The Fire Watch Supervisor must report to the Control Room and sign the Termination portion of the Watch Record form signifying that the Fire Watch was released. He then forwards the completed Watch Record to Records Management for microfilming. With such administrative controls in place, the likelihood of a similar condition is considered improbable.

Fire Protection engineering personnel have received awareness training pertinent to this condition.

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

ANO is in the process of inspecting and revalidating all NRC-required fire barriers. To date, approximately 9,000 of the 10,000 total seals have been inspected as part of the ANO Business Plan (Action D.5.c). No similar condition (rags in the penetration with epoxy on top) has been found. The unique nature of this condition, combined with the evaluation of existing administrative controls and revalidation process, indicate that no additional corrective actions are necessary.

E. Safety Significance

The fire duration rating on both sides of this penetration is moderate (less than one hour). On the lower side, the corridor outside of the Sample Room is protected by smoke detectors which alarm in the Control Room. Combustibles consist of flame resistant cable insulation, oil, cleaning solvents and transients. The South EDG Room contains the A EDG. Redundant equipment is contained in a separate room not affected by this degraded fire barrier. Combustibles consist of lube oil, diesel fuel, flame resistant cable insulation and transients. The room is provided with smoke and flame detectors which actuate a sprinkler water supply valve and provide an alarm in the Control Room. An automatic preaction sprinkler system provides protection for this room. Fire Brigade personnel, specifically trained in fire fighting, are available at all times in the unlikely event that a fire were to occur. Although the fire barrier was degraded, significant protection existed against the spread of a fire because adequate fire detection, suppression equipment, and Fire Brigade personnel were available. For this reason there was no actual safety significance related to the degraded fire barrier.

F. Basis For Reportability

Technical Specifications require that all fire barriers separating safety related areas shall be operable. Since fire barrier 2093-01 had been inoperable for greater than the allowable time of Technical Specifications, this event is reportable pursuant to 10CFR50.73(a)(2)(i)(B) as an operation prohibited by Technical Specifications.

G. Additional Information

Although there have been several ANO Licensee Event Reports associated with inadequate fire barrier penetration seals identified during surveillance inspections, this is the only instance of a fire barrier being discovered to have been deficient from this particular root cause. Therefore there have been no similar Licensee Event Reports.

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