



Entergy
Operations

Entergy Operations, Inc.

Route 1 Box 1270

Rockville, AR 72001

Tel 501 661-1100

May 10, 1991

1CAN059101

U. S. Nuclear Regulatory Commission

Document Control Desk

Mail Station P1-137

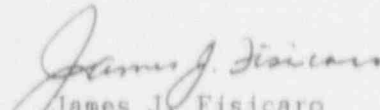
Washington, D. C. 20555

SUBJECT: Arkansas Nuclear One - Unit 1
Docket No. 50-313
License No. DPR-51
Licensee Event Report 50-313/90-004-01

Gentlemen:

In accordance with 10CFR50.73(a)(2)(i)(B), attached is a supplemental report concerning a degraded fire barrier penetration as the result of personnel oversight.

Very truly yours,


James J. Fisicaro
Director, Licensing

JJF/TFS/mmg

Attachment

cc: Regional Administrator
Region IV
U. S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 1000
Arlington, TX 76011

INPO Records Center Suite 1500
1100 Circle, 75 Parkway
Atlanta, GA 30339-3064

9105160074 910510
PDR ADUCK 05000313
S PDR

TE22 11

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Arkansas Nuclear One, Unit One

DOCKET NUMBER (2) PAGE (3)
05000313106

TITLE (4) Degraded Fire Barrier Penetration as the Result of Personnel Oversight

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													
0	5	3	1	9	0	9	0	--	0	0	4	--	0	1	0	5	1	0	9	1	AND-Unit 2	Docket Number(s)
										0	5	0	0	0	3	6	8					

OPERATING MODE (9) N THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §:

POWER LEVEL (10)		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
			20.405(a)(1)(iii)	X	50.73(a)(2)(i)		50.73(a)(2)(viii)(A)		Abstract below and
			20.405(a)(1)(iv)		50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)		in Text, NRC Form
			20.405(a)(1)(v)		50.73(a)(2)(iii)		50.73(a)(2)(x)		366A)

LICENSEE CONTACT FOR THIS LER (12)

Name	Telephone Number
Thomas F. Scott, Nuclear Safety and Licensing Specialist	Area Code 501964-5000

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

Cause	System	Component	Manufacturer	Reportable to NRC	Cause	System	Component	Manufacturer	Reportable to NRC

SUPPLEMENT REPORT EXPECTED (14)

EXPECTED SUBMISSION DATE (15)	Month	Day	Year
X Yes (If yes, complete Expected Submission Date) No	0	1	3

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

On May 31, 1990 at 1330, while conducting a fire barrier penetration seal inspection as part of a comprehensive inspection program initiated as part of a Generic Letter 86-10 evaluation, a degraded fire barrier was discovered by personnel within the fire protection group at Arkansas Nuclear One. The deficient seal consisted of a 2 inch metal sleeve through a floor slab and a 1½ inch conduit contained within the sleeve. A review of past documentation revealed this condition has existed prior to a general fire barrier inspection walk down conducted in 1983. Since this condition was not identified during this walk down or subsequent Technical Specification surveillances, the root cause of this condition has been determined to be personnel error and oversight regarding incorrect procedure identification of penetration number 97-0038. Upon discovery of this condition, the corresponding fire detection system was verified operable, a fire watch was posted in accordance with Technical Specification requirements, the fire barrier was sealed, and the applicable fire print and penetration log updated. In addition, the fire barrier inspection procedure will be revised and a training program will be implemented for fire barrier inspectors. This supplemental report extends applicability to Unit 2 by documenting a similar event discovered as part of the same inspection program.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		Year	Sequential Number	Revision Number	
Arkansas Nuclear One, Unit One	05000313	90	004	01	02 OF 06

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

A. Plant Status

At the time this condition was discovered, Unit 1 (ANO-1) was in power operations at 80 percent. Reactor Coolant System (RCS) [AB] temperature was 579 degrees Fahrenheit and reactor coolant system pressure was approximately 2155 psig.

At the time discovery of the second condition, Arkansas Nuclear One Unit 2 (ANO-2) was in startup conditions (Mode 2) with RCS temperature at 545 degrees Fahrenheit, pressure at 2250 psia, and zero percent reactor power.

B. Event Description

On May 31, 1990 at 1330, while conducting a fire barrier penetration seal inspection as part of a comprehensive inspection program initiated to ensure installed seals are in accordance with tested configurations or have adequate basis for installation (i.e., Generic Letter 86-10 evaluation), a degraded fire barrier was discovered by personnel within the fire protection group at Arkansas Nuclear One (ANO). The degraded fire barrier consisted of a 2 inch metal sleeve extending approximately 3 inches above the floor slab to approximately 22 inches below the floor slab between the cable spreading room and the solid waste filler storage room. A 1½ inch conduit passing through the 2 inch metal sleeve was surrounded by an open annulus which did not contain a fire retardant seal. The sleeve appears to have been used as an equipment drain line, at one time, with the portion of the drain line extending through the floor slab modified into a sleeve and subsequently utilized for the routing of conduit through the fire barrier. The sleeve and conduit pass through penetration number 97-0038 in room 97. The sleeve passing through the floor slab was surrounded by an adequate seal and was properly identified in the fire barrier inspection procedure. The conduit within the sleeve was not surrounded by a seal nor was it identified in the inspection procedure. Documentation pertaining to installation of the conduit indicates that the conduit was routed prior to a major fire barrier walk down effort, conducted in 1983, which served to field verify the adequacy of penetration seals located in either an NRC required fire barrier or insurance required fire barrier. The results of the fire barrier walk down effort were used to supply baseline data for future inspections of fire barrier penetration seals.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)						PAGE (3)
		Year	Sequential Number	Revision Number				
Arkansas Nuclear One, Unit One	05000313	90	04	01				03 OF 06

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

A second degraded fire barrier was discovered by ANO fire protection on April 17, 1991 at 0900 hours during a continuation of the comprehensive inspection program. Fire barrier FB-2081-03 is located between the penetration room and the heat exchanger equipment area at elevation Unit 2 Auxiliary Building [NF]. A small through void was discovered around piping at penetration 2081-03-0029. The through void was causing a steady flow of air was detected flowing into the penetration room. On the same barrier air flow was detected at two conduits, penetration 2081-0033 and 0034, at the conduit covers. The conduit covers are approximately two inches from the barrier.

C. Root Cause

Fire barrier penetration seals inspected during the walk down effort of 1983, including penetration number 97-0038, were either found containing a satisfactory fire barrier seal or were modified to conform with approved fire barrier sealant standards. Historical documentation of penetration number 97-0038 indicates that no deficiencies were found with this fire barrier seal during the 1983 walk down. Since existing documentation indicates that the routing of conduit was performed prior to the 1983 walk down, the condition should have been identified during these inspections since inspection guidance was available to the inspector. However, the sleeve configuration was such that it could have misled the inspector to overlook the gap and accept the fire barrier penetration as satisfactory. Additionally, several Technical Specification surveillance procedures for fire barrier penetrations have been performed since 1983 and also have failed to identify the deficient fire barrier penetration seal. Therefore, the root cause of this condition has been determined to be personnel error and oversight related to the failure to identify an inadequate fire barrier seal during the 1983 walk down effort. A contributing factor associated with this condition may be attributed to the fact that the sleeve through which penetration number 97-0038 passes was not correctly identified in the procedure used to perform Technical Specification inspections. Technical Specification surveillances were conducted by maintenance personnel; whereas, the current fire barrier penetration seal inspection program is being conducted by the ANO fire protection group.

Fire barrier FB-2081-03 was also inspected during the walk down effort of 1983 and documented to be satisfactory. The condition is believed to have existed prior to the 1983 inspection and should have been identified during these inspections since adequate guidance was available to the inspector. Additionally, several Technical Specification surveillances of fire barrier penetrations have been performed since 1983 and also have failed to identify the deficiencies. Therefore the root cause of this condition is personnel error related to the failure to identify an adequate fire barrier seal during the 1983 walk down effort.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		Year	Sequential Number	Revision Number	
Arkansas Nuclear One, Unit One	05000313	90	004	01	04 OF 06

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

D. Corrective Actions

Upon discovery of this condition, the fire detection system for the cable spreading room was verified operable and a fire watch was posted in accordance with Technical Specification requirements. The fire barrier was sealed through a job request initiated to ensure the annulus between the sleeve and conduit was adequately enclosed. In response to identifying the fire barrier penetration for future inspections, the new fire barrier penetration designation for sleeve (97-0127) has been listed on fire print 97-1 and entered in Penetration Log FB-00-1.1. This should be effective in providing a cue to inform the fire barrier inspector that this penetration exists and requires inspection during future inspections.

Additionally, fire barrier inspection procedure (1405.016) will be revised to correctly identify the new designated fire barrier penetration. This action will be completed by August 1, 1991. These actions are in addition to the current fire barrier seal inspection program which is part of the ANO Business Plan (Action D.5.C) scheduled for completion prior to December 31, 1991. The objectives of the assessment program are to verify the physical configuration of Technical Specification penetration seals, perform evaluations of seal designs when deviations are identified, develop a data base and procedures for seal configuration management, and the correction of identified deficiencies.

To provide additional guidance to the fire barrier penetration seal inspector on the correct method of inspecting fire barrier penetrations, a training program will be developed addressing the identification of deficient conditions. The training program also will present a discussion of penetration sealant material and possible conditions rendering particular sealant materials deficient. This program is scheduled for development by September 1, 1991.

Upon discovery of the second degraded fire barrier, the fire detection system for the area was verified to be operable and a fire watch was posted in accordance with Technical Specification requirements. A job request was initiated to repair the deficiencies.

E. Safety Significance

This condition has potential safety significance considering that the deficient fire barrier seal provides protection for the cable spreading room. A fire spreading to the cable spreading room could result in degraded plant control due to possible conductor damage associated with Control Room instrumentation. The degree of damage to Control Room instrumentation is dependent on the nature and extent of the fire within the cable spreading area. Plant control in the event of a fire in the cable spreading room is addressed through abnormal operating procedure 1203.02.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
Arkansas Nuclear One, Unit One		Year	Sequential Number	Revision Number	
		9 0 --	0 0 4 --	0 1	
TEXT (If more space is required, use additional NRC Form 366A's) (17)					

In actuality, the fire preventative measures currently available make the spread of fire in these areas only remotely possible. These measures include a fixed fire detection system in the cable spreading room which provides alarm annunciation in the ANO-1 Control Room, fire suppression equipment in the form of fire extinguishers, fire water hose reels, and an automatically actuated system. Fire Brigade personnel, specifically trained in fire fighting, are available at all times in the unlikely event a fire were to occur. Although the seal was degraded, the availability of detection instrumentation, suppression equipment, and Fire Brigade personnel provide adequate protection against fire propagation. Therefore, there is not a safety concern related to the degraded seal.

The second degraded fire barrier had less safety significance because the areas on either side of the barrier did not contain as much potentially combustible material and a large number of cables associated with instrumentation and control were not involved. Fire detection instrumentation and Fire Brigade personnel were also available if a fire were to have occurred in the area of the second degraded barrier.

At the ANO site there are approximately 8600 total penetrations through plant fire barriers. Approximately 5,000 penetrations have already been reverified with only the two barriers addressed in this report being identified as deficient. Therefore, considering the small population of deficient penetrations which have been identified, the safety concerns as they relate to potentially existent conditions are relatively small for the remaining number of seals.

F. Basis For Reportability

Technical Specifications require that all penetration fire barriers protecting safety related areas shall be operable. With one or more of the required penetration fire barriers inoperable, a continuous fire watch must be established in the affected area within one hour. Although the fire watch was established within one hour of discovering the deficient fire barrier, investigation of the condition revealed that it had most likely existed for greater than one hour without a fire watch established. Therefore, this event is reportable pursuant to 10CFR50.73(a)(2)(i)(B) as a condition prohibited by Technical Specifications.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)						PAGE (3)
		Year	Sequential Number	Revision Number				
Arkansas Nuclear One, Unit One	05000313	90	04	01	--			06 OF 06

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

G. Additional Information

Conditions involving inadequate fire barrier seals in conjunction with personnel related error were previously reported in Licensee Event Reports 50-368/88-018, and 50-368/90-013.

A revision to this Licensee Event Report will be submitted by January 31, 1992 to document additional inadequate fire barrier seals identified as part of the current fire barrier inspection program.

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