Entergy Operations

Entergy Operations, Inc.
Route 3, Box 137G
Russellville, AR 72801
Tel 501-964-3100

July 2, 1990

1CAN079001

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 50-313/90-004-00

Gentlemen:

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

Very truly yours,

E. C. Ewing
General Manager,
Technical Support
and Assessment

ECE/DBS/sgw
Attachment
cc: Regional Administrator
Region IV
U. S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011

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

IE22
1/1

Form 1062.01A

NRC Form 366
(6-89)

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

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Arkansas Nuclear One, Unit One	0 5 0 0 0 3 1 3	1 OF 0 3

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

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 5	3 1	9 0	9 0	-- 0 1 4	-- 0 0	0 7	0 2	9 0		0 5 0 0 0

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)					
POWER LEVEL (10) 0 8 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
Daryll Saulsberry Nuclear Safety and Licensing Specialist	Area Code 5 0 1 9 6 4 - 3 1 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 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. The degraded fire barrier penetration seal is not a significant safety concern considering the fire preventative measures currently available but is reportable pursuant to 10CFR50.73(a)(2)(i)(B), as a condition prohibited by Technical Specifications.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		Year	Sequential Number	Revision Number	
Arkansas Nuclear One, Unit One	0 5 0 0 0 3 1 3	9 0	-- 0 0 4	-- 0 0	0 2 OF 0 3

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.

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 1¼ 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.

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.

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-L1. 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 prior to December 1, 1990. 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 prior to December 1, 1990.

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.

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.

At the ANO site there are approximately 10,000 total penetrations through plant fire barriers. Approximately 1500 penetrations have already been reverified with only the condition addressed in this report being identified as a deficient fire barrier penetration seal. 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 which have not been inspected at this time.

F. Basis For Reportability

This condition is reportable pursuant to 10CFR50.73(a)(2)(i)(B), as a condition prohibited by Technical Specifications.

G. Additional Information

A condition involving an inadequate fire barrier seal in conjunction with personnel related oversight was previously reported in 50-368/88-018 and 50-368/90-013-00.

Revisions to this licensee event report may be submitted in the future if additional inadequate fire barrier seals are identified as part of the current fire barrier inspection program.

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