NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

LICENSEE EVENT REPORT (LER)

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TITLE (4)
Technical Specification Violation - Inoperable Fire Barriers Caused By Personnel Errors

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 2	1 6	8 7	8 7	— 0 1 0	— 0 1	0 7	0 8	8 7		0 5 0 0 0

OPERATING MODE (9)	1
POWER LEVEL (10)	1 0 0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check one or more of the following)* (11)

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
Merlin G. Williams - Superintendent of Regulatory, Quality and Administrative Services	AREA CODE 3 1 6 — 3 6 4 - 8 8 3 1

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	
B	K P	S E A L	X 9 9 9	N							
B	K Q	S E A L	X 9 9 9	N							

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
X YES *(If yes, complete EXPECTED SUBMISSION DATE)*	NO		0 2	1 5	8 8

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

On several occasions during February and March, 1987, situations involving breached fire barriers were discovered. These situations involved fire penetration seals, holes in floors, walls of buildings, abandoned conduit, and a fire door blocked open. In each instance, the appropriate corrective measures delineated by Technical Specification 3.7.11 were promptly initiated. These situations are considered to be conditions prohibited by the plant's Technical Specifications and are being reported pursuant to 10CFR 50.73(a)(2)(i)(B). This revised Licensee Event Report (LER) is being submitted to update the status of corrective action taken as a result of these events.

These events occurred due to personnel errors in failing to comply with various aspects of the fire protection program. In March, 1987, Internal Operations Program Deficiency 87-01 was developed to provide a systematic review and upgrade of key elements of the fire protection program. During the course of this review, the existence of nonconforming silicone RTV foam seals was identified. A corrective action plan is being implemented with vendor assistance.

These events are similar to those discussed in LERs 86-050 and 87-001.

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

Introduction

On several occasions during February and March, 1987, situations involving breached fire barriers were discovered. In each instance, the appropriate corrective measures were promptly initiated. Technical Specification (T/S) 3.7.11 requires that all fire barrier penetrations separating safety related fire-areas or separating portions of redundant systems important to safe shutdown with a fire area and all sealing devices in fire-rated assembly penetrations be operable, or that a fire watch of the affected area be established. These situations are considered to be conditions prohibited by the plant's Technical Specifications and are being reported pursuant to 10CFR 50.73(a)(2)(i)(B).

This revised Licensee Event Report (LER) is being submitted to update the status of corrective action taken as a result of these events. In May, 1987, during a systematic review and upgrade of key elements of the fire protection program, the existence of nonconforming silicone RTV foam penetration seals was identified. The revised portions of this LER provide information concerning this discovery and editorial changes to the original LER.

Description of Events and Immediate Corrective Actions

1. **Breached penetrations originally dispositioned on Nonconformance Report (NCR) 1SN52281C**

NCR 1SN52281C was written in December, 1984. This NCR was written on 22 penetration seals because of a lack of document traceability. Appropriate corrective actions were completed in January, 1985. All penetrations discussed in this section are listed on this NCR.

On February 16, 1987, at approximately 1030 CST, fire barrier penetration 321W0130 was found to be breached. This five inch diameter penetration serves as part of the required fire barrier between two fire zones on the 1984 foot elevation of the Control Building [NA]. The penetration service is a one inch fire protection pipe. Following this discovery, an hourly fire watch was established, and a corrective work request was written to seal the penetration.

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Review of the history of penetration 321W0130, revealed that it had also been inspected in January, 1987. This inspection was conducted as a result of the discovery that penetration 133W2104 was not sealed. (Further discussion of this discovery is provided in Licensee Event Report 87-001.) The January, 1987, inspection did not identify the fact that this penetration was not properly sealed. As a result of this occurrence a walkdown was conducted by the Fire Protection Specialist on March 11 and 12, 1987. During this walkdown of all penetrations addressed in NCR 1SN52281C, penetrations 321W0109, 321W0080, and 141W2491 were found to be breached. It is assumed that the penetrations have been unsealed since issuance of the facility operating license on March 11, 1985.

Investigations have also revealed that penetrations 321W0130, 321W0109, and 321W0080 had been inspected in Fall, 1986, during performance of Technical Specification surveillance procedure STS MT-026, "Fire Barrier Penetrations and Sealing Devices". STS MT-026 was performed to satisfy Technical Specification Surveillance Requirement 4.7.11.1 'c', which requires, in part, that a visual inspection of at least ten percent of each type (mechanical and electrical) of sealed penetration be performed at least once per eighteen months. This Surveillance Requirement further necessitates a visual inspection of an additional ten percent of each type of sealed penetration if apparent changes in appearance or abnormal degradation is found during the initial inspection. During the initial ten percent inspection, which included penetrations 321W0130, 321W0109, and 321W0080, an electrical penetration seal was found to be damaged. Because of this damaged seal, an additional ten percent of each type of sealed penetration was inspected with no further discrepancies identified. Although penetration 321W0130 was identified as not being sealed during the initial inspection, this discovery was not identified as a test deficiency during the review process of the completed surveillance procedure. Consequently, no repair of penetration 321W0130 was initiated. Penetrations 321W0109 and 321W0080 were not identified as having been breached because of personnel error by maintenance personnel.

Figure 1 depicts the chronological order of these events.

2. Fire barrier breaches caused by holes that are not designed penetration closures.

A deficiency identified on February 16, 1987, involved a one-inch diameter hole in the floor slab between the 2000 foot and 2026 foot elevation of the Auxiliary Building [NF]. On December 18, 1986, a corrective work request was initiated to repair several abandoned core drills. At that time, it was not recognized that these deficiencies affected the operability of required fire barriers, and the work request was classified as not requiring a Fire Protection Review. On February 16, when preparing to implement this corrective work request, construction personnel questioned the Fire Protection Specialist concerning this classification. Upon review, it was determined that one of the core drills in the floor slab of the 2026 foot elevation of the Auxiliary Building constituted a breach of a required fire barrier. A fire watch of the affected area was promptly established.

On February 19, 1987, a deficiency involving a hole approximately 2 inches in diameter in the wall between the 2026 elevation of the Auxiliary Building and the south end of the Turbine Building [NM] was identified. Upon discovery, a fire watch of the area was established, and a corrective work request was initiated to repair the hole.

On March 9, 1987, it was discovered that an approximate two inch diameter penetration, believed to be an abandoned conduit, existed in the east wall of Room 3416, Access Control and Electrical Equipment Air Conditioning Units Room Number 2, on the 2016 foot elevation of the Control Building. This condition represented a breach of a required fire barrier between adjacent fire zones. A fire watch of the area was promptly established and a corrective work request was initiated to grout the penetration.

The exact time when these three holes through concrete were made could not be identified. It is assumed that the conditions have existed since before receipt of the facility operating license.

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3. Personnel errors involving failure to comply with fire protection procedures.

On February 19, 1987, at approximately 1545 CST, a deviation from fire protection procedural requirements was discovered. During the review and close-out cycle of a corrective work request package, it was determined that copies of necessary Fire Protection Impairment Control Permits were not included in the package. Fire Protection Impairment Control Permits are utilized to track fire protection impairments and to establish the necessary precautions (e.g., fire watch) when an impairment is planned or discovered. A review of both the Fire Impairment Logs and Fire Protection Impairment Control Permits revealed that the proper permits had not been obtained to complete the activities associated with this corrective work request. During performance of this work, a total of seven T/S required penetrations were breached and then resealed by construction personnel during the month of April, 1986. Following discovery of this T/S violation on February 19, the affected areas were inspected and it was verified that the penetrations had been properly re-sealed.

On March 4, 1987, a Nuclear Regulatory Commission Resident Reactor Inspector identified that Fire Door 34031 was blocked open by a hose but did not have a Fire Impairment Control Permit. The Control Room was notified of the situation, and informed that the door should be closed. Investigation revealed that construction personnel had opened the door and placed a hose through it while performing a Corrective Work Request without first obtaining a fire permit. A previous similar occurrence is discussed in Licensee Event Report 86-050-00.

On March 11, 1987, during an inspection by the Fire Protection Specialist, penetration 321W0091 was identified as breached. Following this discovery, a fire watch was established and a corrective work request was initiated to seal the penetration. An investigation revealed that a video camera cable had been run through this penetration in Fall, 1986, by Health Physics personnel without first obtaining a Fire Impairment Control Permit.

These events occurred as a result of cognitive personnel error by personnel who failed to obtain the proper Fire Impairment Permits when rendering a fire barrier inoperable. These errors are contrary to administrative procedures governing Fire Protection Impairment Control. Upon discovery of each breached fire barrier, immediate corrective actions were taken in accordance with T/S Requirements.

Construction craft personnel have been retrained on the requirements of the administrative procedure governing Fire Protection Impairment Control. In addition, the administrative procedure has been added to required reading for Health Physics personnel as a reminder of the Impairment Control Requirements.

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LONG-TERM CORRECTIVE ACTIONS AND SUBSEQUENT DISCOVERIES

Internal Operations Program Deficiency (IOPD) 87-Ø1 was developed in March, 1987, to provide a systematic review and upgrade of key elements of the fire protection program. Initially, the corrective actions planned as part of the IOPD included the following:

1. Review and revision of the Technical Specification surveillance procedure (STS MT-Ø26) for inspection of fire barriers to enhance specific inspection criteria.

2. Train inspection personnel on the revised inspection criteria.

3. Conduct an inspection of all design fire barrier penetrations and ensure any discrepancies are expeditiously corrected.

4. Label all Technical Specification fire barrier penetrations so that they may be clearly identifiable during future inspections.

During the inspection of design fire barrier penetrations utilizing the revised inspection criteria of STS MT-Ø26, a number of silicone RTV foam seal penetrations were rejected for various reasons, primarily due to missing or damaged damming boards. As a precautionary measure, fire watches were established in safety related areas of the power block while further inspection, evaluation and rework activities were proceeding.

Subsequently, while reworking the discrepant penetrations, additional problems with silicone RTV foam seals were identified. In order to determine the nature and extent of these problems, a Task Force composed of personnel from various disciplines was established to develop an enhanced corrective action plan. The Task Force temporarily halted inspection and rework activities and established corrective measures which included, in part, an expansion of the scope of foam seal inspections per IOPD 87-Ø1 and an evaluation of current seal technology for development of rework plans.

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An inspection of foam seals involving removal of the damming boards was performed starting on May 5, 1987. This inspection of forty (40) accessible randomly selected penetrations resulted in thirteen (13) seals rejected for insufficient foam depth and nine (9) seals rejected for voids or shrinkage. Based upon an Engineering evaluation of the materials and installation procedures, repair of the deficient seals with silicone RTV foam has been determined to be acceptable, with stringent inspection of the cured foam product behind all damming boards and sample selection of the repaired seal population for future surveillance inspections. Alternate materials for new and replacement penetration seals will be evaluated for use as enhancements to the existing design. An expanded corrective action plan including the inspection of foam seals, involving the removal of the damming boards, is now planned as part of IOPD 87-01. Upon conclusion of all corrective actions, currently projected as the end of 1987, a summary report will be provided in a supplement to this Licensee Event Report.

ANALYSIS OF EVENTS

Each breached fire barrier penetration and failure to comply with fire protection procedures represents a potential path for heat and products of combustion to be transmitted to adjacent fire zones. However, each safe shutdown area is served by the Fire Detection System, which would have generated an alarm in the Main Control Room had a fire occurred in any one of these areas. Additionally, fire watches have been establihsed in safety related areas of the power block. A previous similar occurrence of a breached penetration seal is discussed in Licensee Event Report (LER) 87-001. At the time LER 87-001 was originally prepared, the situation was believed to be an isolated case. A revision to LER 87-001 was submitted on March 24, 1987.

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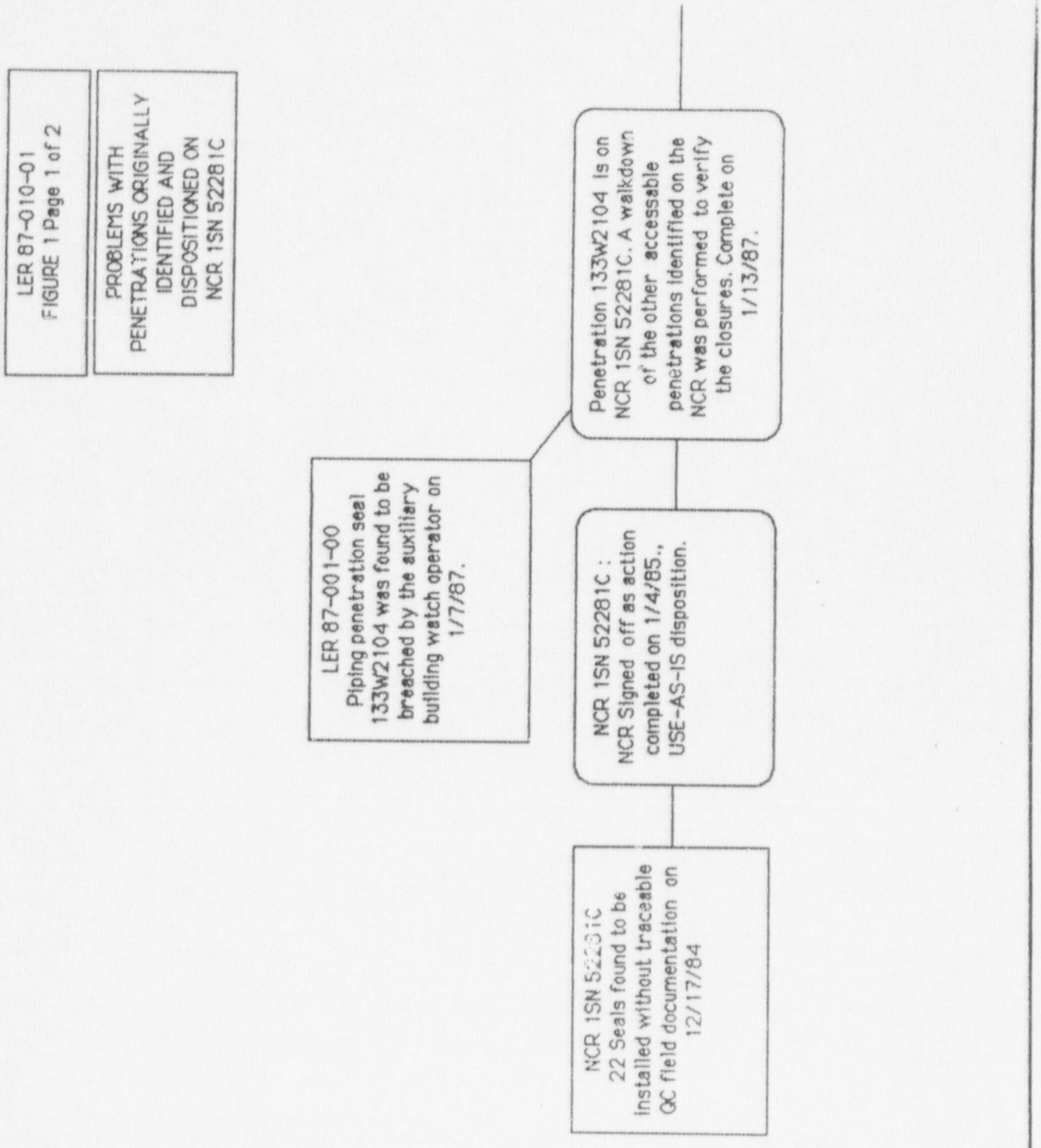

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U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

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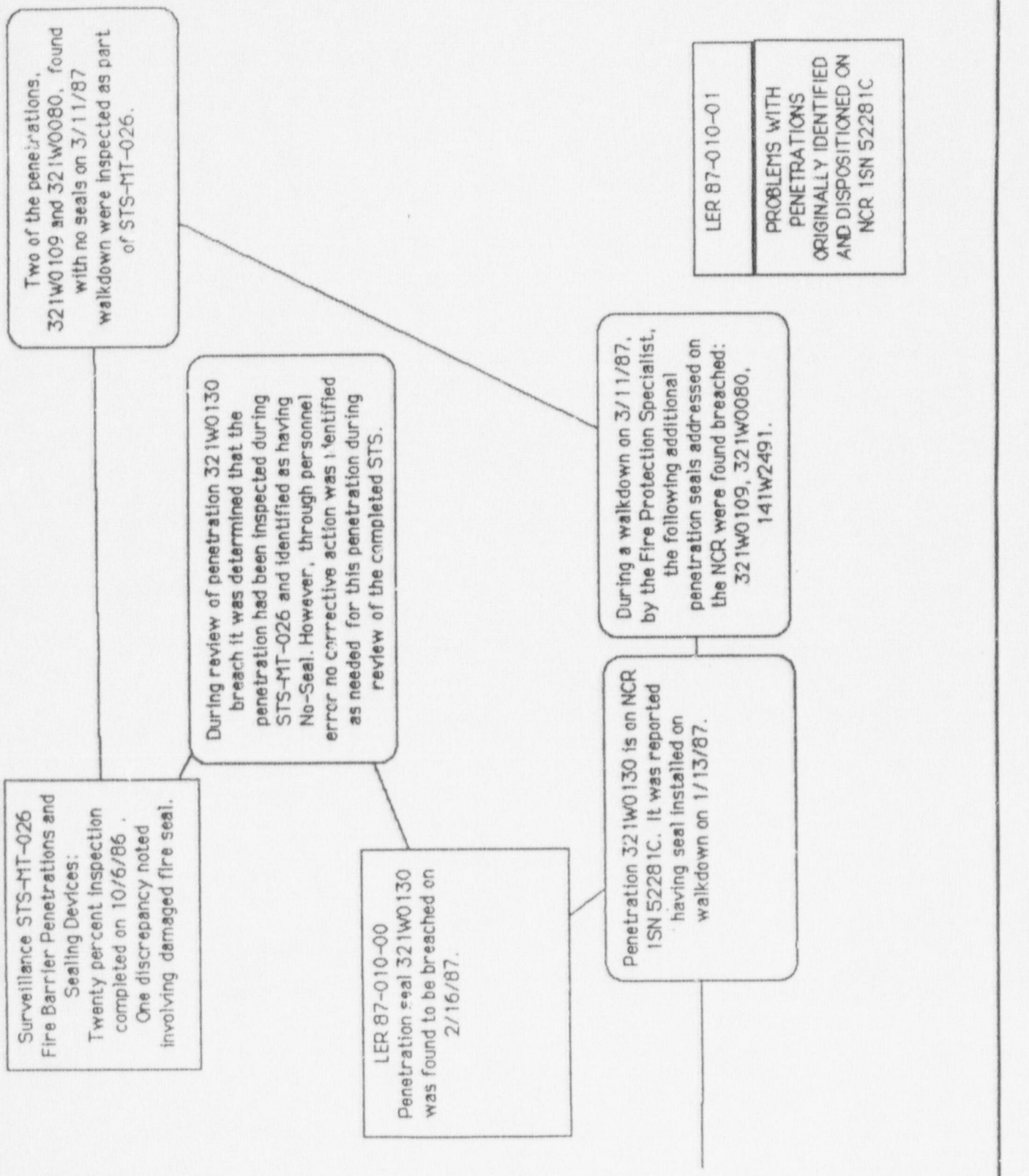

WOLF CREEK
NUCLEAR OPERATING CORPORATION

Bart D. Withers
President and
Chief Executive Officer

July 8, 1987

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Letter: WM 87-0183
Re: Docket No. 50-482
Subj: Licensee Event Report 87-010-01

Gentlemen:

The attached Licensee Event Report (LER) is submitted pursuant to 10 CFR 50.73 (a) (2) (i) concerning a Technical Specification violation. This report is a revision to LER 87-010-00 which was submitted March 18, 1987.

Very truly yours,

B D Withers

Bart D. Withers
Presient and
Chief Executive Officer

BDW:jad

Attachment

cc: PO'Connor (2)
RMartin
JCummins

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