



Carolina Power & Light Company

Brunswick Nuclear Project
P. O. Box 10429
Southport, N.C. 28461-0429

JUN 22 1992

FILE: B09-13510C

10CFR50.73

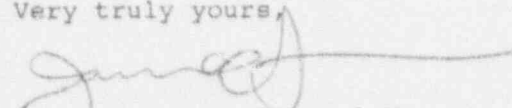
U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

BRUNSWICK STEAM ELECTRIC PLANT UNIT 1
DOCKET NO. 50-325
LICENSE NO. DPR-71
LICENSEE EVENT REPORT 1-92-016

Gentlemen:

In accordance with Title 10 of the Code of Federal Regulations, the enclosed Licensee Event Report is submitted. This report fulfills the requirement for a written report within thirty (30) days of a reportable occurrence and is submitted in accordance with the format set forth in NUREG-1022, September 1983.

Very truly yours,


J. W. Spencer, General Manager
Brunswick Nuclear Project

RK/

Enclosure

cc: Mr. S. D. Ebnetter
Mr. R. H. Lo
BSEP NRC Resident Office

9206260157 920622
PDR ADOCK 05000325
S PDR

JE27 1/1

LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION
COLLECTION REQUEST: 60.0 HRS. FORWARD COMMENTS REGARDING BURDEN
ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (F-830), U.S.
NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20556, AND TO THE
PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND
BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) Brunswick Steam Electric Plant
Unit 1

DOCKET NUMBER (2)
05000325

PAGE (3)
1

TITLE (4) FIRE SEALS AROUND DIESEL GENERATOR PEDESTALS OUTSIDE TECHNICAL SPECIFICATIONS

| EVENT DATE (5) | | | LER NUMBER (6) | | | | REPORT DATE (7) | | | OTHER FACILITIES INVOLVED (8) | | |
|--------------------|-----|--|----------------|-------------------|----------|------------------|-----------------|----------------------|---------------|--------------------------------------|------------------|---------|
| MONTH | DAY | YEAR | YEAR | SEQ. NO. | REV. NO. | MONTH | DAY | YEAR | FACILITY NAME | DOCKET NUMBER | | |
| 5 | 22 | 92 | 92 | - | 016 | - | 0 | 6 | 21 | 92 | BRUNSWICK UNIT 2 | 0500324 |
| OPERATING MODE (9) | | THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 3: (Check one or more of the following) (11) | | | | | | | | | | |
| 4 | | 20.402(b) | | 20.405(c) | | 50.73(a)(2)(vi) | | 73.71(b) | | | | |
| POWER LEVEL (10) | | 0 | | 20.405(a)(1)(i) | | 50.38(c)(1) | | 50.73(a)(2)(vi) | | 73.71(c) | | |
| | | | | 20.405(d)(1)(ii) | | 50.38(c)(2) | | 50.73(a)(2)(vii) | | OTHER (Specify in Abstract and Text) | | |
| | | | | 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)(ix) | | | | |

LICENSEE CONTACT FOR THIS LER (12)

NAME Rhonda S. Knight, Regulatory Compliance Specialist

TELEPHONE NUMBER

(919) 457-2174

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 |
|-------|--------|-----------|--------------|-------------------|-------|--------|-----------|--------------|-------------------|
| | | | | | | | | | |

SUPPLEMENTAL REPORT EXPECTED (14)

| SUPPLEMENTAL REPORT EXPECTED (14) | | | | EXPECTED SUBMISSION DATE (15) | MONTH | DAY | YEAR |
|-----------------------------------|---|--|--|-------------------------------|-------|-----|------|
| X | YES (If yes, complete EXPECTED SUBMISSION DATE) | | | NO | 8 | 15 | 92 |

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

On April 2, 1992, plant management requested that Technical Support (TS) inspect the Rotofoam 300 seals around the four emergency diesel generator (EDG) pedestals which appeared to be soaked with petroleum products. A request was made to the Nuclear Engineering Department (NED) to evaluate the effect of the oil on the seals and to provide corrective actions for the problem of the leaking oil from the collection system. A work request was also initiated to replace the seals. It appears that Rotofoam 300 was used at Brunswick Steam Electric Plant initially as a seismic joint filler material and later qualified as fire barrier material in some applications. Later discussions with the vendor indicated that while the material may not support combustion until 700 degrees, it will begin to soften and melt at temperatures as low as 150 degrees fahrenheit. If the material melted, it could potentially impact cable trays located below the gap; therefore, a fire barrier application in this case is not acceptable. A design change will be developed and implemented on all four diesel generator oil collection trenches to prevent oil seepage into the seismic gap seals. A design change will be developed and implemented on the diesel generator pedestal seals to specify a three hour rated fire seal. In the event of a fire on the elevation of the EDGs, the rotofoam seals could potentially melt and drip to the elevation below prior to reaching combustion temperature. Compensatory fire watches were established as required.

**LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION**

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION
COLLECTION REQUEST: 60.0 HRS. FORWARD COMMENTS REGARDING
BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH
(P-630), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20556,
AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF
MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

| FACILITY NAME (1) | DOCKET NUMBER (2) | LER NUMBER (6) | | | | PAGE (3) |
|--|-------------------|----------------|----------|--|----------|----------|
| | | YEAR | SEQ. NO. | | REV. NO. | |
| Brunswick Steam Electric Plant Unit 1 | 05000325 | 92 | 016 | | 0 | 2 |
| | | | | | | |

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

INITIAL CONDITIONS

On April 2, 1992, at 1710 hours, Unit 1 was at 100 % reactor power and Unit 2 was at 80% reactor power.

EVENT NARRATIVE

On April 2, 1992, plant management requested that Technical Support (TS) inspect the Rotofoam 300 seals around the four emergency diesel generator (EDG) pedestals which appeared to be soaked with petroleum products. Upon inspection, the TS team determined that the seals were in fact saturated with oil. The EDG skids contain collection systems which route oil to a tank. These systems were found to be leaking into the seal around the EDG pedestal. Conservatively, a seven day fire barrier Limiting Condition of Operation (LCO) and a work request were initiated on each of the four EDG seals (4 LCOs). Appropriate fire watches were established at that time. A request was made to the Nuclear Engineering Department (NED) to evaluate the effect of the oil on the seals and to provide corrective actions for the problem of the leaking oil from the collection system. A work request was also initiated to replace the seals. Because it had not been determined whether the seals were actually 10CFR50, Appendix A and/or R seals and if so whether or not the seals were inoperable, the active LCOs were transferred to short term tracking LCOs until an operability determination could be made by NED. The fire watches were removed when the LCOs were transferred to tracking. On April 20, 1992, both units 1 & 2 were shutdown due to non-related issues. On May 22, 1992, NED determined that the seals were inoperable and were 10CFR50 Appendix A and R seals. The tracking LCOs were transferred back to active LCOs with re-establishment of fire watches. On May 29, 1992, the LCOs exceeded seven days and a special report was issued.

CAUSE OF EVENT

It appears that Rotofoam 300 was used at Brunswick Steam Electric Plant initially as a seismic joint filler material and later qualified as fire barrier material in some applications. It appears that the initial analyses were based on the properties of Rotofoam II material (a cross-linked polyethylene plastic) which has dissimilar material composition than Rotofoam 300. Rotofoam 300 is a polyvinyl chloride plastic.

The seals around EDG pedestals function as a seismic gap seal and a fire barrier seal. In 1985, an engineering evaluation was performed on the qualification of these seals as fire barriers. At that time, they were deemed acceptable. The evaluation was based on a Rotofoam 300 combustion temperature of 700 degrees. The evaluation did not take into account the effect of oil leakage on the seals.

In 1989, a nonconformance report was issued on the improper use of Rotofoam 300 as a fire barrier in the Emergency Core Cooling System/Reactor Core Isolation Cooling (ECCS/RCIC) piping penetration room. The ensuing nonconformance report determined that Rotofoam 300 is not a tested fire seal. Records indicate that it was recognized that the Rotofoam 300 was installed around the diesel generator pedestals but had been previously evaluated in 1985 and found to be acceptable "as is".

Later discussions with the vendor indicated that while the material may not support combustion until 700 degrees, it will begin to soften and melt at temperatures as low as 150 degrees fahrenheit. If the material melted, it could potentially impact cable trays located below the gap; therefore, a fire barrier application in this case is not acceptable.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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| FACILITY NAME (1) | DOCKET NUMBER (2) | LER NUMBER (6) | | | | PAGE (3) | |
| Brunswick Steam Electric Plant Unit 1 | 05000325 | YEAR | | SEQ NO. | | REV NO. | 3 |
| | | 92 | | 016 | | 0 | |

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

CORRECTIVE ACTIONS

A design change will be developed and implemented on all four diesel generator oil collection trenches to prevent oil seepage into the seismic gap seals.

A design change will also be developed and implemented on the diesel generator pedestal seals to specify a three hour rated fire seal.

NED will perform a 10% sampling of fire protection seal evaluations to verify sound technical bases have been applied.

NED will review other engineering evaluations which address the use of the rotofoam seal material to determine if the conclusions are acceptable.

SAFETY ASSESSMENT

In the event of a fire on the elevation of the EDGs, the rotofoam seals could potentially melt and drip to the elevation below prior to reaching combustion temperature. In this case, rotofoam material and hot oil could affect the cable trays below. In the event of a fire in the lower elevation, the rising heat could melt the rotofoam and potentially allow Halon to escape the lower area, thereby reducing the Halon concentration and fire suppression capability. Compensatory fire watches were established as required.

PREVIOUS SIMILAR EVENTS

LER 2-83-095 - Fire barrier did not meet criteria.

EIIS COMPONENT IDENTIFICATIONSystem/ComponentEIIS Code

*** NONE