# CATEGORY 1

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FACIL:50-400 Shearon Harris Nuclear Power Plant, Unit 1, Carolina 05000400
AUTH.NAME AUTHOR AFFILIATION
VERRILLI,M. Carolina Power & Light Co.
DONAHUE,J.W. Carolina Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 97-006-00:on 970318,breach was identified in Thermo-Lag fire barrier wall due to inadequate initial design,poor construction methods & incomplete as-built design.Visual insp of Thermo-Lag barrier walls performed.W/970417 ltr.

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TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:Application for permit renewal filed. 05000400

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**Carolina Power & Light Company**
Harris Nuclear Plant
PO Box 165
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APR 17 1997

U.S. Nuclear Regulatory Commission
ATTN: NRC Document Control Desk
Washington, DC 20555

Serial: HNP-97-080
10CFR50.73

SHEARON HARRIS NUCLEAR POWER PLANT UNIT 1
DOCKET NO. 50-400
LICENSE NO. NPF-63
LICENSEE EVENT REPORT 97-006-00

Sir or Madam:

In accordance with Title 10 to the Code of Federal Regulations, the enclosed Licensee Event Report is submitted. This report describes a condition determined to be outside the design basis of the plant, related to a breach in a fire barrier in the Reactor Auxiliary Building.

Sincerely,

J. W. Donahue
Director of Site Operations
Harris Plant

MV

Enclosure

c: Mr. J. B. Brady (HNP Senior NRC Resident)
Mr. L. A. Reyes (NRC Regional Administrator, Region II)
Mr. N. B. Le (NRC - NRR Project Manager)

NRC FORM 366 (4-95) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 04/30/98

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

# LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

| FACILITY NAME (1) | DOCKET NUMBER (2) | PAGE (3) |
|---|---|---|
| Harris Nuclear Plant Unit-1 | 50-400 | 1 OF 3 |

TITLE (4)

Breach in Reactor Auxiliary Building 3-hour rated fire barrier (Thermo-lag wall in Cable Spread Room).

| 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 NAME | DOCKET NUMBER |
| 3 | 18 | 97 | 97 | -- 006 -- | 00 | 4 | 17 | 97 | FACILITY NAME | DOCKET NUMBER 05000 |

| OPERATING MODE (9) | 1 |
|---|---|
| POWER LEVEL (10) | 100% |

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

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 20.2201(b) | | 20.2203(a)(2)(v) | | 50.73(a)(2)(i) | | 50.73(a)(2)(viii) |
| | 20.2203(a)(1) | | 20.2203(a)(3)(i) | X | 50.73(a)(2)(ii) | | 50.73(a)(2)(x) |
| | 20.2203(a)(2)(i) | | 20.2203(a)(3)(ii) | | 50.73(a)(2)(iii) | | 73.71 |
| | 20.2203(a)(2)(ii) | | 20.2203(a)(4) | | 50.73(a)(2)(iv) | | OTHER |
| | 20.2203(a)(2)(iii) | | 50.36(c)(1) | | 50.73(a)(2)(v) | | Specify in Abstract below or in NRC Form 366A |
| | 20.2203(a)(2)(iv) | | 50.36(c)(2) | | 50.73(a)(2)(vii) | | |

LICENSEE CONTACT FOR THIS LER (12)

| NAME | TELEPHONE NUMBER (Include Area Code) |
|---|---|
| Michael Verrilli Sr. Analyst - Licensing | (919) 362-2303 |

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

| SUPPLEMENTAL 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 15 single-spaced typewritten lines) (16)

On March 18, 1997, with the plant operating in mode 1 at 100% power, a breach was identified in the thermo-lag fire barrier wall which provides separation between the A-train and B-train cable spread rooms within the Reactor Auxiliary Building. This breach consists of a "L-shaped" hole approximately 8 inches wide by 6 1/2 inches high at the point where the fire barrier wall joins the cable spread room ceiling. A 3/4 inch conduit containing two wire conductors was also found penetrating the breach. These wires were unconnected at each end and investigation revealed that they were unscheduled and not included in plant design. The breach is very difficult to see due to its location and configuration, coupled with the fact that it is behind several cable trays. It was identified by maintenance personnel during modifications to the cable spread room fire barrier to resolve concerns expressed in NRC Information Bulletin 92-01. Follow-up investigation revealed an additional thermo-lag fire barrier deficiency in a floor drain assembly in the cable spread room. Since there are safety-related cables near both sides of the identified fire barrier breach/deficiency, it is possible that a fire in the cable spread room could adversely affect both the A-train and B-train safety-related cables. These conditions do not comply with the 3-hour-fire-rated barrier requirement in the Harris Nuclear Plant (HNP) Final Safety Analysis Report and Safety Evaluation Report (NUREG-1038), and were determined to constitute operation outside the design basis of the plant.

The fire barrier deficiencies appear to have existed since initial plant construction and were most likely caused by inadequate initial design, poor construction methods, as well as incomplete as-built design verification.

Immediate corrective actions included a visual inspection of thermo-lag barrier walls located in the cable spread rooms and auxiliary control panel room. The unscheduled conduit was removed from the penetration on April 11, 1997. The identified barrier breach and floor drain assembly deficiency will be resolved by an existing Engineering Service Request for penetration upgrades by September 15, 1997.

| FACILITY NAME (1) | DOCKET | LER NUMBER (6) | | | PAGE (3) |
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| Shearon Harris Nuclear Plant - Unit #1 | 50-400 | 97 | -- 006 | -- 00 | 2 OF 3 |

TEXT *(If more space is required, use additional copies of NRC Form 366A)* (17)

EVENT DESCRIPTION:

On March 18, 1997, with the plant operating in mode 1 at 100% power, a breach was identified in the thermo-lag fire barrier wall which provides separation between the A-train and B-train cable spread rooms in the reactor auxiliary building. This breach consists of a "L-shaped" hole approximately 8 inches wide by 6 1/2 inches high at the point where the fire barrier wall joins the ceiling. A 3/4 inch conduit containing two wire conductors was found penetrating the breach. These wires were unconnected at each end and investigation revealed that they were unscheduled and not included in the design of this fire barrier wall. The breach is very difficult to see due to its location and configuration, coupled with the fact that it is behind several cable trays. It was identified by maintenance personnel during modifications to the cable spread room fire barrier to resolve concerns expressed in NRC Information Bulletin 92-01 "Failure of Thermo-Lag 330 Fire Barrier System to Maintain Cabling in Wide Cable Trays and Small Conduits Free From Damage".

Follow-up investigation revealed an additional deficiency in the cable spread room thermo-lag fire barrier that involved a floor drain assembly at the base of the wall. This floor drain was initially installed to accommodate sprinkler water flow, but was later abandoned. During initial construction, an electrical conduit was installed through the floor drain penetration. The conduit was properly sealed and the sides of the steel floor drain assembly were covered with thermo-lag coating. However, the bottom of the floor drain assembly, which was also covered with thermo-lag coating, has no steel reinforcement and would not adequately perform as a 3-hour fire barrier. (Please reference the illustrations on page 3)

Since there are safety-related cables near both sides of the fire barrier breach, it is possible that a fire in the cable spread room could adversely affect both the A-train and B-train safety-related cables. These conditions do not comply with the 3-hour-fire-rated barrier requirement contained in the Harris Nuclear Plant (HNP) Final Safety Analysis Report and Safety Evaluation Report (NUREG-1038).

As a result of NRC Information Bulletin 92-01, HNP implemented compensatory measures on June 26, 1992 for areas containing thermo-lag credited for safe shutdown capability, including verifying the operability of the fire detectors and establishing roving hourly fire watches to monitor these areas. These actions are delineated in plant procedure FPP-013, Fire Protection-Minimum Requirements and Mitigating Actions; however, prior to implementing these compensatory measures, the breached fire barrier resulted in operation outside the design basis of the plant and is being reported per 10CFR 50.73(a)(2)(ii).

CAUSE:

Investigation could not conclusively determine the cause for these conditions. The fire barrier breech and deficient floor drain assembly appear to have existed since initial plant construction and were most likely the result of inadequate initial design, as well as incomplete as-built design verification.

SAFETY SIGNIFICANCE:

There were no actual safety consequences associated with these conditions since there have been no fires in the cable spread rooms at HNP. These fire barriers have been considered inoperable since June 1992 as a result of the information contained in NRC Information Notice 92-01. The above described compensatory measures were established for these areas to provide confidence that a fire would not affect both trains of safety-related cables.

PREVIOUS SIMILAR EVENTS:

There have been no previous similar events reported at HNP.

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| Shearon Harris Nuclear Plant - Unit #1 | 50-400 | 97 | -- 006 -- | 00 | 3 OF 3 |

TEXT *(If more space is required, use additional copies of NRC Form 366A)* (17)

## CORRECTIVE ACTIONS COMPLETED:

1. Hourly roving fire watches were established for areas containing thermo-lag credited for safe shutdown capability. This was implemented in June 1992 as a result of NRC Information Bulletin #92-01.

2. A visual inspection was performed on the breached fire barrier wall, as well as the other thermo-lag barrier walls located in the cable spread rooms and Auxiliary Control Panel room. These inspections were completed on April 10, 1997 and identified no other reportable discrepancies. (Other than the additional item described above.)

3. The unscheduled 3/4 inch conduit was removed from the fire barrier breach on April 4, 1997.

## CORRECTIVE ACTIONS PLANNED:

1. The identified fire barrier deficiencies will be resolved by an existing Engineering Service Request (ESR #95-00715) for penetration upgrades by September 15, 1997.