



Carolina Power & Light Company  
Harris Nuclear Plant  
PO Box 165  
New Hill NC 27562

MAY 12 2000

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

Serial: HNP-00-089  
10CFR50.73

SHEARON HARRIS NUCLEAR POWER PLANT UNIT 1  
DOCKET NO. 50-400  
LICENSE NO. NPF-63  
LICENSEE EVENT REPORT 2000-002-00

Sir or Madam:

In accordance with 10CFR50.73, the enclosed Licensee Event Report is submitted. This report describes a Technical Specification Violation Due To Inoperable Radiation Monitor.

Sincerely,

R. J. Duncan II  
General Manager  
Harris Plant

MSE/mse

Enclosure

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

**FACILITY NAME (1)**

Harris Nuclear Plant, Unit 1

**DOCKET NUMBER (2)**

05000400

**PAGE (3)**

1 OF 3

**TITLE (4)**

Technical Specification Violation Due To Inoperable Radiation Monitor

| 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 |
| 04             | 13  | 2000 | 2000           | - 002             | -- 00           | 05              | 12  | 2000 | FACILITY NAME                 | DOCKET NUMBER |
|                |     |      |                |                   |                 |                 |     |      |                               | 05000         |
|                |     |      |                |                   |                 |                 |     |      | FACILITY NAME                 | DOCKET NUMBER |
|                |     |      |                |                   |                 |                 |     |      |                               | 05000         |

| OPERATING MODE (9) | POWER LEVEL (10) | THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFRs: (Check one or more) (11) |  |                   |                  |                           |
|--------------------|------------------|--|--|-------------------|------------------|---------------------------|
| 1                  | 100              | 20.2201(b)   |  | 20.2203(a)(2)(v)  | X 50.73(a)(2)(i) | 50.73(a)(2)(viii)         |
|                    |                  | 20.2203(a)(1)  |  | 20.2203(a)(3)(i)  | 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 |
|                    |                  | 20.2203(a)(2)(iv)  |  | 50.36(c)(2)       | 50.73(a)(2)(vii) | or in NRC Form 366A       |

**LICENSEE CONTACT FOR THIS LER (12)**

**NAME** Mark Ellington, Project Analyst - Licensing

**TELEPHONE NUMBER (Include Area Code)** (919) 362-2057

| COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13) |        |           |                      |                    |       |        |           |              |                    |
|--|--------|-----------|----------------------|--------------------|-------|--------|-----------|--------------|--------------------|
| CAUSE  | SYSTEM | COMPONENT | MANUFACTURER         | REPORTABLE TO EPIX | CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO EPIX |
| D  | IL     | RE        | Sorrento Electronics | Y                  |       |        |           |              |                    |
|  |        |           |                      |                    |       |        |           |              |                    |

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

On April 13, 2000, with the Harris Nuclear Plant (HNP) at 100% reactor power, an investigation determined that the Containment Reactor Coolant Leakage Detection System Radiation Monitor, REM-01LT-3502ASA, Particulate Channel was inoperable longer than allowed by HNP Technical Specifications (TS). The REM-01LT-3502ASA was inoperable due to the filter paper moving too fast resulting in a non-conservative signal being sent to the radiation monitor indication and alarm circuitry. Investigation determined that the filter paper was moving too fast because the slip-clutch on the take-up reel was not adjusted to the correct torque and was not lubricated as recommended by the vendor. This condition existed in excess of 30 days resulting in a violation of HNP TS 3.3.3.1.1.c.1. "Radiation Monitoring", and TS 3.4.6.1.c.a. "Reactor Coolant System Leakage Detection Systems".

**Cause of this event:** Inadequate preventative and corrective maintenance.

**Corrective actions include:** (1) Revise preventative maintenance tasks to periodically lubricate and check torque adjustment on the slip-clutch of the moving filter take-up reel. (2) Write a new corrective maintenance procedure to adjust the slip-clutch on the take-up reel.

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

| FACILITY NAME (1)            | DOCKET   | LER NUMBER (6) |                   |                 | PAGE (3) |      |
|------------------------------|----------|----------------|-------------------|-----------------|----------|------|
| Harris Nuclear Plant, Unit 1 | 05000400 | YEAR           | SEQUENTIAL NUMBER | REVISION NUMBER | 2        | OF 3 |
|                              |          | 2000           | -- 002            | -- 00           |          |      |

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

I. DESCRIPTION OF EVENT

On April 13, 2000, with the Harris Nuclear Plant (HNP) at 100% reactor power, an investigation determined that the Containment Reactor Coolant Leakage Detection System Radiation Monitor, REM-01LT-3502ASA, Particulate Channel was inoperable longer than allowed by HNP Technical Specifications (TS). The REM-01LT-3502ASA was inoperable due to the filter paper moving too fast resulting in a non-conservative signal being sent to the radiation monitor indication and alarm circuitry. Investigation determined that the filter paper was moving too fast because the slip-clutch on the take-up reel was not adjusted to the correct torque and was not lubricated as recommended by the vendor. This condition existed in excess of 30 days resulting in a violation of HNP TS 3.3.3.1.1.c.1. "Radiation Monitoring", and TS 3.4.6.1.c.a. "Reactor Coolant System Leakage Detection Systems".

The REM-01LT-3502ASA Particulate Channel normally operates in a moving filter mode. The particulate filter paper is set to move at approximately one inch per hour. The filter speed is used in the algorithm that calculates radioactive particulate activity. Increasing the filter speed results in generating a non-conservative signal to the alarm and indications for the radiation monitor.

The REM-01LT-3502ASA Particulate Channel is part of systems used to monitor and detect leakage from the reactor coolant system pressure boundary (RCSPB). These detection systems are consistent with the recommendations of Regulatory Guide 1.45, "Reactor Coolant Pressure Boundary Leakage Detection Systems" May 1973. Other systems used to detect RCSPB leakage include the REM-01LT-3502ASA Gas Channel and the Reactor Cavity Sump Level and Flow Monitoring System. The REM-01LT-3502ASA Particulate Channel is designed to automatically secure normal containment ventilation purge when the high alarm setpoint is reached. This automatic isolation function is also provided by diverse systems such as the REM-01LT-3502ASA Gas Channel and the Containment Ventilation Isolation Signal Area Monitors. Additionally, a Safety Injection signal will also automatically secure normal containment ventilation purge.

The exact date of the equipment failure could not be determined from the available data. The condition first occurred sometime between February 12, 2000 and February 27, 2000 but was not identified until April 13, 2000. This condition was identified because of concerns being raised about the frequency of replacing filter paper.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

| FACILITY NAME (1)            | DOCKET   | LER NUMBER (6) |                |              | PAGE (3) |
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| Harris Nuclear Plant, Unit 1 | 05000400 | 2000           | - 002          | - 00         | 3 OF 3   |
|                              |          | -              | -              | -            |          |

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

II. CAUSE OF EVENT

Inadequate preventative and corrective maintenance.

III. SAFETY SIGNIFICANCE

There were no actual safety consequences as a result of this event. Diverse systems used to detect RCSPB leakage were available including the REM-01LT-3502ASA Gas Channel and the Reactor Cavity Sump Level and Flow Monitoring System. The automatic isolation of normal containment purge function is provided by diverse systems such as the REM-01LT-3502ASA Gas Channel and the Containment Ventilation Isolation Signal Area Monitors. Additionally, a Safety Injection signal will also automatically secure normal containment ventilation purge. This report is being submitted pursuant to the criteria of 10CFR50.73(a)(2)(i) for Technical Specification Prohibited Operation or Condition.

IV. CORRECTIVE ACTIONS

- (1) Revise preventative maintenance tasks to periodically lubricate and check torque adjustment on the slip-clutch of the moving filter take-up reel.
- (2) Write a new corrective maintenance procedure to adjust the slip-clutch on the take-up reel.

V. SIMILAR EVENTS

There have been no previous reportable events at HNP where a radiation monitor particulate channel was inoperable due to filter paper problems.