

Georgia Power Company
310 Peachtree Avenue
Atlanta, Georgia 30305
Telephone 404 526-3750

Mailing Address:
40 Dunwoody Center Parkway
Post Office Box 1295
Emmetsburg, Alabama 35824
Telephone 205 868-6100

W. G. Hairston, III
General Vice President
Fuclear Operations

The Southern Electric System

HL-590
0178V
X7GJ17-H310

June 16, 1989

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

PLANT HATCH - UNIT 1
NRC DOCKET 50-321
OPERATING LICENSE DPR-57
LICENSEE EVENT REPORT
MANUFACTURER'S ERROR RENDERS
TECHNICAL SPECIFICATIONS REQUIRED EQUIPMENT INOPERABLE

Gentlemen:

In accordance with the requirements of 10 CFR 50.73(a)(2)(i), Georgia Power Company is submitting the enclosed Licensee Event Report (LER) concerning a manufacturing error which resulted in some recorders required by Technical Specifications being rendered inoperable. The event occurred at Plant Hatch - Unit 1.

Sincerely,


W. G. Hairston, III

SR/ct

Enclosure: LER 50-321/1989-007

c: (See next page.)

8906200346 890616
PDR ADCK 05000321
S PDC

IE02
1/1

U.S. Nuclear Regulatory Commission

June 16, 1989

Page Two

c: Georgia Power Company

Mr. H. C. Nix, General Manager - Nuclear Plant

Mr. L. T. Gucwa, Manager Engineering and Licensing - Hatch
GO-NORMS

U.S. Nuclear Regulatory Commission, Washington, D.C.

Mr. L. P. Crocker, Licensing Project Manager - Hatch

U.S. Nuclear Regulatory Commission, Region II

Mr. S. D. Ebnetter, Regional Administrator

Mr. J. E. Menning, Senior Resident Inspector - Hatch

0178V

LICENSEE EVENT REPORT (LER)

| | | |
|---|---|-----------------------------|
| FACILITY NAME (1) PLANT HATCH, UNIT 1 | DOCKET NUMBER (2) 0 5 0 0 0 3 2 1 | PAGE (3) 1 OF 0 5 |
|---|---|-----------------------------|

TITLE (4)
MANUFACTURER'S ERROR RENDERS TECHNICAL SPECIFICATION REQUIRED EQUIPMENT INOPERABLE

| 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 | 1 7 | 8 9 | 8 9 | 0 0 7 | 0 | 0 6 | 1 6 | 8 9 | | | 0 5 0 0 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:15%;">OPERATING MODE (9) 1</td> <td colspan="10">THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)</td> </tr> <tr> <td rowspan="5">POWER LEVEL (10) 1 1 0 0</td> <td><input type="checkbox"/> 20.402(b)</td> <td><input type="checkbox"/> 20.405(e)</td> <td><input type="checkbox"/> 50.73(a)(2)(iv)</td> <td><input type="checkbox"/> 73.71(b)</td> </tr> <tr> <td><input type="checkbox"/> 20.405(a)(1)(v)</td> <td><input type="checkbox"/> 50.36(c)(1)</td> <td><input type="checkbox"/> 50.73(a)(2)(v)</td> <td><input type="checkbox"/> 73.71(c)</td> </tr> <tr> <td><input type="checkbox"/> 20.405(a)(1)(ii)</td> <td><input type="checkbox"/> 50.36(c)(2)</td> <td><input type="checkbox"/> 50.73(a)(2)(vii)</td> <td rowspan="3">OTHER (Specify in Abstract below and in Text, NRC Form 366A)</td> </tr> <tr> <td><input type="checkbox"/> 20.405(a)(1)(iii)</td> <td><input checked="" type="checkbox"/> 50.73(a)(2)(i)</td> <td><input type="checkbox"/> 50.73(a)(2)(viii)(A)</td> </tr> <tr> <td><input type="checkbox"/> 20.405(a)(1)(iv)</td> <td><input type="checkbox"/> 50.73(a)(2)(ii)</td> <td><input type="checkbox"/> 50.73(a)(2)(viii)(B)</td> </tr> <tr> <td><input type="checkbox"/> 20.405(a)(1)(iv)</td> <td><input type="checkbox"/> 50.73(a)(2)(iii)</td> <td><input type="checkbox"/> 50.73(a)(2)(ix)</td> <td></td> </tr> </table> | | | | | | | | | | | | OPERATING MODE (9) 1 | THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11) | | | | | | | | | | POWER LEVEL (10) 1 1 0 0 | <input type="checkbox"/> 20.402(b) | <input type="checkbox"/> 20.405(e) | <input type="checkbox"/> 50.73(a)(2)(iv) | <input type="checkbox"/> 73.71(b) | <input type="checkbox"/> 20.405(a)(1)(v) | <input type="checkbox"/> 50.36(c)(1) | <input type="checkbox"/> 50.73(a)(2)(v) | <input type="checkbox"/> 73.71(c) | <input type="checkbox"/> 20.405(a)(1)(ii) | <input type="checkbox"/> 50.36(c)(2) | <input type="checkbox"/> 50.73(a)(2)(vii) | OTHER (Specify in Abstract below and in Text, NRC Form 366A) | <input type="checkbox"/> 20.405(a)(1)(iii) | <input checked="" type="checkbox"/> 50.73(a)(2)(i) | <input type="checkbox"/> 50.73(a)(2)(viii)(A) | <input type="checkbox"/> 20.405(a)(1)(iv) | <input type="checkbox"/> 50.73(a)(2)(ii) | <input type="checkbox"/> 50.73(a)(2)(viii)(B) | <input type="checkbox"/> 20.405(a)(1)(iv) | <input type="checkbox"/> 50.73(a)(2)(iii) | <input type="checkbox"/> 50.73(a)(2)(ix) | |
| OPERATING MODE (9) 1 | THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| POWER LEVEL (10) 1 1 0 0 | <input type="checkbox"/> 20.402(b) | <input type="checkbox"/> 20.405(e) | <input type="checkbox"/> 50.73(a)(2)(iv) | <input type="checkbox"/> 73.71(b) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <input type="checkbox"/> 20.405(a)(1)(v) | <input type="checkbox"/> 50.36(c)(1) | <input type="checkbox"/> 50.73(a)(2)(v) | <input type="checkbox"/> 73.71(c) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <input type="checkbox"/> 20.405(a)(1)(ii) | <input type="checkbox"/> 50.36(c)(2) | <input type="checkbox"/> 50.73(a)(2)(vii) | OTHER (Specify in Abstract below and in Text, NRC Form 366A) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <input type="checkbox"/> 20.405(a)(1)(iii) | <input checked="" type="checkbox"/> 50.73(a)(2)(i) | <input type="checkbox"/> 50.73(a)(2)(viii)(A) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <input type="checkbox"/> 20.405(a)(1)(iv) | <input type="checkbox"/> 50.73(a)(2)(ii) | <input type="checkbox"/> 50.73(a)(2)(viii)(B) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> 20.405(a)(1)(iv) | <input type="checkbox"/> 50.73(a)(2)(iii) | <input type="checkbox"/> 50.73(a)(2)(ix) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

LICENSEE CONTACT FOR THIS LER (12)

| NAME | TELEPHONE NUMBER |
|--|--------------------------------------|
| Steven B. Tipps, Manager Nuclear Safety and Compliance, Hatch | 9 1 1 2 3 1 6 7 1 - 1 7 8 5 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 | 1 1 P | 0 0 4 5 G | 0 8 2 | N | | | | | |

SUPPLEMENTAL REPORT EXPECTED (14)

| | | | | | |
|--|--|-------------------------------|-------|-----|------|
| <input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE) | <input checked="" type="checkbox"/> NO | EXPECTED SUBMISSION DATE (15) | MONTH | DAY | YEAR |
| | | | | | |

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

On 05/17/89 at approximately 1900 CDT, Unit 1 was in the Run mode at an approximate power level of 2435 CMWT (approximately 100 percent of rated thermal power). At that time, a six-month calibration surveillance was being performed on the drywell post loss-of-coolant-accident (LOCA) radiation recorders (EIS Code IP). As a result of the surveillance, the recorders were declared inoperable since they were found not to be capable of recording the full range of zero to 1E06 R/hr as required by the Unit 1 Technical Specifications section 3.2, Table 3.2-11, Item 12, Note (d). The recorders had been inoperable since their installation on 11/20/88, but the digital indication on the monitors and the associated annunciation were available for the control room operator during this time. Only the ability to produce a permanent recording was affected.

The root causes of this event were a wiring error by the vendor of the associated radiation monitors and personnel error on the part of the implementing engineer.

Corrective actions for this event included notifying the vendor of the error, re-wiring the monitors for the correct output voltage range in accordance with instructions from the vendor, counseling the involved engineer, and incorporating details of the event into the plant's Engineering Continuing Training program.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

| | | | | | | |
|--|-----------------------------------|----------------|-------------------|-----------------|----------|-------|
| FACILITY NAME (1) PLANT HATCH, UNIT 1 | DOCKET NUMBER (2) 05000321 | LER NUMBER (6) | | | PAGE (3) | |
| | | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | | |
| | | 89 | 007 | 00 | 02 | OF 05 |

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

Plant and System Identification

General Electric - Boiling Water Reactor
Energy Industry Identification System codes are identified in the text as (EIIS Code XX).

Summary of Event

On 05/17/89 at approximately 1900 CDT, Unit 1 was in the Run mode at an approximate power level of 2435 CMWT (approximately 100 percent of rated thermal power). At that time, a six-month calibration surveillance was being performed on the drywell post loss-of-coolant-accident (LOCA) radiation recorders (EIIS Code IP). As a result of the surveillance, the recorders were declared inoperable since they were found not to be capable of recording the full range of zero to 1E06 R/hr as required by the Unit 1 Technical Specifications section 3.2, Table 3.2-11, Item 12, Note (d). The recorders had been inoperable since their installation on 11/20/88.

The root causes of this event were a wiring error by the vendor of the associated radiation monitors and personnel error on the part of the implementation engineer. The monitors which drive the recorders can be internally wired for any of several output voltage ranges. The monitors sold to Plant Hatch were wired incorrectly such that the monitor output voltage range was incompatible with the recorder input voltage range. The mismatch would have caused the recorders to indicate full scale at a negligible value instead of the Technical Specification required value of 1E06 R/hr. The functional test written by the implementation engineer failed to detect the error.

Corrective actions for this event included notifying the vendor of the error, re-wiring the monitors for the correct output voltage range in accordance with instructions from the vendor, counseling the involved engineer, and incorporating details of the event into the plant's Engineering Continuing Training program. The monitors and recorders were calibrated and returned to operable status on 05/18/89.

Description of Event

On 05/17/89, at approximately 1900 CDT, procedure 57SV-CAL-012-05, "GE NUMAC Post-LOCA Logarithmic Radiation Monitor Calibration," was being performed on the drywell post-LOCA radiation recorders 1D11-K622A/B/C/D. During performance of the surveillance, technicians discovered that a mismatch existed between the output voltage range of the monitors and the input voltage range of the associated recorders. The monitors which drive the recorders are capable of being internally wired for any of several output voltage ranges. It was found that the recorder input voltage range was zero to one volt, whereas the monitor

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

| | | | | | | |
|--|--|----------------|-------------------|-----------------|----------|--------|
| FACILITY NAME (1) PLANT HATCH, UNIT 1 | DOCKET NUMBER (2) 0 5 0 0 0 3 2 1 | LER NUMBER (6) | | | PAGE (3) | |
| | | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | | |
| | | 8 9 | 0 0 7 | 0 0 | 0 3 | OF 0 5 |

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

output was set up by the vendor to provide a voltage range of zero to ten volts. Under extremely high radiation conditions such as might be expected during a LOCA, the mismatch would overdrive the recorder and cause the recorder pen to saturate full scale at a negligible value rather than 1E06 R/hr as required by Unit 1 Technical Specifications section 3.2, Table 3.2-11, Item 12, Note (d).

The installation of the monitors was completed on 11/20/88 during the 1988 Unit 1 refueling outage. The monitors were supplied from the vendor already bearing the wiring defect, and a functional test of the newly installed system failed to detect the voltage mismatch between the monitors and recorders. The wiring defect was not discovered until the first regularly scheduled calibration was performed on the new monitors on 05/17/89, approximately six months after original installation. Therefore, the recorders had been inoperable since 11/20/88. Following re-wiring, the monitors and recorders were calibrated and returned to operable status on 05/18/89.

Cause of Event

One root cause of this event was a wiring error by the vendor of the radiation monitors, General Electric Nuclear Energy Company. Another root cause was personnel error which resulted in an inadequate functional test following installation of the new monitors. The test developed by the implementation engineer failed to check the compatibility of the input and output voltages of the recorders and monitors respectively.

Plant Hatch routinely performs a physical inspection of shipments to determine that the item ordered is the same as the item received (verified by part number and description) and to identify items which may have been damaged during shipping. Such an inspection was performed on the post-LOCA radiation monitors. However, the receipt inspection is not intended to detect functional deficiencies such as those which caused this event.

Reportability Analysis and Safety Assessment

This report is required per 10 CFR 50.73(a)(2)(i)(B) because a condition existed in which equipment required by the Unit 1 Technical Specifications was not capable of displaying the full range required by the Technical Specifications. Specifically, Unit 1 Technical Specifications section 3.2, Table 3.2-11, Item 12, requires the post-LOCA drywell radiation recorders to be capable of displaying a range of zero to 1E06 R/hr. The wiring error which caused this event resulted in the recorders being limited to a negligible display range.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

| | | | | | | |
|--|--|----------------|-------------------|-----------------|----------|----------------|
| FACILITY NAME (1) PLANT HATCH, UNIT 1 | DOCKET NUMBER (2) 0 5 0 0 0 3 2 1 8 9 | LER NUMBER (6) | | | PAGE (3) | |
| | | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | | |
| | | — | 0 0 7 | — | 0 0 | 0 4 OF 0 5 |

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

The drywell post-LOCA radiation monitoring system, including the subject recorders, is designed to monitor the radiation levels that may exist inside the drywell following a LOCA. Unit 1 Technical Specifications section 3.2, Table 3.2-11, Item 12, requires at least one channel of the system to be operable at all times. An operable channel consists of at least one detector in the suppression pool area and one detector in the drywell, with monitoring and recording equipment capable of registering the required range. During accident conditions, the post-LOCA monitors would be used to assess radiological conditions inside containment, including some indication of potential fuel damage. Even though the post-LOCA monitors can provide some preliminary indication of fuel damage, more reliable data on fuel damage would be obtained from the Post Accident Sampling System (PASS, EIIS Code IP). PASS uses more exacting methods of determining radionuclide content in containment.

In the event addressed in this report, the voltage mismatch between the monitor output and the recorder input rendered the recorder incapable of indicating the full range required by the Technical Specifications. However, the monitors which drive the recorders also have a digital display. This display was unaffected by the wiring error, and was fully operable throughout the entire event. In addition to the post-LOCA radiation monitors, two other high-range radiation monitors, 1D11-K621A/B (EIIS Code IL), located inside the drywell, were available throughout the approximately six-month period of the event. These monitors are capable of indicating radiation levels up to 1E07 R/hr. Furthermore, the high-range monitors can be displayed on the Safety Parameter Display System (SPDS, EIIS Code ID), and are therefore easily accessible to plant operators. In the event that it had been necessary to evaluate severe radiological conditions inside the drywell, plant operators could have used the operable digital display on the post-LOCA radiation monitors and corroborated the readings with the high-range monitors on SPDS.

The subject post-LOCA monitors drive a Main Control Room annunciator. The annunciator function was not affected by the wiring error because the annunciator contact is driven by a circuit separate from the recorder output. Thus the annunciator would have alarmed correctly should it have been required. No automated equipment actuations are initiated by the post-LOCA radiation monitors.

Based on the above analysis, it is concluded that this event had no adverse impact on nuclear safety. Since drywell post-LOCA radiation monitoring is most critical for a postulated LOCA during full-power operation, it is concluded that the event would not have been more severe under other operating conditions.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

| | | | | | | |
|--|--|----------------|-------------------|-----------------|----------|--------|
| FACILITY NAME (1) PLANT HATCH, UNIT 1 | DOCKET NUMBER (2) 0 5 0 0 0 3 2 1 8 9 - | LER NUMBER (6) | | | PAGE (3) | |
| | | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | | |
| | | 0 0 7 | 0 0 0 | 0 0 0 | 0 5 | OF 0 5 |

TEXT (If more space is required, use additional NRC Form 386A's) (17)

Corrective Actions

Corrective actions for this event include:

1. Notifying the vendor of the wiring error. This action is complete.
2. Re-wiring the monitors for the correct output voltage range in accordance with instructions from the vendor. This action is complete.
3. Calibrating the monitors and associated recorders and returning them to operable status. This action was completed on 05/18/89.
4. Counseling the involved implementation engineer. This action was completed on 06/15/89.
5. Including the details of the event in the plant's Engineering Continuing Training program. This action will be completed by 12/31/89.

In addition to the above corrective actions, a letter has been received by Georgia Power Company from General Electric Company acknowledging the latter's wiring error. The letter states that General Electric Company is conducting a Quality Assurance investigation to determine the root cause and potential scope of the miswiring. Georgia Power Company will take such action as may be required by the results of General Electric Company's investigation.

Additional Information

1. Failed Component(s) Identification:

Master Parts List Number: 1D11-K622A/B/C/D
 Manufacturer: General Electric Company Root Cause Code: B
 Model Number: 304A3700G028 Component Code: 45
 Type: Logarithmic Radiation Monitor
 Manufacturer Code: G082
 EIIS Code: IP
 Reportable to NPRDS: Not included in NPRDS data base.

2. Previous Similar Events:

No previous similar events were identified.

3. Other affected equipment

No systems other than the Unit 1 drywell post-LOCA radiation monitors were affected by this event.