



**Entergy
Operations**

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W3F1-94-0188

A4.05

PR

November 22, 1994

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

Subject: Waterford 3 SES
Docket No. 50-382
License No. NPF-38
Reporting of Licensee Event Report

Gentlemen:

Attached is Licensee Event Report Number LER-94-015-00 for Waterford Steam Electric Station Unit 3. This is submitted as a voluntary Licensee Event Report.

Very truly yours,

R.S. Starkey
Acting General Manager
Plant Operations

RSS/RWP/ssf
Attachment

cc: L.J. Callan, NRC Region IV
G.L. Florreich
J.T. Wheelock - INPO Records Center
R.B. McGehee
N.S. Reynolds
NRC Resident Inspectors Office
Administrator - LRPD

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9411250222 941122
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LICENSEE EVENT REPORT (LER)

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

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNRB 7714, 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.

FACILITY NAME (1)

Waterford Steam Electric Station Unit 3

DOCKET NUMBER (2)

05000 382

PAGE (3)

1 OF 05

TITLE (4)

Boric Acid Addition to Reactor Coolant System

| EVENT DATE (5) | | | LER NUMBER (6) | | | REPORT NUMBER (7) | | | OTHER FACILITIES INVOLVED (8) | |
|----------------|-----|------|----------------|-------------------|-----------------|-------------------|-----|------|-------------------------------|---------------|
| MONTH | DAY | YEAR | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | MONTH | DAY | YEAR | FACILITY NAME | DOCKET NUMBER |
| 09 | 16 | 94 | 94 | 015 | 00 | 11 | 22 | 94 | N/A | 05000 |
| | | | | | | | | | FACILITY NAME | DOCKET NUMBER |
| | | | | | | | | | N/A | 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)

| | | | |
|-------------------|------------------|----------------------|--|
| 20.402(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) | <input checked="" type="checkbox"/> OTHER |
| 20.405(a)(1)(iii) | 50.73(a)(2)(i) | 50.73(a)(2)(viii)(A) | (Specify in Abstract below and in Text, NRC Form 366A) |
| 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

D.C. Matheny, Operations Superintendent

TELEPHONE NUMBER (Include Area Code)

(504) 464-3178

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

| CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NPDOS | CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NPDOS |
|-------|--------|-----------|--------------|---------------------|-------|--------|-----------|--------------|---------------------|
| | | | | | | | | | |
| | | | | | | | | | |

SUPPLEMENTAL REPORT EXPECTED (14)

YES

(If yes, complete EXPECTED SUBMISSION DATE)

☒

NO

EXPECTED
SUBMISSION
DATE (15)

MONTH DAY YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On September 16, 1994 at approximately 1640 hours, Waterford 3 was in Mode 1 at 100% power when an addition of boric acid was made directly to the Reactor Coolant system (RCS) instead of to the Volume Control Tank (VCT). This erroneous action was noted quickly and appropriate actions were taken to prevent exceeding Technical Specification (TS) limits on RCS Cold Leg Temperature.

The root cause of this event was personnel error due to a lack of self-checking to ensure intended actions were correct. A contributing cause was the non-continuous use of Chemical and Volume Control procedure OP-002-005.

Corrective action included counseling the Primary Nuclear Plant Operator (PNPO) in accordance with the Improving Human Performance (IHP) Program and temporarily assigning the responsible PNPO to an Off-Shift status. This event did not compromise the health and safety of the public. This report is being submitted as a Voluntary LER.

REQUIRED NUMBER OF DIGITS/CHARACTERS
FOR EACH BLOCK

| BLOCK NUMBER | NUMBER OF DIGITS/CHARACTERS | TITLE |
|-----------------|---|------------------------------|
| 1 | UP TO 46 | FACILITY NAME |
| 2 | 8 TOTAL 3 IN ADDITION TO 05000 | DOCKET NUMBER |
| 3 | VARIES | PAGE NUMBER |
| 4 | UP TO 76 | TITLE |
| 5 | 6 TOTAL 2 PER BLOCK | EVENT DATE |
| 6 | 7 TOTAL 2 FOR YEAR 3 FOR SEQUENTIAL NUMBER 2 FOR REVISION NUMBER | LER NUMBER |
| 7 | 6 TOTAL 2 PER BLOCK | REPORT DATE |
| 8 | UP TO 18 -- FACILITY NAME 8 TOTAL -- DOCKET NUMBER 3 IN ADDITION TO 05000 | OTHER FACILITIES INVOLVED |
| 9 | 1 | OPERATING MODE |
| 10 | 3 | POWER LEVEL |
| 11 | 1 CHECK BOX THAT APPLIES | REQUIREMENTS OF 10 CFR |
| 12 | UP TO 50 FOR NAME 14 FOR TELEPHONE | LICENSEE CONTACT |
| 13 | CAUSE VARIES 2 FOR SYSTEM 4 FOR COMPONENT 4 FOR MANUFACTURER NPRDS VARIES | EACH COMPONENT FAILURE |
| 14 | 1 CHECK BOX THAT APPLIES | SUPPLEMENTAL REPORT EXPECTED |
| 15 | 6 TOTAL 2 PER BLOCK | EXPECTED SUBMISSION DATE |

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|--|--|------------------------------------|--|--|----------------------|
| NRC FORM 365A <small>(5-92)</small> | | U.S. NUCLEAR REGULATORY COMMISSION | | APPROVED BY OMB NO. 3150-0104 EXPIRES 5/31/95 | |
| LICENSEE EVENT REPORT (LER) TEXT CONTINUATION | | | | ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20585-0001, 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) | |
| Waterford SteamElectric Station Unit 3 | | 05000 382 | | YEAR | SEQUENTIAL NUMBER |
| | | | | REVISION NUMBER | PAGE (3) |
| | | | | 94 | 015 00 |
| | | | | 02 OF 05 | |

TEXT (If more space is required, use additional copies of NRC Form 365A, (17))

REPORTABLE OCCURRENCE

On September 16, 1994 at approximately 1640 hours, Waterford 3 was operating in Mode 1 at 100% power when a PNPO erroneously added 40 gallons of boric acid to the RCS (EIIS Identifier CB). Upon realizing what happened, the PNPO injected 220 gallons of primary makeup water to the VCT. This prompt mitigating action prevented TS 3.2.6 limits on RCS cold leg temperature from being exceeded. The plant was stabilized through turbine load reduction, with reactor power at 98.5% and RCS cold leg temperature at 545°F.

It has been determined that the event does not meet the reporting threshold of 10CFR50.73. However, Waterford 3 believes that this issue may be of generic concern; thus, this report is being provided as a voluntary LER.

INITIAL CONDITIONS

| | |
|--|------------|
| Plant Power | 100% |
| Plant Operating Mode | Mode 1 |
| Procedures Being Performed Specific to this Event | OP-002-005 |
| Technical Specification LCO's in Effect Specific to this Event | None |
| Major Equipment out of Service Specific to this Event | None |

EVENT SEQUENCE

On September 16, 1994, at approximately 1640 hours, the PNPO decided to perform a makeup to the VCT using the Borate Makeup Mode. The VCT level was at 43%. The PNPO had reviewed the procedure for blended makeups (OP-002-005) earlier in the day and was performing this evolution in accordance with Section 6.11 of OP-002-005. It is not currently a requirement to have this procedure in hand (i.e., in continuous use) while conducting a makeup. The

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| FACILITY NAME (1) | | DOCKET NUMBER (2) | | LER NUMBER (8) | |
| Waterford Steam Electric Station Unit 3 | | 05000 382 | | YEAR | SEQUENTIAL NUMBER |
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| | | | | 00 | 03 OF 05 |

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

PNPO had completed Step #2 of Section 6.11, which places the control switch for BAM-143 (Direct Boration Valve) to the close position, when several annunciator alarms occurred. He then returned BAM-143 to the Auto position prior to acknowledging the annunciator alarms. When he recommenced the makeup, the PNPO failed to switch BAM-143 to the closed position and open CVC-510 (VCT makeup Stop Valve). Upon placing the Makeup Mode Selector Switch to borate position, the Boric Acid Makeup Pump started and BAM-143 opened allowing 40 gallons of boric acid to enter the RCS. This error was detected by the PNPO within two minutes and he immediately notified the CRS. He then promptly injected 200 gallons of primary makeup water to the VCT. The PNPO remained at Control Panel CP-4 during the entire time of the event. Turbine power was lowered to maintain the RCS temperature/turbine load match. At 1651 hours, reactor power was stabilized at 98.5% and RCS cold leg temperature was at 545°F.

CAUSAL FACTORS
 The root cause of this event was a lack of self-checking to ensure intended actions were correct. A contributing cause was the non-continuous use of Chemical and Volume Control procedure, OP-002-005.

IMMEDIATE CORRECTIVE MEASURES
 The plant was stabilized through a combination of primary makeup water addition and turbine power reduction.

ACTIONS TO PREVENT RECURRENCE
 The corrective actions that have already been taken to prevent recurrence are:

- 1) The counseling of the responsible PNPO in accordance with the IHP Program and assigning him to an Off-Shift status.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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| Waterford Steam Electric Station Unit 3 | | 05000 382 | | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | 04 OF 05 |
| | | | | 94 | 015 | 00 | |

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

- 2) The Operations Superintendent issued Daily Instructions (standing instructions) requiring procedure OP-002-005 to be in continuous use until it can be procedurally designated as a Continuous Use Procedure.
- 3) The changing of OP-002-005, Chemical and Volume Control, to provide a single section of the procedure for routine blends to the VCT.

The following additional corrective actions to be taken for this event are:

- 1) The Training Department will conduct training during the next Operator Requalification cycle with all licensed operators and Shift Technical Advisors on reactivity management with emphasis on system response to boric acid and makeup additions and on the conservative decision making process.
- 2) Change OP-100-001, Duties and Responsibilities of Operators on Duty, Section 5.12 to identify VCT makeup procedures as Continuous Use procedures.
- 3) Review reactivity-related sections of OP-002-005, Chemical and Volume Control, for human factoring considerations.
- 4) After OP-002-005 is changed, conduct Operator Requal training on OP-002-005, to include blended makeup evolutions on the simulator.

SAFETY SIGNIFICANCE

The event did not compromise the health and safety of the public in that the plant was stabilized within a time frame that did not violate Technical Specifications or actuate safety features. All systems functioned as designed and no equipment failures were observed during this event.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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| Waterford Steam Electric Station Unit 3 | 05000 382 | 94 | 015 | 00 | 05 OF 05 |

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

SIMILAR EVENTS

There was one similar event involving an improper makeup addition to the RCS, which was reported as voluntary LER-94-011-00. This event is different in that it involved the addition of boric acid directly to the RCS and the other event involved the addition of unborated water to the RCS.