

NRC FORM 366 (4-95)

NUCLEAR REGULATORY COMMISSION

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

LICENSEE EVENT REPORT (LER)

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

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.

FACILITY NAME (1)

Susquehanna Steam Electric Station - Unit 2

DOCKET NUMBER (2)

05000388

PAGE (3)

1 OF 5

TITLE (4)

Entry Into Technical Specification 3.0.3 - Rod Block Monitor Operability Testing

| 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 |
| 10             | 17  | 97   | 97             | 007               | 01              | 03              | 30  | 98   | FACILITY NAME                 | 05000         |
|                |     |      |                |                   |                 |                 |     |      | FACILITY NAME                 | 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)   | 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)(iii) |   | 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

Stephen J. Ellis - Nuclear Licensing Engineer

TELEPHONE NUMBER (Include Area Code)

717/542-3537

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

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

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE).

X NO

EXPECTED SUBMISSION DATE (15)

MONTH DAY YEAR

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

On October 17, 1997, at 0920 hours, with Unit 2 in Condition 1 (Power Operation) at 100% Power, a Technical Specification 3.0.3 entry was voluntarily made. In accordance with the guidance of NUREG 1022, a Technical Specification 3.0.3 entry requires an LER to be submitted within 30 days of the event. The entry was made to allow completion of surveillance testing of one channel of the Rod Block Monitor (RBM), after considering the other available options. There is no provision provided in current Technical Specifications to allow operability testing without entry into Technical Specification 3.0.3. The Technical Specification 3.1.4.3 ACTION statement had been entered to perform surveillance testing of one channel of the RBM. Unexpected results had been obtained during the testing. Investigation of these results determined that 11 LPRMs were not providing an output to the RBM. The testing resumed prior to the expiration of Technical Specification 3.1.4.3 ACTION allowable time limit, but would not be completed before the limit expired. Operations management voluntarily entered Technical Specification 3.0.3, and did not take the ACTIONS described in Technical Specification 3.1.4.3.a, that is placing the inoperable channel of the RBM in the trip condition. In reconsidering this event, PP&L has recognized that the ACTION of Technical Specification 3.1.4.3.a should have been taken to avoid a condition that could be construed as an entry into Technical Specification 3.0.3 made for operational convenience. The cause of the LPRM failures has been traced to inadequate post maintenance testing following earlier work associated with these components. The failed components were repaired/replaced, testing was completed and the RBM returned to operable status. The safety significance of this event was minor, and the health and welfare of the public was not compromised. The technical aspect of this event will be reviewed with the work group and a review of associated work plans and procedures will be performed, and appropriate changes implemented. Administratively, guidance dealing with voluntary Technical Specification 3.0.3 entry and guidance dealing with actions to be taken once Technical Specification 3.0.3 has been entered, will be provided. These changes will be communicated to appropriate personnel.

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| Susquehanna Steam Electric Station - Unit 2 | 388             | 97             | 007                  | 01                 | 2 OF 5   |

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

EVENT DESCRIPTION

On October 17, 1997, at 0920 hours, with Unit 2 in Condition 1( Power Operation) at 100% power, a Technical Specification 3.0.3 entry was voluntarily made.

On October 16, 1997, at 0820 hours Technical Specifications Limiting Condition for Operation (LCO) 3.1.4.3 ACTION a and 3.3.6 ACTION 60 were entered to perform required surveillances for the Rod Block Monitor (RBM) (EIS Code: I). The RBM must be removed from service to perform these surveillances. The ACTION of the most limiting Technical Specification states:

"With one RBM channel inoperative, restore the inoperative channel to OPERABLE status within 24 hours and verify that the reactor is not operating on a LIMITING CONTROL ROD PATTERN; otherwise, place the inoperable rod block monitor channel in the tripped condition within the next hour."

A few hours into the testing, unexpected results were observed and testing was halted to investigate these results. Since the RBM remained inoperative, the LCO ACTION remained in effect. The 24 hour time period expired prior to restarting the surveillance testing. One hour remained before the Technical Specifications ACTION requires that the RBM channel be placed into the tripped condition. Prior to the expiration of the one hour period, testing was restarted. Since testing had begun, the decision was made to voluntarily enter Technical Specification 3.0.3, considering that the completion of the surveillance testing would allow this channel of the RBM to be restored to service. Technical Specification 3.0.3 was entered at 0920 hours on October 17, 1997 and exited at 1410 hours on October 17, 1997.

It was determined that the RBM was actually operating as designed. A number of the Local Power Range Monitors(LPRM) (EIS Code: I) had a zero volt output to the RBM. The RBM correctly identified a zero input condition from an LPRM(s) and automatically eliminated it from the averaging circuit. As long as the RBM had more than the required minimum number of 'good' LPRM inputs, it continued to function normally.

CAUSE OF EVENT

The cause of the unexpected results of the RBM surveillance has been traced to the failure of components in the LPRM output to the RBM. When these components failed, their output to the RBM went to zero volts. 11 LPRMs were identified to have this condition. LPRM output to the Average Power Range Monitor (APRM) (EIS Code: I), the Oscillation Power Range Monitor (OPRM) (EIS Code:I), and to the plant computer were normal. It has been determined that the cause of the failed components stems from a power supply failure in June of 1997. The power supply had been replaced and outputs to the APRM and computer were checked, but not the outputs to the RBM. The post maintenance testing following the power supply replacement was not adequate, and is considered a root cause of the event.

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Technical Specification 3.0.3 was voluntarily entered when the inoperable channel of RBM was not in the tripped condition following the expiration of allowable time limit of Technical Specification 3.1.4.3 ACTION (a). In order to perform the operability testing, the RBM can not be in the tripped condition. The root cause of the Technical Specification 3.0.3 entry is an administrative omission in the current Technical Specifications. Improved Technical Specifications contain provisions to perform operability testing on inoperable equipment without entry into a shutdown action statement. The decision to enter Technical Specification 3.0.3 is discussed in greater detail below.

**REPORTABILITY/ANALYSIS**

This Licensee Event Report is being made per 10 CFR 50.73(a)(2)(i)(B), in that NUREG 1022 requires the reporting of any entry into Technical Specification LCO 3.0.3.

Technical Specification 3.0.3 was entered to allow completion of surveillance testing of one channel of the RBM. As previously noted, one channel of the RBM was removed from service to perform surveillance testing. During that testing, unexpected results were obtained. The time to evaluate these results and then complete the testing was going to exceed the time allowed by Technical Specifications. Since completion of the surveillance testing would allow the RBM to be restored to operable status, the decision was made to resume testing and a Technical Specification 3.0.3 entry was made when Technical Specification 3.1.4.3 ACTION (a) expired. This decision was made after considering the following alternatives:

1. Suspend testing of the RBM. Place the affected channel of the RBM in the tripped condition to satisfy the LCO ACTION. Enter 3.0.3 and activate the RBM channel to allow testing to resume.
2. Reduce power to 30% of Rated Thermal Power. The RBM is not required to be operable, and LCO 3.1.4.3.a does not apply.
3. Allow testing of the RBM to continue. This would mean that compliance with the LCO ACTION would not be maintained. As a result, entry into Technical Specification 3.0.3.

At the time this event occurred, option 1 and 2 were viewed by Operations as presenting an increased risk to nuclear safety. Option 3, the option chosen, was considered to be the least challenging to Operations, and to be within our authority as a licensee. Option 2 challenged the operator to manipulate reactor power, while option 1 required the surveillance work to be halted, delaying the restoration of the RBM, and ultimately resulting in a Technical Specification 3.0.3 entry anyway. Therefore, from strictly a safety perspective, Operations felt that Option 3 was the best option.

The above rationale was reconsidered in response to questions raised by the NRC concerning the appropriateness of entering Technical Specification 3.0.3. A review of the bases for Technical

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Specification 3.0.3 states in part, "The purpose of this specification is to delineate the time limits for placing the unit in a safe shutdown CONDITION when plant operation cannot be maintained within the limits for safe operation defined by the Limited Conditions for Operation and its ACTION requirements. It is not intended to be used as an operational convenience which permits (routine) voluntary removal of redundant systems or components from service in lieu of other alternatives that would not result in redundant systems or components being inoperable." In this case, we could have placed the subject RBM channel in the trip condition to meet the ACTION Statement. The requirement and prerequisite of the surveillance could have been re-established at which point Technical Specification 3.0.3 could have been entered to allow the testing. If a situation similar to this were to occur in the future, taking the Technical Specification ACTION as described would be proper course of action, properly balancing compliance and risk issues. Additional guidance will be provided to shift supervision as an aid in dealing with voluntary entry into Technical Specification LCO 3.0.3. This guidance will deal with removal of redundant equipment from service and with failure to meet LCO ACTION requirements.

Once entered, Technical Specification 3.0.3 requires action to be taken to place the affected unit in STARTUP and HOT SHUTDOWN stating in part, "...within one hour action shall be taken to place the units in a OPERATIONAL CONDITION in which the specification does not apply by placing it, as applicable in:

- at least STARTUP within 6 hours
- at least HOT SHUTDOWN within the following 6 hours...."

Technical Specification LCO 3.0.3 was entered at 0920 hours. The LCO was cleared at 1410 hours. This was four hours and fifty minutes into the LCO, leaving two hours and ten minutes for the unit to be in STARTUP had any further problems been encountered. No power reductions were made during this time period. Throughout this period, shift supervision maintained oversight on the activities associated with clearing the RBM problems, and had reasonable assurance that the LCO would be cleared before the allowed time to be in STARTUP expired. There was no procedural guidance on specific actions that should have been taken, specific to a time frame, to ensure compliance with the ACTION time limits. PP&L believes it is important that we have very clear expectations associated with actions we intend to take once Technical Specification 3.0.3 is entered.

At no time during this event was the ability of the plant to safely shutdown or the health and welfare of the public compromised. The significance of this event from a safety standpoint was minor. The other channel of the RBM was available throughout this period to provide rod block protection, as well as the APRMs to provide core protection in the event of a power transient.

In accordance with NUREG 1022, Supplement 1, the required submission date of this report was determined to be November 17, 1997.

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**CORRECTIVE ACTIONS**

Improved Technical Specifications addresses this type situation by providing allowance for operability testing without entering a shutdown action statement LCO. PP&L's Improved Technical Specification submittal is in review by the commission.

A Technical Specification change request to the current Technical Specifications has been submitted to the NRC to extend the LCO ACTION statement allowable time for one RBM channel inoperable from 24 hours to seven days. Improved Technical Specifications also reflects the lengthened ACTION time limits.

The failed components identified in the LPRMs were repaired/replaced.

The following actions are scheduled to be completed:

- A review of the technical aspects of the event with the involved maintenance work group stressing the importance of comprehensive post maintenance testing.
- A review of work plans and procedures associated with the LPRMs, APRMs, and RBMs to determine and implement satisfactory methods of ensuring that all outputs from the LPRMs are sufficiently tested following work activities.
- Evaluate results/conclusions of above review for generic applicability to other systems.
- Provide clear procedural guidance dealing with voluntary entry into Technical Specification LCO 3.0.3.
- Provide clear procedural guidance dealing with actions to be taken by shift supervision once Technical Specification LCO 3.0.3 has been entered.
- Communicate these changes to the appropriate personnel via training.

**ADDITIONAL INFORMATION**

Past similar events: None

Entries into Technical Specification 3.0.3 have been reported on numerous occasions, although none of the previous reports were a result of a similar condition.

Failed Component: None

LER written for Technical Specification 3.0.3 entry, the failed components were not the reason for submitting this report.

George J. Kuczynski  
General Manager-Susquehanna

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November 17, 1997

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Mail Station P1-137  
Washington, DC 20555

**SUSQUEHANNA STEAM ELECTRIC STATION**  
**LICENSEE EVENT REPORT 50-388/97-007-00**  
**PLA - 4804 FILE R41-2**

Docket No. 50-388  
License No. NPF-22

Attached is Licensee Event Report 50-388/97-007-00. This event is being reported pursuant to the guidance of NUREG 1022, per 10CFR50.73(a)(2)(i)(B), for an entry into Technical Specification 3.0.3. The Technical Specification 3.0.3 entry was made voluntarily to allow completion of operability testing of one channel of the Rod Block Monitor. The operability testing was completed in a timely manner, the Rod Block Monitor was restored to operable status, and the Limiting Condition for Operation was cleared.

  
G. J. Kuczynski  
General Manager - Susquehanna SES

Attachment

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