

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1): Waterford Steam Electric Station Unit 3  
DOCKET NUMBER (2): 0 5 0 0 0 3 8 2 1 OF 0 5

TITLE (4): Containment Spray Pump Inoperable Due to Inadequate Procedural Control of Maintenance Test Equipment

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)
08	27	88	88	023	00	09	26	88	N/A	0 5 0 0 0 0
									N/A	0 5 0 0 0 0

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

OPERATING MODE (9): 1	20.402(b)	20.405(e)	50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10): 110.0	20.405(a)(1)(ii)	50.38(a)(1)	50.73(a)(2)(v)	73.71(e)
	20.405(a)(1)(iii)	50.38(a)(2)	50.73(a)(2)(iv)	OTHER (Specify in Abstract below and in Text, NRC Form 365A)
	20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(vii)(A)	
	20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(vii)(B)	
	20.405(a)(1)(iv)	50.73(a)(2)(iii)	50.73(a)(2)(ix)	

LICENSEE CONTACT FOR THIS LER (12):  
NAME: D.W. Vinci, Maintenance Superintendent  
TELEPHONE NUMBER: 5 0 4 4 6 4 1 - 3 0 1 3 8

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS

SUPPLEMENTAL REPORT EXPECTED (14):  
YES (If yes, complete EXPECTED SUBMISSION DATE):  NO:  X  
EXPECTED SUBMISSION DATE (15):

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

**ABSTRACT**

At 1300 hours on August 27, 1988, Waterford Steam Electric Station Unit 3 was operating at 100% power when it was determined Containment Spray Pump (CSP) B may not have met ASME Pump Inservice Test requirements. A vibration detector was discovered out-of-tolerance (OOT) during calibration. If the OOT error is applied to the tests performed with this instrument, two test results are moved out of specification. Had this occurred CSP B would have been declared inoperable. Therefore, the plant is considered to have been in a condition prohibited by Technical Specification 3.6.2.1 from November 4 thru 26, 1987.

Although Test Equipment (TE) is expected to go OOT periodically, the root cause of this event is inadequate procedural control. The procedure specifies that approval should be obtained if TE is to be used more than 16 times. However, once the use of TE is extended, there is no specified method to limit usage. The TE of concern was used 80 times prior to recalibration. The procedure will be revised to require more supervisory attention of TE use. The test results of concern are not significantly different from the historical data obtained from this pump. Further, the specification limits for vibration have since been significantly raised and the values of concern would now be considered acceptable. Therefore, it is a reasonable conclusion that CSP B was operable throughout this event.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		

TEXT IF more space is required, use additional NRC Form 365A (117)

NARRATIVE

At 1300 hours on August 27, 1988, Waterford Steam Electric Station Unit 3 was operating at 100% power when it was discovered that Containment Spray Pump (CSP) (EHS Identifier BE-P) B may not have met ASME Section XI Inservice Test Requirements when an IRD Mechanalysis Vibration Detector Model 810 was found to be out of calibration.

The vibration detector was calibrated on July 27, 1988, by an offsite calibration facility for Waterford 3, and was determined to be 10.3% low out-of-tolerance. The required accuracy of the vibration detector is 5% high or low. When a piece of Maintenance and Test Equipment (M&TE) is found out-of-tolerance a Record Search and Evaluation of Usage is performed in accordance with administrative procedure UNT-5-009 "Dispositioning of M&TE Nonconformances". This procedure provides guidelines for documenting M&TE identified as nonconforming and for evaluating equipment and systems tested or calibrated by the nonconforming M&TE. The evaluation must evaluate the equipment usage from the M&TE's last calibration to when it was determined to be out-of-tolerance. Upon receiving the vibration instrument back from the offsite facility, the onsite M&TE Laboratory issued Condition Identification (CI) 257699 on August 16, 1988. This CI initiated a Record Search and Usage Evaluation for the vibration instrument.

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

Instrument usage had to be evaluated from the last calibration on July 9, 1987 until the recalibration on July 27, 1988. During this period the instrument was issued for 80 jobs. Fifty of the jobs performed were operability tests on 22 of the 23 safety related pumps in the ASME Section XI Inservice Test Program. The results of 48 of the 50 tests were unaffected by the 10.3% out-of-tolerance error. The other two test results, of tests on CSP B Inboard Pump Bearing Horizontal Vibration Displacement, performed on November 4 and 20, 1987 were affected by the out-of-tolerance condition.

Vibration test results can fall into three ranges; the acceptable range, where no action is required; the alert range, where test frequency is doubled and problem investigation is initiated; and the required action range, where the pump must be declared inoperable. On the above two dates the CSP B inboard bearing horizontal vibration test results were high in the alert range. Since the vibration test results for this pump were usually in the alert range, 1.0-1.5 mils, the test results were not considered abnormal. However, when the 10.3% out-of-tolerance error is added to these results, they are both moved up into the required action range and therefore CSP B would have been declared inoperable.

CSP B was overhauled on November 25, 1987, and tested satisfactorily the next day with an in-tolerance vibration instrument. Even though the vibration test results were again in the alert range, because the pump was overhauled prior to the satisfactory test, the assumption must be made that CSP B inboard pump bearing horizontal vibration test results prior to the overhaul were in the required action range. Technical Specification (TS) 3.6.2.1 requires that an inoperable Containment Spray System (EIS Identifier BE) be restored to operable status within 72 hours or the plant must shutdown to hot standby within the next six hours. Since CSP B must be considered inoperable from November 4 to 26, 1987, the plant is considered to have been in a condition prohibited by TS during that time period.

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TEXT (if more space is required, use additional NRC Form 306A's) (17)

Although M&TE is expected to go out of tolerance periodically, the root cause of this event is inadequate procedural control of monitoring extensive equipment usage. Administrative procedure MD-1-021 "M&TE Accountability Procedure" specifies that M&TE should not be used for more than 16 jobs between calibrations unless further use is approved by a Maintenance Assistant Superintendent (MAS). The MAS verbally approved extension of use for this vibration detector during a period of heavy usage. However, when this was done there was no specified limit on usage except the regular calibration due date. For this vibration instrument, the next annual calibration due date became the usage limit. Contributing causes to this event are the reliance on one offsite calibration facility and the limited amount of this particular test equipment. When the offsite calibration facility delays calibration of limited equipment the remaining equipment might be used extensively while awaiting the completion of the above calibration.

In order to prevent extensive use of equipment, without supervisory attention, procedure MD-1-021 will be changed. A signature space will be added to the M&TE Record of accountability card for signature approval when the equipment is to be used more than 16 times. A MAS signature will be required to extend the use of the equipment. Each additional 16 uses of the equipment will require that the card be signed again by the MAS if use of the equipment is to be extended further. Also, the calibration frequency of this vibration detector will be reduced from one year to six months. These corrective actions will be completed by November 15, 1988. By requiring the MAS to signature approve extended equipment use, every 16 uses, extensive use of equipment will receive supervisory attention.

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TEXT (If more space is required, use additional NRC Form 305A's) (17)

CSP 'B' horizontal vibration test results have often been in the range of 1.0-1.5 mils throughout the pump's operational history, regardless of maintenance performed. In January 1988, an engineering evaluation was performed to review the pump's history and determine if the alert range and required action range limits should be raised. In March 1988, new baseline data was obtained which was used as a basis for changing the alert range of the inboard pump bearing horizontal vibration displacement to 2.2-3.3 mils with the action required range above 3.3 mils. This new range is acceptable based on new baseline data taken and also with the pump's historical data. Had these limits been in place in November 1987 the 10.3% out-of-tolerance, added to the test results in November 1987, would not have affected the pumps operability status. Therefore, it is a reasonable conclusion that CSP B was fully operable throughout this event. Since, CSP A was fully operable throughout this period and CSP B would also have been operable, there was no threat to the health and safety of plant personnel or the public.

SIMILAR EVENTS

NONE

PLANT CONTACT

D.W. Vinci, Maintenance Superintendent, 504/464-3138



**LOUISIANA**  
POWER & LIGHT

WATERFORD 3 SES • PO. BOX B • KILLONA, LA 70066-1751

Ref: 10CFR50.73(a)(2)(i)

September 26, 1988

W3A88-0106  
A4.05  
QA

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

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

Attached is Licensee Event Report Number LER-88-023 for Waterford Steam Electric Station Unit 3. This Licensee Event Report is submitted pursuant to 10CFR50.73(a)(2)(i).

Very truly yours,

N.S. Carns  
Plant Manager - Nuclear

NSC/WMC:rk

Attachment

cc: E.D. Martin, NRC Resident Inspectors Office, INPO Records Center  
(J.T. Wheelock), E.L. Blake, W.M. Stevenson, D.L. Wigginton

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