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Waterford 3

W3F1-2000-0137  
A4.05  
PR

October 13, 2000

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 (LER) 00-008-00 for Waterford Steam Electric Station Unit 3. This report provides details of a failure to comply with a Technical Specification Action Statement when, during a calibration, a Core Protection Calculator (CPC) channel was not recognized as being out of tolerance. This condition is being reported pursuant to 10CFR50.73(a)(2)(i)(B) as an operation or condition prohibited by the plant's Technical Specifications.

There are no commitments contained in this submittal. If you have any questions concerning this LER, please contact David Madere at (504)-739-6481.

Very truly yours,

E.P. Perkins, Jr.  
Director,  
Nuclear Safety Assurance

EPP/DCM/rtk  
Attachment

cc: E.W. Merschoff, (NRC Region IV), N. Kalyanam, (NRC-NRR),  
A.L. Garibaldi, lerevents@inpo.org - INPO Records Center,  
J. Smith, N.S. Reynolds, NRC Resident Inspectors Office,  
Louisiana DEQ/Surveillance Division

IE22

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 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. If an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

**LICENSEE EVENT REPORT (LER)**

FACILITY NAME (1)  
**Waterford Steam Electric Station, Unit 3**

DOCKET NUMBER (2)  
**05000-382**

PAGE (3)  
**1 of 4**

TITLE (4)  
**Operating in a Condition Prohibited by TS 3.3.1 due to an Inoperable Core Protection Calculator Channel**

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
09	14	00	00	008	00	10	13	00	N/A	N/A
									N/A	N/A

OPERATING MODE (9)	POWER LEVEL (10)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (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)(2)(i)	20.2203(a)(3)(i)		50.73(a)(2)(ii)	50.73(a)(2)(x)				
		20.405(a)(1)(ii)	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 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 <b>David Madere / Licensing</b>	TELEPHONE NUMBER (Include Area Code) <b>(504)-739-6481</b>
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**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

**SUPPLEMENTAL REPORT EXPECTED (14)**

YES (If yes, complete EXPECTED SUBMISSION DATE)	X	NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
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**ABSTRACT (Limit to 1400 spaces, i. e., approximately 15 single-spaced typewritten lines) (16)**

On September 14, 2000, at approximately 0100 hours, I&C Technicians performed a Technical Specification Surveillance on Core Protection Calculator (CPC) channel "B". They failed to recognize that the inputs were out of tolerance and made no adjustments as required by procedures. The channel was erroneously placed back in service and declared operable. The error was caught during the I&C Supervisor's review at approximately 0648 hours the same day. A condition report was generated and Operations was notified. CPC channel B was declared inoperable, and TS 3.1.1 was entered. Rework was commenced to re-perform the calibration. The channel was declared operable at 1225 hours the same day. This condition is being reported as a condition prohibited by Technical Specifications since the channel should not have been declared operable and taken out of "bypass".

There is no safety significance associated with this event. Although there was one CPC channel inoperable, the remaining 3 channels remained operable and provided the required plant protection. This event is not considered a Safety System Functional Failure (SSFF).

**LICENSEE EVENT REPORT (LER)**

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
Waterford Steam Electric Station, Unit 3	05000-382	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 4
		00	008	00	

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

**REPORTABLE OCCURRENCE**

On September 14, 2000, it was discovered that out of tolerance inputs to the Core Protection Calculator (CPC) channel [CHA] "B" were not adjusted during a calibration as required by procedures. The channel was erroneously placed back into service and taken out of "bypass", and the TS action was exited. Technical Specification 3.3.1 Action 2 requires the affected channel to be placed in the "bypass" or "trip" position within 1 hour. The CPCs initiate the Low Departure From Nucleate Boiling Ratio (DNBR) and the High Local Power Density (LPD) trips in the Plant Protection System (PPS)[JC]. The condition went unnoticed for approximately 5.5 hours. This event is being reported under 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by the plant's Technical Specifications since the channel should have never been taken out of "bypass".

**INITIAL CONDITIONS**

At the time of discovery, the plant was operating in Mode 1 at approximately 100% reactor power. No other structures, systems, or components were out of service that contributed to this event.

**EVENT DESCRIPTION**

On September 13, 2000, at approximately 1745 hours, I&C Maintenance technicians (one Senior Tech and one Tech III) arrived for their first night of the shift. A turn-over was conducted with the day shift technicians, covering the days activities, which included a calibration of Reactor Coolant (RC) Hot Leg No 1 Temp Loop (CHNL A). The technicians discussed the criticality of performing similar loop calibrations during night shift. Work assignment for that night consisted of two RC Temp Loop calibrations: Reactor Coolant Hot Leg No 1 Temp Loop (CHNL B) and Reactor Coolant Cold Leg No 1 Temp Loop (CHNL B).

Following the Operations' shift meeting, which was held at approximately 1930 hours, the I&C technicians briefed the operators on the calibrations to be performed. They returned to the I&C Maintenance shop to conduct a Pre-Job Briefing / Peer-Check of the work package and associated procedures, drawings, etc.

The work packages were signed on to work at approximately 2040 hours, on September 13, 2000, via the Work Management System (WMS). CPC Channel "B" was declared inoperable at 2217 hours per the Operations Equipment Out of Service (EOS) log. The technicians interviewed indicated that the first loop calibration on RC Hot Leg No 1 Temp Loop, was started at approximately 2200 hours, and was completed at about 0030 hours on September 14, 2000. A review of WMS indicated that the loop was calibrated with satisfactory results, requiring no adjustments. The second loop calibration on RC Cold Leg No 1 Temp Loop was performed around 0100 hours. No errors were reported associated with the loop calibration, and CPC Channel B was returned to operable status at 0122 hours per the Operations shift log.

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		<b>00</b>	<b>008</b>	<b>00</b>	

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

On September 14, 2000, at approximately 0648 hours, during the Supervisor's review of the night's work, an error was noticed in the Instrument Data Record for RC Cold Leg No 1 Temp Loop. The inputs to CPC Channel "B" were found to be out of tolerance at the 50%, 76% and 95.3% readings. The tolerance for the loop check is +/- 0.006 vdc. The actual results were out by -0.009 vdc (50%), -0.010 vdc (76%), and -0.012 vdc (95.3%). The Supervisor immediately notified the Control Room Supervisor in order that Operations could make an operability determination. CPC Channel "B" was declared inoperable at 0657 hours, and the corresponding bistables were placed into "bypass" in accordance with T.S. 3.3.1. The calibration was re-performed on Day Shift on September 14, 2000. CPC Channel "B" was declared operable at 1225 hours and T.S. 3.3.1 was exited.

Upon returning to work on the night of September 14, 2000, a debriefing was conducted with the two technicians, Supervisors, Superintendent, Maintenance Coordinator and the preparer of the Root Cause Determination. During the debriefing, specifics regarding the methods employed in the performance of the RC Cold Leg No 1 Temp Loop calibration were discussed. In the performance of this particular task, one technician applies the loop inputs and documents the NLP card output, which is the CPC input, per the Instrument Data Record, while the second technician reads the indications on the control board. The technician applying the inputs stated that he did not use the actual data record, but instead made a partial copy of the record which did not contain the expected desired output values for the calibration check which he was documenting. After completing the nine-point calibration check, the lead tech transposed the data taken by the second technician onto the actual Instrument Data Record. In doing so, the error occurred due to an Inattention to Detail. The lead technician indicated that he did not verify the data that was being transposed for error. Both technicians stated that a peer-check was not performed on the Instrument Data Record during a peer review of the completed work package.

**CAUSAL FACTORS**

The Root Cause of this event was identified as ineffective self-checking and peer-checking. Neither technician checked the results against the acceptance criteria.

**CORRECTIVE ACTIONS**

Corrective actions included:

- Initiated Condition Report and notified Control Room Supervisor to determine operability.
- Performed rework to restore CPC Channel B to an operable condition.
- Debriefed personnel involved. Counseled on importance of self-checking /peer-checking. Also informed involved personnel that an Improvement Plan would be generated in an effort to prevent future occurrences.
- Other corrective actions are being addressed through the Waterford 3 Corrective Action Program.

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FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
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TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

**SAFETY SIGNIFICANCE**

The design function of the Core Protection Calculator System is to trip on low DNBR and high LPD. The LPD trip function was unaffected by this condition. The low DNBR trip function would have been delayed by a small amount of time due to the lower indicated Tcold for CPC B only. The remaining three CPC channels remained functional and provided the required plant protection (the normal 2-out-of-4 logic was changed to 2-out-of-3 during this period). Therefore, there was no safety significance related to this incident. This event is not considered a Safety System Functional Failure (SSFF).

**SIMILAR EVENTS**

The individuals involved in this incident were also involved in a previous incident where the wrong component was removed from service, which resulted in tripping the Essential Chiller A off-line, (Condition Report 2000-338 March, 2000). The Root Cause was determined to be ineffective self-checking and peer-checking. Ineffective use of human performance error prevention tools is an industry wide issue. Corrective Actions derived from Condition Report 2000-536 are addressing this issue on a site-wide basis at Waterford 3.

**ADDITIONAL INFORMATION**

Energy Industry Identification System (EIIIS) codes are identified in the text within brackets [ ].