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Quad Cities Generating Station  
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March 8, 2000

SVP-00-047

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

Quad Cities Nuclear Power Station, Unit 2  
Facility Operating License No. DPR-30  
NRC Docket No. 50-265

Subject: Engineered Safety Feature Actuation During Instrument Backfilling Due To Inadequate Procedure

Enclosed is Licensee Event Report (LER) 265\00-004, Revision 00, for Quad Cities Nuclear Power Station.

This report is submitted in accordance with the requirements of the Code of Federal Regulations, Title 10, Part 50.73(a)(2)(iv). The licensee shall report any event or condition that resulted in manual or automatic actuation of any Engineered Safety Feature.

We are committing to the following actions:

QCIPM 0100-12, "Backfilling Reactor Instruments Sensing Lines," will be revised to specifically delineate instructions for backfilling individual sensing lines to ensure common instrumentation is adequately isolated.

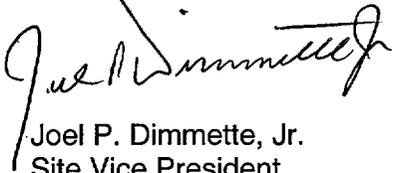
The appropriate Instrument Maintenance personnel will receive training on the revised procedure.

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Should you have any questions concerning this letter, please contact Mr. C.C. Peterson at (309) 654-2241, extension 3609.

Respectfully,

A handwritten signature in black ink, appearing to read "Joel P. Dimmette, Jr.", written in a cursive style.

Joel P. Dimmette, Jr.  
Site Vice President  
Quad Cities Nuclear Power Station

cc: Regional Administrator – NRC Region III  
NRC Senior Resident Inspector – Quad Cities Nuclear Power Station

LICENSEE EVENT REPORT (LER)												Form Rev. 2.0													
Facility Name (1) Quad Cities Unit 2						Docket Number (2) 0   5   0   0   0   2   6   5						Page (3) 1   of   0   4													
Title (4) Engineered Safety Feature Actuation During Instrument Backfilling Due To Inadequate Procedure																									
Event Date (5)			LER Number (6)				Report Date (7)			Other Facilities Involved (8)															
Month	Day	Year	Year	Sequential Number	Revision Number	Month	Day	Year	Docket Number(s)																
0	2	0	9	2000	2000	0	0	4	0	0	0	3	0	8	2000	Facility Names	0	5	0	0	0				
OPERATING MODE (9) 4		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)																							
POWER LEVEL (10)	0	0	0	20.402(b)	20.405(a)(1)(i)	20.405(a)(1)(ii)	20.405(a)(1)(iii)	20.405(a)(1)(iv)	20.405(a)(1)(v)	20.405(c)	50.36(c)(1)	50.36(c)(2)	50.73(a)(2)(i)	50.73(a)(2)(ii)	50.73(a)(2)(iii)	X	50.73(a)(2)(iv)	50.73(a)(2)(v)	50.73(a)(2)(vii)	50.73(a)(2)(viii)(A)	50.73(a)(2)(viii)(B)	50.73(a)(2)(x)	73.71(b)	73.71(c)	Other (Specify in Abstract below and in Text)
LICENSEE CONTACT FOR THIS LER (12)																									
Name Charles Peterson, Regulatory Affairs Manager, ext. 3609												TELEPHONE NUMBER AREA CODE 3   0   9   6   5   4   -   2   2   4   1													
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)												Expected Submission Date (15)						Month	Day	Year					
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)												<input checked="" type="checkbox"/> NO													
ABSTRACT (Limit to 1400 spaces, i.e. approximately fifteen single-space typewritten lines) (16)																									

**ABSTRACT:**

At 0421 hours on February 9, 2000, with Unit 2 in a shutdown condition, Unit 2 received the following Engineered Safety Feature (ESF) actuation signals: Reactor Protection System (RPS) scram, Group 2 isolation and Group 3 isolation. This included isolation of the Residual Heat Removal (RHR) Shutdown Cooling system which was in operation. The ESF actuation was invalid and occurred while backfilling the Unit 2 reactor instrumentation sensing lines. All safety systems responded as designed.

The root cause of the ESF actuation was determined to be inadequate procedural guidance. The procedure for backfilling reactor instrumentation sensing lines will be revised to ensure common instrumentation is isolated when backfilling individual instrument sensing lines.

The safety significance of this event was minimal. At the time of the event, Unit 2 was shutdown with all control rods fully inserted. RHR Shutdown Cooling was restored within 15 minutes of the event at 0432 hours. The associated increase in reactor coolant temperature was minimal - approximately 5 degrees Fahrenheit. For these reasons, there was no adverse impact on the health and safety of the public, including control room and site personnel.

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FACILITY NAME (1)	DOCKET NUMBER (2)							LER NUMBER (6)			PAGE (3)							
								Year	Sequential Number		Revision Number							
Quad Cities Unit 2	0	5	0	0	0	2	6	5	2000	0	0	4	0	0	2	of	0	4
TEXT Energy Industry Identification System (EIS) codes are identified in the text as [XX]																		

**PLANT AND SYSTEM IDENTIFICATION:**

General Electric - Boiling Water Reactor - 2511 MWt rated core thermal power.

**EVENT IDENTIFICATION:**

**A. CONDITIONS PRIOR TO EVENT:**

Unit:	2	Event Date:	2/09/00	Event Time:	0421 hours
Reactor Mode:	4	Mode Name:	Cold Shutdown	Power Level:	0.0 %

This report was initiated by Licensee Event Report 265/00-004

Cold Shutdown (4) - Mode switch in Shutdown position with average reactor coolant temperature  $\leq$  212 degrees F.

**B. DESCRIPTION OF EVENT:**

On February 8, 2000, Unit 2 was in a cold shutdown condition (Operational Mode 4) with Unit 2 Refueling Outage 15 (Q2R15) activities in progress. At approximately 1100 hours, following successful completion of the Unit 2 vessel hydrostatic test, Instrument Maintenance (IM) personnel began a scheduled outage activity to backfill reactor instrument sensing lines in accordance with station procedure QCIPM 0100-12, "Backfilling Reactor Instruments Sensing Lines." Backfilling instrument sensing lines is a standard outage activity performed to ensure no air remains entrained in the sensing lines prior to reactor startup. At this time, reactor water level was being maintained between 90 and 100 inches. Typically, during the backfilling evolution, alternate instrumentation is installed on the opposite channel to allow backfilling an entire channel at one time. Prior to initiating instrument sensing line backfilling on the A channel instrumentation, the alternate level indicator was valved in and was found to provide erroneous indication. QCIPM 0100-12 was reviewed to determine if the procedure allowed individual sensing lines to be backfilled. This would allow the backfilling evolution to progress while maintaining level instrumentation available to the control room.

The IM Technicians reviewed QCIPM 0100-12 with IM management personnel. It was determined that QCIPM 0100-12 did allow for individual instrument line backfilling, and the decision was made to proceed with backfilling on that basis.

At 0421 hours on February 9, 2000, Unit 2 received the following Engineered Safety Feature (ESF) [JE] actuation signals: Reactor Protection System (RPS) scram, Group 2 isolation and Group 3 isolation. This included isolation of the Residual Heat Removal (RHR) Shutdown Cooling [BO] system. The ESF actuation occurred while backfilling the Unit 2 instrumentation sensing lines. The ESF actuation was determined to be the result of receiving an invalid low reactor water level signal from the 2-263-57A and 2-263-57B level transmitters. A review of the event determined that the invalid low reactor level signal was a result of the backfilling activity. The sensing lines being backfilled at the time were connected via a common condensing chamber to the 2-263-57A and 2-263-57B level transmitters. Upon further review, QCIPM 0100-12 was determined to not provide sufficient guidance to ensure common instrumentation is isolated when individual instrument sensing lines are being backfilled.

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TEXT Energy Industry Identification System (EIS) codes are identified in the text as [XX]																				

All safety systems responded as designed and RHR Shutdown Cooling was restored within 15 minutes of the event. Immediately following the event, the Operations Department directed the IM Technicians to restore the instrumentation to a safe condition. The RPS scram was reset at 0502 hours on February 9, 2000.

**C. CAUSE OF THE EVENT:**

The root cause of this event was determined to be an inadequate procedure. The procedure used for execution of the activity contained ambiguous information that did not adequately address backfilling individual sensing lines.

**D. SAFETY ANALYSIS:**

The safety significance of this event was minimal. At the time of the event, Unit 2 was shutdown with all control rods [AA] fully inserted. RHR Shutdown Cooling was restored within 15 minutes of the event and the associated increase in reactor coolant temperature was minimal - approximately 5 degrees Fahrenheit. At no time during the event did reactor coolant temperature exceed the temperature band specified by the Operations Department prior to the event (140 - 160 degrees Fahrenheit). All safety systems responded as designed. For these reasons, there was no adverse impact on the health and safety of the public, including control room and site personnel.

**E. CORRECTIVE ACTIONS:**

**Corrective Actions Completed:**

- 1) Immediately following the event, the Operations Department directed the Instrument Maintenance Technicians to restore the instruments to a safe condition.
- 2) RHR Shutdown Cooling was restored within 15 minutes of the event at 0432 hours on February 9, 2000.
- 3) The RPS scram was reset at 0502 hours on February 9, 2000.

**Corrective Actions to be Completed:**

- 1) QCIPM 0100-12, "Backfilling Reactor Instruments Sensing Lines," will be revised to specifically delineate instructions for backfilling individual sensing lines to ensure common instrumentation is adequately isolated.
- 2) The appropriate IM personnel will receive training on the revised procedure.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

Form Rev. 2.0

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		Year	Sequential Number	Revision Number	
		Quad Cities Unit 2	0   5   0   0   0   2   6   5	2000	
TEXT Energy Industry Identification System (EIS) codes are identified in the text as [XX]					

**F. PREVIOUS OCCURRENCES:**

A search of LERs over the past three years revealed one previous occurrence. On June 4, 1997, with Unit 2 shutdown, the Anticipated Transient Without Scram (ATWS) system received an invalid trip signal while backfilling reactor instrumentation sensing lines in accordance with QCIPM 0100-12. Although procedure changes were made at the time, they were inadequate to prevent recurrence.

**G. COMPONENT FAILURE DATA:**

No component failures were identified during this event.