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June 13, 2001

SVP-01-004

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

Quad Cities Generating Station, Unit 1
Facility Operating License No. DPR-29
NRC Docket No. 50-254

Subject: Supplemental Licensee Event Report Concerning Wiring Error in Average
Power Range Monitor Flow Biased Neutron Flux Instrument

Enclosed is Licensee Event Report (LER) 254 00-009, "Wiring Error in Average Power Range
Monitor Flow Biased Neutron Flux Instrument," Revision 01, for Quad Cities Nuclear Power
Station.

This report is submitted in accordance with the requirements of the 10CFR50.73, "Licensee
event report system," paragraph (a)(2)(i)(B), which requires reporting of any operation or
condition prohibited by the plant's Technical Specifications.

No further actions are committed to by this submittal. Any actions described in the submittal
represent intended or planned actions by Exelon. They are described for the NRC's
information and are not regulatory commitments.

Should you have any questions concerning this letter, please contact Mr. W. J. Beck at
(309) 227-2800.

Respectfully,



Timothy J. Tulon
Site Vice President
Quad Cities Generating Station

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

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bcc: Project Manager – NRR
Office of Nuclear Facility Safety, - IDNS
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NRC Coordinator – Quad Cities Nuclear Power Station
NSRB Site Coordinator – Quad Cities Nuclear Power Station
SVP Letter File

Estimated burden per response to comply with this mandatory information collection request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U. S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and by internet e-mail to bjs1@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NOEB-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose 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): Quad Cities Nuclear Power
Station, Unit 1

DOCKET NUMBER (2)

05000254

PAGE (3)

1 of 4

TITLE (4) Wiring Error in Average Power Range Monitor Flow Biased Neutron Flux Instrument

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
11	03	00	00	- 009	- 01	06	13	01	N/A	N/A
									N/A	N/A

OPERATING
MODE (9)

1

POWER
LEVEL (10)

010

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply) (11)

<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)
<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)
<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 73.71(a)(4)
<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(5)
<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> OTHER
<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	Specify in Abstract below or in NRC Form 366A
<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(D)	
<input type="checkbox"/> 20.2203(a)(2)(v)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(vii)	
<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)	
<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)	

LICENSEE CONTACT FOR THIS LER (12)

NAME

Wally Beck, Regulatory Assurance Manager

TELEPHONE NUMBER (Include Area Code)

(309) 227-2800

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

CAUSE	SYSTEM	COMPONENT	MANU- FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU- FACTURER	REPORTABLE TO EPIX

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 fifteen single-space typewritten lines)(16)

At 0214 hours on November 3, 2000, the APRM 4, 5 and 6 flow biased neutron flux high reactor trips were determined to be not operable. The "B" channel of the reactor protection system (RPS) was tripped in accordance with Technical Specifications.

It was determined that two power wires to the flow biased proportional amplifier were swapped. Consequently, when the reactor mode switch was placed in RUN (Mode 1) the "B" channel APRM relays that transfer trip setpoints from the fixed high flux level for Mode 2 to the flow biased level for Mode 1 would not energize. The wiring error was subsequently corrected.

The root cause of this event was personnel error, in that maintenance personnel failed to follow station procedural guidance for documenting electrical leads that are lifted or landed and for temporary labeling of those leads.

The safety significance of this event was minimal. The APRMs on the "B" division would have provided an RPS trip signal at a lower (i.e., more conservative) power level than that required by Technical Specifications and design. This event is reportable in accordance with 10CFR50.73(a)(2)(i)(B), which requires reporting of any operation or condition prohibited by the plant's Technical Specifications.

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
Quad Cities Nuclear Power Station, Unit 1	05000254	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 of 4
		00	- 009 -	01	

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

PLANT AND SYSTEM IDENTIFICATION

General Electric - Boiling Water Reactor, 2511 Megawatts Thermal Rated Core Power

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

EVENT IDENTIFICATION

Wiring Error on Average Power Range Monitor Flow Biased Neutron Flux Instrument

A. CONDITION PRIOR TO EVENT

Unit: 1 Event Date: November 3, 2000 Event Time: 0214 hours
Reactor Mode: 1 Mode Name: Power Operation Power Level: 010%

Power Operation (1) - Mode switch in the RUN position with average reactor coolant temperature at any temperature.

B. DESCRIPTION OF EVENT

On November 2, 2000, at 2307 hours, the Unit 1 mode switch was moved to the RUN position, putting the reactor in Mode 1. At 2319 hours, with the reactor at about 10% reactor power, a rod block was received from the Average Power Range Monitor (APRM) [IG]. This was not expected, as the Mode 2 APRM upscale rod block is bypassed when the reactor is in Mode 1, and the APRM Flow Biased rod block would not be expected at that reactor power. At 0214 hours on November 3, 2000, it was determined that the flow biased neutron flux high reactor trip for APRMs 4, 5 and 6 was not operable. The "B" channel of the reactor protection system (RPS) [IG] was placed in the tripped condition in accordance with Technical Specification Section 3.1.A, Action 1.

When the reactor is in Mode 2, the APRMs provide an RPS trip signal at 15% rated neutron flux and a control rod block at 12% rated neutron flux. When the reactor is in Mode 1, the APRMs provide an RPS trip signal and a control rod block at neutron flux levels that increase as reactor flow increases (flow biased).

Troubleshooting identified that two AC power wires to the 1-0260-8B General Electric flow biased proportional amplifier [AMP] had been swapped during maintenance performed in the just completed refueling outage. This resulted in a neutral feed being applied to both sides of the flow bias mode switch contact. Consequently, when the reactor mode switch was placed in RUN (Mode 1) the "B" channel APRM relays that transfer trip setpoints from the fixed high flux level for Mode 2 to the flow biased level for Mode 1 would not energize.

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

C. CAUSE OF EVENT

The root cause of this event was personnel error, in that the maintenance personnel failed to follow station procedural guidance concerning the documentation of electrical leads that are lifted or landed, and the use of temporary labeling for those leads.

Additionally, the supervisor failed to recognize the failure to follow station guidance while observing the work, and the post-maintenance testing did not identify the wiring error.

D. SAFETY ANALYSIS

The safety significance of this event was minimal. The APRMs on the "A" division were operable. The wiring error was such that the APRMs on the "B" division would have provided an RPS trip signal at a lower (more conservative) power level than that required by Technical Specifications and system design. Although the wiring error did result in an APRM rod block and subsequent insertion of an RPS trip on one division, no mitigating equipment was degraded and plant safety equipment operated as designed. There were no safety system functional failures associated with this event.

E. CORRECTIVE ACTIONS

The wiring error was corrected.

A team reviewed other work performed during the refuel outage and the post-maintenance testing requirements for that work, and determined that, with the exception of this event, the post-maintenance testing specified and performed adequately verified equipment performance.

The individual human performance issues have been addressed through the appropriate human resources process.

Current Maintenance first-line supervisors have attended observation skills training.

F. PREVIOUS OCCURRENCES

Licensee Event Report 265/2000-006, revision 1, " Primary Coolant Isolation and Reactor Trip due to Adjustment of Incorrect Main Steam Line High Flow Switch during Calibration," was submitted on September 13, 2000. In that event, a Group I Primary Coolant isolation and a reactor trip were received on Unit 2 during calibration of Main Steam Line High Flow switches. The individual performing the calibration adjusted a switch other than the one that was isolated and prepared for calibration. The root causes of the event were inadequate individual performance on the part of the Instrument Maintenance Technician in the field, failure to adequately enforce management expectations concerning established human performance initiatives, insufficient barriers considering the risk associated with testing Group I isolation instruments, and a lack of oversight and communication. Corrective actions included a one-on-one dynamic learning activity that

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

demonstrated expectations for self-check, communication, and procedure use and adherence, proceduralization of the requirement to flag equipment in the field that is being tested, training for Maintenance personnel on human performance fundamentals and verification practices through laboratory exercises, and enhancements of specific maintenance procedures.

The corrective actions for LER 265/2000-006 did not preclude the APRM wiring error because a failure of supervisors to recognize when station guidance was not being followed was not identified as an issue in that event. The observation skills training is intended to provide maintenance supervisors with additional knowledge and skills to better enable them to monitor and enforce station guidance and management expectations.

G. COMPONENT FAILURE DATA

There were no component failures associated with this event.