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SVP-04-033

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: Licensee Event Report 265/04-001, "Drywell High Radiation Monitor Failure due to Unsoldered Wiring Connection"

Enclosed is Licensee Event Report (LER) 265/04-001, "Drywell High Radiation Monitor Failure due to Unsoldered Wiring Connection," for Quad Cities Nuclear Power Station, Unit 2.

This report is submitted in accordance with the requirements of the Code of Federal Regulations, Title 10, Part 50.73(a)(2)(v)(C), which requires reporting of any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to control the release of radioactive material.

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

Respectfully,

Timothy J. Tulon
Site Vice President
Quad Cities Nuclear Power Station

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

JE22

NRC FORM 366 (7-2001) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 EXPIRES 7-31-2004

Estimated burden per response to comply with this mandatory information collection request: 50 hours. 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, or by Internet e-mail to bjs1@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-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)

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Quad Cities Nuclear Power Station Unit 2	05000265	1 of 3

4. TITLE: Drywell High Radiation Monitor Failure due to Unsoldered Wiring Connection

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
									Quad Cities Nuclear Power Station Unit 1	05000254
01	18	2004	2004	- 001 -	00	03	29	2004	FACILITY NAME: N/A	DOCKET NUMBER: N/A

9. OPERATING MODE	1
10. POWER LEVEL	096

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

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

12. LICENSEE CONTACT FOR THIS LER

NAME	TELEPHONE NUMBER (Include Area Code)
Wally Beck, Regulatory Assurance Manager	(309) 227-2800

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

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
BM1	JM	HS	S637	X					

14. SUPPLEMENTAL REPORT EXPECTED			15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
	YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

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

On January 28, 2004, it was determined during troubleshooting that a wire on the selector switch for the Unit 2 "A" drywell (DW) radiation monitor was crimped back on itself at a connection point but was not soldered. This instrument provides post-accident indication as well as an isolation of Primary Containment (Group II isolation) in response to high radiation levels in the drywell. The troubleshooting was being performed in response to a drop in the indicated value on January 18, 2004, from 3R/hr to 1R/hr.

It was determined that the chassis was manufactured with an unsoldered switch connection, and that this connection made intermittent contact. In the event of a gross failure of the fuel cladding, the discontinuity may have prevented a containment isolation initiation during a DW high radiation condition. However, high DW pressure and low reactor water level instrumentation would have initiated a Group II isolation in the event of a break in the reactor coolant pressure boundary inside containment.

The DW radiation monitors on Unit 1 and Unit 2 were checked and no additional loose or unsoldered connections were identified.

PLANT AND SYSTEM IDENTIFICATION

General Electric - Boiling Water Reactor, 2957 Megawatts Thermal Rated Core Power

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

EVENT IDENTIFICATION

Drywell High Radiation Monitor Failure due to Unsoldered Wiring Connection

A. CONDITION PRIOR TO EVENT

Unit: 2 Event Date: January 18, 2004 Event Time: 1527 hours
Reactor Mode: 1 Mode Name: Power Operation Power Level: 096%

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

B. DESCRIPTION OF EVENT

On January 28, 2004, during troubleshooting activities on the Unit 2 "A" Drywell (DW) radiation monitor [RI] chassis, it was determined that tapping on the chassis would change the reading from 1R/hr to 3R/hr. This instrument provides post-accident indication [IP] as well as an isolation of Primary Containment (Group II isolation) [JM] in response to high radiation levels in the drywell. The faulted chassis was replaced with a bench-tested spare. Further investigation revealed that a wire on the failed chassis's selector switch was crimped back on itself at a connection point but not soldered.

The troubleshooting was being performed because on January 18, 2004, at 1527 hours, the Unit 2 "A" DW radiation monitor indication dropped from 3R/hr to 1R/hr. Because the green "Operate" light remained lit and the reading remained on scale, it was determined that the instrument was operable. On January 19, 2004, following discussions concerning the instrument trend, a work request was written to examine the chassis in the Control Room.

Because both the "A" and the "B" DW radiation monitors need to trip for the Group II isolation signal to be initiated, the unsoldered connection is reportable as a condition that could have prevented the fulfillment of the safety function of a system that is needed to control the release of radioactive material.

A review of maintenance history identified that no maintenance had been performed on this switch. Therefore, it is assumed that this condition has existed since the time of purchase in 1991, and any monitor in which the chassis was installed was inoperable while the chassis was installed.

C. CAUSE OF EVENT

The chassis was manufactured with an unsoldered switch connection that had intermittent contact.

D. SAFETY ANALYSIS

The safety significance of this event was minimal. Although a Group II isolation from high DW radiation requires both the "A" and "B" DW radiation monitors to trip, the Group II isolation also occurs in response to high DW pressure and low reactor water level for a break in the primary coolant pressure boundary inside containment. The UFSAR describes the high DW radiation trip, but credit is not taken for the trip in the design basis accident analyses. Also, although the switch connection was not soldered, the intermittent connection provided by the crimped connection may have been adequate to provide a trip if one were required.

E. CORRECTIVE ACTIONS

Immediate Actions

Immediate Corrective Actions included inspections of two other spare modules that were on site, with no solder issues identified.

Corrective Actions Completed

The switches installed in the Unit 2 monitors were inspected, and no additional loose or unsoldered connections associated with the switches were identified. Other solder connections in the chassis not associated with the switch were identified as substandard, but their condition was not such that the functionality was affected. The solders were brought up to standard.

The switches installed in the Unit 1 monitors were inspected, and no loose or unsoldered connections were identified.

F. PREVIOUS OCCURRENCES

A review for extent of condition did not identify any other similar failures. Reviews of work orders and condition reports over the last 12 years identified no other similar failures of DW radiation monitors. A review for previous events did not identify a like failure at the Station or in the industry. Therefore it is concluded that this missing solder connection is an example of a single manufacturing defect.

There have been four previous instances of degradation of the DW radiation monitors in the last two years. Two of these involved cable splice issues, one involved a mispositioned detector, and one involved both a mispositioned detector and a degraded cable. These events did not render the monitors incapable of providing the safety function. The corrective actions for these events addressed the root causes involved in each event.

G. COMPONENT FAILURE DATA

The monitor is a Sorrento RP-2CM model radiation monitor.