



**Commonwealth Edison**

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GGC-94-015

January 20, 1994

U.S. Nuclear Regulatory Commission  
Document Control Desk  
Washington, DC 20555

Reference: Quad Cities Nuclear Power Station  
Docket Number 50-265, DPR-30, Unit Two

Enclosed is Licensee Event Report (LER) 93-026, Revision 00, for Quad Cities Nuclear Power Plant 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.

The following commitments are being made by this letter:

- 1) The Mechanical Maintenance Department is to revise QCMM 1515-7, General Valve Packing Procedure, to include provisions for valve position verification when packing valves on the backseat.
- 2) The Maintenance and Operations Organization is to review this LER report with their entire line management organization as a lesson learned.
- 3) The Maintenance Organization is to review the need for NWR task analysis/scheduling and provide guidance to appropriate maintenance personnel.
- 4) The Maintenance and Operations Organization is to review the turnover process with particular regard to integrated jobs/revisions and develop a turnover guideline.

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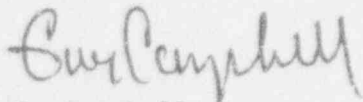
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If there are any questions or comments concerning this letter, please refer them to Nick Chrissotimos, Regulatory Performance Administrator at (309) 654-2241, Ext. 3100.

Respectfully,

COMMONWEALTH EDISON COMPANY  
QUAD CITIES NUCLEAR POWER STATION



G. G. Campbell  
Station Manager

GGC/TB/plm

Enclosure

cc: J. Schrage  
T. Taylor  
INPO Records Center  
NRC Region III

# Licensee Event Report Reviewer Assignment Form

Revised 07/14/93

LER # 265\93-026

Date: December 24, 1993

Subject:

Reactor Scram Due To A Sudden Pressure Release From The 2-220-118A

Valve.

Signatures of reviewers indicating review and approval of item:

Tech Staff Supv:	<u>W. Brooknell</u>	<u>11-24-94</u>	<u>R. R. Hopkins for</u>	<u>1-24-94</u>
		Date		Date
Operating Eng.:	<u>H. J. Nantahal</u>	<u>1/24/94</u>	<u>R. Walden</u>	<u>1-24-94</u>
		Date		Date
Technical Supt.:	<u>D. Kunkelt for</u>	<u>1/24/94</u>	<u>[Signature]</u>	<u>1-24-94</u>
		Date		Date
	<u>W. C. Mitchell</u>	<u>1/24/94</u>		
		Date		Date

Approved: [Signature] 1/24/94  
Station Manager/Date

LICENSEE EVENT REPORT (LER)

Form Rev. 2.0

Facility Name (1) Quad Cities Unit Two	Docket Number (2) 0   5   0   0   0   2   6   5	Page (3) 1   of   0   5
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Title (4)  
Reactor Scram Due To A Sudden Pressure Release From The 2-220-118A Valve.

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)																
1	2	2	4	9	3	9	3	--	0	2	6	--	0	0	0	0	1	2	4	9	4	0	5	0	0	0

OPERATING MODE (9) 01	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)									
POWER LEVEL (10) 0   0   0	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)						
	<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 50.36(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)						
	<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> Other (Specify in Abstract below and in Text)						
	<input type="checkbox"/> 20.405(a)(1)(iii)	<input type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)							
	<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)							
<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)								

LICENSEE CONTACT FOR THIS LER (12)					
NAME Dennis Cook, Ext. 2077				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 NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS
E									

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:**

On December 24, 1993, at 0833 hours, with Unit 2 at zero percent power and in the shutdown mode (Mode 1) of operation, the Control Room received a Reactor Low Level SCRAM (All Rods IN).

The SCRAM was determined to have been caused by pressure wave propagation in instrument sensing lines for the Reactor Low Level Differential Pressure Transmitters. The pressure wave was propagated from the sudden release of water spray from the 2-0220-118A isolation valve [ISV] during repacking work.

The proximate root cause of this event was due to an inadequate pre-job briefing and lack of verification of the 118A valve position prior to the start of Mechanical Maintenance work to repack the valve. A contributing root cause was determined to be due to inadequate overall job planning and implementation.

The recommended corrective actions include revising procedures, development of guidelines for Nuclear Work Request task analysis and reviewing this LER report with the entire maintenance line management/operations organization as a lesson learned.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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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: Reactor Scram due to a sudden pressure release from the 2-220-118A valve.

A. CONDITIONS PRIOR TO EVENT:

Unit: Two                      Event Date: December 24, 1993                      Event Time: 0833  
 Reactor Mode: 01              Mode Name: Shutdown    Power Level: 0

This report was initiated by Licensee Event Report 265\93-026.

SHUTDOWN (1) - In this position, a reactor scram is initiated, power to the control rod drives is removed, and the reactor protection trip systems have been deenergized for 10 seconds prior to permissive for manual reset.

DESCRIPTION OF EVENT:

On April 22, 1993, Nuclear Work Request (NWR) #Q07572 was generated to replace isolation valve # 2-0220-118A [ISV] on line #2-0264-1/2"-A. In October of 1993, station management made a decision to bring Unit 2 to cold shutdown in December for a short maintenance outage. The station's Work Planning (WP) Department scheduled NWR #Q07572 to be performed during the maintenance outage. NWR #Q07572 work instructions were written and approved November 22. Parts were identified as available and assembled in the storeroom under this NWR on the front of the NWR. Instructions were included in the NWR traveler to unpack the new valve and obtain internal dimensions for ordering Argo packing material to be put in the new valve after installation. The work to obtain the valve internal dimensions was shop work begun on December 16. The Argo packing material was ordered on December 17. The packing order was not expedited at that time.

On December 17, NWR #Q07572 was Shift Authorized to begin field work. The station Mechanical Maintenance (MM) Department obtained and installed the new valve. The MM Department identified that the Argo packing was not available at the station. This problem was discussed at the station's daily outage meeting. The options provided were to maintain the Out-Of-Service (OOS) and wait for 5 days until the Argo packing could be obtained and installed or temporarily pack the valve using bulk packing and release the OOS to allow other outage work to continue. The decision was made to pack the valve using bulk packing. The bulk packing was installed in accordance with NWR #Q07572 and Quad Cities Mechanical Maintenance (QCMM) 1515-7, General Valve Packing Procedure.

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On December 20, during the station outage meeting, a discussion ensued pertaining to the installation of the Argo packing. The MM Department representative was asked if the packing could be installed with the valve on it's backseat. If the valve could be packed on the backseat, this would alleviate the need for an additional OOS. The MM representative, after additional discussion, responded that the valve could be packed on the backseat. Mechanical Maintenance checked the parts status and found that the Argo packing material was not yet available. The MM Department requested that the packing order be expedited.

On December 22, the Argo packing was received and ready for installation. On December 23, shift 2, a MM Supervisor made preparations to repack the 118A valve in accordance with NWR #Q07572 and QCMM 1515-7. The MM Supervisor requested permission from the Shift Engineer (SE) to repack the valve, that the valve be opened and the valve be put on it's backseat. The SE would not allow the valve to be opened until additional precautions were taken to ensure that no unplanned system actuations would occur from the opening of the valve. A discussion was held with a WP Supervisor, a MM Supervisor, the SE and an Instrument Maintenance (IM) Supervisor. A decision was made to revise IM Department NWR #Q12892 to; isolate the common line instrumentation associated with the 118A valve, notify the MM Department to work on the 118A valve, verify that the MM work was complete and then backfill the sensing line. The IM NWR was revised and work to isolate the instrumentation was begun on shift 3, December 23.

Upon completion of the instrument isolations, the shift 3 MM Supervisor was notified by the shift 3 IM Supervisor that work on the 118A valve could continue. The MM Supervisor did not receive this as a task during the MM Department turnover briefing. The shift 3 MM Supervisor then called another MM Supervisor at home to discuss the performance of the valve work. The MM Supervisor at home, was not aware of the earlier discussion to revise the IM NWR for additional precautions. The shift 3 IM Supervisor was only aware that the instrument lines needed to be backfilled. The shift 3 MM Supervisor relayed information to the shift 3 IM Supervisor that the valve work would not be performed on this shift, due to unfamiliarity with the job, and that the valve had temporary packing installed. This put the valve in a condition that if the valve needed to be manipulated for the IM work to be performed, the IM work could continue. Based on the information the shift 3 IM Supervisor had, the step in the IM NWR traveler for verification of completion of the MM work was signed off.

Arrangements were made with the Operations Department to open the 118A valve. A discussion of valve position was held between the Shift Control Room Engineer (SCRE) and the IM Supervisor. The IM Supervisor told the SCRE that the valve would not be required to be put on the backseat at this time as the MM work was not going to be performed. The valve was opened and work was begun to backfill the instrument line. On December 24, shift 1, the instrumentation was valved into service after the backfilling activity was completed.

On December 24, shift 2, the MM Department made preparations to repack the 2-220-118A valve with the Argo packing. At the pre-shift briefing, a MM Supervisor requested permission to repack the 118A valve. The shift 2 SE approved the request. The old packing had apparently all been removed when a spray of water was released from the valve along with a small piece of packing material. A Unit 2 SCRAM from Reactor Low Level trip occurred. The MM Technician noticed just a mist of water spray, and tried to position the valve further on the backseat.

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The spray immediately stopped. Through the interview process with the MM Technician, it was stated that he was sure that the valve did not move. This could have been due to the valve being close to, but not fully backseated. In that condition valve movement might not be easily detected. MM work was stopped and recovery actions were begun.

Some further discussion was held between the Operating and MM Supervision. A decision was made to take the instrumentation lines OOS to allow continued work on the valve. OOS #12266 was completed on shift 3, December 24. On December 26, shift 2, the valve was repacked, stroked and the packing was consolidated. The Post Maintenance Testing and Verification was performed successfully and NWR #Q07572 was closed out.

**APPARENT CAUSE OF EVENT:**

This report is submitted in accordance with the reportability requirements of 10CFR50.73(a)(2)(iv) which states in part that the licensee shall report any event or condition that resulted in manual or automatic actuation of any Engineered Safety Feature or Reactor Protection System unless the initiation occurred as a result of a preplanned activity.

The proximate root cause of this event was due to an inadequate pre-job briefing and lack of verification of the 118A valve position prior to the repacking activity. On December 24, shift 1, the IM Department with Operator assistance, opened the 118A valve to perform a backfilling activity in accordance with NWR #Q12892. The performance of this activity did not require backseating the valve. The valve was opened to the backseat, but not fully backseated. On December 24, shift 2, the MM Department was repacking the valve in accordance with NWR #Q07572. No positive actions were taken to ensure the valve was fully backseated prior to the repacking activity.

A contributing root cause was due to inadequate overall job planning and implementation. NWR #Q07572 was generated to replace the 2-0220-118A isolation valve. The traveler instructions were written to obtain internal dimensions of the new isolation valve. Ordering of the Argo packing required internal dimensions of the new valve. The dimensions were obtained on December 16. The valve replacement work began on December 17. Due to the short time period between obtaining the valve internal dimensions and the valve installation, the Argo packing was not ordered and subsequently not available when needed.

A contributing causal factor of this event was due to inadequate turnover performance.

**SAFETY ANALYSIS OF EVENT:**

The safety consequences of this event were minimal. The unit was in the shutdown mode of operation with all rods in. The 2-0220-118A isolation valve is physically mounted on a common tapped instrument sensing line with Reactor Low Water Level Differential Pressure Transmitters 2-263-57 A and B. These transmitters provide input signals to the Reactor Protection System (RPS). The effect of the sudden water spray release, was propagation of a pressure wave in the sensing line. The reactor low level transmitters detected the line perturbation and initiated the SCRAM function of the RPS system. The Group II isolation, Group III isolation, Reactor Building Vent isolation, Control Room Vent isolation and Standby Gas Train System autostart functions expected from the reactor low level signal responded properly.

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		9   4	-   0   2   6	-   0   0	

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**CORRECTIVE ACTIONS:**

The Mechanical Maintenance Department is to revise QCMM 1515-7, General Valve Packing Procedure, to include provisions for valve position verification when packing valves on the backseat.  
(NTS #2651809302601)

The Maintenance and Operations Organization is to review this LER report with their entire line management organization as a lesson learned.  
(NTS #2651809302602)

The Maintenance Organization is to review the need for NWR task analysis/scheduling and provide guidance to appropriate maintenance personnel.  
(NTS #2651809302603)

The Maintenance and Operations Organization is to review the turnover process with particular regard to integrated jobs/revisions and develop a turnover guideline.  
(NTS #2651809302604)

**PREVIOUS EVENTS:**

A search of the Nuclear Tracking System database program showed no other events caused by repacking isolation valves on backseats and no other events associated with the 2-220-118A isolation valve.

**COMPONENT FAILURE DATA:**