



Commonwealth Edison

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November 13, 1987

Mr. A. Bert Davis
Regional Administrator
U.S. Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

Subject: Quad Cities Station Units 1 and 2
Response to I.E. Inspection Report
Nos. 50-254/87019 and 50-265/87019
NRC Docket Nos. 50-254 and 50-265

Reference (a): Letter from W.L. Forney to Cordell Reed
dated October 15, 1987

Dear Mr. Davis:

This letter is in response to the inspection conducted by your office during the period August 2, 1987 through October 3, 1987, of certain activities at Quad Cities Station. The referenced letter indicated that certain activities appeared to be in violation of NRC requirements. The Commonwealth Edison Company's response to the Notice of Violation is provided in Attachment A.

If you have any further questions regarding this matter, please contact this office.

Very truly yours,

N. P. Smith
BWR Licensing Supervisor

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Attachment

cc: NRC Resident Inspector - Quad

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ATTACHMENT A

COMMONWEALTH EDISON COMPANY

RESPONSE TO NOTICE OF VIOLATION

As a result of the NRC inspection conducted on August 2, 1987 through October 3, 1987, the following violations were identified:

ITEM OF VIOLATION:

1. Technical Specification 6.2 and 10 CFR 50 Appendix B require that detailed written procedures be prepared, approved, and adhered to for operation of the reactor.

Contrary to the above, the following failure to prepare and adhere to procedures took place:

With Unit 2 in cold shutdown, a reactor scram occurred on August 17, 1987, at 2110 hours due to vessel low level. This occurred when the unit operator, without a procedure, attempted to control vessel level with the normal letdown path isolated. The technique which the operator used involved opening valves which are forbidden to be opened by the Shutdown Cooling Startup and Operation Procedure. A contributing factor was a failure of the Operating Engineer to provide adequate direction to the unit operator on how to maintain vessel level with the normal letdown path isolated.

This is considered a Severity Level IV violation (265/87019-01(DRP)).

DISCUSSION:

License Event Report (LER) 265/87-010, Revision 00, provides details of this event. A brief description of the event scenario is provided below:

With the Shift Control Room Engineer (SCRE) at panel 902-5, the Nuclear Station Operator (NSO) went to panel 902-3 and opened valve 2-1001-34A. The shutdown cooling suction valves were already open and the Residual Heat Removal (RHR) pumps were off. When valve 2-1001-34A was full open, the NSO jogged open valve 2-1001-36A for two or three seconds. Valve 2-1001-36A is a throttle valve and was the intended means of controlling the rate of reactor water removal. The NSO then proceeded to panel 902-5 to check the reactor water level trend. As the NSO reached panel 902-5, the SCRE alerted him that the level was dropping more rapidly than expected and the reactor low water level alarm (+18 inches) was received. The NSO returned immediately to panel 902-3 and started valve 2-1001-34A closed (seal-in) and began closing valve 2-1001-36A. Before valve 2-1001-36A was fully closed, the NSO moved to panel 902-6 to open the feedwater supply valves (seal-in), then returned to panel 902-3 to complete closing of valve 2-1001-36A. Valve 2-1001-36A was fully closed approximately two seconds after returning to panel 902-3.

As noted above, the RHR pumps were off and therefore Shutdown Cooling was not in operation. Therefore, it is not significant that this evolution is forbidden by the Shutdown Cooling Startup and Operation procedure, as noted in the inspection report.

1) Cause:

The cause of this event was attributed to inadequate procedures. At the time of the event, there was no written and approved procedure for lowering reactor vessel water level with the RWCU system unavailable. A procedure would have provided adequate precautions against rapid removal of water from the vessel and would have provided instructions for controlling the rate of water removal. Contributing to the event was the lack of sufficient planning and coordination prior to and during the event. Although the Shift Engineer had discussed the operation with the SCRE and NSO, the SCRE and NSO did not notify the SE prior to performing the operation, nor was the SE in the control room at the time of the event. There were no communications arranged to alert the NSO immediately if vessel water level began to decrease rapidly during the operation. Therefore, by the time the SCRE noticed the rapid decrease in water level and informed the NSO, it was too late to prevent the low reactor water level.

2) Corrective Steps Which Have Been Taken and the Results Achieved:

A temporary procedure was written and implemented on August 19, 1987 which described the method to be used to remove water from the reactor vessel during cold shutdown when the RWCU system is not available. This procedure is now a permanent procedure (QOP 201-6, Rejecting Water from the Reactor to the Condenser using RHR Pumps when the RWCU System is Unavailable) which was approved on September 21, 1987.

This event was discussed by the Assistant Superintendent of Operating with the Operating Department Staff.

3) Corrective Steps Which Will Be Taken to Avoid Further Violations:

The Station reviews of the following documents were evaluated in light of this event to determine if additional corrective actions are needed:

IE Information Notice No. 84-81:

Inadvertent Reduction in
Primary Coolant Inventory In
Boiling Water Reactor During
Shutdown and Startup

GE Service Information Letter No. 388:

RHR Valve Misalignment During
Shutdown Cooling Operation
For BWRs 3/4/5 and 6

INPO SOER 87-2:

Inadvertent Draining of
Reactor Vessel To
Suppression Pool at BWRs

IE Information Notice No. 86-74:

Reduction of Reactor Coolant
Inventory Because of
Misalignment of RHR Valves

Each of these reports is concerned with inadvertent reduction of the reactor coolant inventory in BWRs because of misalignment of RHR system valves. As a result of this review, the following corrective action is being taken to avoid further draining events. A Modification Request Form has been initiated for the design and installation of valve interlocks between the shutdown cooling pump suction valves and the RHR test return and suppression pool spray valves. This interlock will prevent simultaneous opening of these valves which would result in a drain flowpath from the reactor.

Additionally, the on-shift licensed operating personnel have been interviewed to determine if any other operations are performed which may not be directly covered by procedures. The information gathered from the interviews is currently being reviewed. The results of this review will determine what procedure revisions or additional procedures are necessary.

4) Date When Full Compliance Will Be Achieved:

The Modification Request Form is scheduled for review in December 1987 by the Station Modification Review Committee. Pending the approval of the committee, the modifications will be scheduled for completion based on the development of a design and availability of parts.

The review of the information received from the interviews will be completed and assignments made for procedure development by January 1, 1988. Any new procedures are expected to be written and implemented by July 1, 1988.

ITEM OF VIOLATION:

2. Technical Specification 6.2 and 10 CFR 50 Appendix B require that detailed written procedures be prepared, approved, and adhered to for operation of the reactor.

Contrary to the above, on September 17, 1987, at 0547 hours, with Unit 2 at or near full power, an instrument technician failed to comply with a surveillance procedure, resulting in a reactor scram.

This is considered a Severity Level IV violation (265/87019-02(DRP)).

DISCUSSION:

LER 265/87-011, Revision 00 provides complete details of this event. Briefly, Instrument Maintenance (IM) personnel were performing QIS 11-2, Low-Low Reactor Water Level Functional Test. This test involves simulating a low-low level to each of the four reactor water level switches using a dead weight pump. Each switch is isolated prior to pressurization and pre-pressurized to reactor pressure before returning the switch to service. The IM had successfully completed testing of two level switches but on the third switch, LIS-2-263-72C, he did not pre-pressurize the instrument prior to opening the isolation valve. When the isolation valve for LIS-2-263-72C was opened, it caused a pressure transient in the sensing line which tripped Low Reactor Water Level Switches, LIS-2-263-57A and B, which are connected to the same sensing line. This resulted in a reactor scram.

1) Cause:

The cause of the reactor scram was attributed to personnel error. The IM's inattention to detail following two successful calibrations led to his failure to pre-pressurize prior to returning the third switch to service. Although this was only the second time that the IM had performed this procedure, he had been given sufficient training to complete this task. The pre-pressurization step is clearly identified in the procedure, although a signoff step is not provided.

2) Corrective Steps Which Have Been Taken and the Results Achieved:

This event has been discussed with all members of the Instrument Maintenance Department. Emphasis was placed on attention to detail, especially when working with equipment in operation. Employees were reminded to develop a thorough understanding of a job and possible effects on other systems prior to performing the task. The work performance record of the IM involved with this event was reviewed and appropriate disciplinary action has been administered.

3) Corrective Steps Which Will Be Taken to Avoid Further Violations:

Procedure QIS 11-2, Low-Low Reactor Water Level Functional Test will be revised to add notes and caution statements as appropriate. The checklist associated with this procedure will be revised to add a signoff step for pre-pressurization and returning the instrument to service. In addition, all surveillance procedures requiring instrument pre-pressurization were reviewed to determine if they lack adequate cautions or signoffs. Procedure changes have been submitted as deemed appropriate. This effort should preclude recurrence.

4) Date When Full Compliance Will Be Achieved:

The procedure changes will be implemented by December 15, 1987.

ITEM OF VIOLATION:

3. 10 CFR 50 Appendix B requires that changes to procedures are distributed to and used at the location where the prescribed activity is performed. QAP 300-27, the Operating Department Procedure Revision Training procedure, requires a notice sheet to be inserted into control room copies of any QOA to alert operators if a temporary revision is in effect.

Contrary to the above, a temporary revision to QOA 6900-3, the 24/48 VDC System Failure procedure, was placed into effect on September 21, 1987, but the notice sheet alerting operators of the procedure revision was not inserted into the control room copy of QOA 6900-3 until October 2, 1987. This is considered a Severity Level V violation (254/87019-01(DRP); 265/87019-03(DRP)).

DISCUSSION:

The purpose of requiring a notice sheet (QAP 300-T20) insertion into the control room copies of any QOA procedure that has a temporary change in effect is to alert the operators to the temporary change and also to notify them if training is required. This has been determined to be an effective method of preventing inadvertent use of an outdated procedure.

1) Cause:

This event occurred because of a shift of responsibility in the control of temporary procedure revisions. Previously the Shift Control Room Engineer (SCRE) had maintained the temporary procedure logbook and was responsible for insuring that a notice sheet (QAP 300-T20) was inserted in the appropriate procedure manuals.

Shortly before this event occurred, Communications Center personnel had assumed responsibility for control of the temporary procedure logbook. This shift of responsibility was and is intended to relieve the SCREs of one of their routine administrative functions. The SCRE still reviews the temporary procedure revisions once per day to determine if Operating Department training is required. The notice sheet (QAP 300-T20) alerts operators to the temporary revision and notifies them if training is required. However this temporary procedure revision was overlooked during the transition and a notice sheet was not provided for the change to QOA 6900-3 until October 2, 1987.

2) Corrective Steps Which Have Been Taken and the Results Achieved:

A review was performed the evening this event was discovered to verify that notice sheets were in place as required for all procedures that had temporary procedure revisions in effect. No other deficiencies were identified during this review.

3) Corrective Steps Which Will Be Taken to Avoid Further Violations:

Communications Center personnel and SCREs will all be informed of this deficiency and are currently aware of the necessity of insuring that the notice sheets are placed in the appropriate procedure manuals.

In addition, QAP 300-27 (Operating Department Procedure Revision Training) will be revised to state that Communications Center personnel will be responsible for processing temporary procedure changes. As part of this process, temporary change revisions will be given to the SCREs for determination of what training is required. The SCREs will continue to be responsible for inserting the notice sheets into the appropriate procedure manual.

4) Date When Full Compliance Will Be Achieved:

All corrective actions should be complete by January 31, 1988.