



Commonwealth Edison
1400 Opus Place
Downers Grove, Illinois 60515

June 10, 1994

Mr. William T. Russell, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attn: Document Control Desk

Subject: Zion Station Units 1 and 2
Request for NRR Enforcement Discretion for
Facility Operating Licenses DPR-39 and DPR-48
Containment Penetration Type C Leak Rate Testing
NRC Docket Nos. 50-295 and 50-304

Dear Mr. Russell:

The purpose of this letter is to provide a request from Commonwealth Edison Company (CECo) for an NRR Notice of Enforcement Discretion from Zion Station's Technical Specification 3/4.10. This Enforcement Discretion is requested to allow unit startup and operation while providing the NRC sufficient time to review a License Amendment request and associated request for schedular exemption to the Type C testing requirements of Appendix J for a single penetration on each unit. This License Amendment and schedular exemption request will be submitted by June 15, 1994.

The basis for this request is provided in the following Attachment:

NRR Enforcement Discretion Request

- Discussion of the Technical Specification that will be violated
- Circumstances leading to the request
- Evaluation of safety significance and potential consequences
- Discussion of compensatory actions
- Discussion which justifies the duration of the request
- Basis for concluding that the request does not involve a Significant Hazards Consideration
- Basis for concluding that the request does not involve irreversible environmental consequences

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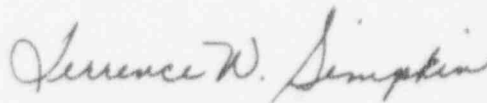
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June 10, 1994

This request for a NRR Enforcement Discretion has been reviewed and approved by Commonwealth Edison Senior Management, as well as the On-site Review Committee in accordance with Commonwealth Edison procedures.

Please direct any questions or comments regarding this matter to this office.

Sincerely,



T.W. Simpkin
Nuclear Licensing Administrator

Attachment

cc: J.B. Martin, Regional Administrator - Region III
C.Y. Shiraki, Project Manager - NRR
J.D. Smith, Senior Resident Inspector - Zion
M. Parker - IDNS

ATTACHMENT

REQUEST FOR NRR ENFORCEMENT DISCRETION

ZION STATION
DPR-39 AND DPR-48

1. TECHNICAL SPECIFICATION THAT WILL BE VIOLATED:

Zion Station is requesting enforcement discretion from the requirements of Technical Specification 4.10.1.A.2. This specification requires that Type B and C tests (except airlock tests) be performed at P_a (postulated peak accident pressure) or above in accordance with the provisions of the appropriate section of 10CFR50 Appendix J.

Specification 4.0.2 requires that each Surveillance Requirement shall be performed within the specified surveillance interval with a maximum allowable extension not to exceed 25 percent of the specified surveillance interval.

Specification 4.0.3 specifies that failure to perform a Surveillance Requirement within the allowed surveillance interval, defined by Specification 4.0.2, shall constitute noncompliance with the OPERABILITY requirements for a Limiting Condition for Operation. The time limits of the ACTION requirements are applicable at the time it is identified that a Surveillance Requirement has not been performed. The ACTION requirements may be delayed for up to 24 hours to permit the completion of the surveillance when the allowable outage time limits of the ACTION requirements are less than 24 hours.

On 6/8/94 at 1645 hours, Zion Station System Engineering identified that the Type C surveillance tests of Technical Specification 4.10.1.A.2 had not been performed in the required interval for 1(2)MOV-CC685, which are containment isolation valves for the component cooling water return from the thermal barriers associated with the reactor coolant pumps. As a result, both Zion Station Unit 1 and 2, which were in Mode 3 (Hot Shutdown) and Mode 1 (Power Operation), respectively, started on a 24 hour clock pursuant to Technical Specification 4.0.3.

The basis for Specification 4.0.3 states that the purpose of the 24 hour allowance is to permit the completion of a surveillance before a shutdown is required to comply with the Action requirements or before other remedial measures would be required that would preclude completion of a surveillance requirement. In this case, remedial measures which would preclude completion of the surveillance requirement include this request for enforcement discretion and submittal of a schedular exemption to Appendix J and accompanying License Amendment.

It is requested that the enforcement discretion be effective until such time as a schedular exemption to 10CFR50 Appendix J and associated License Amendment request can be approved by the NRC. The schedular exemption will defer Type C testing of valves 1(2)MOV-CC685 to the next refueling outage for each unit. Upon approval of the schedular exemption and License Amendment, the enforcement discretion will terminate and Zion Station will be in full compliance with the Technical Specifications and 10CFR50 Appendix J.

Should the NRC not approve the upcoming request, the Action requirements of Technical Specification 3.0.3 will be initiated. This means that action will be taken within 1 hour to place the affected units in at least Hot Shutdown within the following 4 hours and Cold Shutdown (Mode 5) within the following 48 hours.

2. CIRCUMSTANCES SURROUNDING THE SITUATION:

In the fourth quarter of 1990, CECo personnel initiated a self assessment of the Appendix J leak rate testing program at Zion Station. Through this self assessment, CECo identified two containment pathways that had not been Type C tested in accordance with 10CFR50 Appendix J. The pathways in question (P-76 and P-80) were subsequently dispositioned by Emergency Technical Specification Amendment 121/110 which was issued on February 15, 1991. Amendment 121/110 allowed relief for P-76 and P-80 in addition to allowing relief from Type C leak rate testing and Confirmatory Order item A.3 requirements for untested Unit 1 and 2 containment penetrations evaluated during the self assessment until after March 11, 1991.

In completing the self assessment, CECo identified five additional penetrations that were not properly Type C tested in accordance with 10CFR50 Appendix J. In accordance with the self assessment criteria provided in the CECo letter of February 13, 1991 requesting Technical Specification 121/110, Zion Station personnel notified the NRC of these deficiencies on March 5 and March 7, 1991, pursuant to 10CFR50.72.

Based on the aforementioned containment leak rate testing self assessment, and the understanding of the NRC's interpretation of 10CFR50 Appendix J requirements, CECo determined that Type C leak rate testing of the identified penetrations was required.

On 3/11/91 a Temporary Waiver of Compliance was granted by NRR to permit continued operation of Unit 2 and startup and operation of Unit 1 until such time as an Emergency Technical Specification Amendment could be issued to address the situation. A request for an Emergency Technical Specification Amendment was included in the transmittal that requested the Temporary Waiver.

On 4/5/91 the Emergency Technical Specification Amendment request was approved and issued (Amendment 122/111). Amendment 122/111 added a footnote to Technical Specification 4.10.1.A.2 which included an exemption from Type C and local leak rate testing requirements for several penetrations. Among these were Unit 1 penetration P-33 (valves 1MOV-CC685 and 1MOV-CC9438) and Unit 2 penetration P-33 (valves 2MOV-CC685 and 2MOV-CC9438). This footnote was applicable prior to startup following operating cycles Z1C12 and Z2C12 since it was expected that Type C testing would be completed during the Z1R12 and Z2R12 refueling outages. Modifications were designed and installed which would allow the affected penetrations to be Type C tested.

The modification as originally conceived allowed pressure for Type C testing to be applied in the same direction as flow through the system; the accident direction. The modification as approved and installed only allowed air pressure to be applied between the valves. This would result in the upstream valve (1(2)MOV-CC685) being tested in the non-accident direction.

On 6/8/94 at 1645, it was determined by the Zion System Engineering Department that Type C testing requirements have not been met for 1(2)MOV-CC685. When this determination was made, both Unit 1 and 2 initiated a 24 hour clock per Technical Specification 4.0.3. Modifications that were installed did allow successful completion of Type C testing on 1(2)MOV-CC9438.

It is uncertain at this point what decisions were made between the time of issuance of Technical

Specification 122/111 and installation of the modification to P-33. Investigation and interviews are ongoing to determine how and when the design of the modification was changed such that the installed modifications did not allow traditional Type C leak rate testing of 1(2)MOV-CC685 as was intended.

At present, enforcement discretion is necessary to allow continued operation of Unit 2 and startup and operation of Unit 1 until a schedular exemption to 10CFR50 Appendix J and associated License Amendment can be approved by the NRC. The request for a schedular exemption from Appendix J will be submitted to the NRC on or before June 16, 1994.

CECo recognizes that there has been a breakdown in communications or processes regarding design, installation and testing of the modifications for containment penetration P-33. Investigation is continuing to determine the root causes that contributed to the current plant status and the need for enforcement discretion. In the meantime, CECo is confident that granting of the request for enforcement discretion does not involve any significant safety concern as demonstrated by the following discussions. This request for enforcement discretion is similar to the request that was granted on March 11, 1991 except that this request involves only one valve (MOV-CC685) and one penetration (P-33) on each unit. Upon identification of causes contributing to the need for this request for enforcement discretion, comprehensive corrective actions will be implemented to prevent recurrence of a similar situation.

3. EVALUATION OF THE SAFETY SIGNIFICANCE AND CONSEQUENCES:

An evaluation of the safety significance and potential consequences of NRR Enforcement Discretion has been performed. The following discussion demonstrates that enforcement discretion does not create an unsafe condition nor are the potential consequences increased for postulated events during the period for which enforcement discretion is requested.

- 1) The piping associated with penetration P-33 and valves 1(2)MOV-CC685 is seismically supported.
- 2) The component cooling return line from the thermal barriers associated with the reactor coolant pumps is normally pressurized well above P_a . During most accidents considered in the Updated Final Safety Analysis Report (UFSAR), the valves associated with penetration P-33 remain open since the line is used following an accident. This precludes leakage into to the CC from the radioactive containment atmosphere during an accident. During a Large Break LOCA (LBLOCA) valves 1(2)MOV-CC685 and 1(2)MOV-CC9438 receive an automatic Phase B signal to close.
- 3) The Component Cooling system is a closed system within containment.
- 4) There is a loop seal in the line inside containment that is missile protected. This loop seal ensures that water will remain in the line in the event of a line break on a section of the piping not missile protected inside containment.

- 5) Manual Isolation Valve Seal Water is provided to 1(2)MOV-CC685. Manual initiation of seal water to the valves is initiated during long term recovery from an accident. Guidance is provided in the Emergency Operating Procedures to initiate seal water to the valves. Initiation of seal water is based on the particular event in progress, the potential for leakage through the penetration, and potential radiation exposure to the operator.
- 6) The modifications that were installed on penetration P-33 does allow Type C testing of valves 1(2)MOV-CC9438). Valves 1(2)MOV-CC9438 have been Type C tested pursuant to 10CFR50 Appendix J. Test results indicated acceptable leakage through those valves.
- 7) Testing that has been performed on the penetration has provided a high degree of confidence that leakage through 1(2)MOV-CC685 would be well within Type C testing limits. Testing that has been performed is as follows:
 - Pressurized air tests were performed. The piping between valves 1(2)MOV-CC685 and 1(2)MOV-CC9438 was pressurized and no air leakage was observed.
 - Water leakage tests were performed on valves 1(2)MOV-CC685. The component cooling (CC) system typically operates well above P_a (2.5 times P_a). Valves 1(2)MOV-CC685 were closed with CC system pressure behind them. A test valve downstream was then opened to observe for water leakage through the valve. No leakage was observed for the valves.
- 8) The valves associated with penetration P-33 are of similar design and are exposed to similar environments as those valves that have been successfully Type C tested.
- 9) For a significant release of radioactive containment atmosphere to occur through the subject pathway, the following combination of events must occur:
 - a) LOCA, and
 - b) Rupture of piping inside containment connected to penetration P-33, and
 - c) Leakage through MOV-CC685 AND MOV-CC9438 (via the component cooling system surge tank vent) to the Auxiliary Building atmosphere, and
 - d) Manual isolation valve seal water supply is not utilized.

Although valves 1(2)MOV-CC685 have not been Type C tested, unacceptable leakage has not occurred from these valves during isolation valve seal water system tests. The probability of occurrence of this combination of events during the limited time period of the requested enforcement discretion is judged to be very low.

4. COMPENSATORY ACTIONS:

As a result of the need for enforcement discretion, several compensatory actions have been and will be performed as follows:

- A Problem Identification Form was completed to identify and document the issue.
- An investigation will be performed to determine factors contributing to the need for enforcement discretion and the corrective actions required to prevent recurrence of a similar situation.
- A request for a schedular exemption to 10CFR50 Appendix J testing requirements and associated License Amendment for 1(2)MOV-CC685 will be submitted to the NRC on or before June 16, 1994 to defer the testing of 1(2)MOV-CC685 to the next refueling outage for each unit.
- Zion Station will reduce the administrative limit for allowable containment Type B and C leak rate. The current leak rate of $0.6 L_a$ (285 SCFH) will be reduced to an administrative limit of $0.4 L_a$ (190 SCFH).
- Periodic walkdowns of the piping between the containment penetration P-33 and valves 1(2)MOV-CC9438 will be performed. This walkdown will verify the integrity of the piping and the subject valves.

5. JUSTIFICATION FOR THE DURATION OF THE REQUEST:

It is requested that the NRR enforcement discretion apply until such time as a request for a schedular exemption to 10CFR50 Appendix J and License Amendment can be approved by the NRC which will defer the Type C testing of 1(2)MOV-CC685 to the next refueling outage on each unit. The request will be docketed on or before June 16, 1994. The justification for the duration of the requested enforcement discretion is as follows:

- Testing that has been completed has provided a high degree of confidence that the leakage limits of Appendix J would be met.
- The evaluation of the safety significance and consequences has shown that enforcement discretion does not create an unsafe condition and the potential consequences for postulated accidents are not increased during the period for which enforcement discretion is requested.
- It would be undesirable to shut down Unit 2 or delay startup of Unit 1 due to the lack of completion of a Type C test on 1(2)MOV-CC685 since it has been determined through the testing that has been completed that the penetration will likely function as required during and following any postulated accident. The thermal cycles that each unit would experience as a result are also undesirable.

6. EVALUATION OF SIGNIFICANT HAZARD CONSIDERATIONS:

Commonwealth Edison has evaluated this request for NRR enforcement discretion and determined that it involves no significant hazard considerations. The proposed enforcement discretion does not:

1. Involve a significant increase in the probability of occurrence or consequences of an accident previously evaluated; or
2. Create the possibility of a new or different kind of accident from any accident previously evaluated; or
3. Involve a significant reduction in a margin of safety.

The proposed enforcement discretion does not involve a significant increase in the probability or consequences of an accident previously evaluated. With respect to an increase in the probability of previously evaluated accidents, leakage through the containment penetration does not alter or change initiating aspects of the events considered in the analysis since containment leakage paths are not initiators or precursors to previously evaluated accidents.

With regards to the consequences of accidents previously evaluated, the subject pathway and associated containment isolation valves 1(2)MOV-CC685 and 1(2)MOV-CC9438 provide the necessary assurance to conclude that the overall containment leakage rates will remain within the limits assumed in the accident analysis. Failures in excess of design basis requirements would be necessary to adversely impact the offsite dose in the unlikely event of an accident. This conclusion can be reached since the isolation barriers of the Component Cooling Water return from the reactor coolant pumps meet the following criteria:

- are of seismic design,
- connected to the isolation valve seal water system,
- have demonstrated overall containment integrity under successfully completed Isolation Valve Seal Water (IVSW) tests,
- are required to operate post accident (except for large break LOCA),
- the valves close automatically on Phase B isolation signal,
- are subject to Emergency Operating Procedure guidance for manual IVSW system actuation,
- are of similar design and exposed to similar environments as those penetrations that are Type C tested,

As such, the consequences of previously evaluated accidents, with respect to offsite dose considerations, would not be significantly impacted.

The proposed enforcement discretion does not create the possibility of a new or different kind of accident from any accident previously analyzed. The proposed enforcement discretion does not result in plant operations or configurations that could create a new or different type of accident. The proposed enforcement discretion does not add new or different types of plant equipment nor does the enforcement discretion alter any plant procedures used during recovery from accidents described in the

analysis. As such, it can be concluded that the possibility for a new or different type of accident has not been introduced.

The proposed enforcement discretion does not represent a significant reduction in a margin of safety. As described in Technical Specification Bases, dose calculations suggest that the public exposure would be well below the 10CFR100 values in the event of a design basis accident.

Calculations indicate that the accident leak rate could be allowed to increase to approximately 0.148%/day before the guideline thyroid dose value given in 10CFR100 would be exceeded. However, the 0.1%/day pre-operational test acceptance criteria provides an adequate margin of safety to assure the health and safety of the public. Additional margin is achieved by establishing the allowable operational leakage rate at 0.075%/day. The as measured containment leakage rates are well within that limit. Despite the lack of testing of the subject penetration in strict compliance with Appendix J, substantial barriers to fission product release are provided by the intact system piping and associated valves.

Testing that has been completed on the subject penetration and valves provides a high degree of confidence that Type C leakage limits would be met. Based on this it is concluded that the proposed enforcement discretion does not involve a significant reduction in a margin of safety.

7. ENVIRONMENTAL ASSESSMENT

Zion Station has evaluated the requested enforcement discretion against the criteria for the identification of licensing and regulatory actions requiring environmental assessment in accordance with 10 CFR 51.21. It has been determined that the proposed change meets the criteria for a categorical exclusion as provided under 10 CFR 51.22(c)(9). This determination is based on the fact that this change is being proposed as enforcement discretion to a license issued pursuant to 10 CFR 50, and that the change requested involves changes to surveillance requirements and involves no significant hazards consideration. There is no change in the amount, or type, of releases made offsite, and there is no significant increase in individual or cumulative occupational radiation exposure.

8. APPROVAL BY ON-SITE REVIEW:

The request has been reviewed and approved by the Zion Station On-Site Review Committee in accordance with the Zion Station procedures.