Commonwealth Edison
1400 Opus Place
Downers Grove, Illinois 60515

October 10, 1994

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

Subject: Dresden Nuclear Power Station Units 2 and 3
Torus Spray Isolation Valve Piping at Dresden Station
NRC Docket Nos. 50-237 and 50-249

References: (a) Meeting between representatives of ComEd (H. Massin, A. Lintakas, et.al.,) and the U.S. NRC (J. Gavula), dated October 6, 1994.

(b) L. Olshan letter to T. Kovach, dated September 27, 1991.

The purpose of this letter is to inform the NRC staff of our plans regarding the Unit 2 and Unit 3 Torus Spray Isolation Valve Piping at Dresden Station. It is our intention to start up both Dresden Units with operability assessments addressing piping stress concerns associated with the subject lines. In accordance with NRC approved operability criteria, any required design changes will be implemented during the next refueling outage. This issue was previously discussed with members of the NRC staff during the Reference (a) meeting.

BACKGROUND

In the Reference (b) letter, the NRC staff approved the Dresden/Quad Cities Piping Operability Criteria submitted by ComEd. If the operability criteria are met, Reference (b) allows for continued operation of systems and components when piping stresses exceed UFSAR allowable values, until appropriate modifications to the system can be implemented during the next refueling outage or sooner. In early 1992, while performing calculations to quantify the stresses on valve/actuator assemblies at Dresden Unit 2 and Unit 3, ComEd identified discrepancies between the size of MOV actuators used in Mark I analyses and the actual MOV actuators installed in the plant. An operability assessment was performed that concluded the piping stresses for all affected lines were within the approved operability criteria of Reference (b). A chronological summary is provided as an attachment to this letter.

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UNIT 2

After completing the above operability assessment, engineering work was initiated to perform a simplified UFSAR reconciliation of the larger actuators on the 1501-19A & 19B, Torus Spray Isolation Valves. When it was determined that the actuator discrepancies could not be resolved without a detailed Mark I analysis, the approach was changed to installing smaller actuators such that the piping configuration would match the piping analysis. It was later determined that this approach would not be acceptable because of a concern over high actuator accelerations. As a result, a Mark I detailed analysis was initiated to change the piping configuration to reduce actuator accelerations and incorporate the larger actuators. Although detailed analysis of the as-built condition has not been performed, the piping system has been evaluated to be outside the UFSAR design code allowables. Pipe support modifications to reduce actuator accelerations are currently being designed and will be installed during the next refueling outage. Once completed, the piping analysis will reflect the new support configurations as well as the larger actuators.

UNIT 3

Similar to Unit 2, work was planned to install smaller actuators on Unit 3 Torus Spray Isolation Valves in order to have the piping configuration match the piping analysis. However, evolving GL 89-10 criteria resulted in changing this approach because the smaller - actuators would not meet the GL 89-10 (thrust) requirements. This resulted in the Mark I re-analysis of the as-built condition for the lines containing the larger actuators, which is still in progress and is scheduled for completion in January of 1995. As discussed with the NRC staff in Reference (a), although the detailed analysis is not complete on the piping containing the subject valves, the piping has been evaluated to meet UFSAR design code allowables.

CONCLUSION

ComEd has concluded that the affected subsystems for both units will remain operable until all discrepancies are resolved, and any required modifications are installed. An independent ComEd team has reviewed the existing operability evaluations and supporting calculations and finds all conclusions correct.

As discussed with the NRC staff in Reference (a), Com Ed has determined that the affected systems are operable per the criteria outlined in Reference (b). No additional technical information was required.

ComEd will repair any affected piping during the next refueling outages for both Dresden Unit 2 (D2R14 - currently scheduled to begin February of 1995), and if required for Unit 3 (D3R14 - currently scheduled to begin January of 1996). At such time, the piping configuration will comply with UFSAR allowable values. Also, a root cause investigation has been initiated to evaluate the timeliness of the notification. The results of our investigation will be available for your Staff's review when it has been completed.

If there are any questions concerning this matter, please contact this office.

Sincerely,

Peter L. Piet
Nuclear Licensing Administrator

Attachment

cc: J. B. Martin, Regional Administrator - RIII
J. F. Stang, Project Manager - NRR
M. N. Leach, Senior Resident Inspector - Dresden
J. A. Gavula - RIII
Office of Nuclear Facility Safety - IDNS

ATTACHMENT
CHRONOLOGICAL SUMMARY

September 8, 1991	Begin D3R12
April 25, 1992	End D3R12
June 4, 1992	Walkdowns were performed for the GL 89-10 program and actuator size discrepancies were found. A subsequent operability determination showed that, by engineering judgement, the piping systems were still within operability limits. Follow up actions were to complete operability calculations (which have been completed), perform UFSAR evaluations to determine if the piping systems meet UFSAR criteria, and to perform any necessary modifications pending resolution of GL 89-10 MOV upgrade evaluations.
June 4, 1992	An operability assessment was also performed for the 2-1501-19A & 19B MOVs. This operability assessment was written to address the fact that two yokes on motor operated valves may not pass Mark I UFSAR structural criteria. This operability assessment determined that the MOVs remained functional.
July 2, 1992	The operability calculation for valve yokes was finalized.
July 14, 1992	The operability calculations for the piping systems were finalized.

After the operability calculations were completed, a simplified reconciliation of the additional actuator weight to show compliance to UFSAR allowables was attempted for the piping models containing the 2(3)-1501-19A and 19B valves, but UFSAR compliance could not be demonstrated.

A recommendation was made to replace the existing actuators with the smaller, SMB-000 actuators, thereby returning the piping systems to their as-analyzed condition. This approach was chosen to resolve the actuator discrepancies in lieu of performing detailed Mark I analyses. However, new actuators for Unit 2 could not be procured before the next refueling outage.

ATTACHMENT
CHRONOLOGICAL SUMMARY
(continued)

January 16, 1993 Begin D2R13

February 26, 1993 Begin D3F15

April 8, 1993 The modification process for the Unit 2 actuator replacement was initiated. The accelerations of approximately 23 g and 18 g for the Unit 2, and 11 g and 9 g for Unit 3 torus spray valves 2(3)-1501-19A & 19B, respectively, were discussed. It was determined that the original manufacturer rating for these actuators was 6 g in any direction.

Many options were subsequently evaluated - perform Mark I piping analysis; qualify actuators to higher g values; remove the Torus Spray sub-system from the Technical Specifications and lock the Torus Spray containment isolation valves closed. Preliminary operability calculations were being performed to determine the actual accelerations at the valves. Unit 3 calculations were given priority.

April 26, 1993 Operability calculations were completed for the accelerations on Unit 3 valves. The Unit 3 actuator test results were determined to be acceptable. ComEd decided to replace these actuators with SMB-000 actuators during D3R13 to make the installed conditions reflect the design basis analysis. The analyses of the Unit 2 valves were in progress due to the additional refinements of the calculations required.

April 28, 1993 End D3F15

May 21, 1993 The Unit 2 actuators were more difficult to evaluate because of their higher accelerations. Calculation refinements using more accurate inputs (e.g. stiffness) were performed that reduced the originally predicted accelerations to within allowable limits. These calculations were performed for the worst case to evaluate operability. Replacing the actuators with the smaller SMB-000 would not solve the problem, since the accelerations with the smaller actuators were still excessive. ComEd decided to perform a Mark I piping analysis to reduce accelerations and reflect the actuator discrepancy in the design basis analysis. This scope of work begun on June of 1993 for Unit 2. (The approach for Unit 3 was still to use smaller actuators.)

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CHRONOLOGICAL SUMMARY
(continued)

May 25, 1993	End D2R13
January, 1994	The differential pressure testing on various valves indicated that the valve factors are higher that originally predicted. With higher valve factors, the SMB-000 actuators on the 31501-19A & 19B valves would not have sufficient capacity to meet the design basis requirements of G.L. 89-10. Thus, the larger, SMB-00 actuators must remain on the valves and Mark I piping analyses must be performed using these larger actuators. Since a Mark I piping analysis and subsequent modifications could not be completed prior to the end of the upcoming Unit 3 outage, ComEd decided to continue the re-analysis on Unit 2 and shift directly to Unit 3 after the Unit 2 analysis was complete.
March 10, 1994	Begin D3R13.
September 9, 1994	The modification process for support modifications to the Unit 2 Torus Spray Lines was initiated.
September 28, 1994	The engineering design for the Unit 2 Torus Spray Lines was finalized.
September 28, 1994	10 CFR 50.72 notification was made.
October 5, 1994	ComEd Engineering completed their review of the operability calculations and concluded that assumptions, methodology, design input, judgement and the results were acceptable. No technical deficiencies were found in the calculations.
October 6, 1994	Meeting between representatives of ComEd (H. Massin, A. Lintakas, et.al.,) and the U.S. NRC (J. Gavula).
October 7, 1994	Formal documentation of the independent review of operability calculations determined that the Unit 3 Torus Spray Isolation Valve Piping compliance were within UFSAR allowables.