March 22, 1991

Docket No. 50-249

Mr. Thomas J. Kovach
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Dear Mr. Kovach:

SUBJECT: REVIEW OF REQUEST NUMBER CR-11 FOR RELIEF FROM THE REQUIREMENTS OF SECTION XI OF THE ASME CODE FOR DRESDEN UNIT 3 (TAC NO. 79436)

In a letter dated January 17, 1991, you requested relief for Dresden, Unit 3, for the remainder of the second ten-year interval of the IST program (until March 1, 1992) from the testing of the Target Rock Safety-Relief Valve pilot valve assembly replacement at a pressure of not less than 1000 psig with 100% power.

The staff has reviewed your request and proposed alternative examination and provided verbal approval to permit startup of Unit 3 from its mid-cycle outage in January. We have determined that the inspection requirements are impractical for the mid-cycle outage for which relief is being granted and, pursuant to 10 CFR 50.55a(g)(6)(i), that the granting of relief is authorized by law, will not endanger life or property or the common defense and security, and is otherwise in the public interest. In making this determination, we have given due consideration to the burden that could result if those requirements are imposed on your facility. The enclosed Safety Evaluation (SE) provides the staff's formal evaluation of your request. However, as noted in the SE, relief has only been granted for the Dresden Unit 3 mid-cycle outage and not for the remainder of your current ten-year interval of the IST program as requested. Any subsequent relief requests will be evaluated on a case-by-case basis.

Sincerely,

Original signed by
Byron L. Siegel for

Richard J. Barrett, Director
Project Directorate III-2
Division of Reactor Projects - III/IV/V
Office of Nuclear Reactor Regulation

Enclosure:
Safety Evaluation

cc w/enclosure:
See next page

Subject to comments

OFC	:LA:PDIII-2	:PM:PDIII-2	:D:PDIII-2	:OGC	:
NAME	:CMOORE	:BSIEGEL:jc	:RBARRETT	:E HOLLER	:
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ENCLOSURE

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

REQUEST FOR RELIEF FROM ASME SECTION XI

HYDROSTATIC PRESSURE TESTING REQUIREMENTS

COMMONWEALTH EDISON COMPANY

DRESDEN NUCLEAR POWER STATION, UNIT 3

DOCKET NO. 50-249

1.0 INTRODUCTION

Section 50.55a(g) of Title 10 of the Code of Federal Regulations requires examinations and tests of nuclear power facilities piping and components to be performed in accordance with the requirements of the applicable ASME Section XI Code edition and addenda. If it is impractical to meet the requirements, the licensee of the facility is required to notify the Commission and submit information in support of the determination that a requirement is impractical to perform. The Commission is authorized to grant relief from ASME Code requirements under 10 CFR 50.55a(g)(6)(i) upon making the necessary findings.

By letter dated January 17, 1991, and teleconferences on January 15 and 16, 1991, Commonwealth Edison Company (the licensee) requested relief from certain ASME Section XI requirements for the second ten-year interval. The licensee's Second Ten-Year ISI program is based on ASME Section XI, 1977 Edition through Summer 1979 Addenda (1977 Code). The licensee's request for relief from certain ASME Section XI requirements for the second ten-year interval is evaluated herein, pursuant to 10 CFR 55.55a(g)(6)(i), to determine if the necessary findings can be made to grant the request.

2.0 EVALUATION

2.1 Relief Request (RR) Number CR-11 - Relief from System Leakage Test Pressure for Target Rock Safety-Relief Valve Pilot Valve Assembly Replacement

Component Identification

System: Main Steam
Component Description: Class 1 - Target Rock Safety-Relief Valve pilot valve assembly replacement.

ASME Code Section XI Second Interval Inspection Requirements

1977 Edition through Summer 1979 Addenda, Class 1, Category B-P, Item No. B15.70 (Valves - Pressure Retaining Boundary) requires visual examination (VT-2). The following articles apply:

IWB-5211(a) - Requires a system leakage test to be conducted following opening and reclosing of a component in the system after pressurization to nominal operating pressure.

IWB-5221(a) - Requires that a system leakage test shall be conducted at a test pressure not less than the nominal operating pressure associated with 100% rated reactor power.

2.2 Relief Requested

Relief is requested from the performance of a Class 1 system leakage test at a pressure not less than the nominal operation pressure of 1000 psig with 100% reactor power. Relief is requested for Unit 3 for the second ten-year interval (March 1, 1982 to March 1, 1992).

2.3 Licensee's Basis for Relief

The nominal operating pressure associated with 100% rated reactor power is 1000 psig. At the end of each refueling outage a system leakage test of all Class 1 pressure retaining components is conducted at this pressure.

During the current forced mid-cycle outage on Unit 3, the Target Rock Safety-Relief Valve pilot valve assembly was replaced. The replacement requires the disassembly and reassembly of a bolted mechanical connection to the safety-relief valve. For this situation, performance of a Class 1 system leakage test at 1000 psig would have a significant impact on the units' critical path outage time and personnel exposure.

In order to perform the normal Class 1 system leakage test, 383 valves must be taken out of service, the safety valves must be gagged and the vessel flooded up. Compliance with the code requirements would place a burden on the licensee because performance of the equipment outages coupled with the performance of the system leakage test takes approximately 5 days (3 shifts per day) with a total personnel exposure of approximately 2.5 man-rem.

Performing of the system leakage test using reactor pressure during unit startup is possible, however, the test cannot be performed at 1000 psig. During unit startup, the Electro-Hydraulic Control System precludes a reactor pressure above 950 psig with significant increases in reactor power. In order to achieve 1000 psig the reactor would have to be approximately 100% rated power. The dose rates experienced in the drywell at this power level are prohibitive and would pose a great risk to the health and safety of the workers.

A drywell entry to inspect for leakage can be performed at 920 psig, which is associated with 15% reactor power. Performance of leakage test in this manner would have an insignificant impact on the ability to detect leakage from the reassembled connection. It would also significantly reduce the personnel exposure and critical path outage time required for the test.

2.4 Licensee's Proposed Alternative Examination

For each Unit 3 mid-cycle outage in which the Target Rock Safety-Relief Valve pilot valve assembly is replaced, the bolted mechanical connection will be pressurized to 920 psig and inspected for leakage during unit startup.

2.5 Plant Quality and Safety

The hydrostatic testing, as performed with visual examination, provides an acceptable level of assurance of integrity of the Target Rock Safety-Relief Valve pilot valve assembly pressure retaining boundary.

2.6 Radiation Considerations

Total man-rem exposure for performance of the system leakage test as required by the Code is 2.5 man-rem.

3.0 STAFF EVALUATION AND CONCLUSIONS

The Code requirements to perform a system leakage test as discussed above are impractical because of the total personnel radiation exposure of 2.5 man-rem for the preparation and performance of the leakage testing. The NRC staff has determined that the alternative inspection proposed by the licensee will provide adequate assurance of the structural and pressure boundary integrity of the Target Rock Safety-Relief Valve pilot valve assembly. Granting relief, pursuant to 10 CFR 50.55a(a)(3)(i) and (g)(6)(i), would provide an acceptable level of quality and safety, and is authorized by law and will not endanger life or property or the common defense and security and is otherwise in the public interest giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility. Furthermore, compliance with 10 CFR 50.55a(a)(3)(ii) would result in unusual difficulties without a compensating increase in the level of quality and safety. We conclude that relief from the ASME Boiler and Pressure Code requirement may be granted as requested by the licensee with the exception that the granting of the subject relief request is only for the current mid-cycle outage (March 1, 1992). Subsequent relief requests will be evaluated on a case-by-case basis.

Principal Contributor: T. McLellan

Date: March 22, 1991