



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20545

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 125 TO FACILITY OPERATING LICENSE NO. DPR-19,  
AMENDMENT NO. 119 TO FACILITY OPERATING LICENSE NO. DPR-25  
AMENDMENT NO. 145 TO FACILITY OPERATING LICENSE NO. DPR-29  
AND AMENDMENT NO. 141 TO FACILITY OPERATING LICENSE NO. DPR-30

COMMONWEALTH EDISON COMPANY

AND

IOWA ILLINOIS GAS AND ELECTRIC COMPANY

DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3

QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2

DOCKET NOS. 50-237, 50-249, 50-254, AND 50-265

## 1.0 INTRODUCTION

By letter dated June 1, 1992, Commonwealth Edison Company (the licensee, CECO) proposed changes to the Technical Specifications (TS) for the Dresden Nuclear Power Station, Units 2 and 3 (DNPS), and Quad Cities Nuclear Power Station, Units 1 and 2 (QCNPS). The proposed changes update the leakage test requirements of the Drywell Airlock to the standards of 10 CFR Part 50, Appendix J, Section III.D.2. In addition, during the review of TS page v for Dresden, Unit 2, it was found to be in error. Page v is a Table of Contents page and incorrectly listed sections of the TS. In issuing the proposed amendment, page v is corrected to accurately reflect the correct TS sections in the Table of Contents.

## 2.0 BACKGROUND

By letters dated June 25, 1982, and June 12, 1984, the U.S. Nuclear Regulatory Commission issued exemptions from certain requirements of Section 50.54(o) and Appendix J to 10 CFR Part 50 for DNPS and QCNPS, respectively. Item 4 of these exemptions, pertaining to the test frequency for conducting Type B tests at six month intervals at a pressure of not less than the calculated peak containment internal pressure ( $P_a$ ), was granted on condition. The staff developed a revised position which required the containment air locks be tested at six month intervals at a pressure of  $P_a$  in accordance with Appendix J, except that this test interval could be extended up to the next refueling outage (up to a maximum interval between  $P_a$  tests of 24 months) if there had been no air lock openings since the last successful test at  $P_a$  and a  $P_a$  test

was performed following the next air lock opening. Furthermore, the staff found it acceptable to perform reduced pressure testing between extended testing intervals at  $P_a$  provided that the test results could be conservatively extrapolated to yield  $P_a$  test results within acceptance criteria limits.

Implicit within the basis for granting the exemptions was a testing methodology that required shutting down the reactor and opening the equipment hatch in order to install a strongback on the inner air lock door to prevent unseating the air lock door, and subsequent door and hatch openings to remove the strongback. The current TS supported this testing methodology since the Type B test for air locks was only required at least once per 18 months. The DNPS and QCNPS air lock doors do not have testable seals.

Upon receipt of the exemptions, CECO initiated several design reviews focused on developing a tenable reduced pressure test without the use of strongbacks. By April 1985 at DNPS and July 1986 at QCNPS, all attempts to develop a reduced pressure test were abandoned and modifications to the upper and lower strongbacks were initiated. The modifications were completed by March 1986 at DNPS and September 1986 at QCNPS. The modifications facilitate the installation of the strongbacks without making a drywell entry. The more conservative requirements of Appendix J, requiring all tests at  $P_a$ , were implemented by controlled plant procedures in March 1986 at DNPS and August 1987 at QCNPS.

### 3.0 EVALUATION

The current requirements for containment air locks are contained in limiting condition for operation (LCO), TS 3.7.A.2.h(2)(b) at DNPS and 3.7.A.2.d at QCNPS and in surveillance requirement (SR), TS 4.7.A.2.e(3) at DNPS and 4.7.A.2.d(1) at QCNPS. CECO's proposal deletes the current requirements and replaces them with new LCOs and SRs TS 3.7.A.8 and 4.7.A.8 at DNPS and TS 3.7.A.7 and 4.7.A.7 at QCNPS.

#### 3.1 Proposed TS 3.7.A.8.a at DNPS and 3.7.A.7.a at QCNPS

The current TS 3.7.A.2.b(2)(b) at DNPS and TS 3.7.A.2.d at QCNPS require that leakage shall be limited to a leakage rate of less than or equal to 3.75 percent of the maximum allowable leakage rate at  $P_a$  ( $L_a$ ) for any one air lock when pressurized to 10 psig. The 3.75 percent acceptance criterion is based on early leakage rate determinations of typical air lock sealing capabilities. The 10 psig test pressure was originally determined necessary because of the inboard door closing design, which is opposite the direction of the applied test pressure.

Proposed TS 3.7.A.8.a at DNPS and TS 3.7.A.7.a at QCNPS is an adaptation of the Standard Technical Specifications (STS) which require that each primary containment air lock be operable with both doors closed except when the air lock is being used for normal transit entry and exit through the containment, then at least one air lock door would be required to be closed. Additionally,

operability would be linked to an acceptable air lock leakage rate of less than or equal to 5.0 percent of  $L_a$  when pressurized to  $P_a$ , 48 psig.

The staff has reviewed this proposed TS change and determined that the proposed increase in the allowed fraction of overall leakage from 3.75 percent to 5.0 percent is consistent with the proposed increase in test pressure from 10 psig to  $P_a$ . The proposed TS change is also consistent with the requirements and acceptance criteria of the STS and does not affect the maximum overall or combined leakage limits. The staff, therefore, finds this TS change acceptable.

### 3.2 Proposed TS 3.7.A.8.b at DNPS and TS 3.7.A.7.b at QCNPS

Proposed TS 3.7.A.8.b at DNPS and TS 3.7.A.7.b at QCNPS describe the actions required with one primary containment air lock door inoperable. The current DNPS and QCNPS TS do not address this condition.

With one primary containment air lock door inoperable, the proposed TS require the operable door to be maintained closed except during entry to repair the inoperable door or to facilitate the removal of personnel for a cumulative time not to exceed one hour per year. If the inoperable door can not be returned to operable status within 24 hours, then the operable air lock door must be locked closed. Operation may then continue until the performance of the next required overall air lock leakage test provided that the operable air lock door is verified to be locked closed, except during entry to repair the inoperable door or to facilitate the removal of personnel for a cumulative time not to exceed one hour per year, at least once per 31 days. Otherwise, the plant must be in at least hot shutdown within the next 12 hours and in cold shutdown within the following 24 hours.

The proposed TS are consistent with the STS with one exception. The provision in the proposed TS that would allow entry through an operable door to repair an inoperable door or to facilitate the removal of personnel for a cumulative time not to exceed one hour per year is not included in the STS. The Improved Standard Technical Specifications (ISTS), however, contain two notes that relate to this provision. Note 1 under ACTIONS for TS 3.6.1.2, "Primary Containment Air Lock," states that entry and exit is permissible to perform repairs of the air lock components. Note 2 under REQUIRED ACTIONS for TS 3.6.1.2.A, "One primary containment air lock inoperable," states that entry and exit is permissible for 7 days under administrative controls.

The staff has reviewed this proposed TS change and determined that it is consistent with requirements of the Standard Technical Specifications and Improved Standard Technical Specifications for BWR/4 facilities. The entry provision in CECO's proposal is actually more conservative than the provisions noted in the ISTS by limiting the time the door may be open to a cumulative limit of one hour per year. The staff, therefore, finds this change acceptable.

3.3. Proposed TS 3.7.A.8.c at DNPS and TS 3.7.A.7.c at QCNPS

Proposed TS 3.7.A.8.c at DNPS and TS 3.7.A.7.c at QCNPS describe the actions required for operation of the primary containment air lock with an inoperable interlock mechanism. The current DNPS and QCNPS TS do not address this condition.

With the primary containment air interlock mechanism inoperable, the proposed TS allow operations to continue provided the air lock is otherwise operable and entry and exit of the primary containment is administratively controlled by a dedicated individual. The action provides a 24 hour allowable out of service time to restore the interlock mechanism. Otherwise, an operable door would have to be locked and verified locked at least once every 31 days.

The staff has reviewed this proposed TS change and since it is consistent with the requirements of the Improved Standard Technical Specifications for BWR/4 facilities, the staff finds this change acceptable.

3.4 Proposed TS 3.7.A.8.d at DNPS and TS 3.7.A.7.d at QCNPS

Proposed TS 3.7.A.8.d at DNPS and TS 3.7.A.7.d at QCNPS describe the actions required for an inoperable primary containment air lock, except as a result of an inoperable air lock door or air lock interlock mechanism. The current DNPS and QCNPS TS do not address this condition.

With the primary containment air lock inoperable except as a result of an inoperable air lock door or air lock interlock mechanism, the proposed TS requires that at least one air lock door be maintained locked closed and that the inoperable air lock be restored to operable status within 24 hours or be in at least hot shutdown within the next 12 hours and in at least cold shutdown within the following 24 hours.

The staff has reviewed this proposed TS change and since it is consistent with the requirements of the Improved Standard Technical Specifications for BWR/4 facilities, the staff finds this change acceptable.

3.5 Proposed SR 4.7.A.8 at DNPS and SR 4.7.A.7 at QCNPS

Currently SR 4.7.A.2.e(3) at DNPS requires air locks to be tested at 10 psig each operating cycle and SR 4.7.A.2.d(1) at QCNPS requires that air locks be tested at 10 psig once per 18 months.

Proposed SR TS 4.7.A.8.a(1) at DNPS and SR TS 4.7.A.7.a(1) at QCNPS would require each primary containment air lock to be demonstrated operable by conducting an overall air lock leakage test at  $P_1$ , 48 psig and verifying that the overall air lock leakage rate is within its limit. The frequency of this test would be (1) within 72 hours of air lock opening when containment integrity is required, except when the air lock is being used for multiple entries, then at least once per 72 hours; (2) at least once per 6 months without the interval extensions of TS 1.0.CC for DNPS and 1.0.DD for QCNPS;

and (3) prior to establishing Primary Containment Integrity following air lock opening. To support this testing methodology, the current use of strongbacks on the inner air lock door when testing, would be expanded under the provisions of 10 CFR 50.59 to allow the strongbacks to remain in place during the operating cycle.

The proposed surveillance requirements are consistent with the STS and the requirements of 10 CFR 50, Appendix J, Section III.D.2, taking into consideration that both DNPS and QCNPS air lock design contain no provisions for testable seals. The staff, therefore, finds this proposed TS change acceptable.

Proposed SR 4.7.A.8.a(2) at DNPS and SR 4.7.A.7.a(2) at QCNPS would require each primary containment air lock to be demonstrated operable by verifying that only one door in each air lock can be opened at a time. This test would be required concurrent with each overall air lock leakage test conducted prior to establishing primary containment integrity.

The proposed surveillance requirement is consistent with the STS and the proposed frequency is consistent with the use frequency of the DNPS and QCNPS primary containment air locks which normally remain closed for most of the operating cycle. The staff, therefore, finds this proposed TS change acceptable.

### 3.6 TS Definition 1.0.R for DNPS and 1.0.P for QCNPS

CECo's proposal changes the current TS definition for Primary Containment Integrity, 1.0.R for DNPS and 1.0.P for QCNPS, such that the statement "...At least one door in each airlock is closed and sealed," is replaced with the statement "...Each primary containment air lock is in compliance with the requirements of Specification 3.7.A.8 [3.7.A.7 for QCNPS]."

TS 3.7.A.8 at DNPS and 3.7.A.7 at QCNPS contain the requirement that each primary containment air lock be operable with both doors closed except when the air lock is being used for normal transit entry and exit through the containment, then at least one air lock door would be required to be closed. Since the referenced TS contains a similar requirement as the current definition for Primary Containment Integrity, CECo's proposed change does not substantively change the definition. The staff, therefore, finds this TS change acceptable.

### 3.7 Bases for TS 3.7 and 4.7 at DNPS and QCNPS

CECo's proposal included primary containment air lock base: to support the proposed TS changes. The staff has reviewed these proposed TS bases and determined that they accurately reflect the proposed TS changes discussed above and are, therefore, acceptable.



#### 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Illinois State official was notified of the proposed issuance of the amendments. The State official had no comments.

#### 5.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change a surveillance requirement. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (57 FR 48818). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

#### 6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: R. Laufer

Date: March 11, 1994

Docket Nos. 50-237, 50-249  
and 50-254, 50-265

Mr. D. L. Farrar  
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Dear Mr. Farrar:

SUBJECT: ISSUANCE OF AMENDMENTS (TAC NOS. M83980, M83981, M83982, AND M83983)

The Commission has issued the enclosed Amendment No. to Facility Operating License No. DPR-19 for Dresden, Unit 2, Amendment No. to Facility Operating License No. DPR-25 for Dresden, Unit 3, Amendment No. to Facility Operating License No. DPR-29 for Quad Cities, Unit 1, and Amendment No. to Facility Operating License No. DPR-30 for Quad Cities, Unit 2. The amendments are in response to your application dated June 1, 1992.

The amendments consist of changes to the Dresden and Quad Cities Technical Specifications that will update the leakage test requirements of the Drywell Airlock to the standards of 10 CFR 50, Appendix J, Section III.D.2 in response to an Unresolved Item listed in Inspection Report Nos. 50-237/91032 and 50-249/91035.

A copy of the Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

John F. Stang, Project Manager  
Project Directorate III-2  
Division of Reactor Projects - III/IV/V  
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. to DPR-19
2. Amendment No. to DPR-25
3. Amendment No. to DPR-29
4. Amendment No. to DPR-30
5. Safety Evaluation

cc w/enclosures:  
See next page

*RL for*  
BC: SCSB  
R. BARRATT  
2/24/94  
COPY: YES

OFC	LA: PDIII-2	PM: PDIII-2	PM: PDIII-2	BC: SPLB	D: PDIII-2	OGC
NAME	CMOORE <i>no TS</i>	JSTANG	CPATEL	CMCCRACKEN	JDYER	<i>CMOORE</i>
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