

October 1, 1999

Mr. Oliver D. Kingsley, President  
Nuclear Generation Group  
Commonwealth Edison Company  
Executive Towers West III  
1400 Opus Place, Suite 500  
Downers Grove, IL 60515

SUBJECT: ISSUANCE OF AMENDMENTS (TAC NOS. MA5754 AND MA5755)

Dear Mr. Kingsley:

The U.S. Nuclear Regulatory Commission (Commission) has issued the enclosed Amendment No. 175 to Facility Operating License No. DPR-19 and Amendment No. 171 to Facility Operating License No. DPR-25 for Dresden Nuclear Power Station, Units 2 and 3. The amendments are in response to your application dated June 15, 1999.

The amendments revise Technical Specification 4.7.D.6 by replacing the leakage limit of 11.5 standard cubic feet per hour (scfh) for each main steam isolation valve (MSIV) with a limit of 46 scfh on the total combined leakage for the MSIVs of all four main steam lines.

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,

Original signed by:  
Lawrence W. Rossbach, Project Manager, Section 2  
Project Directorate III  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

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PDR ADOCK 05000237  
P PDR

Docket Nos. 50-237 and 50-249

Enclosures: 1. Amendment No. 175 to DPR-19  
2. Amendment No. 171 to DPR-25  
3. Safety Evaluation

cc w/encs: See next page

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

COMMONWEALTH EDISON COMPANY

DOCKET NO. 50-237

DRESDEN NUCLEAR POWER STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 175  
License No. DPR-19

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by the Commonwealth Edison Company (the licensee) dated June 15, 1999, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-19 is hereby amended to read as follows:

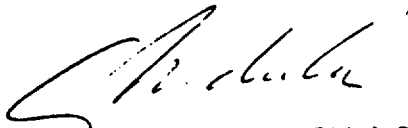
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(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 175, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION



Anthony J. Mendiola, Chief, Section 2  
Project Directorate III  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: October 1, 1999



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

COMMONWEALTH EDISON COMPANY

DOCKET NO. 50-249

DRESDEN NUCLEAR POWER STATION, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 171  
License No. DPR-25

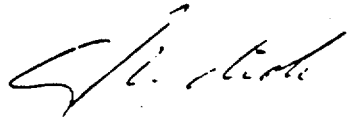
1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by the Commonwealth Edison Company (the licensee) dated June 15, 1999, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 3.B. of Facility Operating License No. DPR-25 is hereby amended to read as follows:

**B. Technical Specifications**

The Technical Specifications contained in Appendix A, as revised through Amendment No. 171 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION



Anthony J. Mendiola, Chief, Section 2  
Project Directorate III  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: October 1, 1999

ATTACHMENT TO LICENSE AMENDMENT NOS. 175 AND 171

FACILITY OPERATING LICENSE NOS. DPR-19 AND DPR-25

DOCKET NOS. 50-237 AND 50-249

Revise the Appendix "A" Technical Specifications by replacing the pages identified below with the enclosed pages. The revised pages are identified by the amendment number and contain a vertical line in the margin indicating the area of change.

REMOVE

3/4.7-7

B3/4.7-2

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INSERT

3/4.7-7

B3/4.7-2

B3/4.7-2a

**3.7 - LIMITING CONDITIONS FOR OPERATION**

2. With one or more reactor instrumentation line excess flow check valves inoperable, operation may continue and the provisions of Specification 3.0.C are not applicable, provided that within 4 hours either:

- a. The inoperable valve is restored to OPERABLE status, or
- b. The instrument line is isolated and the associated instrument is declared inoperable.

Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

**4.7 - SURVEILLANCE REQUIREMENTS**

- a. At least once per 31 days by verifying the continuity of the explosive charge.
  - b. At least once per 18 months by removing at least one explosive squib from an explosive valve such that each explosive squib will be tested at least once per 90 months, and initiating the removed explosive squib(s). The replacement charge for the exploded squib(s) shall be from the same manufactured batch as the one fired or from another batch which has been certified by having at least one of that batch successfully fired. No squib shall remain in use beyond the expiration of its shelf-life or operating life, as applicable.
6. In accordance with the methods and at the frequency specified by the Primary Containment Leakage Rate Testing Program, verify total maximum pathway leakage for all Main Steam Isolation Valves is  $\leq 46$  scfh when tested at  $P_1$  (25 psig).



**BASES**

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leakage tests). The acceptance criteria were established during initial air lock and primary containment OPERABILITY testing. The periodic testing requirements verify that air lock leakage does not exceed the allowed fraction of the overall primary containment leakage rate. The Frequency is required by the Primary Containment Leakage Rate Testing Program. The surveillance requirements have been annotated such that an inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test. This is considered reasonable since either air lock door is capable of providing a fission product barrier in the event of a DBA. Additional annotation is provided to require the results of air lock leakage tests being evaluated against the acceptance criteria applicable to the surveillance requirements. This ensures that the air lock leakage is properly accounted for in determining the combined Type B and Type C primary containment leakage.

**3/4.7.D Primary Containment Isolation Valves**

The OPERABILITY of the primary containment isolation valves ensures that the containment atmosphere will be isolated from the outside environment in the event of a release of radioactive material to the containment atmosphere or pressurization of the containment. Containment isolation within the time limits specified for those isolation valves designed to close automatically ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analyses for a LOCA.

The containment is also penetrated by a large number of small diameter instrument lines which contact the primary coolant system. A program for periodic testing and examination of the flow check valves in these lines is performed by blowing down the instrument line during a vessel hydro and observing conditions which verify that the flow check valve is operable, e.g., a distinctive 'click' when the poppet valve seats, or an instrumentation high flow that quickly reduces to a slight trickle.

The main steam line isolation valves are tested at lower pressures, per an approved exemption, but the leakage rate is included in the Type B and C test totals. The surveillance testing for measuring leakage rates is consistent with the requirements of Appendix J of 10CFR Part 50 with the exception of approved exemptions. (Ref: Exemption Request Approval, Mr. D. G. Eisenhower (NRC) to Mr. L. DelGeorge (CECo) dated June 25, 1982.)

The individual main steam isolation valve (MSIV) leakage limit has been replaced by the aggregate leakage limit of  $\leq 46$  scfh for all MSIVs. The leakage will be determined for the maximum pathway leakage in accordance with the Primary Containment Leakage Rate Testing Program. This is a very conservative total for MSIV leakage because it takes the MSIV with the maximum leakage in each steam line and sums the leakage for each of those valves to determine the maximum pathway leakage.

**BASES**

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**3/4.7.E      Suppression Chamber - Drywell Vacuum Breakers**

The function of the suppression chamber to drywell vacuum breakers is to relieve vacuum in the drywell. These internal vacuum breakers allow air and steam flow from the suppression chamber to the drywell when the drywell is at a negative pressure with respect to the suppression chamber. Each vacuum breaker is a self-actuating valve, similar to a check valve.

The safety analysis assumes that the internal vacuum breakers are closed initially and are fully open at a differential pressure of 0.5 psid. Additionally, three of these internal vacuum breakers



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 175 TO FACILITY OPERATING LICENSE NO. DPR-19  
AND AMENDMENT NO. 171 TO FACILITY OPERATING LICENSE NO. DPR-25  
COMMONWEALTH EDISON COMPANY  
DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3  
DOCKET NOS. 50-237 AND 50-249

1.0 INTRODUCTION

In a letter dated June 15, 1999, Commonwealth Edison Company (ComEd, the licensee) requested an amendment to their Technical Specifications (TSs) for Dresden Nuclear Power Station, Units 2 and 3. The proposed amendment would change TS Section 3/4.7.D and the associated Bases to eliminate the individual leakage limits for each main steam isolation valve (MSIV). The removed limits would be replaced with a total limit for all four main steam lines combined. The current leakage limit is 11.5 standard cubic feet per hour (scfh) per valve. The proposed amendment would change the limit to 46 scfh for all four main steam lines combined. The value chosen for the new total limit is equivalent to the sum of the current individual limits.

2.0 BACKGROUND

Compliance with Title 10, Part 50, Appendix J, of the *Code of Federal Regulations* (10 CFR Part 50, Appendix J) provides assurance that the primary containment, including those systems and components that penetrate the primary containment, do not exceed the allowable leakage rate values specified in the TSs and their bases. The allowable leakage rate is determined so that the leakage assumed in the safety analyses is not exceeded.

The Dresden primary containment system consists of a drywell, which encloses the reactor vessel and recirculation pumps, a pressure suppression chamber which stores a large amount of water, a connecting vent system between the drywell and the suppression chamber, and isolation valves. The four main steam lines that penetrate the primary containment boundary each have two 20-inch diameter isolation valves installed in series for a total of eight valves. Type C leak rate testing of the MSIVs is performed in accordance with the requirements of 10 CFR Part 50, Appendix J (as modified by an approved exemption). The purpose of the Type C testing is to verify that any leakage through the isolation valves would be within acceptable limits. Appendix J requires that the combined leakage of all containment

penetrations and valves that are subject to Type B and C tests shall be less than 0.6 times the maximum allowable containment leak rate ( $L_a$ ). For Dresden,  $L_a$  is 0.5% (by volume) of the containment air per day at the calculated peak containment internal pressure ( $P_a$ ) for a design-basis loss-of-coolant accident.  $P_a$  is 48 pounds per square inch gage (psig) for Dresden. The MSIVs are tested at a lower test pressure ( $P_t$ ) of 25 psig per a previous exemption. The allowable leakage through all main steam lines at  $P_t$  is 46 scfh. Furthermore, boiling-water reactor plants generally have additional leakage limits placed specifically on the MSIVs, in recognition of their large size and historical tendency to leak excessively. In the case of Dresden, the total leakage limit is 11.5 scfh per valve.

ComEd stated in their letter of June 15, 1999, that use of the proposed combined steam line leakage rate would reduce unnecessary repair of the isolation valves. Dresden reviewed their last three refueling outages and concluded that, had the proposed limits been in effect, four MSIV overhauls could have been avoided while still maintaining the equivalent maximum leak rate. From this review, it can also be inferred that worker radiation exposure would have been reduced.

The Boiling Water Reactor Owners' Group (BWROG) issued a topical report on MSIV leakage limits, entitled NEDC-31858P, Revision 2, "BWROG Report for Increasing MSIV Leakage Rate Limits and Elimination of Leakage Control Systems," dated September 1993. In their report, the BWROG states that MSIV leakage could increase in excess of 200 scfh per valve without reducing the valve's ability to perform its safety function. Based on this, it can be seen that Dresden's current 11.5 scfh leakage limit doesn't provide indication that the valve's safety capability is reduced. The 11.5 scfh limit, therefore, causes Dresden to often perform unnecessary maintenance on the valves simply to maintain the low leakage rate. These unnecessary maintenance activities can reduce the valve life and lead to repeated failures and premature major repairs or valve replacements.

In a safety evaluation dated March 3, 1999, the NRC accepted the report for direct reference in future individual plant submittals on the MSIV leakage issue, subject to certain conditions. In the safety evaluation, the staff concurred with the conclusions stated in the paragraph above.

### 3.0 EVALUATION

ComEd is proposing to change TS 3/4.7.D and the associated Bases to allow a combined maximum flow path leakage for all MSIVs of less than or equal to 46 scfh when tested at 25 psig. For Dresden, the MSIV leak rates are included in the Type B and C test totals for the plant, which are used for demonstrating compliance with the 0.6  $L_a$  leakage limit. Therefore, the proposed amendment does not affect the total leakage through containment valves and penetrations subject to Type B and C test requirements.

The effect of the proposed amendment would be to allow an individual MSIV to have a maximum leakage rate of up to 46 scfh (four times higher than previously), provided that the other three lines had no leakage. The original 11.5 scfh leakage limit value for the MSIV does not represent a limit which indicates significant valve degradation. As such, it does not indicate that the valve has degraded to the point where its ability to perform its safety function is reduced. Based on the BWROG report cited above, Dresden's proposed 46 scfh limit would

not reduce the valve's ability to perform its safety function. As a result, the new limit would not reduce overall plant safety.

Based on our review, we conclude that the proposed amendment does not increase Dresden's overall allowable leakage limit or reduce the ability of the MSIVs to perform their intended safety functions. The proposed amendment would also reduce worker radiation exposure which is consistent with the Commission's policy of keeping exposures as low as reasonably achievable. Accordingly, we conclude that the proposed amendment is 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 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 (64 FR 38024). 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 Contributors: Robert B. Elliott  
Jim Pulsipher

Date: October 1, 1999