May 8, 1998

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 NO. MA0763 AND MA0764)

Dear Mr. Kingsley:

The U.S. Nuclear Regulatory Commission (Commission) has issued the enclosed Amendment No. 102 to Facility Operating License No. NPF-37 and Amendment No. 102 to Facility Operating License No. NPF-66 for the Byron Station, Unit Nos. 1 and 2, respectively. The amendments are in response to your application dated November 7, 1997, as supplemented on March 24, 1998, and April 9, 1998.

The amendments defer the next scheduled Type A containment integrated leak rate test for Byron, Unit 2, until the next refueling outage in 1999.

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,

ORIG. SIGNED BY:

John B. Hickman, Project Manager
Project Directorate III-2
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Docket Nos. STN 50-454, STN 50-455

Enclosures: 1. Amendment No. 102 to NPF-37
2. Amendment No. 102 to NPF-66
3. Safety Evaluation

cc w/encl: see next page



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

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

COMMONWEALTH EDISON COMPANY

DOCKET NO. STN 50-454

BYRON STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 102
License No. NPF-37

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Commonwealth Edison Company (the licensee) dated November 7, 1997, as supplemented on March 24, 1998, and April 9, 1998, 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. NPF-37 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A as revised through Amendment No. 102 and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated into this license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

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

John B. Hickman, Project Manager
Project Directorate III-2
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical Specifications

Date of Issuance: May 8, 1998

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

COMMONWEALTH EDISON COMPANY

DOCKET NO. STN 50-455

BYRON STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 102
License No. NPF-66

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Commonwealth Edison Company (the licensee) dated November 7, 1997, as supplemented on March 24, 1998, and April 9, 1998, 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. NPF-66 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A (NUREG-1113), as revised through Amendment No. 102 and revised by Attachment 2 to NPF-66, and the Environmental Protection Plan contained in Appendix B, both of which were attached to License No. NPF-37, dated February 14, 1985, are hereby incorporated into this license. Attachment 2 contains a revision to Appendix A which is hereby incorporated into this license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

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

John B. Hickman, Project Manager
Project Directorate III-2
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical Specifications

Date of Issuance: May 8, 1998

ATTACHMENT TO LICENSE AMENDMENT NOS. 102 AND 102

FACILITY OPERATING LICENSE NOS. NPF-37 AND NPF-66

DOCKET NOS. STN 50-454 AND STN 50-455

Revise the Appendix A Technical Specifications by removing the pages identified below and inserting the attached pages. The revised pages are identified by the captioned amendment number and contain marginal lines indicating the area of change. Pages marked with an asterisk are provided for convenience.

| Remove Pages | Insert Pages |
|---|---|
| 3/4 6-1 | 3/4 6-1 |
| 3/4 6-2 | 3/4 6-2 |
| 3/4 6-3 | 3/4 6-3 |
| B 3/4 6-1 | B 3/4 6-1 |

## 3/4.6 CONTAINMENT SYSTEMS

### 3/4.6.1 PRIMARY CONTAINMENT

### CONTAINMENT INTEGRITY

#### LIMITING CONDITION FOR OPERATION

3.6.1.1 Primary CONTAINMENT INTEGRITY shall be maintained.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

Without primary CONTAINMENT INTEGRITY, restore CONTAINMENT INTEGRITY within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

#### SURVEILLANCE REQUIREMENTS

4.6.1.1 Primary CONTAINMENT INTEGRITY shall be demonstrated:

a. At least once per 31 days by verifying that all penetrations* not capable of being closed by OPERABLE containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in their positions, except as provided in Table 3.6-1 of Specification 3.6.3 or for containment isolation valves that are open under administrative controls;

b. By verifying that each containment air lock is in compliance with the requirements of Specification 3.6.1.3; and

c. By performing containment leakage testing in accordance with Regulatory Guide 1.163, September 1995, as modified by an approved schedular exception and 10 CFR 50, Appendix J, Option B.

---

*Except valves, blind flanges, and deactivated automatic valves which are located inside the containment and are locked, sealed or otherwise secured in the closed position. These penetrations shall be verified closed during each COLD SHUTDOWN except that such verification need not be performed more often than once per 92 days.

CONTAINMENT SYSTEMS

CONTAINMENT LEAKAGE

LIMITING CONDITION FOR OPERATION

3.6.1.2 Containment leakage rates shall be limited to:

a. An overall integrated leakage rate of less than or equal to $L_a$ at $P_a$.

b. A combined leakage rate of less than 0.60 $L_a$ for all penetrations and valves subject to Type B and C tests, when pressurized to $P_a$.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With either the measured overall integrated containment leakage rate exceeding 0.75 $L_a$ or the measured combined leakage rate for all penetrations and valves subject to Types B and C tests exceeding 0.60 $L_a$, restore the overall integrated leakage rate to less than 0.75 $L_a$ and the combined leakage rate for all penetrations subject to Type B and C tests to less than 0.60 $L_a$ prior to increasing the Reactor Coolant System temperature above 200°F.

SURVEILLANCE REQUIREMENTS

4.6.1.2 The containment leakage rates shall be demonstrated in accordance with Regulatory Guide 1.163, September 1995, and 10 CFR 50, Appendix J, Option B.

a. Type A (Overall Integrated Containment Leakage Rate) testing shall be conducted in accordance with Regulatory Guide 1.163, September 1995, as modified by an approved schedular exception and 10 CFR 50, Appendix J, Option B.

SURVEILLANCE REQUIREMENTS (Continued)

b. The reporting requirements and frequency of Type A tests shall be in accordance with Regulatory Guide 1.163, September 1995, as modified by an approved schedular exception and 10 CFR 50, Appendix J, Option B.

c. The accuracy of each Type A test shall be verified by a supplemental test conducted in accordance with Regulatory Guide 1.163, September 1995, and 10 CFR 50, Appendix J, Option B.

d. Type B and C tests shall be conducted in accordance with Regulatory Guide 1.163, September 1995, and 10 CFR 50, Appendix J, Option B.

e. Air locks shall be tested and demonstrated OPERABLE by the requirements of Specification 4.6.1.3;

f. Purge supply and exhaust isolation valves with resilient material seals shall be tested and demonstrated OPERABLE by the requirements of Specification 4.6.1.7.3 or 4.6.1.7.4, as applicable; and

g. The structural integrity of the exposed accessible interior and exterior surfaces of the containment vessel, including the liner plate, shall be demonstrated during the shutdown for each Type A containment leakage rate test by a visual inspection of these surfaces. This inspection shall be performed at a frequency in accordance with Regulatory Guide 1.163, September 1995, to verify no apparent changes in appearance or other abnormal degradation.

h. The provisions of Specification 4.0.2 are not applicable.

## 3/4.6 CONTAINMENT SYSTEMS

### BASES

### 3/4.6.1 PRIMARY CONTAINMENT

### 3/4.6.1.1 CONTAINMENT INTEGRITY

Primary CONTAINMENT INTEGRITY ensures that the release of radioactive materials from the containment atmosphere will be restricted to those leakage paths and associated leak rates assumed in the safety analyses. This restriction, in conjunction with the leakage rate limitation, will limit the SITE BOUNDARY radiation doses to within the dose guideline values of 10 CFR Part 100 during accident conditions.

### 3/4.6.1.2 CONTAINMENT LEAKAGE

The limitations on containment leakage rates ensure that the total containment leakage volume will not exceed the value assumed in the accident analyses at the peak accident pressure, $P_a$. As an added conservatism, the measured overall integrated leakage rate is further limited to less than or equal to 0.75 $L_a$ during performance of the periodic test to account for possible degradation of the containment leakage barriers between leakage tests.

The surveillance testing for measuring leakage rates is consistent with the requirements of Appendix J of 10 CFR Part 50, Option B, Regulatory Guide 1.163, September 1995, Nuclear Energy Institute document NEI 94-01, and ANSI/ANS-56.8-1994 except as modified for Unit 2. An extension for Unit 2 is allowed to perform the Type A test during B2RO8. Subsequent Type A test intervals for Unit 2 will be determined based on test results, in accordance with NEI 94-01.

### 3/4.6.1.3 CONTAINMENT AIR LOCKS

The limitations on closure and leak rate for the containment air locks are required to meet the restrictions on CONTAINMENT INTEGRITY and containment leak rate. Surveillance testing of the air lock seals provides assurance that the overall air lock leakage will not become excessive due to seal damage during the intervals between air lock leakage tests.

### 3/4.6.1.4 INTERNAL PRESSURE

The limitations on containment internal pressure ensure that: (1) the containment structure is prevented from exceeding its design negative pressure differential with respect to the outside atmosphere of 0.1 psig, and (2) the containment peak pressure does not exceed the design pressure of 50 psig during steam line break conditions.

The maximum increase in peak pressure expected to be obtained from a cold leg double-ended break event is defined as $P_a$. The limit of 1.0 psig for initial positive containment pressure will limit the total pressure to $P_a$, which is higher than the UFSAR Chapter 15 accident analysis calculated peak pressure assuming a limit of 0.3 psig for initial positive containment pressure, but is considerably less than the design pressure of 50 psig.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 102 TO FACILITY OPERATING LICENSE NO. NPF-37

AND AMENDMENT NO. 102 TO FACILITY OPERATING LICENSE NO. NPF-66

COMMONWEALTH EDISON COMPANY

BYRON STATION, UNIT NOS. 1 AND 2

DOCKET NOS. STN 50-454 AND STN 50-455

## 1.0 INTRODUCTION

By letter dated November 7, 1997, as supplemented on March 24, 1998, and April 9, 1998, Commonwealth Edison Company (ComEd), the licensee for Byron Station, Units 1 and 2, requested a deferral of the next scheduled Type A containment integrated leak rate test for Byron, Unit 2, until the next refueling outage in 1999. A consideration in this request is the failure of one of two previous Type A tests. The staff has reviewed the licensee's submittal and our evaluation is provided below. The April 9, 1998, supplement provided clarifying information which did not change the staff's initial proposed no significant hazards consideration.

## 2.0 BACKGROUND

The Byron, Unit 2, technical specifications (TS) require that containment leakage rate testing shall be performed in accordance with Option B of 10 CFR Part 50, Appendix J, and Regulatory Guide (RG) 1.163, "Performance-Based Containment Leak-Test Program", September 1995. Among other things, RG 1.163 specifies that periodic Type A (integrated leakage rate tests) of the containment shall be performed at a frequency of at least every 48 months. RG 1.163 also allows an extension of this test interval by 15 months.

The first Byron, Unit 2, Type A test following a successful pre-operational test was conducted in September 1990. This test was a failure due to leakage by a steam generator manway. The second Byron, Unit 2, Type A test was successfully conducted in September 1993. In accordance with Option B, another Type A test must be performed by December 1998. This date includes the 15 month extension. The licensee has proposed to defer performance of this Type A test until the next refueling outage, B2R08, in 1999 which would mean an extension of the test interval by approximately 10 months. Because the extension of the test interval included in Option B has already been credited, the licensee has proposed a change to the Byron, Unit 2, TSs to permit an exception to RG 1.163 to defer the Type A test.

Because of the past problem with failure of a Type A test due to steam generator manway leakage, the review of this deferral request concentrated on this potential leakage path.

## 3.0 EVALUATION

Steam generator secondary manways provide access to the interior of the steam generators so that various inspections and operations (such as sludge lancing) can be performed. Thus, they are removed regularly during outages. The design of the manway provides for bolting from the outside so that the steam generator secondary side pressure during normal operation is acting in the direction to force the manway open. The licensee's March 24, 1998, submittal states, however, that

> "... the [manway] gasket load is 8.6% higher during accident conditions and Type A testing than during normal plant operation."

That is, the manway gasket is compressed more (making a tighter seal) during accident conditions and Type A testing (which simulates containment accident pressure), than during normal operation when the pressure is in the opposite direction and the bolts provide the only compressive force on the gasket. Thus, it is reasonable to assume that a manway leaking during normal operation would be a conservative indication of the potential for leakage during accident conditions when containment integrity is important. Prior to the failed Type A test in September 1990, there was a steam leak in the steam generator manway, as described in the licensee's March 24, 1998, submittal.

As discussed in the March 24, 1998, submittal, the licensee has equipment and procedures in place for detecting and evaluating steam generator manway leakage. While these procedures do not require shutdown if a manway leaks, long-term operation with a leaking manway would be deleterious to the steam generator structure in the vicinity of the leak and, thus, would not be a desirable condition to continue.

The March 24, 1998, submittal states that walkdowns will be performed "as the unit approaches normal operating parameters" with the steam generator pressurized to approximately 1000 psig which will include inspections for manway leakage.

The staff considers it acceptable to defer performance of the scheduled Type A test for 10 months. This is based on licensee surveillances which will be performed during startup and the design of the steam generator manway which makes it likely that steam leakage through the manway will be a precursor to a condition which would result in failure of a Type A test. Such leakage is detectable and the licensee states that procedures are in place to evaluate such leakage.

## 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 surveillance requirements. 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 (63 FR 17036). 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: Richard Lobel

Date: May 8, 1998