

May 1, 1987

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

Mr. Dennis L. Farrar
Director of Nuclear Licensing
Post Office Box 767
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DISTRIBUTION

Docket File	NRC PDR	Local PDR
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E. Butcher	N. Thompson	ACRS (10)
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Dear Mr. Farrar:

The Commission has issued the enclosed Amendment No. 7 to Facility Operating License No. NPF-37 and Amendment No. 7 to Facility Operating License No. NPF-66 for the Byron Station, Unit Nos. 1 and 2, respectively. The amendments consist of changes to the Technical Specifications in response to your application transmitted by letter dated January 6, 1987, supplemented March 4 and March 23, 1987.

These amendments revise Design Features Section 5.3.1 on page 5-4 to allow for the reconstitution of fuel assemblies by insertion of filler rods fabricated from Zircaloy-4 or stainless steel or by leaving vacancies.

A copy of the related Safety Evaluation is enclosed. A Notice of Issuance will be included in the Commission's next regular bi-weekly Federal Register notice.

Sincerely,

Original Signed by
Leonard N. Olshan, Project Manager
Project Directorate III-2
Division of Reactor Projects - III, IV,
V and Special Projects

Enclosures:

1. Amendment No.7 to NPF-37
2. Amendment No.7 to NPF-66
3. Safety Evaluation

cc: w/enclosures

See next page

*Previously Concurred

LA:PDIII-2 *LO* PD III-2:PM
 CVogan *w* LOlshan
 5/1/87 5/1/87

PD III-2
DM
 Duller
 5/1/87

No legal objection, as corrected
 OGC-Bethesda*
 SLewis
 4/29/87

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 P PDR

Mr. Dennis L. Farrar
Commonwealth Edison Company

Byron Station
Units 1 and 2

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

COMMONWEALTH EDISON COMPANY

DOCKET NO. STN 50-454

BYRON STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 7
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 January 6, 1987, supplemented March 4 and March 23, 1987, 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:

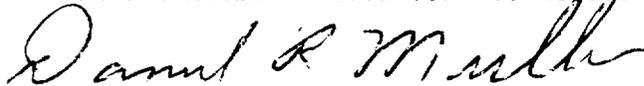
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(2) Technical Specifications

The Technical Specifications contained in Appendix (NUREG-1113), as revised through Amendment No. 7 and revised by Attachment 2 to NPF-60, 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.

FOR THE NUCLEAR REGULATORY COMMISSION



Daniel R. Muller, Director
Project Directorate III-2
Division of Reactor Projects - III, IV,
V and Special Projects

Enclosure:
Changes to the Technical
Specifications

Date of Issuance: May 1, 1987



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

COMMONWEALTH EDISON COMPANY

DOCKET NO. STN 50-455

BYRON STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 7
License No. NPF-66

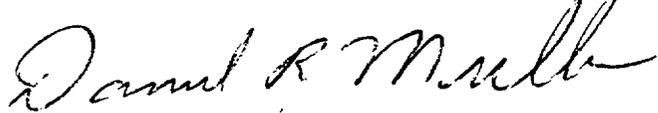
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Commonwealth Edison Company (the licensee) dated January 6, 1987, supplemented March 4 and March 23, 1987, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (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 as revised through Amendment No. 7 and the Environment 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.

FOR THE NUCLEAR REGULATORY COMMISSION



Daniel R. Muller, Director
Project Directorate III-2
Division of Reactor Projects - III, IV,
V and Special Projects

Enclosure:
Changes to the Technical
Specifications

Date of Issuance: May 1, 1987



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

ATTACHMENT TO LICENSE AMENDMENT NO. 7 AND 7
FACILITY OPERATING LICENSE NOS. NPF-37 AND NPF-66
DOCKET NOS. STN-50-454 AND STN 50-455

Revise Appendix A as follows:

Remove Pages

5-3*

5-4

Insert Pages

5-3*

5-4

* Overleaf page added for convenience

DESIGN FEATURES

5.3 REACTOR CORE

FUEL ASSEMBLIES

5.3.1 The core shall contain 193 fuel assemblies with each fuel assembly containing 264 fuel rods clad with Zircaloy-4, except that limited substitution of fuel rods by filler rods consisting of Zircaloy-4 or stainless steel or by vacancies may be made if justified by a cycle specific reload analysis. Each fuel rod shall have a nominal active fuel length of 144 inches. The initial core loading shall have a maximum enrichment of less than 3.20 weight percent U-235. Reload fuel shall be similar in physical design to the initial core loading and shall have a maximum enrichment of 4.0 weight percent U-235.

CONTROL ROD ASSEMBLIES

5.3.2 The core shall contain 53 full-length and no part-length control rod assemblies. The full-length control rod assemblies shall contain a nominal 142 inches of absorber material. All control rods shall be hafnium, clad with stainless steel tubing.

5.4 REACTOR COOLANT SYSTEM

DESIGN PRESSURE AND TEMPERATURE

5.4.1 The Reactor Coolant System is designed and shall be maintained:

- a. In accordance with the Code requirements specified in Section 5.2 of the FSAR, with allowance for normal degradation pursuant to the applicable Surveillance Requirements,
- b. For a pressure of 2485 psig, and
- c. For a temperature of 650°F, except for the pressurizer which is 680°F.

VOLUME

5.4.2 The total water and steam volume of the Reactor Coolant System is 12,257 cubic feet at a nominal T_{avg} of 588.4°F.

5.5 METEOROLOGICAL TOWER LOCATION

5.5.1 The meteorological tower shall be located as shown on Figure 5.1-1.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 7 TO FACILITY OPERATING LICENSE NO. NPF-37
AND AMENDMENT NO. 7 TO FACILITY OPERATING LICENSE NO. NPF-66

COMMONWEALTH EDISON COMPANY

BYRON STATION, UNITS 1 AND 2

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

INTRODUCTION

In a letter dated January 6, 1987 the licensee requested a change to Technical Specification Section 5.3.1, Design Features - Fuel Assemblies. The change would allow for reconstitution of fuel assemblies by insertion of filler rods fabricated from Zircaloy-4 or stainless steel or by leaving vacancies.

The licensee's submittals of March 4 and March 23, 1987, were made as a result of NRC staff request to clarify the original submittal and do not contain substantive changes.

EVALUATION

The intent of the proposed change is to allow for the reduction in the number of fuel rods per assembly in cases where leaking fuel rods can be identified and replaced with Zircaloy-4 or stainless steel rods or vacancies. Replacement of leaking fuel rods with other fuel rods involves handling of additional fuel assemblies and has not been used in Westinghouse reactors to date. Replacement of leaking fuel rods will permit utilization of the energy remaining in fuel assemblies containing defective fuel rods.

In general, substitution of a limited number of fuel rods with filler rods or water holes has a negligible effect on core physics parameters and consequently on the safety analysis. The licensee states that in each reload core the reconstituted assemblies will be evaluated using approved methods. The reload analysis will ensure that the safety criteria and design limits, including peaking factors and core average linear heat rate effects, are not exceeded. Thus, the final safety evaluation of implementation of substitutions allowed by this change will be made as part of the reload analysis performed for the affected cycle.

We had earlier approved a similar request at another facility for a change to Technical Specification 5.3.1 with slightly different wording than proposed by the licensee which we prefer and wish to standardize. This wording is "The reactor core shall contain 193 fuel assemblies with each fuel assembly normally containing 264 fuel rods clad with Zircaloy-4, except that limited substitution of fuel rods by filler rods consisting of Zircaloy-4 or stainless steel or by vacancies may be made if justified by a cycle specific reload analysis." This wording was discussed with the Commonwealth Edison staff and they orally agreed on February 4, 1987. With this modification, we find the proposed change acceptable.

The licensee's proposal to reconstitute nuclear fuel on site posed the possibility of undue occupational radiation exposure. By letter dated February 11, 1987 we asked several questions concerning radiation protection provisions for these operations. The licensee responded by letter dated March 4, 1987. The licensee's planned radiation protection coverage includes continuous health physics technician coverage, health physics supervision review each shift, alarming radiation and contamination equipment, underwater dose rate equipment, enhanced contamination control measures and minimization of non-essential observers. The reactor will be subcritical for approximately 30 days before reconstitution starts. We reviewed the response and concluded that generally the appropriate steps were being taken to keep occupational exposure as low as is reasonably achievable (ALARA).

However, experience elsewhere suggested that these operations might need special precautions to control radiologically "hot" particles. This potential problem was discussed with the licensee and the licensee's response was documented by letter dated March 23, 1987. Enclosed with the letter was a list of radiation guidelines to be followed during reconstitution activities. These guidelines include surveying workers for hot particles prior to removing the outer and inner protective clothing, and checking worker outer protection clothing for particles whenever work is going on and items are being handled or put into or taken out of the fuel pool. We have reviewed this response and conclude that the licensee is utilizing the experience at San Onofre and otherwise taking the appropriate actions to control possible radioactive particles. Thus, we conclude that the radiation protection provisions are appropriate for compliance with the criterion "as low as is reasonably achievable" (ALARA) and, therefore, are acceptable.

Because the limited substitution of Zircaloy-4 or stainless steel rods of vacancies for fuel rods is not expected to have a significant impact on plant safety, because the radiation protection provisions while performing reconstitution are appropriate for compliance with ALARA, and because a cycle specific evaluation will be performed to justify any such substitutions with an acceptable evaluation model, we find the proposed Technical Specification change for Byron, Units 1 and 2, with the modifications as discussed above, acceptable.

ENVIRONMENTAL CONSIDERATION

These amendments involve a change in the installation or use of the facilities components located within the restricted areas as defined in 10 CFR 20. The staff has determined that these 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 these amendments involve no significant hazards consideration and there has been no public comment on such finding. Accordingly, these amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR Sec 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 these amendments.

CONCLUSION

We have 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, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Dated: May 1, 1987

PRINCIPAL CONTRIBUTORS:

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