



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

November 28, 1989

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

Mr. Thomas J. Kovach  
Nuclear Licensing Manager  
Commonwealth Edison Company  
Post Office Box 767  
Chicago, Illinois 60690

Dear Mr. Kovach:

SUBJECT: TECHNICAL SPECIFICATION AMENDMENTS RELATED TO CHANGING THE MOST  
LIMITING INHALATION PATHWAY (TAC NOS. 73422, 73423, 37424, AND 73425)

Re: Dresden Nuclear Power Station, Unit Nos. 2 and 3 and Quad Cities  
Station, Unit Nos. 1 and 2

The Commission has issued the enclosed Amendment No. 109 to Provisional  
Operating License No. DPR-19 for Dresden Unit 2, Amendment No. 104 to Facility  
Operating License No. DPR-25 for Dresden Unit 3, and Amendment Nos. 122 and 118  
to Facility Operating License Nos. DPR-29 and DPR-30 for Quad Cities Units 1  
and 2, respectively. These amendments are in response to your application dated  
June 12, 1989.

These amendments change the Technical Specification Bases to identify the most  
limiting pathway due to gaseous effluents to a child via the inhalation pathway  
rather than from an infant via the cow-milk-infant-pathway.

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

Sincerely,

*151*

Thierry M. Ross, Project Manager  
Project Directorate III-2  
Division of Reactor Projects - III,  
IV, V and Special Projects

*151*

Byron L. Siegel, Project Manager  
Project Directorate III-2  
Division of Reactor Projects - III,  
IV, V and Special Projects

Enclosures:

- 1. Amendment No. 109 to License No. DPR-19
- 2. Amendment No. 104 to License No. DPR-25
- 3. Amendment No. 122 to License No. DPR-29
- 4. Amendment No. 118 to License No. DPR-30
- 5. Safety Evaluation

cc w/enclosures:  
See next page

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OC/LFMB	GCunningham	(DRESDEN AMENDMENT 508)

*w/ change to 508*

PDIII-2  
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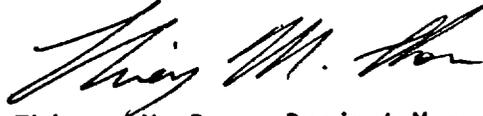
Mr. Thomas J. Kovach

- 2 -

November 28, 1989

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

Sincerely,



Thierry M. Ross, Project Manager  
Project Directorate III-2  
Division of Reactor Projects - III,  
IV, V and Special Projects



Byron L. Siegel, Project Manager  
Project Directorate III-2  
Division of Reactor Projects - III,  
IV, V and Special Projects

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License No. DPR-29
4. Amendment No. 118 to  
License No. DPR-30
5. Safety Evaluation

cc w/enclosures:  
See next page

Mr. Thomas J. Kovach  
Commonwealth Edison Company

Dresden Nuclear Power Station  
Units 2 and 3

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Illinois Department of Nuclear Safety  
Office of Nuclear Facility Safety  
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Springfield, Illinois 62704

Mr. Thomas J. Kovach  
Commonwealth Edison Company

Quad Cities Nuclear Power Station  
Units 1 and 2

cc:

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

COMMONWEALTH EDISON COMPANY

DOCKET NO. 50-237

DRESDEN NUCLEAR POWER STATION, UNIT NO. 2

AMENDMENT TO PROVISIONAL OPERATING LICENSE

Amendment No. 109  
License No. DPR-19

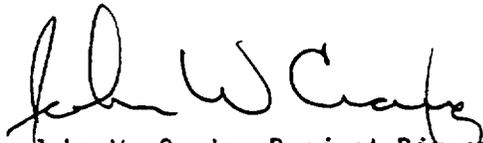
1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by the Commonwealth Edison Company (the licensee) dated June 12, 1989 complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules 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.

B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 122, 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 to be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION



John W. Craig, Project Director  
Project Directorate III-2  
Division of Reactor Projects - III,  
IV, V and Special Projects

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: November 28, 1989

ATTACHMENT TO LICENSE AMENDMENT NO. 122

FACILITY OPERATING LICENSE NO. DPR-29

DOCKET NO. 50-254

Revise the Appendix A Technical Specifications by removing the page identified below and inserting the attached page. The revised page is identified by the captioned amendment number and contains marginal lines indicating the area of change.

REMOVE

3.8/4.8-22

INSERT

3.8/4.8-22

QUAD-CITIES  
DPR-29  
BASES

3.8/4.8 Limiting Conditions for Operation and Surveillance Requirement Bases

3.8/4.8.A.1 GASEOUS EFFLUENTS - DOSE

This specification is provided to ensure that the dose at the unrestricted area boundary from gaseous effluents from the units on the site will be within the annual dose limits of 10 CFR Part 20 for unrestricted areas. The annual dose limits are the doses associated with the concentrations of 10 CFR Part 20, Appendix B, Table II. These limits provide reasonable assurance that radioactive material discharged in gaseous effluents will not result in the exposure of an individual in an unrestricted area to annual average concentrations exceeding the limits specified in Appendix B, Table II of 10 CFR Part 20 (10 CFR Part 20.106(b)). The specified release rate limits restrict, at all times, the corresponding gamma and beta dose rates above background to an individual at or beyond the unrestricted area boundary to less than or equal to 500 mrem/year to the total body or to not less than or equal to 3000 mrem/year to the skin. These release rate limits also restrict, at all times, the corresponding thyroid dose rate above background to a child via the inhalation pathway to less than or equal to 1500 mrem/year. For purposes of calculating doses resulting from airborne releases the main chimney is considered to be an elevated release point, and the reactor vent stack is considered to be a mixed mode release point.

3.8/4.8.A.2 DOSE, NOBLE GASES

This specification is provided to implement the requirements of Sections II.B, III.A and IV.A of Appendix I, 10 CFR Part 50. The Limiting Condition for Operation implements the guides set forth in Section II.B of Appendix I. The statements provide the required operating flexibility and at the same time implement the guides set forth in Section IV.A of Appendix I to assure that the releases of radioactive material in gaseous effluents will be kept "as low as is reasonably achievable." The Surveillance Requirements implement the requirements in Section III.A of Appendix I that conformance with the guides of Appendix I is to be shown by calculational procedures based on models and data such that the actual exposure of an individual through the appropriate pathways is unlikely to be substantially underestimated. The dose calculations established in the ODCM for calculating the doses due to the actual release rates of radioactive noble gases in gaseous effluents will be consistent with the methodology provided in Regulatory Guide 1.109, "Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I," Revision 1, October 1977 and Regulatory Guide 1.111, "Methods for Estimating Atmospheric Transport and Dispersion of Gaseous Effluents in Routine Releases from Light-Water Cooled Reactors", Revision 1, July 1977. The ODCM equations provide for determining the air doses at the unrestricted boundary based upon the historical average atmospheric conditions. NUREG-0133 provides methods for dose calculations consistent with Regulatory Guides 1.109 and 1.111.



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

COMMONWEALTH EDISON COMPANY

AND

IOWA-ILLINOIS GAS AND ELECTRIC COMPANY

DOCKET NO. 50-265

QUAD CITIES NUCLEAR POWER STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 118  
License No. DPR-30

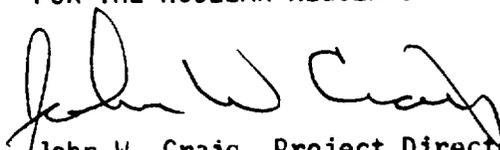
1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Commonwealth Edison Company (the licensee) dated June 12, 1989, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules 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-30 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 118, 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 to be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION



John W. Craig, Project Director  
Project Directorate III-2  
Division of Reactor Projects - III,  
IV, V and Special Projects

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: November 28, 1989

ATTACHMENT TO LICENSE AMENDMENT NO. 118

FACILITY OPERATING LICENSE NO. DPR-30

DOCKET NO. 50-265

Revise the Appendix A Technical Specifications by removing the page identified below and inserting the attached page. The revised page is identified by the captioned amendment number and contains marginal lines indicating the area of change.

REMOVE

3.8/4.8-15

INSERT

3.8/4.8-15

QUAD-CITIES  
DPR-30  
BASES

3.8/4.8.A.1 GASEOUS EFFLUENTS - DOSE

This specification is provided to ensure that the dose at the unrestricted area boundary from gaseous effluents from the units on the site will be within the annual dose limits of 10 CFR Part 20 for unrestricted areas. The annual dose limits are the doses associated with the concentrations of 10 CFR Part 20, Appendix B, Table II. These limits provide reasonable assurance that radioactive material discharged in gaseous effluents will not result in the exposure of an individual in an unrestricted area to annual average concentrations exceeding the limits specified in Appendix B, Table II of 10 CFR Part 20 (10 CFR Part 20.106(b)). The specified release rate limits restrict, at all times, the corresponding gamma and beta dose rates above background to an individual at or beyond the unrestricted area boundary to less than or equal to 500 mrem/year to the total body or to not less than or equal to 3000 mrem/year to the skin. These release rate limits also restrict, at all times, the corresponding thyroid dose rate above background to a child via the inhalation pathway to less than or equal to 1500 mrem/year. For purposes of calculating doses resulting from airborne releases the main chimney is considered to be an elevated release point, and the reactor vent stack is considered to be a mixed mode release point.

3.8/4.8.A.2 DOSE, NOBLE GASES

This specification is provided to implement the requirements of Sections II.B, III.A and IV.A of Appendix I, 10 CFR Part 50. The Limiting Condition for Operation implements the guides set forth in Section II.B of Appendix I. The statements provide the required operating flexibility and at the same time implement the guides set forth in Section IV.A of Appendix I to assure that the releases of radioactive material in gaseous effluents will be kept "as low as is reasonably achievable." The Surveillance Requirements implement the requirements in Section III.A of Appendix I that conformance with the guides of Appendix I is to be shown by calculational procedures based on models and data such that the actual exposure of an individual through the appropriate pathways is unlikely to be substantially underestimated. The dose calculations established in the ODCM for calculating the doses due to the actual release rates of radioactive noble gases in gaseous effluents will be consistent with the methodology provided in Regulatory Guide 1.109, "Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I," Revision 1, October 1977 and Regulatory Guide 1.111, "Methods for Estimating Atmospheric Transport and Dispersion of Gaseous Effluents in Routine Releases from Light-Water Cooled Reactors", Revision 1, July 1977. The ODCM equations provide for determining the air doses at the unrestricted boundary based upon the historical average atmospheric conditions. NUREG-0133 provides methods for dose calculations consistent with Regulatory Guides 1.109 and 1.111.



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COMMONWEALTH EDISON COMPANY

AND

IOWA-ILLINOIS GAS AND ELECTRIC COMPANY

DOCKET NO. 50-254

QUAD CITIES NUCLEAR POWER STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 122  
License No. DPR-29

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Commonwealth Edison Company (the licensee) dated June 12, 1989, 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-29 is hereby amended to read as follows:



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
SUPPORTING AMENDMENT NO. 122 TO FACILITY OPERATING LICENSE NO. DPR-29  
AMENDMENT NO. 118 TO FACILITY OPERATING LICENSE NO. DPR-30  
AMENDMENT NO. 109 TO PROVISIONAL OPERATING LICENSE NO. DPR-19  
AMENDMENT NO. 104 TO FACILITY OPERATING LICENSE NO. DPR-25  
COMMONWEALTH EDISON COMPANY  
QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2  
DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3  
DOCKET NOS. 50-254/265/237 AND 249

1.0 INTRODUCTION

By letters dated June 25, 1987 and July 27, 1987, the staff in its enclosed Safety Evaluations accepted revisions to the Offsite Dose Calculation Manual (ODCM) for both the Dresden and Quad Cities Stations, respectively. In these Safety Evaluations, the staff stated that the dose rate calculations should be made for the thyroid of a child via the inhalation pathway, instead of for an infant via the cow-milk-infant pathway. The staff accepted the inhalation pathway calculations used with certain conditions, one of which was that Commonwealth Edison Company (CECo) would change the inhalation pathway to that of a child in the next revision to the ODCM. Consequently, CECo submitted an amendment application dated June 12, 1989 with the Technical Specifications changes necessary to comply with the staff's evaluation of CECo's ODCMs for the Dresden and Quad Cities Stations contained in the above referenced documents.

2.0 EVALUATION

The current Technical Specifications (TS) for both Dresden and Quad Cities require that release rates be restricted to less than or equal to 1500 mrem/year thyroid dose rate above background to an infant via the cow-milk-infant pathway. The proposed Technical Specifications retain the dose rate of 1500 mrem/year; however, the critical receptor of a child via the inhalation pathway in lieu of an infant via the cow-milk-infant pathway is used.

The proposed changes to the Technical Specification Bases are consistent with the "Radiological Effluent Technical Specifications for Boiling Water Reactors" (NUREG 0473) which identifies inhalation as the most limiting pathway with the child's thyroid as the critical organ instead of any organ of an infant. Since this pathway is more limiting than that

contained in current TS, CECO determined that the dose calculation should be based on the child's inhalation pathway. Following the acceptance of this amendment, CECO committed to alter the computer model for calculating dose to the more limiting receptor pathway. CECO's amendment also provided clarification of TS wording related to permissible dose rate via the inhalation pathway.

The proposed changes are consistent with the staff's position contained in Safety Evaluations transmitted by letters dated June 25, 1987 and July 27, 1987 to CECO regarding approval of Revisions 11 and 11A of the ODCM for the Dresden Nuclear Power Station and Revision 11 of the ODCM for the Quad Cities Station, respectively. These Safety Evaluations accepted the ODCMs, provided the inhalation pathway due to gaseous effluents would be changed to that of a child.

Since the proposed amendments use a more limiting receptor than currently in the Technical Specification, and since they are consistent with staff guidance contained in the latest revision to NUREG-0473, the staff concludes these proposed amendments are acceptable.

### 3.0 ENVIRONMENTAL CONSIDERATION

These amendments involve changes to surveillance and operability requirements for ECCS equipment located within the restricted area as defined in 10 CFR Part 20. The 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 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 Part 51.22(c)(9). Pursuant to 10 CFR Part 51.22(b) no environmental impact statement nor environmental assessment need be prepared in connection with the issuance of these amendments.

### 4.0 CONCLUSION

The staff 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 these amendments will not be inimical to the common defense and security nor to the health and safety of the public.

Principal Contributor: Byron Siegel and Thierry Ross

Dated: November 28, 1989