

UNITED STATES NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

June 14, 1995

Mr. D. L. Farrar Manager, Nuclear Regulatory Services Commonwealth Edison Company Executive Towers West III 1400 Opus Place, Suite 500 Downers Grove, IL 60515

SUBJECT: ISSUANCE OF AMENDMENTS RELATED TO TUSP SECTION 5.0

(TAC NOS. M90417, M90418, M90419 AND M90420)

Dear Mr. Farrar:

The Commission has issued the enclosed Amendment No. 135 to Facility Operating License No. DPR-19 and Amendment No. 129 to Facility Operating License No. DPR-25 for the Dresden Nuclear Power Station, Units 2 and 3, respectively; and Amendment No. 156 to Facility Operating License No. DPR-29 and Amendment No. 152 to Facility Operating License No. DPR-30 for the Quad Cities Nuclear Power Station, Units 1 and 2, respectively. The amendments are in response to your application dated December 15, 1993, as supplemented April 21, 1995.

As a result of findings by a Diagnostic Evaluation Team inspection performed by the NRC staff at the Dresden Nuclear Power Station in 1987, Commonwealth Edison Company (ComEd) made a decision that both the Dresden Nuclear Power Station and sister site Quad Cities Nuclear Power Station, needed attention focused on the existing custom Technical Specifications (TS).

Commonwealth Edison Company made the decision to initiate a Technical Specification Upgrade Program (TSUP) for both Dresden and Quad Cities. Commonwealth Edison Company evaluated the current TS for both Dresden and Quad Cities against the Standard Technical Specifications (STS) contained in NUREG-0123, "Standard Technical Specifications General Electric Plants, BWR/4." Commonwealth Edison Company's evaluation identified numerous potential improvements such as clarifying requirements, changing TS to make them more understandable and to eliminate interpretation, and deleting requirements that are no longer considered current with industry practice. As a result of the evaluation, ComEd has elected to upgrade both the Dresden and Quad Cities TS to the STS contained in NUREG-0123.

The TSUP for Dresden and Quad Cities is not a complete adoption of the STSs. The TSUP focuses on (1) integrating additional information such as equipment operability requirements during shutdown conditions, (2) clarifying requirements such as limiting conditions for operations and action statements utilizing STS terminology, (3) deleting superseded requirements and modifications to the TSs based on the licensee's responses to Generic Letters (GLs), and (4) relocating specific items to more appropriate TS locations.

Q-1



50-237/249/ 50-254/265 This application upgrades only Section 5.0 (Design Features) of the Dresden and Quad Cities TS.

The review guidance to be used by the NRC staff in the review of the TSUP is described in Section 2 of the enclosed Safety Evaluation (SE). In the staff's review of the proposed amendments each change is evaluated and all deviations between the proposed TS and the STS are justified in detail in the SE. In no case did the licensee propose a relaxation of the licensing basis as stated in the Updated Final Safety Analysis Reports (UFSAR) for Dresden or Quad Cities.

Based on discussions between ComEd and the staff, it has been mutually agreed upon that the NRC will review the sections of TSUP as they are submitted and provide ComEd an amendment for each submittal. Once all of the TSUP sections have been reviewed and the amendments issued, it is our understanding that ComEd will make one final submittal addressing any changes that may be required as a result of problems uncovered during the course of this effort. Upon receipt and review of this final submittal, the staff will issue a final amendment which addresses any remaining open items and any changes or corrections to the previous amendments. The applicable TSUP TS will be issued with each amendment and will become effective immediately, but shall be implemented no later than December 31, 1995, for Dresden and June 30, 1996, for Quad Cities.

The Notice of Issuance will be included in the Commission's biweekly $\underline{\mathsf{Federal}}$ Register notice.

Sincerely,

John F. Stang Senior Project Manager Project Directorate III-2

Division of Reactor Projects - III/IV Office of Nuclear Reactor Regulation

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

Enclosures: 1. Amendment No. 135 to DPR-19

2. Amendment No. 129 to DPR-25

3. Amendment No. 156 to DPR-29

4. Amendment No. 152 to DPR-30

5. Safety Evaluation

cc w/encls: see next page

This application upgrades only Section 5.0 (Design Features) of the Dresden and Quad Cities TS.

The review guidance to be used by the NRC staff in the review of the TSUP is described in Section 2 of the enclosed Safety Evaluation (SE). In the staff's review of the proposed amendments each change is evaluated and all deviations between the proposed TS and the STS are justified in detail in the SE. In no case did the licensee propose a relaxation of the licensing basis as stated in the Updated Final Safety Analysis Reports (UFSAR) for Dresden or Quad Cities.

Based on discussions between ComEd and the staff, it has been mutually agreed upon that the NRC will review the sections of TSUP as they are submitted and provide ComEd an amendment for each submittal. Once all of the TSUP sections have been reviewed and the amendments issued, it is our understanding that ComEd will make one final submittal addressing any changes that may be required as a result of problems uncovered during the course of this effort. Upon receipt and review of this final submittal, the staff will issue a final amendment which addresses any remaining open items and any changes or corrections to the previous amendments. The applicable TSUP TS will be issued with each amendment and will become effective immediately, but shall be implemented no later than December 31, 1995, for Dresden and June 30, 1996, for Quad Cities.

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Sincerely,

Original signed by:

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

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

Enclosures: 1.

Amendment No. 135 to DPR-19 Amendment No. 129 to DPR-25 2.

3. Amendment No. 156 to DPR-29

Amendment No. 152 to DPR-30

Safety Evaluation

cc w/encls: see next page

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D. Skav OC/LFDCB OGC C. Moore (2)

ACRS (4) P. Hiland. RIII G. Hill (8) C. Grimes

C. Miller, TERB R. Jones

E. Adensam (E-mail)

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DOCUMENT NAME: G:\CMVLJR\DRESDEN\DRQ90417.AMD

* See previous concurrence

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D. L. Farrar Commonwealth Edison Company

cc:

Michael I. Miller, Esquire Sidley and Austin One First National Plaza Chicago, Illinois 60603

Mr. Thomas P. Joyce Site Vice President Dresden Nuclear Power Station 6500 North Dresden Road Morris, Illinois 60450-9765

Mr. D. Bax Station Manager, Unit 2 Dresden Nuclear Power Station 6500 North Dresden Road Morris, Illinois 60450-9765

Mr. J. Heffley Station Manager, Unit 3 Dresden Nuclear Power Station 6500 North Dresden Road Morris, Illinois 60450-9765

U.S. Nuclear Regulatory Commission Resident Inspectors Office Dresden Station 6500 North Dresden Road Morris, Illinois 60450-9766

Regional Administrator U.S. NRC, Region III 801 Warrenville Road Lisle, Illinois 60532-4351

Illinois Department of Nuclear Safety Office of Nuclear Facility Safety 1035 Outer Park Drive Springfield, Illinois 62704

Chairman Grundy County Board Administration Building 1320 Union Street Morris, Illinois 60450 Dresden Nuclear Power Station Unit Nos. 2 and 3 Quad Cities Nuclear Power Station Unit Nos. 1 and 2

Mr. Stephen E. Shelton Vice President Iowa-Illinois Gas and Electric Company P. O. Box 4350 Davenport, Iowa 52808

Mr. L. William Pearce Station Manager Quad Cities Nuclear Power Station 22710 206th Avenue North Cordova, Illinois 61242

U.S. Nuclear Regulatory Commission Quad Cities Resident Inspectors Office 22712 206th Avenue North Cordova, Illinois 61242

Chairman
Rock Island County Board
of Supervisors
1504 3rd Avenue
Rock Island County Office Bldg.
Rock Island, Illinois 61201



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. 135 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 December 15, 1993, as supplemented April 21, 1995, 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:

(2) <u>Technical Specifications</u>

The Technical Specifications contained in Appendix A, as revised through Amendment No. 135 , 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 no later than December 31, 1995.

FOR THE NUCLEAR REGULATORY COMMISSION

John F. Stang, Senior 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: June 14, 1995



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. 129 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 December 15, 1993, as supplemented April 21, 1995, 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. 129, 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 no later than December 31, 1995.

FOR THE NUCLEAR REGULATORY COMMISSION

John F. Stand Senior 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: June 14, 1995

ATTACHMENT TO LICENSE AMENDMENT NOS. 135 AND 129 FACILITY OPERATING LICENSE NOS. DPR-19 AND DPR-25 DOCKET NOS. 50-237 AND 50-249

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.

UNIT 2 REMOVE	UNIT 3 <u>REMOVE</u>	INSERT
5-1	5-1	5-1
5-2	5-2	5-2
-	-	5-3
-	-	5-4
-	-	5-5
-	-	5-6
-	-	5-7
-	-	5-8

5.0 DESIGN FEATURES

5.1 SITE

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5.1.A [INTENTIONALLY BLANK]

Low Population Zone

5.1.B The low population zone shall be as shown in Figure 5.1.B-1.

Radioactive Gaseous Effluents

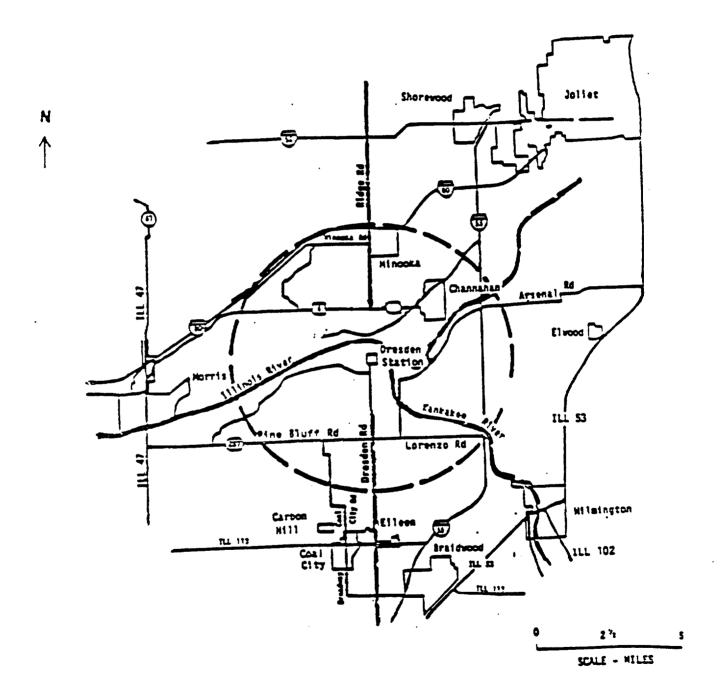
5.1.C Information regarding radioactive gaseous effluents shall be located in the OFFSITE DOSE CALCULATION MANUAL.

Radioactive Liquid Effluents

5.1.D Information regarding radioactive liquid effluents shall be located in the OFFSITE DOSE CALCULATION MANUAL.

FIGURE 5.1.A-1 [INTENTIONALLY BLANK]

FIGURE 5.1.B-1
LOW POPULATION ZONE



5.2 CONTAINMENT

Configuration

5.2.A The primary containment is a steel lined concrete structure consisting of a drywell and suppression chamber. The drywell is a steel structure composed of a spherical lower portion, a cylindrical middle portion, and a hemispherical top head. The drywell is attached to the suppression chamber through a series of downcomer vents. The drywell has a minimum free air volume of 158,236 cubic feet. The suppression chamber has an air region of 116,300 to 112,800 cubic feet and a water region of 116,300 to 119,800 cubic feet.

Design Temperature and Pressure

- 5.2.B The primary containment is designed and shall be maintained for:
 - 1. Maximum internal pressure:

62 psig.

2. Maximum internal temperature:

drywell 281°F.

- suppression pool 281°F.
- 3. Maximum external pressure:

drywell 2 psig.

suppression pool 1 psig.

Secondary Containment

5.2.C The secondary containment consists of the Reactor Building and a portion of the main steam tunnel and has a minimum free volume of 5,760,000 cubic feet.

5.3 REACTOR CORE

Fuel Assemblies

5.3.A The reactor core shall contain 724 fuel assemblies. Each assembly consists of a matrix of Zircaloy clad fuel rods with an initial composition of natural or slightly enriched uranium dioxide as fuel material and water rods. Limited substitutions of zirconium alloy or stainless steel filler rods for fuel rods, in accordance with NRC-approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC staff-approved codes and methods, and shown by tests or analyses to comply with all fuel safety design bases. A limited number of lead test assemblies that have not completed representative testing may be placed in non-limiting core regions.

Control Rod Assemblies

5.3.B The reactor core shall contain 177 cruciform shaped control rod assemblies. The control material shall be boron carbide powder (B_4C) and/or hafnium metal. The control rod assembly shall have a nominal axial absorber length of 143 inches.

5.4 REACTOR COOLANT SYSTEM

Design Pressure and Temperature

- 5.4.A The reactor coolant system is designed and shall be maintained:
 - In accordance with the code requirements specified in Section 5 of the UFSAR, with allowance for normal degradation pursuant to the applicable Surveillance Requirements,
 - 2. For a pressure and temperature of:
 - a. 1175 psig at 565°F on the suction side of the recirculation pump.
 - b. 1450 psig at 575°F from the recirculation pump discharge to the outlet side of the discharge shutoff valve.
 - c. 1325 psig at 580°F from the discharge shutoff valve to the jet pumps.

Volume

5.4.B The total water and steam volume of the reactor vessel and recirculation system is approximately 14,626 cubic feet at 68°F.

5.5 [INTENTIONALLY BLANK]

5.5.A [INTENTIONALLY BLANK]

5.6 FUEL STORAGE

Criticality

- 5.6.A The spent fuel storage racks are designed and shall be maintained with:
 - 1. A k_{eff} equivalent to ≤0.95 when flooded with unborated water, including all calculational uncertainties and biases as described in Section 9.1 of the UFSAR.
 - 2. A nominal 6.30 inch center-to-center distance between fuel assemblies placed in the storage racks.

<u>Drainage</u>

5.6.B The spent fuel storage pool is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 589' 2.5".

Capacity

5.6.C The spent fuel storage pool is designed and shall be maintained with a storage capacity limited to no more than 3537 fuel assemblies.



UNITED STATES NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

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. 156 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 December 15, 1993, as supplemented April 21, 1995, 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:

B. <u>Technical Specifications</u>

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 156, 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 no later than June 30, 1996.

FOR THE NUCLEAR REGULATORY COMMISSION

Robert M. Pulsifer, 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: June 14, 1995



UNITED STATES NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

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. 152 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 December 15, 1993, as supplemented April 21, 1995, 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. <u>Technical Specifications</u>

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 152, 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 no later than June 30, 1996.

FOR THE NUCLEAR REGULATORY COMMISSION

Robert M. Pulsifer, 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: June 14, 1995

ATTACHMENT TO LICENSE AMENDMENT NOS. 156 AND 152

FACILITY OPERATING LICENSE NOS. DPR-29 AND DPR-30

DOCKET NOS. 50-254 AND 50-265

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.

UNIT 1 <u>REMOVE</u>	UNIT 2 <u>REMOVE</u>	INSERT
5.0-1	5.0-1	5-1
5.0-2	-	5-2
-	-	5-3
-	-	5-4
-	-	5-5
-	-	5-6
-	-	5-7
-	-	5-8

5.0 **DESIGN FEATURES**

5.1 SITE

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5.1.A [INTENTIONALLY BLANK]

Low Population Zone

5.1.B The low population zone shall be as shown in Figure 5.1.B-1.

Radioactive Gaseous Effluents

Information regarding radioactive gaseous effluents shall be located in the OFFSITE 5.1.C DOSE CALCULATION MANUAL.

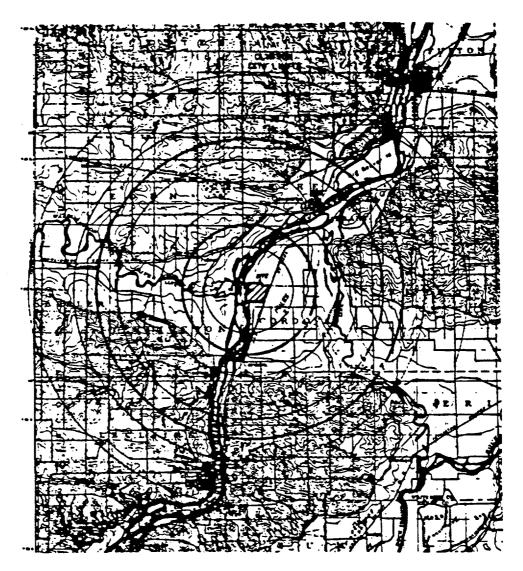
Radioactive Liquid Effluents

5.1.D Information regarding radioactive liquid effluents shall be located in the OFFSITE DOSE CALCULATION MANUAL.

5-1

FIGURE 5.1.A-1 IINTENTIONALLY BLANKI

FIGURE 5.1.B-1 LOW POPULATION ZONE



POPULATION CENTER DISTANCE, 7 MILE RADIUS LOW POPULATION ZONE, 3 MILE RADIUS

5.2 CONTAINMENT

Configuration

5.2.A The primary containment is a steel lined concrete structure consisting of a drywell and suppression chamber. The drywell is a steel structure composed of a spherical lower portion, a cylindrical middle portion, and a hemispherical top head. The drywell is attached to the suppression chamber through a series of downcomer vents. The drywell has a minimum free air volume of 158,236 cubic feet. The suppression chamber has an air region of 120,800 to 117,300 cubic feet and a water region of 111,500 to 115,000 cubic feet.

Design Temperature and Pressure

- 5.2.B The primary containment is designed and shall be maintained for:
 - 1. Maximum internal pressure:

56 psig.

2. Maximum internal temperature:

drywell 281°F.

- suppression pool 281°F.
- 3. Maximum external pressure:

drywell 2 psig.

suppression pool 1 psig.

Secondary Containment

5.2.C The secondary containment consists of the Reactor Building and a portion of the main steam tunnel and has a minimum free volume of 5,760,000 cubic feet.

5.3 REACTOR CORE

Fuel Assemblies

5.3.A The reactor core shall contain 724 fuel assemblies. Each assembly consists of a matrix of Zircaloy clad fuel rods with an initial composition of natural or slightly enriched uranium dioxide as fuel material and water rods. Limited substitutions of zirconium alloy, in accordance with NRC-approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC staff-approved codes and methods, and shown by tests or analyses to comply with all fuel safety design bases. A limited number of lead test assemblies that have not completed representative testing may be placed in non-limiting core regions.

Control Rod Assemblies

5.3.B The reactor core shall contain 177 cruciform shaped control rod assemblies. The control material shall be boron carbide powder (B₄C) and/or hafnium metal. The control rod assembly shall have a nominal axial absorber length of 143 inches.

5.4 REACTOR COOLANT SYSTEM

Design Pressure and Temperature

- 5.4.A The reactor coolant system is designed and shall be maintained:
 - In accordance with the code requirements specified in Section 5 of the UFSAR, with allowance for normal degradation pursuant to the applicable Surveillance Requirements,
 - 2. For a pressure and temperature of:
 - a. 1175 psig at 565°F on the suction side of the recirculation pump.
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Volume

5.4.B The total water and steam volume of the reactor vessel and recirculation system is approximately 15,679 cubic feet at 68°F.

5.5 [INTENTIONALLY BLANK]

5.5.A [INTENTIONALLY BLANK]

5.6 FUEL STORAGE

Criticality

- 5.6.A The spent fuel storage racks are designed and shall be maintained with:
 - 1. A k_{eff} equivalent to ≤0.95 when flooded with unborated water, including all calculational uncertainties and biases as described in Section 9.1 of the UFSAR.
 - 2. A nominal 6.22 inch center-to-center distance between fuel assemblies placed in the storage racks.

Drainage

5.6.B The spent fuel storage pool is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 666' 8.5".

Capacity

5.6.C The spent fuel storage pool is designed and shall be maintained with a storage capacity limited to no more than 3657(Unit 1)/3897(Unit 2) fuel assemblies.



UNITED STATES NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 135 TO FACILITY OPERATING LICENSE NO. DPR-19,

AMENDMENT NO. 129TO FACILITY OPERATING LICENSE NO. DPR-25,

AMENDMENT NO. 156 TO FACILITY OPERATING LICENSE NO. DPR-29,

AND AMENDMENT NO. 152 TO FACILITY OPERATING LICENSE NO. DPR-30

COMMONWEALTH EDISON COMPANY

AND

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 December 15, 1993, as supplemented by letter dated April 21, 1995, Commonwealth Edison Company (ComEd, the licensee) submitted an amendment requesting to upgrade a section of the Dresden Nuclear Power Station, Units 2 and 3, and the Quad Cities Nuclear Power Station, Units 1 and 2 Technical Specifications (TS). The changes have been requested as part of their Technical Specification Upgrade Program (TSUP).

As a result of findings by a Diagnostic Evaluation Team inspection performed by the NRC staff at the Dresden Nuclear Power Station in 1987, ComEd made a decision that both the Dresden Nuclear Power Station and sister site Quad Cities Nuclear Power Station, needed attention focused on the existing custom Technical Specifications used at the sites.

Commonwealth Edison made the decision to initiate a Technical Specification Upgrade Program (TSUP) for both Dresden and Quad Cities. The licensee evaluated the current TS for both stations against the Standard Technical Specifications (STS), contained in NUREG-0123, "Standard Technical Specifications General Electric Plants BWR/4." Both Dresden and Quad Cities are BWR-3 designs and are nearly identical plants. The licensee's evaluation identified numerous potential improvements such as clarifying requirements, changing the TS to make them more understandable and eliminate the need for interpretation, and deleting requirements that are no longer considered

current with industry practice. As a result of the evaluation, ComEd elected to upgrade both the Dresden and Quad Cities TS to the STS contained in NUREG-0123.

The TSUP for Dresden and Quad Cities is not a complete adoption of the STS. The TSUP focuses on (1) the integration of additional information such as equipment operability requirements during shutdown conditions, (2) clarification of requirements such as limiting conditions for operations and action statements utilizing STS terminology, (3) deletion of superseded requirements and modifications to the TS based on the licensee's responses to Generic Letters (GL), and (4) relocation of specific items to more appropriate TS locations.

The application dated December 15, 1993 as supplemented April 21, 1995, proposed to upgrade only those sections of the TS to be included in TSUP section 5.0 (Design Features) of the Dresden and Quad Cities TS.

The staff reviewed the proposed changes and evaluated all deviations and changes between the proposed TS, the STS, and the current TS. In no case did the licensee propose a change in the TS that would result in the relaxation of the current design requirements as stated in the Updated Final Safety Analysis Reports (UFSAR) for Dresden or Quad Cities.

In response to the staff's recommendations, the licensee submitted identical TS for Quad Cities and Dresden except for plant-specific equipment and design differences. Technical differences between the units are identified as appropriate in the proposed amendment.

2.0 EVALUATION

Review Guidelines - The licensees' purpose for the TSUP was to reformat the existing Dresden and Quad Cities TS into the easier to use STS format. Plant specific data, values, parameters, and equipment specific operational requirements contained in the current TS for Dresden and Quad Cities were retained by the licensee in the TSUP.

The STS contained in NUREG-0123 were developed by the NRC and industry because of the shortcomings associated with the custom TS which were issued to plants licensed in early 1970's (i.e., Dresden (1971) and Quad Cities (1972)). The STS developed by the NRC and industry provided an adequate level of protection for plant operation by assuring required systems are operable and have been proven to be able to perform their intended functions. The limiting conditions for operation (LCO), the allowed out-of-service times, and the required surveillance frequencies were developed based on industry operating experience, equipment performance, and probabilistic risk assessment analysis during the 1970's. The STS were used as the licensing basis for plants licensed starting in the late 1970's.

For the most part, ComEd's adoption of the STS resulted in more restrictive LCOs and surveillance requirements (SR). In some cases, however, the STS provides relief from the Dresden and Quad Cities current TS requirements. In all these cases, the adoption of the STS requirements for LCOs or SR does not change the current design requirements of either plant as described in each station's UFSAR respectively. In addition, the success criteria for the availability and operability of all required systems contained in the current TS are maintained by the adoption of the STS requirements in the proposed TSUP TS.

In addition to adopting the STS guidelines and requirements in the TSUP, ComEd has also evaluated Generic Letters (GLs) concerning line item improvements for TS. These GLs were factored into TSUP to make the proposed TS in the TSUP reflect industry lessons learned in the 1980's and early 1990's.

Deviations between the proposed specifications, the STS, and the current TS were reviewed by the staff to determine if the deviations were due to plant specific features or if they posed a technical deviation from the STS guidelines. Plant specific data, values, parameters, and equipment specific operational requirements contained in the current TS for Dresden and Quad Cities were retained by the licensee in the upgraded TS.

Administrative Changes - Non-technical, administrative changes were intended to incorporate human factor principles into the form and structure of the STS so that they would be easier to use for plant operation's personnel. These changes are editorial in nature or involve the reorganization or reformatting of requirements without affecting technical content of the current TS or operational requirements. Every section of the proposed TS reflects this type of change.

More Restrictive Requirements - The proposed TSUP TS include certain more restrictive requirements than are contained in the existing TS. Examples of more restrictive requirements include the following: placing an LCO on plant equipment which is not required by the present TS to be operable; adding more restrictive requirements to restore inoperable equipment; and adding more restrictive surveillance requirements.

<u>Less Restrictive Requirements</u> - The licensee provided a justification for less restrictive requirements on a case-by-case basis as discussed in this SE. When requirements have been shown to provide little or no safety benefit, their removal from the TS may be appropriate. In most cases, these relaxations had previously been granted to individual plants on a plant-specific basis as the result of (a) generic NRC actions and (b) new NRC staff positions that have evolved from technological advancements and operating experience.

The Dresden and Quad Cities plant design was reviewed to determine if the specific design basis was consistent with the STS contained in NUREG-0123. All changes to the current TS and deviations between the licensees' proposed TS and the STS were reviewed by the staff for acceptability to determine if

adequate justification was provided (i.e., plant specific features, retention of existing operating values, etc.).

Deviations the staff finds acceptable include: (1) the addition of clarifying statements, (2) incorporating changes based on GL, (3) reformatting multiple steps included under STS action statements into single steps with unique identifiers, (4) retaining plant specific steps, parameters, or values, (5) moving ACTION statements within a TS, (6) moving ACTION statements from an existing TS to form a new TS section, and (7) omitting the inclusion of STS steps that are not in existing TS.

Relocation of Technical Specifications - The proposed TS include the relocation of some requirements from the TS to licensee-controlled documents. Section 182a of the Atomic Energy Act requires applicants for nuclear power plant operating licenses to state Technical Specifications to be included as part of the license. The Commission's regulatory requirements related to the content of TS are set forth in 10 CFR 50.36. That regulation requires that the TS include items in five specific categories, including (1) safety limits, limiting safety system settings, and limiting control settings; (2) limiting conditions for operation; (3) surveillance requirements; (4) design features; and (5) administrative controls. However, the regulation does not specify the particular requirements to be included in a plant's TS.

The Commission has provided guidance for the contents of TS in its "Final Policy Statement on Technical Specification Improvements for Nuclear Power Reactors," 58 Fed. Reg. 39132 (July 22, 1993), in which the Commission indicated that compliance with the Final Policy Statement satisfies Section 182a of the Energy Reorganization Act. The Final Policy Statement identified four criteria to be used in determining whether a particular matter is required to be included in the TS, as follows: (1) Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary; (2) a process variable, design feature, or operating restriction that is an initial condition of a Design Basis Accident or Transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier; (3) a structure, system, or component that is part of a primary success path and which functions or actuates to mitigate a Design Basis Accident of Transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier; (4) a structure, system, or component which operating experience or probabilistic safety assessment has shown to be significant to public health and safety. As a result, existing TS requirements which fall within or satisfy any of the criteria in the Final Policy Statement must be retained in the TS, while those TS requirements which do not fall within or satisfy these criteria may be relocated to other, licensee-controlled documents.

The following sections provide the staff's evaluations of the specific proposed TS changes.

3.0 EVALUATION OF TSUP PROPOSED TS SECTION 5.0, DESIGN FEATURES

Proposed Section 5.0 contains the design features for the Dresden and Quad Cities Stations and provides the necessary controls of those features. The proposed TS incorporate the requirements of the current TS Section 5.0 for both Dresden and Quad Cities. Each change from the current TS requirements and deviations from the STS requirements are described below.

3.1 Section 5.1, Site

Proposed TSUP Section 5.1, "Site," incorporates the guidelines of STS Section 5.1 and all existing TS requirements from Section 5.1 for both Dresden and Quad Cities. Plant-specific Figures 5.1.B-1, Low Population Zone are consistent with the safety analysis for the plant. The proposed Figures 5.1.B-1 provided in the December 15, 1993, submittal were unclear. This item is left as an open item contingent upon correction in the TSUP cleanup amendment. In addition, the licensee did not include the STS figure concerning the exclusion area. This item is also left as an open item. Based on discussions between the NRC staff and ComEd, Figure 5.1.A-1 for the Exclusion Area will be added in the cleanup amendment. The location and/or description of the Meteorological Tower will be added to Figure 5.1.A-1.

The references regarding the OFFSITE DOSE CALCULATION MANUAL (ODCM) in proposed TS Sections 5.1.C and 5.1.D are consistent with the current TS requirements and with the guidance of GL 89-10.

3.2 <u>Section 5.2, Containment</u>

Proposed TSUP Section 5.2, "Containment," incorporates the guidelines of STS Section 5.2 and existing TS requirements from Section 5.4 for both Dresden and Quad Cities. Plant specific values for the listed parameters are included to be consistent with the UFSAR for the plants. Deviations from STS requirements are discussed below. The TSUP Section 5.2 is proposed to incorporate the containment design provisions determined necessary by STS guidelines to assure that the containment response analyses assumptions remain valid.

Current TS Section 5.4 provides only a general reference to the UFSAR regarding general design parameters. Proposed Section 5.2 identifies only the critical design features and provides a description rather than referencing the UFSAR. Revisions to other parameters not included in the proposed TS will continue to be adequately controlled in the UFSAR by the requirements of 10 CFR 50.59. This change from current TS is acceptable.

The licensee deviated from STS guidance by providing a range of values rather than a nominal value in the description of the containment configuration. The proposed values are consistent with other TS requirements for water level (upper and lower limits). Because the change does not invalidate other TS requirements and is consistent with current design basis requirements described in the UFSAR, the NRC staff finds the proposed deviation from the STS guidelines acceptable.

3.3 Section 5.3, Reactor Core

Proposed TSUP Section 5.3, "Reactor Core," incorporates the guidelines of STS Section 5.3 and the current TS requirements of Section 5.2 for Dresden and Quad Cities. Plant-specific values for the listed parameters are included to be consistent with the UFSAR for the plants. The proposed TS incorporates the reactor core and control rod design provisions determined necessary by STS guidelines to assure that the reactor physical content and arrangement does not change. The proposed TS Section 5.3.A deviates from STS and from the current TS Section 5.2, per the guidance provided in GL 90-02, Supplement 1, in that it allows limited substitutions of fuel assemblies in accordance with NRC approved applications. The purpose of this section is to define/describe fuel assemblies at Dresden and Quad Cities. Significant changes in bundle designs are controlled pursuant to 10 CFR 50.59. Because the proposed wording is consistent with the fuel bundle design features at Dresden and Quad Cities and the guidelines of GL 90-02, Supplement 1, the staff finds the proposed deviation from STS guidelines and from current TS 5.2 acceptable.

Proposed TS Section 5.3.B deviates from the current TS in the design requirements for the control rods. The proposed TS deletes the statement that the boron carbide powder is compacted to approximately 70 percent theoretical density. The design of the control rods is included in the UFSAR Section Any changes to the design are controlled pursuant to 10 CFR 50.59 4.6.2.1. and therefore, it is not necessary to control this design feature in the TS. The staff has determined that the requirements for the density of the boron carbide powder are not required to be in the TS under 10 CFR 50.36 or Section 182a of the Atomic Energy Act. Further, they do not fall within any of the four criteria discussed in Section 2.0 above. In addition, the staff finds that sufficient regulatory controls exist under 10 CFR 50.59 to assure continued protection of public health and safety. The proposed TS also adds the requirement that the control rod assembly shall have a nominal axial absorber length of 143 inches. This is an enhancement of the current TS, based on STS guidance and is acceptable.

3.4 Section 5.4, Reactor Coolant System

Proposed TS Section 5.4, "Reactor Coolant System," incorporates the requirements of STS Section 5.4 and the requirements of current TS 5.3 for Dresden and Quad Cities. Plant-specific values for the listed parameters are included to be consistent with the UFSAR for the plants. Section 5.4 is proposed to incorporate the reactor coolant system specific design provisions of pressure, temperature and volume. Deviations exist between the proposed TS and STS guidance. The proposed TS use specific reference of individual pressures and temperatures for each parameter, while STS guidance only stipulates a single temperature for all parameters. This deviation from STS guidance is based on the current design basis at Dresden and Quad Cities and ensures that the safety analyses assumptions remain valid. The staff finds the proposed deviation from the STS guidelines acceptable.

Current TS Section 5.3 provides only a general reference to the UFSAR concerning design parameters for the reactor vessel only, not the complete reactor coolant system. The proposed TS identifies only specific features of the entire reactor coolant system and provides a description per the STS guidelines rather than referring to the UFSAR. Revisions to parameters not included in the proposed TS will be adequately controlled in the UFSAR by the requirements of 10 CFR 50.59. The staff finds this acceptable.

Proposed TSUP Section 5.4 provided in the December 15, 1993, submittal contained an incorrect reference to the FSAR on TS pages 5-4 and 5-8 for both stations. Per discussions with the licensee, the appropriate TS pages were revised to reference the UFSAR instead of the FSAR. This is an editorial change and is acceptable.

The proposed changes are consistent with the current design basis as described in the UFSAR. Therefore, the staff finds the proposed deviation from the STS quidelines and current TS acceptable.

3.5 Section 5.5, Meteorological Tower Location

The proposed TS does not incorporate the requirements of STS Section 5.5, "Meteorological Tower Location," which references a separate figure showing the location of the meteorological tower. In lieu of providing a separate figure for the meteorological tower, the proposed TS will show the location of the meteorological tower in Figure 5.1.A-1, "Exclusion Area". More detailed information on the meteorological tower is included in the ODCM in accordance with the guidance of GL 89-01. Because the proposed change is consistent with the guidelines of GL 89-01, and the meteorological tower location will be shown in the proposed TS, the staff finds the proposed deviation from STS quidelines acceptable.

3.6 Section 5.6, Fuel Storage

Proposed TS Section 5.6, "Fuel Storage," incorporates the guidelines of STS Section 5.6 and current TS requirements of Section 5.5 for both Dresden and Quad Cities. Plant-specific values for the listed parameters are included to be consistent with the UFSAR for the plants. Proposed Section 5.6 incorporates the fuel storage design provisions determined necessary by STS to assure that the spent fuel is appropriately stored and cooled.

The proposed Section 5.6 deviates from both the current TS and STS in the requirements for new fuel storage. The current TS specify a reactivity limit for new fuel storage which has been eliminated in the proposed TS. The UFSAR Section 9.1.1 states the maximum number of new fuel bundles that can be stored and the minimum center-to-center spacing that will prevent an accidental critical array. Therefore, the design in the new fuel storage system ensures that the limits in the current TS will not be exceeded. Changes to the UFSAR are controlled by the requirements of 10 CFR 50.59. These requirements are more appropriately controlled in the UFSAR. The staff has determined that the requirements for new fuel storage are not required to be in the TS under 10 CFR 50.36 or Section 182a of the Atomic Energy Act. Further, they do not fall

within any of the four criteria discussed in Section 2.0 above. In addition, the staff finds that sufficient regulatory controls exist under 10 CFR 50.59 to assure continued protection of public health and safety. Therefore, this change from the current TS is acceptable. The STS requires design limits for storage of new fuel only for the initial core loading. This STS requirement is no longer applicable for Dresden and Quad Cities and therefore, this deviation from STS is acceptable.

The proposed TS deletes some of the current TS requirements with regard to the maintenance of K_{eff} and K_{inf} for the Dresden station. The proposed TS only require that a K_{eff} equivalent to less than or equal to 0.95 be maintained in the spent fuel storage racks. The requirements for K_{inf} in the current TS are more appropriately controlled in the UFSAR. K_{eff}/K_{inf} limits are fuel type dependent, which could be cycle dependent and should be contained within the UFSAR. The design of the fuel racks ensures that a maximum K_{eff} is not exceeded and, therefore, the fuel cycle need not be analyzed for such limits. The proposed TS add a requirement that a nominal center-to-center distance be maintained between the fuel assemblies in the storage racks.

The current Dresden Section 5.5 TS requires that reactivity limits for fuel storage be maintained within the limits specified in current TS Sections 3.10.G.1 and 3.10.G.2. Proposed TS Section 5.6 does not include the specific reactivity limits specified in current TS Sections 3.10.G.1 and 3.10.G.2. The proposed TS have moved the current reactivity limits concerning fuel storage to Section 9 of the UFSAR. The requirements outlined by the current TS Sections 3.10.G.1 and 3.10.G.2 are design parameters more appropriate for inclusions into the UFSAR and will be administratively controlled in owner controlled documentation. Changes to the reactivity limits will be controlled by 10 CFR 50.59. The staff has determined that the requirements for fuel storage are not required to be in the TS under 10 CFR 50.36 or Section 182a of the Atomic Energy Act. Further, they do not fall within any of the four criteria discussed in Section 2.0 above. In addition, the staff finds that sufficient regulatory controls exist under 10 CFR 50.59 to assure continued protection of public health and safety. The staff finds moving the current TS requirements of Sections 3.10.G.1 and 3.10.G.2 concerning reactivity limits to the USFAR is acceptable.

Proposed TS Section 5.6 adds specific design features concerning the drainage of the spent fuel pool and the capacity of the spent fuel pool for both Dresden and Quad Cities. The current TS for Dresden and Quad Cities do not contain these design features. Both new design features have been added to the proposed TS in accordance with the STS guidelines.

The proposed TS are consistent to the current Dresden and Quad Cities designs and do not reduce existing safety margins. Therefore, the change from current TS is acceptable.

3.7 STS Section 5.7, Component Cyclic or Transient Limit

STS Section 5.7 was not adopted in the proposed TS. The current TS design feature sections for Dresden or Quad Cities do not contain Component Cyclic or

Transient Limit requirements. Design limits such as this are more appropriately controlled in owner-controlled documents. Currently, both Dresden and Quad Cities control the thermal cycle limits in the UFSAR. Changes to the UFSAR are controlled by the requirements of 10 CFR 50.59. The staff finds this deviation from STS requirements acceptable.

3.8 Relocation of Current TS Requirements

Current TS Section 5.6, which contains a discussion of seismic design, is proposed to be deleted. This parameter was not incorporated into STS requirements. This design parameter is considered to be adequately maintained and controlled in the UFSAR. Changes to the seismic design criteria in the UFSAR will be governed in accordance with 10 CFR 50.59. The staff has determined that the requirements for seismic design are not required to be in the TS under 10 CFR 50.36 or Section 182a of the Atomic Energy Act. Further, they do not fall within any of the four criteria discussed in Section 2.0 above. In addition, the staff finds that sufficient regulatory controls exist under 10 CFR 50.59 to assure continued protection of public health and safety. Therefore, the staff finds the proposed deletion of the seismic design criteria from the TS is acceptable.

3.9 Open Items

The following items should be left as open items, contingent upon implementation and correction in the TSUP clean-up amendment.

- 1. Figure 5.1.B-1, Low Population Zone
- 2. Figure 5.1.A-1, Exclusion Area

3.10 <u>Summary for Section 5.0</u>

The proposed TSUP TS Section 5.0, "Design Features," clarifies the requirements of the present TS through the adoption of STS format, adds more restrictive requirements, and incorporates changes to correct inconsistencies with the STS. The staff has reviewed the proposed TS against the STS and the current TS and finds that all deviations from the STS are acceptable and that the relaxation of current TS requirements does not reduce existing safety margins. Based on the above evaluation, the staff finds the proposed TS Section 5.0 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 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 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 effluent 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 (60 FR 24909). 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: J. Stang

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