

October 7, 1997

Ms. Irene Johnson, Acting Manager
Nuclear Regulatory Services
Commonwealth Edison Company
Executive Towers West III
1400 Opus Place, Suite 500
Downers Grove, IL 60515

SUBJECT: ISSUANCE OF AMENDMENTS (TAC NOS. M98816 AND M98817)

Dear Ms. Johnson:

The U.S. Nuclear Regulatory Commission (Commission) has issued the enclosed Amendment No. 178 to Facility Operating License No. DPR-29 and Amendment No. 176 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 May 1, 1997.

The amendments clarify the load value for the emergency diesel generator to be equal to or greater than the largest single load and revise the frequency and voltage requirements during the performance of the test.

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

Sincerely,

ORIGINAL SIGNED BY:

Robert M. Pulsifer, Project Manager
Project Directorate III-2
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Docket Nos. 50-254 and 50-265

Enclosures: 1. Amendment No. 178 to DPR-29
2. Amendment No. 176 to DPR-30
3. Safety Evaluation

cc w/encl: see next page

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E. Adensam R. Capra C. Moore
R. Pulsifer OGC, 015B18 G. Hill (4), T5C3
ACRS, T2E26 W. Kropp, RIII W. Beckner, 13H15

Handwritten initials: Jof

*concurring by memo dtd 8/8/97;
no major revisions



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DATE	09/14/97	09/18/97	8/8/97	09/27/97	09/03/97

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

October 7, 1997

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Sincerely,

A handwritten signature in black ink, appearing to read "Robert M. Pulsifer".

Robert M. Pulsifer, Project Manager
Project Directorate III-2
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Docket Nos. 50-254 and 50-265

Enclosures: 1. Amendment No. 178 to DPR-29
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3. Safety Evaluation

cc w/encl: see next page

I. Johnson
Commonwealth Edison Company

Quad Cities Nuclear Power Station
Unit Nos. 1 and 2

cc:

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

COMMONWEALTH EDISON COMPANY

AND

MIDAMERICAN ENERGY COMPANY

DOCKET NO. 50-254

QUAD CITIES NUCLEAR POWER STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 178
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 May 1, 1997, 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. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No.178 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION



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: October 7, 1997



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

COMMONWEALTH EDISON COMPANY

AND

MIDAMERICAN ENERGY COMPANY

DOCKET NO. 50-265

QUAD CITIES NUCLEAR POWER STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No.176
License No. DPR-30

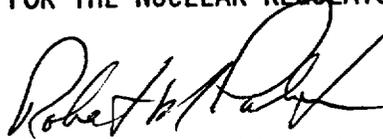
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Commonwealth Edison Company (the licensee) dated May 1, 1997, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and 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. 176, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION



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: October 7, 1997

ATTACHMENT TO LICENSE AMENDMENT NOS. 178 AND 176
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 and contain marginal lines indicating the area of change.

REMOVE

3/4.9-5
B 3/4.9-3
- -

INSERT

3/4.9-5
B 3/4.9-3
B 3/4.9-3a

3.9 - LIMITING CONDITIONS FOR OPERATION

- 5. With two of the above required offsite circuit power sources inoperable:
 - a. Restore at least one of the inoperable offsite circuits to OPERABLE status within 24 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
 - b. Restore at least two offsite circuits to OPERABLE status within 7 days from the time of initial loss or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
- 6. With both of the above required diesel generator power sources inoperable:
 - a. Demonstrate the OPERABILITY of the offsite circuit power sources by performing Surveillance Requirement 4.9.A.1.a within 1 hour and at least once per 8 hours thereafter.

4.9 - SURVEILLANCE REQUIREMENTS

- b. Verify the diesel generator rejects a load greater than or equal to its largest single emergency load, and:
 - 1) Following load rejection, the frequency is ≤ 66.73 Hz.
 - 2) Within 3 seconds following load rejection, the voltage is 4160 ± 420 volts.
 - 3) Within 4 seconds following load rejection, the frequency is 60 ± 1.2 Hz.
- c. Verifying the diesel generator capability to reject a load between 2470 and 2600 kW^(d), without tripping on overspeed. The generator voltage shall not exceed 5000 volts^(g) during or following the load rejection.
- d. Simulating a loss of offsite power by itself, and:
 - 1) Verifying de-energization of the emergency buses, and load shedding from the emergency buses.
 - 2) Verifying the diesel starts on the auto-start signal, energizes the emergency buses with permanently connected loads in ≤ 10 seconds, energizes the auto-connected shutdown loads, and operates with this load for ≥ 5 minutes. After energization, the steady-state voltage and frequency of the emergency busses shall be maintained at 4160 ± 420 volts and 60 ± 1.2 Hz, respectively, during this test.

^d Momentary transients outside of the load range do not invalidate this test. Diesel generator loadings may include gradual loading as recommended by the manufacturer/vendor. This surveillance shall be conducted on only one diesel generator at a time.

^g Momentary transients outside of the voltage limit do not invalidate this test.

BASES

Surveillance Requirements are also provided for demonstrating the OPERABILITY of the diesel generators. The specified testing is based on the guidance provided in Regulatory Guide 1.9, Revision 3 (7/93), Regulatory Guide 1.108, Revision 1, and Regulatory Guide 1.137, Revision 1, as modified by plant specific analysis, diesel generator manufacturer/vendor recommendations and responses to Generic Letter 84-15.

Surveillance Requirement 4.9.A.8.b demonstrates the diesel generator load response characteristics and capability to reject the largest single emergency load while maintaining a specified margin to the overspeed trip. Each diesel generator is provided with an engine overspeed trip to prevent damage to the engine. Recovery from the transient caused by the loss of a large load could cause diesel engine overspeed, which, if excessive, might result in a trip of the engine. The recovery response of the diesel generator will be demonstrated by verification of the steady-state voltage and frequency following the load rejection. The largest single emergency load associated with each diesel generator is the residual heat removal service water (RHRSW) pump (900 horsepower nameplate). This Surveillance can be accomplished by one of two methods. One method is to simultaneously trip loads supplied by the diesel generator, which have a minimum combined load equal to or greater than the RHRSW pump. The other method is to trip the RHRSW pump.

The diesel generators are equipped with a prelubrication system which maintains a continuous flow of oil to the diesel engine moving parts while the engine is shutdown. The purpose of this system is to increase long term diesel generator reliability by reducing the stress and wear caused by frequent dry starting of the diesel generator. The diesel generator prelude may be accomplished either through normal operation of the installed prelubrication system or by manual prelubrication of the diesel generator in accordance with the manufacturer's/vendor's instructions. Performance of an idle start of the diesel generator is not considered to be a means of prelubrication.

A periodic "start test" of the diesel generators demonstrates proper startup from standby conditions, and verifies that the required generator voltage and frequency is attained. For this test, the diesel generator may be slow started and reach rated speed on a prescribed schedule that is selected to minimize stress and wear. In cases where this Surveillance Requirement is being used to identify a possible common mode failure in accordance with the action provisions, this test eliminates the risk of paralleling two of the remaining A.C. sources, which may compromise the A.C. source independence.

A "load-run test" normally follows the periodic "start test" of the diesel generator to demonstrate operation at or near the continuous rating. This surveillance should only be conducted on one diesel generator at a time in order to avoid common mode failures that might result from offsite circuit or grid perturbations. A minimum run time of 60 minutes is required to stabilize engine temperatures. Actual run time should be in accordance with vendor recommendations with regard to good operating practice and should be sufficient to ensure that cooling and lubrication are adequate for extended periods of operation, while minimizing the time that the diesel generator is connected to the offsite source. This Surveillance Requirement may include gradual loading, as recommended by the manufacturer, so that mechanical stress and wear on the diesel engine are minimized. A load band is provided to avoid routine overloading of the diesel generators.

BASES

Momentary transients outside the load band because of changing bus loads do not impact the validity of this test.

A periodic surveillance requirement is provided to assure the diesel generator is aligned to provide standby power on demand. Periodic surveillance requirements also verify that, without the aid of the refill compressor, sufficient air start capacity for each diesel generator is available. With either pair of air receiver tanks at the minimum specified pressure, there is sufficient air in the tanks to start the associated diesel generator.

The periodicity of surveillance requirements for the shared diesel generators shall be equivalent to those required for the unit diesel generators. For example, it is not the intention to perform surveillances for the shared diesel generators twice during the specified surveillance interval in order to satisfy each unit's diesel generator surveillance requirements. By appropriately staggering



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 178 TO FACILITY OPERATING LICENSE NO. DPR-29
AND AMENDMENT NO. 176 TO FACILITY OPERATING LICENSE NO. DPR-30

COMMONWEALTH EDISON COMPANY

AND

MIDAMERICAN ENERGY COMPANY

QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2

DOCKET NOS. 50-254 AND 50-265

1.0 INTRODUCTION

By letter dated May 1, 1997, Commonwealth Edison Company (ComEd, the licensee) proposed several changes to the Technical Specifications (TS) for Quad Cities Nuclear Power Station, Units 1 and 2. Specifically, the proposed changes would revise the load to be equal to or greater than the largest single load and revise the frequency and voltage requirements following the guidance of Revision 3 to Regulatory Guide (RG) 1.9, "Selection, Design, and Qualification of Diesel-Generator Units Used as Standby (Onsite) Electric Power Systems at Nuclear Power Plants," for the emergency diesel generator (EDG) largest single load rejection test.

2.0 EVALUATION

The licensee proposed to delete Surveillance Requirement 4.9.A.8.b:

- b. Verify the diesel generator capability to reject its largest single emergency load (≥ 725 kW) while maintaining frequency ≤ 66.73 Hz and voltage at 4160 ± 420 volts.

and substitute the following:

- b. Verify the diesel generator rejects a load greater than or equal to its largest single emergency load, and:
 - 1) Following load rejection, the frequency is ≤ 66.73 Hz.
 - 2) Within 3 seconds following load rejection, the voltage is 4160 ± 420 volts.

- 3) Within 4 seconds following load rejection, the frequency is 60 ± 1.2 Hz.

A comparison of the existing surveillance requirement with the new proposed requirement reveals that the specific load value " ≥ 725 kW" has been deleted. This value was originally rounded up for the TS from the nameplate horsepower rating of the largest single emergency load. This change is consistent with current Standard Technical Specifications for BWR/4 plants (NUREG-1433, Revision 1). This is considered an editorial change and is, therefore, acceptable. Also the proposed surveillance requirement contains specific frequency and voltage limits for specified time periods calculated per the guidance contained in Section 1.4 of RG 1.9, Revision 3, with a format following NUREG-1433, Revision 1; it is, therefore, acceptable.

The licensee also proposed to change Bases Section 3/4.9.A. After the first paragraph on Page B 3/4.9-3, add the following new paragraph:

Surveillance Requirement 4.9.A.8.b demonstrates the diesel generator load response characteristics and capability to reject the largest single emergency load while maintaining a specified margin to the overspeed trip. Each diesel generator is provided with an engine overspeed trip to prevent damage to the engine. Recovery from the transient caused by the loss of a large load could cause diesel engine overspeed, which, if excessive, might result in a trip of the engine. The recovery response of the diesel generator will be demonstrated by verification of the steady-state voltage and frequency following the load rejection. The largest single emergency load associated with each diesel generator is the residual heat removal service water (RHRSW) pump (900 horsepower nameplate). This Surveillance can be accomplished by one of two methods. One method is to simultaneously trip loads supplied by the diesel generator, which have a minimum combined load equal to or greater than the RHRSW pump. The other method is to trip the RHRSW pump.

This change adds an appropriate discussion of the largest single emergency load rejection test to the Bases. This change is editorial in nature, and is, therefore, acceptable.

3.0 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.

4.0 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 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 (62 FR 33121). 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.

5.0 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: F. Burrows

Date: October 7, 1997