August 4, 1999

Mr. Oliver D. Kingsley, President
Nuclear Generation Group
Commonwealth Edison Company
Executive Towers West III
1400 Opus Place, Suite 500
Downers Grove, IL 60515

SUBJECT: ISSUANCE OF AMENDMENTS (TAC NOS. MA5091 AND MA5092)

Dear Mr. Kingsley:

The U.S. Nuclear Regulatory Commission (Commission) has issued the enclosed Amendment No. 189 to Facility Operating License No. DPR-29 and Amendment No. 186 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 March 30, 1999, as supplemented on June 30, 1999.

The amendments revise the Technical Specifications, Section 3/4.6.G, "Leakage Detection Systems," to allow an alternate methodology for quantifying Reactor Coolant System (RCS) leakage when the normal RCS leakage detection system is inoperable.

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, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-254 and 50-265

Enclosures:
1. Amendment No.189to DPR-29
2. Amendment No.186to DPR-30
3. Safety Evaluation

cc w/encls: See next page

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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. 189
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 March 30, 1999, as supplemented on June 30, 1999, 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. 189 , 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 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

Anthony J. Mendiola, Chief, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: August 4, 1999

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. 186
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 March 30, 1999, as supplemented on June 30, 1999, 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. 186 , 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 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

Anthony J. Mendiola, Chief, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: August 4, 1999

ATTACHMENT TO LICENSE AMENDMENT NOS. 189 AND 186

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	INSERT
3/4.6-10	3/4.6.10
B 3/4.6-4	B 3/4.6-4

3.6 LIMITING CONDITIONS FOR OPERATION	4.11 - SURVEILLANCE REQUIREMENTS
G. Leakage Detection Systems	G. Leakage Detection Systems
The following reactor coolant system leakage detection systems shall be OPERABLE: 1. The primary containment atmosphere particulate radioactivity sampling system, and 2. The drywell floor drain sump monitoring system.	The reactor coolant system leakage detection systems shall be demonstrated OPERABLE by: 1. Performing the leakage determinations of Specification 4.6.H. 2. Performing a CHANNEL CALIBRATION of required leakage detection instrumentaion at least once per 18 months.

APPLICABILITY:

OPERATIONAL MODE(s) 1, 2 and 3.

ACTION:

1. With the primary containment atmosphere particulate radioactivity sampling system inoperable, restore the inoperable leak detection radioactivity sampling system to OPERABLE status within 24 hours; otherwise, be in HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

2. With the drywell floor drain sump monitoring system inoperable, within 8 hours establish an alternate manual method of determining drywell floor drain sump flow rates by calculating flow rates using sump pump run times, AND within 30 days restore the drywell floor drain sump monitoring system to an OPERABLE status; otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

BASES

Leakage from the reactor coolant pressure boundary inside the drywell is detected by at least one or two independently monitored variables, such as sump level changes and drywell atmosphere radioactivity levels. The means of quantifying leakage in the drywell is the drywell floor drain sump pumps. With the drywell floor drain sump pump monitoring system inoperable, an alternate method using measured sump run-times for quantifying leakage can be employed for up to 30 days under administrative controls. Primary containment atmosphere sampling for radioactivity can provide indication of changes in leakage rates.

3/4.6.H Operational Leakage

The allowable leakage rates from the reactor coolant system have been based on the predicted and experimentally observed behavior of cracks in pipes. The normally expected background leakage due to equipment design and the detection capability of the instrumentation for determining system leakage was also considered. The evidence obtained from experiments suggests that for leakage somewhat greater than that specified for UNIDENTIFIED LEAKAGE the probability is small that the imperfection or crack associated with such leakage would grow rapidly. However, in all cases, if the leakage rates exceed the values specified or the leakage is located and known to be PRESSURE BOUNDARY LEAKAGE, the reactor will be shutdown to allow further investigation and corrective action.

An UNIDENTIFIED LEAKAGE increase of more than 2 gpm within a 24 hour period is an indication of a potential flaw in the reactor coolant pressure boundary and must be quickly evaluated. Although the increase does not necessarily violate the absolute UNIDENTIFIED LEAKAGE limit, IGSCC susceptible components must be determined not to be the source of the leakage within the required completion time.

3/4.6.I

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 189 TO FACILITY OPERATING LICENSE NO. DPR-29

AND AMENDMENT NO. 186 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 March 30, 1999, as supplemented on June 30, 1999, the Commonwealth Edison Company (ComEd, the licensee) submitted a request for changes to the Quad Cities Nuclear Power Station, Units 1 and 2, Technical Specifications (TS). The requested changes would revise the TS to allow an alternate methodology for quantifying Reactor Coolant System (RCS) leakage when the normal RCS leakage detection system is inoperable. This change would continue Quad Cities conformance to Generic Letter (GL) 88-01, "NRC Position on IGSCC [Intergranular Stress Corrosion Cracking] in BWR [Boiling Water Reactor] Austenitic Stainless Steel Piping," as delineated in NRC letter dated August 21, 1990. The June 30, 1999, submittal provided additional clarifying information that did not change the initial proposed no significant hazards consideration determination.

2.0 DISCUSSION

NRC GL 88-01, issued January 25, 1988, provided guidance in the form of NRC positions regarding IGSCC problems in BWR piping made of austenitic stainless steel that is 4 inches or larger in nominal diameter and contains reactor coolant at a temperature above 200 degrees Fahrenheit during reactor power operation regardless of American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Code) classification. One of the items which the GL requested licensees to address was the confirmation of the licensees' plans to ensure that the TS related to leak detection will be in conformance with the NRC positions on leak detection.

After review of your GL 88-01 response, the staff issued a letter dated August 21, 1990, where ComEd was requested to propose a TS amendment to include Limiting Conditions for Operation (LCO) on operability of sump monitoring instruments. The letter states: "Since your plant has Intergranular Stress Corrosion Cracking (IGSCC) weld Category E weldments, Generic Letter 88-01 provides an allowed outage time of 24 hours for repairing the drywell floor

drain sump monitoring system, or an orderly shutdown should be initiated. As an alternative, the staff recommends that when the drywell sump monitoring system is inoperable, the operator should use a demonstrated manual method for determining leak rate, such as measuring the time to manually pump the sump at a fixed interval (4 hours). The staff considers manual measurement a viable sump measuring method without hardship to the operator; therefore, this method could be added to the appropriate LCO section. With the manual method operable, the outage time for the drywell sump monitoring system could be extended to 30 days. However, if the sump pump and drywell sump monitoring systems are inoperable concurrently, then either system has to be repaired within 24 hours or an orderly shutdown should be initiated."

The NRC issued letters dated September 21,1995, for Amendment Nos.162 and 158 and June 28, 1996, for Amendment Nos.171 and 167 for Units 1 and 2, respectively. These amendments incorporated the current TS that changed the LCO for drywell leakage detection from reactor shutdown after 7 days of plant operation when the sump was found to be inoperable to the present TS that state to restore the drywell floor drain sump (DWFDS) system to operable status within 8 hours, otherwise be in at least hot shutdown within the next 12 hours and in cold shutdown within the following 24 hours.

3.0 EVALUATION

In a letter dated March 30, 1999, as supplemented on June 30, 1999, ComEd proposed an amendment request to change TS Section 3/4.6.G and Bases Section 3/4.6.G to address an alternate method of determining RCS leakage. Quad Cities has found that when the flow totalizer for the DWFDS monitoring system is inoperable the TS require a plant shutdown if the totalizer is not declared operable within 8 hours. The licensee has found this to be unnecessarily restrictive because alternate means are available for quantifying RCS leakage when the DWFDS monitoring system is inoperable.

The changes proposed would provide additional flexibility for monitoring RCS leakage by making available other viable means of quantifying RCS leakage. One alternate method proposed by ComEd is calculating flow rates using sump pump run times. The pump run times multiplied by the rated pump flow will be used to determine total volume of water pumped between surveillances. The pump flow rate will be periodically determined to monitor potential pump degradation. The licensee has monitored sump pump run times and pump flow rates since October 1998 and has found no significant pump degradation and the comparison of the measured and calculated flow rates have been consistent. The licensee states that alternate methodologies will be controlled by station procedures and reflected in the UFSAR.

The licensee has proposed the following changes to the TS in conformance with the guidance in GL 88-01 which is consistent with the Improved Technical Specifications, NUREG 1433, Revision 1, and meets the intent of NRC staff letter dated August 21, 1990:

1. Modify TS section 3.6.G.2 to read:

   2. The drywell floor drain sump monitoring system.

   This change adds the word monitoring to clearly indicate that this TS section is addressing the DWFDS monitoring capabilities for RCS leakage and is acceptable.

2. Modify TS section 3.6.G, Action 2 to read:

   2. With the drywell floor drain sump monitoring system inoperable, within 8 hours establish an alternate manual method of determining drywell floor drain sump flow rates by calculating flow rates using sump pump run times, AND within 30 days restore the drywell floor drain sump monitoring system to an OPERABLE status; otherwise be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

This TS section was revised to indicate that if the DWFDS monitoring system is not made operable within 8 hours the plant may continue to operate if an alternate method for monitoring RCS leakage has been established. The alternative is a manual method by using calculated flow rates using sump pump run times. The licensee has proposed this change in conformance with the guidance in GL 88-01, which is consistent with the Improved Technical Specifications, NUREG 1433, Revision 1, and meets the intent of NRC staff letter dated August 21, 1990; therefore, this change is acceptable.

3. Modify TS section 4.6.G.2 to read:

   2. Performing a CHANNEL CALIBRATION of required leakage detection instrumentation at least once per 18 months.

This change more clearly specifies that the CHANNEL CALIBRATION of the DWFDS monitoring system is not just the totalizer as stated in the current TS Section 4.6.G.2, but it includes all required leakage detection instrumentation of the DWFDS. This change is acceptable.

4. Modify the last two sentences in BASES section 3/4.6.G to read:

   With the drywell floor drain sump monitoring system inoperable, an alternate method using measured sump run-times for quantifying leakage can be employed for up to 30 days under administrative controls. Primary containment atmosphere sampling for radioactivity can provide indication of changes in leakage rates.

This Bases change describes the revision made in the TS which allows the use of an alternate means to measure RCS leakage and this is acceptable.

These TS changes also meet the statement in the August 21, 1990, letter regarding inoperability of both the sump pump and drywell sump monitoring system. If both the sump pump and the DWFDS monitoring system are inoperable at the same time then either system has to be repaired within 24 hours or an orderly shutdown should be initiated. Quad Cities meets this criteria with Surveillance Requirement 4.6.H.2 for determining the primary containment sump flow rate at least once per 8 hours, not to exceed 12 hours. If this requirement can not be met, the plant needs to be in hot shutdown within 12 hours and in cold shutdown within the following 24 hours.

These changes would allow the licensee to continue to operate the plant if the DWFDS monitoring system is found to be inoperable for up to 30 days if an alternate method has been established to quantify RCS leakage and this 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. 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 (64 FR 24194). 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: Robert M. Pulsifer

Date: August 4, 1999