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ComEd

December 30, 1999

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Quad Cities Nuclear Power Station, Units 1 and 2
Facility Operating License Nos. DPR-29 and DPR-30
NRC Docket Nos. 50-254 and 50-265

Subject: Request for an Amendment to Technical Specifications For Elimination of Main Steam Line Radiation Monitor Isolation and Scram Functions

References:

(1) General Electric Report NEDO-31400A, "Safety Evaluation for Eliminating The Boiling Water Reactor Main Steam Line Isolation Valve Closure Function and Scram Function of the Main Steam Line Radiation Monitor," dated October, 1992.

(2) Letter from A. C. Thadani (USNRC) to G. J. Beck (BWROG), dated May 15, 1991, "Acceptance for Referencing Topical Report NEDO-31400."

(3) Letter from J. S. Perry (ComEd) to USNRC, dated March 5, 1997, "Elimination of Main Steam Line Valve Closure and Scram Function related to Main Steam Line Radiation Monitor."

In accordance with 10 CFR 50.90 we request a change to the Technical Specifications (TS) of Facility License Nos. DPR-29 and DPR-30 for the Quad Cities Nuclear Power Station, Units 1 and 2 respectively. The proposed change involves the following TS Sections:

Table of Contents
Section 2.2 – Limiting Safety System Settings
Section 3/4.1 – Reactor Protection System (RPS)
Section 3/4.2 – Instrumentation

The proposed change removes the Main Steam Line Radiation Monitor (MSLRM) scram and main steam line isolation functions. Note that a new TS requirement is being proposed for the MSLRM trip of the Mechanical Vacuum Pump, which is not being eliminated. The proposed change is part of our ongoing scram reduction efforts approved the BWROG licensing topical report in Reference 2. As outlined in Attachment A, Commonwealth Edison (ComEd) Company has determined that the proposed change satisfies the criteria delineated in the Reference (2) Safety Evaluation. A similar change was approved by the NRC for the Dresden Nuclear Power Station, Units 2 and 3 in Reference 3.

The request is subdivided as follows:

1. Attachment A gives a description and safety analysis of the proposed change,

2. Attachment B includes the marked-up TS pages with the requested change indicated,

3. Attachment C provides information supporting a finding of no significant hazards consideration in accordance with 10 CFR 50.92(c),

4. Attachment D provides information supporting an Environmental Assessment.

5. Attachment E provides the site-specific radiological evaluation supporting the proposed change (i.e., Calculation QDC 9400-M-0550 Rev. 0).

ComEd requests approval of this proposed TS change as soon as possible to support installation during the next refueling outage on Unit 2 or during the next planned or unplanned outage of sufficient duration. A similar design change is planned on Unit 1 during the 16th refueling outage schedueled to begin in October 2000.

This proposed change has been reviewed by the Plant Operations Review Committee and the Nuclear Safety Review Board in accordance with the Quality Assurance Program.

ComEd is notifying the State of Illinois of this request for changes to the TS by transmitting a copy of this letter and its attachments to the designated State Official.

Should you have any questions concerning this letter, please contact the Mr. C. C. Peterson at (309) 654-2241, extension 3609.

Sincerely,

R. M. Krich
Vice President Regulatory Services

Attachments: Affidavit
A. Description and Safety Analysis for Proposed Changes
B. Marked-Up Technical Specifications Pages
C. Information Supporting a Finding of No Significant Hazards Consideration
D. Information Supporting an Environmental Assessment
E. Calculation No. QDC 9400-M-0550 Rev. 0

cc: Regional Administrator – NRC Region III
NRC Senior Resident Inspector – Quad Cities Nuclear Power Station
Office of Nuclear Facility Safety – Illionois Department of Nuclear Safety

bcc: Project Manager – NRR
Senior Reactor Analyst – IDNS
Manager of Energy Practice – Winston and Strawn
Director, Licensing and Compliance – ComEd
Vice President, Regulatory Services– ComEd
ComEd Document Control Desk Licensing (Hard Copy)
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W. Leech – MidAmerican Energy Company
D. Tubbs – MidAmerican Energy Company
Regulatory Assurance Manager – Dresden Nuclear Power Station
Regulatory Assurance Manager – Quad Cities Nuclear Power Station
NRC Coordinator – Quad Cities Nuclear Power Station
NSRB Site Coordinator – Quad Cities Nuclear Power Station
INPO Records Center
SVP Letter File

STATE OF ILLINOIS )

COUNTY OF DUPAGE )

IN THE MATTER OF )

COMMONWEALTH EDISON (COMED) COMPANY ) Docket Numbers

QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2 ) 50-254 and 50-265

**SUBJECT:** **Proposed Technical Specifications Change**
**Elimination of Main Steam Line Radiation Monitor Isolation and Scram Functions**

# AFFIDAVIT

I affirm that the content of this transmittal is true and correct to the best of my knowledge, information and belief.

R. M. Krich
Vice President - Regulatory Services

Subscribed and sworn to before me, a Notary Public in and for the State above named, this 30th day of December, 1999.

Joseph V Sipek
Notary Public

" OFFICIAL SEAL "
Joseph V. Sipek
Notary Public, State of Illinois
My Commission Expires 11/24/2001

**DESCRIPTION AND SAFETY ANALYSIS FOR PROPOSED CHANGES**

## A. SUMMARY OF PROPOSED CHANGES

In accordance with 10 CFR 50.90, "Application for amendment of license or construction permit," we are requesting a change to Appendix A, Technical Specifications (TS), Facility Operating License Nos. DPR-29 and DPR-30. The proposed change removes the Main Steam Line Radiation Monitor (MSLRM) scram and Main Steam Line (MSL) isolation functions at Quad Cities Nuclear Power Station (QCNPS), Units 1 and 2. The proposed change is supported by an NRC approved Boiling Water Reactor Owners' Group (BWROG) Licensing Topical Report (LTR) NEDO- 31400A, "Safety Evaluation for Eliminating The Boiling Water Reactor Main Steam Line Isolation Valve Closure Function and Scram Function of the Main Steam Line Radiation Monitor" (Reference 1). Eliminating these functions would improve the availability of the main condenser for removal of decay heat and aids in eliminating inadvertent reactor trips. Note that ComEd participated in the BWROG study as noted in Appendix B of NEDO-31400A.

All MSLRM trip functions are being eliminated except the MSLRM trip of the condenser Mechanical Vacuum Pump. A new requirement, TS Section 3/4.2.L, "Mechanical Vacuum Pump Isolation Instrumentation," is proposed for this function. This new TS requirement is consistent with the Improved Standard Technical Specifications (i.e., NUREG-1433, Revision 1, "Standard Technical Specifications, General Electric Plants, BWR/4," April 1995).

The Reference 1 radiological assessment evaluated two scenarios for the Control Rod Drop Accident (CRDA). The first scenario followed the standard approach outlined in NUREG-0800, "Standard Review Plan," (SRP) Section 15.4.9, "Radiological Consequences of Control Rod Drop Accident (BWR)." In this case it was assumed that the released radioactivity is airborne in the turbine and condenser following Main Steam Isolation Valve (MSIV) closure and leaks directly to the atmosphere. In the second scenario, it was assumed that no MSL isolation occurred and that the released radioactive material was transported to the augmented offgas system. These evaluations determined that eliminating the MSLRM scram and MSL isolation functions results in radiological exposures that are a small fraction of 10 CFR 100, "Reactor Site Criteria," guidelines. As outlined in Section F below, we have performed a plant specific radiological evaluation supporting the proposed change. The plant specific evaluation (i.e., provided in Attachment E) was performed consistent with the Reference 1 evaluation (i.e., scenario 2) and includes plant features unique to QCNPS, Units 1 and 2, for example, the release path associated with the turbine gland seal exhauster.

The proposed change is described in detail in Section E of this Attachment. The marked up TS pages are shown in Attachment B.

## B. DESCRIPTION OF THE CURRENT REQUIREMENTS

TS Table 2.2.A-1, "Reactor Protection System Instrumentation Setpoints," currently specifies the Main Steam Line Radiation – High Scram Setpoint (i.e., Item 6) as $\leq$ 15 times normal full power background (without primary coolant system hydrogen addition).

TS Bases Section 2.2.A, "Reactor Protection System Instrumentation Setpoints," provides the bases for the Main Steam Line Radiation - High trip function.

TS Table 3.1.A-1, "Reactor Protection System Instrumentation," currently lists Item 6 "Main Steam Line Radiation – High." TS Table 3.1.A-1 provides the modes for which the MSLRM requirements are applicable, modified by TS Table 3.1.A-1 Note (f), the required minimum number of operable channels per trip system, and the actions required when the Limiting Conditions for Operation (LCO) are not met. TS Table 3.1.A-1, ACTION 15, prescribes the required actions when the "Minimum OPERABLE CHANNEL(s) per TRIP SYSTEM" are not met.

Similarly, TS Table 4.1.A.1, "Reactor Protection System Instrumentation Surveillance Requirements," also lists Item 6 "Main Steam Line Radiation - High." The table lists the surveillance requirements for this MSLRM function. Note (p) to TS Table 4.1.A-1 modifies the refueling channel calibration requirement by specifying a three month periodicity for a channel alignment with a current source. Note (i) modifies the applicable modes for the surveillance requirements.

TS Tables 3.2.A-1 and 4.2.A-1, "Isolation Actuation Instrumentation" and "Isolation Actuation Instrumentation Surveillance Requirements," list the MSL Tunnel Radiation - High (i.e., Item 3b) input to the MSL Isolation. TS Table 3.2.A-1 lists the applicable operating modes, trip setpoints, the minimum required channels to be operable per trip system, as well as the required actions in the event the LCO condition is not met. Notes (b) and (h) of TS Table 3.2.A-1 provide clarification on the function of the scram and on the scram setpoint. TS Table 4.2.A-1 lists the surveillance requirements for the MSL Tunnel Radiation - High Instrumentation. Table 4.2.A-1, Note (e), provides additional information on the required channel calibration.

## C. BASES FOR THE CURRENT REQUIRMENTS

The MSLRM consists of ionization chambers that monitor for gamma radiation at points external to the MSLs. In the event of a high radiation level, which is indicative of fuel failure, the MSLRM provides a trip signal to the Reactor Protection System (i.e., reactor scram) and the Group 1 Isolation Logic. A Group 1 signal isolates the four main steam lines, the main steam line drain and the recirculation sample line. The MSLRM also provides an isolation signal to the offgas Steam Jet Air Ejector (SJAE) isolation and suction valves, a trip signal to the main condenser Mechanical Vacuum Pump, and close signals to the offgas Pressurized Drain Tank drain valves and offgas sample valves.

The MSLRM detects large to moderate fuel failures by measuring gross gamma radiation from the MSLs downstream of the outboard MSIVs. These scram and isolation signals limit releases to the environment and mitigate the radiological effects of a failure of the fuel cladding during a CRDA to well within the limits of 10 CFR Part 100.11. "Well within" is defined in Appendix A of the Standard Review Plan (i.e., NUREG-0800) Section 15.4.9, "Spectrum of Rod Drop Accidents (BWR)," as 25% of the limits of 10 CFR 100 or 75 REM for the thyroid and 6 REM for whole-body doses.

## D. NEED FOR REVISION OF THE REQUIREMENTS

The proposed TS change will implement an NRC approved BWROG initiative to reduce unnecessary reactor trips. Removal of the MSLRM scram and isolation functions will reduce forced shutdowns due to inadvertent scrams and provides an economic benefit by increasing system availability without a corresponding significant increase in radiological consequences of a CRDA.

## E. DESCRIPTION OF THE PROPOSED CHANGE

The proposed change removes the MSLRM scram and the MSL tunnel radiation high signal to the MSL isolation functions at QCNPS, Units 1 and 2. The specific changes being proposed are summarized below:

1) **TS Page V, “Table of Contents”:**

   - Add new Section 3/4.L, “Mechanical Vacuum Pump Isolation Instrumentation"

2) **TS Page 2-4, TS Table 2.2.A-1, "Reactor Protection System Instrumentation Setpoints":**

   - Delete Item 6, "Main Steam Line Radiation - High"

3) **TS Bases Page B 2-8:**

   - Delete Item 6, "Main Steam Line Radiation - High"

4) **TS Page 3/4.1-3, TS Table 3.1.A-1, "Reactor Protection System Instrumentation":**

   - Delete Item 6, “Main Steam Line Radiation – High”

**ATTACHMENT A**



5) **TS Page 3/4.1-5, TS Table 3.1.A-1, "Reactor Protection System Instrumentation":**

- Delete Action 15

6) **TS Page 3/4.1-7, TS Table 4.1.A-1, "Reactor Protection System Instrumentation Surveillance Requirements":**

- Delete Item 6, "Main Steam Line Radiation - High"

7) **TS Page 3/4.1-10, TS Table 4.1.A-1, "Reactor Protection System Instrumentation Surveillance Requirements":**

- Delete Note (p)

8) **TS Page 3/4.2-3, TS Table 3.2.A-1, "Isolation Actuation Instrumentation":**

- Delete Item 3.b, "MSL Tunnel Radiation - High"

9) **TS Page 3/4.2-7, TS Table 3.2.A-1, "Isolation Actuation Instrumentation":**

- Delete Note (b)
- Delete Note (h)

10) **TS Page 3/4.2-8, TS Table 4.2.A-1, "Isolation Actuation Instrumentation Surveillance Requirements":**

- Delete Item 3.b, "MSL Tunnel Radiation - High"

11) **TS Page 3/4.2-10, TS Table 4.2.A-1, "Isolation Actuation Instrumentation Surveillance Requirements":**

- Delete Note (e)

12) **TS Page 3/4.2-55, and Page B3/4.2-5 "INSTRUMENTATION" (New Specification)**

- Add TS 3/4.2.L, "Mechanical Vacuum Pump Isolation Instrumentation"

A new TS Section is proposed for the MSLRM trip function of the condenser Mechanical Vacuum Pump. This change is consistent with the Improved Standard TS. A total of four channels of the Main Steam Line Radiation - High function will be required to be OPERABLE in Modes 1 and 2. In Modes 3, 4 and 5, the consequences of a CRDA accident are insignificant. TS Surveillance Requirements are proposed, including CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION and Logic Testing requirements. The Mechanical Vacuum Pump trip setpoint remains unchanged at 15 times normal background radiation levels without primary coolant system hydrogen injection. Action requirements are proposed whenever one or more channels are inoperable. These actions include a one hour verification of trip capability and a 12 hour requirement to place the inoperable channel(s) in the tripped condition. If these actions can not be met, the Mechanical Vacuum Pump must be removed from service, or the MSLs isolated, or the unit must be placed in operational mode 3 within 12 hours. Associated TS bases are also provided.

## F. SAFETY ANALYSIS OF THE PROPOSED CHANGES

In Reference 1, the BWROG presented a safety analysis for removal of the MSLRM scram and MSL tunnel radiation signal input to the MSL isolation function (i.e., NEDO-31400A). By letter dated May 15, 1991, the NRC accepted the BWROG safety analysis and concluded that the removal of the MSLRM scram and MSL isolation functions from the high radiation signal were acceptable (Reference 2). In the Safety Evaluation accompanying the May 15, 1991 letter, the NRC stated that licensees submitting license amendment requests could reference NEDO-31400A in support of their requests provided the following three conditions were satisfied.

1. *The applicant demonstrates that the assumptions with regard to input values (including power per assembly, Chi/Q, and decay times) that are made in the generic analysis bound those for the plant.*

   GE Licensing Topical Report NEDO-31400A evaluated the consequences of eliminating the MSLRM scram and MSL isolation functions by performing two radiological assessments: a CRDA with and without automatic MSL isolation. The NEDO-31400A evaluation demonstrated that removing the scram and MSL isolation functions of the MSLRM results in acceptable dose consequences following a CRDA (below 25% of the 10 CFR 100 limits as provided in SRP Section 15.4.9).

   Although the general conclusions of the GE report are valid for QCNPS, the supporting radiological analysis is not directly applicable due to a site-specific release path not accounted for in the study. Therefore, we have completed a site-specific radiological evaluation (see Attachment E) to account for the additional release path from the turbine gland seal exhauster. The gland seal exhauster discharges, via the main chimney, reactor steam collected at the turbine gland seals. The analysis was performed using the approach outlined in SRP Section 15.4.9. A summary of the evaluation is provided below.

*CRDA Model*

The plant was modeled so that the MSIVs do not close on a high radiation signal. Two primary release paths are considered: 1) main steam to the turbine/condenser (which is treated by the augmented offgas system) and 2) gland seal steam to the gland steam condenser. Note that the Mechanical Vacuum Pump typically does not operate above certain power levels (i.e., in accordance with existing procedures, the Mechanical Vacuum Pump shall NOT be operated when the Reactor Mode Switch is in RUN). The main condenser Mechanical Vacuum Pump is assumed to operate until it trips off on a high radiation signal from the MSLRM. The analysis conservatively assumes that the Mechanical Vacuum Pump operates for 6-seconds following the CRDA. Note that SRP Section 15.4.9 requires that a loss of offsite power be assumed coincident with the CRDA. However, as discussed in NEDO-31400A (Reference 1), loss of offsite power results in a loss of cooling water to the main condenser and a subsequent loss of main condenser vacuum. A low main condenser vacuum condition will isolate the main condenser from the reactor by generating turbine trip and turbine bypass valve closure signals. Consistent with Reference 1, the Attachment E analysis assumes offsite power is available, which provides power to the condenser Mechanical Vacuum Pump, the main turbine Gland Seal Exhauster, and the offgas system valves which fail close on a loss of power. These three components represent the release pathways evaluated in the Attachment E analysis.

The following table summarizes the key input parameters.

INPUT PARAMETERS

| Parameter | NEDO-31400A | Site Specific Study QDC 9400-M-0550 Rev. 0 |
|---|---|---|
| Failed Fuel Rods Following CRDA | 850 | 850 |
| Rod Peaking Factor | 1.5 | 1.5 |
| Power Per Assembly | 0.12 Mw/Rod | 0.084 Mw/Rod |
| ½ - 2 hour Exclusion Area Boundary (EAB) Chi/Q | 3.0E-4 s/m$^3$ (Bounding) | 2.3E-05 s/m$^3$ |
| Decay Times (Augmented Offgas System (AOG) holdup time) | Range of Values Evaluated | No Credit Taken For Noble Gas holdup in Augmented Offgas System (AOG). |

Source Term

A source term for activity to be released was developed based on the guidelines of NEDO 31400A (Reference 1), which is for a generic plant, SRP Section 15.4.9, and plant specific data for QCNPS. A model to evaluate the CRDA was developed to include source term contributions from the MSL and the gland seal steam line, their leakage paths and release points. The total radioactive inventory of the core was calculated based on NRC Technical Information Document (TID) 14844, "Calculation of Distance Factors for Power and Test Reactor Sites," methodology and Siemens 20 and 60 GWd/MTU fuels.

Dose Conversion Factors

The existing licensing basis accident analysis is based on the dose conversion factors (DCFs) which were referenced in NRC Regulatory Guide 1.3, "Assumptions Used for Evaluating the Potential Radiological Consequences of a Loss of Coolant Accident for Boiling Water Reactors," Revision 2, and TID-14844. The basis was International Commission on Radiological Protection (ICRP) Publication 2, which was published in the early 1960's. Since the publishing of ICRP-2, work has been and continues to be performed in both the U.S. and overseas on developing new DCFs. Regulatory Guide 1.109, "Calculation Of Annual Doses To Man From Routine Releases Of Reactor Effluents For The Purpose Of Evaluation Compliance With 10 CFR PART 50, Appendix I," Revision 1, recommends DCFs that are significantly lower than those recommended in Regulatory Guide 1.3 or TID-14844. ICRP Publication 30 issued in 1979 provides even lower DCFs. Although ICRP-30 DCFs have not been included in a regulatory guide for use in accident analyses, they have been submitted and approved by NRC in a number of post Three Mile Island (TMI) Control Room Habitability analyses. The Attachment E radiological assessment calculates thyroid doses using both ICRP-2 and ICRP-30 for comparison purposes. The following is a summary of the limiting results (i.e., TID-14844 Source Term and ICRP-2 DCFs). The radiological consequences were assessed with the Scientech-NUS "AXIDENT" computer code which is a transient control room and site boundary dose analysis model.

ANALYSIS RESULTS SUMMARY

| Location | Dose | Thyroid (Rem) | Whole Body (Rem) | Beta Dose (Rem) |
|---|---|---|---|---|
| Low Population Zone (LPZ) Dose | AXIDENT Prediction | *0.229* | *0.472* | *0.263* |
| | SRP 15.4.9 Limit | 75 | 6 | - |
| Control Room | AXIDENT Prediction | *4.78* | *0.209* | *4.23* |
| | SRP 6.4 Limits | 30 | 5 | 30 |
| EAB Dose | AXIDENT Prediction | *2.07* | *2.65* | *1.12* |
| | SRP 15.4.9 Limit | 75 | 6 | - |

The SRP 15.4.9 limits provided above are based on 25% of the limits established in 10 CFR 100.11. As can be seen, the calculated total doses tabulated above are below 25% of the limits in 10 CFR part 100.11, (i.e., 75 REM for the thyroid and 6 REM for whole - body doses). In addition, the calculated control room exposure is also well within the guidelines in SRP 6.4. The Attachment E calculation provides a comparison of thyroid doses using ICRP-2 and ICRP-30. As can be seen in Table 9 of Attachment E, calculated doses are significantly reduced (i.e., between 40%-43% lower) using ICRP-30 DCFs.

Note that all MSLRM trip functions will be eliminated except the Mechanical Vacuum Pump trip function. This is consistent with the BWROG and site specific analyses. In order to ensure an acceptable level of performance, we are proposing the addition of a new TS requirement specifically for the Mechanical Vacuum Pump trip function. This new requirement, TS Section 3/4.2.L, "Mechanical Vacuum Pump Isolation Instrumentation," provides limiting conditions for operation, action requirements and surveillance requirements. This proposed TS requirement is consistent with the Improved Standard TS.

The radiological evaluation discussed above supports eliminating the MSLRM scram and MSL isolation functions consistent with Reference 1. Protection will continue to be provided by the offgas monitoring system at QCNPS as described here. To guard against the potential atmospheric release of fission products resulting from postulated fuel failures, offgas activity from the main condenser is monitored prior to release to the main chimney. The offgas system includes ion-chamber detectors that are mounted adjacent to and just ahead of the off-gas holdup volume. An upscale output from either monitor (i.e., two actuation channels are provided) actuates a high-high radiation alarm in the control room. In addition, control logic is such that two upscale trips or one upscale and one downscale trip initiate a time-delayed (i.e., 15 minute) closure of the off-gas isolation valve, which prevents further release of off-gas from the holdup volume to the main chimney. The changes proposed by this TS change request have no impact on the offgas monitoring actuation features at QCNPS.

2. *The applicant includes sufficient evidence (implemented or proposed operating procedures or equivalent commitments) to provide reasonable assurance that increased significant levels of radioactivity in the main steam lines will be controlled expeditiously to limit both occupational doses and environmental releases.*

   Operating procedures will be reviewed and revised as necessary to ensure operator actions limit occupational doses and environmental releases upon evidence of increased levels of radioactivity in the main steam lines. These changes will be completed prior to implementation of the proposed TS changes once approved by the NRC.

3. *The applicant standardizes the MSLRM and offgas radiation monitor alarm setpoints at 1.5 times the nominal nitrogen-16 background dose rate at the monitor locations, and commits to promptly sample the reactor coolant to determine possible contamination levels in the reactor coolant and the need for additional corrective actions if the MSLRM or offgas radiation monitors or both exceed their alarm setpoints.*

   ComEd will reset the MSLRM and offgas radiation monitor alarms to 1.5 times the normal full power Nitrogen (N)-16 background with hydrogen addition on as well as amend operating procedures as necessary to ensure prompt sampling of the reactor coolant to determine possible sources of the contamination as well as to determine the need for further corrective action. (Note that *Normal* full power N-16 background radiation level with hydrogen addition on will be calculated by averaging the detector outputs over a duration specified in station procedures.) These changes will be completed prior to implementation of the approved TS changes. Note that TS Section 4.8.I, "Main Condenser Offgas Activity," requires the release rate of activities from the main condenser be verified within limits within four hours following a 50% increase in activity.

## G. IMPACT ON PREVIOUS SUBMITTALS

ComEd has determined that the amendment request contained herein has no impact on submittals currently under review by the NRC.

## H. SCHEDULE REQUIREMENTS

ComEd requests approval of this proposed TS change as soon as possible to support installation during the next refueling outage on Unit 2 or during the next planned or unplanned outage of sufficient duration. A similar design change is planned on Unit 1 during the $16^{th}$ refueling outage schedueled to begin in October 2000.

## I. REFERENCES

(1) General Electric Report NEDO-31400A, "Safety Evaluation for Eliminating The Boiling Water Reactor Main Steam Line Isolation Valve Closure Function and Scram Function of the Main Steam Line Radiation Monitor," dated October 1992.

(2) Letter from A. C. Thadani (USNRC) to G. J. Beck (BWROG), dated May 15, 1991, "Acceptance for Referencing Topical Report NEDO-31400."

ATTACHMENT B

Proposed Change to Technical Specifications
Quad Cities Nuclear Power Station - Units 1 and 2

# Marked-up Technical Specifications Changes

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

TABLE 2.2.A-1

REACTOR PROTECTION SYSTEM INSTRUMENTATION SETPOINTS

| Functional Unit | Trip Setpoint |
| --- | --- |
| 1. Intermediate Range Monitor: | |
| a. Neutron Flux - High | ≤120/125 divisions of full scale |
| b. Inoperative | NA |
| 2. Average Power Range Monitor: | |
| a. Setdown Neutron Flux - High | ≤15% of RATED THERMAL POWER |
| b. Flow Biased Neutron Flux - High | |
| 1) Dual Recirculation Loop Operation | |
| a) Flow Biased | ≤0.58W[a] + 62%, with a maximum of |
| b) High Flow Clamped | ≤120% of RATED THERMAL POWER |
| 2) Single Recirculation Loop Operation | |
| a) Flow Biased | ≤0.58W[a] + 58.5%, with a maximum of |
| b) High Flow Clamped | ≤116.5% of RATED THERMAL POWER |
| c. Fixed Neutron Flux - High | ≤120% of RATED THERMAL POWER |
| d. Inoperative | NA |
| 3. Reactor Vessel Steam Dome Pressure - High | ≤1060 psig |
| 4. Reactor Vessel Water Level - Low | ≥144 inches above top of active fuel |
| 5. Main Steam Line Isolation Valve - Closure | ≤10% closed |
| 6. ~~Main Steam Line Radiation - High~~ Deleted | ~~≤15 x normal full power background (without hydrogen addition)~~ |

a W shall be the recirculation loop flow expressed as a percentage of the recirculation loop flow which produces a rated core flow of 98 million lbs/hr.

## BASES

decrease as power is increased to 100% in comparison to the level outside the shroud, to a maximum of seven inches, due to the pressure drop across the steam dryer. Therefore, at 100% power, an indicated water level of +8 inches water level may be as low as +1 inches inside the shroud which corresponds to 144 inches above the top of active fuel and 504 inches above vessel zero. The top of active fuel is defined to be 360 inches above vessel zero.

5. Main Steam Line Isolation Valve - Closure

Automatic isolation of the main steam lines is provided to give protection against rapid reactor depressurization and cooldown of the vessel. When the main steam line isolation valves begin to close, a scram signal provides for reactor shutdown so that high power operation at low reactor pressures does not occur. With the scram setting at 10% valve closure (from full open), there is no appreciable increase in neutron flux during normal or inadvertent isolation valve closure, thus providing protection for the fuel cladding integrity Safety Limit. Operation of the reactor at pressures lower than the MSIV closure setting requires the reactor mode switch to be in the Startup/Hot Standby position, where protection of the fuel cladding integrity Safety Limit is provided by the IRM and APRM high neutron flux scram signals. Thus, the combination of main steam line low pressure isolation and the isolation valve closure scram with the mode switch in the Run position assures the availability of the neutron flux scram protection over the entire range of applicability of fuel cladding integrity Safety Limit.

6. ~~Main Steam Line Radiation - High~~ Deleted

~~High radiation levels in the main steam line tunnel above that due to the normal nitrogen and oxygen radioactivity are an indication of leaking fuel. When high radiation is detected, a scram is initiated to mitigate the failure of fuel cladding. The scram setting is high enough above background radiation levels to prevent spurious scrams yet low enough to promptly detect gross failures in the fuel cladding. This setting is determined based on normal full power background (NFPB) radiation levels without hydrogen addition. With the injection of hydrogen into the feedwater for mitigation of intergranular stress corrosion cracking, the full power background levels may be significantly increased. The setting is sufficiently high to allow the injection of hydrogen without requiring an increase in the setting. This trip function provides an anticipatory scram to limit offsite dose consequences, but is not assumed to occur in the analysis of any design basis event.~~

TABLE 3.1.A-1 (Continued)

REACTOR PROTECTION SYSTEM INSTRUMENTATION

| Functional Unit | Applicable OPERATIONAL MODE(s) | Minimum OPERABLE CHANNEL(s) per TRIP SYSTEM[a] | ACTION |
|---|---|---|---|
| 5. Main Steam Line Isolation Valve - Closure | 1 | 4 | 14 |
| 6. Deleted ~~Main Steam Line Radiation - High~~ | ~~1, 2[f]~~ | ~~2~~ | ~~15~~ |
| 7. Drywell Pressure - High | 1, 2[h] | 2 | 11 |
| 8. Scram Discharge Volume Water Level - High | | | |
| a. ΔP Switch, and | 1, 2<br>5[b,l] | 2<br>2 | 11<br>13 |
| b. Thermal Switch | 1, 2<br>5[b,l] | 2<br>2 | 11<br>13 |
| 9. Turbine Stop Valve - Closure | 1[d] | 4 | 16 |
| 10. Turbine EHC Control Oil Pressure - Low | 1[d] | 2 | 16 |
| 11. Turbine Control Valve Fast Closure | 1[d] | 2 | 16 |
| 12. Turbine Condenser Vacuum - Low | 1 | 2 | 14 |

TABLE 3.1.A-1 (Continued)

REACTOR PROTECTION SYSTEM INSTRUMENTATION

ACTION

ACTION 11 - Be in at least HOT SHUTDOWN within 12 hours.

ACTION 12 - Verify all insertable control rods to be fully inserted in the core and lock the reactor mode switch in the Shutdown position within one hour.

ACTION 13 - Suspend all operations involving CORE ALTERATIONS, and fully insert all insertable control rods within one hour. If SRM instrumentation is not OPERABLE per Specification 3.10.B, also suspend replacement of LPRMs.

ACTION 14 - Be in at least STARTUP within 8 hours.

ACTION 15 - Deleted ~~Be in STARTUP with the main steam line isolation valves closed within 8 hours or in at least HOT SHUTDOWN within 12 hours.~~

ACTION 16 - Initiate a reduction in THERMAL POWER within 15 minutes and reduce reactor power to less than 45% of RATED THERMAL POWER within 2 hours.

ACTION 17 - Verify all insertable control rods to be fully inserted in the core within one hour.

ACTION 18 - Lock the reactor mode switch in the Shutdown position within one hour.

ACTION 19 - Suspend all operations involving CORE ALTERATIONS, and fully insert all insertable control rods and lock the reactor mode switch in the Shutdown position within one hour. If SRM instrumentation is not OPERABLE per Specification 3.10.B, also suspend replacement of LPRMs.

TABLE 4.1.A-1

REACTOR PROTECTION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

| Functional Unit | Applicable OPERATIONAL MODES | CHANNEL CHECK | CHANNEL FUNCTIONAL TEST | CHANNEL[a] CALIBRATION |
|---|---|---|---|---|
| 1. Intermediate Range Monitor: | | | | |
| a. Neutron Flux - High | 2<br>3, 4, 5 | S[b]<br>S | S/U[c], W[o]<br>W[o] | E[o]<br>E[o] |
| b. Inoperative | 2, 3, 4, 5 | NA | W[o] | NA |
| 2. Average Power Range Monitor[f]: | | | | |
| a. Setdown Neutron Flux - High | 2<br>3, 5[m] | S[b]<br>S | S/U[c], W[o]<br>W[o] | SA[o]<br>SA[o] |
| b. Flow Biased Neutron Flux - High | 1 | S, D | W | W[d,e], SA |
| c. Fixed Neutron Flux - High | 1 | S | W | W[d], SA |
| d. Inoperative | 1, 2, 3, 5[m] | NA | W | NA |
| 3. Reactor Vessel Steam Dome Pressure - High | 1, 2[i] | NA | M | Q |
| 4. Reactor Vessel Water Level - Low | 1, 2 | D | M | E[h] |
| 5. Main Steam Line Isolation Valve - Closure | 1 | NA | M | E |
| 6. Deleted ~~Main Steam Line Radiation - High~~ | ~~1, 2[i]~~ | ~~S~~ | ~~M~~ | ~~E[p]~~ |
| 7. Drywell Pressure - High | 1, 2[n] | NA | M | Q |

TABLE 4.1.A-1 (Continued)

REACTOR PROTECTION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

(l) With THERMAL POWER greater than or equal to 45% of RATED THERMAL POWER.

(m) Required to be OPERABLE only prior to and during required SHUTDOWN MARGIN demonstrations performed per Specification 3.12.B.

(n) This function is not required to be OPERABLE when PRIMARY CONTAINMENT INTEGRITY is not required.

(o) The provisions of Specification 4.0.D are not applicable to the CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION surveillances for a period of 24 hours after entering OPERATIONAL MODE 2 or 3 when shutting down from OPERATIONAL MODE 1.

(p) ~~A current source provides an instrument channel alignment every 3 months.~~

Deleted

TABLE 3.2.A-1

ISOLATION ACTUATION INSTRUMENTATION

| Functional Unit | Trip Setpoint[j] | Minimum CHANNEL(s) per TRIP SYSTEM[a] | Applicable OPERATIONAL MODE(s) | ACTION |
|---|---|---|---|---|
| **1. PRIMARY CONTAINMENT ISOLATION** | | | | |
| a. Reactor Vessel Water Level - Low | ≥144 inches | 2 | 1, 2, 3 | 20 |
| b. Drywell Pressure - High[d] | ≤2.5 psig | 2 | 1, 2, 3 | 20 |
| c. Drywell Radiation - High | ≤100 R/hr | 1 | 1, 2, 3 | 23 |
| **2. SECONDARY CONTAINMENT ISOLATION** | | | | |
| a. Reactor Vessel Water Level - Low[c,k] | ≥144 inches | 2 | 1, 2, 3 & * | 24 |
| b. Drywell Pressure - High[c,d,k] | ≤2.5 psig | 2 | 1, 2, 3 | 24 |
| c. Reactor Building Ventilation Exhaust Radiation - High[c,k] | ≤10 mR/hr | 2 | 1, 2, 3 & ** | 24 |
| d. Refueling Floor Radiation - High[c,k] | ≤100 mR/hr | 2 | 1, 2, 3 & ** | 24 |
| **3. MAIN STEAM LINE (MSL) ISOLATION** | | | | |
| a. Reactor Vessel Water Level - Low Low | ≥84 inches | 2 | 1, 2, 3 | 21 |
| b. ~~MSL Tunnel Radiation - High[b]~~ Deleted | ~~≤15[h] x normal background~~ | ~~2~~ | ~~1, 2, 3~~ | ~~21~~ |
| c. MSL Pressure - Low | ≥825 psig | 2 | 1 | 22 |
| d. MSL Flow - High[k] | ≤140% of rated | 2/line | 1, 2, 3 | 21 |
| e. MSL Tunnel Temperature - High | ≤200°F | 2 of 4 in each of 2 sets | 1, 2, 3 | 21 |

TABLE 3.2.A-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

TABLE NOTATION

* During CORE ALTERATIONS or operations with a potential for draining the reactor vessel.

** When handling irradiated fuel in the secondary containment.

(a) A CHANNEL may be placed in an inoperable status for up to 2 hours for required surveillance without placing the CHANNEL in the tripped condition provided the Functional Unit maintains isolation actuation capability.

(b) ~~Also trips the mechanical vacuum pump and isolates the steam jet air ejectors.~~ Deleted

(c) Isolates the reactor building ventilation system and actuates the standby gas treatment system.

(d) This function is not required to be OPERABLE when PRIMARY CONTAINMENT INTEGRITY is not required.

(e) Only one TRIP SYSTEM.

(f) Closes only reactor water cleanup system isolation valves.

(g) Only one trip system requied in OPERATIONAL MODE(s) 4 and 5 with RHR Shutdown Cooling System integrity maintained. System integrity is maintained provided the piping is intact and no maintenance is being performed that has the potential for draining the reactor vessel through the system.

(h) ~~Normal background is as measured during full power operation without hydrogen being injected.~~ Deleted

(i) Includes a time delay of $3 \leq t \leq 9$ seconds.

(j) Reactor vessel water level settings are expressed in inches above the top of active fuel (which is 360 inches above vessel zero).

(k) Also isolates the control room ventilation system.

TABLE 4.2.A-1

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

| Functional Unit | CHANNEL CHECK | CHANNEL FUNCTIONAL TEST | CHANNEL CALIBRATION | Applicable OPERATIONAL MODE(s) |
|---|---|---|---|---|
| 1. PRIMARY CONTAINMENT ISOLATION | | | | |
| a. Reactor Vessel Water Level - Low | S | M | E[a] | 1, 2, 3 |
| b. Drywell Pressure - High[b] | NA | M | Q | 1, 2, 3 |
| c. Drywell Radiation - High | S | M | E | 1, 2, 3 |
| 2. SECONDARY CONTAINMENT ISOLATION | | | | |
| a. Reactor Vessel Water Level - Low[c,d] | S | M | E[a] | 1, 2, 3 & * |
| b. Drywell Pressure - High[b,c,d] | NA | M | Q | 1, 2, 3 |
| c. Reactor Building Ventilation Exhaust Radiation - High[c,d] | S | M | Q | 1, 2, 3 & ** |
| d. Refueling Floor Radiation - High[c,d] | S | M | Q | 1, 2, 3 & ** |
| 3. MAIN STEAM LINE (MSL) ISOLATION | | | | |
| a. Reactor Vessel Water Level - Low Low | S | M | E[a] | 1, 2, 3 |
| b. ~~MSL Tunnel Radiation - High~~ Delete | ~~S~~ | ~~M~~ | ~~E[a]~~ | ~~1, 2, 3~~ |
| c. MSL Pressure - Low | NA | M | Q | 1 |
| d. MSL Flow - High[d] | S | M | E | 1, 2, 3 |
| e. MSL Tunnel Temperature - High | NA | E | E | 1, 2, 3 |

TABLE 4.2.A-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

TABLE NOTATION

* During CORE ALTERATIONS or operations with a potential for draining the reactor vessel.

** When handling irradiated fuel in the secondary containment.

(a) Trip units are calibrated at least once per 31 days and transmitters are calibrated at the frequency identified in the table.

(b) This function is not required to be OPERABLE when PRIMARY CONTAINMENT INTEGRITY is not required.

(c) Isolates the reactor building ventilation system and actuates the standby gas treatment system.

(d) Also isolates the control room ventilation system.

(e) ~~These instrument channels will be calibrated using simulated electrical signals once every three months. In addition, calibration including the sensors will be performed every 18 months.~~

Deleted

## 3.2 - LIMITING CONDITIONS FOR OPERATION

L. Mechanical Vacuum Pump Isolation Instrumentation

Four CHANNELS of the of the Main Steam Line Radiation - High Function for the Mechanical Vacuum Pump trip shall be OPERABLE[c].

APPLICABILITY

OPERATIONAL MODE(s) 1 and 2 with the Mechanical Vacuum Pump in service and any main steam line not isolated.

ACTION:

With one or more CHANNEL(s) inoperable:

a. Within one hour, verify sufficient CHANNELS remain OPERABLE to maintain trip capability, AND

b. Within 12 hours, place the inoperable CHANNEL(s) in the tripped condition[d].

Otherwise, within 12 hours either:

a. Trip or isolate the Mechanical Vacuum Pump, OR

b. Close the Main Steam Lines, OR

c. Be in OPERATIONAL MODE 3.

## 4.2 - SURVEILLANCE REQUIREMENTS

L. Mechanical Vacuum Pump Isolation Instrumentation

The Main Steam Line Radiation - High Function for the Mechanical Vacuum Pump trip shall be demonstrated OPERABLE by performance of a:

1. CHANNEL CHECK at least once per 12 hours,
2. CHANNEL FUNCTIONAL TEST at least once per 31 days, and
3. CHANNEL CALIBRATION[a] at least once per 18 months. The trip setpoint shall be $\leq$ 15 x normal background[b].
4. LOGIC SYSTEM FUNCTIONAL TEST at least once per 18 months including the Mechanical Vacuum Pump breaker.

(a) A current source provides an instrument channel alignment every 3 months.
(b) Normal background is as measured during full power operation without hydrogen being injected.
(c) When a CHANNEL is placed in an inoperable status solely for performance of required surveillances, entry into the associated Limiting Conditions for Operation and required ACTIONs may be delayed for up to 6 hours provided Mechanical Vacuum Pump trip capability is maintained.
(d) Not applicable if the inoperable channel is due to an inoperable Mechanical Vacuum Pump breaker.

BASES

## 3/4.2.I Suppression Chamber and Drywell Spray Actuation Instrumentation

Instrumentation is provided to monitor the parameters which are necessary to permit initiation of the containment cooling mode of the residual heat removal system to condense steam in the containment atmosphere. The spray mode does not significantly affect the rise of drywell pressure following a loss of coolant accident, but does result in quicker depressurization following completion of the blowdown.

## 3/4.2.J Feedwater Trip System Actuation

The feedwater trip system actuation instrumentation is designed to detect a potential failure of the feedwater control system which causes excessive feedwater flow. If undetected, this would lead to reactor vessel water carryover into the main steam lines and to the main turbine. This instrumentation is included in response to Generic Letter 89-19.

## 3/4.2.K Toxic Gas Monitoring

Toxic gas monitoring instrumentation is provided in or near the control room ventilation system intakes to allow prompt detection and the necessary protective actions to be initiated. Isolation from high toxic chemical concentration has been added to the station design as a result of the "Control Room Habitability Study" submitted to the NRC in December 1981 in response to NUREG-0737 Item III D.3.4. As explained in Section 3 of this study, ammonia, chlorine, and sulphur dioxide detection capability has been provided. In a report generated by Sargent and Lundy in April 1991, justification was provided to delete the chlorine and sulphur dioxide detectors from the plant. The setpoints chosen for the control room ventilation isolation are based on early detection in the outside air supply at the odor threshold, so that the toxic chemical will not achieve toxicity limit concentrations in the Control Room.

INSERT A

## INSERT A

### 3/4.2.L Mechanical Vacuum Pump Isolation Instrumentation

The Mechanical Vacuum Pump Isolation Instrumentation initiates a trip of the main condenser Mechanical Vacuum Pump following an event in which main steam line radiation levels exceed predetermined values. Tripping the mechanical vacuum pump limits the offsite doses in the event of a control rod drop accident (CRDA). The trip logic consists of two independent trip systems with two channels of the Main Steam Line Radiation - High in each trip system. The outputs of each trip system are combined in a one-out-of-two taken twice logic.

The trip of the Mechanical Vacuum Pump is credited in the CRDA radiological analysis. Accordingly, the Mechanical Vacuum Pump trip is required to be operable in Modes 1 and 2. In modes 3, 4 and 5, the consequences of a CRDA are insignificant and are not expected to result in any fuel damage. Surveillance requirements for testing and calibration are provided to ensure an acceptable level of quality and reliability.

## ATTACHMENT C

**Proposed Change to Technical Specifications**
**Quad Cities Nuclear Power Station - Units 1 and 2**
**(Page 1 of 2)**

## INFORMATION SUPPORTING A FINDING OF NO SIGNIFICANT HAZARDS CONSIDERATION

Commonwealth Edison (ComEd) Company has evaluated the proposed Technical Specifications (TS) change for Quad Cities Nuclear Power Station (QCNPS), Units 1 and 2, and has determined that it involves no significant hazards consideration. According to 10 CFR 50.92(c), "Issuance of amendment," a proposed change to an operating license involves no significant hazards consideration if operation of the facility in accordance with the proposed change would not:

Involve a significant increase in the probability of occurrence or consequences of an accident previously evaluated;

Create the possibility of a new or different kind of accident from any previously analyzed; or

Involve a significant reduction in a margin of safety.

In accordance with 10 CFR 50.90, "Application for amendment of license or construction permit," ComEd proposes to amend Appendix A, TS, of Facility Operating License Nos. DPR-29 and DPR-30. The proposed change involves the following TS Sections.

Table of Contents
Section 2.2 – Limiting Safety System Setpoints
Section 3/4.1 – Reactor Protection System
Section 3/4.2 – Instrumentation

The proposed change removes the Main Steam Line Radiation Monitor (MSLRM) scram and main steam line MSL isolation functions. In addition, a new TS requirement is proposed for the MSLRM Mechanical Vacuum Pump trip function, which is not being eliminated by this proposed change.

The determination that the criteria set forth in 10 CFR 50.92 are met for this change is provided below:

**Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?**

This proposed change involves the removal of existing Main Steam Line Radiation Monitor (MSLRM) scram and the MSLRM MSL Valve closure signal. The purpose of the MSLRM reactor scram and the MSL isolation signal is to mitigate the radiological effects of a fuel element failure. These functions do not serve as initiators for any of the accidents evaluated in chapter 15 of the Updated Final Safety Analysis Report (UFSAR). Removal of these functions will not increase the probability of any of the accidents previously evaluated.

## ATTACHMENT C

### Proposed Change to Technical Specifications
### Quad Cities Nuclear Power Station - Units 1 and 2


### INFORMATION SUPPORTING A FINDING OF NO SIGNIFICANT HAZARDS CONSIDERATION

The radiological effects of a Control Rod Drop Accident (CRDA) have been evaluated for the Boiling Water Reactor Owners' Group (BWROG) by General Electric (GE) in Report NEDO-31400A, "Safety Evaluation For Eliminating the Boiling Water Reactor Main Steam Isolation Valve Closure Function and Scram Function of the Main Steam Line Radiation Monitor." The GE report was evaluated by the NRC and found acceptable by letter dated May 15, 1991, "Acceptance for Referencing of Licensing Topical Report NEDO-31400." The NRC Safety Evaluation Report accepting the GE report required licensees to demonstrate that the assumptions of the GE report analysis were bounding for their plants. ComEd has evaluated the GE analysis for applicability to Quad Cities Nuclear Power Station, Units 1 and 2.

The GE analysis demonstrates that operation with the proposed change does not represent a significant increase in the consequences of a CRDA. Therefore, operation of Quad Cities Nuclear Power Station, Units 1 and 2, under the proposed change does not represent a significant increase in the probability or consequences of an accident previously evaluated. A site specific radiological evaluation was completed to confirm the applicability of the generic GE analysis to Quad Cities Nuclear Power Station.

**Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?**

This proposed change involves the removal of the existing MSLRM scram and the MSL Valve closure input from the MSL Tunnel High Radiation signal. Removal of these functions does not represent a change in operating parameters for Quad Cities Nuclear Power Station, Units 1 and 2. Removal of these functions does not add any additional hardware and does not represent any new failure modes. Operation of Quad Cities Nuclear Power Station, Units 1 and 2, under the proposed change does not create the possibility of a new or different type of accident previously evaluated.

**Does the change involve a significant reduction in a margin of safety?**

The proposed change involves the elimination of the MSLRM scram and the MSL Valve closure input from the MSL Tunnel High Radiation signal. Operation under the proposed change will not change any plant operation parameters, nor any protective system setpoints other than removal of these functions. The GE report has demonstrated that the consequences of the CRDA without the MSLRM High scram and MSL Valve closure signal from the MSL Tunnel Radiation detector results in doses which are well within 10 CFR part 100, "Reactor Site Criteria," limits. Therefore, the proposed change does not involve a significant reduction in the margin of safety.

Therefore, based upon the above evaluation, ComEd has concluded that these changes involve no significant hazards considerations.

## ATTACHMENT D

**Proposed Change to Technical Specifications**
**Quad Cities Nuclear Power Station - Units 1 and 2**


### INFORMATION SUPPORTING AN ENVIRONMENTAL ASSESSMENT

Commonwealth Edison (ComEd) Company has evaluated the proposed change to the Technical Specifications (TS) against the criteria for identification of licensing and regulatory actions requiring environmental assessment in accordance with 10 CFR 51.21, "Criteria for and identification of licensing and regulatory actions requiring environmental assessments." ComEd has determined that this change meets the criteria for a categorical exclusion set forth in 10 CFR 51.22(c)(9) and as such, has determined that no irreversible consequences exist in accordance with 10 CFR 50.92(b). This determination is based on the fact that this change is being proposed as an amendment to a license issued pursuant to 10 CFR 50, "Domestic Licensing of Production and Utilization Facilities," that changes a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, "Standards for Protection Against Radiation," or that changes an inspection or a surveillance requirement, and the proposed change meets the following specific criteria:

(i) the proposed change involves no significant hazards consideration.

As demonstrated in Attachment C, this proposed amendment does not involve any significant hazards consideration.

(ii) there is no significant change in the types or significant increase in the amounts of any effluent that may be released offsite.

As documented in Attachment C, there will be no significant change in the types or significant increase in the amounts of any effluents released offsite.

(iii) there is no significant increase in individual or cumulative occupational radiation exposure.

The proposed change will not result in changes in the operation of the facility. There will be no change in the level of controls or methodology used for processing of radioactive effluents or handling of solid radioactive waste, nor will the proposal result in any change in the normal radiation levels within the plant. Therefore, there will be no significant increase in individual or cumulative occupational radiation exposure resulting from this proposed change.

# Quad Cities Nuclear Power Station Calculation
# Calculation No. QDC 9400-M-0550 Rev. 0