

RS-01-192

September 13, 2001

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

Dresden Nuclear Power Station, Units 2 and 3  
Facility Operating License Nos. DPR-19 and DPR-25  
NRC Docket Nos. 50-237 and 50-249

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: Supplement to Request for License Amendment for Reactor Vessel Low Water Level Setpoint

References: (1) Letter from R. M. Krich (Exelon Generation Company, LLC) to U. S. NRC, "Request for License Amendment for Reactor Vessel Low Water Level Setpoint," dated February 22, 2001

(2) Letter from R. M. Krich (Commonwealth Edison Company) to U. S. NRC, "Request for License Amendment for Power Uprate Operation," dated December 27, 2000

(3) Letter from K. A. Ainger (Exelon Generation Company, LLC) to U. S. NRC, "Supplement to Request for License Amendment for Power Uprate Operation," dated August 29, 2001

Pursuant to 10 CFR 50.90, "Application for amendment of license or construction permit," Exelon Generation Company (EGC), LLC, formerly Commonwealth Edison Company, is requesting additional changes to the Technical Specifications (TS) relative to the changes proposed in Reference 1 for the Dresden Nuclear Power Station (DNPS), Units 2 and 3, and the Quad Cities Nuclear Power Station (QCNPS), Units 1 and 2. In Reference 1, EGC requested changes to reduce the reactor vessel water level - low scram and isolation setpoints. These proposed changes were identical to changes previously proposed in Reference 2 supporting the DNPS and QCNPS Extended Power Uprate (EPU), and Reference 1 requested that the proposed changes be approved separately from the EPU proposed changes.

In Reference 3, EGC submitted additional proposed changes related to the proposed reduction in the reactor vessel water level - low scram and isolation setpoints in support of the EPU. As described in Reference 3, during implementation reviews it was

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discovered that additional TS changes are required to support the reduction in these setpoints. Thus, EGC requests that these additional changes be reviewed and approved as part of the proposed changes for the reactor vessel low water level setpoint previously submitted in Reference 1. These changes are included in the attachments to this letter, and are identical to the changes proposed in Reference 3. Specifically, the proposed changes include revision of the allowable values for the reactor vessel water level – low function in Table 3.3.6.2-1, "Secondary Containment Isolation Instrumentation," for DNPS, Units 2 and 3 and QCNPS, Units 1 and 2, and Table 3.3.7.1-1, "Control Room Emergency Ventilation (CREV) System Isolation Instrumentation," for QCNPS, Units 1 and 2.

This supplement to the Reference 1 amendment request contains separate enclosures for DNPS and QCNPS. Each enclosure is subdivided as follows.

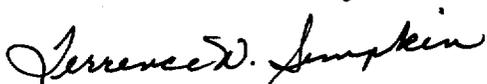
Attachment A contains a detailed description of the additional proposed changes.

Attachment B provides the proposed mark-ups to the TS for the proposed changes.

EGC has determined that these additional proposed changes do not affect the information supporting a finding of no significant hazards consideration or the information supporting an environmental assessment provided in Reference 1.

Should you have any questions related to this request, please contact Mr. Allan R. Haeger at (630) 657-2807.

Respectfully,



T. W. Simpkin  
Manager – Licensing  
Mid-West Regional Operating Group

Attachments:

Affidavit

Enclosure 1: Dresden Nuclear Power Station

Attachment A: Description and Summary Safety Analysis for Proposed Change

Attachment B: Marked-Up TS Page for Proposed Change

Enclosure 2: Quad Cities Nuclear Power Station

Attachment A: Description and Summary Safety Analysis for Proposed Changes

Attachment B: Marked-Up TS Pages for Proposed Changes

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

STATE OF ILLINOIS	)	
COUNTY OF DUPAGE	)	
IN THE MATTER OF:	)	
EXELON GENERATION COMPANY, LLC	)	Docket Numbers
DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3	)	50-237 and 50-249
QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2	)	50-254 and 50-265

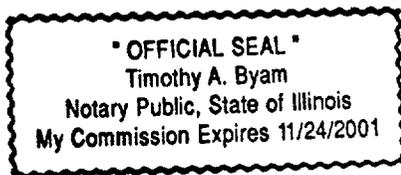
**SUBJECT:** Supplement to Request for License Amendment for Reactor Vessel Low Water Level Setpoint

**AFFIDAVIT**

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

  
 T. W. Simpkin  
 Manager - Licensing

Subscribed and sworn to before me, a Notary Public in and  
 for the State above named, this 13<sup>th</sup> day of  
September, 2001



  
 Notary Public

**ENCLOSURE 1 - ATTACHMENT A**  
**Supplement to Request For Reactor Vessel Low Water Level Setpoint**  
**Dresden Nuclear Power Station, Units 2 and 3**

**DESCRIPTION AND SUMMARY SAFETY ANALYSIS**  
**FOR PROPOSED CHANGE**

**A. SUMMARY OF PROPOSED CHANGE**

Pursuant to 10 CFR 50.90, "Application for amendment of license or construction permit," Exelon Generation Company (EGC), LLC, formerly Commonwealth Edison Company, is requesting an additional change to the Technical Specifications (TS) relative to the changes proposed in Reference I.1 for the Dresden Nuclear Power Station (DNPS), Units 2 and 3. This proposed change revises the allowable value for the reactor vessel water level – low function in Table 3.3.6.2-1, "Secondary Containment Isolation Instrumentation," for DNPS, Units 2 and 3.

Reference I.1 proposed changes to allowable values in TS Tables 3.3.1.1-1, "Reactor Protection System Instrumentation," and 3.3.6.1-1, "Primary Containment Isolation Instrumentation." During implementation reviews, it was recognized that the same allowable value change is required in Table 3.3.6.2-1, "Secondary Containment Isolation Instrumentation." The change proposed in this attachment revises this allowable value in TS Table 3.3.6.2-1.

**B. DESCRIPTION OF THE CURRENT REQUIREMENT**

TS Table 3.3.6.2-1, "Secondary Containment Isolation Instrumentation," Function 1, identifies the allowable value for the reactor vessel water level – low function. The allowable value is  $\geq 10.24$  inches.

**C. BASES FOR THE CURRENT REQUIREMENT**

TS Table 3.3.6.2-1, Function 1 identifies the instrumentation requirements for the reactor vessel water level - low function including the allowable value. A low reactor vessel water level indicates that the capability to cool the fuel may be threatened. Should the reactor vessel water level decrease too far, fuel damage could result. An isolation of the secondary containment and actuation of the standby gas treatment system are initiated in order to minimize the potential of an offsite release.

**D. NEED FOR REVISION OF THE REQUIREMENT**

The primary purpose of the Reference I.1 proposed TS changes is to reduce the likelihood of unnecessary reactor scrams and the resultant engineered safeguards feature actuations by increasing the operating range between the normal reactor vessel water level and the trip function. The increased range will provide additional time for operators or automatic features to respond to recoverable transients and thus avert unnecessary reactor scrams.

Industry studies have identified low water level scrams as being initiators of a significant number of plant trips. The Boiling Water Reactor Owner's Group Scram Frequency Reduction Committee identified some of these scrams as unnecessary, since the reactor

**ENCLOSURE 1 - ATTACHMENT A**  
**Supplement to Request For Reactor Vessel Low Water Level Setpoint**  
**Dresden Nuclear Power Station, Units 2 and 3**

water level would have stabilized above the top of the active fuel and recovered to normal level without the scram.

The proposed change to the allowable value for the secondary containment isolation function on reactor vessel water level – low discussed in this supplement to Reference I.1 is directly related to the proposed change for the reactor scram setpoint reduction. To maintain the secondary containment isolation function at the same level as the reactor scram, the allowable value for TS Table 3.3.6.2-1, Function 1, must also be revised.

**E. DESCRIPTION OF THE PROPOSED CHANGE**

The allowable value for Table 3.3.6.2-1, Function 1, is revised from  $\geq 10.24$  inches to  $\geq 2.65$  inches.

**F. SUMMARY SAFETY ANALYSIS OF THE PROPOSED CHANGE**

The reactor vessel water level - low function is assumed in the analysis of the recirculation line break and is credited in the loss of normal feedwater flow event. The reactor scram associated with the function reduces the amount of energy required to be absorbed and, along with the actions of the emergency core cooling systems, ensures that the fuel peak cladding temperature remains below the limits of 10 CFR 50.46, "Acceptance criteria for emergency core cooling systems for light-water nuclear power reactors." The associated secondary containment isolation function is initiated in order to minimize the potential of an offsite release. The allowable value for the secondary containment isolation function is chosen to be the same as the allowable value for the reactor protection system setpoint and is not analyzed separately. The proposed change in the reactor scram setpoint does not result in a change to the current safety analyses. Thus, the change in the allowable value for the secondary containment isolation function continues to ensure that any offsite releases are within the limits calculated in the safety analysis.

**G. IMPACT ON PREVIOUS SUBMITTALS**

All submittals currently under review by the NRC were evaluated to determine the impact of these proposed changes. References I.2 and I.3 proposed to increase the rated thermal power of the DNPS units and includes the same proposed changes described herein. EGC requests that these changes be reviewed and approved as part of the proposed changes for the reactor vessel low water level setpoint previously submitted in Reference I.1.

No other submittals currently under review by the NRC are affected by the information presented in this supplement to the license amendment request.

**ENCLOSURE 1 - ATTACHMENT A**  
**Supplement to Request For Reactor Vessel Low Water Level Setpoint**  
**Dresden Nuclear Power Station, Units 2 and 3**

**H. SCHEDULE REQUIREMENTS**

EGC requests that this proposed change be reviewed and approved as part of the proposed changes for the reactor vessel low water level setpoint previously submitted in Reference I.1.

**I. REFERENCES**

1. Letter from R. M. Krich (Exelon Generation Company) to U. S. NRC, "Request for License Amendment for Reactor Vessel Low Water Level Setpoint," dated February 22, 2001
2. Letter from R. M. Krich (Exelon Generation Company, LLC) to U. S. NRC, "Request for License Amendment for Power Uprate Operation," dated December 27, 2000
3. Letter from K. A. Ainger (Exelon Generation Company, LLC) to U. S. NRC, "Supplement to Request for License Amendment for Power Uprate Operation," dated August 29, 2001

**ENCLOSURE 1 - ATTACHMENT B**  
**Supplement to Request For Reactor Vessel Low Water Level Setpoint**  
**Dresden Nuclear Power Station, Units 2 and 3**

**MARKED-UP TECHNICAL SPECIFICATION PAGES FOR PROPOSED CHANGE**

REVISED PAGE

3.3.6.2-4

Secondary Containment Isolation Instrumentation  
3.3.6.2

Table 3.3.6.2-1 (page 1 of 1)  
Secondary Containment Isolation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Reactor Vessel Water Level - Low	1,2,3, (a)	2	SR 3.3.6.2.1	$\geq$ <del>18.24</del> inches 2.65
			SR 3.3.6.2.2	
			SR 3.3.6.2.3	
			SR 3.3.6.2.5	
			SR 3.3.6.2.6	
2. Drywell Pressure - High	1,2,3	2	SR 3.3.6.2.2	$\leq$ 1.94 psig
			SR 3.3.6.2.4	
			SR 3.3.6.2.6	
3. Reactor Building Exhaust Radiation - High	1,2,3, (a),(b)	2	SR 3.3.6.2.1	$\leq$ 14.9 mR/hr
			SR 3.3.6.2.2	
			SR 3.3.6.2.4	
			SR 3.3.6.2.6	
4. Refueling Floor Radiation - High	1,2,3, (a),(b)	2	SR 3.3.6.2.1	$\leq$ 100 mR/hr
			SR 3.3.6.2.2	
			SR 3.3.6.2.4	
			SR 3.3.6.2.6	

(a) During operations with a potential for draining the reactor vessel.

(b) During CORE ALTERATIONS and during movement of irradiated fuel assemblies in secondary containment.

**ENCLOSURE 2 - ATTACHMENT A**  
**Supplement to Request For Reactor Vessel Low Water Level Setpoint**  
**Quad Cities Nuclear Power Station, Units 1 and 2**

**DESCRIPTION AND SUMMARY SAFETY ANALYSIS**  
**FOR PROPOSED CHANGES**

**A. SUMMARY OF PROPOSED CHANGES**

Pursuant to 10 CFR 50.90, "Application for amendment of license or construction permit," Exelon Generation Company (EGC), LLC, formerly Commonwealth Edison Company, is requesting additional changes to the Technical Specifications (TS) relative to the changes proposed in Reference I.1 for the Quad Cities Nuclear Power Station (QCNPS), Units 1 and 2. These proposed changes identify two additional TS tables that require changes to support the proposed change to the reactor vessel water level scram and isolation setpoint for QCNPS submitted in Reference I.2 and I.3.

Reference I.1 proposed changes to allowable values in TS Tables 3.3.1.1-1, "Reactor Protection System Instrumentation," and 3.3.6.1-1, "Primary Containment Isolation Instrumentation." During implementation reviews, it was recognized that the same allowable value change was required in Table 3.3.6.2-1, "Secondary Containment Isolation Instrumentation," and Table 3.3.7.1-1, "Control Room Emergency Ventilation (CREV) System Isolation Instrumentation." The changes proposed in this attachment revise this allowable value in TS Tables 3.3.6.2-1 and 3.3.7.1-1.

**B. DESCRIPTION OF THE CURRENT REQUIREMENTS**

Table 3.3.6.2-1, Function 1, identifies the allowable value for the reactor vessel water level – low function. The allowable value is  $\geq 11.8$  inches.

Table 3.3.7.1-1, Function 1, identifies the allowable value for the reactor vessel water level - low function. The allowable value is  $\geq 11.8$  inches.

**C. BASES FOR THE CURRENT REQUIREMENTS**

A low reactor pressure vessel (RPV) water level indicates that the capability to cool the fuel may be threatened. Should the RPV water level decrease too far, fuel damage could result. An isolation of the secondary containment and actuation of the standby gas treatment system are initiated in order to minimize the potential of an offsite release. An isolation of the CREV system occurs since this could be a precursor to a potential radiation release and subsequent radiation exposure to control room personnel.

**D. NEED FOR REVISION OF THE REQUIREMENTS**

The primary purpose of the Reference I.1 proposed TS changes is to reduce the likelihood of unnecessary reactor scrams and the resultant engineered safeguards feature actuations by increasing the operating range between the normal reactor vessel water level and the trip function. The increased range will provide additional time for operators or automatic features to respond to recoverable transients and thus avert unnecessary reactor scrams.

## **ENCLOSURE 2 - ATTACHMENT A**

### **Supplement to Request For Reactor Vessel Low Water Level Setpoint Quad Cities Nuclear Power Station, Units 1 and 2**

Industry studies have identified low water level scrams as being initiators of a significant number of plant trips. The Boiling Water Reactor Owner's Group Scram Frequency Reduction Committee identified some of these scrams as unnecessary, since the reactor water level would have stabilized above the top of the active fuel and recovered to normal level without the scram.

The proposed changes to the allowable values for the secondary containment isolation and CREV system isolation functions on reactor vessel water level – low are directly related to the proposed change for the reactor scram setpoint reduction. To maintain the secondary containment isolation and CREV system isolation functions at the same level as the reactor scram function, the allowable values for TS Table 3.3.6.2-1, Function 1, and Table 3.3.7.1-1, Function 1, must be revised.

#### **E. DESCRIPTION OF THE PROPOSED CHANGES**

The allowable value for Table 3.3.6.2-1, Function 1, is revised from  $\geq 11.8$  inches to  $\geq 3.8$  inches.

The allowable value for Table 3.3.7.1-1, Function 1, is revised from  $\geq 11.8$  inches to  $\geq 3.8$  inches.

#### **F. SUMMARY SAFETY ANALYSIS OF THE PROPOSED CHANGES**

The reactor vessel water level - low function is assumed in the analysis of the recirculation line break and is credited in the loss of normal feedwater flow event. The reactor scram associated with the function reduces the amount of energy required to be absorbed and, along with the actions of the emergency core cooling systems, ensures that the fuel peak cladding temperature remains below the limits of 10 CFR 50.46, "Acceptable criteria for emergency core cooling systems for light-water nuclear power reactors." The associated secondary containment isolation function is initiated in order to minimize the potential of an offsite release. Additionally, the CREV system isolation is initiated in order to minimize the potential dose to the control room operators. The allowable values for the secondary containment isolation function and CREV system isolation function are chosen to be the same as the allowable value for the reactor protection system setpoint and are not analyzed separately. The proposed change in the reactor scram setpoint does not result in a change to the current safety analyses. Thus, the change in the allowable value for the secondary containment isolation function continues to ensure that any offsite releases are within the limits calculated in the safety analysis. For the CREV system isolation function, the change in allowable value continues to ensure that the radiation exposure of control room personnel, as a result of a LOCA, does not exceed the limits set by GDC 19 "Control Room," of 10 CFR 50, Appendix A, "General Design Criteria for Nuclear Power Plants."

#### **G. IMPACT ON PREVIOUS SUBMITTALS**

All submittals currently under review by the NRC were evaluated to determine the impact of these proposed changes. References I.2 and I.3 proposed to increase the rated thermal power of the QCNPS units and includes the same proposed changes described

**ENCLOSURE 2 - ATTACHMENT A**  
**Supplement to Request For Reactor Vessel Low Water Level Setpoint**  
**Quad Cities Nuclear Power Station, Units 1 and 2**

herein. EGC requests that these changes be reviewed and approved as part of the proposed changes for the reactor vessel low water level setpoint previously submitted in Reference I.1.

No other submittals currently under review by the NRC are affected by the information presented in this supplement to the license amendment request.

**H. SCHEDULE REQUIREMENTS**

EGC requests that these proposed changes be reviewed and approved as part of the proposed changes for the reactor vessel low water level setpoint previously submitted in Reference I.1.

**I. REFERENCES**

1. Letter from R. M. Krich (Exelon Generation Company) to U. S. NRC, "Request for License Amendment for Reactor Vessel Low Water Level Setpoint," dated February 22, 2001
2. Letter from R. M. Krich (Exelon Generation Company, LLC) to U. S. NRC, "Request for License Amendment for Power Uprate Operation," dated December 27, 2000
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**ENCLOSURE 2 - ATTACHMENT B**  
**Supplement to Request For Reactor Vessel Low Water Level Setpoint**  
**Quad Cities Nuclear Power Station, Units 1 and 2**

**MARKED-UP TS PAGES FOR PROPOSED CHANGES**

The marked-up Technical Specifications are provided in the following pages.

REVISED PAGES

3.3.6.2-4

3.3.7.1-4

Secondary Containment Isolation Instrumentation  
3.3.6.2

Table 3.3.6.2-1 (page 1 of 1)  
Secondary Containment Isolation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Reactor Vessel Water Level - Low	1,2,3, (a)	2	SR 3.3.6.2.1 SR 3.3.6.2.2 SR 3.3.6.2.3 SR 3.3.6.2.5 SR 3.3.6.2.6	$\geq$ <del>4.8</del> inches 3.8
2. Drywell Pressure - High	1,2,3	2	SR 3.3.6.2.2 SR 3.3.6.2.4 SR 3.3.6.2.6	$\leq$ 2.43 psig
3. Reactor Building Exhaust Radiation - High	1,2,3, (a),(b)	2	SR 3.3.6.2.1 SR 3.3.6.2.2 SR 3.3.6.2.4 SR 3.3.6.2.6	$\leq$ 9 mR/hr
4. Refueling Floor Radiation - High	1,2,3, (a),(b)	2	SR 3.3.6.2.1 SR 3.3.6.2.2 SR 3.3.6.2.4 SR 3.3.6.2.6	$\leq$ 100 mR/hr

(a) During operations with a potential for draining the reactor vessel.

(b) During CORE ALTERATIONS and during movement of irradiated fuel assemblies in secondary containment.

CREV System Isolation Instrumentation  
3.3.7.1

Table 3.3.7.1-1 (page 1 of 1)  
Control Room Emergency Ventilation (CREV) System Isolation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Reactor Vessel Water Level - Low	1,2,3, (a)	2	C	SR 3.3.7.1.1 SR 3.3.7.1.2 SR 3.3.7.1.3 SR 3.3.7.1.5 SR 3.3.7.1.6	$\geq$ <del>11.8</del> inches <b>3.8</b>
2. Drywell Pressure - High	1,2,3	2	C	SR 3.3.7.1.2 SR 3.3.7.1.4 SR 3.3.7.1.6	$\leq$ 2.43 psig
3. Main Steam Line Flow - High	1,2,3	2 per MSL	B	SR 3.3.7.1.1 SR 3.3.7.1.2 SR 3.3.7.1.5 SR 3.3.7.1.6	$\leq$ 138% rated steam flow
4. Refueling Floor Radiation - High	1,2,3, (a),(b)	2	B	SR 3.3.7.1.1 SR 3.3.7.1.2 SR 3.3.7.1.4 SR 3.3.7.1.6	$\leq$ 100 mR/hr
5. Reactor Building Ventilation Exhaust Radiation - High	1,2,3, (a),(b)	2	B	SR 3.3.7.1.1 SR 3.3.7.1.2 SR 3.3.7.1.4 SR 3.3.7.1.6	$\leq$ 9 mR/hr

(a) During operations with a potential for draining the reactor vessel.

(b) During CORE ALTERATIONS and during movement of irradiated fuel assemblies in the secondary containment.