



Commonwealth Edison
Braidwood Nuclear Power Station
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July 28, 1994

Mr. William Russell, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attn: Document Control Desk

Subject: Supplement to Request to Amend
Technical Specification Sections 3.4.9.1 and 3.4.9.3

Braidwood Station Units 1 and 2
NPF-72/77; NRC Docket Nos. 50-456/457

- References:
1. Teleconference dated July 28, 1994, between Commonwealth Edison Company and the Nuclear Regulatory Commission
 2. D. Saccomando letter to W. Russell dated July 21, 1994, transmitting supplement to request to amend Technical Specification Sections 3.4.9.1 and 3.4.9.3
 3. D. Saccomando letter to W. Russell dated June 14, 1994, transmitting supplement to request to amend Technical Specification Sections 3.4.9.1 and 3.4.9.3
 4. D. Saccomando letter to W. Russell dated March 30, 1994, transmitting request to amend Technical Specification Sections 3.4.9.1 and 3.4.9.3

Dear Mr. Russell:

The reference letter 4 transmitted Commonwealth Edison Company's (ComEd) request to amend Sections 3.4.9.1 and 3.4.9.3 of the Technical Specifications for Braidwood Units 1 and 2. This amendment request was subsequently supplemented in reference letters 2 and 3.

During the reference teleconference, ComEd agreed to revised the Technical Specification Figure 3.4-4a, "Nominal PORV Pressure Relief Setpoint Versus RCS Temperature for the Cold Overpressure Protection System Applicable Up to 32 EFY (Unit 1)," to incorporate administrative limits which would restrict the maximum allowable Power Operated Relief Valve (PORV) setpoint. This administrative limit was selected in order to provide sufficient margin between the PORV lift setpoint and the 800 psig pressure limit on the PORV discharge piping.

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Also, to address the NRC's question: What effect does the revised curve have on the 310° F enabling temperature?

ComEd has performed revised Appendix G calculations for the 5.37 Effective Full Power Year Curve and have determined that the new enabling temperature is equal to or below 310°F. Per Technical Specification and Station procedures, Braidwood Station enables the Low Temperature Over temperature Protection (LTOP) system at 350°F, which is more conservative by at least 40°F. The enabling temperature is not explicitly addressed in the Technical Specifications. It is however addressed implicitly because the LTOP curve does not apply unless the reactor is in Modes 4, 5, or 6. A mode change from mode 3 to mode 4 cannot take place unless the average coolant temperature is less than 350°F.

This supplemental amendment request contains the following:

Attachment A: Description and Safety Analysis of
Proposed Supplement

Attachment B: Proposed Supplemental Revision to the Technical
Specifications

As the Figure 3.4-4a, submitted with this request is more conservative than the Figure 3.4-4a that was previously submitted, the evaluation of Significant Hazards Considerations and the Environmental Assessment remains unchanged from that previously submitted in reference 4.

The proposed changes have been reviewed and approved by the On-site and Off-site Review Committees in accordance with CECo procedures. CECo has reviewed this proposed amendment in accordance with 10 CFR 50.92(c) and has determined that no significant hazards consideration exists.

CECo is notifying the State of Illinois of our application for this supplemental request by transmitting a copy of this letter and the associated attachments to the designated State Official.

To the best of my knowledge and belief, the statements contained in this document are true and correct. In some respects these statements are not based on my personal knowledge, but on information furnished by other CECo employees, contractor employees, and/or consultants. Such information has been reviewed in accordance with company practice, and I believe it to be reliable.

Mr. W. Russell

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July 28, 1994

Please address any further comments or questions regarding this matter to this office.

Sincerely,



Denise M. Saccomando
Nuclear Licensing Administrator

Attachments

cc: R. R. Assa, Braidwood Project Manager - NRR
S. G. Dupont, Senior Resident Inspector - Braidwood
B. Clayton, Branch Chief - Region III
Office of Nuclear Facility Safety - IDNS

ATTACHMENT A

DESCRIPTION AND SAFETY ANALYSIS OF PROPOSED SUPPLEMENTAL CHANGES TO APPENDIX A TECHNICAL SPECIFICATIONS OF FACILITY OPERATING LICENSES NPF-72 AND NPF-77

A. DESCRIPTION OF THE PROPOSED SUPPLEMENTAL CHANGE

Figure 3.4-4a, "Nominal PORV Pressure Relief Setpoint Versus RCS Temperature for the Cold Overpressure Protection System Applicable Up to 5.37 EFY (Unit 1)," of Technical Specification 3.4.9.3 in Commonwealth Edison's (ComEd) July 21, 1994, submittal will be modified by the addition of an administrative maximum Power Operated Relief Valve (PORV) cold overpressure protection setpoint limit line.

B. DESCRIPTION OF THE CURRENT REQUIREMENT

Figure 3.4-4a describes the nominal PORV setpoints for the Low Temperature Overpressure Protection System (LTOPS) as a function of Reactor Coolant System (RCS) temperature.

C. BASES FOR THE CURRENT REQUIREMENT

The setpoints provided for the LTOPS are selected such that the pressure peaks resulting from design basis overpressure events are limited to values less than those specified by Appendix G of Title 10 Code of Federal Regulations Part 50 (10 CFR 50). Appendix G provides the fracture toughness requirements for reactor vessels under specified operating conditions, and Regulatory Guide (RG) 1.99, "Radiation Embrittlement of Reactor Vessel Materials," Revision 2, specifies the procedure acceptable to the Nuclear Regulatory Commission (NRC) staff for calculating the pressure limits required by Appendix G.

D. NEED FOR REVISION OF THE REQUIREMENT

It was determined that beyond the 638 pounds per square inch gauge (psig) point on Figure 3.4-4a, if all instrument uncertainties combined in the worst case fashion, it was possible to exceed the 800 psig PORV discharge piping limit. This limit applies only in the cold overpressure protection mode.

In order to prevent this from occurring, it was necessary to limit the maximum allowable PORV setpoint in this mode.

E. DESCRIPTION OF THE REVISED REQUIREMENT

Figure 3.4-4a in ComEd's July 21, 1994, submittal will be replaced with the attached Figure 3.4-4a.

F. BASES FOR THE REVISED REQUIREMENT

The setpoints provided for the LTOPS are selected such that the pressure peaks resulting from design basis overpressure events are limited to values less than those specified by Appendix G of 10 CFR 50. Appendix G provides the fracture toughness requirements for reactor vessels under specified operating conditions, and RG 1.99 specifies the procedure acceptable to the NRC staff for calculating the pressure limits required by Appendix G.

The administrative limit line was added to Figure 3.4-4a to provide a maximum PORV setpoint in the cold overpressure protection mode in order to prevent exceeding a PORV discharge piping pressure limit of 800 psig.

G. IMPACT OF THE PROPOSED SUPPLEMENTAL CHANGE

This change is administrative in nature and conservatively limits the maximum PORV lift setpoint in the cold overpressure protection mode. The actual lift setpoints of the PORVs in this mode are controlled by an electronic function generator which actuates the PORV when RCS pressure reaches a pre-set value based on RCS temperature. These pressure values are set into the function generator by the Instrument Maintenance Department in accordance with a work package generated and approved in accordance with station procedures. Once these pressure setpoints are entered they can not be altered except through another approved work package. They are fixed as far as an operator is concerned and cannot be altered by him or her.

The administrative limit line on Figure 3.4-4a was selected in order to provide sufficient margin between the PORV lift setpoint and the 800 psig pressure limit on the PORV discharge piping. This limit exists only in the cold over pressure protection mode of operation.

A comparison of selected points on Figure 3.4-4a against Appendix G and PORV pipe limits is presented below:

Temp °F	LTOP PORV SETPT. (psig)	Over shoot (psig)	MI or HI Limit.	Press Instr. Uncert (psig)	Total Max Press. (psig)	5.37 EFPY App. G limit used (psig)	Marg. to App G Limit psig
70	490	30	MI	60	580	581	1
97	490	30	MI	60	580	628	48
127	494	30	MI	60	584	720	136
147	504	30	MI	60	594	808*	214 206**
177	525	30	MI	60	615	998*	383 185**
227	610	35	HI	60	705	1566*	861 95**
277	638 (2)	54 (1)	HI	60	752	*	48**
327	638 (2)	74 (1)	HI	60	772	*	28**
377	638 (2)	98 (1)	HI	60	796	*	4**

* A constant PORV piping structural integrity criteria of 800 psig is conservatively imposed for setpoint development when the Appendix G limit exceeds 800 psig.

** Margin to PORV piping structural limit.

(1) These overshoot values are conservatively determined based on original LTOP curve (higher) PORV setpoint values.

(2) Administrative limit for maximum PORV setpoint.

Neutron fluence on the inside diameter (wetted surface) of the Reactor vessel at 5.37 EFPY is 5.0×10^{18} N/CM².

Current PORV LTOP setpoints are consistent with these requirements. No new equipment is being installed and no existing equipment is being modified. No new system interfaces are being created and no existing system interfaces are being modified.

This change is conservative in that it limits the lift setpoint of the PORVs in the cold overpressure protection mode.

Thus this change request has no negative impact on any system or operating mode.

H. SCHEDULE REQUIREMENTS

The proposed amendment dated March 30, 1994 to Technical Specification 3.4.9.3 is required for Braidwood Unit 1 to exceed 4.5 EFPY. Braidwood Unit 1 is currently predicted to reach 4.5 EFPY on July 30, 1994. Therefore, ComEd requests that this amendment be approved prior to July 30, 1994.