

April 25, 2002

Mr. J. V. Parrish
Chief Executive Officer
Energy Northwest
P.O. Box 968 (Mail Drop 1023)
Richland, WA 99352-0968

SUBJECT: COLUMBIA GENERATING STATION - ISSUANCE OF EXIGENT AMENDMENT
RE: MAIN STEAM ISOLATION VALVE (MSIV) ISOLATION TIMES (TAC NO.
MB4648)

Dear Mr. Parrish:

The Commission has issued the enclosed Amendment No. 175 to Facility Operating License No. NPF-21 for the Columbia Generating Station. The amendment consists of changes to the Technical Specifications (TS) in response to your application dated March 22, 2002, as supplemented by letter dated March 28, 2002. This amendment is the followup to the Notice of Enforcement Discretion issued by the NRC staff on March 26, 2002.

The amendment modifies TS Surveillance Requirement (SR) 3.6.1.3.6 to add a footnote specifying that the isolation time of each MSIV include circuit response time and to require verification that isolation of all of the main steam lines can be completed within the limits specified in SR 3.6.1.3.6.

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

Sincerely,

/RA/

John Hickman, Project Manager, Section 2
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-397

Enclosures: 1. Amendment No. 175 to NPF-21
2. Safety Evaluation

cc w/encls: See next page

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Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-397

Enclosures: 1. Amendment No. 175 to NPF-2
2. Safety Evaluation

cc w/encls: See next page

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Columbia Generating Station

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ENERGY NORTHWEST

DOCKET NO. 50-397

COLUMBIA GENERATING STATION

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No.175
License No. NPF-21

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by the Energy Northwest (licensee) dated March 22, 2002, as supplemented by letter dated March 28, 2002, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's 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 2.C.(2) of Facility Operating License No. NPF-21 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 175 and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. The license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Stephen Dembek, Chief, Section 2
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: April 25, 2002

ATTACHMENT TO LICENSE AMENDMENT NO. 175

FACILITY OPERATING LICENSE NO. NPF-21

DOCKET NO. 50-397

Replace the following page of the Appendix A Technical Specifications with the attached revised page. The revised page is identified by amendment number and contains vertical lines indicating the areas of change.

REMOVE

3.6.1.3-8

INSERT

3.6.1.3-8

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 175 TO FACILITY OPERATING LICENSE NO. NPF-21
ENERGY NORTHWEST
COLUMBIA GENERATING STATION
DOCKET NO. 50-397

1.0 INTRODUCTION

By application dated March 22, 2002, as supplemented by letter dated March 28, 2002, Energy Northwest (the licensee) requested changes to the Technical Specifications (Appendix A to Facility Operating License No. NPF-21) for the Columbia Generating Station. The proposed changes would revise the technical specifications (TS) to add a footnote to Surveillance Requirement (SR) 3.6.1.3.6 for Cycle 16 operation.

2.0 BACKGROUND

Energy Northwest identified a potential error in the testing methodology for main steam isolation valve (MSIV) closure time as a result of a review of an Operating Experience Report from the Monticello facility. During the review of the MSIV surveillance test data, a question was raised regarding the definition of the term "isolation time" as it is used in SR 3.6.1.3.6, "Verify the isolation time of each MSIV is > 3 seconds and < 5 seconds." Specifically, a question was raised regarding whether the isolation requirement of > 3 seconds should include the circuit response time and MSIV motion time from full-open to full-closed position. A review of the data indicated that if the current surveillance methodology was changed to eliminate circuit response time (from switch actuation to start of the valve motion), then two MSIVs do not meet the surveillance requirement of > 3 seconds.

Energy Northwest determined that two MSIVs, MS-V-22A and MS-V-22D, did not meet the three second isolation time limit as specified in SR 3.6.1.3.6. MSIV MS-V-22A had an isolation time of 2.74 seconds and MSIV MS-V-22D had an isolation time of 2.88 seconds. The two remaining MSIVs closed in greater than 3 seconds. The surveillance test methodology for these valves included circuit response time and valve motion time. Energy Northwest determined that the circuit response time should not have been included in the MSIV isolation time for the 3 second time limit included in SR 3.6.1.3.6, and therefore declared the two MSIVs inoperable.

On March 21, 2002 Energy Northwest requested enforcement discretion regarding TS 3.6.1.3, "Primary Containment Isolation Valves (PCIV)", Action A. This TS is applicable during Modes 1, 2, or 3. Action A states: "one or more penetration flow paths with one PCIV inoperable except due to leakage not within limit." The applicable action statement requires isolation of

the affected penetration flow path within 8 hours. After several telephone conferences with representatives of Energy Northwest on March 21, 2002, the NRC staff verbally granted their request for enforcement discretion regarding TS 3.6.1.3, Action A completion time. The written request for enforcement discretion was submitted on March 22, 2002. The NRC issued written approval of the enforcement discretion on March 26, 2002.

3.0 EVALUATION

At present, Columbia is operating in Cycle 16 with 100 percent Westinghouse/ABB fuel.

The valve stroke times for the MSIVs, from start of valve motion to full closed are as follows:

"A" Steam Line	Inboard Valve MS-V-22A	2.74 seconds
	Outboard Valve MS-V-28A	3.29 seconds
"B" Steam Line	Inboard Valve MS-V-22B	3.70 seconds
	Outboard Valve MS-V-28B	3.42 seconds
"C" Steam Line	Inboard Valve MS-V-22C	3.97 seconds
	Outboard Valve MS-V-28C	3.42 seconds
"D" Steam Line	Inboard Valve MS-V-22D	2.88 seconds
	Outboard Valve MS-V-28D	3.42 seconds

Steam line "A" is isolated in 2.74 seconds, "B" is isolated in 3.42 seconds, "C" is isolated in 3.42 seconds and "D" is isolated in 2.88 seconds. The average isolation time for the steam lines is 3.12 seconds, which is approximately equal to the 3 seconds assumed in the overpressurization analysis. This average time is faster than the actual time for final steam line isolation (3.42 seconds), and as such, is a conservative value to use and to verify that the measured valve isolation times are bounded by the 3 second isolation time assumed in the American Society of Mechanical Engineers' (ASME) overpressurization analysis. The ASME overpressurization analysis performed by Westinghouse/CE was included in the Columbia Cycle 16 reload licensing report.

The overpressurization analysis modeled the four sets of main steam line isolation valves (two valves per steam line) collectively as a single orifice that transitions from full open to full closed in 3 seconds. The staff-approved CE plant simulator code BISON, which includes an axial one-dimensional neutronics model, was used for the overpressurization analysis. The MSIV closure was found to be the most limiting and resulted in the maximum vessel pressure. The following assumptions were made in the analysis.

- (a) The MSIVs were assumed to close in 3.0 seconds.
- (b) Direct scram on valve position was assumed to fail during the transient, and scram trips on high neutron flux and high dome pressure were included in the model.
- (c) No credit was allowed for turbine bypass operation.

- (d) The scram speed was based on the control rod insertion times in the TS.
- (e) Six safety/relief valves with the lowest pressure setpoints were assumed to be out-of-service. The safety/relief valves that remained in operation were assumed to operate only in the safety mode.

The calculated peak reactor vessel lower plenum pressure is 1339 psig which is below the ASME code limit of 110 percent of design pressure (1375 psig). There is a margin of 36 psi.

Scoping analyses to assess the impact of a change in MSIV closure time from 3.0 seconds to 2.5 seconds for a similar BWR/5 showed an increase in peak reactor vessel pressure of only 3 psi. Since there is sufficient pressure margin, reactor vessel overpressure protection will be maintained with two MSIVs closing in 2.74 seconds and 2.88 seconds.

A small increase in reactor pressure will not have a significant impact on the minimum critical power ratio (MCPR) and will not challenge the safety limit MCPR.

The following note is added to TS SR 3.6.1.3.6:

"The isolation time of each MSIV includes circuit response time and valve motion time. In addition, the fastest isolation times (excluding circuit response times) of the four main steam lines, when averaged together, shall be ≥ 3 seconds. This modification of SR 3.6.1.3.6 is effective until startup from refueling outage R-16 or startup from a forced outage of sufficient duration (>72 hours) to perform testing to comply with SR 3.6.1.3.6 whichever occurs first."

Since the average time of the measured limiting (fastest) isolation times for the MSIVs remain bounded by the Cycle 16 licensing analysis and the ASME overpressure limit is still satisfied, continued plant operation is acceptable.

The average isolation time of 3.12 seconds is faster than the actual time for the final steam line isolation (3.42 seconds), and as such, is conservative to use to verify that the measured valve isolation times are bounded by the 3 second isolation time assumed in ASME overpressurization analysis. Therefore, it is acceptable.

4.0 EXIGENT CIRCUMSTANCES

The Commission's regulations, 10 CFR 50.91, contain provisions for issuance of amendments when the usual 30-day public notice period cannot be met. One such provision, 10 CFR 50.91(a)(6), concerns exigencies. Where the Commission finds that exigent circumstances exist, in that a licensee and the Commission must act quickly and that time does not permit the Commission to publish a Federal Register notice allowing 30 days for prior public comment, and it also determines that the amendment involves no significant hazards considerations, the Commission will require the licensee to explain the exigency and why the licensee cannot avoid it.

Under such circumstances, the Commission notifies the public in one of two ways: by issuing a *Federal Register* notice providing an opportunity for hearing and allowing at least two weeks for

prior public comments, or by issuing a press release discussing the proposed changes, using the local media. In this case, the Commission used the first approach.

The licensee submitted the request for amendment on March 22, 2002, and supplemental letter dated March 28, 2002. It was noticed in the *Federal Register* on April 8, 2002 (67 FR 16767), at which time the staff proposed a no significant hazards consideration determination. The licensee requested that NRC exercise discretion not to enforce compliance with the actions required in TS 3.6.1.3. The licensee has proposed changes to SR 3.6.1.3.6 that would add a note stating that the MSIV isolation time includes circuit response time and valve motion time effective until startup from the next scheduled refueling outage or forced outage of sufficient duration. The notice of enforcement discretion (NOED) letter to the licensee was issued by the NRC staff on March 26, 2002, requiring issuance of this amendment on an exigent basis within four weeks in accordance with the guidance provided in Section C.2.0 of the NRC Inspection Manual, Part 9900 - Technical Guidance for NOED. Therefore, the NRC staff is issuing the amendment under exigent circumstances.

5.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The Commission's regulations in 10 CFR 50.92 state that the Commission may make a final determination that a license amendment involves no significant hazards considerations if operation of the facility in accordance with the amendment would not: (1) involve a significant increase in the probability of consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

The MSIV closure transient is discussed in Section 15.2.4 of the Columbia Generating Station's Final Safety Analysis Report (FSAR). The sequence of events for this transient assumes a time of 3.0 sec for all MSIVs to be closed. The Cycle 16 analysis modeled the four sets of MSIVs (two valves per steam line) collectively as a single orifice that transitions from full open to full closed in 3 seconds (includes valve motion time only). The overpressurization event occurs as a result of the pressure wave reflected back to the reactor pressure vessel by rapid MSIV closure. The specific closure times measured during the last MSIV isolation time surveillances, performed on February 18 and February 22, 2002, determined that although two steam lines would be isolated in less than 3 seconds, the two remaining steam lines would be isolated in greater than 3 seconds. Averaging of the limiting (fastest) time for each of the four main steam lines yields an average valve motion time of 3.12 seconds. This average time is within the bounds of the analysis assumptions. Thus, there is no effect on the probability of a previously evaluated accident because two main steam lines isolating at the slightly faster time does not alter any event sequence considered in the accident analysis. Therefore, operation of the facility in accordance with the proposed amendment will not involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed action does not involve physical alteration of the units. No new equipment is being introduced, and installed equipment is not being operated in a new or different manner. This proposed action will not alter the manner in which equipment operation is initiated. This change does not impact normal operation of the MSIVs. In addition, no alteration in the procedures, which ensure the units remain within analyzed limits, is proposed, and no change is being made to procedures relied upon to respond to an off-normal event. The proposed

amendment will not change the design function or operation of the MSIVs involved. There are no credible new failure mechanisms, malfunctions, or accident initiators associated with this change that are not considered in the design and licensing bases. The safety function of the MSIVs is to mitigate release of radioactive material. Therefore, the proposed action does not create the possibility of a new or different kind of accident from any accident previously evaluated.

The staff has reviewed analyses performed by the licensee and determined that the current MSIV isolation times will not challenge the MCPR or ASME vessel protection limits. Therefore, there is no adverse affect on any station equipment. Accordingly, implementing the requested amendment to the technical specifications would not affect the baseline core damage probability. Since the average of the measured limiting (fastest) isolation times for the MSIVs remain bounded by the Cycle 16 licensing analysis there is no condition that would present a challenge to thermal limits, and thus, fuel failures. Also, since margin to the ASME overpressure limit is still maintained, protection of the reactor pressure vessel (RPV) is not diminished. Since the maximum closure time for the MSIVs is not affected by this proposed amendment, containment isolation function is not impacted. Therefore, the proposed action does not involve a significant reduction in the margin of safety.

Based upon the above considerations, the staff concludes that the amendment meets the three criteria of 10 CFR 50.92. Therefore, the staff has made a final determination that the proposed amendment does not involve a significant hazards consideration.

6.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Washington State official was notified of the proposed issuance of the amendment. The State official had no comments.

7.0 ENVIRONMENTAL CONSIDERATION

The amendment changes 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 amendment involves 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 made a final finding that the amendment involves no significant hazards consideration. Accordingly, the amendment meets 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 amendment.

8.0 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 amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: George Thomas, NRR

Date: April 25, 2002