

March 22, 2002
GO2-02-050

Docket No. 50-397

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Gentlemen:

Subject: **COLUMBIA GENERATING STATION, OPERATING LICENSE NPF-21,
TECHNICAL SPECIFICATION AMENDMENT REQUEST TO
TECHNICAL SPECIFICATION SURVEILLANCE REQUIREMENT
3.6.1.3.6**

Reference: Letter dated March 22, 2002, GO Smith (Energy Northwest) to NRC, "Request for Enforcement Discretion for Technical Specification Surveillance Requirement 3.6.1.3.6"

In accordance with the Code of Federal Regulations, Title 10, Parts 50.91(a)(6), 50.90, and 2.101, Energy Northwest hereby submits a request for an amendment to the Columbia Generating Station Technical Specifications. Specifically, Energy Northwest is requesting modification of Technical Specification Surveillance Requirement (SR) 3.6.1.3.6 to add a modifying footnote to verification requirements for Main Steam Isolation Valve (MSIV) isolation times. Modification of SR 3.6.1.3.6 is herein requested to specify 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.

Approval of this Technical Specification amendment request will negate the need for continued enforcement discretion. The proposed revision to SR 3.6.1.3.6 is requested to remain in effect until startup from the R-16 refueling outage, or until startup from a forced outage of sufficient duration (greater than 72 hours) to perform surveillance testing to meet the requirements of SR 3.6.1.3.6 as it is currently written.

ADD1

TECHNICAL SPECIFICATION AMENDMENT REQUEST TO TECHNICAL SPECIFICATION SURVEILLANCE REQUIREMENT 3.6.1.3.6

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Attachment 1 provides the basis for acceptability of the amendment request. Attachment 2 provides the Significant Hazards Evaluation. Attachment 3 contains the Environmental Considerations evaluation. Attachment 4 contains the marked up page from Technical Specifications, which, if approved, will be used to implement the modified SR. Attachment 5 contains the typed page, as it would be revised by this amendment. Energy Northwest has concluded that the proposed change warrants a no significant hazards consideration and does not represent a significant increase in the amount or type of any effluent that may be released offsite.

The Plant Operations Committee and the Corporate Nuclear Safety Review Board have reviewed this Technical Specification amendment request.

Should you have any questions or desire additional information regarding this matter, please call Ms. CL Perino at (509) 377-2075.

Respectfully,

A handwritten signature in black ink, appearing to read "GO Smith" with a stylized flourish at the end.

GO Smith
Vice President, Generation
Mail Drop PE04

Attachments:

1. Basis for Technical Specification Amendment Request
2. Evaluation of Significant Hazards Consideration
3. Evaluation of Environmental Considerations
4. Marked up Technical Specification page
5. Typed revised Technical Specification page

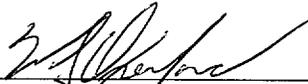
cc: EW Merschoff - NRC-RIV
JB Hickman - NRC-NRR
NRC Sr. Resident Inspector - 988C
DL Williams - BPA/MD1399
TC Poindexter - Winston & Strawn
JO Luce - ESFEC

STATE OF WASHINGTON)
)
COUNTY OF BENTON)

Subject: Request for Amendment,
Technical Specification
Surveillance Requirement 3.6.1.3.6

I, WS Oxenford, being duly sworn, subscribe to and say that I am the Plant General Manager for ENERGY NORTHWEST, the applicant herein; that I have the full authority to execute this oath; that I have reviewed the foregoing; and that to the best of my knowledge, information, and belief that the statements made in it are true.

DATE MARCH 22, 2002

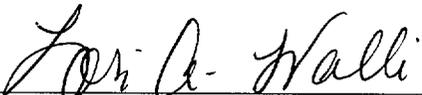


WS Oxenford
Plant General Manager

On this date personally appeared before me WS Oxenford, to me known to be the individual who executed the foregoing instrument, and acknowledged that he signed the same as his free act and deed for the uses and purposes herein mentioned.

GIVEN under my hand and seal this 22nd day of March 2002





Notary Public in and for the
STATE OF WASHINGTON

Residing at Richland, WA

My Commission expires 3-29-05

TECHNICAL SPECIFICATION AMENDMENT REQUEST TO TECHNICAL SPECIFICATION SURVEILLANCE REQUIREMENT 3.6.1.3.6

Attachment 1

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BASIS FOR TECHNICAL SPECIFICATION AMENDMENT REQUEST

Background

On March 21, 2002 Columbia Generating Station requested enforcement discretion from compliance with Required Action A of Limiting Condition for Operation (LCO) 3.6.1.3 because two inboard Main Steam Isolation Valves (MSIVs) were declared inoperable due to failure to meet Surveillance Requirement (SR) 3.6.1.3.6. Compliance with the LCO action would have required isolation of two main steam lines necessitating a plant shutdown. Enforcement discretion was granted in order to minimize the potential safety consequences and operational risks associated with an unnecessary plant transient.

Currently, two inboard MSIVs are inoperable because their valve isolation times are less than the minimum 3 seconds (i.e., 2.74 and 2.88 seconds) specified in SR 3.6.1.3.6. The reason for this condition is that surveillance testing pursuant to SR 3.6.1.3.6 has been performed in a manner that includes circuit response time as a portion of the total time that is credited for meeting the procedure acceptance criteria. The intent of SR 3.6.1.3.6 is to demonstrate that the MSIV full closure isolation time does not exceed the times assumed in the Design Basis Accident (DBA) scenario and transient analyses. Circuit response time is not considered in the applicable transient analyses.

Justification

The justification for this amendment request is based on our determination that the average valve motion time (3.12 seconds) for the limiting (fastest) MSIV in each main steam line is bounded by the ASME overpressurization analysis contained in the Columbia Cycle 16 reload licensing report that assumes all MSIVs close in 3 seconds. That report contains the licensing analyses performed by Westinghouse CE in support of the Cycle 16 reload for Columbia Generating Station.

The 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. A rapid pressure transient of the Reactor Pressure Vessel (RPV) is postulated to occur as a result of a pressure wave generated by sudden MSIV closure. When analyzing the specific valve motion times from the last MSIV stroke time surveillances, performed on February 18 and February 22, 2002, it was determined that two steam lines would be isolated in less than 3 seconds, the two remaining steam lines would be isolated in greater than 3 seconds. Specifically, the valve motion times, from start of valve motion to full closed are as follows:

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"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

The maximum magnitude pressure wave reflected back to the reactor pressure vessel is generated when the last steam line is isolated. Prior to that time, ample flow area exists to prevent rapid pressure buildup. For the valve data listed above, this would equate to a steam line isolation sequence and timing as follows:

T = 0 seconds	All MSIVs commence closed direction stem motion
T = 2.74 seconds	Main steam line "A" isolated
T = 2.88 seconds	Main steam line "D" isolated
T = 3.42 seconds	Main steam line "B" isolated
T = 3.42 seconds	Main steam line "C" isolated

With individual steam line isolations occurring, individual (discrete) pressure waves are propagated back to the reactor pressure vessel. Each discrete wave is a fraction of the pressure wave that would be generated from simultaneous isolation of all four lines.

It can be seen from the above data that the maximum pressure wave propagation commences at 3.42 seconds from start of valve motion, concurrent with the isolation of the "B" and "C" steam lines. The peak pressure achieved from this data set of measured isolation times would be less than that resulting from the 3 second simultaneous isolation time assumed in the overpressurization analysis.

Averaging the limiting (fastest) isolation time for each of the four main steam lines yields an average valve motion time of 3.12 seconds. This average time is faster than the actual time for final steam line isolation, and as such, is a conservative value to use when determining if the measured valve isolation times are bounded by the analysis (3 seconds).

Other Supporting Analyses

Framatome ANP has performed sensitivity analyses to assess the impact of varying MSIV closing times on the ASME overpressurization event for several plants. The results of these sensitivity analyses show an increase in the peak vessel and peak dome pressure of up to 8 psi for MSIV closure times ranging from 3.0 to 1.0 seconds. Scoping analyses to assess the

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impact of a change in MSIV closure time from 3.0 seconds to 2.5 seconds for a similar BWR5 show an increase in peak vessel and peak dome pressure of 3 psi. The BWR5 scoping analysis was performed with only 10 safety valves in service and did not credit scram on valve position. The high pressure (or ATWS) RPT was credited in the analysis. Based on the results of the analyses described above, the increase in peak vessel pressure for the MSIV ASME overpressurization event at Columbia Generating Station should be less than 4 psi if the MSIV full stroke closure time (simultaneous isolation of all four steam lines) were reduced from 3.0 to 2.5 seconds. The Westinghouse Cycle 16 analysis reports a 36 psi margin to the established transient pressure safety limit of 110% of the design pressure limit.

The BWR5 sensitivity study is particularly relevant to Columbia Generating Station since the rated power and rated steam flow are very similar (3489 MWt and 15.145 Mlb/hr for the BWR5; 3486 MWt and 14.93 Mlb/hr at Columbia Generating Station). When the transient model for the similar BWR5 was developed at Framatome, the model was tested using transient analysis input for previously documented analyses for Columbia Generating Station. The results showed that the plants are very similar except for the steam line geometry. However, differences in the steam line model should make little difference for the ASME MSIV closure overpressurization event since the MSIVs are located close to the reactor vessel where the piping geometry differences between plants is minimal. The BWR5 scoping analysis was intentionally performed for a lower number of operable safety valves to identify how many would need to be in service to ensure that the overpressurization criteria are met. A higher number of available safety valves should result in a lower increase in peak pressure for a faster valve closure time.

Consistent with the above conclusions, an NRC memorandum discussing data collection errors from DG Eisenhut (NRR) to R Spessard (NRC) dated January 12, 1983, determined that for steam line isolation times of 2 seconds or greater, the impact on MCPR and vessel pressure is insignificant, and will not challenge the safety limits. In the analysis, an MSIV position switch scram was assumed for the effect on MCPR and a high flux scram was assumed for the assessment of the effect on overpressure protection. On that bases, the NRC concluded that the interpretation of the ASME code which allows as much as one second error in MSIV closure time is of no safety concern for plants with a technical specification minimum allowable MSIV closure time of 2.0 seconds or greater.

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Attachment 2

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Evaluation of Significant Hazards

Summary of Proposed Change:

On March 21, 2002 Columbia Generating Station requested enforcement discretion from compliance with Required Action A of Limiting Condition for Operation (LCO) 3.6.1.3 because two inboard Main Steam Isolation Valves (MSIVs) were declared inoperable due to failure to meet Surveillance Requirement (SR) 3.6.1.3.6. Compliance with the LCO action would have required isolation of two main steam lines necessitating a plant shutdown. Enforcement discretion was granted in order to minimize the potential safety consequences and operational risks associated with an unnecessary plant transient.

This condition was discussed with the NRC on March 20, 2002. This non-compliance with SR 3.6.1.3.6 was caused by the surveillance testing methodology where circuit response time was included in the total measured time credited for meeting SR 3.6.1.3.6. A review of the safety analysis associated with the closure of the MSIVs showed these shorter closure times to be bounded by the analyses. The NRC approved a Notice of Enforcement Discretion (NOED) at 0126 on March 21, 2002. The enclosed Technical Specification Amendment request proposes modification of Technical Specification Surveillance Requirement (SR) 3.6.1.3.6 to add a footnote to verification requirements for Main Steam Isolation Valve (MSIV) isolation times. Modification of SR 3.6.1.3.6 is herein requested to specify 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.

Significant Hazards Evaluation:

Energy Northwest has evaluated the proposed change using the criteria established in 10CFR50.92(c) and has determined that it warrants a no significant hazards consideration as described below.

The operation of Columbia Generating Station in accordance with the proposed amendment will not involve a significant increase in the probability or consequences of an accident previously evaluated:

The MSIV closure transient is discussed in FSAR section 15.2.4. The sequence of events for this transient is given in FSAR Table 15.2-5 that assumes a time of 3.0 sec for all MSIVs to be closed. A review was performed of the Cycle 16 analysis, which 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. When analyzing the specific closure times from the last MSIV isolation time surveillances, performed on February 18 and February 22, 2002, it was determined that although

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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. There is no affect 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, this request for amendment does not involve a significant increase in the probability or consequences of the MSIV closure accident previously evaluated.

The operation of Columbia Generating Station in accordance with the proposed amendment will not create the possibility of a new or different kind of accident from any accident previously evaluated:

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. The proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

The operation of Columbia Generating Station in accordance with the proposed amendment will not involve a significant reduction in the margin of safety for the following reasons:

Qualitative Risk Assessment

Analysis by Columbia Generating Station has determined that the current MSIV isolation times will not result in exceeding MCPR or ASME vessel protection limits. Therefore, there is no adverse affect on any station equipment. Accordingly, implementing the requested amendment to 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 RPV is not diminished. Therefore, there can be no increased risk to the public health and safety.

Other relevant analyses indicate that for closure times of 2 seconds or greater the impact on MCPR and vessel pressure is insignificant and will not challenge safety limits. The measured valve motion times of 2.74 seconds and 2.88 seconds are well above this value. Further, the average MSIV valve motion time of 3.12 seconds shows that the overall plant response with the current configuration is well within the bounds of the analysis. Therefore, this amendment request does not involve a significant reduction in the margin of safety.

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SPECIFICATION SURVEILLANCE REQUIREMENT 3.6.1.3.6**

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Environmental Assessment Applicability Review

Energy Northwest has evaluated the proposed amendment against the criteria for identification of licensing and regulatory actions requiring environmental assessment in accordance with 10CFR51.21. It has been determined that the proposed changes meet the criteria for categorical exclusion as provided for under 10CFR51.22(c)(9). This conclusion has been determined because the change requested does not pose a significant hazards consideration nor does it involve a significant increase in the amounts, or a significant change in the types of any effluent that may be released off-site. Additionally, this request does not involve a significant increase in individual or cumulative occupational radiation exposure.

**TECHNICAL SPECIFICATION AMENDMENT REQUEST TO TECHNICAL
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Marked up Technical Specification page

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.6	Verify the isolation time of each MSIV is ≥ 3 seconds and ≤ 5 seconds. ¹	In accordance with the Inservice Testing Program
SR 3.6.1.3.7	Verify each automatic PCIV actuates to the isolation position on an actual or simulated isolation signal.	24 months
SR 3.6.1.3.8	Verify each EFCV actuates to the isolation position on an actual or simulated instrument line break signal.	24 months
SR 3.6.1.3.9	Remove and test the explosive squib from each shear isolation valve of the TIP System.	24 months on a STAGGERED TEST BASIS
SR 3.6.1.3.10	Verify the combined leakage rate for all secondary containment bypass leakage paths is ≤ 0.74 scfh when pressurized to $\geq P_s$.	In accordance with the Primary Containment Leakage Rate Testing Program

(continued)

¹ 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

**TECHNICAL SPECIFICATION AMENDMENT REQUEST TO TECHNICAL
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Typed revised Technical Specification page

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.6.1.3.3 -----NOTES-----</p> <ol style="list-style-type: none"> 1. Valves and blind flanges in high radiation areas may be verified by use of administrative means. 2. Not required to be met for PCIVs that are open under administrative controls. <p>-----</p> <p>Verify each primary containment isolation manual valve and blind flange that is located inside primary containment and is required to be closed during accident conditions is closed.</p>	<p>Prior to entering MODE 2 or 3 from MODE 4 if primary containment was de-inerted while in MODE 4, if not performed within the previous 92 days</p>
<p>SR 3.6.1.3.4 Verify continuity of the traversing incore probe (TIP) shear isolation valve explosive charge.</p>	<p>31 days</p>
<p>SR 3.6.1.3.5 Verify the isolation time of each power operated and each automatic PCIV, except MSIVs, is within limits.</p>	<p>In accordance with the Inservice Testing Program</p>

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.6	Verify the isolation time of each MSIV is ≥ 3 seconds and ≤ 5 seconds. ¹	In accordance with the Inservice Testing Program
SR 3.6.1.3.7	Verify each automatic PCIV actuates to the isolation position on an actual or simulated isolation signal.	24 months
SR 3.6.1.3.8	Verify a representative sample of reactor instrument line EFCVs actuate to the isolation position on an actual or simulated instrument line break signal.	24 months
SR 3.6.1.3.9	Remove and test the explosive squib from each shear isolation valve of the TIP System.	24 months on a STAGGERED TEST BASIS
SR 3.6.1.3.10	Verify the combined leakage rate for all secondary containment bypass leakage paths is ≤ 0.74 scfh when pressurized to $\geq P_a$.	In accordance with the Primary Containment Leakage Rate Testing Program

(continued)

¹The 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.