UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

February 9, 2015

Mr. Mark E. Reddemann
Chief Executive Officer
Energy Northwest
P.O. Box 968 (Mail Drop 1023)
Richland, WA 99352-0968

SUBJECT: COLUMBIA GENERATING STATION – CORRECTION TO SAFETY EVALUATION PAGES RELATED TO REQUESTS FOR RELIEF NOS. RG01, RP01, RP02, RP03, RP04, RP05, RP06, RV01, RV02, RV03, AND RV04 FOR THE FOURTH 10-YEAR INSERVICE TESTING INTERVAL (TAC NOS. MF3847, MF3848, MF3849, MF3851, MF3852, MF3853, MF3854, MF3855, MF3856, MF3857, AND MF3858)

Dear Mr. Reddemann:

By letter dated April 2, 2014, as supplemented by letters dated July 21, October 13, and October 23, 2014, Energy Northwest (the licensee) submitted requests for relief, RG01, RP01 through RP06, and RV01 through RV04, from certain requirements of the American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (OM Code), for the fourth 10-year inservice testing (IST) program interval at Columbia Generating Station (CGS). The fourth 10-year IST program interval at CGS begins on December 13, 2014, and concludes on December 12, 2024.

By letter dated December 9, 2014 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14337A449), the U.S. Nuclear Regulatory Commission (NRC) staff authorized the use of relief requests RG01, RP01, RP02, RP03, RP04, RP05, RP06, RP01, RP02, RP03, and RP04 at CGS for the duration of the fourth 10-year IST program interval at CGS.

By *Federal Register* notice 79 FR 65776, dated November 5, 2014, which became effective on December 5, 2014, the paragraph headings in 10 CFR 50.55a were revised. Accordingly, citations in the NRC letter dated December 9, 2014, of 10 CFR 50.55a(a)(3)(i) and (a)(3)(ii) should have cited 10 CFR 50.55a(z)(1) and (z)(2), respectively. Enclosed are corrected safety evaluation (SE) pages 1, 2, 41, and 43, with revision bars indicating the area of 10 CFR 50.55a changes. I apologize for any confusion that may have resulted from the revision.

Additionally, as noted in discussions with your staff, the SE issued by the NRC staff for the subject relief requests contained some administrative errors. These administrative errors do not affect the NRC's staff's overall conclusions associating with granting relief for the subject requests. Enclosed are corrected SE pages 17, 20, 25, 26, 27, 29, 30, and 39, with revision bars indicating the areas of change. We regret any inconvenience this may have caused.

If you have any questions regarding this matter, the CGS Project Manager, Andrea George, may be reached at (301) 415-1081 or via e-mail at andrea.george@nrc.gov.

Sincerely,

Eric R. Oesterle, Acting Chief
Plant Licensing Branch IV-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-397

Enclosure:
Revised pages of SE dated
December 9, 2014

cc w/encl: Distribution via Listserv

ENCLOSURE

CORRECTED PAGES 1, 2, 17, 20, 25, 26, 27, 29, 30, 39, 41, AND 43

OF SAFETY EVALUATION DATED DECEMBER 9, 2014, FOR

REQUEST FOR RELIEF NOS. RG01, RP01, RP02, RP03, RP04, RP05,

RP06, RV01, RV02, RV03, AND RV04

ENERGY NORTHWEST

COLUMBIA GENERATING STATION

DOCKET NO. 50-397

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

FOURTH 10-YEAR INSERVICE TESTING PROGRAM INTERVAL

REQUEST FOR RELIEF NOS. RG01, RP01, RP02, RP03, RP04, RP05, RP06,

RV01, RV02, RV03, AND RV04

ENERGY NORTHWEST

COLUMBIA GENERATING STATION

DOCKET NO. 50-397

1.0 INTRODUCTION

By letter dated April 2, 2014 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14101A365), as supplemented by letters dated July 21, October 13, and October 23, 2014 (ADAMS Accession Nos. ML14212A397, ML14296A385, and ML14310A665, respectively), Energy Northwest (the licensee), submitted requests RG01, RP01, RP02, RP03, RP04, RP05, RP06, RV01, RV02, RV03, and RV04, to the U.S. Nuclear Regulatory Commission (NRC). The licensee proposed alternatives to certain inservice testing (IST) requirements of the American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (OM Code), for the IST program at Columbia Generating Station (CGS) for the fourth 10-year IST program interval, which begins on December 13, 2014, and is scheduled to end on December 12, 2024.

Specifically, pursuant to paragraph 50.55a(a)(3)(i) (effective December 5, 2014, retitled as 50.55a(z)(1)) of Title 10 of the *Code of Federal Regulations* (10 CFR), the licensee requested to use the proposed alternatives in RP01, RP04, RP06, RV02, RV03, and RV04 on the basis that the alternatives provide an acceptable level of quality and safety. Pursuant to 10 CFR 50.55a(a)(3)(ii) (effective December 5, 2014, retitled as 10 CFR 50.55a(z)(2)), the licensee requested to use the proposed alternatives in RG01 and RP05 on the basis that the ASME OM Code requirements present an undue hardship without a compensating increase in the level of quality and safety. Pursuant to 10 CFR 50.55a(f)(6)(i), the licensee requested to use the proposed alternatives in RP02, RP03, and RV01 on the basis that the ASME OM Code requirement is impractical.

2.0 REGULATORY EVALUATION

The regulations at 10 CFR 50.55a require that IST of certain ASME Code Class 1, 2, and 3 pumps and valves be performed at 120-month (10-year) IST program intervals in accordance with the specified ASME Code incorporated by reference in the regulations, except where alternatives have been authorized or relief has been requested by the licensee and granted by the Commission pursuant to paragraphs (z)(1), (z)(2), or (f)(6)(i) of 10 CFR 50.55a. In

accordance with 10 CFR 50.55a(f)(4)(ii), licensees are required to comply with the requirements of the latest edition and addenda of the ASME Code incorporated by reference in the regulations 12 months prior to the start of each 120-month IST program interval. In accordance with 10 CFR 50.55a(f)(4)(iv), IST of pumps and valves may meet the requirements set forth in subsequent editions and addenda that are incorporated by reference in 10 CFR 50.55a(b), subject to NRC approval. Portions of editions or addenda may be used provided that all related requirements of the respective editions and addenda are met.

In proposing alternatives from IST requirements, the licensee must demonstrate in accordance with 10 CFR 50.55a(z) that: (1) The proposed alternative would provide an acceptable level of quality and safety; or (2) Compliance with the specified requirements of this section would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

In requesting relief from IST requirements, the licensee must demonstrate in accordance with 10 CFR 50.55a(f)(5)(iii) "that conformance with certain code requirements is impractical for its facility...." Pursuant to 10 CFR 50.55a(f)(6)(i), the Commission is authorized to approve alternatives and to grant relief from ASME Code requirements upon making necessary findings.

The licensee stated that the CGS's fourth 10-year IST program interval is scheduled to commence on December 13, 2014, and to conclude on December 12, 2024. The licensee also stated that the fourth 10-year IST program at CGS will comply with the requirements of ASME OM Code 2004 Edition through 2006 Addenda, as required by 10 CFR 50.55a(f)(4).

The NRC staff previously approved similar relief requests to RP01, RP02, RP03, RP04, RP05, RV01, RV02, RV03, and RV04 for CGS for the third 10-year IST interval, as documented in NRC letters dated March 23 and May 15, 2007 (ADAMS Accession Nos. ML070600111 and ML071010344, respectively).

For each request for relief below, the licensee stated that the applicable ASME Code Edition and Addenda is the 2004 Edition and the 2005 and 2006 Addenda.

3.0 TECHNICAL EVALUATION

3.1 Licensee's Alternative Request RG01

3.1.1 ASME Code Components Affected (as stated by the licensee)

All Pumps and Valves contained within the Inservice Testing Program scope.

acceptably. All subsequent test results are to be compared to these reference values. Based on operating experience, flow rate (independent variable during inservice testing) for these pumps cannot be readily duplicated with the existing flow control systems. Flow control for these systems can only be accomplished through the operation of relatively large motor operated globe valves as throttling valves. The operator must repeatedly jog the motor operator to try to make even minor adjustments in flow rate. These efforts, to exactly duplicate the reference value, would require excessive valve manipulation which could ultimately result in damage to valves or motor operators.

3.4.4 Proposed Alternative and Basis for Use (as stated by the licensee)

As discussed above, it is impractical to return to a specific value of flow rate, or differential pressure for testing of these pumps. As stated in NUREG-1482, Rev. 2, Section 5.2, some system designs do not allow for testing at a single reference point or a set of reference points. In such cases, it may be necessary to plot pump curves to use as the basis for variable reference points. [ASME] OM Code Case OMN-16 is included in draft Revision 1 of RG 1.192, "Operations and Maintenance Code Case Acceptability, ASME OM Code."

Since the independent reference variable (flow rate) for these pumps is impractical to adjust to a fixed reference value and requires excessive valve manipulation, the maximum variance shall be limited to ± 2% of the reference value. Thus, flow rate shall be adjusted to be within ± 2% of the reference flow rate and the corresponding differential pressure shall be measured and compared to the reference differential pressure value determined from the pump reference curve established for this narrow range of flow rate. Slope of the pump reference curve is not flat even over this narrow range of flow rates. Assuming the flow rate to be fixed over this narrow range can result in additional error in calculating the deviation between the measured and reference differential pressure and at times this deviation can be non-conservative. Since the dependent variable (differential pressure) can be assumed to vary linearly with flow rate in this narrow range, establishing multiple reference points in this narrow range is similar to establishing a reference pump curve representing multiple reference points. This assumption of linearity between differential pressure and flow rate is supported by the manufacturer's pump curves in the stable design flow rate region.

All requirements specified in Code Case OMN-16 will be followed in developing and implementing the reference pump curves.

1. RHR-P-28 was replaced with a new pump in 2013. A preservice test as required by the ASME OM Code was performed and a reference pump curve (flow rate vs. differential pressure) was established for this pump using the preservice test data. A similar reference pump curve (flow rate vs differential pressure) has been established for RHR-P-2A and

3.4.8 NRC Staff Evaluation

The licensee has requested an alternative to Subsections ISTB-5122(a), (b), and (c), ISTB-5123(a) and (b), ISTB-5221(b), ISTB-5222(b) and (c), and ISTB-5223(b) of the ASME OM Code, which require establishing a fixed set of reference values for either flow or differential pressure.

For the pumps listed in Section 3.4.1 of this safety evaluation (SE), the licensee has stated that it is impractical to alter the pump flow rate to obtain a repeatable reference value. The flow-control valves used in these systems are large motor-operated globe valves which do not have any position indication that would facilitate achieving a repeatable reference value. Requiring the licensee to install flow-control valves with more accurate flow adjustment capability would be a burden because of the design, fabrication, and installation changes that would have to be made. In addition, efforts to duplicate reference values may require extensive manipulation and result in damage to either the valves or motor operators.

The licensee has proposed to limit the variance in the flow rate of these pumps to ± 2 percent of the reference flow rate. This is different from the requirements of the ASME OM Code, which requires that the flow rate be within ± 1 percent of the reference-flow rate. The licensee proposes to use pump curves developed and implemented following the guidance of Code Case OMN-16, instead of reference values. In NUREG-1482, Revision 2, Section 5.2, the NRC staff provided guidance for utilizing pump curves when it is impractical to establish a fixed set of reference values. Based on the information provided above, the licensee has proposed a methodology consistent with the guidance of Section 5.2 and also Code Case OMN-16.

Acceptance criteria and use of the reference curves will be following the guidelines of ASME OM Code Case OMN-16. The NRC staff has reviewed the OMN-16 Code Case referenced above. Although this code case has not yet been incorporated into RG 1.192, OMN-16 is a replacement for Code Case OMN-9. The Code Case OMN-9 is currently an authorized alternative, with conditions as noted in RG 1.192, for setting reference values as required by ISTB-5221(b) and ISTB-5223(b). Additionally, OMN-16, from the 2006 Addenda of the ASME OM Code, has incorporated the NRC staff's conditions for OMN-9, as listed in RG 1.192.

Based on the information provided by the licensee and the above evaluation, the NRC staff concludes it is impractical for the licensee to comply with the specified requirement. The licensee's proposed alternative provides reasonable assurance of the operational readiness of the pumps listed in Section 3.4.1 of this SE. The NRC staff further concludes that granting relief pursuant to 10 CFR 50.55a(f)(6)(i) is authorized by law and will not endanger life or property or the common defense and security, and is otherwise in the public interest giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility.

a burden because of the design and installation changes to be made to the existing system. Therefore, compliance with the [ASME OM] Code requirements would be a hardship."

Pump flow rate will be determined by measuring the volume of fluid pumped and dividing corresponding pump run time. The volume of fluid pumped will be determined by the difference in fluid level in the test tank at the beginning and end of the pump run (test tank fluid level corresponds to volume of fluid in the tank). The pump flow rate calculation methodology meets the accuracy requirements of [ASME OM] Code, Table ISTB-3510-1. The pump flow rate calculation is identified on the record of test and ensures that the method for the flow rate calculation yields an acceptable means for the detection and monitoring of potential degradation of the Standby Liquid Control Pumps and therefore, satisfies the intent of the [ASME] OM Code Subsection ISTB.

In this type of testing, the requirement to maintain a 2 minute hold time after stabilization of the system is unnecessary and provides no additional increase of the ability of determining pump condition.

3.6.5 Quality/Safety Impact (as stated by the licensee)

The test tank fluid volume is approximately 236 gallons. The measured flow rate is approximately 43 gpm. The accuracy of the level reading is ± 1/8 inch. The accuracy of volume or level change is ±1/4 inch (1/8 inch at initial level and 1/8 inch at final level). The pump is required to be run for a minimum time to ensure that an 18 inch change of test tank level has occurred. This is to ensure that the [ASME OM] Code required accuracy for flow rate measurement of ±2 percent is satisfied. A 2% error over 18 inches corresponds to 0.36 inches, which is greater than 0.25 inches. The test methodology used to calculate pump flow rate will provide results consistent with [ASME OM] Code requirements. This will provide adequate assurance of acceptable pump performance.

Calculation methods are specified in the surveillance procedures for the Standby Liquid Control Pumps, and meet the quality assurance requirements for the Columbia Generating Station.

3.6.6 Duration of Proposed Alternative (as stated by the licensee)

Fourth 10 year interval.

3.6.7 NRC Staff Evaluation

Section ISTB-3550 requires that when measuring flow rate, a rate or quantity meter shall be installed in the test circuit. Additionally, ISTB-5300(a) requires that for the Group A test and comprehensive test, after pump conditions are as stable as the system permits, each pump shall be run at least 2 minutes.

The licensee stated that to install a flow meter to measure the flow rate and to guarantee the test tank size, such that the pump flow rate will stabilize in 2 minutes before recording the data, would be a burden because of the design and installation changes to be made to the existing system. In the NRC staff guidance in NUREG-1482, Revision 2, Section 5.5.2, the NRC staff agreed, and noted that requiring licensees to install a flow meter to measure the flow rate and to guarantee the test tank size, such that the pump flow rate will stabilize in 2 minutes before recording the data, would be a burden because of the design and installation changes to be made to the existing system, and that compliance with the ASME OM Code requirements would be a hardship.

The licensee's proposed alternative for measuring the flow rate for these pumps is to use a test tank and determine the pump flow rate by measuring the volume of fluid pumped and dividing the volume by the corresponding pump run time. The volume of fluid pumped will be determined by the difference in fluid level in the test tank at the beginning and end of the pump run. The test methodology used to calculate pump flow rate will provide results consistent with ASME OM Code requirements and will provide adequate assurance of acceptable pump performance.

The pump flow rate calculation methodology meets the accuracy requirements of Table ISTB-3510-1 of the ASME OM Code. The pump flow rate calculation from the surveillance test performed as part of the IST Program is identified on the record of the surveillance test and ensures that the method for the flow rate calculation yields an acceptable means for the detection and monitoring of potential degradation of the pumps. In this type of testing, the requirement to maintain a 2-minute hold time after stabilization of the system is unnecessary and provides no additional increase of the ability to determine pump condition. The NRC staff concludes that complying with ISTB-3550 and ISTB-5300(a) would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. The testing proposed by the licensee provides reasonable assurance that the pumps listed in Table 3 are operationally ready. Therefore, the NRC staff concludes that the licensee's proposed alternative to the requirements of ISTB-3550 and ISTB-5300(a) of the ASME OM Code is acceptable.

3.7 Licensee's Alternative Request RP06

3.7.1 ASME Code Components Affected

The licensee has requested an alternative to the comprehensive pump testing requirements of ISTB-5123(e), ISTB-5223(e), and ISTB-5323(e). The components affected by this alternative request, as stated by the licensee, are provided in Table 4 below.

[Table 4: Pumps Affected by Alternative Request RP06]

Pump	Code Class	Pump Group	Design Basis Accident Flow rate (GPM)	Test Flow Rate (GPM)
FPC-P-1A	3	A	*575	595 to 605
FPC-P-1B	3	A	*575	595 t0 605
HPCS-P-1	2	B	6250 @ 0 psid	6500 to 6690
HPCS-P-2	3	A	*1022	1030 to 1180
LPCS-P-1	2	B	5625 @ 122 psid	6435 to 6630
RCIC-P-1	2	B	600	610 to 628
RHR-P-2A	2	A	7034 @ 0 psid	7493 to 7550
RHR-P-2B	2	A	7034 @ 0 psid	7493 to 7550
RHR-P-2C	2	A	7034 @ 0 psid	7493 to 7650
SLC-P-1A	2	B	41.2	≥ 41 49
SLC-P-1B	2	B	41.2	≥ 41.49
SW-P-1A	3	A	*8928	9350 to 10270
SW-P-1B	3	A	*8880	9350 to 10270

*These values are design flow rates rather than design basis accident flow rates.

3.7.2 Applicable Code Requirement

ISTB-5123, "Comprehensive Test Procedure," (e), refers to Table ISTB-5121-1 which requires an upper required action limit of $1.03Q_r$ and $1.03\Delta P_r$, where Q_r is the reference flow rate and ΔP_r is the reference differential pressure.

ISTB-5223, "Comprehensive Test Procedure," (e), refers to Table ISTB-5221-1 which requires an upper required action limit of $1.03Q_r$ and $1.03\Delta P_r$, where Q_r is the reference flow rate and ΔP_r is the reference differential pressure.

ISTB-5323, "Comprehensive Test Procedure," (e), refers to Table ISTB-5321-2 which requires an upper required action limit of $1.03Q_r$ and $1.03P_r$, where Q_r is the reference flow rate and P_r is the reference discharge pressure.

ASME OM Code Case, OMN-19, "Alternative Upper Limit for the Comprehensive Pump Test," states, in part, that "a multiplier of 1.06 times the reference value may be used in lieu of the 1.03 multiplier for the comprehensive pump test's upper "Acceptable Range" criteria and "Required Action Range, High" criteria referenced in the ISTB test acceptance criteria tables.

4. Human factors involved with setting and measuring flow, D/P [differential pressure], and speed.
5. Readability of Gauges based on the smallest gauge increment.
6. Miscellaneous factors.

The above discussed inaccuracies associated with obtaining the comprehensive pump test hydraulic data may easily cause the measured value to exceed the existing [ASME OM Code] allowed upper required action limit of 3% percent. The new upper limit of 6% as approved in the [ASME OM Code Case] OMN-19 will eliminate declaring the pump inoperable and entering unplanned TS LCO.

The mandatory Appendix V pump periodic verification test program has been published in ASME OM-2012 Edition. This mandatory appendix contains requirements to augment the rules of subsection ISTB for inservice testing of pumps. It also states that the Owner is not required to perform a pump periodic verification test if the design basis accident flow rate in the Owner's safety analysis is bounded by the comprehensive pump test or Group A test. As specified in the pump table above, the quarterly Group A and biennial comprehensive tests bound the verification of pump design basis flow rate and associated differential pressure or discharge pressure for positive displacement pumps.

3.7.6 Quality/Safety Impact (as stated by the licensee)

Using the upper limit of 1.06 times the reference value in lieu of the 1.03 multiplier for the comprehensive pump test's upper "Acceptable Range" criteria and "Required Action Range, High" criteria referenced in the applicable ISTB test acceptance criteria tables will provide adequate indication of pump performance and continue to provide an acceptable level of quality and safety. Each pump performance is also monitored by subsection ISTB-required quarterly applicable Group A or Group B test that verifies operational readiness of the pump. The quarterly Group A or B pump test and biennial comprehensive pump test bounds the verification of pump design basis flow rate and associated differential or discharge pressure as applicable.

3.7.7 Duration of Proposed Alternative (as stated by the licensee)

Fourth 10 year interval.

3.7.8 NRC Staff Evaluation

The ASME Committee on OM developed ASME OM Code Case OMN-19 and published it in the 2011 Addenda of the ASME OM Code. OMN-19 allows the use of a multiplier of 1.06 times the reference value in lieu of the 1.03 multiplier for the comprehensive pump test's upper "Acceptable Range" criteria and "Required Action Range, High" criteria referenced in Table ISTB-5121-1, Table ISTB-5221-1, and Table ISTB-5321-2.

ASME OM Code Case OMN-19 has not been added to Regulatory Guide 1.192, and the 2011 Addenda of the ASME OM Code has not been incorporated by reference into 10 CFR 50.55a. The NRC staff has reviewed OMN-19, and currently has no concerns with its use, provided that a condition is met. The NRC staff has determined that licensees choosing to implement OMN-19 must implement a pump periodic verification (PPV) test program to verify that a pump can meet the required differential (or discharge) pressure as applicable, at its highest design basis accident flow rate, as discussed in Mandatory Appendix V, which was published in the 2012 Edition of the ASME OM Code.

The NRC staff notes that the licensee is not required to perform a PPV test if the design basis accident flow rate in the licensee's safety analysis is bounded by the comprehensive pump test or Group A test. The licensee stated that the design basis accident flow rate in the licensee's safety analysis is bounded by the comprehensive pump test or Group A test for the pumps listed in Table 4. The NRC staff also notes that pumps FPC-P-1A, FPC-P-1B, HPCS-P-2, SW-P-1A, and SW-P-1B do not have design basis accident flow rates, so a PPV test is not required. Since the licensee's design basis accident flow rates for the pumps are bounded, the licensee is not required to perform the PPV test to support use of ASME OM Code Case OMN-19 for the pumps listed in Table 4. Therefore, the NRC staff concludes that the licensee's proposed alternative provides an acceptable level of quality and safety to the specific ASME OM Code requirements of ISTB-5121-1, ISTB-5221-1, and ISTB-5321-2.

3.8 Licensee's Alternative Request RV01

3.8.1 ASME Code Components Affected

The components affected by this alternative request are provided in Table 5 below.

[Table 5: Valves Affected by Alternative Request RV01]

Valve ID	Function	Cat.	Class
CVB-V-1AB	To break vacuum on the drywell to suppression chamber downcomers and to limit steam leakage from the downcomer to the wetwell gas space.	AC	2
CVB-V-1CD			
CVB-V-1EF			
CVB-V-1GH			
CVB-V-1JK			
CVB-V-1LM			
CVB-V-1NP			
CVB-V-1QR			
CVB-V-1ST			

3.8.2 Applicable Code Requirement (as stated by the licensee)

OM Subsection ISTC-3630, Leakage Rate for Other Than Containment Isolation Valves.

set-pressure testing would be performed during power ascension. This would cause the testing to be out of sequence. Because of this, the licensee has proposed to treat the valve testing requirements I-3310 (a), (b), (c), and (i) separately from the accessory testing requirements I-3310 (d), (e), (f), and (h). Valve set-pressure adjustment or maintenance does not affect the testing of accessories. Likewise, maintenance on accessories does not affect valve set-pressure or seat leakage. Therefore, the MSRVs and the accessories may be tracked separately for the purpose of satisfying the requirements of Paragraph I-1320 "Test Frequencies, Class 1 Pressure Relief Valves." As a result, the requirements of I-3310 would be satisfied during normal shutdown conditions or scram shutdown conditions and the operability and electrical characteristics of the MSRVs would be sufficiently determined.

Based on the information provided by the licensee and the above analysis, the NRC staff concludes that the licensee's proposed alternative provides an acceptable level of quality and safety.

3.11 Licensee's Alternative Request RV04

3.11.1 ASME Code Components Affected

The components affected by this alternative request are provided in Table 8 below.

[Table 8: Valves Affected by Alternative Request RV04]

Valve ID	Function	Cat	Class
PI-EFC-X37E, PI-EFC-X37F	Process Instrumentation Excess Flow Check Valves	C	1
PI-EFC-X38A, PI-EFC-X38B, PI-EFC-X38C, PI-EFC-X38D,PI-EFC-X38E, PI-EFC-X38F		C	1
PI-EFC-X39A, PI-EFC-X39B, PI-EFC-X39D, PI-EFC-X39E		C	1
PI-EFC-X40C, PI-EFC-X40D		C	1
PI-EFC-X40E, PI-EFC-X40F		C	2
PI-EFC-X41C, PI-EFC-X41D		C	1
PI-EFC-X41E, PI-EFC-X41F		C	2
PI-EFC-X42A, PI-EFC-X42B		C	1
PI-EFC-X44AA, PI-EFC-X44AB, PI-EFC-X44AC, PI-EFC-X44AD, PI-EFC-X44AE, PI-EFC-X44AF, PI-EFC-X44AG, PI-EFC-X44AH, PI-EFC-X44AJ, PI-EFC-X44AK, PI-EFC-X44AL, PI-EFC-X44AM		C	1
PI-EFC-X44BA, PI-EFC-X44BB, PI-EFC-X44BC, PI-EFC-X44BD, PI-EFC-X44BE, PI-EFC-X44BF, PI-EFC-X44BG, PI-EFC-X44BH, PI-EFC-X44BJ, PI-EFC-X44BK, PI-EFC-X44BL, PI-EFC-X44BM		C	1
PI-EFC-X61A, PI-EFC-X61B		C	1
PI-EFC-X62C, PI-EFC-X62D		C	1
PI-EFC-X69A, PI-EFC-X69B, PI-EFC-X69E		C	1

(EFCVs)] are not required to perform a specific function for shutting down or maintaining the reactor in a cold shutdown condition. Additionally, the reactor instrument lines are assumed to maintain integrity for all accidents except for the Instrument Line Break Accident (ILBA) as described In Final Safety Analysis Report (FSAR) Subsection 15.6.2. The reactor instrument lines at Columbia Generating Station have a flow-restricting orifice upstream of the EFCV to limit reactor coolant leakage in the event of an instrument line rupture. Isolation of the instrument line by the EFCV is not credited for mitigating the ILBA. Thus, a failure of an EFCV is bounded by the Columbia Generating Station safety analysis. These EFCVs close to limit the flow of reactor coolant to the secondary containment in the event of an instrument line break and as such are included in the IST program at the Owner's discretion and are tested in accordance with the amended Technical Specification SR 3.6.1.3.8.

The GE (General Electric) Licensing Topical Report NEDO-32977-A dated [June 2000 (Reference 2 of the licensee's letter dated April 2, 2014], and associated NRC safety evaluation, dated March 14, 2000 [available in ADAMS at Accession No. ML003691722], provides the basis for this relief. The report provides justification for relaxation of the testing frequency as described in the amended Technical Specification SR 3.6.1.3.8. The report demonstrates the high degree of EFCV reliability and the low consequences of an EFCV failure. Excess flow check valves have been extremely reliable throughout the industry. Based on 15 years of testing (up to year 2000) with only one (1) failure, the Columbia Generating Station revised Best Estimate Failure Rate Is 7.9E-8 per hour; less than the industry average of 1.01E-7 per hour. There have been no failures since year 2000. Technical Specification amendment request for SR 3.6.1.3.8 was reviewed [and approved] by the NRC staff in safety evaluation (SE) dated February 20, 2001 [available in ADAMS at Accession No. ML010590279].

Failure of an EFCV, though not expected as a result of the amended [TS] change, is bounded by the Columbia Generating Station safety analysis. Based on the GE Topical report and the analysis contained in the FSAR, the proposed alternative to the required exercise frequency and valve Indication verification frequency for EFCVs provide an acceptable level of quality and safety. In [the SE dated February 20, 2001], the NRC staff concluded that the increase in risk associated with the relaxation of EFCV testing is sufficiently low and acceptable.

3.11.4 Proposed Alternative and Basis for Use (as stated by the licensee)

Energy Northwest requests relief pursuant to [10 CFR 50.55a(z)(1)] to test reactor instrument line excess flow check valves in accordance with the amended Technical Specification SR 3.6.1.3.8. This SR requires verification every 24 months that a representative sample of reactor instrument line EFCVs actuate to the isolation position on an actual or simulated Instrument line break signal. The representative sample consists of an approximately equal number of EFCVs such that each EFCV is tested at least once every 10 years (nominal). Valve position indication verification of the representative sample will also

evaluation, and since the licensee has provided information to assure continuing conformance with the NRC staff approved guidance and GE Topical Report NEDO-32977-A, the NRC staff concludes that the licensee's proposed alternative provides an acceptable level of quality and safety.

4.0 CONCLUSION

As set forth above, regarding relief requests RP02, Revision 1, RP03, Revision 1, and RV01, the NRC concludes that it is impractical for the licensee to comply with the specified requirement and that the proposed testing provides reasonable assurance that the subject components are operationally ready. Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements in 10 CFR 50.55a(f)(6)(i), and that granting relief is authorized by law and will not endanger life or property or the common defense and security, and is otherwise in the public interest giving due consideration to the burden upon the licensee that could result if the requirements were imposed upon the facility. Therefore, the NRC staff grants relief requested in RP02, Revision 1, RP03, Revision 1, and RV01 for CGS for the fourth 10-year IST program interval, which begins on December 13, 2014, and is scheduled to end on December 12, 2024.

As set forth above, the NRC staff concludes that the proposed alternatives in RP01, RP04, RP06, RV02, RV03, and RV04 provide an acceptable level of quality and safety. Accordingly, the NRC staff concludes that, for these items, the licensee has adequately addressed all of the regulatory requirements in 10 CFR 50.55a(z)(1). Therefore, the NRC staff authorizes proposed alternatives RP01, RP04, RP06, RV02, RV03, and RV04 for CGS for the fourth 10-year IST program interval, which begins on December 13, 2014, and is scheduled to end on December 12, 2024.

As set forth above, the NRC staff concludes that proposed alternatives RG01 and RP05 provide reasonable assurance that the affected components are operationally ready and that complying with the specified ASME OM Code requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements in 10 CFR 50.55a(z)(2). Therefore, the NRC staff authorizes proposed alternatives RG01 and RP05 for CGS for the fourth 10-year IST program interval, which begins on December 13, 2014, and is scheduled to end on December 12, 2024.

All other ASME OM Code requirements for which relief was not specifically requested and approved remain applicable.

Principal Contributors: M. Farnam, NRR
R. Wolfgang, NRR
J. Carneal, NRR
J. Billerbeck, NRR

Date: December 9, 2014

If you have any questions regarding this matter, the CGS Project Manager, Andrea George, may be reached at (301) 415-1081 or via e-mail at andrea.george@nrc.gov.

Sincerely,

/RA/

Eric R. Oesterle, Acting Chief
Plant Licensing Branch IV-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-397

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