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February 22, 2007
GO2-07-035

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

Subject: **COLUMBIA GENERATING STATION, DOCKET NO. 50-397 RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION REGARDING THE THIRD TEN-YEAR INTERVAL INSERVICE TESTING PROGRAM AT COLUMBIA GENERATING STATION**

Reference: Letter dated, October 10, 2005, GO2-05-166, WS Oxenford (Energy Northwest) to NRC, "Submittal of the Third Ten-Year Interval Pump and Valve Inservice Testing (IST) Program Plan"

Dear Sir or Madam:

The NRC staff is reviewing the referenced application. The NRC staff has determined that to complete the review they require additional information regarding IST relief requests RP-01, RP-02, RP-03, RP-06, RV-01, and RV-02. The requested additional information was discussed with the Staff via teleconference on January 11, 2007. The attachment hereto provides Energy Northwest's responses to the request for additional information. There are no new commitments contained in this response.

If you have any questions or require additional information, please contact Mr. GV Cullen at (509) 377-6105.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the date of this letter.

Respectfully,

WS Oxenford (Mail Drop PE04)
Vice President, Technical Services

Attachments: 1. Response to Request for Additional Information
2. Revised Relief Requests

cc: BS Mallett – NRC RIV
CF Lyon – NRC NRR
NRC Senior Resident Inspector/988C
RN Sherman – BPA/1399
WA Horin – Winston & Strawn

A047

Response to Request for Additional Information

1. Relief Request RP-01

RAI RP-01-01

The relief request states that relief is required for Group A, Group B, and comprehensive and preservice tests. It also states that the Standby Service Water and HPCS pumps are Group A pumps. Please explain why relief is requested for Group B tests for these pumps.

Columbia Response

Pumps SW-P-1A, SW-P-1B, and HPCS-P-2 are categorized as Group A pumps but the relief for measuring pump discharge pressure in lieu of pump differential pressure is requested for Group B tests also. The reason for this request is to allow applicability of this relief request to any future re-categorization of these pumps to category B. There is no change in required test parameters for Group A or Group B tests per Table ISTB-3000-1. Any re-categorization would require revising the IST program plan and implementing surveillance procedures.

2. Relief Request RP-02

RAI RP-02-01

The relief request section pertaining to "Proposed Alternative and Basis for Use" references NUREG-1482, Rev. 1, Section 5.5.2. The NUREG-1482, Rev.1, Section 5.5.2 is applicable to positive displacement pumps. According to relief request RP-08, the Diesel Fuel Oil Transfer Pumps are vertical line shaft centrifugal pumps. Please explain why NUREG-1482, Section 5.5.2 is used as the basis for the proposed alternative testing method.

Columbia Response

The NUREG-1482, Rev. 1, Section 5.5.2 is for calculating the flow rate via change in tank level for positive displacement pumps. Energy Northwest is requesting to apply the same methodology for calculating the flow rate via change in tank level for diesel fuel transfer pumps which are vertical line shaft centrifugal pumps. In both cases the systems were not designed with a flow meter in the flow loop. The Section 5.5.2 methodology is germane to both types of pumps and provides an accurate means for determining flow rate.

RAI RP-02-02

Please explain why a temporary clamp-on flow meter cannot be used to measure the flow rates for the Diesel Fuel Oil Transfer Pumps during inservice testing.

Columbia Response

During previous baseline testing for diesel fuel oil transfer pumps clamp-on UT flow meter measurements were compared with the flow rates calculated from change in tank level. Consistent and accurate flow measurements could not be obtained using UT flow meters.

RAI RP-02-03

The relief request states that relief is required for Group A, Group B, and comprehensive and preservice tests. It also states that the Diesel Fuel Oil Transfer pumps are Group B pumps. Please explain why relief is requested for Group A tests for these pumps.

Columbia Response

Diesel Fuel Oil Transfer pumps are categorized as Group B pumps but the relief for measuring flow rate using change in tank level is requested for Group A tests also. ISTB-5000 allows substitution of Group A tests for Group B tests. There is no change in required test parameters for Group A or Group B tests per Table ISTB-3000-1.

3. Relief Request RP-03

RAI RP-03-01

The relief request states that relief is required for Group A, Group B, and comprehensive and preservice tests. It also states that the Standby Service Water and HPCS pumps are Group A pumps. Please explain why relief is requested for Group B tests for these pumps.

Columbia Response

Pumps SW-P-1A, SW-P-1B, and HPCS-P-2 are categorized as Group A pumps but the relief for using the pump curve for discharge pressure vs. flow rate in lieu of fixed reference flow rate is requested for Group B tests also. The reason for this request is to allow applicability of this relief request to any future re-categorization of these pumps to category B. There is no change in required test parameters for Group A or Group B tests per Table ISTB-3000-1. Any re-categorization would require revising the IST program plan and implementing surveillance procedures.

4. Relief Request RP-06

RAI RP-06-01

The relief request states that relief is required for Group A, Group B, and comprehensive and preservice tests. It also states that the Standby Liquid Control pumps are Group B pumps. Please explain why relief is requested for Group A tests for these pumps.

Columbia Response

Standby Liquid Control pumps are categorized as Group B pumps but the relief for measuring flow rate using change in tank level is requested for Group A tests also. ISTB-5000 allows substitution of Group A tests for Group B tests. There is no change in required test parameters for Group A or Group B tests per Table ISTB-3000-1.

5. Relief Request RV-02

RAI RV-02-01

ASME Code Case OMN-8 states that stroke-time testing need not be performed for control valves when the only safety-related function of these valves is fail safe. Code Case OMN-8 also requires that all other applicable requirements of the corresponding paragraph shall be met. The relief request indicates that these valves shall be exercised quarterly in accordance with the Subsection ISTC requirements and the fail safe position on a loss of power (OPEN) shall be verified. Any abnormality or erratic action experienced during valve exercising shall be evaluated per the Corrective Action Program. However, the relief request does not specifically state that the proposed tests will be performed in accordance with Code Case OMN-8. Please clarify that the proposed tests will be performed in accordance with Code Case OMN-8.

Columbia Response

The "Proposed Alternative and Basis for Use" section of this relief request is being revised to state that, "The proposed tests are performed in accordance with Code Case OMN-8, using the applicable paragraphs of 2001 ASME OM Code edition with 2002 and 2003 addenda". See attached revised relief request.

6. Relief Request RV-01

RAI RV-01-01

The relief request states that the vacuum relief valves are verified-closed by position indicators, tested in the open direction using a torque wrench, and each valve seat is visually inspected per Technical Specification SR 3.6.1.7.1, SR 3.6.1.7.2, and SR

3.6.1.7.3. According to these technical specification surveillance requirements, there is no specific requirement for valve seat visual inspection. Please verify the valve seat visual inspection requirement.

Columbia Response

Technical Specifications SR 3.6.1.7.1, SR 3.6.1.7.2, and SR 3.6.1.7.3 do not require visual inspection of valve seats. Visual inspection of valve seats is performed to satisfy a previous commitment made in response to an NRC question. The relief request is being revised to clarify visual inspection of valves. See attached revised relief request.

Request RV-01 has also been revised to request leak test substitutions approved by the Staff in an SER dated February 9, 2007 (referenced in attached revised relief request), to also apply to the testing specified in Paragraph ISTC-3630.

Relief Request -- **RV01**
Revision 1

Proposed Alternative
in Accordance with 10CFR 50.55a(a)(3)(i)

--Alternative Provides Acceptable Level of Quality and Safety--

ASME Code Components Affected

Affected Valves	Class	Cat.	Function	System(s)
CVB-V-1AB, CD, EF, GH, JK, LM, NP, QR, ST	2	AC	To break vacuum on the drywell to suppression chamber downcomers and to limit steam leakage from the downcomer to the wetwell gas space.	Primary Containment Cooling and Purge

Applicable Code Edition and Addenda

The 2001 Edition and the 2002 and 2003 Addenda of the ASME OM Code

Applicable Code Requirement

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

Reason for Request

Subsection ISTC-3630 requires Category A valves, other than containment isolation valves, to be individually leak tested at least once every two years. The leak test described in Subsection ISTC-3630 is bounded by leak testing performed to meet Technical Specifications Surveillance Requirements (SR) 3.6.1.1.3 and SR 3.6.1.1.4 and both the Code requirement and the SRs are met by performance of the same procedure. Each of the SRs in Technical Specifications contain a note which states "Performance of SR 3.6.1.1.2 satisfies this surveillance." Relief is requested to allow SR 3.6.1.1.2 bypass leakage test to also satisfy ISTC-3630 requirements.

Relief Request -- **RV01** (Contd.)

Proposed Alternative and Basis for Use

These valves will be leak tested in accordance with Columbia Generating Station Technical Specifications SR 3.6.1.1.2, SR 3.6.1.1.3, and SR 3.6.1.1.4 during refueling outages.

Technical Specifications SR 3.6.1.1.2 drywell-to-suppression chamber bypass leakage test monitors the combined leakage of three types of pathways: (1) the drywell floor and downcomers, (2) piping externally connected to both the drywell and suppression chamber air space, and (3) the suppression chamber-to-drywell vacuum breakers. The test frequency is 120 months and 48 months following one test failure and 24 months if two consecutive tests fail until two consecutive tests are less than or equal to the bypass leakage limit.

Technical Specifications SR 3.6.1.1.3 establishes a leak rate test frequency of 24 months for each suppression chamber-to-drywell vacuum breaker pathway, except when the leakage test of SR 3.6.1.1.2 has been performed (Note to SR 3.6.1.1.3). Thus, each suppression chamber-to-drywell vacuum breaker pathway will have a leak test frequency of 24 months by either SR 3.6.1.1.2 or SR 3.6.1.1.3.

Technical Specifications SR 3.6.1.1.4 establishes a leakage test frequency of 24 months to determine the suppression chamber-to-drywell vacuum breaker total bypass leakage, except when the bypass leakage test of SR 3.6.1.1.2 has been performed (Note to SR 3.6.1.1.4). Thus, the determination of suppression chamber-to-drywell vacuum breaker total leakage will have a leak test frequency of 24 months by either SR 3.6.1.1.2 or SR 3.6.1.1.4.

These valves are also verified-closed by position indicators, exercised, and tested in the open direction using a torque wrench per Technical Specification SR 3.6.1.7.1, SR 3.6.1.7.2, and SR 3.6.1.7.3. In accordance with a separate commitment, the valves are visually inspected each refueling outage.

Quality/Safety Impact

The leakage criteria and corrective actions specified in Technical Specifications SR 3.6.1.1.2, SR 3.6.1.1.3, and SR 3.6.1.1.4 combined with visual examination of valve seats every refueling outage provides adequate assurance of the vacuum relief valve assembly's ability to remain leak tight and to prevent a suppression pool bypass. Thus, the proposed alternative provides adequate assurance of material quality and public safety.

Relief Request -- **RV01** (Contd.)

Duration of Proposed Alternative

Third 10 year interval.

Precedents

A similar relief request was granted for the previous 10 year interval.

SER letter dated November 27, 1995 (TAC No. M91159), Relief Request No. RV01.

References

Letter GI2-07-016, dated February 9, 2007, Carl F. Lyon (NRC) to J. V. Parish (Energy Northwest), "Columbia Generating Station - Issuance of Amendment RE: Suppression Chamber-to-Drywell Vacuum Breakers and Drywell-to-Suppression Chamber Bypass Leakage Test (TAC No. MD1225)".

Relief Request -- **RV02**
Revision 1

Relief Request
in Accordance with 10CFR 50.55a(f)(5)(iii)

— Inservice Testing Impracticality --

ASME Code Components Affected

Affected Valves	Class	Cat.	Function	System(s)
SW-TCV-11A, B	3	B	Throttle flow to control temperature of the Control Room	Standby Service Water

Applicable Code Edition and Addenda

The 2001 Edition and the 2002 and 2003 Addenda of the ASME OM Code.

Applicable Code Requirement

1. OM Subsection ISTC, Paragraph ISTC-5141, Hydraulically Operated Valves Stroke Testing

2. OM Subsection ISTC, Paragraph ISTC-5142, Stroke Test Acceptance Criteria

3. OM Subsection ISTC, Paragraph ISTC-5143(b), Stroke Test Corrective Action

Impracticality of Compliance

It is difficult to accurately measure the stroke time of these hydraulically actuated control valves. These valves are not provided with any form of override that would allow them to be manually cycled. Additionally, they are not provided with position indication. Partial stroking of these valves can be verified by observing system operational parameter changes, but accurate timing of full stroke for trending purposes is impractical.

Burden Caused by Compliance

1. These hydraulically actuated valves serve as regulating thermostatic control valves. The valves do not function to rapidly isolate or de-isolate the piping into which they are installed. Rather, their function is to slowly regulate throughout their entire stroke range to control the outlet temperatures of the components they serve. SW-TCV-11A & 11B are controlled by thermostats which regulate main control room air temperature.

2. Manual control of these valves can only be obtained by lifting the 4-20 mA control leads to inject a test signal to the hydraulic actuator. This in turn requires that the Technical Specification 3.7.4 and Licensee Controlled Specification 1.7.2 required systems be taken out of service.

3. Modification of the existing valves or installation of new valves to provide manual control and position indication would be burdensome and costly.

Proposed Alternative and Basis for Use

1. In general, control valves that respond to system conditions are exempt from IST per Subsection ISTC-1200. However, these control valves perform a fail-safe function (fail open), and must be tested in accordance with the Code provisions to monitor the valve for degrading conditions. ASME Code Case OMN-8 states that stroke-time testing need not be performed for these valves when the only safety-related function of the valves is to fail safe. Code Case OMN-8, as accepted in RG 1.192 is only applicable through OM Code-1995. OM Code Committee is in the process of revising the applicability of this Code Case to the later approved OM Code editions and addenda.

2. These valves shall be exercised quarterly in accordance with the Subsection ISTC requirements and the failsafe position on a loss of power (OPEN) shall be verified. Any abnormality or erratic action experienced during valve exercising shall be evaluated per the Corrective Action Program. The proposed tests are performed in accordance with Code Case OMN-8, using the applicable paragraphs of 2001 ASME OM Code edition with 2002 and 2003 addenda.

Quality/Safety Impact

The alternative testing to be performed will verify proper operation of the valve to meet its design function. Adequate assurance of material quality and maintenance of public safety will be provided.

Duration of Proposed Alternative

Third 10 year interval.

Precedents

Similar relief request was granted for the previous 10 year interval.

SER letter dated November 27, 1995 (TAC No. M91159), Relief Request No. RV03.