

ENERGY NORTHWEST

P.O. Box 968 ■ Richland, Washington 99352-0968

June 7, 2000
GO2-00-104

Docket No. 50-397

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

Gentlemen:

Subject: **WNP-2, OPERATING LICENSE NPF-21
REQUEST FOR ADDITIONAL INFORMATION
TECHNICAL SPECIFICATION 5.5.7.C
VENTILATION FILTER TESTING PROGRAM**

Reference: Letter dated May 18, 2000, J Cushing (NRC) to JV Parrish (Energy Northwest), "Request for Additional Information (RAI) for WNP-2 (TAC NO. MA7227)"

In the referenced letter the Staff determined that additional information was needed to complete their review of the amendment request to revise Subsection 5.5.7.c of Technical Specification 5.5.7, "Ventilation Filter Testing Program." The information requested by the Staff is detailed in the enclosure.

Should you have any questions or desire additional information pertaining to this letter, please call PJ Inserra at (509) 377-4147.

Respectfully,



DW Coleman
Manager, Regulatory Affairs
Mail Drop PE20

Enclosure

cc: EW Merschoff - NRC RIV
JS Cushing - NRC NRR
NRC Resident Inspector - 927N

DL Williams - BPA/1399
TC Poindexter - Winston & Strawn

NRR-057

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NRC Question 1:

For both the current and proposed testing of the standby gas treatment system (SGTS) and the control room emergency filtration system (CREFS), neither the charcoal bed depth nor the total residence time per bed depth were provided in the submittal. This information was requested from all GL 99-02, "Laboratory Testing of Nuclear-Grade Activated Charcoal" Group 2 plants. Please provide this information.

Response 1:

The CREF filter units use 3 each, 2 inch thick, type II carbon trays, arranged in parallel. The residence time for the CREF units is 0.229 seconds per 2 inches of bed thickness, at a maximum expected flow rate of 1100 actual cubic feet per minute (acfm) (nominal design flow rate is 1000 acfm). The SGT filter units use 2 each, 4 inch thick, type III deep beds, arranged in series for an aggregate carbon bed depth of 8 inches. The residence time for the SGT units is 0.532 seconds per 8 inches of bed depth, at a maximum expected flow rate of 6720 acfm (the outstanding secondary containment JCO, reference GO2-96-199, October 15, 1996 nominal design flow rate is 5385 acfm). The residence time calculation methodology of ASME AG-1-1997, Appendixs FD-I and FE-I was used as guidance for determination of the above residence times.

NRC Question 2.

For the CREF and SGT systems, please indicate how the face velocities were calculated. The actual system face velocities can be calculated by dividing the maximum system flow rates specified in the technical specification (TS) (nominal +10% upper value) by the total exposed surface area of the charcoal filter media. Per GL 99-02, if this value is >110% of 40 ft/min, then the TS should be revised to specify that value as the test face velocity.

Response 2:

CREF and SGT carbon filter face velocities are calculated using the standard equation $Q=VA$, where Q is the maximum expected flow rate through the unit in acfm, V is the average face velocity in feet per minute (fpm) and A is net cross-sectional area of the carbon filter(s). The CREF filter units are simple, constant flow units that do not use modulating flow control components. As the nominal technical specification design flow for each CREF filter unit is 1000 acfm, a flow rate of 110% or 1100 acfm is used as the maximum expected flow through the filter unit. This maximum flow rate is verified by surveillance testing. Dividing this maximum flow rate by the total exposed net surface area of the three type II carbon trays provides an air velocity of less than 44 fpm. For the SGT filter units, the required design flow rate is 5385 acfm. Because the SGT filter unit uses a modulating flow control loop, a maximum expected flow rate of 6720 acfm is conservatively used to account for instrument loop setpoint tolerances, drift and uncertainties. Dividing this maximum flow rate by the net exposed net surface area of the deep bed carbon filters provides a face velocity of 75 fpm.

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NRC Question 3:

Please provide the credited efficiency for the SGTS and for the CREFS; this information is needed to verify the proposed safety factor.

Response 3:

As provided in FSAR sections 6.4.4.1 and 6.5.1.1, the credited carbon filter efficiencies for the CREF and SGT systems are 95% and 99%, respectively. These credited filter efficiencies remain unchanged with respect to our proposed TS amendment and the requirements of GL 99-02.

NRC Question 4:

Please clarify what is meant by "Variations in the above testing parameters of temperature, relative humidity, and face velocity are permitted per Table 1 and Section A.5.2 of ASTM D3803-1989." Is this statement meant to provide the basis for using test parameters other than what is specified in the standard?

Response 4:

The intent of this note (i.e. Variations in) was to indicate that allowed test parameter tolerances to be used during performance of the laboratory tests were as specified in ASTM D3803-1989. To clarify the intent of this note, we propose revising the note to read as follows: "Allowed tolerances in the above testing parameters of temperature, relative humidity, and face velocity are as specified in ASTM D3803-1989." A marked-up and revised technical specification page is included with this enclosure.

5.5 Programs and Manuals

5.5.7 Ventilation Filter Testing Program (VFTP) (continued)

- c. Demonstrate for each of the ESF systems that a laboratory test of a sample of the charcoal adsorber, when obtained as described in Regulatory Guide 1.52, Revision 2, shows the methyl iodide penetration less than the value specified below when tested in accordance with ASTM D3803-1986 (Method 1989 ~~B for the SGT System and Method A for the CREF System~~) at a temperature of 30°C (86°F) and the relative humidity greater than or equal to the value specified below. Testing of the SGT System will also be conducted at a face velocity of ~~4~~ ¹⁵ feet per minute.

ESF Ventilation System	Penetration (%)	RH (%)
SGT System	0.175 0.5	70
CREF System	1.0 2.5	70

- d. Demonstrate for each of the ESF systems that the pressure drop across the combined HEPA filters and the charcoal adsorbers is less than the value specified below when tested at the system flowrate specified below:

ESF Ventilation System	Delta P (inches wg)	Flowrate (cfm)
SGT System	< 8	4012 to 4902
CREF System	< 6	900 to 1100

- e. Demonstrate that the heaters for each of the ESF systems dissipate the nominal value specified below when tested in accordance with ASME N510-1989:

ESF Ventilation System	Wattage (kW)
SGT System	18.6 to 22.8
CREF System	4.5 to 5.5

5.5.8 Explosive Gas and Storage Tank Radioactivity Monitoring Program

This program provides controls for potentially explosive gas mixtures contained in the Main Condenser Offgas Treatment System and the quantity of radioactivity contained in unprotected outdoor liquid storage tanks.

The program shall include:

(continued)

Variations in the ^{above} testing parameters of temperature, relative humidity, and face velocity are permitted per Table 1 and Section A5.2 of ASTM D3803-1989 as specified in

Allowed tolerances

5.5 Programs and Manuals

5.5.7 Ventilation Filter Testing Program (VFTP) (continued)

- b. Demonstrate for each of the ESF systems that an inplace test of the charcoal adsorber shows a penetration and system bypass < 0.05% when tested in accordance with Regulatory Guide 1.52, Revision 2, and ASME N510-1989 at the system flowrate specified below:

ESF Ventilation System	Flowrate (cfm)
SGT System	4012 to 4902
CREF System	900 to 1100

- c. Demonstrate for each of the ESF systems that a laboratory test of a sample of the charcoal adsorber, when obtained as described in Regulatory Guide 1.52, Revision 2, shows the methyl iodide penetration less than the value specified below when tested in accordance with ASTM D3803-1989 at a temperature of 30°C (86°F) and the relative humidity specified below. Testing of the SGT System will also be conducted at a face velocity of 75 feet per minute.

ESF Ventilation System	Penetration (%)	RH (%)
SGT System	0.5	70
CREF System	2.5	70

Allowed tolerances in the above testing parameters of temperature, relative humidity, and face velocity are as specified in ASTM D3803-1989.

- d. Demonstrate for each of the ESF systems that the pressure drop across the combined HEPA filters and the charcoal adsorbers is less than the value specified below when tested at the system flowrate specified below:

ESF Ventilation System	Delta P (inches wg)	Flowrate (cfm)
SGT System	< 8	4012 to 4902
CREF System	< 6	900 to 1100

(continued)

5.5 Programs and Manuals

5.5.7 Ventilation Filter Testing Program (VFTP) (continued)

- e. Demonstrate that the heaters for each of the ESF systems dissipate the nominal value specified below when tested in accordance with ASME N510-1989:

ESF Ventilation System	Wattage (kW)
SGT System	18.6 to 22.8
CREF System	4.5 to 5.5

5.5.8 Explosive Gas and Storage Tank Radioactivity Monitoring Program

This program provides controls for potentially explosive gas mixtures contained in the Main Condenser Offgas Treatment System and the quantity of radioactivity contained in unprotected outdoor liquid storage tanks.

The program shall include:

- a. The limits for concentrations of hydrogen in the Main Condenser Offgas Treatment System and a surveillance program to ensure the limits are maintained. Such limits shall be appropriate to the system's design criteria (i.e., whether or not the system is designed to withstand a hydrogen explosion); and
- b. A surveillance program to ensure that the quantity of radioactivity contained in all outside temporary liquid radwaste tanks that are not surrounded by liners, dikes, or walls, capable of holding the tanks' contents and that do not have tank overflows and surrounding area drains connected to the Liquid Radwaste Treatment System is less than the amount that would result in concentrations greater than the limits of Appendix B, Table 2, Column 2 to 10 CFR 20.1001 - 20.2402, at the nearest potable water supply and the nearest surface water supply in an unrestricted area, in the event of an uncontrolled release of the tanks' contents.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Explosive Gas and Storage Tank Radioactivity Monitoring Program Surveillance Frequencies.

(continued)