August 9, 2006

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

SUBJECT: COLUMBIA GENERATING STATION - REQUEST FOR ADDITIONAL INFORMATION RE: LICENSE AMENDMENT APPLICATION ON ALTERNATIVE SOURCE TERM (TAC NO. MC4570)

Dear Mr. Parrish:

By letter dated September 30, 2004, Energy Northwest submitted a request for a license amendment to Facility Operating License No. NPF-21 related to the application of an alternative source term for the Columbia Generating Station. The Nuclear Regulatory Commission (NRC) staff has performed a review of the amendment request and finds that it needs additional information to complete its review.

Therefore, it is requested that you respond to the enclosed request for additional information by August 25, 2006, for the NRC staff to complete its review.

Sincerely,

/RA/

Brian Benney, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-397

Enclosure: Request for Additional Information

cc w/encl: See next page

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REQUEST FOR ADDITIONAL INFORMATION

COLUMBIA GENERATING STATION

ALTERNATIVE SOURCE TERM

TAC NO. MC4570

Previous discussion questions transmitted informally and discussed on the telephone:

Columbia's Proposed Changes:

TS 3.6.4.1 Secondary Containment

1. Revised Surveillance Requirement (SR) 3.6.4.1.1 to change the minimum required containment vacuum from greater than or equal to 0.25 inch of vacuum water gauge to greater than 0.0 inch of vacuum water gauge (wg).

2. Deleted SR 3.6.4.1.4.

3. Revised the existing SR 3.6.4.1.5 to change the maximum allowed standby gas treatment (SGT) subsystem flow rate from less than or equal to 2240 cubic feet per minute (cfm) to a secondary containment inleakage flow rate of less than or equal to 2430 cfm.

4. Due to the deletion of SR 3.6.4.1.4, SR 3.6.4.1.5 is renumbered as SR 3.6.4.1.4.

TS 3.6.4.3 Standby Gas Treatment System

5. Revised SR 3.6.4.3.3 to add the phrase "and reaches greater than or equal to 4800 cfm within 2 minutes."

NRC Staff's Request for Additional Information (RAI)

1. The current TSs require the secondary containment to be maintained at a negative 0.25 inch wg during normal operation. The daily surveillance on this requirement assures that the building integrity is being monitored and maintained during the 24-month interval between draw down testing. If the TSs were changed to allow less than or equal to 0.0 inch of wg pressure normally (change no. 1 above), the building would potentially breathe as external pressures changed and integrity could degrade and be undetected. What assurance would this test or any other test provide that secondary containment integrity capability is being maintained?

   Also, with the secondary containment being maintained at a negative pressure, the release to the environment is from a single point that is monitored for release. If the secondary containment is allowed to breathe with external pressure changes, how would Columbia meet General Design Criteria (GDC) 64 or its equivalent for monitoring releases?

2. Deleting SR 3.6.4.1.4 (change no. 2) deletes the requirement to measure the time it takes to achieve a secondary containment negative pressure of a negative 0.25 inch wg. Criterion 2 of Section 50.36 of Title 10 of the *Code of Federal Regulations* (10 CFR) requires a Limiting Condition of Operation (LCO) for a process variable, design feature, or operating restriction that is an initial condition of a deign-basis accident. The time at which secondary containment is established is directly input into the loss-of-coolant (LOCA) design-basis analysis as the point at which secondary containment and the SGT can be credited. The LCO is relieved by meeting the SR that measures the time at which draw down is achieved as stated in the TSs. Please clarify how the requirements of 10 CFR 50.36 are satisfied with respect to removing this SR.

3. SR 3.6.4.1.5 verifies the SGT ability to maintain the negative 0.25 inch wg pressure in the secondary containment for a period of 1 hour. The change increases the flow rate from a maximum of 2240 cfm to a maximum of 2430 cfm and labels this flow as an "inleakage" flow. Please clarify how inleakage flow is measured or provided a basis for labeling it inleakage flow in lieu of the measured quantity which appears to be SGT subsystem flow. Please clarify if the reason to increase this maximum flow results from greater secondary containment inleakage and identify any steps being taken to control the degradation of secondary containment integrity.

4. No question on change no. 4. It is editorial.

5. SR 3.6.4.3.3 verifies the ability of each subsystem to start. The proposed additional requirement of achieving 4800 cfm in 2 minutes is more restrictive and conservative. The staff is concerned that Columbia is trying to relate the initial subsystem flow rate (4800 cfm in 2 minutes) to the time it takes to achieve draw down of the secondary containment to the negative 0.25 inch wg. A subsystem flow rate is not related to secondary containment integrity except in the sense that if there was more inleakage such as a door being open there would be less pressure drop on the subsystem and a corresponding increase in flow. Please clarify if Columbia is requesting that an SR on SGT subsystem flow combined with a gothic analysis be substituted for measuring the draw down time directly and explain how this would identify changes in building leakage and other parameters used in the analysis over the time interval between tests (24 months).

<u>Additional RAIs on Secondary Containment TS Changes</u>

SR 3.6.4.1.1 changes:

1. What is the instrument accuracy on the gauge that measures secondary containment pressure and how does Columbia account for this in the SR.

2. Where is the pressure measured? How does Columbia determine that this is a limiting pressure? Is it connected with the general secondary containment atmosphere?

SR 3.6.4.1.4 deletion and analysis issues:

3. How was the draw down analysis validated? Has Columbia conducted an actual test and compared the test results with the prediction of the model?

4. Section 50.36 of 10 CFR requires an SR on parameters used in design-basis analyses such as the draw down time. Please state clearly the basis for substituting an analysis for an SR that measures the parameter directly with emphasis on how 10 CFR 50.36 requirements for surveillances are satisfied.

5. What are the uncertainties in the analytical model? How are these uncertainties accounted for by conservatism or defense in depth?

6. What is the pressure transient for the secondary containment during a LOCA accident? Can the secondary containment go positive and lose its integrity because of the transient? What is the secondary containment design pressure?

7. What are the problems associated with conducting a draw down test? It was stated that draw down could be achieved in 30 seconds? It would appear that if draw down could be demonstrated in 2 minutes (current TSs) that the impact of heat loads, external temperatures, wind, et al., would be small when spread out over the entire secondary volume. As the draw down time got longer, these effects would be more noticible.

8. Realizing that draw down under cold (ideal) conditions does not reflect the draw down under accident conditions, would it be more feasible to conduct a draw down under cold (ideal) conditions and adjust the results for accident conditions by use of an analysis? By doing this, Columbia would have a measured value or SR and a defendable basis for relating it to an accident-based draw down time.

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