June 21, 2010

Mr. W.S. Oxenford, Vice President
Nuclear Generation and Chief Nuclear Officer
Columbia Generating Station
Energy Northwest
MD PE08
P.O. Box 968
Richland, WA 99352

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE COLUMBIA GENERATING STATION, LICENSE RENEWAL APPLICATION

Dear Mr. Oxenford:

By letter dated January 19, 2010, Energy Northwest submitted an application pursuant to Title 10 of the *Code of Federal Regulations* Part 54 (10 CFR Part 54), to renew operating license NPF-21 for Columbia Generating Station, for review by the U.S. Nuclear Regulatory Commission (NRC or the staff). The staff is reviewing the information contained in the license renewal application and has identified, in the enclosure, areas where additional information is needed to complete the review. Further requests for additional information may be issued in the future.

Items in the enclosure were discussed with Abbas Mostala and a mutually agreeable date for the response is within 30 days from the date of this letter. If you have any questions, please contact me at 301-415-4029 or by e-mail at evelyn.gettys@nrc.gov.

Sincerely,

/RA/

Evelyn Gettys, Project Manager
Projects Branch 1
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket No. 50-397

Enclosure:
As stated

cc w/encl: See next page

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COLUMBIA GENERATING STATION
LICENSE RENEWAL APPLICATION
REQUEST FOR ADDITIONAL INFORMATION

RAI 3.3.2.2.6-1

Background

The Generic Aging Lessons Learned (GALL) Report for neutron absorbing materials cites both loss of material and loss of neutron absorbing capacity as potential aging effects. In addition, the LR-ISG-2009-01, "Aging Management of Spent Fuel Pool Neutron-Absorbing Materials other than Boraflex," April 27, 2010, recommends that applicants implement an aging management program to address these effects on neutron absorber material other than Boraflex during the period of extended operation. In the LRA, it was stated that boron carbide (B_4C) is used as the neutron absorbing material, sealed in stainless steel racks, and is not exposed to treated water. As a result, it was stated that there are no aging effects requiring management for this neutron absorber material.

Issue

The LRA does not address applicability of recent adverse industry operating experience with neutron absorber materials and staff guidance (i.e., NRC Information Notice 2009-26: Degradation Of Neutron-Absorbing Materials in the Spent Fuel Pool, and LR-ISG-2009-01).

Request

1. Describe how the Columbia plant plans to address the potential effects of loss of material and loss of neutron absorbing capacity of the boron carbide material. If it is determined that there are no aging affects requiring managing for the neutron absorber material, please provide and discuss the justification.

2. Describe the material specifications (i.e., dimensions, percentage B_4C, etc) of the boron carbide material. Also, provide the age, manufacturer of the material and method of fabrication.

3. If the applicant identifies aging effect requiring management for the boron carbide, describe the aging management program(s) that will be used. Specifically:

    a. Provide the 10 elements of the aging management program for boron carbide (i.e., scope of program, preventive actions, parameters monitored or inspected, detection of aging effects, monitoring and trending, acceptance, corrective actions, confirmation process, administrative controls, and operating experience).
    b. Discuss the weight loss acceptance criteria for the boron carbide neutron absorber material such that the 5 percent subcriticality margin is maintained.
    c. Indicate whether the boron carbide material in the spent fuel pool is vented or not.

ENCLOSURE

d. Indicate the installation date of the boron carbide material in the Columbia spent fuel pool.
e. Describe the surveillance approach that will be used in the cited AMP, specifically the methods and techniques utilized (e.g., visual, weight, volumetric, surface inspection, neutron attenuation testing; frequency, sample size, data collection, timing and acceptance criteria).
f. Describe how the neutron attenuation of the material will be measured. Include a description of the testing, parameters measured, calculations, and acceptance criteria.
g. Discuss the corrective actions that would be implemented if test results are not acceptable.

4. Discuss how it is assured that spent fuel pool water does not leak into the sealed stainless steel weld.

5. Discuss the results of coupon testing at Columbia, other industry operating experience of boron carbide, and how that experience is applicable to Columbia and any potential safety concerns identified in the boron carbide operating experience.

RAI B.2.28-1

Background

In LRA Section B.2.28, the applicant states that the Flow-Accelerated Corrosion (FAC) Program includes procedures to assure that the structural integrity of all steel and gray cast iron lines containing high energy fluids is maintained. The applicant further states that to ensure that all aging effects caused by FAC are properly managed following Nuclear Safety Analysis Center-202L Rev. 3, the program includes the use of a predictive code such as CHECWORKS model predictions, trending, inspections and plant and industry operating experience events.

Issue

The LRA does not contain information regarding the accuracy of the FAC Program in predicting FAC degradation in components.

Request

Please provide a sample list of components, from the systems most affected by FAC, for which wall thinning is predicted and measured in order to assess the accuracy of the FAC predictions from CHECWORKS. This list should also include the initial wall thickness (nominal), current (measured) wall thickness, and a comparison of the measured wall thickness to the thickness predicted by the CHECWORKS FAC model.

RAI B.2.29-1

Background

After the issuance of Revision 1 of the GALL Report, the NRC has issued Information Notice (IN) 2009-02, "Biodiesel in Fuel Oil Could Adversely Impact Diesel Engine Performance." This Information Notice discusses potential issues that may occur with the use of B5 blend fuel oil, such as: suspended water particles, biodegradation of B5, material incompatibility, etc.

Issue

The LRA does not provide information discussing the concerns of IN 2009-02 and the acceptable or unacceptable use of biodiesel at Columbia.

Request

1. Provide a summary of the actions that were taken to determine the impact of IN 2009-02 and the use of biodiesel fuel oil at Columbia, particularly, whether issues of suspended water particles and biodegradation introduces a new aging environment to be considered.

2. If biodiesel is currently being used at Columbia, please describe any problems that Columbia encountered with the use of bio-diesel and the associated corrective actions to prevent reoccurrence in the future.

3. If biodiesel has been determined to not be acceptable for use at Columbia, please describe the actions taken and/or will be taken to prevent its addition into fuel oil supply. Please also describe actions that will be taken if it is determined that biodiesel has been added into the fuel oil supply.

RAI B.2.29-2

Background

The GALL Report AMP XI.M30 states that degradation of the diesel fuel oil tank cannot occur without exposure of the tanks internal surfaces to contaminants in the fuel oil, such as water and microbiological organisms. It is further stated that periodic multilevel sampling provides assurance that fuel oil contaminants are below unacceptable levels.

Issue

The LRA states that multilevel sampling of the fuel oil storage tanks is not performed; rather, a representative fuel stream sample is drawn from the flushing line during recirculation and transfer.

Request

Discuss how the sampling method utilized for the fuel oil storage tanks is consistent with the recommendations of the GALL Report (i.e., multilevel sampling).

RAI XI.S8-1

Background

The GALL Report states that proper maintenance of protective coatings inside containment (defined as Service Level I in Nuclear Regulatory Commission Regulatory Guide [RG] 1.54, Rev. 1) is essential to ensure operability of post-accident safety systems that rely on water recycled through the containment sump/drain system. Degradation of coatings can lead to clogging of strainers, which reduces flow through the sump/drain system.

Issue

The Columbia LRA does not credit the protective coating monitoring and maintenance program for aging management. Although the licensee does not credit the program for aging management, there needs to be adequate assurance that there is proper management and maintenance of the protective coatings in containment, such that they will not degrade and become a debris source that may challenge the Emergency Core Cooling Systems performance.

Request

1. Discuss why XI.S8, “Protective Coating Monitoring and Maintenance Program,” is not credited for aging management.

2. Discuss in detail whether Columbia has a coatings monitoring and maintenance program. Describe the program if one is used.

3. Describe how Columbia will ensure that there will be proper maintenance of the protective coatings inside containment such that they will not become a debris source that could impact the operability of post-accident safety systems that rely on water recycled through the containment sump or drain system in the extended period of operation.

4. If a program is used, describe the frequency and scope of the inspections, acceptance criteria, standards used, and the qualification of personnel who perform containment coatings inspections.

Letter to W.S. Oxenford from E. Gettys dated June 21, 2010

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