



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

October 14, 2010

Mr. S.K. Gambhir
Vice President Technical Services
Columbia Generating Station
Energy Northwest
MD PE04
P.O. Box 968
Richland, WA 99352-0968

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE
COLUMBIA GENERATING STATION, LICENSE RENEWAL APPLICATION
(TAC NO. ME3058)

Dear Mr. Gambhir:

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 No. 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,

A handwritten signature in cursive script that reads "Evelyn Gettys".

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

Docket No. 50-397

Enclosure:
As stated

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COLUMBIA GENERATING STATION
LICENSE RENEWAL APPLICATION
REQUEST FOR ADDITIONAL INFORMATION

RAI 3.2.2.3.1-1

Background:

In License Renewal Application (LRA) Tables 3.2.2-1 and 3.2.2-2, the applicant stated that steel piping exposed to moist air (internal) are being managed for loss of material by the Supplemental Piping/Tank Inspection Program. The aging management review (AMR) line item cite Generic Note G. Line items associated with steel piping in LRA Table 3.2.2-1 cite plant specific Note 0201 which states that the Supplemental Piping/Tank Inspection will manage loss of material at the air-water interface on the piping at the surface of the suppression pool. The staff notes that the Supplemental Piping/Tank Inspection Program is a new one-time inspection program which focuses on detection and characterization of the material condition for steel and stainless steel components exposed to moist air environments, such as at air-water interfaces or air spaces of piping and tanks.

The staff notes that given the definitions in LRA Table 3.0-1, moist air is susceptible to condensation. The staff also notes that the GALL Report recommends that steel piping exposed to an air-indoor uncontrolled or condensation internal environment will be managed by GALL AMP XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components."

The staff notes that the GALL recommended AMP XI.M38 consists of periodic inspections which are based on the (a) "detection of aging effects" program element, "Inspection intervals are established such that they provide timely detection of degradation", (b) "operating experience" program element, "The elements that comprise these inspections (e.g., the scope of the inspections and inspection techniques) are consistent with industry practice and staff expectations. However, because the inspection frequency is plant-specific and depends on the plant operating experience, the applicant's plant-specific operating experience or applicable generic operating experience is further evaluated for the extended period of operation. The applicant is to evaluate recent operating experience and provide objective evidence to support the conclusion that the effects of aging are adequately managed", and (c) "monitoring and trending" program element, "Maintenance and surveillance activities provide for monitoring and trending of aging degradation. Inspection intervals are dependent on component material and environment, and take into consideration industry and plant-specific operating experience. Results of the periodic inspections are monitored for indications of various corrosion mechanisms and fouling."

Issue:

The staff notes that the applicant has proposed a one-time inspection program instead of the periodic inspections recommended by GALL AMP XI.M38 and has not provided sufficient plant-specific or industry operating experience information to justify a one-time inspection program nor justified why monitoring and trending need not be performed.

ENCLOSURE

Request:

Provide sufficient plant-specific or industry operating experience to justify the use of a one-time inspection program in lieu of a periodic inspection program, and justify why the monitoring and trending recommendations of GALL AMP XI.M38 need not be met.

SS Components
RAI 3.3.2.3.16-1

Background:

LRA Tables 3.3.2-16, 3.3.2-42 and 3.4.2-3 state that for stainless steel flexible connections, nozzles, orifices, piping, valve bodies, and tubing exposed to air-outdoor (internal), there is no aging effect and no aging management program (AMP) is proposed. The AMR line items cite Generic Note G.

Issue:

The staff notes that the GALL Report does not address stainless steel components in an outdoor air environment; however, given the stations location to arid land, agriculture, road salt compound, and cooling tower vapor, trace compounds (e.g., chlorides) could be contained in the outside air supply that could cause loss of material in stainless steel components.

Request:

Justify why the outside air environment does not contain trace compounds that could cause loss of material in stainless steel components, or propose an AMP to manage the aging of stainless steel flexible connections, nozzles, orifices, piping, valve bodies, and tubing exposed to air-outdoor (internal).

Fire water
Follow-up to RAI B.2.26-2

Background:

The GALL Report recommends GALL AMP XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components," to manage loss of material for steel piping and components exposed internally to indoor or outdoor uncontrolled air. The GALL Report recommends GALL AMP XI.M36, "External Surfaces Monitoring," to manage loss of material for steel components exposed externally to indoor or outdoor uncontrolled air. Both GALL AMP XI.M36 and XI.M38 recommend performing periodic visual inspection to manage loss of material.

The Columbia LRA does not include an AMP that is consistent with GALL AMP XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components". In its response to RAI B.2.26-2, the applicant stated that it will use inspections of the external surfaces of some components to characterize the aging effects on the internal surfaces where the material and environment is the same. For these components, the applicant credited the External Surfaces Monitoring Program to manage aging for components exposed to an internal environment of indoor or outdoor air.

Issue:

The staff notes that the external surfaces of piping and components are often painted or coated, while the internal surfaces are not usually painted or coated; and therefore an external inspection would not be able to be used to characterize aging on the component's internal surface. It is unclear to the staff whether the applicant has components available for external inspection that are constructed of the same material and exposed to the same environment as all of the components for which the applicant credited the External Surfaces Monitoring Program to manage the internal surfaces of the components.

Request:

1. State whether there are components available for inspection that are constructed of the same material and exposed to the same environment as all of the components for which the LRA credited the External Surfaces Monitoring Program to manage aging for the internal surface of the component.
2. If there are any components for which there is no external surface available to characterize the condition of the internal surface of the component, state how aging will be managed for the internal surface of the component, including which aging management program will be used and the inspection method (e.g., visual, volumetric).

Structures

Follow-Up RAI B.2.50-6

Background:

By letter dated September 3, 2010, the applicant responded to RAI B.2.50-6 regarding narrow through wall cracks at the top of the spray pond walls and past inspection results.

Issue:

In the response the applicant stated that inspection of the spray ponds, have been limited to the portions above water, and past inspection results have been documented by stating that the spray ponds remain capable of performing their intended function. The applicant further stated that based on engineering judgment and lack of any signs indicating the cracks are active, the cracks were considered to be cosmetic with no adverse effect on the structural integrity of the walls. The applicant stated that during the period of extended operation, the spray ponds will be

monitored by the enhanced Structures Monitoring Program, which will include acceptance criteria developed from the guidelines in ACI 349.3R.

The staff does not consider this adequate, because without a comprehensive, quantitative inspection to capture current levels of degradation, inspections during the period of extended operation have no baseline to compare degradation against.

Request:

Based on the existing degradation noted during the walk down, provide and justify a time-line for conducting a baseline inspection of the spray ponds (including submerged portions), using quantitative acceptance criteria in accordance with ACI 349.3R, prior to the period of extended operation. If a baseline inspection prior to the period of extended operation is not scheduled, explain and justify why it is unnecessary.

RAI 3.5.2.2.1.4-1

Background:

Industry operating experience has identified water leakage from refueling cavity liners and bellows, which may contact the primary containment vessel.

Issue:

CGS has no leakage detection system or alarm that could identify leakage into the annular space between the steel containment and the shield wall, other than the sand pocket drains. Although leakage has not been detected in the sand pocket drains, leakage may become trapped by the compressible material in the annular space above the sand pocket region and never reach the drains. Without a clear drainage path for possible leak detection, additional inspections should be conducted to verify leakage is not entering the annular region.

Request:

Discuss any additional visual (VT-1 or VT-3) or NDE examinations of the stainless steel refueling cavity liner and the bellows being conducted to verify leakage is not entering the annular space between the containment vessel and the concrete shield wall.

RAI 3.5.2.2.2.3-1

Background:

SRP-LR Section 3.5.2.2.2.3 notes that the GALL Report recommends further evaluation for any concrete elements that exceed the specified temperature limits (>150°F general or 200°F local) for normal operation or any other long-term period.

Issue:

LRA Section 3.5.2.2.2.3 states that in-scope concrete is not exposed to temperatures above the GALL Report limits. The LRA further states that the general air temperatures are maintained below the 150°F threshold and the limits are given in FSAR Table 3.11-1. However, while reviewing FSAR Table 3.11-1, the staff noted that several areas (DG1 and DG2 Day Tank Room, and HPCS Day Tank Room) had temperature limits that exceeded the 150°F threshold.

Request:

Explain how concrete in these areas will be managed for possible aging effects due to elevated temperatures, or explain why additional aging management is unnecessary.

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Evelyn Gettys, Project Manager
Projects Branch 1
Division of License Renewal
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Docket No. 50-397

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As stated

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Letter to S.K. Gambhir from Evelyn H. Gettys dated October 14, 2010.

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COLUMBIA GENERATING STATION, LICENSE RENEWAL APPLICATION
(TAC NO. 3058)

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