



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

August 19, 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: SCOPING AND SCREENING AUDIT REPORT REGARDING THE COLUMBIA  
GENERATING STATION, LICENSE RENEWAL APPLICATION

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).

During the week of May 10, 2010, the staff led a project team responsible for auditing and reviewing the applicant's administrative controls governing implementation of the license renewal application (LRA) scoping and screening methodology. The staff reviewed the technical basis for selected scoping and screening results for various plant systems, structures, and components. In addition, the staff reviewed quality attributes for aging management programs, quality practices used during LRA development and the training for personnel that developed the LRA. A summary of the audit and review results is enclosed for your information. No specific action or written response is required.

If you have any questions, please contact me at 301-415-4029 or by e-mail at [evelyn.gettys@nrc.gov](mailto: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

cc w/encl: Distribution via Listserv

# SCOPING AND SCREENING METHODOLOGY TRIP REPORT FOR THE COLUMBIA GENERATING STATION LICENSE RENEWAL APPLICATION

## I. Introduction

During the week of May 10-13, 2010, the Division of License Renewal performed an audit of the Energy Northwest (the applicant) license renewal scoping and screening methodology developed to support the license renewal application (LRA) for Columbia Generating Station (Columbia). The audit was performed at the applicant's facility located approximately 12 miles north of Richland, Washington. The focus of the staff's audit was the applicant's administrative controls governing implementation of the LRA scoping and screening methodology and review of the technical basis for selected scoping and screening results for various plant systems, structures, and components (SSCs). The audit team also reviewed the quality attributes of aging management programs (AMPs), quality practices used by the applicant to develop the LRA, and training of personnel that developed the LRA.

The regulatory bases for the audit were Title 10 of the *Code of Federal Regulations*, Part 54, "Requirements for Renewal of Operating Licenses for Nuclear Power Plants," (the Rule), (10 CFR Part 54) and NUREG-1800, "Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants," Revision 1 (SRP-LR). In addition, the applicant developed the LRA in accordance with Nuclear Energy Institute (NEI) 95-10, "Industry Guidelines for Implementing the Requirements of 10 CFR 54 – The License Renewal Rule," Revision 6 (NEI 95-10) which the NRC has endorsed via Regulatory Guide 1.188, "Standard Format and Content for Applications to Renew Nuclear Power Plant Operating Licenses," (Regulatory Guide 1.188).

## II. Background

10 CFR 54.21, "Contents of Application – Technical Information," requires that each application for license renewal contain an integrated plant assessment (IPA). Furthermore, the IPA must list and identify those structures and components (SCs) subject to an aging management review (AMR) from the SSCs that are included within the scope of license renewal. 10 CFR 54.4(a) identifies the SSCs within the scope of license renewal. SCs within the scope of license renewal are evaluated to determine if they are long-lived and passive equipment and, therefore, subject to an AMR in accordance with 10 CFR 54.21(a)(1).

## III. Scoping Methodology

The scoping evaluations for the Columbia LRA were prepared by the applicant's license renewal contractor AREVA and reviewed by the applicant's license renewal project personnel. The audit team conducted detailed discussions with the applicant's and AREVA license renewal project personnel and reviewed documentation pertinent to the scoping process. The audit team assessed whether the scoping methodology outlined in the LRA and implementation procedures were appropriately implemented and whether the scoping results were consistent with current licensing basis requirements. The audit team noted that the applicant's scoping process was performed in accordance with its written requirements and was consistent with the guidance provided in the SRP-LR and NEI 95-10. The audit team determined that the scoping methodology was consistent with the requirements of the Rule for the identification of SSC to be included within the scope of license renewal in accordance with the criteria of 10 CFR 54.4(a).

ENCLOSURE

The audit team conducted a review of sample components, randomly selected from the applicant's plant equipment database to verify that the selected components were correctly evaluated to determine whether the component should be included within the scope of license renewal. The audit team reviewed the selected components, which included mechanical, electrical and structural components, using the applicant's documents including the Final Safety Evaluation Report (FSAR), plant information and piping and instrumentation drawings to perform its review. The audit team did not identify any components that had not been appropriately included within the scope of license renewal.

The audit team also reviewed a sample of system scoping results for the following systems and structures: service water system, emergency diesel generators and support systems, and the turbine building. The audit team determined that the applicant's scoping methodology was generally consistent with the requirements of the rule for the identification of SSCs that meet the scoping criteria of 10 CFR 54.4(a). However, the audit team determined that additional information was required in order for the staff to complete its review:

- The staff determined that the applicant had identified safety-related components and cables located in the turbine building. The applicant had performed an evaluation, as documented in the license renewal implementing documents and reports, that concluded that the nonsafety-related SSCs in the proximity of, or attached to, the safety-related components and cables were not required to be included within the scope of license renewal because the safety-related components and cables had been evaluated to be fail-safe. The staff requested that the applicant provide the details of the evaluation and basis for the conclusion that nonsafety-related SSC's, in the proximity of or attached to safety-related components and cables, were not required to be included within the scope of the license in accordance with 10 CFR 54.4(a)(2).
- During the scoping and screening methodology audit, the applicant indicated that additional nonsafety-related SSCs, with the potential to spatially interact with safety-related SSCs, had been identified and would be included within the scope of license renewal in accordance with 10 CFR 54.4(a)(2). The nonsafety-related SSCs are located in corridors between buildings and were identified by the applicant during walkdowns which was performed subsequent to the issuance of the LRA. The staff requested that the applicant perform a review of the scoping methodology (as described in the LRA) and indicate why the methodology or its implementation precluded the identification of the nonsafety-related SSCs to be included within the scope of license renewal in accordance with 10 CFR 54.4(a)(2). In addition, the staff requested the applicant to describe any changes to the scoping methodology (as described in the LRA) or its implementation and to list any additional SSCs that were included within the scope of license renewal as a result of the reviews discussed.
- During the scoping and screening methodology audit the applicant discussed the bounding conditions (as described in NEI 95-10, Appendix F) that had been used to identify the portion of nonsafety-related pipe, attached to safety-related SSCs, to be included within the scope of license renewal in accordance with 10 CFR 54.4(a)(2). The staff determined that the use of some bounding conditions had not been described in the LRA and requested that the applicant discuss all bounding conditions used to identify the portion of nonsafety-related pipe, attached to safety-related SSCs, to be included within the scope of license renewal in accordance with 10 CFR 54.4(a)(2).

#### **IV. Screening Methodology and Material Environment Review**

The audit team reviewed the methodology used by the applicant to determine if mechanical, structural, and electrical components within the scope of license renewal would be subject to an AMR (screening). The applicant provided the audit team with a detailed discussion of the processes used for each discipline and provided administrative documentation that described the screening methodology. The audit team also reviewed the screening results reports for the service water system, emergency diesel generators and support systems, and the turbine building. The audit team noted that the applicant's screening process was performed in accordance with its written requirements and was consistent with the guidance provided in the SRP-LR and NEI 95-10. The audit team determined that the screening methodology was consistent with the requirements of the Rule for the identification of structures and components that meet the screening criteria of 10 CFR 54.21(a)(1).

The audit team also reviewed the applicant's material and environment information contained in the LRA by selecting thirty-five randomly selected components for verification of the information contained in the LRA. The staff's determined that the LRA correctly identified the material and environment information for thirty-four of the selected components. However, the staff identified that one component, the oil fog lubricator for diesel engine starting air, LRA Table 3.3.2-17, was a ferrite material as opposed to aluminum, the material listed in the LRA. The applicant entered the discrepancy into the corrective action program.

#### **V. Aging Management Program Quality Assurance Attributes**

The audit team reviewed the applicant's AMPs described in Appendix A, "Final Safety Analysis Report Supplement," and Appendix B, "Aging Management Programs," of the Columbia LRA for inclusion of the appropriate quality assurance (QA) requirements for Elements No. 7 (corrective action), No. 8 (confirmation process), and No. 9 (administrative controls). In addition, the audit team reviewed the AMP basis documents to ensure consistency in the use of the QA attributes for each program. The purpose of this review was to ensure that the aging management activities were consistent with the staff's guidance described in SRP-LR, Section A.2, "Quality Assurance for Aging Management Program (Branch Technical Position IQMB-1)."

Based on the audit team's evaluation, the descriptions and applicability of the AMPs and their associated quality attributes, provided in Appendix A, Section A.1.2, "Aging Management Program Activities," and Appendix B, Section B.1.3, "Quality Assurance Program and Administrative Controls," of the LRA, were determined to be generally consistent with the staff's position regarding QA for aging management.

#### **VI. Quality Assurance Controls Applied to LRA Development**

The staff reviewed the quality controls used by the applicant to ensure that scoping and screening methodologies used to develop the LRA were adequately implemented. The applicant used the following quality control processes during the LRA development:

- The applicant developed written instructions, guidelines and positions papers to direct implementation of the scoping and screening methodology, control LRA development, and to describe training requirements and documentation.

- The license renewal contractor AREVA initially prepared the LRA and LRA basis documents, which were subsequently reviewed by the applicant's license renewal project personnel, subject matter experts, and independent technical reviewers.
- License renewal basis documents and the LRA were reviewed and accepted by the applicant's technical lead and by the license renewal project manager.
- The applicant's team applied lessons learned from other license renewal activities to their scoping and screening methodology.
- The LRA was examined by industry peers, independent consultants, the applicant's quality assurance manager, the Plant Oversight Committee, and Corporate Nuclear Safety Review Board.
- The comments received through the review process and their resolutions were documented on comment and resolution forms. The audit team reviewed the applicant's sample comment resolution and determined the applicant's comment resolution process is consistent and adequate.
- The applicant used a documented instruction LRPI-09 for its License Renewal Open Item Tracking System to track and capture any identified issues for resolution.

The audit team performed a sample review of reports and LRA development guidance, the applicant's documentation of the activities performed to assess the quality of the LRA, and held discussions with the applicant's license renewal personnel. The audit team determined that the applicant's activities provide assurance that LRA development activities were performed consistently with the applicant's license renewal program requirements.

## **VII. Training for License Renewal Project Personnel**

The audit team reviewed the applicant's training process to ensure the guidelines and methodology for the scoping and screening activities were applied in a consistent and appropriate manner. The applicant required training for all personnel participating in the development of the LRA and used only trained and qualified personnel to prepare the scoping and screening implementing procedures and reports.

- Training was required for the applicant's and AREVA license renewal project personnel which followed documented and written guidance.
- Initial training was provided to license renewal project personnel involved in developing license renewal process instructions.
- After license renewal process instructions were issued, license renewal project personnel were provided process training for developing LRA basis documents and the LRA.
- The applicant's managers and subject matter experts received general orientation training and specialized training as appropriate.

On the basis of discussions with the applicant's license renewal personnel responsible for the scoping and screening process, and a review of selected training documentation in support of the process, the NRC audit team determined that the applicant's personnel understood the requirements and adequately implemented the scoping and screening methodology established in the applicant's license renewal application.

### **VIII. Final Briefing**

A final briefing was held with the applicant on May 13, 2010, to discuss the results of the scoping and screening methodology audit. The audit team identified preliminary areas where additional information would be required to support completion of the staff's LRA review.

### **IX. Documents Reviewed**

NUREG-1800, "Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants," Revision 1

NEI 95-10, "Industry Guideline for Implementing the Requirements of 10 CFR Part 54 - The License Renewal Rule," Revision 6

Columbia Generating Station License Renewal Application

LRPI-01, Columbia License Renewal Project Execution Plan – AREVA Scope

LRPI-02, System and Structure Scoping Method

LRPI-03, Mechanical Screening and Aging Management Review

LRPI-04, Electrical Screening and Aging Management Review

LRPI-05, Structural Screening and Aging Management Review

LRPI-06, Evaluation of Aging Management Programs

LRPI-07, TLAA and Exemption Evaluations

LRPI-08, Operating Experience Review

LRPI-09, License Renewal Open Item Tracking System

LRPI-10, License Renewal Application Development and Maintenance

LRPD-01, System and Structure Scoping Results

LRPD-02, TLAA and Exemption Evaluation Results

LRPD-03, TLAA - Metal Fatigue

LRPD-04, Operating Experience Review Results and Summary

LRPD-05, Aging Management Program Evaluation Results

LRPD-06, General Aging Considerations

LRPD-07, Documentation of Additional Basis for the LRA

LRPD-08, License Renewal Reference Update

Position Paper - Safety-Related (SR) Considerations for License Renewal

Position Paper - Methodology for Determination of License Renewal Boundaries for NSR SSCs Attached to SR SSCs

Position Paper - Non-Safety Affecting Safety (NSAS) Considerations for License Renewal

Position Paper - Comparison of Columbia's Bolting Integrity Program to Industry Recommendations

Position Paper - Use of Ultra-Low-Sulfur Diesel Fuel at Columbia Generating Station and Applicability to License Renewal

Position Paper - Electrical Separation Barrier License Renewal Scoping

Position Paper - Tie Wrap License Renewal Scoping

Position Paper - Station Blackout Evaluation Boundary

#### **X. NRC Audit Team Members**

Bill Rogers	NRR/DLR
Seung Min	NRR/DLR
Don Brittner	NRR/DLR
Ed Smith	NRR/DSS
Evan Davison	NRR/DSS
Bart Fu	NRR/DLR
Robert Brient	SwRI/CNWRA
Lane Howard	SwRI/CNWRA
Jim Nickolaus	PNNL
Siva Pilli	PNNL

## **XI. Applicant Personnel Contacted During Audit**

Vic Parrish	Energy Northwest
Scott Oxenford	Energy Northwest
Sudesh Gambhir	Energy Northwest
Doug Coleman	Energy Northwest
Abbas Mostala	Energy Northwest
Marsha Eades	Energy Northwest
Jeff Person	Energy Northwest
John Twomey	Energy Northwest
Scott Wood	Energy Northwest
Janet Worthington	Energy Northwest
Jim Chasse	Energy Northwest
Massoud Tafazzoli	AREVA
David Lee	AREVA
Mark Hager	AREVA
Jim Hamlen	AREVA
Sing Chu	AREVA
Ron Finnin	AREVA
Mike Carter	AREVA

August 19, 2010

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

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If you have any questions, please contact me at 301-415-4029 or by e-mail at [evelyn.gettys@nrc.gov](mailto: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:  
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Letter to S.K. Gambhir from E. Gettys dated August 19, 2010

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