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

January 6, 2014

Mr. Michael J. Pacilio
Senior Vice President
Exelon Generation Company, LLC
President and Chief Nuclear Officer
Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2: CHANGE TO COMMITMENT FOR LICENSE RENEWAL (TAC NOS. ME8961 AND ME8962)

Dear Mr. Pacilio:

By letter to the U.S. Nuclear Regulatory Commission (NRC) dated May 18, 2012, which can be found in the Agencywide Documents Access and Management System (ADAMS) under Accession No. ML12173A423, Exelon Generation Company, LLC submitted a change to a commitment for license renewal regarding visual examinations for identifying aging effects at Quad Cities Nuclear Power Station, Units 1 and 2. Exelon letters dated November 29, 2012 (ADAMS Accession No. ML12335A056), and May 8, 2013 (ADAMS Accession No. ML13128A257), responded to Requests for Additional Information (RAIs) related to the change to the commitment for license renewal.

The NRC staff concludes the programmatic controls described for license renewal visual examinations conducted outside the formal jurisdiction of the American Society of Mechanical Engineers (ASME) Code Section XI requirements are sufficient to demonstrate that effects of aging will be adequately managed so that the intended functions will be maintained consistent with the current licensing basis for the period of extended operation, as required by 10 CFR 54.21(a)(3). The technical assignment control (TAC) Nos. ME8961 and ME8962 associated with this review will be closed.

Sincerely,

Heather M. Jones, Project Manager
Subsequent Renewal, Guidance,
and Operations Branch
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket Nos. 50-254 and 50-265

Enclosure:
Safety Review

cc: Listserv

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/RA/

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Enclosure: Safety Review

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ADAMS Accession No.: ML13304A524 *concurrence via email

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DATE	12/18/2013	12/18/2013	12/18/2013	1/6/2014	1/6/2014

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Letter to Mr. Pacilio from H. Jones dated January 6, 2014

SUBJECT: QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2: CHANGE TO COMMITMENT FOR LICENSE RENEWAL (TAC NOS. ME8961 AND ME8962)

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OFFICE OF NUCLEAR REACTOR REGULATION

SAFETY REVIEW REGARDING CHANGE TO COMMITMENT FOR LICENSE RENEWAL

EXELON GENERATION COMPANY, LLC

QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2

DOCKET NOS. 50-254 AND 50-265

LICENSE NOS. DPR-29 AND DPR-30

1.0 INTRODUCTION

By letter dated May 18, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12173A423), Exelon Generation Company, LLC (the licensee) submitted "License Renewal Commitment Change in Accordance with NEI 99-04," for Quad Cities Nuclear Power Station (Quad Cities), Units 1 and 2, regarding visual examinations credited for identifying aging effects. The licensee stated that it identified ambiguity with respect to its commitment for applying VT-1/VT-3 examination techniques in cases where the examination will not be credited as a Code examination (i.e., examinations outside the formal jurisdiction of the ASME Code Section XI requirements) based on its review of NUREG-1796, "Safety Evaluation Report [SER] Related to the License Renewal of the Dresden Nuclear Power Station, Units 2 and 3 and Quad Cities Nuclear Power Station, Units 1 and 2" dated October 2004. The licensee also stated that the change does not directly impact or change the verbiage contained in the formal list of license renewal commitments provided in Appendix A of the SER. The licensee further stated that because details contained within the SER describe the basis upon which the staff originally determined that the inspection activities were acceptable, the clarification to this methodology is considered a commitment change.

2.0 REGULATORY EVALUATION

During several post-approval inspections of Quad Cities documented in Inspection Reports 05000254/2011008, 05000254/2012008, 05000254/2012010, and 05000265/2012010, the inspectors noted that the licensee was not conducting visual inspections for the Selective Leaching of Materials, One-Time Inspection, Periodic Inspection of Components Subject to Moist Air, and Periodic Inspection of Plant Heating Steam programs in accordance with American Society of Mechanical Engineers (ASME) Code Section XI VT-1 or VT-3 requirements as stated in its SER. The licensee stated that it believed it was committed to the use of VT-1 qualified personnel to perform the examinations, but inspections did not have to conform to the remaining requirements of the ASME Code. The licensee captured this condition adverse to quality (CAQ) in its corrective action process.

The licensee elected to use VT-1/VT-3 qualified personnel, while not conforming to the remaining ASME Code Section XI requirements, for all license renewal inspections conducted to date for the above programs.

The inspectors documented this discrepancy as Unresolved Items (URI), 05000254/2012010-01 and 05000265/2012010-01: "Concern with Meeting One Time Visual Inspections IAW ASME Section XI Requirements."

Quad Cities submitted its license renewal application (LRA) to Revision 0 of NUREG-1801, "Generic Aging Lessons Learned (GALL) Report," July 2001. A summary of the recommendations in regard to this issue for the credited programs is as follows:

- GALL Report aging management program (AMP) XI.M32, "One-Time Inspection." The "parameters monitored/inspected" program element states "[i]nspection is performed in accordance with the requirements of the ASME Code and 10 CFR Part 50, Appendix B, by using a variety of nondestructive examination (NDE) methods, including visual, volumetric, and surface techniques." The "detection of aging effects" program element states, "[c]ombinations of NDE, including visual, ultrasonic, and surface techniques, are performed by qualified personnel following procedures consistent with the ASME Code and 10 CFR Part 50, Appendix B."
- GALL Report AMP XI.M33, "Selective Leaching of Materials." This AMP does not include any recommendations for the qualification of the inspection methods or inspection personnel conducting the inspections.
- The Periodic Inspection of Components Subject to Moist Air, and Periodic Inspection of Plant Heating Steam programs are plant-specific programs. In GALL Report, Revision 0, there are no comparable recommended programs. However, given that the inspections are equivalent to those conducted for the One-Time Inspection program and the requirements in the updated final safety analysis report (UFSAR) supplement and SER, the staff believes that it is appropriate to evaluate the licensee's proposal in light of the recommendations in GALL Report XI.M32.

The staff noted that the current Revision 2 of the GALL Report contains the following recommendations.

- GALL Report AMP XI.M32. The "detection of aging effects" program element states:

  > The program relies on established NDE techniques, including visual, ultrasonic, and surface techniques. Inspections are performed by personnel qualified in accordance with site procedures and programs to perform the type of examination specified. For code components, examinations should follow procedures consistent with the American Society of Mechanical Engineers (ASME) Code and 10 CFR Part 50, Appendix B. For non-code components, examinations should follow site procedures that include requirements for items such as lighting, presence of protective coatings, and cleaning processes that ensure an adequate examination. The inspection and test techniques shall have a demonstrated history of effectiveness in detecting the aging effect of concern.

- GALL Report AMP XI.M33. This AMP does not include any recommendations for the qualification of the inspection methods or inspection personnel conducting the inspections.
- GALL Report AMP XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components." The staff is citing this AMP because it is the closest equivalent to the plant-specific programs in the current version of the GALL Report. The "detection of aging effects" program element states, "[u]nless otherwise required (e.g., by the ASME code) all inspections should be carried out using plant-specific procedures by inspectors qualified

through plant specific programs. The inspection procedures utilized must be capable of detecting the aging effect(s) under consideration."

3.0 STAFF EVALUATION

The staff confirmed that the commitments associated with the One-Time Inspection, Selective Leaching of Materials, and Periodic Inspection of Plant Heating Steam programs, Commitment Nos. 23, 24, and 46, do not contain any statement associated with performing the inspections in accordance with ASME Code Section XI. The Periodic Inspection of Components Subject to Moist Air program did not have an associated commitment in Appendix A, "D/QCNPS Commitment List Associated with Renewal of the Operating Licenses of the SER."

Various portions of the SER related to the licensee's proposed clarification state that VT-1 and VT-3 visual inspections would be conducted for structures, systems and components (SSC) subject to an aging management review that perform an intended function as described in 10 CFR 54.4:

- Section 3.2.2.2.2, "[t]he inspection will consist of VT-3 visual inspections for the presence of general corrosion in selected standby gas treatment components." These inspections would be conducted using the One-Time Inspection (LRA Section B.1.23) program.
- Section 3.3.2.5.7, "[t]his program uses VT-3 visual inspections on a sample of components that represent or bound the piping system components within the scope of license renewal to verify that there is no unacceptable loss of material in the compressed gas systems." These inspections would be conducted using the One-Time Inspection (LRA Section B.1.23) program.
- Section 3.3.2.5.7, "[t]his program uses VT-3 visual inspections of a representative sample of ventilation system ductwork, equipment frames and housings, valves, debris screens, access doors, and closure bolting to confirm that there is no penetrating corrosion, which could indicate an unacceptable loss of material condition. Drip pan drain piping will be inspected for corrosion that could result in a pipe wall perforation." These inspections would be conducted using the One-Time Inspection (LRA Section B.1.23) program.
- SER Section 3.0.3.2, "[a]ging of [Standby Liquid Control] SBLC system components not in the reactor coolant pressure boundary section of SBLC system relies on monitoring of SBLC makeup water chemistry. The makeup water is monitored in lieu of the storage tank. The effectiveness of the water chemistry program will be verified by a one-time VT-3 inspection of a Dresden SBLC pump discharge valve casing and a Quad Cities SBLC pump casing as discussed in the One-Time Inspection (B.1.23) aging management program." These inspections would be conducted using the One-Time Inspection (LRA Section B.1.23) program.
- SER Section 3.0.3.11, "[t]he applicant indicated that visual inspection would be performed consistent with the requirements of ASME Code Section XI VT-1 visual inspection. The applicant indicated that inspectors would inspect surfaces for evidence of weak, porous or spongy layers in localized (plug-type) or general areas and if visual inspection indicated the potential for selective leaching other NDE methods (i.e., [ultrasonic testing] UT) may be used to assess the component." These inspections would be conducted using the Selective Leaching of Materials (LRA Section B.1.24) program.

- SER Section 3.0.3.11, "[t]he applicant indicated that visual inspection will be performed in accordance with ASME Code Section XI VT-1 requirements and will be supplemented by work instructions. The applicant provided sample work instructions that include steps for surface preparation including the removal of dirt grease or other foreign material that could mask indications of selective leaching." These inspections would be conducted using the Selective Leaching of Materials (LRA Section B.1.24) program.
- SER Section 3.0.3.11 "[t]he staff reviewed the applicant's program exception not to perform hardness testing, and the responses to the RAIs and the requests for clarification. The staff concurs with the applicant that the program will provide that aging will be managed because visual inspection will be performed using ASME Code Section XI VT-1 requirements, if necessary alternate NDE methods may be used to assess the component's condition, the applicant has taken steps to ensure that indications of selective leaching will not be masked through the use of surface preparation, which will provide a somewhat qualitative assessment of surface hardness." These inspections would be conducted using the Selective Leaching of Materials (LRA Section B.1.24) program.
- SER Section 3.0.3.11 "[t]he staff finds the applicant's response to modify the UFSAR description of the program acceptable because it identifies that program inspections will be performed in accordance with ASME Code Section XI VT-1 visual inspection requirements and scope expansion will occur if selective leaching is identified." These inspections would be conducted using the Selective Leaching of Materials (LRA Section B.1.24) program.
- SER Section 3.3.2.3.7, "[t]he plant heating inspections are performed a[t] periodic intervals, and they detect aging prior to the equipment leaking so as to prevent spatial interaction with safety-related equipment. Inspections will be performed in accordance with ASME Code requirements and certified NDE examiners will conduct a VT-3 visual examination. The staff finds this acceptable because the inspections will identify the aging effects managed by this program." These inspections would be conducted using the Periodic Inspection of Plant Heating Steam (LRA Section B.2.8) program.
- SER Section 3.0.3.18.2, "[t]he applicant stated that the program would perform periodic thickness measurements (UT) of a representative sample of steel piping, fittings, and air accumulator vessels, and periodic visual inspections (VT-3) of a representative sample of valves, filters/strainers, and mufflers to determine if aging degradation is occurring. The components are inspected to ensure they are free of unacceptable loss of material due to general corrosion, pitting and crevice corrosion. Inspections will be performed in accordance with ASME Code requirements and certified NDE examiners will conduct UT and VT-3 inspections." These inspections would be conducted using the Periodic Inspection of Components Subject to Moist Air Environments (LRA Section B.2.9) program.

The staff noted that SER Section 3 contained other references to VT-1 and VT-3 examinations (i.e., pages 95, 96, 98, 100, 106, 113, 115, 125, 126, 403, 418, and 452). However, these were associated with inspections of ASME Code Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," SSCs. Visual examinations of SSCs within the scope of ASME Code Section XI are not impacted by the licensee's proposed clarification because the regional staff's concern and the licensee's commitment change letter are associated with license renewal related inspections of SSCs that are not within the scope of ASME Section XI.

In addition, the following referenced letters revised the UFSAR supplement for each of the programs as follows:

- Selective Leaching of Materials: by letter dated October 3, 2003 (ADAMS Accession No. ML032810682), LRA Section A.1.24 was revised to include "[t]hese inspections will consist of visual inspection consistent with ASME Section XI VT-1 visual inspection requirements."
- Periodic Inspection of Plant Heating Steam – by letter dated March 25, 2004 (ADAMS Accession No. ML040900466), LRA Section A.2.8 was revised to include, "[t]he inspection will consist of a visual inspection for the presence of general, crevice, galvanic, and pitting corrosion. The inspection will be performed in accordance with ASME Code requirements. Certified NDE examiners will conduct a VT-3 visual inspection."
- Periodic Inspection of Components Subject to Moist Air Environments: By letter dated March 25, 2004 (ADAMS Accession No. ML040900466), LRA Section A.2.9 was added. This section included, "[t]he inspection will consist of UT examinations of components with interior surfaces that are inaccessible and visual inspection (VT-3) of components with accessible interior surfaces for the presence of loss of material due to general corrosion, pitting and crevice corrosion. The inspection will be performed in accordance with ASME Code requirements. Certified NDE examiners will conduct the UT and VT-3 visual inspection."

Regional Inspector Input on the Conduct of These Inspections

As part of its analysis of this commitment change, the Division of License Renewal (DLR) staff conducted a conference call with several inspectors that had been involved in the inspections cited above. One inspector provided the following written input:

> In their commitment, the licensee stated that it was their intent to perform an ASME VT examination as part of their selective leaching examinations. However, we observed that while the licensee was using VT qualified examiners to perform the selective leaching VT examinations, they were not performing ASME VT Code equivalent examinations. They were only using work order instructions that lacked the rigorous detail on an adequate ASME VT examination (such as preparation, checking for lighting, etc). The licensee also emphasized during the pre-job briefing that they were not performing ASME equivalent examinations. The licensee subsequently explained their original intent was to use VT qualified personnel for the examination but not to perform an ASME VT equivalent examination.

DLR Staff Review of the Licensee's RAI Responses

The licensee proposed "commitment clarifications" for conducting visual examinations of non-Code SSCs. The licensee stated the commitment clarifications is applicable for past and future inspections performed for the following programs:

- B.1.23 One-Time Inspection of ventilation systems, compressed gas systems, and the SBLC Chemistry Control Program
- B.1.24 Selective Leaching of Materials
- B.2.8 Periodic Inspection of Plant Heating Steam
- B.2.9 Periodic Inspection of Components Subject to Moist Air Environments

The licensee proposed that in lieu of conducting VT-1 and VT-3 ASME Code Section XI visual examinations for SSCs subject to an aging management review that perform an intended function as described on 10 CFR 54.4, when those SSCs are not within the scope of ASME Code Section, the visual examinations will be conducted in accordance with work instructions provided in an approved work order. The licensee stated that, "[t]he visual examinations will be conducted by personnel certified to perform VT-3 examinations and will be performed in accordance with approved work instructions. The work instructions will include guidance for identifying the aging management effect of concern." The licensee also stated that the work instructions will provide a means for recording relevant indications. The licensee further stated that this approach ensures that relevant indications and conditions indicative of unacceptable age-related degradation are identified, documented, and evaluated under the Corrective Action Program.

In part, the staff's conclusions in the SER related to the adequacy of the above programs were based on statements in the LRA and RAI responses that VT-1 and VT-3 examinations would be performed for inspections of SSCs being managed by the above programs. By citing VT-1 and VT-3 visual examination techniques, the AMP includes inspection requirements essential to an effective visual examination regardless of whether the SSC is ASME Class 1, 2, or 3. The staff acknowledges that the inspections of SSCs that are not within the scope of ASME Code Section XI should not have to meet all the VT-1 and VT-3 requirements from ASME Code Section XI. However, without the assurance that the ASME Code Section XI requirements are in place and with the limited level of detail provided in the commitment clarification letter (e.g., "[t]he governing work instructions will contain the necessary steps for performing the visual examination, and include guidance specific for identifying the appropriate aging mechanism"), the staff could not conclude that aging of in-scope SSCs would be adequately managed. For example, the commitment clarification does not describe the training and qualification for the equivalent roles of the Level II personnel (e.g., evaluating the validity and acceptability of examination results) or equivalent details to ASME Code Section XI subarticles IWA-2211 and IWA-2213 which provide requirements such as inspection distance offset, illumination, and distinguishing and differentiation of colors for remote examinations, and subarticle IWA-2200 which contains requirements for surface coverage during examinations.

By letter dated October 22, 2012 (ADAMS Accession No. ML12291A831), the staff submitted an RAI to the licensee requesting that the applicant: (a) provide justification that the methods used for license renewal visual examinations outside of Code examinations will be effective in detecting aging, (b) for each of the affected programs discussed in the May 18, 2012, letter, include details on the visual examination work instructions (e.g., illumination, examination distance, examination coverage, acceptance criteria) demonstrating the staff's conclusions that relied on VT-1 or VT-3 examinations remain valid, and (c) state the qualifications for personnel involved in writing work instructions, interpreting results, establishing acceptance criteria, and developing and qualifying procedures related to the non-Code inspections.

In its response dated November 29, 2012 (ADAMS Accession No. ML12335A056), the applicant stated:

- An NDE Level III individual qualified/certified in VT-1 and VT-3 examinations worked with engineering personnel to generate work order package instructions, degradation descriptions, acceptance criteria, and report forms in lieu of procedures.
- Work instructions included acceptance criteria specific to the degradation mechanism that was being assessed.

- The training, qualification, and certification of the Level II or Level III VT-1 and VT-3 examiner who performed the examination ensures that they have experience in identifying degradation visually, have appropriate vision acuity, and are trained in establishing appropriate lighting and resolution to ensure that the aging effect can be identified.
- Engineering personnel had the responsibility to evaluate the conditions identified by the examiner through the station Corrective Action Program.
- Examination report forms and work package instructions were developed by a qualified Level III examiner certified in VT-1 and VT-3 examination methods in conjunction with the license renewal team and engineering personnel to ensure that the relevant aging effects would be identified and documented.
- Engineering personnel and the Level III examiner provided the necessary oversight to ensure that instruction steps or examination report revision forms are consistent with the license renewal SER.
- A pre-job brief for the inspections was conducted by a Level II or Level III examiner familiar with the license renewal process prior to inspections. The pre-job brief covered:
  - Maximum direct examination distance requirement versus remote
  - Minimum illumination requirement
  - Use of white-light meter and/or use of test card (i.e., illumination card)
  - Specific color photograph degradation examples from Electric Power Research Institute (EPRI) Report No. 1007933, "Aging Assessment Field Guide."

The staff found the applicant's response, in part, acceptable because:

- SSCs that are not within the scope of ASME Code Section XI can be effectively age-managed without using ASME Code Section XI inspections as long as critical aspects of inspections (e.g., purpose of the inspection, acceptance criteria, exam distance, illumination, examination coverage) are controlled by formal instructions.
- A VT-1 and VT-3 Level III qualified person assisted engineering personnel with the development of work order instructions. As per ANSI N45.2.6, "Qualifications of Inspection, Examination, and Testing Personnel for Nuclear Power Plants," 1978, Level III personnel are qualified to plan inspections, evaluate the validity and acceptability of examination results, and develop reporting formats for examination results. Work instructions included acceptance criteria specific to the degradation mechanism. Therefore, given the input of a Level III qualified inspector, the purpose of the inspection (i.e., degradation mechanism to be inspected for) and acceptance could be adequately defined.
- Level III personnel provide oversight of changes to the instruction steps and examination report revision forms. This could ensure that the inspection requirements remain adequately defined.
- VT-1 and VT-3 trained, qualified, and certified personnel are used to perform the inspections. As per ANSI N45.2.6, VT-1 and VT-3 certified personnel are capable of implementing inspection procedures and recording inspection data.

The staff did not find the applicant's response acceptable, in part, because:

- The response did not address how examination coverage was controlled.
- The staff is not clear on where critical inspection parameters are documented (e.g., work instructions, pre-job brief forms) based on the following:
  - While VT-1 and VT-3 certified personnel are trained on establishing appropriate lighting, resolution, and other critical inspection parameters to ensure that the aging effect can be identified, regional inspection personnel observed the performance of some of these inspections and did not find uniform compliance with appropriate lighting levels, angle of observation, and distance to the SSC.
  - Based on the observation of regional inspection personnel, the pre-job briefs did not consistently cover maximum direct examination distance, illumination, or use of white-light meter and/or use of test card.
- The response stated that, "since the examiner was required to identify all evidence of aging effects, no interpretation or evaluation by the individual was required. For these examinations, engineering personnel had the responsibility to evaluate the conditions identified by the examiner through the station Corrective Action Program." When conducting an ASME Code Section XI examination, evaluating the validity and acceptability of inspection results is the responsibility of a Level II or Level III certified individual. While the inspections are not conducted on ASME Code Section XI SSCs, the staff lacks sufficient information to conclude that the engineers are adequately trained to interpret inspection results and determine those that are non-conforming.
- Most of the statements related to justifying that the methods used for license renewal visual examinations outside of ASME Code Section XI examinations will be effective in detecting aging were made in the past tense. The staff is not clear that these will be continued throughout the period of extended operation.

By letter dated March 21, 2013 (ADAMS Accession No. ML13064A059), the staff submitted a follow-up RAI to the licensee requesting that the applicant:

1. For minimum examination coverage area, maximum distance from the subject SSC for which the examiner can conduct the examination, angle of observation, and minimum lighting requirements and how they are verified, state what plant-specific document will include the specific critical inspection parameters to ensure consistent performance of each examination.
2. If the plant-specific documents do not cite specific inspection parameters, but rather rely on the knowledge base of the inspector and individual conducting the pre-job brief, state the basis for how inspections are consistently and effectively conducted.
3. State how engineers that are not certified as Level II or Level III personnel are trained in regard to inspection and examination activities such that they can appropriately evaluate the conditions identified by the examiner.
4. For future periodic inspections, state that all of the details in Section A, "Overview," and program-specific details in Section B, "Program Specific Information Related to the Effectiveness of Visual Examinations," in the RAI response apply, or identify which statements do not apply.

In its response dated May 8, 2013 (ADAMS Accession No. ML13128A257), the licensee stated the following:

1. It will implement formally approved inspection procedures containing the requirements for the Periodic Inspection of Plant Heating Systems and Periodic Inspection of Components Subject to Moist Environments programs when non-code visual examinations are credited. The inspection procedures will document the critical parameters (i.e., minimum examination coverage area, maximum distance from the subject SSC for which the examiner can conduct the examination, angle of observation, minimum lighting requirements and how they are verified).
2. As stated in 1 above, plant-specific documents will cite specific inspection parameters.
3. Engineers are trained using an accredited program that includes formal requirements for both initial and ongoing training. Initial training includes topics associated with aging management, such as corrosion control. New engineers must complete initial training requirements prior to independently evaluating aging effects. Continuing training has included topics such as requirements of 10 CFR Part 54, "Requirements for Renewal of Operating Licenses for Nuclear Power Plants," NUREG-1801, "Generic Aging Lessons Learned (GALL) Report," AMP requirements including their alignment with NUREG-1796, "Safety Evaluation Report Related to the License Renewal of the Dresden Nuclear Power Station, Units 2 and 3 and Quad Cities Nuclear Power Station, Units 1 and 2," and aging management industry operating experience, including lessons learned from sources such as completed NRC license renewal inspections.
4. Section A, "Overview:"

   With respect to Section A, the primary focus of the visual examinations, as discussed in the previous RAI response, is unchanged for future periodic inspections. A non-destructive examination (NDE) Level III individual qualified/certified in VT-1 and VT-3 examinations will work with engineering personnel to generate the new procedures discussed above. Personnel with training, qualification, and certification for Level II or Level III VT examinations will continue to perform the future periodic inspections.

   Section B, "Program Specific Information Related to the Effectiveness of Visual Examinations:"

   With respect to Section B, the ongoing AMPs that specify visual examinations include B.2.8 and B.2.9. As discussed in the response to NRC Request 1 above, future inspections performed for these AMPs will be controlled using a new procedure that documents critical inspection parameters. Also, as discussed in the response to NRC Request 1, one inspection has already been completed for B.2.9 since entering the PEO, and that inspection was performed using work order instructions with direction to follow the inspection requirements related to the four critical inspection parameters contained in the procedure for code-related visual inspection of pump and valve internals.

The staff finds the licensee's proposed alternative controls for conducting license renewal related visual examinations of non-Code SSCs and its response to RAIs described above acceptable because in regard to inspections to be conducted for the Periodic Inspection of Plant Heating Systems and Periodic Inspection of Components Subject to Moist Environments programs:

- VT-1 and VT-3 trained, qualified, and certified personnel will be used to perform the inspections.
- A VT-1 and VT-3 Level III qualified person will assist engineering personnel with the development of procedures cited in response No. 1 above.
- Level III personnel will provide oversight of changes to the instruction steps and examination report revision forms.
- Appropriate plant-specific documents will control critical inspection parameters.
- Work instructions include acceptance criteria specific to the degradation mechanism that was being assessed.
- Engineers that evaluate the conditions identified by the examiner are trained in corrosion control, and the licensee demonstrated that it selected appropriate continuing training topics in regard to managing aging effects in the period of extended operation.

4.0 CONCLUSION

The staff concludes that the programmatic controls described above for license renewal visual examinations conducted outside the formal jurisdiction of the ASME Code Section XI requirements are sufficient to demonstrate that effects of aging will be adequately managed so that the intended functions will be maintained consistent with the current licensing basis for the period of extended operation, as required by 10 CFR 54.21(a)(3).

Primary Contributor: W. Holston NRR/DLR
301-415-8573

Date: January 6, 2014