

SVP-12-048

May 18, 2012

U. S. Nuclear Regulatory Commission  
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Quad Cities Nuclear Power Station, Units 1 and 2  
Renewed Facility Operating License Nos. DPR-29 and DPR-30  
NRC Docket Nos. 50-254 and 50-265

Subject: License Renewal – Commitment Change in Accordance with NEI 99-04

- References:
1. 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," July 2004.
  2. C. D. Pedersen (U. S. NRC) letter to J. L. Skolds (Exelon), "Dresden Nuclear Power Station, Quad Cities Nuclear Power Station, NRC Aging Management Program Inspection Report," dated December 5, 2003.
  3. A. M. Stone letter to C. G. Pardee, "Dresden Nuclear Power Station, Unit 2, NRC Post-Approval Site Inspection for License Renewal Inspection Report," dated December 22, 2009.
  4. A. M. Stone letter to M. J. Pacillio, "Dresden Nuclear Power Station, Unit 3, NRC Post-Approval Site Inspection for License Renewal Inspection Report," dated December 22, 2010.
  5. A. M. Stone letter to M. J. Pacillio, "Quad Cities Nuclear Power Station, Unit 1, NRC Post Approval Site Inspection for License Renewal," dated July 12, 2011.

The purpose of this letter is to clarify Exelon's commitment regarding visual examinations credited for identifying aging effects. Specifically, a review of the License Renewal (LR) Safety Evaluation (SE) Report (Reference 1) identified ambiguity with respect to our 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 American Society of Mechanical Engineers, ASME, Section XI, requirements). Details contained within the LR SE describe the basis upon which the Staff originally determined that the inspection activities were acceptable; therefore, the clarification to this methodology is being considered a commitment change, and has been evaluated under Exelon's commitment management process.

During the LR application process, Exelon did not intend to perform ASME Code VT examinations for detecting aging effects unless credited as a Code examination (e.g., under the Inservice Inspection program). The Code catalogs components by examination category; each examination category specifies the physical areas to be examined, the examination method, acceptance criteria, and frequency of examination. For LR visual examinations not credited as a Code examination, Exelon implemented an inspection program that focused on detecting aging

mechanisms. Exelon's intent was to ensure LR visual examinations (not credited as Code examinations) are effective in detecting unacceptable aging by providing:

- Written instructions in an approved Work Order (WO).
- A mechanism for recording relevant indications that mimics that used for Code examinations.
- Information to help focus the examiner on identifying aging effects.
- The requirement that these examinations be conducted by experienced individuals certified to perform Code VT-1 / VT-3 examinations.

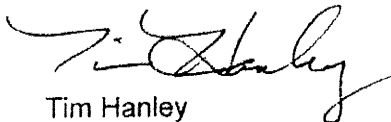
The practice described above, which uses certified VT examiners, provides sufficient rigor to ensure LR examinations can, and will continue to, detect aging effects throughout the renewal period. These practices were developed and implemented prior to the NRC inspections at Dresden and Quad Cities under IP 71002, "License Renewal Inspection," in 2003. During this inspection, and subsequent inspections performed under IP 71003, "Post-Approval Site Inspection for License Renewal," WOs that implement the strategy described above were included in the NRC inspection sample (References 2, 3 and 4); however, during the Reference 5 inspection at Quad Cities, a concern was raised that a commitment change should be processed to clarify our approach for conducting visual examinations credited for LR, but not credited as an ASME Code examination. Note that this clarification does not directly impact or change the verbiage contained in the formal list of LR commitments provided in Appendix A of Reference 1, "D/QCNPS Commitment List Associated with Renewal of the Operating Licenses."

The attachment to this letter clarifies our commitments for the following aging management programs:

- B.1.23 One Time Inspection
- B.1.24 Selective Leaching
- B.2.8 Periodic Inspection of Plant Heating Steam
- B.2.9 Periodic Inspection of Components Subject to Moist Air Environments

Should you have any questions concerning this letter, please contact Mr. Wally J. Beck at (309) 227-2800.

Respectfully,



Tim Hanley  
Site Vice President  
Quad Cities Nuclear Power Station

Attachment – License Renewal Commitments Associated With VT Examinations

cc: Regional Administrator – NRC Region III  
NRC Senior Resident Inspector – Quad Cities Nuclear Power Station

ATTACHMENT

License Renewal Commitments Associated With VT Examinations

Aging Management Program

B.1.23 One Time Inspection – Ventilation Systems

**License Renewal (LR) Safety Evaluation (SE) Appendix A Commitment:**

23) One-time inspection sampling will be performed on the following:

- (7) control room ventilation, EDG ventilation, SBO building ventilation, reactor building ventilation, and standby gas treatment system components for loss of material

**LR SE Excerpts:**

Section 3.2.2.2

Loss of Material Due to General Corrosion

The applicant stated in LRA Section 3.2.1.1.3 that an inspection in accordance with the One-Time Inspection Program (B.1.23) of SGTS ducts and components will be performed. This One-Time Inspection Program will provide assurance that penetrating corrosion of SGTS components is not occurring at an unacceptable rate. The inspection will consist of VT-3 visual inspections for the presence of general corrosion in selected standby gas treatment components.

Section 3.3.2.5.7

Detailed Breakdown on the Aging Management Programs for Loss of Material Due to General, Pitting, and Crevice Corrosion, and MIC

One-Time Inspection Program - Ventilation System (B.1.23): This 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.

**Commitment Clarification:**

The 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.

**Justification for Change:**

The visual examinations will be completed in accordance with work instructions provided in an approved work order. The governing work instructions will contain the necessary steps for performing the visual examination, and include guidance specific for identifying the appropriate aging mechanism. The approved work instructions will provide a means for recording relevant indications. The examinations will be completed by an examiner certified to perform Section XI VT-3 examinations to provide consistent, high-quality examinations. This approach ensures relevant indications and conditions indicative of unacceptable age-related degradation are identified, documented, and evaluated under the Corrective Action Program. This clarification has no impact on or change to Appendix A of the LR SE (D/QCNPS Commitment List Associated with Renewal of the Operating Licenses).

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License Renewal Commitments Associated With VT Examinations

<p>Aging Management Program</p> <p>B.1.23 One Time Inspection – Compressed Gas Systems</p>
<p><b><u>LR SE Appendix A Commitment:</u></b></p> <p>23) One-time inspection sampling will be performed on the following: (3) compressed gas system piping components for corrosion</p> <p><b>LR SE Excerpts:</b></p> <p><u>Section 3.3.2.5.7</u> Detailed Breakdown on the Aging Management Programs for Loss of Material Due to General, Pitting, and Crevice Corrosion, and MIC</p> <p>One-Time Inspection Program - Compressed Gas (B.1.23): This 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.</p>
<p><b>Commitment Clarification:</b></p> <p>The 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.</p>
<p><b>Justification for Change:</b></p> <p>The visual examinations will be completed in accordance with work instructions provided in an approved work order. The governing work instructions will contain the necessary steps for performing the visual examination, and include guidance specific for identifying the appropriate aging mechanism. The approved work instructions will provide a means for recording relevant indications. The examinations will be completed by an examiner certified to perform Section XI VT-3 examinations to provide consistent, high-quality examinations. This approach ensures relevant indications and conditions indicative of unacceptable age-related degradation are identified, documented, and evaluated under the Corrective Action Program. This clarification has no impact on or change to Appendix A of the LR SE (D/QCNPS Commitment List Associated with Renewal of the Operating Licenses).</p>

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### License Renewal Commitments Associated With VT Examinations

<p>Aging Management Program</p> <p>B.1.23 One Time Inspection – SBLC Chemistry Program</p>
<p><b>LR SE Appendix A Commitment:</b> 23) One-time inspection sampling will be performed on the following:</p> <p><b>LR SE Excerpts:</b></p> <p><u>Section 3.0.3.2</u> Water Chemistry Program</p> <p>Aging of 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.</p>
<p><b>Commitment Clarification:</b></p> <p>The 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.</p>
<p><b>Justification for Change:</b></p> <p>The visual examinations will be completed in accordance with work instructions provided in an approved work order. The governing work instructions will contain the necessary steps for performing the visual examination, and include guidance specific for identifying the appropriate aging mechanism. The approved work instructions will provide a means for recording relevant indications. The examinations will be completed by an examiner certified to perform Section XI VT-3 examinations to provide consistent, high-quality examinations. This approach ensures relevant indications and conditions indicative of unacceptable age-related degradation are identified, documented, and evaluated under the Corrective Action Program. This clarification has no impact on or change to Appendix A of the LR SE (D/QCNPS Commitment List Associated with Renewal of the Operating Licenses).</p>

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License Renewal Commitments Associated With VT Examinations

<p>Aging Management Program</p> <p>B.1.24 Selective Leaching</p>
<p><b>LR SE Appendix A Commitment:</b></p> <p>24) A sample of components that are made of susceptible materials will be visually inspected for evidence of selective leaching. The sample will be expanded if failed conditions are identified.</p> <p><b>LR SE Excerpts:</b></p> <p><u>Section 3.0.3.11</u> Selective Leaching of Materials</p> <p>The 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.</p>
<p><b>Commitment Clarification:</b></p> <p>The visual examinations will be conducted by personnel certified to perform VT-1 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.</p>
<p><b>Justification for Change:</b></p> <p>The visual examinations will be completed in accordance with work instructions provided in an approved work order. The governing work instructions will contain the necessary steps for performing the visual examination, and include guidance specific for identifying the appropriate aging mechanism. The approved work instructions will provide a means for recording relevant indications. The examinations will be completed by an examiner certified to perform Section XI VT-1 examinations to provide consistent, high-quality examinations. This approach ensures relevant indications and conditions indicative of unacceptable age-related degradation are identified, documented, and evaluated under the Corrective Action Program. This clarification has no impact on or change to Appendix A of the LR SE (D/QCNPS Commitment List Associated with Renewal of the Operating Licenses).</p>

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License Renewal Commitments Associated With VT Examinations

<p>Aging Management Program</p> <p>B.2.8 Periodic Inspection of Plant Heating Steam</p>
<p><b><u>LR SE Appendix A Commitment:</u></b></p> <p>46) An aging management program will be developed and implemented to inspect components in the Plant Heating system once before the end of the current operating term and periodically at intervals not to exceed once every 5 years during the period of extended operation.</p> <p><b>LR SE Excerpts:</b></p> <p><u>Section 3.3.2.3.7</u> Periodic Inspection of Plant Heating System</p> <p>The plant heating inspections are performed a [sic] 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.</p>
<p><b>Commitment Clarification:</b></p> <p>The 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.</p>
<p><b>Justification for Change:</b></p> <p>The visual examinations will be completed in accordance with work instructions provided in an approved work order. The governing work instructions will contain the necessary steps for performing the visual examination, and include guidance specific for identifying the appropriate aging mechanism. The approved work instructions will provide a means for recording relevant indications. The examinations will be completed by an examiner certified to perform Section XI VT-3 examinations to provide consistent, high-quality examinations. This approach ensures relevant indications and conditions indicative of unacceptable age-related degradation are identified, documented, and evaluated under the Corrective Action Program. This clarification has no impact on or change to Appendix A of the LR SE (D/QCNPS Commitment List Associated with Renewal of the Operating Licenses).</p>

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License Renewal Commitments Associated With VT Examinations

<p>Aging Management Program</p> <p>B.2.9 Periodic Inspection of Components Subject to Moist Air Environments</p>
<p><b><u>LR SE Appendix A Commitment:</u></b> [B.2.9 not included in Appendix A]</p> <p><b>LR SE Excerpts:</b></p> <p><u>Section 3.0.3.18.2</u> Staff Evaluation</p> <p>The 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. Visual inspections of flexible hoses will be performed to determine the presence of age-related degradation.</p>
<p><b>Commitment Clarification:</b></p> <p>The visual and UT examinations will be conducted by personnel certified to perform VT-3 and UT examinations accordingly and will be performed in accordance with approved work instructions. The work instructions will include guidance for identifying the aging management effect of concern.</p>
<p><b>Justification for Change:</b></p> <p>The visual examinations will be completed in accordance with work instructions provided in an approved work order. The governing work instructions will contain the necessary steps for performing the visual examination, and include guidance specific for identifying the appropriate aging mechanism. The approved work instructions will provide a means for recording relevant indications. The examinations will be completed by an examiner certified to perform Section XI VT-3 examinations to provide consistent, high-quality examinations. This approach ensures relevant indications and conditions indicative of unacceptable age-related degradation are identified, documented, and evaluated under the Corrective Action Program. This clarification has no impact on or change to Appendix A of the LR SE (D/QCNPS Commitment List Associated with Renewal of the Operating Licenses). Note that B.2.9 is not included in Appendix A.</p>