[7590-01-P]

NUCLEAR REGULATORY COMMISSION

[NRC-2009-0565]

LICENSE RENEWAL INTERIM STAFF GUIDANCE LR-ISG-2007-02: CHANGES TO GENERIC AGING LESSONS LEARNED REPORT AGING MANAGEMENT PROGRAM XI.E6, "ELECTRICAL CABLE CONNECTIONS NOT SUBJECT TO 10 CFR 50.49 ENVIRONMENTAL QUALIFICATION REQUIREMENTS"

NOTICE OF AVAILABILITY

AGENCY: Nuclear Regulatory Commission (NRC).

ACTION: Notice of availability.

SUMMARY: The NRC is issuing the final License Renewal Interim Staff Guidance (LR-ISG), LR-ISG-2007-02, "Changes to Generic Aging Lessons Learned (GALL) Report Aging Management Program (AMP) XI.E6, "Electrical Cable Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements." LR-ISG-2007-02 revises current NRC guidance in Section XI.E6 of NUREG-1801, Revision 1, "Generic Aging Lessons Learned (GALL) Report," Volume 2, dated September 2005 (GALL Report). Volume 2 of the GALL Report is available in the NRC's Agencywide Documents Access and Management System (ADAMS) under Accession No. ML052780376. The revised GALL Report Section XI.E6 recommends an AMP with a one-time inspection for electrical cable connections not subject to 10 CFR 50.49 environmental qualification requirements, instead of the periodic inspection as currently recommended in the GALL Report. The NRC staff has determined that a one-time inspection, on a representative sample basis, is adequate to ensure that either aging of metallic cable connections is not occurring and/or that an existing preventive maintenance program is effective such that a periodic inspection is not required. The final LR-ISG-2007-02 is available under Accession No. ML091940093.

FOR FURTHER INFORMATION CONTACT: Mr. Matthew Homiack, Division of License Renewal, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; telephone 301-415-1683; or e-mail *Matthew.Homiack@nrc.gov*.

ADDRESSES: Documents created or received after November 1, 1999, are available electronically at the NRC's Public Electronic Reading Room on the Internet at *http://www.nrc.gov/reading-rm/adams.html*. From this site, the public can gain entry into ADAMS. If you do not have access to the Internet or if there are any problems in accessing the documents located in ADAMS, contact the NRC Public Document Room reference staff at 1-800-397-4209, 301-415-4737, or by e-mail at *PDR.Resource@nrc.gov*.

The NRC posts LR-ISGs on its public web page under the "License Renewal" heading at *http://www.nrc.gov/reading-rm/doc-collections/isg*.

SUPPLEMENTARY INFORMATION:

Background

The NRC issues LR-ISGs to communicate insights and lessons learned and to address emergent issues that are not addressed in the guidance documents NRC published to facilitate implementation of Part 54, "Requirements for Renewal of Operating Licenses for Nuclear Power Plants," of Title 10 of the *Code of Federal Regulations* (10 CFR Part 54). The NRC staff and stakeholders use LR-ISGs until their guidance is incorporated into a formal license renewal guidance document revision.

By letter dated September 5, 2006 (ML062770105), the Nuclear Energy Institute (NEI) submitted a white paper to the NRC regarding GALL AMP XI.E6 (ML062770111). NEI expressed several concerns regarding the AMP and asked that the NRC staff consider the position in the white paper in order to eliminate GALL AMP XI.E6 or minimize its scope and redundancy. On November 30, 2006, the NRC staff met with NEI representatives to discuss the white paper, as documented in "Summary of the License Renewal Meeting between the

U.S. Nuclear Regulatory Commission Staff and the Nuclear Energy Institute Regarding Generic Aging Lessons Learned Aging Management Program XI.E6," dated January 26, 2007 (ML063600004). In a letter dated March 16, 2007 (ML070400349), the NRC staff responded to each of the concerns identified in NEI's white paper. By letter dated May 25, 2007 (ML071590175 and ML071590182), NEI submitted comments on the staff's responses.

After reviewing NEI's white paper and comments, the NRC staff determined that current operating experience does not support the periodic inspections as recommended in GALL AMP XI.E6. Instead, the staff determined that a one-time inspection of the metallic portion of electrical cable connections is warranted due to the limited number of age-related failures of cable connections.

The NRC staff developed LR-ISG-2007-02 to revise GALL AMP XI.E6. On September 6, 2007, the NRC requested public comments on the proposed LR-ISG-2007-02 in the *Federal Register* (72 FR 51256). The NRC issued the proposed LR-ISG to clarify and recommend a one-time inspection to ensure that either aging of metallic cable connections is not occurring or that an existing preventive maintenance program is effective, such that a periodic inspection program is not needed.

The public comment period ended on October 22, 2007. The NRC received comments from the NEI by letter dated October 18, 2007 (ML072960480). No other comments were received. The NRC staff has considered NEI's comments in developing the final LR-ISG-2007-02, as discussed in the "Comments and Responses" section of this notice.

Final Action

By this action, the NRC is making the final LR-ISG-2007-02 available. The NRC staff approves of this LR-ISG for NRC staff and industry use. The NRC staff will also incorporate the approved LR-ISG into the next revision of the GALL Report.

The final LR-ISG-2007-02 revises GALL AMP XI.E6. As revised, the AMP recommends a one-time inspection for electrical cable connections not subject to 10 CFR 50.49 environmental qualification requirements instead of the periodic inspection as currently recommended in GALL AMP XI.E6. The NRC staff has determined that one-time inspection, on a representative sample basis, is adequate to ensure that either aging of metallic cable connections is not occurring and/or that an existing preventive maintenance program is effective such that a periodic inspection program is not required. Additional details on the staff's position and rationale for revising GALL AMP XI.E6 are in the final LR-ISG-2007-02.

Comments and Responses

The NEI comments, in general, indicated that the revised GALL AMP XI.E6 should provide options, where appropriate, for the use of visual inspection to detect aging effects on covered connections. NEI stated that, while the proposed LR-ISG would permit testing of components without removing insulation, frequent testing cannot be performed on covered connections with the insulation in-place. Visual inspection is used in the industry for detecting loose connections and is preferable to potentially damaging sound connections while removing the insulation to perform testing. NEI further stated that including an option to perform visual inspections to detect aging effects for covered connections reduces the likelihood of damaging components and is an effective and practical alternative to testing.

In response, the NRC staff has determined that resistance measurement or thermography is the preferred method for testing loose cable connections. However, if resistance measurement cannot be performed with the insulation in place, and for reasons of

personnel safety, energized equipment cannot be accessed to perform thermography, then visual inspection is an acceptable alternative inspection method for cable connections covered with insulation material. The staff has previously permitted visual inspection for covered bus connections in GALL AMP XI.E4, “Metal Enclosed Bus.” If visual inspection is chosen as an alternative to thermography or resistance measurement of cable connections covered with insulating materials (heat shrink tapes, sleeving, insulation boots, etc.), then a one-time inspection cannot be used and periodic visual inspections must be performed. Periodic visual inspections can effectively detect loosening of cable connections by inspecting insulation materials for discoloration, cracking, chipping, or surface contamination. This NRC staff position is reflected in the final LR-ISG-2007-02.

NEI also provided comments in the form of a mark-up to the proposed GALL AMP XI.E6 revision. The NRC staff has incorporated these comments in the final LR-ISG as appropriate.

Dated at Rockville, Maryland, this 15th day of December, 2009.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

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