

Interim Staff Guidance for License Renewal

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Interim Staff Guidance Status

- Overview
 - ISGs status and staff resolution
 - ISG-09

Interim Staff Guidance Status

- Two types of ISGs:
 - Clarification ISGs
 - Compliance ISGs
ISG-02, ISG-05, and ISG-06

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Interim Staff Guidance Status

- Clarification ISGs:
 - Provide additional guidance to applicants that will reduce unnecessary RAI
 - Do not create new staff positions that have not been addressed by previous applicants
 - Inform applicants that more information is needed on an issue already addressed in the LRGDs.
 - Do not apply to licensees holding a renewed license

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Interim Staff Guidance Status

- Compliance ISGs
 - Involve compliance with the regulations and therefore do apply to licensees holding a renewed license

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Interim Staff Guidance Status

- To serve as a bridge until the license renewal guidance documents are revised

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Interim Staff Guidance Status

License Renewal Guidance Documents (LRGDs) - 2005:

- NUREG-1800, "Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants" (SRP-LR)
- NUREG-1801, "Generic Aging Lessons Learned (GALL) Report" (GALL Report)

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Interim Staff Guidance Status

License Renewal Guidance Documents (LRGDs) -2005 (con't):

- Draft Regulatory Guide (DG) -1140, "Standard Format and Content for Applications to Renew Nuclear Power Plant Operating Licenses," which endorses the industry license renewal document Nuclear Energy Institute (NEI) 95-10, "Industry Guideline for Implementing the Requirements of 10 CFR Part 54 - The License Renewal Rule," Revision 5, with two exceptions.

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Interim Staff Guidance Status

ISGs Incorporated into LRGDs (2005):

- Completed ISGs
- ISGs in development
- ISGs involved established Staff positions

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Interim Staff Guidance Status

- Completed/Closed ISGs:
 - ISG-01, ISG-02, ISG-03, ISG-04, ISG-05, ISG-08, ISG-10, and ISG-11
- ISGs folded into updated LRGDs (withdrawn and closed):
 - ISG-06, ISG-12, ISG-13, ISG-14, ISG-15, ISG-16, ISG-17, ISG-18, ISG-19A, ISG-20, and ISG-21
- ISGs that remain open:
 - ISG-07, ISG-09, and ISG-19B

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Interim Staff Guidance Status

- ISG-01: Clarification (completed)
- ISG-01, "Proposed Staff Guidance on the Position of the GALL Report Presenting One Acceptable Way to Manage Aging Effects for License Renewal," dated November 23, 2001 (ADAMS Accession No. ML013300531)
- Incorporated into SRP-LR, Chapter 3.0

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Interim Staff Guidance Status

- ISG-02: Compliance (completed)
- ISG-02, "Staff Guidance on Scoping of Equipment Relied on to Meet the Requirements of the Station Blackout (SBO) rule (10 CFR 50.63) for License Renewal", dated April 1, 2002 (ADAMS Accession No. ML020920464)
- Incorporated into SRP-LR, Chapter 2.0

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Interim Staff Guidance Status

- ISG-03: Clarification (completed)
- ISG-03, "Proposed Revision of Chapters II and III of Generic Aging Lessons Learned (GALL) Report on Aging Management of Concrete Elements," dated November 23, 2001 (ADAMS Accession Nos. ML013300440 and ML013300445)
- Incorporated into GALL Volume 2, AMPs XI.S2, and XI.S6

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Interim Staff Guidance Status

- ISG-04: Clarification (completed)
- ISG-04, "Interim Staff Guidance (ISG)-04: Aging Management of Fire Protection Systems for License Renewal," dated December 3, 2002 (ADAMS Accession No. ML023440123)
- Incorporated into GALL Volume 2, AMPs XI.M26 and AMP XI.M27

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Interim Staff Guidance Status

- ISG-05: Compliance (completed)
- ISG-05, "Interim Staff Guidance (ISG)-5 on the Identification and Treatment of Electrical Fuse Holders for License Renewal," dated March 10, 2003 (ADAMS Accession No. ML030690492)
- Incorporated into SRP-LR, Table 2.1-5, GALL Volume 2, AMP XI.E5 (new)

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Interim Staff Guidance Status

- ISG-06: Compliance (withdrawn and closed)
- ISG-06, "Proposed Interim Staff Guidance on Identification and Treatment of Housing for Active Components for License Renewal," dated April 8, 2003 (ADAMS Accession No. ML031010423)
- Incorporated into SRP-LR, Table 2.1-5, Chapter 3.0, and GALL Volume 2, IX.B Table

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Interim Staff Guidance Status

- ISG-07: Clarification (open)
- Proposed Staff Guidance on the Scoping of Fire Protection Equipment for License Renewal, dated November 13, 2002 (ADAMS Accession No. ML023190479)
- On-hold until staff completes its assessment of additional LRA review experience

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Interim Staff Guidance Status

- ISG-08: Clarification (closed)
- Process for Interim Staff Guidance Development and Implementation, dated December 12, 2003 (ADAMS Accession No. ML023520620)

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Interim Staff Guidance Status

- ISG -09: Clarification (open)
- Industry Guidance on Revised 54.4(a)(2) Scoping Criterion for license renewal, dated June 6, 2003 (ADAMS Accession No. ML031570613)
- Draft Regulatory Guidance -1140 endorsed NEI 95-10, Rev. 5 with 2 exceptions

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Interim Staff Guidance Status

- ISG-10: Clarification (closed)
- Standardized Format for License Renewal Application, April 7, 2003 (ADAMS Accession No. ML030990204)

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Interim Staff Guidance Status

- ISG-11: Clarification (closed)
- Evaluation of Proposed Interim Staff Guidance (ISG)-11: "Recommendations for Fatigue Environmental Effects in a License Renewal Application," dated January 21, 2004 (ADAMS Accession No. ML040220124)
- Staff concluded there is insufficient technical basis provided to justify the elimination of the fatigue evaluation of carbon and low alloy steel components for the effects of the reactor coolant environment for LRA

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Interim Staff Guidance Status

- ISG-12: Clarification (withdrawn and closed)
- Proposed Interim Staff Guidance (ISG)-12: "Addition of Generic Aging Lessons Learned (GALL) Aging Management Program (AMP) XI.M35, 'One-time Inspection of Small-bore Piping,' for License Renewal," dated November 3, 2003 (ADAMS Accession No. ML033100516)
- Incorporated into GALL Volume 2, AMP XI.M35 (new) and corresponding AMR line items

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Interim Staff Guidance Status

- ISG-13: Clarification (withdrawn and closed)
- To review the use of the loose parts monitoring (XI.M14) system for the management of the loss of preload on reactor vessel internal bolting
- Incorporated into GALL Volume 2, corresponding AMR line items

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Interim Staff Guidance Status

- ISG-14, Clarification (withdrawn and closed)
- To capture the operational experience related to the cracking of bolting
- Incorporated into GALL Volume 2, AMP XI.M18 and the corresponding AMRs line items

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Interim Staff Guidance Status

- ISG-15: Clarification (withdrawn and closed)
- ISG-15, "Proposed Interim Staff Guidance (ISG)-15: Revision of Generic Aging Lessons Learned (GALL) Aging Management Program (AMP) XI.E2, 'Electrical Cables Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Used in Instrumentation Circuits', for License Renewal," dated August 12, 2003 (ADAMS Accession No. ML032250579)
- Incorporated into GALL Volume 2, AMP XI.E2

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Interim Staff Guidance Status

- ISG-16: Clarification (withdrawn and closed)
- ISG-16, "Proposed Interim Staff Guidance (ISG)-16: Time-limited Aging Analyses (TLAAs) Supporting Information for License Renewal Applications" dated May 12, 2003 (ADAMS Accession No. ML031320798)
- Incorporated into SRP-LR Chapter 4

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Interim Staff Guidance Status

- ISG-17: Clarification (withdrawn and closed)
- ISG-17, "Interim Staff Guidance (ISG)-17: Proposed Aging Management Program (AMP) XI.E4, 'Periodic Inspection of Bus Ducts', for License Renewal." - See FRN /Vol. 69, No. 246, Page 76960, dated December 23, 2004.
- Incorporated into GALL Volume 2, AMP XI.E4 (new) and corresponding AMR line items

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Interim Staff Guidance Status

- ISG-18: Clarification (withdrawn and closed)
- To develop aging management procedure to prevent moisture collection in man hole and to revise GALL AMP XI.E3
- Incorporated into GALL Volume 2, AMP XI.E3

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Interim Staff Guidance Status

- ISG-19: Clarification
- Revise aging management program XI.M11 to include nickel-alloy upper vessel heads (primary water stress corrosion cracking in nickel-alloy upper reactor vessel head penetration nozzles)
- ISG-19A and ISG-19B

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Interim Staff Guidance Status

- ISG-19A: Clarification (withdrawn and closed)
- ISG-19A: "Proposed Aging Management Program XI.M11-A, 'Nickel-alloy Penetration Nozzles Welded to the Upper Reactor Vessel Closure Heads of Pressurized Water Reactors (PWRs Only)', for License Renewal."
- Incorporated into GALL Volume 2, AMP XI.M11-A (new) and corresponding AMR line items

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Interim Staff Guidance Status

- ISG-19B: Clarification (open)
- ISG-19B, "Proposed Aging Management Program XI.M11-B, 'Nickel-alloy Base-metal Components and Welds in the Reactor Coolant Pressure Boundary', for License Renewal."
- Open - On-hold until NEI and EPRI-MRP activities completed

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Interim Staff Guidance Status

- ISG-20: Clarification (withdrawn and closed)
- Revise aging management program XI.M19 to include steam generator tube integrity
- Incorporated into GALL Volume 2, AMP XI.M19

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Interim Staff Guidance Status

- ISG-21: Clarification (withdrawn and closed)
- Revise Chapter IV tables, AMP XI.M9 and AMP XI.M16, to provide improved guidance on reactor vessel internals
- Incorporated into Revision to XI.M9 and deletion of XI.M16; and corresponding AMR line items

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Interim Staff Guidance Status

- Issue: to address thermal aging embrittlement of CASS components
- Staff concluded that GALL adequately addressed this issue - no ISG is needed

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Interim Staff Guidance Status

- Issue: to provide guidance on how to handle replacement parts for 10 CFR 50.48
- To determine if an ISG is necessary

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Interim Staff Guidance Status

- ISG -09: Clarification (open)
- Industry Guidance on Revised 54.4(a)(2) Scoping Criterion for license renewal, dated June 6, 2003 (ADAMS Accession No. ML031570613)
- Draft Regulatory Guidance -1140 endorsed NEI 95-10, Rev. 5 with 2 exceptions

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**AGENDA FOR NRC MEETING WITH NEI ON GALL
REPORT COMMENTS
MAY 16, 2005**

ELECTRICAL TOPICS FOR DISCUSSION

- 1) Discussion of Aging Management Programs:
 - XI.E4 – Metal-Enclosed Bus (Industry Proposed AMP)
 - XI.E5 – Fuse Holders (Industry Comments)
 - XI.E6 – Cable Connections (Elimination of AMP)
- 2) Past Precedence and Operating Experience bases for elimination of AMPs for high-voltage insulators, switchyard bus and conductors, and transmission conductors.
- 3) Achieving consistency and completeness of definitions.
- 4) Resolution and inclusion of minor comments.

MECHANICAL TOPICS FOR DISCUSSION

- 1) New Line Items at the end of GALL Chapters – Applicable to GALL Chapters IV, V, VII and VIII
- 2) Bolting (loss of preload) - Applicable to GALL Chapters IV, V, VII and VIII
- 3) External Environments – Applicable to GALL Chapters V, VII and VIII

Program comments:

- XI.M1 ASME Section XI – Acknowledge acceptability of later versions of approved ASME Code required via 10CFR50.55a. (Acknowledge the ISI Footnote in AMPs M1 & M3 through M9)
- XI.M2 Water Chemistry – Acknowledge acceptability of later versions of EPRI document and change “crack initiation and growth” to “cracking”.
- XI.M7 BWR Stress Corrosion Cracking – increase scope to include nickel-based alloys and CASS, and acknowledge acceptability of later versions of EPRI document.
- XI.M17 Flow-Accelerated Corrosion – related to location of increased sample size when wear is detected.
- XI.M18 Bolting Integrity – Credit for ASME Section XI and External Surfaces Monitoring for SR and NS bolting and loss of preload is not an aging effect. However, programs would detect loss of preload.

**AGENDA FOR NRC MEETING WITH NEI ON GALL
REPORT COMMENTS
MAY 16, 2005**

- XI.M21 Closed-Cycle Cooling Water System – Address standards for testing, acknowledge acceptability of later versions of EPRI document, eliminate “pump wear characteristics” (active function)
 - XI.M26 Fire Protection – Replace prescriptive inspection requirements and add words to recognize allowable defect indications.
 - XI.M27 Fire Water System – Modify code reference (recognize second acceptable version of the NFPA Code), modify sprinkler flow test requirements, etc.
 - XI.M31 Reactor Vessel Surveillance – Modify sentence delineating storage requirements for capsules.
 - XI.M32 One-Time Inspections – Remove table of example parameters/inspections (they are too prescriptive) and consider editorial comments.
 - XIMXX External Surfaces Monitoring Program – New AMP
 - XIMXX Flux Thimble Tube Inspection Program – New AMP
- 5) Loss of Material for Stainless steel in treated borated water – Applicable to GALL Chapters IV, V & VII
- 6) Heat exchanger components (tube side vs. shell side) - Applicable to GALL Chapters V, VII and VIII
- 7) With the exception of loss of fracture toughness, integrate CASS with Stainless Steel - Applicable to GALL Chapters IV and V
- 8) Alloy 600 to Nickel-based alloys - Applicable to GALL Chapter IV
- 9) PWR RV Internals AMP Commitments - Inspection Plan submittal and lack of control by an individual applicant over Industry initiatives - Applicable to GALL Chapter IV
- 10) PWR Core Support Pads and PZR Spray Head AMP clarification - Applicable to GALL Chapter IV
- 11) Composite vs. specific component identification (piping, ... vs. vessel shell, heads, ...) - Applicable to GALL Chapter IV
- 12) TLAA Section X.M1 – monitoring of high fatigue usage locations (NUREG/CR-6260)

**AGENDA FOR NRC MEETING WITH NEI ON GALL
REPORT COMMENTS
MAY 16, 2005**

CIVIL TOPICS FOR DISCUSSION

1) Corrections to GALL:

- a. Referencing Wrong AMP – The AMP should be “Structures Monitoring Program” and not “ASME Section XI, Subsection IWL” – Incorrectly used consistently throughout Section III
- b. Incorrect Aging Mechanism listed under AMP Section for the aging mechanism specified. – Several places (Section III.A1-5 is a good example).
- c. Correcting Section III A6 (Water- Control Structures) such that it differentiates for accessible and inaccessible areas making it consistent with other concrete structure sections of the GALL.
- d. Addition of Program for Water-Control Structures – Structures Monitoring Program is commonly used for concrete aging management of water control structures in cases where plants do not use chapter X1.S7, R.G. 1.127, Inspection of Water-Control Structures. (Either program should be acceptable)
- e. Generic use of component description caused problem – Change component to match previous version of GALL. GALL II.B2 is for a MARK II BWR, which does not have a torous or torous ring girder.
- f. Aging effect and AMP not consistent with previous SERs – Previous SERs have accepted no aging effects for galvanized steel and aluminum in an air-indoor uncontrolled environment.

2) Consolidation of GALL Sections IIIA and IIIB Summary:

- a. 93 Items in Section III.A Consolidates to 36 Items
- b. 52 Items in Section III.B Consolidates to 20 items
- c. Total 145 Item consolidates to 56 Items
- d. 117 Page document transforms to 47 page document

2005 NRC/NEI GALL Rev. 1
Electrical Comments

05-12-2005

NEI Comments to NRC, R1

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2005 NRC/NEI GALL Rev. 1
Electrical Comments

- New Programs
 - XI.E4 Bus Duct
 - XI.E5 Fuse Holders
 - XI.E6 Electrical Cable Connections

05-12-2005

NEI Comments to NRC, R1

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2005 NRC/NEI GALL Rev. 1 Electrical Comments

- **New Line Items**
 - High-Voltage Insulators
 - Switchyard Bus and Connectors
 - Transmission Conductors

05-12-2005

NEI Comments to NRC, R1

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2005 NRC/NEI GALL Rev. 1 Electrical Comments

- **XI.E4 Bus Duct**
 - “Metal-Enclosed Bus” (MEB) is the proper industry designation to use for AMP per ANSI/IEEE Standards
 - Eliminate retorquing of bolted connections as not recommended by vendors or bolting practices
 - White paper and revised AMP description was be provided
 - Past Precedence shows majority of plants do not need a MEB AMP

05-12-2005

NEI Comments to NRC, R1

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2005 NRC/NEI GALL Rev. 1
Electrical Comments

- Metal-Enclosed Bus (continued)
 - Problems to-date have been event-driven
 - Copper-copper MEB has indefinite lifetime
 - Aluminum properties required more overview
 - Conditions for untended operation
 - Continuously loaded
 - Moderate loading versus rating
 - Moisture-free environment

05-12-2005

NEI Comments to NRC, R1

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2005 NRC/NEI GALL Rev. 1
Electrical Comments

- XI.E5 Fuse Holders
 - The AMP and GALL line item LP-01 should be revised to clearly state that if the stressors that result in fatigue of fuse clips are not present, no AMP is needed
 - Boric acid program eliminates corrosion due to leakage
 - a(2) evaluation covers water leakage

05-12-2005

NEI Comments to NRC, R1

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2005 NRC/NEI GALL Rev. 1 Electrical Comments

- **XI.E6 Electrical Cable Connections Program**
 - No past precedent or ISG
 - No OE to show significant failure frequency
 - EPRI 1003471, Electrical Connection Application Guidelines, concludes not an aging issue
 - No electrical connections are exposed outside of cabinets or equipment
 - Bolted and crimped connections are splice or tape covered
 - Connectors are covered in XI.E1 AMP or XI.M10
 - Recommend elimination of this AMP

05-12-2005

NEI Comments to NRC, R1

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2005 NRC/NEI GALL Rev. 1 Electrical Comments

- **No Plant-Specific AMPs should be required for:**
 - High-Voltage Insulators – External deposits are temporary or events, not aging – insulator material not degraded
 - Switchyard Bus and Connectors – Materials chosen for long-term compatibility with the outdoor environment
 - Transmission Conductors – Proven 80 year lifetimes
 - SERS for prior LRAs confirm there are no aging effects requiring management – Past Precedent
 - These proposed new line items can be expected to result in numerous exceptions to GALL

05-12-2005

NEI Comments to NRC, R1

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**2005 NRC/NEI GALL Rev. 1
Electrical Comments**

- **Inconsistent AMP Element**
 - 10 CFR 50, Appendix B, should be credited for “Corrective Actions” without specific, prescriptive AMP engineering evaluation details for all electrical AMPs
 - Recommend using standard words from Corrective Action Element in Mechanical AMPs for consistency

05-12-2005

NEI Comments to NRC, RI

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