



Updating License Renewal Guidance Documents

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License Renewal and
Environmental Impacts - B



Agenda and Overview

- Background
- Schedule
- Scope
- Bases Document (Amy Hull)
- 9/30 Posting (Al Baione)
- NEI 95-10 (Mark Lintz)
- Feedback on Update Project (NEI)
- New License Renewal Process (NEI)



License Renewal Guidance Documents

- NUREG-1800, *Standard Review Plan for License Renewal Applications for Nuclear Power Plants*
- NUREG-1801, *Generic Aging Lessons Learned (GALL) Report*
- RG 1.188, *Standard Format and Content for Applications to Renew Nuclear Power Plant Operating Licenses*



Schedule

- January 31, 2005 Approved draft update to GALL and SRP-LR available for public comment. Draft reference document available on Web that provides explanation and justification for update changes.
- February 1, 2005 to March 30, 2005 Public Comment Period



Schedule

- Public Workshop (1 or 2 day workshop proposed for late February or early March during public comment period)
- 9/30/2005 Final Publication of GALL and SRP-LR (Rev 1) with Bases and Public Comment NUREG



Phase II

- Phase II involves changes such as modification of AMPs, additional approved staff positions, and enhancements
- Phase II comments evaluated for incorporation in January 2005 version



Phase II

- Resolution of some of the Phase 2 comments requires substantial resources and time. These comments will be retained. Resolution of such comments will be deferred for consideration until a later revision (beyond September 2005). NRC is also deferring items such as unapproved ISGs and other unresolved issues.



Changes to SRP-LR

- SRP-LR changes corresponding to the update in GALL
- Update of review process (new section 3.0 added)
- Incorporation of appropriate staff and contractor comments



License Renewal Guidance Update Website


- Information is available such as relevant correspondence, meeting notices, summaries, NRC public presentations, 9/30 Posting, etc.
- <http://www.nrc.gov/reactors/operating/licensing/renewal/guidance/updated-guidance.html>

NRC: Schedule and Background For Guidance Updates - Microsoft Internet Explorer provided by Provided by USNRC

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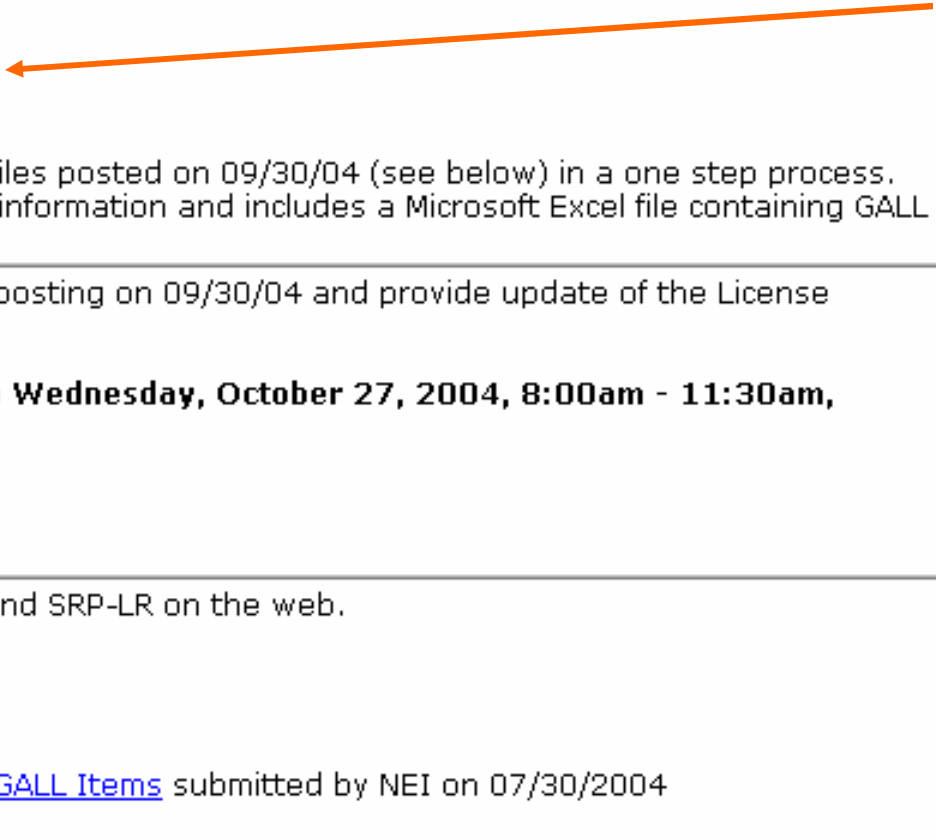
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Address <http://www.nrc.gov/reactors/operating/licensing/renewal/guidance/updated-guidance.htm> infoseek

Date	Description
10/14/04	<p>Preliminary Draft Guidance Documents Download</p> <ul style="list-style-type: none">• About this download• How to download• Download  <p>This download makes available all of the files posted on 09/30/04 (see below) in a one step process. These files provide links between related information and includes a Microsoft Excel file containing GALL Report Volume 2 table data.</p>
10/12/04	<p>Public meeting scheduled to discuss web posting on 09/30/04 and provide update of the License Renewal Guidance Update Project</p> <p>NOTE: Meeting time and date changed to Wednesday, October 27, 2004, 8:00am - 11:30am, Auditorium, Two White Flint North</p> <ul style="list-style-type: none">• Notice
09/30/04	<p>Posted Preliminary draft update to GALL and SRP-LR on the web.</p> <ul style="list-style-type: none">• About this Preliminary Draft Posting• Preliminary NUREG-1800• Preliminary NUREG-1801• Preliminary Staff Review Results of GALL Items submitted by NEI on 07/30/2004
08/03/04	<p>Public meeting to provide project status and discuss NEI 05/11/04 submittal.</p>

Local intranet

Start WordPerfect 10 - [G:\... Microsoft PowerPoint - ... Microsoft Excel - Proje... NRC: Schedule and ... 10:37 AM





Near Term Path Forward

- The NRC anticipates completing the following before the 1/31/2005 update:
- Development of a draft 'bases' document to justify planned changes to the license renewal guidance documents
- Further technical review to ensure the effectiveness, completeness, accuracy and consistency of the updated documents
- Incorporation of selected NRC staff and contractor Phase II comments
- Incorporation of NRC management and interfacing organizations comments



Near Term Path Forward

- Conforming changes to all documents for consistency
- Possible development of new Aging Management Programs
- Aging Management Program Update (GALL)
- Further changes as deemed technically or procedurally necessary
- Gall line Item additions due to operating experience



Overview of Bases Document

- Team Effort – critical input from Parallax, ANL, NRC
- Provides technical justification for both revised and new AMR line-items added to GALL.
- Explains justification for technical changes in NUREG-1800 and NUREG-1801, Vol.1.
- Captures pick lists used in GALL relational database for MEAPs (materials, environments, aging effects/mechanisms, programs) and SSCs.
- Illuminates changes in TLAAs and AMPs.
- Provides summary and observations of update changes for all related LRG documents.
- Appendix includes system-specific audit tools.



Basic Underlying Sources & Principles

- Materials aging of passive structures, systems, and components (SSCs) is a significant challenge facing the worldwide nuclear industry.
- “Nuclear safety improvement is nuclear safety improvement everywhere” – Nils J. Diaz, Nuclear Safety Research Conference 2004.
- Supporting information (technical justification) for updating GALL comes from many sources as appropriate
 - Assessment of operating events – focused review of operating experience
 - Evaluation of SERs
 - Aging management – inspections/ condition monitoring, frequency, type, reliability
- Staff and contractor comments will be retained but will not be published in the Bases document.
- SERs will be referenced, as appropriate, in the technical justification for using a given MEAP parameter.

A.3.2 Technical Justification for inclusion of new 'MEAP' combinations

Item	Material	Environment	Aging Effect/ Mechanisms	AMP	Technical Justification for Acceptance of Precedent
AP-35	Aluminum	Fuel oil	Loss of material/ Pitting and crevice corrosion	XI.M30 Fuel Oil Chemistry. The AMP is to be augmented by verifying the effectiveness of water chemistry control. See Chapter XI.M32, "One-Time Inspection," for an acceptable verification program.	An approved precedent exists for adding this material, environment, aging effect and program combination item to the GALL Report. As shown in Ft. Calhoun Unit 1 SER 3.3.2.4.5, the staff has accepted the position that loss of material exhibited by aluminum in a fuel oil environment is properly managed by the Fuel Oil Chemistry AMP which monitors fuel oil quality and the levels of water and microbiological organisms in the fuel oil. This program provides reasonable assurance that the component's intended functions will be maintained within the CLB for the extended period of operation.
AP-36	Aluminum	Air – indoor controlled (Ext)	None	None	An approved precedent exists for adding this material, environment, aging effect and program combination item to the GALL Report. As shown in Ft. Calhoun Unit 1 SER 3.3.2.4.5, the staff has accepted the position that aluminum in an indoor, controlled air environment exhibits no aging effect and that the component or structure will therefore remain capable of performing its intended functions consistent with the CLB for the period of extended operation. This conclusion is based on the fact that aluminum is highly resistant to corrosion in an indoor air environment in the absence of corrosive species, as cited in <u>Metals Handbook</u> , Volume 13 (p. 597), Ninth Edition, American Society for Metals International, 1987

B2. Containment Structures

Item	Old GALL Item Number	Material	Environment	Aging Effect/ Mechanism	Aging Management Program	Further Evaluation Recommended	Basis for Change
C-02	II.A1.1-b II.A2.2-b II.B2.2.1-a II.B3.1.2-a II.B3.2.1-b	Concrete	Water	Increase in porosity, permeability/ leaching of calcium hydroxide	Chapter XI.S2, "ASME Section XI, Subsection IWL" Accessible areas: Inspections performed in accordance with IWL will indicate the presence of increase in porosity, and permeability for to leaching of calcium hydroxide. Inaccessible Areas: A plant-specific aging management program is required for below-grade inaccessible areas (basemat and concrete wall), if the concrete is exposed to flowing water (NUREG-1557). An aging management program is not required, even if reinforced concrete is exposed to flowing water, if there is documented evidence that confirms the in-place concrete was constructed	A plant-specific aging management program is required for inaccessible areas as stated	The AMP was changed to incorporate approved ISG-3 for the following reasons: Applicable AMPs for concrete elements in the current GALL'01 report were not clearly stated and (2) some inconsistencies were found between Chapters II and III of the GALL report for the concrete elements.

GALL test Query

Material	Environment	Aging Effect/ Mechanism	Aging Management Program (AMP)
Stainless steel/ steel with stainless steel cladding	Reactor coolant	Cracking/ stress corrosion cracking	Chapter XI.M1, "ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD," for Class 1 components and Chapter XI.M2, "Water Chemistry," for PWR primary water in EPRI TR-105714

GALL test Query

Material	Environment	Aging Effect/ Mechanism	Aging Management Program (AMP)
Steel	Air – outdoor (External)	Loss of material/ general, pitting and crevice corrosion	Chapter XI.M29, "Aboveground Steel Tanks"

GALL test Query

Material	Environment	Aging Effect/ Mechanism	Aging Management Program (AMP)
Steel	Reactor coolant and neutron flux	Loss of fracture toughness/ neutron irradiation embrittlement	Neutron irradiation embrittlement is a time-limited aging analysis (TLAA) to be evaluated for the period of extended operation for all ferritic materials that have a neutron fluence greater than 10 ¹⁷ n/cm ² (E >1 MeV) at the end of the license renewal term. In accordance with approved BWRVIP-74, the TLAA is to evaluate the impact of neutron embrittlement on: (a) the adjusted reference temperature, the plant's pressure-temperature limits, (b) the Charpy upper shelf energy, and (c) the equivalent margins analyses performed in accordance with 10 CFR 50, Appendix G. The applicant may choose to demonstrate that the materials of the nozzles are not controlling for the TLAA evaluations. See the Standard Review Plan, Section 4.2 "Reactor Vessel Neutron Embrittlement" for acceptable methods for meeting the requirements of 10 CFR 54.21(c).



Schedule for Bases Document

- 1/31/05 – Draft reference document available on Web that provides explanation and justification for update changes.
- 9/30/05 – Bases document published and released at same time as GALL, SRP-LR, and Public Comment NUREG.



NEI 95-10, Revision 4

- Comments
- SRP
- Schedule: mid-November



Discussion