

# FINAL LICENSE RENEWAL INTERIM STAFF GUIDANCE LR-ISG-2011-05

## ONGOING REVIEW OF OPERATING EXPERIENCE

### INTRODUCTION

This license renewal interim staff guidance (LR-ISG) clarifies the U.S. Nuclear Regulatory Commission (NRC's) guidance in NUREG-1800, Revision 2, "Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants" (SRP-LR), that acceptable license renewal aging management programs (AMPs) should be informed, and enhanced when necessary, based on the ongoing review of both plant-specific and industry operating experience. Specifically, this LR-ISG revises the NRC staff's acceptance criteria and review procedures to better address the ongoing review of operating experience within the SRP-LR. This LR-ISG also better aligns NUREG-1801, Revision 2, "Generic Aging Lessons Learned (GALL) Report," with the SRP-LR by incorporating the recommendation for ongoing review of operating experience into each of the program descriptions in Chapter X, "Time-Limited Aging Analyses Evaluation of Aging Management Programs under 10 CFR 54.21(c)(1)(iii)," and Chapter XI, "Aging Management Programs (AMPs)." This LR-ISG also provides a framework to ensure that license renewal applicants' operating experience review activities will adequately address operating experience concerning age-related degradation and aging management during the term of the renewed license.

### DISCUSSION

#### Current Regulatory Framework

Pursuant to Part 54, "Requirements for Renewal of Operating Licenses for Nuclear Power Plants," Section 21(a)(3), of Title 10 of the *Code of Federal Regulations* (10 CFR 54.21(a)(3)), a license renewal applicant is required to demonstrate that the effects of aging on structures and components subject to an aging management review (AMR) are adequately managed so that the intended function(s) will be maintained consistent with the current licensing basis (CLB) for the period of extended operation. The NRC's guidance in SRP-LR Section 3.0.1 defines the AMR as the identification of the structure and component materials, environments, aging effects, and AMPs credited for managing the aging effects. In turn, SRP-LR Section A.1.2.3 defines an acceptable AMP as consisting of 10 elements, with the description of element 10, "Operating Experience," in SRP-LR Section A.1.2.3.10 stating that:

1. Consideration of future plant-specific and industry operating experience relating to aging management programs should be discussed. Reviews of operating experience by the applicant in the future may identify areas where aging management programs should be enhanced or new programs developed. An applicant should commit to a future review of plant-specific and industry operating experience to confirm the effectiveness of its aging management programs or indicate a need to develop new aging management programs. This information should provide objective evidence to support the conclusion that the effects of aging will be managed adequately so that the structure and component intended function(s) will be maintained during the period of extended operation.

2. Operating experience with existing programs should be discussed. The operating experience of AMPs that are existing programs, including past corrective actions resulting in program enhancements or additional programs, should be considered. A past failure would not necessarily invalidate an AMP because the feedback from operating experience should have resulted in appropriate program enhancements or new programs. This information can show where an existing program has succeeded and where it has failed (if at all) in intercepting aging degradation in a timely manner. This information should provide objective evidence to support the conclusion that the effects of aging will be managed adequately so that the structure- and component-intended function(s) will be maintained during the period of extended operation.
3. For new AMPs that have yet to be implemented at an applicant's facility, the programs have not yet generated any operating experience (OE). However, there may be other relevant plant-specific OE at the plant or generic OE in the industry that is relevant to the AMP's program elements even though the OE was not identified as a result of the implementation of the new program. Thus, for new programs, an applicant may need to consider the impact of relevant OE that results from the past implementation of its existing AMPs that are existing programs and the impact of relevant generic OE on developing the program elements. Therefore, operating experience applicable to new programs should be discussed. Additionally, an applicant should commit to a review of future plant-specific and industry operating experience for new programs to confirm their effectiveness.

In addition, 10 CFR 54.21(d) requires the license renewal application (LRA) to contain a final safety analysis report (FSAR) supplement, which must contain a summary description of the programs and activities for managing the effects of aging and the evaluation of time-limited aging analyses (TLAAs) for the period of extended operation. For the AMR, SRP-LR Sections 3.1.2.5, 3.2.2.5, 3.3.2.5, 3.4.2.5, 3.5.2.5, and 3.6.2.5 provide the NRC staff's acceptance criteria for the FSAR supplement as follows:

The summary description of the programs and activities for managing the effects of aging for the period of extended operation in the FSAR Supplement should be sufficiently comprehensive, such that later changes can be controlled by 10 CFR 50.59. The description should contain information associated with the bases for determining that aging effects will be managed during the period of extended operation. The description should also contain any future aging management activities, including enhancements and commitments, to be completed before the period of extended operation. Table 3.0-1 of this SRP-LR provides examples of the type of information to be included in the FSAR Supplement.

For TLAAs, SRP-LR Sections 4.2.2.2, 4.3.2.2, 4.4.2.2, 4.5.2.2, 4.6.2.2, and 4.7.2.2 provide the NRC staff's acceptance criteria for the FSAR supplement as follows:

The summary description of the evaluation of TLAAs for the period of extended operation in the FSAR supplement is appropriate such that later changes can be controlled by 10 CFR 50.59. The description should contain information associated with the TLAAs regarding the basis for determining that the applicant has made the demonstration required by 10 CFR 54.21(c)(1).

#### Basis for Issuing Interim Guidance

In December 2010, the NRC issued the current revision of the SRP-LR (Revision 2) with an expanded description of the operating experience program element in Section A.1.2.3.10. In Revision 1, the SRP-LR describes two criteria for the operating experience program element: (1) for existing programs, the need to discuss operating experience to support the conclusion that the program is effective, and (2) for new programs, the potential need to provide future operating experience to confirm the effectiveness of the program. SRP-LR, Revision 2, retains the criterion on existing programs, expands the criterion on new programs, and introduces a new criterion applicable to both new and existing programs. The new criterion concerns the future review of plant-specific and industry operating experience to confirm the effectiveness of the AMPs or indicate the need to develop new AMPs. However, through implementation of SRP-LR, Revision 2, the NRC staff has determined that both the SRP-LR and GALL Report discussions need clarification and additional guidance to better address the criterion concerning future reviews of operating experience.

One area of clarification concerns consistency within the SRP-LR. As currently written, the review procedures in SRP-LR Chapter 3, "Aging Management Review," only direct the reviewer to address past operating experience when reviewing those AMR results compared to the GALL Report. For better alignment with SRP-LR Section A.1.2.3.10, these review procedures need revision to also address how the applicant will use future operating experience to ensure the effectiveness of its AMPs.

Another area of clarification concerns consistency between the SRP-LR and the GALL Report. Consistent with the operating experience description in the current SRP-LR, the effectiveness of AMPs should be ensured through the future review of operating experience. However, while the current SRP-LR reflects this position, GALL Report, Revision 2, which was issued concurrently with SRP-LR, Revision 2, in December 2010, does not. The AMPs in GALL Report Chapters X and XI address the 10 elements described in SRP-LR Section A.1.2.3, but they do not explicitly address the need for an ongoing assessment of operating experience in element 10.

In addition, the NRC staff has determined that clarification is needed concerning the use of the word "commit" in SRP-LR Section A.1.2.3.10, where paragraph 1 states: "An applicant should commit to a future review of plant-specific and industry operating experience to confirm the effectiveness of its aging management programs or indicate a need to develop new aging management programs." The NRC staff believes that applicants should review operating experience on an ongoing basis through the term of a renewed license and provide plans to do so through a summary description in the FSAR supplement required by 10 CFR 54.21(d). As such, the applicant's ongoing operating experience review should be described and subject to certain regulatory controls consistent with the other programs and activities relied on for managing the effects of aging. This LR-ISG provides the start of such a summary description,

which an applicant may use as a basis from which to begin its own summary description; however, each applicant should develop its own summary description to fully describe how it will review operating experience during the term of the renewed license. Applicants also can propose a different approach for considering operating experience on an ongoing basis and include a summary description of this approach in the FSAR supplement.

Clarification is also needed concerning the consideration of operating experience for new programs, as discussed in SRP-LR Section A.1.2.3.10, paragraph 3: "Additionally, an applicant should commit to a review of future plant-specific and industry operating experience for new programs to confirm their effectiveness." In this LR-ISG, the NRC staff describes a framework for reviewing operating experience on an ongoing basis to ensure the effectiveness of license renewal AMPs. The NRC staff intends for the ongoing review of operating experience to inform every AMP, regardless of the AMP's implementation schedule. Therefore, this LR-ISG retains the intent of the current SRP-LR guidance.

The nature of operating experience is such that it can come from a variety of sources and may affect any number of areas of plant operation. Thus, potentially relevant operating experience must be screened and, if necessary, further reviewed to determine whether any subsequent actions should be taken. The NRC staff recognizes that the capture and review of operating experience may best be accomplished through generic plant operating experience review activities, such as those implemented to address the requirements of Item I.C.5, "Procedures for Feedback of Operating Experience to Plant Staff," of NUREG-0737, "Clarification of TMI Action Plan Requirements," and 10 CFR Part 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants." In this regard, the NRC staff believes that guidance on the ongoing review of operating experience for license renewal should primarily be addressed under generic processes used to inform each AMP and, when necessary, to develop and implement new AMPs. These processes could then be credited within the operating experience element of all AMPs, similar to how the 10 CFR Part 50, Appendix B, quality assurance program may be applied to the elements of corrective actions, confirmation process, and administrative controls in all AMPs. Therefore, the NRC staff believes that the SRP-LR and the GALL Report should address the ongoing review of operating experience in the same fashion as the quality assurance program.

Also, notwithstanding the continued use of existing programmatic activities for the ongoing review of operating experience, there are several areas where these activities may need to be augmented for the purposes of license renewal. These areas concern matters such as:

- sources of operating experience information
- training of plant personnel
- information considered in operating experience evaluations
- identification of operating experience as related to aging
- criteria for considering when AMPs should be modified or new AMPs developed due to operating experience
- guidelines for reporting aging-related operating experience to the industry

Review of these areas is necessary to ensure that operating experience related to aging is captured and used appropriately. To ensure the full consideration of available information, any necessary augmentations to address these areas should be addressed in an applicant's LRA, incorporated into the programmatic operating experience review activities no later than the date the renewed license is issued, and then implemented on an ongoing basis throughout the term

of the renewed license. In this way, operating experience on age-related degradation and aging management can be used to inform the aging management activities currently being implemented or planned to be implemented in the future, and it can be used to determine when new activities are necessary.

Further, on the sources of information that should be considered as operating experience, it is important to include revisions to the GALL Report and industry guidance documents and standards applicable to aging management. While the content in these documents in their entirety may not directly translate to operating experience, they can provide historical information and lessons learned in response to operating experience information over a period of time. As such, it is expected that the operating experience in these documents already will have been identified and evaluated. Nevertheless, it is also important to consider the historical lessons learned to provide a check on the adequacy of the initial evaluations of this operating experience.

## **ACTION**

This LR-ISG establishes a framework for the consideration of operating experience concerning aging management and age-related degradation during the term of a renewed operating license. It provides interim revisions to the SRP-LR to clarify the NRC staff's acceptance criteria and review procedures with respect to the ongoing review of operating experience. It also provides interim revisions to the GALL Report to make the AMP descriptions therein consistent with the SRP-LR guidance for acceptable AMPs. Appendix A, "Revisions to the SRP-LR and GALL Report," to this LR-ISG shows these changes. The majority of these changes result in the incorporation of new guidance within the SRP-LR and the GALL Report; however, the existing text in SRP-LR Section A.1.2.3.10 has been clarified and, to better show the changes to this section, a mark-up is shown in Appendix B, "Mark-Up of Changes to SRP-LR Section A.1.2.3.10," to this LR-ISG.

On August 24, 2011, at Volume 76, page 52995, of the *Federal Register* (76 FR 52995), the NRC requested public comments on a draft LR-ISG-2011-05. As noticed on September 20, 2011 (76 FR 58311), in response to an August 29, 2011, request from the Nuclear Energy Institute (NEI), the NRC extended the comment period and held a public meeting to discuss draft comments and questions concerning implementation of the LR-ISG. This meeting was held on October 12, 2011, a summary of which is available in an NRC memorandum dated November 7, 2011. The NEI and Exelon Nuclear provided comments on the draft LR-ISG by letters dated October 18, 2011. Subsequently, on November 25, 2011 (76 FR 72725), the NRC requested public comments on a revised draft LR-ISG. In response to this request, the NEI provided comments by letter dated December 15, 2011.

The NRC staff considered the comments provided by NEI and Exelon in developing the final LR-ISG-2011-05. Responses to these comments are in Appendix C, "Resolution of Public Comments on Draft LR-ISG-2011-05," to this LR-ISG. The guidance described in this final LR-ISG supersedes the affected sections of the SRP-LR and GALL Report and is approved for use by the NRC staff and stakeholders.

## **NEWLY IDENTIFIED SYSTEMS, STRUCTURES, AND COMPONENTS UNDER 10 CFR 54.37(b)**

The NRC is not proposing to treat the ongoing review of operating experience as a “newly identified” system, structure, or component (SSC) under 10 CFR 54.37(b). Therefore, any additional action on such reviews which the NRC may impose upon current holders of renewed operating licenses under 10 CFR Part 54 would not fall within the scope of 10 CFR 54.37(b).

## **BACKFITTING DISCUSSION**

This LR-ISG contains guidance as to one acceptable approach for managing the effects of aging during the period of extended operation. This LR-ISG does not constitute backfitting as defined in 10 CFR 50.109(a)(1) and is not otherwise inconsistent with the issue finality provisions in 10 CFR Part 52, and the NRC staff did not prepare a backfit analysis. There are several rationales for these conclusions, depending upon the status of the nuclear power plant licensee.

*Current operating license or combined license holders who have not yet applied for renewed licenses* – This LR-ISG is not directed at holders of (original) operating licenses or combined licenses until they apply for license renewal. As such, this LR-ISG does not constitute backfitting as applied to holders of (original) operating licenses and is not otherwise inconsistent with the applicable issue finality provisions in 10 CFR Part 52 as applied to holders of combined licenses.

*Licensees who are currently in the license renewal process* – This LR-ISG is directed to current applicants for license renewal. However, this LR-ISG is not backfitting as defined in 10 CFR 50.109(a)(1). This guidance is non-binding and provides one approach acceptable to the NRC staff for considering operating experience on an ongoing basis as one component of the management of the effects of aging in accordance with the requirements of 10 CFR Part 54. License renewal applicants are not required to use this guidance and may elect to propose alternative approaches for managing the effects of aging during the period of extended operation. In addition, the Backfit Rule does not protect license renewal applicants voluntarily requesting renewed licenses from changes in NRC requirements or guidance on license renewal prior to or during the pendency of their renewal application. Additional information is in the April 1, 2008, memorandum from NRC Chairman Dale E. Klein to Hubert T. Bell, Office of the Inspector General, NRC, entitled “Response to Recommendation 8 of 9/6/07 Audit Report on NRC’s License Renewal Program.”

*Licensees who already hold a renewed license* – While applicable to holders of renewed licenses, this guidance is non-binding and this LR-ISG does not require current holders of renewed licenses to take any action (i.e., programmatic or plant hardware changes for managing the aging of SSCs within the scope of license renewal). Nevertheless, renewed license holders should review the information in this LR-ISG and consider actions consistent with this guidance, as appropriate, to ensure continued compliance with maintaining effective AMPs. If, in the future, the NRC decides to take additional action and impose requirements for the review of operating experience related to aging management, then the NRC will follow the requirements of the Backfit Rule.

## REFERENCES

1. *U.S. Code of Federal Regulations*, "Domestic Licensing of Production and Utilization Facilities," Part 50, Chapter I, Title 10, "Energy."
2. *U.S. Code of Federal Regulations*, "Licenses, Certifications, and Approvals for Nuclear Power Plants," Part 52, Chapter I, Title 10, "Energy."
3. *U.S. Code of Federal Regulations*, "Requirements for Renewal of Operating Licenses for Nuclear Power Plants," Part 54, Chapter I, Title 10, "Energy."
4. Byrd, Kendall W., FirstEnergy Nuclear Operating Company, letter to U.S. Nuclear Regulatory Commission, June 24, 2011, ADAMS Accession No. ML11180A060.
5. Freeman, Paul O., NextEra Energy Seabrook, LLC, letter to U.S. Nuclear Regulatory Commission, June 24, 2011, ADAMS Accession No. ML11178A236.
6. Gallagher, Michael P., Exelon Generation Company, LLC, letter to Cindy Bladey, U.S. Nuclear Regulatory Commission, October 18, 2011, ADAMS Accession No. ML11298A171.
7. Gettys, Evelyn H., U.S. Nuclear Regulatory Commission, memorandum to Bo M. Pham, U.S. Nuclear Regulatory Commission, November 7, 2011, ADAMS Accession No. ML11304A259.
8. Keys, Julie, Nuclear Energy Institute, letter to Cindy K. Bladey, U.S. Nuclear Regulatory Commission, August 29, 2011, ADAMS Accession No. ML11242A114.
9. Keys, Julie, Nuclear Energy Institute, letter to Cindy K. Bladey, U.S. Nuclear Regulatory Commission, October 18, 2011, ADAMS Accession No. ML11293A041.
10. Keys, Julie, Nuclear Energy Institute, letter to Cindy K. Bladey, U.S. Nuclear Regulatory Commission, December 15, 2011, ADAMS Accession No. ML11354A228.
11. Klein, Dale E., U.S. Nuclear Regulatory Commission, memorandum to Hubert T. Bell, U.S. Nuclear Regulatory Commission, April 1, 2008, ADAMS Accession No. ML080870286.
12. Powell, G. T., STP Nuclear Operating Company, letter to U.S. Nuclear Regulatory Commission, June 23, 2011, ADAMS Accession No. ML11181A037.
13. Swank, David A., Energy Northwest, letter to U.S. Nuclear Regulatory Commission, June 23, 2011, ADMAS Accession No. ML11180A013.
14. U.S. Nuclear Regulatory Commission, "Clarification of TMI Action Plan Requirements," NUREG-0737, November 1980, ADAMS Accession No. ML051400209.
15. U.S. Nuclear Regulatory Commission, "Draft License Renewal Interim Staff Guidance LR-ISG-2011-05; Ongoing Review of Operating Experience," *Federal Register*, Vol. 76, No. 182, September 20, 2011, pp. 58311–58312.

16. U.S. Nuclear Regulatory Commission, "Draft License Renewal Interim Staff Guidance LR-ISG-2011-05: Ongoing Review of Operating Experience," *Federal Register*, Vol. 76, No. 227, November 25, 2011, pp. 72725–72727.
17. U.S. Nuclear Regulatory Commission, "Draft License Renewal Interim Staff Guidance LR-ISG-2011-05: Ongoing Review of Operating Experience Request for Public Comment," *Federal Register*, Vol. 76, No. 164, August 24, 2011, pp. 52995–52996.
18. U.S. Nuclear Regulatory Commission, "Generic Aging Lessons Learned (GALL) Report," NUREG-1801, Revision 2, December 2010, ADAMS Accession No. ML103490041.
19. U.S. Nuclear Regulatory Commission, "Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants," NUREG-1800, Revision 2, December 2010, ADAMS Accession No. ML103490036.

## **APPENDIX A**

### **REVISIONS TO THE SRP-LR AND GALL REPORT**

Itemized Changes

(1) Add a new row to SRP-LR Table 3.0-1, "FSAR Supplement for Aging Management of Applicable Systems," after the row for "GALL Appendix A," to read:

<b>Table 3.0-1 FSAR Supplement for Aging Management of Applicable Systems</b>				
<b>GALL Chapter</b>	<b>GALL Program</b>	<b>Description of Program</b>	<b>Implementation Schedule*</b>	<b>Applicable GALL Report and SRP-LR Chapter References</b>
GALL Appendix B	Operating Experience	Operating experience from plant-specific and industry sources is captured and systematically reviewed on an ongoing basis in accordance with the quality assurance program, which meets the requirements of 10 CFR Part 50, Appendix B, and the operating experience program, which meets the requirements of NUREG-0737, "Clarification of TMI Action Plan Requirements," Item I.C.5, "Procedures for Feedback of Operating Experience to Plant Staff." The operating experience program interfaces with and relies on active participation in the Institute of Nuclear Power Operations' operating experience program, as endorsed by the NRC. In accordance with these programs, all incoming operating experience items are screened to determine whether they may involve age-related degradation or aging management impacts. Items so	Existing Program	GALL II-III / SRP 3.5  GALL IV / SRP 3.1  GALL V / SRP 3.2  GALL VI / SRP 3.6  GALL VII / SRP 3.3  GALL VIII / SRP 3.4

		<p>identified are further evaluated and the AMPs are either enhanced or new AMPs are developed, as appropriate, when it is determined through these evaluations that the effects of aging may not be adequately managed. Training on age-related degradation and aging management is provided to those personnel responsible for implementing the AMPs and who may submit, screen, assign, evaluate, or otherwise process plant-specific and industry operating experience. Plant-specific operating experience associated with aging management and age-related degradation is reported to the industry in accordance with guidelines established in the operating experience program.</p>		
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- (2) Add new acceptance criteria as SRP-LR Sections 3.1.2.2.16, 3.2.2.2.8, 3.3.2.2.7, 3.4.2.2.5, 3.5.2.2.4, and 3.6.2.2.5 entitled, "Ongoing Review of Operating Experience," to read:

Acceptance criteria are described in Appendix A.4, "Operating Experience for Aging Management Programs."

- (3) Add new review procedures as SRP-LR Sections 3.1.3.2.16, 3.2.3.2.8, 3.3.3.2.7, 3.4.3.2.5, 3.5.3.2.4, and 3.6.3.2.5 entitled, "Ongoing Review of Operating Experience," to read:

The applicant's AMPs should contain the element of operating experience. The reviewer verifies that the applicant has appropriate programs or processes for the ongoing review of both plant-specific and industry operating experience concerning age-related degradation and aging management. Such reviews are used to ensure that the AMPs are effective to manage the aging effects for which they are credited. The AMPs are either enhanced or new AMPs are developed, as appropriate, when it is determined through the evaluation of operating experience that the effects of aging may not be adequately managed. Additional information is in Appendix A.4, "Operating Experience for Aging Management Programs."

In addition, the reviewer confirms that the applicant has provided an appropriate summary description of these activities in the FSAR supplement. An example description is under "Operating Experience" in Table 3.0-1, "FSAR Supplement for Aging Management of Applicable Systems."

- (4) In these SRP-LR tables:

- Table 3.1-2, "Aging Management Programs Recommended for Reactor Vessel, Internals, and Reactor Coolant System"
- Table 3.2-2, "Aging Management Programs Recommended for Engineered Safety Features"
- Table 3.3-2, "Aging Management Programs Recommended for Aging Management of Auxiliary Systems"
- Table 3.4-2, "Aging Management Programs Recommended for Aging Management of Steam and Power Conversion System"
- Table 3.5-2, "Aging Management Programs Recommended for Containments, Structures, and Component Supports"
- Table 3.6-2, "Aging Management Programs Recommended for Electrical and Instrumentation and Control Systems"

Add new rows after each of the rows for "Appendix for GALL," to read:

<b>GALL Report Chapter/AMP</b>	<b>Program Name</b>
GALL Report Appendix B	Operating Experience for Aging Management Programs

(5) Change SRP-LR Section A.1.2.3.10, "Operating Experience," to read:

**A.1.2.3.10 Operating Experience**

1. Consideration of future plant-specific and industry operating experience relating to AMPs should be discussed. The ongoing review of operating experience may identify areas where AMPs should be enhanced or new AMPs developed. As such, an applicant should ensure that it has adequate processes to monitor and evaluate plant-specific and industry operating experience related to aging management to ensure that the AMPs are effective in managing the aging effects for which they are credited. The AMPs are informed by this review of operating experience on an ongoing basis, regardless of the AMP's implementation schedule. The ongoing review of operating experience information should provide objective evidence to support the conclusion that the effects of aging are managed adequately so that the structure- and component- intended function(s) will be maintained during the period of extended operation.
2. Currently available operating experience with existing programs should be discussed. The operating experience of existing programs, including past corrective actions resulting in program enhancements or additional programs, should be considered. A past failure would not necessarily invalidate an AMP because the feedback from operating experience should have resulted in appropriate program enhancements or new programs. This information can show where an existing program has succeeded and where it has not been fully effective in intercepting aging degradation in a timely manner. This information should provide objective evidence to support the conclusion that the effects of aging will be managed adequately so that the structure- and component-intended function(s) will be maintained during the period of extended operation.
3. Currently available operating experience applicable to new programs should also be discussed. For new AMPs that have yet to be implemented at an applicant's facility, the programs have not yet generated any operating experience. However, there may be other relevant plant-specific or generic industry operating experience that is relevant to the program elements, even though the operating experience was not identified through implementation of the new program. Thus, when developing the elements for new programs, an applicant should consider the impact of relevant operating experience from implementation of its existing AMPs and from generic industry operating experience.

- (6) Change the last row in SRP-LR Table A.1-1, "Elements of an Aging Management Program for License Renewal," to read:

<b>Element</b>	<b>Description</b>
10. Operating Experience	<p>Operating experience applicable to the AMP, including past corrective actions resulting in program enhancements or additional programs, should provide objective evidence to support the conclusion that the effects of aging will be managed adequately so that the structure- and component-intended function(s) will be maintained during the period of extended operation.</p> <p>In addition, the ongoing review of both plant-specific and industry operating experience ensures that the AMP is effective in managing the aging effects for which it is credited. The AMP is either enhanced or new AMPs are developed, as appropriate, when it is determined through the evaluation of operating experience that the effects of aging may not be adequately managed.</p>

- (7) Re-title SRP-LR Appendix A to, "General Staff Positions and Guidance," and insert a new Appendix A.4, "Operating Experience for Aging Management Programs," after page A.3-3, to read:

#### **A.4 OPERATING EXPERIENCE FOR AGING MANAGEMENT PROGRAMS**

##### **A.4.1 Background**

Operating experience is a crucial element of an effective aging management program (AMP). It provides the basis to support all other elements of the AMP and, as a continuous feedback mechanism, drives changes to these elements to ensure the overall effectiveness of the AMP. Operating experience should provide objective evidence to support the conclusion that the effects of aging are managed adequately so that the structure- and component-intended function(s) will be maintained during the period of extended operation. Under their current operating licenses, license renewal applicants are required to implement programs for the ongoing review of operating experience, such as those established in accordance with Item I.C.5, "Procedures for Feedback of Operating Experience to Plant Staff," of NUREG-0737, "Clarification of TMI Action Plan Requirements."

#### **A.4.2 Position**

The systematic review of plant-specific and industry operating experience concerning aging management and age-related degradation ensures that the license renewal AMPs are, and will continue to be, effective in managing the aging effects for which they are credited. The AMPs should either be enhanced or new AMPs developed, as appropriate, when it is determined through the evaluation of operating experience that the effects of aging may not be adequately managed. AMPs should be informed by the review of operating experience on an ongoing basis, regardless of the AMP's implementation schedule.

##### Acceptable Use of Existing Programs

Programs and procedures relied upon to meet the requirements of 10 CFR Part 50, Appendix B, and NUREG-0737, Item I.C.5, may be used for the capture, processing, and evaluation of operating experience concerning age-related degradation and aging management during the term of a renewed operating license. As part of meeting the requirements of NUREG-0737, Item I.C.5, the applicant should actively participate in the Institute of Nuclear Power Operations' operating experience program (formerly the Significant Event Evaluation and Information Network (SEE-IN) program endorsed in NRC Generic Letter 82-04, "Use of INPO SEE-IN Program"). These programs and procedures may also be used for the translation of recommendations from the operating experience evaluations into plant actions (e.g., enhancement of AMPs and development of new AMPs). While these programs and procedures establish a majority of the functions necessary for the ongoing review of operating experience, they are also subject to further review as discussed below.

##### Areas of Further Review

To ensure that the programmatic activities for the ongoing review of operating experience are adequate for license renewal, the following points should be addressed:

- The programs and procedures relied upon to meet the requirements of 10 CFR Part 50, Appendix B, and NUREG-0737, Item I.C.5, explicitly apply to and otherwise would not preclude the consideration of operating experience on age-related degradation and aging management. Such operating experience can constitute information on the structures and components identified in the integrated plant assessment; their materials, environments, aging effects, and aging mechanisms; the AMPs credited for managing the effects of aging; and the activities, criteria, and evaluations integral to the elements of the AMPs. To satisfy this criterion, the applicant should use the option described in Position 2 of SRP-LR Appendix A.2, "Quality Assurance for Aging Management Programs (Branch Technical Position IQMB-1)," to

expand the scope of its 10 CFR Part 50, Appendix B, program to include nonsafety-related structures and components.

- All revisions to NUREG-1801, “Generic Aging Lessons Learned (GALL) Report,” should be considered as a source of operating experience and evaluated accordingly. NRC and industry guidance documents and standards applicable to aging management also should be considered as sources of operating experience. There should be written plans and expectations for identifying such documents and processing them as operating experience.
- All incoming plant-specific and industry operating experience should be screened to determine whether it may involve age-related degradation or impacts to aging management activities.
- A specific identification code (i.e., “Aging”) should be used in the corrective action program to identify operating experience concerning age-related degradation applicable to the plant. A definition should be provided so that this code can be assigned consistently by plant personnel. The entries associated with this code should be periodically reviewed to determine whether trending is necessary. Any adverse trend should be entered into the corrective action program for evaluation.
- Operating experience items identified as potentially involving aging should receive further evaluation. This evaluation should specifically take into account the following: (a) systems, structures, and components, (b) materials, (c) environments, (d) aging effects, (e) aging mechanisms, (f) AMPs, and (g) the activities, criteria, and evaluations integral to the elements of the AMPs. The assessment of this information should be recorded with the operating experience evaluation. If it is found through evaluation that any effects of aging may not be adequately managed, then a corrective action should be entered into the 10 CFR Part 50, Appendix B, program to either enhance the AMPs or develop and implement new AMPs.
- The results of implementing each AMP (i.e., data from inspections, tests, analyses, etc.) should be evaluated to determine whether the effects of aging are adequately managed. These evaluations should be conducted regardless of whether the acceptance criteria of the particular AMP have been met. A determination is made as to whether the frequency of future inspections should be adjusted, whether new inspections should be established, and whether the inspection scope should be adjusted or expanded. If there is an indication that the effects of aging may not be adequately managed, then a corrective action is entered into the 10 CFR Part 50, Appendix B, program to either enhance the AMP or develop and implement new AMPs.

- Training on age-related degradation and aging management should be provided to those personnel responsible for implementing the AMPs and those personnel who may submit, screen, assign, evaluate, or otherwise process plant-specific and industry operating experience. The scope of training should be linked to the responsibilities for processing operating experience. This training should occur on a periodic basis and include provisions to accommodate the turnover of plant personnel.
- Guidelines should be established for reporting plant-specific operating experience on age-related degradation and aging management to the industry. This reporting should be accomplished through participation in the Institute of Nuclear Power Operations' operating experience program.
- Any enhancements necessary to fulfill the above criteria should be put in place no later than the date the renewed operating license is issued and implemented on an ongoing basis throughout the term of the renewed license.

The programmatic activities for the ongoing review of plant-specific and industry experience concerning age-related degradation and aging management should be described in the license renewal application, including the FSAR supplement. Alternate approaches for the future consideration of operating experience are subject to NRC review on a case-by-case basis.

#### **A.4.3 References**

1. 10 CFR Part 50, Appendix B, *Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants*, Office of the Federal Register, National Archives and Records Administration, 2011.
2. Generic Letter 82-04, "Use of INPO SEE-IN Program." March 9, 1982. U.S. Nuclear Regulatory Commission.
3. NUREG-0737, "Clarification of TMI Action Plan Requirements," U.S. Nuclear Regulatory Commission.
4. NUREG-1801, "Generic Aging Lessons Learned (GALL) Report," U.S. Nuclear Regulatory Commission.

(8) In the table on GALL Report page 6, change the last row to read:

AMP Element	Description
10. Operating Experience	<p>Operating experience applicable to the AMP, including past corrective actions resulting in program enhancements or additional programs, should provide objective evidence to support the conclusion that the effects of aging will be managed adequately so that the structure- and component-intended function(s) will be maintained during the period of extended operation.</p> <p>In addition, the ongoing review of both plant-specific and industry operating experience ensures that the AMP is effective in managing the aging effects for which it is credited. The AMP is either enhanced or new AMPs are developed, as appropriate, when it is determined through the evaluation of operating experience that the effects of aging may not be adequately managed.</p>

(9) In each of the programs in GALL Report Chapters X, "Time-Limited Aging Analyses Evaluation of Aging Management Programs under 10 CFR 54.21(c)(1)(iii)," and XI, "Aging Management Programs (AMPs)," insert under element 10, "Operating Experience," this statement:

The program is informed and enhanced when necessary through the systematic and ongoing review of both plant-specific and industry operating experience, as discussed in Appendix B of the GALL Report.

(10) Insert in the GALL Report a new Appendix B, "Operating Experience for Aging Management Programs," after page A-1, to read:

**OPERATING EXPERIENCE FOR AGING MANAGEMENT PROGRAMS**

Operating experience is a crucial element of an effective aging management program (AMP). It provides the basis to support all other elements of the AMP and, as a continuous feedback mechanism, drives changes to these elements to ensure the overall effectiveness of the AMP. Operating experience should provide objective evidence to support the conclusion that the effects of aging are managed adequately so that the structure- and component-intended function(s) will be maintained during the period of extended operation. Under their current operating licenses, license renewal applicants are required to implement programs for the ongoing review of operating experience, such as those established in accordance with Item I.C.5, "Procedures for Feedback of Operating Experience to Plant Staff," of NUREG-0737, "Clarification of TMI Action Plan Requirements."

The systematic review of plant-specific and industry operating experience concerning aging management and age-related degradation ensures that the license renewal AMPs are, and will continue to be, effective in managing the aging effects for which they are credited. The AMPs should either be enhanced or new AMPs developed, as appropriate, when it is determined through the evaluation of operating experience that the effects of aging may not be adequately managed. AMPs should be informed by the review of operating experience on an ongoing basis, regardless of the AMP's implementation schedule.

#### Acceptable Use of Existing Programs

Programs and procedures relied upon to meet the requirements of 10 CFR Part 50, Appendix B, and NUREG-0737, Item I.C.5, may be used for the capture, processing, and evaluation of operating experience concerning age-related degradation and aging management during the term of a renewed operating license. As part of meeting the requirements of NUREG-0737, Item I.C.5, the applicant should actively participate in the Institute of Nuclear Power Operations' operating experience program (formerly the Significant Event Evaluation and Information Network (SEE-IN) program endorsed in NRC Generic Letter 82-04, "Use of INPO SEE-IN Program"). These programs and procedures may also be used for the translation of recommendations from the operating experience evaluations into plant actions (e.g., enhancement of AMPs and development of new AMPs). While these programs and procedures establish a majority of the functions necessary for the ongoing review of operating experience, they are also subject to further review as discussed below.

#### Areas of Further Review

To ensure that the programmatic activities for the ongoing review of operating experience are adequate for license renewal, the following points should be addressed:

- The programs and procedures relied upon to meet the requirements of 10 CFR Part 50, Appendix B, and NUREG-0737, Item I.C.5, explicitly apply to and otherwise would not preclude the consideration of operating experience on age-related degradation and aging management. Such operating experience can constitute information on the structures and components identified in the integrated plant assessment; their materials, environments, aging effects, and aging mechanisms; the AMPs credited for managing the effects of aging; and the activities, criteria, and evaluations integral to the elements of the AMPs. To satisfy this criterion, the applicant should use the option described in NUREG-1800, "Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants," Section A.2, "Quality Assurance for Aging Management Programs (Branch Technical Position IQMB-1)," Position 2, to expand the scope of its

10 CFR Part 50, Appendix B, program to include nonsafety-related structures and components.

- All revisions to NUREG-1801, "Generic Aging Lessons Learned (GALL) Report," should be considered as a source of operating experience and evaluated accordingly. NRC and industry guidance documents and standards applicable to aging management also should be considered as sources of operating experience. There should be written plans and expectations for finding this type of document and processing it as operating experience.
- All incoming plant-specific and industry operating experience should be screened to determine whether it may involve age-related degradation or impacts to aging management activities.
- A specific identification code (i.e., "Aging") should be used in the corrective action program to identify operating experience concerning age-related degradation applicable to the plant. A definition should be provided so that this code can be assigned consistently by plant personnel. The entries associated with this code should be periodically reviewed to determine whether trending is necessary. Any adverse trend should be entered into the corrective action program for evaluation.
- Operating experience items identified as potentially involving aging should receive further evaluation. This evaluation should specifically take into account the following: (a) systems, structures, and components, (b) materials, (c) environments, (d) aging effects, (e) aging mechanisms, (f) AMPs, and (g) the activities, criteria, and evaluations integral to the elements of the AMPs. The assessment of this information should be recorded with the operating experience evaluation. If it is found through evaluation that any effects of aging may not be adequately managed, then a corrective action should be entered into the 10 CFR Part 50, Appendix B, program to either enhance the AMPs or develop and implement new AMPs.
- The results of implementing each AMP (i.e., data from inspections, tests, analyses, etc.) should be evaluated to determine whether the effects of aging are adequately managed. These evaluations should be conducted regardless of whether the acceptance criteria of the particular AMP have been met. A determination is made as to whether the frequency of future inspections should be adjusted, whether new inspections should be established, and whether the inspection scope should be adjusted or expanded. If there is an indication that the effects of aging may not be adequately managed, then a corrective action is entered into the 10 CFR Part 50, Appendix B, program to either enhance the AMP or develop and implement new AMPs.

- Training on age-related degradation and aging management should be provided to those personnel responsible for implementing the AMPs and those personnel who may submit, screen, assign, evaluate, or otherwise process plant-specific and industry operating experience. The scope of training should be linked to the responsibilities for processing operating experience. This training should occur on a periodic basis and include provisions to accommodate the turnover of plant personnel.
- Guidelines should be established for reporting plant-specific operating experience on age-related degradation and aging management to the industry. This reporting should be accomplished through participation in the Institute of Nuclear Power Operations' operating experience program.
- Any enhancements necessary to fulfill the above criteria should be put in place no later than the date the renewed operating license is issued and implemented on an ongoing basis throughout the term of the renewed license.

The programmatic activities for the ongoing review of plant-specific and industry experience concerning age-related degradation and aging management should be described in the license renewal application, including the final safety analysis report supplement. Alternate approaches for the future consideration of operating experience are subject to NRC review on a case-by-case basis.

## **APPENDIX B**

### **MARK-UP OF CHANGES TO SRP-LR SECTION A.1.2.3.10**

Mark-Up<sup>1</sup> of Changes to SRP-LR Section A.1.2.3.10

**A.1.2.3.10 Operating Experience**

1. Consideration of future plant-specific and industry operating experience relating to ~~aging management programs~~AMPs should be discussed. The ongoing Rreviews of operating experience ~~by the applicant in the future~~ may identify areas where ~~aging management programs~~AMPs should be enhanced or new ~~programs~~AMPs developed. As such, An applicant should ensure that it has adequate processes to monitor and evaluate ~~commit to a future review of~~ plant-specific and industry operating experience related to aging management to ensure that the AMPs are effective in managing the aging effects for which they are credited, ~~confirm the effectiveness of its aging management programs or indicate a need to develop new aging management programs~~. The AMPs are informed by this review of operating experience on an ongoing basis, regardless of the AMP's implementation schedule. ~~This~~The ongoing review of operating experience information should provide objective evidence to support the conclusion that the effects of aging ~~will be~~ are managed adequately so that the structure- and component-intended function(s) will be maintained during the period of extended operation.
2. Currently available ~~O~~operating experience with existing programs should be discussed. The operating experience of ~~AMPs that are~~ existing programs, including past corrective actions resulting in program enhancements or additional programs, should be considered. A past failure would not necessarily invalidate an AMP because the feedback from operating experience should have resulted in appropriate program enhancements or new programs. This information can show where an existing program has succeeded and where it has ~~failed (if at all)~~not been fully effective in intercepting aging degradation in a timely manner. This information should provide objective evidence to support the conclusion that the effects of aging will be managed adequately so that the structure- and component-intended function(s) will be maintained during the period of extended operation.
3. Currently available ~~Therefore, operating experience applicable to new programs should also be discussed.~~ For new AMPs that have yet to be implemented at an applicant's facility, the programs have not yet generated any operating experience ~~(OE)~~. However, there may be other relevant plant-specific ~~OE at the plant~~ or generic ~~OE in the industry~~ operating experience that is relevant to the AMP's program elements, even though the ~~OE operating experience~~ was not identified ~~as a result of the~~ through implementation of the new program. Thus, when developing the elements for new programs, an applicant ~~may need to~~ should consider the impact of relevant ~~OE operating experience that results from the past implementation of its existing AMPs that are existing programs and the impact of relevant from generic industry OE operating experience on developing the program elements.~~ Therefore, operating experience applicable to new programs should be discussed. ~~Additionally, an applicant should commit to a review of future plant-specific and industry operating experience for new programs to confirm their effectiveness.~~

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<sup>1</sup> In the mark-up, red or green strikethrough text indicates a deletion and blue underline text indicates an insertion. Green text indicates a move, where a double strikethrough indicates the original location of the text and a double underline indicates the final location of the moved text.

## **APPENDIX C**

### **RESOLUTION OF PUBLIC COMMENTS ON DRAFT LR-ISG-2011-05**

No.	Source (ADAMS Accession No.)	Summary of Comment	NRC Staff Response
1	Nuclear Energy Institute Letter dated October 18, 2011, Page 1 of Enclosure (ML11293A041)	Delete instances of the phrase, "or can be improved," in Itemized Change Nos. 1, 3, 6, 7, 8, and 10, like in the following excerpt: "... when the review of operating experience indicates that the programs may not be fully effective or can be improved." This phrase is open-ended and very subjective and could mean anything from correction of typographical errors and standard format fonts to more substantial comments. In addition, operating experience is a program that is designed to incorporate lessons learned and not to enhance programs or procedures just because they can be enhanced. For example, performing volumetric examinations instead of visual examinations could enhance a program, but if the existing program is effective in managing the aging effects through visual examinations, it would be unnecessary and burdensome to require different examination techniques.	The NRC staff agrees that that the phrase "or can be improved" could be interpreted subjectively and, therefore, a more objective standard is needed from which to determine when to enhance the AMPs or develop new AMPs. The most appropriate standard should be based on the adequate management of aging effects, as required under 10 CFR 54.21(a)(3) and 10 CFR 54.21(c)(1)(iii). Therefore, the phrase "or can be improved" has been deleted and language similar to the following is used throughout the LR-ISG: "The AMPs are either enhanced or new AMPs are developed, as appropriate, when it is determined through the evaluation of operating experience that the effects of aging may not be adequately managed."

No.	Source (ADAMS Accession No.)	Summary of Comment	NRC Staff Response
2	Nuclear Energy Institute Letter dated October 18, 2011, Page 2 of Enclosure (ML11293A041)	<p>In Itemized Change No. 7, where it states, "For example, the processes appropriately gather information on all the license renewal structures and components," the use of both "appropriately" and "all" could be confused to mean that system, structure, and component information may not be representative of other components and, therefore, this information could not be applied to similar components. The result would be an increase in gathering the information for each component. Since the industry does not believe this is appropriate, nor what is meant, the word "appropriately" should remain and the word "all" should be deleted.</p>	<p>The NRC staff agrees that this language should be clarified. Use of the term "gather" in this case could create confusion by implying that certain information needs to be sought out specifically under an operating experience review program. However, such an approach is in contrast to how existing operating experience programs generally function, which is in response to incoming information as it becomes available. Also, the comment correctly points out that system, structure, and component information should be applied to similar components. The circumstances described in operating experience should be considered to be representative of similar circumstances at the plant, until otherwise determined through evaluation. As suggested in this comment, the word "all" has been deleted. The language in the LR-ISG has also been further clarified to indicate that information concerning AMPs and systems, structures, and components constitutes operating experience on age-related degradation and aging management. In addition, the language has been clarified to indicate that the operating experience review processes should not preclude review of this information. The subject language also occurs in Itemized Change No. 10. As discussed in the response to Comment No. 5B, the content of Itemized Change Nos. 7 and 10 has been made consistent.</p>

No.	Source (ADAMS Accession No.)	Summary of Comment	NRC Staff Response
3	Nuclear Energy Institute Letter dated October 18, 2011, Page 3 of Enclosure (ML11293A041)	<p>In Itemized Change No. 7, the phrase “any potential source of relevant plant-specific or industry operating experience information,” is too generic and subjective. Existing plant programs specify what constitutes operating experience and what information should be reviewed for incorporation into the AMPs. This phrase could be interpreted to believe that the NRC is interested in additional information being reviewed for incorporation into the AMPs, or that the existing definitions of what constitutes operating experience should be expanded. If the NRC believes that the current items reviewed as operating experience should be expanded, then regulatory guidance should be issued to backfit a new definition. Development of this guidance may require INPO involvement because plants follow the INPO operating experience guidelines. This sentence should be deleted or rewritten to clarify that the existing definitions of what constitutes operating experience remain sufficient.</p>	<p>The NRC staff agrees that the phrase, “any potential source of relevant plant-specific or industry operating experience information,” should be clarified. The language has been revised as discussed in the response to Comment No. 21. Except as discussed in this LR-ISG, the NRC staff has determined that existing programs contain suitable examples of operating experience sources. It should be noted, however, that there is no precise list of operating experience sources. NUREG-0737, Item I.C.5, states: “Those involved with the assessment of operating experience will review information from a variety of sources,” including, “pertinent NRC or industrial assessments of operating experience.” Further, INPO’s January 1982 “Significant Event Evaluation and Information Network (SEE-IN)” program description, lists common sources, but also states, “no single source of information should be ruled out entirely.” This program description is referenced in NRC Generic Letter (GL) 82-04, “Use of INPO SEE-IN Program.” Sources of operating experience are further discussed in the NRC staff’s response to Comment No.23.</p>

No.	Source (ADAMS Accession No.)	Summary of Comment	NRC Staff Response
4	Nuclear Energy Institute Letter dated October 18, 2011, Page 4 of Enclosure (ML11293A041)	<p>The LR-ISG acknowledges the appropriateness of using generic plant operating experience review activities to identify areas where enhancement of AMPs or new AMPs may be needed. Although the industry completely agrees with this intent, some of the language in the LR-ISG could be interpreted to imply an expectation to perform additional, discrete operating experience reviews on an AMP-by-AMP basis. The industry believes that the wording, "In this regard, the staff believes that guidance on the ongoing review of operating experience for license renewal should be addressed as a generic process that is used to inform each AMP and, when necessary, to develop new AMPs," better describes the NRC's objective and should be used to replace various language throughout the document.</p>	<p>The NRC staff agrees that certain language in the LR-ISG should be clarified. Overall, this LR-ISG describes generic processes for capturing and reviewing operating experience. These processes should be used to inform the aging management activities and to enhance them when necessary. As suggested, language in the LR-ISG has been revised to clarify this intent, where appropriate. However, the LR-ISG also describes some activities which would need to be conducted on an AMP-by-AMP basis. Specifically, it would be necessary to review implementation results (e.g., data from inspections, tests, analyses) on an AMP-by-AMP basis. It may also be necessary to review each AMP individually to determine which industry guidance documents and standards are pertinent and therefore necessary to consider as operating experience.</p>

No.	Source (ADAMS Accession No.)	Summary of Comment	NRC Staff Response
5A	Nuclear Energy Institute Letter dated October 18, 2011, Page 4 of Enclosure (ML11293A041)	Itemized Change Nos. 7 and 10 provide proposed inserts for the SRP-LR and GALL Report, respectively. These proposed inserts, while slightly different from each other, both provide a description of the new expectations for the ongoing use of operating experience. In the "Discussion" section, under the "Basis for Issuing Interim Guidance" heading, the LR-ISG states that the obligation to review operating experience should be captured in a summary description in the FSAR supplement and that an example of such a summary description is provided in the LR-ISG. However, the LR-ISG does not provide an actual example of an FSAR supplement summary description. Either provide an example or revise the text to indicate that the FSAR supplement summary description should be developed based on the guidance provided in Itemized Change Nos. 7 and 10.	The NRC staff does not agree that the LR-ISG does not provide an example summary description for the FSAR supplement. To clarify, Itemized Change No. 1 provides this information. This change will include the description in SRP-LR Table 3.0-1, "FSAR Supplement for Aging Management of Applicable Systems," which contains guidance on summary descriptions for all the GALL Report AMPs. The summary description has also been revised to more completely address the content presented in Itemized Change Nos. 7 and 10.
5B	Nuclear Energy Institute Letter dated October 18, 2011, Page 5 of Enclosure (ML11293A041)	Review and make consistent the inserts to the SRP-LR and GALL Report, as described in Itemized Change Nos. 7 and 10, respectively.	The NRC staff agrees that the inserts described in Itemized Change Nos. 7 and 10 should be consistent. These inserts have been made consistent.

No.	Source (ADAMS Accession No.)	Summary of Comment	NRC Staff Response
6	Nuclear Energy Institute Letter dated October 18, 2011, Page 5 of Enclosure (ML11293A041)	Itemized Change No. 7 inserts a new Appendix A.4, "Operating Experience for Aging Management Programs," into the SRP-LR. Clarify whether this new guidance is a branch technical position or whether SRP-LR Appendix A is being changed to include more than just branch technical positions.	<p>The NRC staff agrees that clarification is needed concerning whether the new SRP-LR Section A.4 described in Itemized Change No. 7 is a branch technical position. The sections in SRP-LR Appendix A, "Branch Technical Positions," contain guidance which the NRC had developed as branch technical positions. These sections also provide generic guidance applicable to the reviews described in the body of the SRP-LR. As numerous sections in the SRP-LR direct the NRC staff reviewer to use this guidance, for conciseness, the branch technical positions have been incorporated into an appendix to the SRP-LR. Although the content of the new Section A.4 has not been developed as a branch technical position, it is appropriate to include it in the same appendix because it serves the same purposes and will be used in the same manner as the branch technical positions. In addition, the branch technical positions in SRP-LR Appendix A are updated, as necessary, and issued in revisions to the SRP-LR. To clarify that SRP-LR Appendix A includes guidance in addition to branch technical positions, it will be re-titled "General Staff Positions and Guidance." Itemized Change No. 7 has been revised to reflect this change.</p>

No.	Source (ADAMS Accession No.)	Summary of Comment	NRC Staff Response
7A	Exelon Generation Company, LLC Letter dated October 18, 2011, Page 1 of Enclosure (ML11298A171)	The LR-ISG clarifies the need for license renewal applicants and holders of renewed licenses to conduct future and ongoing reviews of internal and external operating experience to ensure that the AMPs credited for license renewal remain effective in managing aging effects over the term of the renewed license. Exelon agrees with this expectation.	The NRC staff agrees with this comment. However, no changes to the LR-ISG have been made in response to this comment because it supports the overall intent of the LR-ISG.
7B	Exelon Generation Company, LLC Letter dated October 18, 2011, Page 1 of Enclosure (ML11298A171)	The LR-ISG acknowledges the appropriateness of using generic plant operating experience review activities, such as those implemented to address NUREG-0737, Item I.C.5, to identify areas where AMPs may be deficient or new AMPs may be needed. However, some of the language in the LR-ISG could be interpreted to imply an expectation to perform future, discrete operating experience reviews on an AMP-by-AMP basis, rather than ensuring that operating experience reviews performed as part of ongoing station programs consider the adequacy of all credited AMPs and establish actions for improvements to existing programs or establishment of new programs, if needed. A specific example of language that could be interpreted in this way is: "... the NRC staff's intent is for applicants to obligate themselves to review operating experience on an ongoing basis as part of their AMPs," as stated in the "Discussion" section, under "Basis for Issuing Interim Guidance" heading. Also, the addition of the new text, "As discussed in Appendix B of the GALL Report, the ongoing effectiveness of the program is ensured through the systematic review of both plant specific and industry operating experience," into each of the programs described in GALL Report Chapters X and XI, as described in Itemized Change No. 9, could be interpreted to require AMP-by-AMP operating experience reviews.	Addressed in the response to Comment No. 4.

No.	Source (ADAMS Accession No.)	Summary of Comment	NRC Staff Response
7C	<p>Exelon Generation Company, LLC Letter dated October 18, 2011, Page 1 of Enclosure (ML11298A171)</p>	<p>This sentence in Itemized Change No. 10, "In addition, the processes [i.e., processes for review of operating the experience] include the AMPs credited for managing the effects of aging, and the activities under these AMPs (e.g., inspection methods, preventive actions, evaluation techniques, etc.);" could introduce confusion relative to the method of performing operating experience reviews. This language, under the "Basis for Issuing Interim Guidance" heading in the "Discussion" section, more appropriately describes the objective of the LR-ISG, and similar language should be used throughout the document: "... the staff believes that guidance on the ongoing review of operating experience for license renewal should be addressed as a generic process that is used to inform each AMP and, when necessary, to develop new AMPs."</p>	<p>Addressed in the response to Comment No. 4.</p>

No.	Source (ADAMS Accession No.)	Summary of Comment	NRC Staff Response
8	Exelon Generation Company, LLC Letter dated October 18, 2011, Page 2 of Enclosure (ML11298A171)	<p>Language similar or identical to this example from Itemized Change No. 1 presents a concern: "The programs are either enhanced or new programs are developed when the review of operating experience indicates that the programs may not be fully effective or can be improved." The concern is that, rather than providing guidance to the NRC reviewer that operating experience should be used to provide reasonable assurance that the AMP will manage aging effects throughout the period of extended operation, the proposed language suggests that if any change can possibly be made to the AMP, it should be made. This guidance should be modified because it limits the ability of the licensee to evaluate operating experience and make decisions based on its significance. While achieving excellence is an industry objective, Exelon believes that the LR-ISG should invoke the reasonable assurance standard. Therefore, the following language should instead be used: "The programs are either enhanced or new programs are developed when the review of operating experience indicates that the existing programs do not provide reasonable assurance that the relevant aging effects are being adequately managed."</p>	<p>The NRC staff does not agree that it is appropriate to use the "reasonable assurance" standard as suggested in this comment. The NRC's license renewal regulations use the words "reasonable assurance" in 10 CFR 54.29, which describes the standards by which the NRC may issue a renewed operating license. In this application, the finding of reasonable assurance is required of the NRC, not of the applicant. However, the reasonable assurance finding is based, in part, on the demonstration by the applicant that the effects of aging will be adequately managed as required by 10 CFR 54.21(a)(3) and 10 CFR 54.21(c)(1)(iii). A standard based on this language is used throughout the LR-ISG, as described in the response to Comment No. 1.</p>
9	Exelon Generation Company, LLC Letter dated October 18, 2011, Page 3 of Enclosure (ML11298A171)	<p>In the "Discussion" section, under "Basis for Issuing Interim Guidance" heading, the LR-ISG indicates that the obligation to perform ongoing reviews of operating experience should be captured in a summary description in the license renewal FSAR supplement. This section of the LR-ISG also indicates, in part, that the LR-ISG provides an example of such a summary description. Either confirm that the new row for SRP-LR Table 3.0-1, as described in Itemized Change No. 1, is the intended example FSAR summary description or, if not, further clarify.</p>	<p>Addressed in the response to Comment No. 5A.</p>

No.	Source (ADAMS Accession No.)	Summary of Comment	NRC Staff Response
10	Exelon Generation Company, LLC Letter dated October 18, 2011, Page 3 of Enclosure (ML11298A171)	Itemized Change No. 7, states that the new SRP-LR insert titled, "Operating Experience for Aging Management Programs," should become a new part (Section A.4) of SRP-LR Appendix A. Is this new guidance a "Branch Technical Position" or is SRP-LR Appendix A being changed to include more than just branch technical positions?	Addressed in the response to Comment No. 6.
11A	Nuclear Energy Institute Letter dated December 15, 2011, Page 1 of Attachment 1 (ML11354A228)	In the "Discussion" section, under the "Basis for Issuing Interim Guidance" heading, and in Itemized Change Nos. 7 and 10, revise the phrase, "no later than the date the renewed license is issued and then implemented on an ongoing basis throughout the term of the renewed license," to "prior to the period of extended operation," to make it consistent with implementation of other license renewal requirements. The GALL Report provides guidelines for AMPs during the period of extended operation. As such, the phrase "no later than the date the renewed license is issued" is irrelevant in the GALL Report.	<p>The NRC staff does not agree that this phrase should be changed as proposed in the comment. Although 10 CFR 54.21(a)(3) and 10 CFR 54.21(c)(1)(iii) require a demonstration that the effects of aging will be adequately managed for the period of extended operation, these requirements do not preclude the possibility that some actions may need to be taken in the period between the renewed license issuance date and the start of the period of extended operation in order to adequately manage the effects of aging during the period of extended operation. Further, in accordance with 10 CFR 54.31(c), a renewed license supersedes the operating license issued under 10 CFR Part 50. Therefore, any actions identified as necessary to manage the effects of aging become obligations under a renewed operating license and implementation of these actions is not necessarily constrained to the period of extended operation.</p> <p>Further, the statement in the comment that, implementation "no later than the date the renewed license is issued" is irrelevant in the GALL Report, is not accurate. In fact, the</p>

No.	Source (ADAMS Accession No.)	Summary of Comment	NRC Staff Response
			<p>GALL Report identifies many actions that should be taken after the renewed license is issued and before entering the period of extended operation. Just a few examples are in the following GALL Report AMPs:</p> <ul style="list-style-type: none"><li>• XI.M9, "BWR Vessel Internals," which states that, "One example of a supplemental examination is VT-1 examination of ASME Code, Section XI, IWA-2210. The initial inspection is performed either prior to or within 5 years after entering the period of extended operation."</li><li>• XI.M30, "Fuel Oil Chemistry," which states that, "At least once during the 10-year period prior to the period of extended operation, each diesel fuel tank is drained and cleaned, the internal surfaces are visually inspected (if physically possible) and volumetrically inspected if evidence of degradation is observed during visual inspection, or if visual inspection is not possible."</li><li>• XI.M33, "Selective Leaching," which states that, "The visual inspection and hardness measurement or other mechanical examination techniques, such as destructive testing (when the opportunity arises), chipping, or scraping, is a one-time inspection conducted within the last 5 years prior to entering the period of extended operation."</li></ul>

No.	Source (ADAMS Accession No.)	Summary of Comment	NRC Staff Response
11B	<p>Nuclear Energy Institute Letter dated December 15, 2011, Page 1 of Attachment 1 (ML11354A228)</p>	<p>The LR-ISG should be withdrawn because the six programmatic enhancements described in Itemized Change Nos. 7 and 10 are clearly a backfit to the existing 10 CFR Part 50 period of operation. These changes are also inconsistent with the intent of the operating experience program, as stated in GL 82-04, for both the current and extended period of operations. Further, current operating experience practices under 10 CFR Part 50 encompass the intent of these programmatic changes. The industry strongly believes that a backfit analysis would be required if the NRC wants to change the operating experience program under 10 CFR Part 50. The industry also believes that GL 82-04 would require revision. GL 82-04 states that the INPO operating experience program is acceptable to the NRC staff with no additional review required, and it strongly encourages all utilities to participate in the program. The generic letter also acknowledges that the INPO program relieves individual plants of the necessity of setting up large staffs to obtain and screen large volumes of raw data pertaining to operating experience throughout the industry. Implementation of the programmatic changes described in the LR-ISG will require additional burden with no nexus to safety.</p>	<p>The purpose of implementing the activities described in the LR-ISG, beginning when the renewed license is issued, is to ensure the full consideration of available information so that the aging management activities are appropriately informed.</p> <p>The NRC staff does not agree that the LR-ISG should be withdrawn. As stated in the "Backfitting Discussion" section, this LR-ISG does not constitute backfitting as defined in 10 CFR 50.109(a)(1); therefore, the NRC staff is not required to prepare a backfit analysis associated with this LR-ISG. Moreover, this LR-ISG provides guidance on implementation of the license renewal requirements in 10 CFR Part 54; it does not apply to implementation of 10 CFR Part 50 requirements. In accordance with 10 CFR 54.31(c), a renewed license supersedes the operating license previously in effect and incorporates those activities identified as necessary for managing the effects of aging. To the extent that this comment argues that the LR-ISG is a backfit to "the existing 10 CFR Part 50 period of operation," that period is superseded by a renewed operating license.</p> <p>The NRC staff has determined that operating experience review activities conducted under an operating license may not be adequate to address age-related degradation issues and thus need further review for license renewal. Therefore, the NRC staff does not agree with the broad statement that current operating experience practices under 10 CFR Part 50</p>

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			<p>encompass the intent of the LR-ISG. The areas described in the LR-ISG have a nexus to safety because they are an element of the programs relied on to manage the effects of aging on structures and components subject to an AMR so that the intended function(s) will be maintained consistent with the CLB for the period of extended operation.</p> <p>Further, the NRC staff does not agree that either the INPO operating experience program or its endorsement in GL 82-04 require revision. This LR-ISG describes actions to be accomplished by a license renewal applicant, not INPO. As stated in GL 82-04, "Participation in [the INPO operating experience program] does not relieve a utility from taking those actions specific to the utility's nuclear unit."</p>
12	<p>Nuclear Energy Institute Letter dated December 15, 2011, Page 2 of Attachment 1 (ML11354A228)</p>	<p>In the "Discussion" section, under the "Basis for Issuing Interim Guidance" heading, add the words "as required" after "augmented" in this sentence: "Notwithstanding the continued use of existing programmatic activities for the ongoing review of operating experiences, there are several areas where these activities should be augmented for license renewal." As written, this sentence is not worded appropriately because it incorrectly assumes that all applicant programs do not already include the areas described as needing augmentation for license renewal.</p>	<p>The NRC staff agrees that the subject sentence should be clarified. Any activities described in the LR-ISG which are already being implemented by an applicant do not constitute an enhancement or augmentation to its existing processes. However, the applicant should still continue to conduct these activities under a renewed operating license and provide plans to do so through a summary description in the FSAR supplement required by 10 CFR 54.21(d). The subject language has been clarified to indicate that augmentations may be needed for license renewal.</p>
13	<p>Nuclear Energy Institute</p>	<p>The LR-ISG continues to espouse the position that the</p>	<p>The NRC staff does not agree that the GALL</p>

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	<p>Letter dated December 15, 2011, Page 2 of Attachment 1 (ML11354A228)</p>	<p>GALL Report is operating experience, which it is not. The GALL Report documents the NRC's recommendations to address operating experience. There is no unique operating experience related to aging identified in the GALL Report. Also, in the "Discussion" section, under the "Basis for Issuing Interim Guidance" heading, the discussion beginning with "Generally these kinds of documents ..." is too vague to be actionable or enforceable. Change the affected section of the paragraph to: "The GALL report is based on operating experience. As such, it is expected that the operating experience in the GALL Report will already have been identified and evaluated."</p>	<p>Report does not constitute operating experience. The NRC staff's position that the GALL Report is operating experience is consistent with the position described in NUREG-0737, Item I.C.5. This item states that, "Those involved in the assessment of operating experience will review information from a variety of sources. These include operating information from the licensee's own plant(s), publications such as [Inspection and Enforcement] Bulletins, Circulars, and Notices, and pertinent NRC or industrial assessments of operating experience." The comment correctly points out that the GALL Report documents the NRC's recommendations to address operating experience. These recommendations are developed with input from stakeholders, including the industry. In addition, the GALL Report is also the principal NRC guidance document related to aging management. On this basis, the GALL Report constitutes a pertinent NRC assessment of operating experience and warrants review as a source of operating experience.</p> <p>In addition, the NRC staff disagrees with the comment that the discussion beginning with "Generally these kinds of documents ..." is too vague to be actionable or enforceable. The NRC contends that this statement is also consistent with NUREG-0737, Item I.C.5, which states that operating experience is to be reviewed from a variety of sources (i.e., operating experience should not be limited to a list of prescribed sources). As some industry guidance documents and</p>

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			standards may constitute a "pertinent NRC or industrial assessments of operating experience" related to aging, the applicant should have a plan in place to identify such documents and process them as operating experience. This intent is described in Itemized Change Nos. 7 and 10.
14	Nuclear Energy Institute Letter dated December 15, 2011, Page 3 of Attachment 1 (ML11354A228)	Delete the "Newly Identified Systems, Structures, and Components Under 10 CFR 54.37(b)" section. The discussion in this section is confusing. It seems obvious that an operating experience review is not a system, structure, or component, newly identified or otherwise. Also, the meaning of the second sentence is not apparent.	The NRC staff does not agree that this section should be deleted. The NRC staff developed this LR-ISG in accordance with the LR-ISG Process, Revision 2, for which a notice of availability was published in the <i>Federal Register</i> on June 22, 2010 (75 FR 35510). Under this process, the NRC staff evaluates and documents its determinations as to whether an LR-ISG meets the provisions of 10 CFR 54.37(b). Accordingly, the "Newly Identified Systems, Structures, and Components Under 10 CFR 54.37(b)" section documents the NRC's determination that the content of the LR-ISG does not involve newly identified systems, structures, or components. To clarify, the intent of the second sentence is to identify that, because the LR-ISG does not address any newly identified systems, structures, or components, no action in accordance with 10 CFR 54.37(b) is required of renewed license holders.
15A	Nuclear Energy Institute Letter dated December 15, 2011, Page 3 of Attachment 1 (ML11354A228)	The paragraphs described in Itemized Change No.3 mostly apply to the generic process for the review of operating experience. These paragraphs should not be included in each technical review section as suggested. Discussion related to the generic operating experience	The NRC staff does not agree that this discussion should only be provided in one location. Itemized Change No. 3 concerns the NRC staff's procedures in the SRP-LR for review of the applicant's aging

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		<p>review process should only be provided in one location, which is consistent with the statement in the "Discussion" section, under the "Basis for Issuing Interim Guidance" heading, that, "Therefore, the staff believes that the SRP-LR and the GALL Report should address the ongoing review of operating experience in the same fashion as the quality assurance program." The sentence stating that, "The applicant's AMPs should contain the element of operating experience," is all that is needed in each of the individual sections referenced in Itemized Change No. 3.</p>	<p>management review results. This change provides new review procedures related to the applicant's approach for reviewing operating experience on an ongoing basis. It is necessary to repeat these review procedures in each section identified in the change because SRP-LR Chapter 3 divides the review of the applicant's aging management review results among six technical areas, and the ongoing review of operating experience applies generically to each of these areas. However, these sections are summary in nature and direct the reviewer to one location, the new Section A.4 described in Itemized Change No. 7, which provides details for conducting the review.</p> <p>This approach is similar to how the SRP-LR addresses the review of quality assurance, which also generically applies to all six of the technical areas in SRP-LR Chapter 3. For example, the review of quality assurance for aging management is addressed in SRP-LR Sections 3.1.2.2.15, 3.2.2.2.7, 3.3.2.2.6, 3.4.2.2.4, 3.5.2.2.3, and 3.6.2.2.4, which all direct the reviewer to SRP-LR Section A.2, "Quality Assurance for Aging Management Programs (Branch Technical Position IQMB-1)." Therefore, the changes described in Itemized Change No. 3 address the ongoing review of operating experience in the same manner as the review of the quality assurance program.</p>

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15B	Nuclear Energy Institute Letter dated December 15, 2011, Page 4 of Attachment 1 (ML11354A228)	There is no guidance provided regarding the expected content of the operating experience element in each AMP description.	The NRC staff does not agree that the LR-ISG should provide guidance on the content of AMP descriptions in the license renewal application. Consistent with the guidance in this LR-ISG, the license renewal application should describe how operating experience will be reviewed on an ongoing basis and used to inform the AMPs or develop new AMPs, as necessary. The NRC staff's response to Comment No. 17 provides some guidance as to how an applicant may prepare its program descriptions.
16	Nuclear Energy Institute Letter dated December 15, 2011, Page 4 of Attachment 1 (ML11354A228)	Itemized Change No. 4, which adds the operating experience review program to the lists of AMPs in various SRP-LR sections, is inappropriate because the operating experience process, as conceived in the LR-ISG, is intended to inform AMPs. The process itself, however, is not an AMP.	The NRC staff does not agree that it is inappropriate to include the operating experience review activities in the lists of AMPs identified in Itemized Change No. 4. The SRP-LR tables listed in Itemized Change No. 4 identify programs for managing the effects of aging for the various areas of plant systems, structures, and components in SRP-LR Chapter 3. For example, SRP-LR Table 3.1-2, "Aging Management Programs Recommended for Reactor Vessel, Internals, and Reactor Coolant System," includes the AMP described in GALL Report Section XI.M2, "Water Chemistry." Although these tables primarily include AMPs, they also include other activities for managing the effects of aging. For example, all of the tables include the GALL Report Appendix, "Quality Assurance for Aging Management Programs." As described in SRP-LR Section A.2, "Quality Assurance for Aging

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			<p>Management Programs (Branch Technical Position IQMB-1),” the quality assurance activities may be used by the applicant to address the “corrective actions,” “confirmation process,” and “administrative controls,” program elements for all AMPs. Similarly, to manage the effects of aging, the ongoing operating experience review activities described in the LR-ISG may be used to address the “operating experience” program element for all AMPs. Therefore, it is appropriate to include “Operating Experience for Aging Management Programs” in SRP-LR Tables 3.1-2, 3.2-2, 3.3-2, 3.4-2, 3.5-2, and 3.6-2, as described in Itemized Change No. 4.</p>
17	<p>Nuclear Energy Institute Letter dated December 15, 2011, Page 4 of Attachment 1 (ML11354A228)</p>	<p>Delete paragraph 1 in Itemized Change No. 5. Generally, SRP-LR Section A.1.2.3 describes the content of the elements of an AMP. The ongoing review of operating experience is not an element of individual AMPs; it is a common process applicable to all AMPs. It is inefficient to suggest that the operating experience review process be described in each AMP of a license renewal application. This information should be reviewed in one place, not in the operating experience element of each individual AMP.</p>	<p>The NRC staff does not agree that paragraph 1 in Itemized Change No. 5 should be deleted. As currently described in SRP-LR Section A.1.2.3.10, the future consideration of operating experience constitutes, in part, the “operating experience” element of an AMP. In Itemized Change Nos. 7 and 10, the LR-ISG describes programmatic activities for the ongoing review of operating experience. Implementation of these activities satisfies the criterion in SRP-LR Section A.1.2.3.10 with respect to the future consideration of operating experience and, as such, these activities may be credited in any individual AMP to meet this criterion. However, this guidance does not preclude the use of other activities, whether program-specific or different from those described in Itemized Change Nos. 7 and 10, to meet this criterion.</p>

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			<p>SRP-LR Section A.1, "Aging Management Review – Generic (Branch Technical Position RLSB-1)," addresses the aging management demonstration not specifically addressed in SRP-LR Chapters 3 and 4 (i.e., it used for the review of "plant-specific" AMR results or those AMR results not consistent with or not addressed in the GALL Report). The NRC staff will use this guidance to assess the adequacy of other approaches to the future consideration of operating experience. Therefore, the paragraph described in this comment is necessary and has not been deleted as suggested.</p> <p>Also, to clarify, this LR-ISG does not suggest that it is necessary to describe the details of a common operating experience review process in each AMP crediting the process. Therefore, for efficiency, an applicant may describe the details of such a process in one section of its application. If this approach is used, then the application should also include a short reference to this description in the "operating experience" discussion of each AMP which credits the process. For example: "The process for incorporation of future plant-specific and industry operating experience for this program is discussed in Section B.1.4" (where LRA Section B.1.4 discusses the ongoing operating experience review activities common to all AMPs).</p>

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18	Nuclear Energy Institute Letter dated December 15, 2011, Page 4 of Attachment 1 (ML11354A228)	Delete the words "currently available" at the beginning of paragraphs 2 and 3 in Itemized Change No. 5. These words are redundant and unnecessary. It is difficult to comprehend how one would discuss operating experience that is not currently available.	The NRC staff does not agree that these words should be deleted. These words were inserted to better differentiate between the paragraph in SRP-LR Section A.1.2.3.10 which applies to future operating experience and those paragraphs which apply to historical operating experience. These words help to provide clarity on the context of these two paragraphs and, therefore, the words have been retained.
19	Nuclear Energy Institute Letter dated December 15, 2011, Page 5 of Attachment 1 (ML11354A228)	Revise paragraph 3 in Itemized Change No. 5 to acknowledge the significance of operating experience in the GALL Report for new AMPs. For these new AMPs, operating experience described under the "operating experience" program element is often the most relevant operating experience related to the program. This operating experience identifies the potential need for the AMP and demonstrates its likely effectiveness at a specific plant. The subject paragraph should acknowledge the significance of operating experience in the GALL Report for cases where a new AMP has no relevant plant-specific operating experience.	The NRC staff does not agree that this paragraph should be revised to acknowledge the significance of operating experience in the GALL Report for new AMPs. Itemized Change No. 5 affects the content of SRP-LR Section A.1. The purpose of this section is to address the aging management demonstration not specifically addressed in SRP-LR Chapters 3 and 4 (i.e., it is used for the review of "plant-specific" aging management review results, or those aging management review results not consistent with or not addressed in the GALL Report). Therefore, it would not be appropriate to associate the content of this section with the GALL Report.
20	Nuclear Energy Institute Letter dated December 15, 2011, Page 5 of Attachment 1 (ML11354A228)	Delete this sentence in Itemized Change No. 7: "Operating experience is a very important element of an effective aging management program (AMP)." While this statement is true, it fails to acknowledge the extent to which operating experience is ingrained in the GALL Report AMPs. Each AMP is based on relevant operating experience accrued over decades of nuclear power plant	The NRC staff does not agree that this sentence should be deleted. This comment accurately points out that operating experience is ingrained in the GALL Report AMPs. The elements of these AMPs, such as "scope of program," "preventive actions," "parameters monitored or inspected,"

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		<p>operation. Rarely does plant-specific operating experience significantly impact an AMP. Therefore, this statement adds no value and leaves the industry wondering why it is used.</p>	<p>“detection of aging effects,” monitoring and trending,” and “acceptance criteria,” have been developed, in part, in response to operating experience. However, given the importance of operating experience, the NRC staff has determined that the subject sentence should be revised to better reinforce this concept, rather than to delete it as the comment suggests. Therefore, this statement has been revised to: “Operating experience is a very important element of an effective aging management program (AMP) because it forms the foundation for all other elements of the AMP.” The subject language also occurs in Itemized Change No. 10. As discussed in the response to Comment No. 5B, the content of Itemized Change Nos. 7 and 10 has been made consistent.</p> <p>Further, although the GALL Report AMPs are based on operating experience, crediting these programs does not negate the need for an applicant to review plant-specific operating experience or operating experience after publication of the GALL Report. As discussed in the GALL Report, in the “Application of the GALL Report” section, if an applicant takes credit for a program in the GALL Report, it is incumbent on the applicant to ensure that the conditions and operating experience at the plant are bounded by the conditions and operating experience for which the GALL Report program was evaluated, otherwise it is incumbent on the applicant to augment the GALL Report program as appropriate.</p>

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21	<p>Nuclear Energy Institute Letter dated December 15, 2011, Page 5 of Attachment 1 (ML11354A228)</p>	<p>The industry strongly recommends that the NRC withdraw the LR-ISG because the bullets in Itemized Change No. 7 following the statement, "To this end, the applicant should ensure that its processes adequately address the following points," are vague and difficult to interpret consistently. It will be difficult to implement or enforce these items. Also, interpretations could be far-reaching. For example, the first bullet states that the processes should appropriately gather information on all the license renewal structures and components identified in the integrated plant assessment, and their materials, environments, aging effects, and aging mechanisms. This is a lot of information to gather. As another example, the second bullet states that programs and procedures should include any potential source of relevant plant-specific or industry operating experience information. There may be a lot of "potential" sources of relevant information depending on the outlook of each individual.</p>	<p>The NRC staff does not agree that the LR-ISG should be withdrawn. The language on gathering information on all the license renewal structures and components has been clarified, as discussed in the response to Comment No. 2. The NRC staff's response to Comment No. 23 addresses the portion of this comment on potential sources of operating experience.</p> <p>In addition, most of the subject bullets have been removed based on the NRC staff's determination that their intent is adequately captured under existing programs established in accordance with NUREG-0737, Item I.C.5, and 10 CFR Part 50, Appendix B. The LR-ISG has been revised to credit activities under both of these programs without the need for further review. These changes better focus the LR-ISG on those areas where additional review is necessary to ensure that the operating experience review activities are adequate to address operating experience concerning age-related degradation and aging management.</p>

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22	Nuclear Energy Institute Letter dated December 15, 2011, Page 6 of Attachment 1 (ML11354A228)	The industry strongly recommends that the NRC withdraw the LR-ISG because as a whole, and in particular the bullets characterized as enhancements in Itemized Change No. 7, are full of vague, subjective wording, which will be difficult, if not impossible, to implement and consistently enforce. Example phrases are: "appropriately capture," "broadly identify and trend issues," and "ensure an adequate depth and breadth of component, material, environment, and aging effect combinations." Data is relatively easy to trend; it is not so clear what to "trend issues" means.	The NRC staff does not agree that the LR-ISG should be withdrawn. The LR-ISG describes a framework acceptable to the NRC staff for the consideration of operating experience under a renewed operating license. As a framework, the details of implementation are to be developed by each individual applicant. The NRC staff does agree that certain words or phrases in the LR-ISG could be interpreted subjectively, like "appropriate" and "adequate." However, these statements only warrant clarification; where appropriate, this type of language has been deleted or re-worded. Beyond these clarifications, a sufficient basis has not been provided to justify a complete withdrawal of the LR-ISG.

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23	Nuclear Energy Institute Letter dated December 15, 2011, Page 6 of Attachment 1 (ML11354A228)	<p>The industry strongly recommends that the NRC withdraw the LR-ISG. However, at a minimum, the description on consideration of guidance documents and other publications, when they contain lessons learned applicable to aging management, in Itemized Change No. 7, should be deleted or revised to read: "Guidance documents and other publications, when they contain lessons learned applicable to aging management, are considered as operating experience and evaluated accordingly when enhancing or creating new AMPs. Examples of such documents are EPRI chemistry guideline revision, ASME Code changes, and revisions to NUREG-1801, 'Generic Aging Lessons Learned (GALL) Report.'" It is unclear as to what is considered a guidance document that contains lessons learned and there is not enough information in the LR-ISG to keep the scope from becoming a "Pandora's box." This description could include all the documents published by outside organizations which licensees may not have access to, nor be aware of, nor have the ability to review. All revisions to standards include lessons learned and this statement could mean that the industry needs to incorporate all the latest standards applicable to its sites. This bullet seems to require evaluation of guidance documents and other publications that the NRC believes to provide lessons learned during the identification of operating experience. However, as currently written, other relevant plant-specific or industry operating experience information is ambiguous and may include many documents which are outside of the current industry practices and those endorsed in GL 82-04.</p>	<p>The NRC staff does not agree that the LR-ISG should be withdrawn or that the subject language should be deleted or revised as proposed in the comment. As discussed in the response to Comment No. 3, neither NUREG-0737, Item I.C.5, nor the INPO operating experience program endorsed by GL 82-04, contain an explicit listing of all sources of operating experience. However, like this LR-ISG, they do provide a framework for the kind of information that should be considered as a source of operating experience. Applicant personnel, through their knowledge of their AMPs and involvement in industry research programs, working groups, etc., should have sufficient opportunities to be made aware of new information on age-related degradation and aging management, and should be able to determine whether this new information warrants review under the operating experience program. Therefore, as discussed in this LR-ISG, it is not unreasonable for applicants to have written plans and expectations to this effect. Also, the purpose of the operating experience program is to facilitate the capture and evaluation of new information, not to require conformance with new standards. Changes to plant activities are made only in response to the applicant's evaluations.</p>
24A	Nuclear Energy Institute Letter dated December 15, 2011, Page 7 of Attachment 1	<p>In the bullet in Itemized Change Nos. 7 and 10 beginning with the sentence, "Evaluations of all plant-specific and industry operating experience include assessments of potential aging management impacts," change the</p>	<p>The NRC staff does not agree that the language should be changed as proposed. The subject bullet in the LR-ISG concerns specific information, such as materials,</p>

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	(ML11354A228)	<p>language to the following: "Evaluation of plant specific and industry operating experience that has been identified as containing issues concerning age-related degradation shall be evaluated for potential aging management impacts. These evaluations should consider the impact of the aging on the effectiveness of the AMP to manage aging." The application of this bullet to the identification of operating experience with aging management impacts, or the evaluation of AMP enhancements or new AMPs, needs to be clarified. Use of the word "all" may not apply to every evaluation of plant-specific and industry operating experience, as there will be some operating experience which does not contain aging issues. Evaluations should apply to plant-specific and industry operating experience that has been identified as containing issues associated with aging. The evaluations may consider aging mechanisms, but need to evaluate management of the aging effects.</p>	<p>environments, and aging effects, which should be assessed when evaluating operating experience related to aging. Assessment of this information, to the fullest extent possible, is needed to determine the extent to which the operating experience may impact the aging management activities. This same information is also assessed in the aging management reviews conducted by applicants when preparing their license renewal applications. The suggested language in this comment has not been incorporated into the LR-ISG because it would result in the replacement of these specific assessment criteria with a more general assessment of aging impacts, which could result in a less complete and effective evaluation.</p> <p>The NRC staff does agree, however, that clarification is necessary because not all plant-specific or industry operating experience items will pertain to age-related degradation. Therefore, it is not necessary to evaluate all operating experience with respect to the age-related assessment criteria. However, all operating experience should be screened to determine whether it has the potential to involve age-related degradation. If this potential exists, the operating experience should be reviewed in accordance with the assessment criteria described above. The LR-ISG has been revised to indicate that it is acceptable to screen incoming operating experience items to determine if they potentially concern age-related degradation and then to assess them</p>

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24B	Nuclear Energy Institute Letter dated December 15, 2011, Page 8 of Attachment 1 (ML11354A228)	In Itemized Change Nos. 7 and 10, remove the statement that, "... evaluations are documented and retained in an auditable and retrievable form." All plant evaluations require documentation and are retained in accordance with the current programs they are evaluated under. To specifically call this item out for retention and documentation raises a question as to whether the NRC is looking for more than that which is accomplished under established major plant programs. If so, then this item is a backfit and should be evaluated as such; if not, then its mention only causes confusion.	The NRC staff agrees that this statement should be removed. The statement has been removed for the reasons discussed in the NRC staff's response to Comment No. 21. Also, to clarify, the LR-ISG has been revised to better describe what should be documented in evaluations of operating experience involving potential aging impacts. Specifically, the evaluation should document how the evaluation considered the applicable (a) systems, structures, and components, (b) materials, (c) environments, (d) aging effects, (e) aging mechanisms, (f) AMPs, and (g) the activities, criteria, and evaluations integral to the elements of the AMPs. Further, as stated in the "Backfitting Discussion" section, the issuance of this LR-ISG does not constitute backfitting as defined in 10 CFR 50.109(a)(1); therefore, the NRC staff is not required to prepare a backfit analysis associated with this LR-ISG.
25	Nuclear Energy Institute Letter dated December 15, 2011, Page 9 of Attachment 1 (ML11354A228)	In Itemized Change No. 7, delete all discussion of training specific to aging management and age-related degradation. This training is unnecessary. It places an undue emphasis on operating experience potentially involving age-related degradation. Operating experience review personnel are trained and qualified to review operating experience items and assign them to the appropriate plant personnel, regardless of whether they involve age-related degradation. Operating experience involving age-related degradation seems no more important than operating experience involving maintenance or operational events. This undue	The NRC staff does not agree that the description of training is unnecessary. Given that the primary focus of the license renewal requirements in 10 CFR Part 54 is on aging management, plant personnel involved with operating experience should be adequately indoctrinated on the subject. This indoctrination, through training, will ensure that the appropriate plant personnel have a sufficient knowledge base from which to help them successfully identify, process, and evaluate operating experience with the

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		<p>emphasis on operating experience involving age-related degradation may well divert resources from the evaluation of more significant operating experience items and result in a net decrease in plant safety. Also, the whole discussion of training seems to prescribe the desired licensee response, which is uncommon for anything other than specific, well-defined technical issues.</p>	<p>potential to concern age-related degradation. However, the NRC staff recognizes that aging is a continuous process not unique to license renewal, and therefore applicants may already have training programs which address aging issues. These existing training activities may be credited to meet the intent of the guidance in this LR-ISG.</p> <p>Also, the framework outlined in this LR-ISG emphasizes operating experience related to aging, consistent with the focus of the license renewal requirements. However, it should not be implied from this LR-ISG that operating experience related to aging is more important than operating experience related to other areas of plant operation. As discussed in the LR-ISG, all operating experience should be processed through those programs established in accordance with NUREG-0737, Item I.C.5, and 10 CFR Part 50, Appendix B. These programs include provisions for assessing the potential significance of operating experience and addressing it in a timely manner. Therefore, applicants implementing activities consistent with this LR-ISG should not be diverting attention from the most safety-significant operating experience.</p> <p>The response to Comment No. 26 addresses the portion of this comment related to the prescriptiveness of the training discussion.</p>

No.	Source (ADAMS Accession No.)	Summary of Comment	NRC Staff Response
26	Nuclear Energy Institute Letter dated December 15, 2011, Page 9 of Attachment 1 (ML11354A228)	<p>In Itemized Change No. 7, delete everything after the first sentence in the paragraph on additional training for personnel who oversee and implement the aging management activities. This discussion describes specific training for the review of operating experience, which seems to go well beyond the level of detail typical of NRC guidance. This discussion should at most specify that personnel reviewing operating experience be qualified to perform the review and identification of operating experience. It should be up to the licensee to determine training requirements and the levels of review. This approach is no different than AMPs which rely on qualified individuals in accordance with industry standards.</p>	<p>The NRC staff does not agree that this language should be deleted. This LR-ISG identifies the need for training on age-related degradation and aging management for those plant personnel who screen, assign, evaluate, and submit plant-specific and industry operating experience information. The specific need for this training is further discussed in response to Comment No. 25. However, the NRC staff recognizes that applicants may have different approaches to providing this training and the LR-ISG should provide some flexibility in this regard. Therefore, the overall description of training in Itemized Change No. 7 has been reduced and made less prescriptive, so that it focuses only on the most important aspects of this training. Applicants implementing the guidance in this LR-ISG should develop the details of their training programs within this framework, and the NRC staff will review these details on a case-by-case basis. The subject language also occurs in Itemized Change No. 10. As discussed in the response to Comment No. 5B, the content of Itemized Change Nos. 7 and 10 has been made consistent.</p>