

April 29, 2005

Mr. Alex Marion
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SUBJECT: INFORMATION TO AID STAFF IN SUFFICIENCY REVIEW OF LICENSE
RENEWAL APPLICATIONS

Dear Mr. Marion:

As a means to facilitate the performance of an effective and efficient 10 CFR 2.109(b) sufficiency review for license renewal applications (LRAs), the staff has compiled a list of items to aid them in their review and to focus applicant attention on lessons learned during prior reviews. This list was compiled based on the staff's review of license renewal applications submitted in the past. The items identify information that the staff has found it must repeatedly request from the applicant to complete its review. Providing this information in the initial submittal of the application would help improve the review process.

Table 1.1-1 of the NUREG-1800, "Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants" (SRP-LR), Acceptance Review Checklist for Docketing of Timely and Sufficient Renewal Application, provides a checklist to help the staff determine sufficiency as stated in Section 1.1.3.1. The items in the SRP-LR table are based on the requirements contained in 10 CFR Part 54 and are general in nature to ensure that only a sufficiency review is performed, and not the actual detailed LRA review. However, the staff believes that lessons learned from previous LRA reviews should be considered while performing the checklist outlined in the SRP-LR. The staff expects to continue to issue requests for additional information as part of its detailed review of renewal applications.

The attached list contains items that are important for an effective and efficient LRA review. The items are grouped into five sections: scoping, aging management reviews (AMRs), aging management programs (AMPs), time-limited aging analysis (TLAA), and general. This list is not meant to add to the requirements that are outlined in 10 CFR Part 54. This list contains information that would enhance the quality of an LRA and would facilitate the staff's review. It would also support the achievement of the typical 22 month (without a hearing) review schedule.

A. Marion

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If you have any questions regarding this matter, please contact Kimberley Corp of my staff at 301-415-1091 or email kar1@nrc.gov.

Sincerely,

/RA/ (A. Kugler for)

Pao-Tsin Kuo, Program Director
License Renewal and Environmental Impacts Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Enclosure: As stated

cc w/encl: See next page

A. Marion

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ADAMS Accession No.: ML051190496

Document Name: E:\Filenet\ML051190496.wpd

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Information to Aid Staff in Sufficiency Review

Expectations for Document Quality

SCOPING

1. The LRA identifies and describes the scoping and screening process consistent with the SRP and the rule.
 - a. The LRA definition of safety-related is consistent with 54.4(a)(1).
 - b. The LRA adequately describes the evaluation of design basis events.
 - c. The LRA adequately describes the evaluation of the current licensing basis.
 - d. The LRA does not take any exceptions to the scoping and screening criteria in the SRP (consumables and determination of long-lived/passive SSCs).

2. The applicant clearly marks the drawings to identify which SSCs are within the scope of license renewal. The applicant's use of marking is consistent.

3. The LRA indicates that the following components are within the scope of license renewal.
 - a. fuse holders (ISG-05)
 - b. neutron monitoring cables
 - c. steam dryers (BWRs only)
 - d. refueling seals (BWRs only), if not is justification provided?
 - e. crane rail supports
 - f. crane
 - g. rails
 - h. hoists
 - i. lifting devices
 - j. offsite power system components (ISG-02), SBO
 - k. make-up water source and piping for spent fuel pool
 - l. fan and damper housings (ISG-0)
 - m. elastomers

4. The LRA addresses non-safety-related (NSR) affecting safety-related (SR) per 10 CFR 54.4(a)(2).
 - a. The methodology for evaluating the NSR SSCs are consistent with the rule, SRP, ISG-09, and Regulatory Guide 1.188, as revised.
 - b. The LRA uses the preventive and/or mitigative approach to scoping.
 - c. The LRA criteria for scoping NSR SSCs are clearly described and technical justification is provided.
 - d. The LRA defines equivalent anchors in accordance with the staff position.
 - i. If equivalent anchors have not been identified, the LRA included within the license renewal boundary a portion of the NSR system attached to the SR system up to and including at least two supports in each of the three orthogonal directions.
 - ii. If the above (i) has not been included, then the LRA provides adequate technical justification for the boundary criteria (i.e., flexible connection, buried piping).
 - e. The LRA methodology used to exclude (a)(2) components from scope is based on something other than the spray duration, leakage detection method, or having an

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- existing AMP for the NSR SSCs.
- f. The LRA and/or boundary drawings provides a clear delineation of LR boundaries.
 - g. (a)(2) components are unambiguously identified.
5. The LRA addresses insulation in the scoping and screening methodology and results sections.
 6. The LRA addresses consumables in the scoping and screening methodology and results sections.
 7. The LRA includes a general description for the structures that the applicant determined are outside the scope of license renewal (purpose of the structure, II/I not applicable, no intended function, etc).
 8. The LRA provides an explanation for system realignment if it is used for scoping purposes.
 9. The LRA provides scoping information by sub-systems that can be reviewed. Scoping information presented based on an integrated major system or a functional approach is difficult to review.
 10. The LRA includes obvious structures and components that are in scope of license renewal, such as piping for mechanical fluid systems.

AMRs

11. (BWRs only) The LRA Section 3.0 AMR Tables consistently apply the BWR Stress Corrosion Cracking Program for the IGSCC/SCC aging effect.
12. (PWRs only) The LRA AMR Table 3.1 includes the feedwater inlet ring assemblies.
13. The LRA includes an aging management review of the following components:
 - a. uninsulated ground conductors
 - b. transmission conductors
14. The LRA AMR Tables 3.2.1, 3.3.1, and 3.4.1 consistently apply the Flow Accelerated Corrosion Program.
15. The LRA identifies an AMP to mitigate and detect crack growth and initiation due to stress corrosion cracking (SCC) in stainless steel vessel flange leak tubes.
16. The LRA identifies an AMP for managing the degradation of containment bellows, seals, and gaskets.
17. The LRA identifies AMPs for galvanic corrosion and leaching.
18. The LRA identifies an aging effect and AMP for concrete.

19. The LRA identifies AMPs, other than the Section XI, IWE and Systems AMP and the Structures Monitoring Program AMP, to manage the aging of the following for non-structural components.
 - a. piping/fittings (embedded or encased carbon steel)
 - b. Section XI - thermal sleeves
20. The LRA AMR Tables address both external and internal environments.
 - a. Walk-down AMPs are for management of external, not internal, aging.
 - b. Preventive Maintenance AMPs are for external aging. If for internal aging, a description is provided.
 - c. (PWRs only) Boric Acid Corrosion AMPs are for external aging. If for internal aging, a description is provided.
21. The LRA addresses the "Further Evaluation" column of the AMR tables in a sub-section in the LRA. "Not applicable" or "Consistent with NUREG-1801" is not an adequate disposition of this column.

AMPs

22. The LRA includes an evaluation of the 10 elements for all plant-specific AMPs and future AMPs.
23. (Westinghouse PWRs only) The LRA identifies an AMP for the flux detector thimble tube.
24. The LRA Appendix A, "UFSAR Supplements," provides adequate descriptions of the AMPs, the associated commitments, and specify when the programs will be implemented or commitments completed.
25. The LRA Appendix B Table for, "Correlation of NUREG-1801 and Plant Aging Management Programs," compares GALL AMPs with the LRA AMPs. AMPs are reasonable, i.e., PWR specific AMPs not used for BWRs, and BWR specific AMPs not used for PWRs.
26. The LRA references industry reports associated with the appropriate vendor type. PWR LRAs reference MRP reports. BWR LRAs reference BWRVIP reports.
27. The LRA provides edition, addendum, revision of codes, standards, and topical reports for AMPs.
28. (BWRs only) The LRA contains the BWRVIP action items from the NRC approval letter.
29. The LRA AMP for inservice inspections does not credit previously granted ISI reliefs under 10 CFR 50.55(a)(3)(I) or (ii).
30. The LRA AMP for buried piping and tanks includes at least one inspection during the first ten years of extended operation. Opportunistic inspections may be used to meet the ten year inspection requirement.

31. The LRA AMP for managing selective leaching requires hardness measurement in addition to visual inspection. The LRA provides justification if hardness measurements are eliminated.
32. How many exceptions to performing the GALL One-Time Inspection has the LRA taken in the AMR tables?
33. The LRA AMP for one-time inspections includes an acceptable form of inspection method as addressed in the revised GALL.
34. (PWRs only) The LRA includes an augmented inspection for SG shell assemblies for loss of material due to pitting/crevice corrosion [Table 1 of LRA].
35. The LRA AMP for small bore piping includes a volumetric inspection.
36. (PWRs only) The LRA AMP for CASS thermal embrittlement includes a flaw tolerance evaluation or enhanced volumetric inspection. Leak before break (LBB) analysis should not be substituted for either of these two methods.
37. The LRA identifies AMP inspection frequencies.
38. The LRA provides a justification for AMP inspection frequencies that is inconsistent with the GALL Report.
39. The LRA Reactor Vessel Materials Surveillance Program is consistent with GALL or the exceptions are identified and justified.
40. The LRA Reactor Vessel Internals AMP includes the 10 elements or a commitment to comply with the appropriate vendor industry initiatives (MRP for PWRs and BWRVIP for BWRs).

TLAAs

41. The LRA includes an evaluation for each TLAA. The evaluations include validated analyses or addition information such as:
 - a. Description of TLAAs
 - b. Acceptance criterion for TLAA
 - c. Basis on why TLAA is acceptable (statements of conservative safety margins are not acceptable)
 - d. Use of 10 CFR 54.21(c)(1) (i), (ii), or (iii)
42. The TLAA for pressurized thermal shock (PTS - for PWRs only) and Upper Shelf Energy includes actual materials data, calculations and 10 CFR 50.61 analysis for 54 effective full power years (EFPY).
43. The LRA includes a TLAA for pressure/temperature (PT) limits if end of life curves are approved in the technical specifications.

44. The TLAAAs meet the definition for a TLAA.
 - a. Verify understanding of TLAA (40 years or remaining end of life Illg. of SOC identifies whether an analysis is a TLAA). Note: "Not a TLAA" should not be in Chapter 4 or if not 40 years should not be in Chapter 4 [compare to SRP list of TLAAAs].
45. The TLAA for the metal fatigue program (FMP) identifies specific critical fatigue locations with high cumulative usage factor (CUF). (It is unacceptable to just reference the NUREG/CR-6260 critical locations as they are generic locations, not plant-specific).
 - a. The FMP identifies the critical fatigue locations.
 - b. The FMP is credited to manage CUF.
 - c. The FMP is not credited for crack growth.
 - d. The TLAA provides a list of transients to be monitored.
46. (PWRs only) The LRA identifies the aging management of the pump fly wheel as a TLAA.
47. (PWRs only) The LRA identifies a TLAA addressing containment pre-stressing forces. The TLAA contains containment tendon pre-tensioning data.

General

48. The Environmental Report contains sufficient information to support the staff's review of environmental impacts, including:
 - a. The information necessary for the staff to evaluate the applicant's analysis for severe accident mitigation alternatives (SAMAs). Note that the staff is currently reviewing a draft NEI guidance document addressing this area.
 - b. The information necessary for the staff to determine that the applicant used a sufficiently robust process to search for new and significant information for the Category 1 issues in NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants".
 - c. The information necessary to demonstrate that the applicant performed a thorough search for, and review of, historic and archaeological resources that could be affected by the proposed action.
49. The LRA contains technically correct information: does not use wrong AMP on aging effect, such as:
 - a. FAC in nonflow system
 - b. FAC to manage cracking
 - c. SG Integrity Program to manage the SG feed ring and nozzle
 - d. Boric Acid Corrosion Program for cracking
50. The LRA identifies appropriate and specific materials in the AMR tables. AMR tables should not list as a material the following:
 - a. Any
 - b. Steel (except in electrical AMR tables)
 - c. Iron

- d. Cast iron in the RCS
51. The LRA did not include component names that are too general, such as the following:
 - a. Carbon steel in air
 - b. (a)2 component
 - c. NSR fluid-retaining components in safety-related buildings and areas
 - d. Polymer in soil
 52. The LRA includes a preliminary commitment list and all commitments listed in the LRA are included in the list.
 53. The LRA listed specific component intended functions, not general functions like NSR Functional Support.
 54. The LRA includes the standard NEI notes A-J for the AMR tables. New and/or plant-specific notes do not duplicate or contradict standard NEI notes.
 55. In the AMR tables, the LRA correctly identifies the note in the last column.