U.S. NUCLEAR REGULATORY COMMISSION



REGULATORY GUIDE 1.188, REVISION 2

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STANDARD FORMAT AND CONTENT FOR APPLICATIONS TO RENEW NUCLEAR POWER PLANT OPERATING LICENSES

A. INTRODUCTION

Purpose

This regulatory guide (RG) describes an approach that is acceptable to the staff of the U.S. Nuclear Regulatory Commission (NRC) for the format and content of an application to renew or subsequently renew an NRC-issued operating license under Title 10 of the *Code of Federal Regulations* (10 CFR) Part 54, "Requirements for Renewal of Operating Licenses for Nuclear Power Plants" (Ref. 1). This RG endorses Revision 6 of Nuclear Energy Institute (NEI) 95-10, "Industry Guideline for Implementing the Requirements of 10 CFR Part 54—The License Renewal Rule," (Ref. 2), and NEI 17-01, "Industry Guideline for Implementing the Requirements of 10 CFR Part 54 for Subsequent License Renewal," (Ref. 3).

Applicability

This RG applies to initial license renewal applications (LRAs) and subsequent license renewal applications (SLRAs). It applies to applicants and licensees subject to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities" (Ref. 4) that seek renewal of their current operating licenses.

Applicable Regulations

The issuance of renewed operating licenses for nuclear power plants is governed by 10 CFR Part 54, commonly known as the license renewal rule.

• 10 CFR Part 54 provides the requirements for the issuance of renewed operating licenses and renewed combined licenses for nuclear power plants licensed in accordance with Sections 103 or 104b of the Atomic Energy Act of 1954, as amended (Ref. 5), and Title II of the Energy Reorganization Act of 1974 (Ref. 6).

Written suggestions regarding this guide or development of new guides may be submitted through the NRC's public Web site in the NRC Library at <u>https://nrcweb.nrc.gov/reading-rm/doc-collections/reg-guides/</u>, under Document Collections, in Regulatory Guides, at <u>https://nrcweb.nrc.gov/reading-rm/doc-collections/reg-guides/contactus.html</u>.

Electronic copies of this RG, previous versions of RGs, and other recently issued guides are also available through the NRC's public Web site in the NRC Library at https://nrcweb.nrc.gov/reading-rm/doc-collections/reg-guides/, under Document Collections, in Regulatory Guides. This RG is also available through the NRC's Agencywide Documents Access and Management System (ADAMS) at https://www.nrc.gov/reading-rm/adams.html, under ADAMS Accession Number (No.) ML20017A265. The regulatory analysis may be found in ADAMS under Accession No. ML19213A343. The associated draft guide DG-1341 may be found in ADAMS under Accession No. ML19213A345, and the staff responses to the public comments on DG-1341 may be found under ADAMS Accession No. ML20017A259.

- 10 CFR 54.17, "Filing of application," provides the requirements for filing an LRA or SLRA.
- 10 CFR 54.19, "Contents of application—general information," provides the requirements for the general information in an LRA or SLRA.
- 10 CFR 54.21, "Contents of application—technical information," provides the requirements for the technical information in an LRA or SLRA.
- 10 CFR 54.22, "Contents of application—technical specifications," provides the requirements for the changes or additions to the technical specifications to manage the effects of aging in an LRA or SLRA.
- 10 CFR 54.23, "Contents of application—environmental information," provides the requirements for the environmental information in a renewal application.

Additional applicable regulations are as follows:

- 10 CFR Part 2, "Agency Rules of Practice and Procedure" (Ref. 7), provides the requirements for the conduct of all proceedings under the Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974.
 - Subpart A, "Procedure for Issuance, Amendment, Transfer, or Renewal of a License, and Standard Design Approval," of 10 CFR Part 2 provides the procedures for the issuance, amendment, transfer, or renewal of a license, and standard design approval.
- 10 CFR Part 50 provides the regulations governing the licensing of production and utilization facilities.
 - 10 CFR 50.4, "Written communications," provides the requirements for written communications.
 - 10 CFR 50.30, "Filing of application; oath or affirmation," provides the requirements for filing of an application and oath or affirmation.
- 10 CFR Part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions" (Ref. 8), contains environmental protection regulations applicable to the NRC's domestic licensing actions and related regulatory functions, in accordance with the National Environmental Policy Act of 1969, as amended (Ref. 9).

Related Guidance

• NUREG-1555, "Standard Review Plans for Environmental Reviews for Nuclear Power Plants," Supplement 1, "Operating License Renewal—Final Report," Revision 1 (Ref. 10), issued June 2013, provides the criteria used by the NRC staff for reviewing environmental reports (ERs) submitted with nuclear power plant applications for license renewal or subsequent license renewal.

- NUREG-1800, "Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants," Revision 2, issued December 2010 (Ref. 11), provides the criteria used by the NRC staff for reviewing LRAs for nuclear power plants.
- NUREG-1801, "Generic Aging Lessons Learned (GALL) Report," Revision 2, issued December 2010 (Ref. 12), provides guidance on the content of applications for the initial renewal of an operating license.
- NUREG-2191, Volumes 1 and 2, "Generic Aging Lessons Learned for Subsequent License Renewal (GALL-SLR) Report," issued July 2017 (Ref. 13), provides guidance on the content of applications for subsequent renewal of renewed operating licenses.
- NUREG-2192, "Standard Review Plan for Review of Subsequent License Renewal Applications for Nuclear Power Plants—Final Report," issued July 2017 (Ref. 14), provides guidance to the NRC staff for the review of subsequent license renewal applications, for operation for 60 to 80 years.
- RG 4.2, Supplement 1, "Preparation of Environmental Reports for Nuclear Power Plant License Renewal Applications" (Ref. 15), provides additional guidance on the format and content of an ER submitted for license renewal or subsequent license renewal.

Purpose of Regulatory Guides

The NRC issues RGs to describe to the public methods that the staff considers acceptable for use in implementing specific parts of the agency's regulations, to explain techniques that the staff uses in evaluating specific problems or postulated events, and to provide guidance to applicants. Regulatory guides are not substitutes for regulations and compliance with them is not required. Methods and solutions that differ from those set forth in RGs will be deemed acceptable if they provide a basis for the findings required for the issuance or renewal of a permit or license by the Commission.

Paperwork Reduction Act

This RG provides voluntary guidance for implementing the mandatory information collections in 10 CFR Parts 50 and 54 that are subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et. seq.). These information collections were approved by the Office of Management and Budget (OMB), approval numbers 3150-0011 and 3150-0155. Send comments regarding this information collection to the Information Services Branch (T6-A10M), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollects.Resource@nrc.gov, and to the OMB reviewer at: OMB Office of Information and Regulatory Affairs (3150-0011, 3150-0155), Attn: Desk Officer for the Nuclear Regulatory Commission, 725 17th Street, NW Washington, DC 20503; e-mail: oira_submission@omb.eop.gov.

Public Protection Notification

The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the document requesting or requiring the collection displays a currently valid OMB control number.

B. DISCUSSION

Reason for Revision

This revision of the guide (Revision 2) broadens the scope of the RG to include both license renewal and subsequent license renewal by endorsing NEI 17-01, which provides an acceptable approach for implementing the requirements of 10 CFR Part 54 for subsequent license renewal.

Background

The NRC initially issued RG 1.188 in July 2001, which incorporated lessons learned from the review of LRAs and owners' group topical reports. The guide also incorporated relevant information from NUREG-1800, Revision 0, issued July 2001 (Ref. 16) and NUREG-1801, Revision 0, issued July 2001 (Ref. 17), as well as from a summary of public comments received on those documents found in NUREG-1739, "Analysis of Public Comments on the Improved License Renewal Guidance Documents," issued July 2001 (Ref. 18).

Since the initial publication of RG 1.188 in July 2001, the staff has revised both NUREG-1800 and NUREG-1801 based on experience gained from numerous LRA reviews and other insights identified by the industry and NRC. Consequently, the staff also revised RG 1.188 to reflect updates to those guidance documents. The NRC staff found Revision 6 of NEI 95-10 acceptable for use in implementing the license renewal rule, without exceptions, as discussed in RG 1.188, Revision 1, issued September 2005 (Ref. 19).

After issuance of RG 1.188, Revision 1, the nuclear power industry indicated interest in submitting applications to operate nuclear power plants for an additional 20 years beyond the initial license renewal period. As identified above in Section A of this RG, the NRC developed and published guidance documents on aging management programs that provide reasonable assurance of safe operation during operation from 60 to 80 years, in NUREG-2191 and NUREG-2192. Additionally, in December 2017, the staff issued NUREG-2221, "Technical Bases for Changes in the Subsequent License Renewal Guidance Documents NUREG-2191 and NUREG-2192" (Ref. 20), which provides the technical bases for the changes in the guidance documents from initial license renewal to subsequent license renewal. The staff also issued NUREG-2222, "Disposition of Public Comments on the Draft Subsequent License Renewal Guidance Documents NUREG-2191, and NUREG-2192," in December 2017 (Ref. 21), which provides the disposition of the public comments on the draft guidance documents for subsequent license renewal. Concurrently, the industry developed NEI 17-01 to provide guidance to utilities on implementing the license renewal rule for subsequent license renewal, incorporating lessons learned from industry experience and completing initial LRAs. The NRC endorses NEI 17-01 in this RG.

Harmonization with International Standards

The NRC staff has been actively involved with the International Atomic Energy Agency (IAEA) in developing and updating the IAEA International Generic Aging Lessons Learned (IGALL) program. The development of IGALL started with NRC guidance for license renewal from GALL Revision 2, and the latest updates to IGALL used GALL-SLR technical information as the basis for many of the updates. The NRC continues to review information from IGALL program counterparts and evaluate the need to make changes to GALL and GALL-SLR. The staff notes that the IAEA Safety Reports Series No. 82, "Ageing Management for Nuclear Power Plants: International Generic Ageing Lessons Learned (IGALL)," issued 2015 (Ref. 22), may provide additional useful information.

Documents Discussed in Staff Regulatory Guidance

This RG endorses the use of one or more third-party guidance documents. These third-party guidance documents may contain references to other codes, standards, or third-party guidance documents ("secondary references"). If a secondary reference has itself been incorporated by reference into NRC regulations as a requirement, then licensees and applicants must comply with that standard as set forth in the regulation. If the secondary reference has been endorsed in a RG as an acceptable approach for meeting an NRC requirement, then the standard constitutes a method acceptable to the NRC staff for meeting that regulatory requirement as described in the specific RG. If the secondary reference has not been incorporated by reference into NRC regulations nor endorsed in a RG, then the secondary reference is neither a legally-binding requirement nor a "generic" NRC-approved acceptable approach for meeting an NRC requirement. However, licensees and applicants may consider and use the information in the secondary reference, if appropriately justified, consistent with current regulatory practice, and consistent with applicable NRC requirements.

C. STAFF REGULATORY GUIDANCE

This section discusses the NRC staff's regulatory position on the standard format and content of applications for renewal and subsequent renewal of operating licenses for commercial nuclear power plants. Therefore, the guidance provided in this section is expected to ensure that applicants have identified and taken (or will take) actions to ensure plant safety throughout the period of extended operation. Specifically, such actions relate to (1) managing the effects of aging on the functionality of plant structures, systems, and components that the NRC staff has identified as requiring aging management, and (2) evaluating time-limited aging analyses (TLAAs) that the NRC staff has identified as requiring such review.

1. Contents of a License Renewal Application or Subsequent License Renewal Application

To renew a nuclear power plant operating license, an applicant must meet the requirements of 10 CFR Part 54. This license renewal rule establishes the procedures, criteria, and standards governing renewal of an operating license. The application must include (1) general information, (2) technical information, including an integrated plant assessment, changes to the current licensing basis, an evaluation of TLAAs, and a supplement to the plant's final safety analysis report (FSAR), (3) any necessary changes to the plant's technical specifications (along with related justifications), and (4) a supplement to the plant's Environmental Report (ER).

NUREG-1801, Revision 2, provides guidance on the content of an LRA for the initial renewal of an operating license. NUREG-1800, Revision 2, provides the criteria used by the NRC staff for reviewing LRAs. NUREG-2191, Volumes 1 and 2, provides guidance on the content of an SLRA for subsequent renewal of the initial renewed operating license. NUREG-2192 provides the criteria used by the NRC staff for reviewing SLRAs. RG 4.2, Supplement 1, provides additional guidance on the format and content of the ER. Supplement 1 to NUREG-1555 provides the criteria used by the NRC staff for reviewing ERs submitted with LRAs and SLRAs.

2. Endorsement of Nuclear Energy Institute Guidelines

The NRC staff endorses Revision 6 of NEI 95-10 as acceptable for complying with the requirements of 10 CFR Part 54 for preparing an initial LRA. For additional information concerning the preparation of acceptable LRAs, applicants may refer to NUREG-1800 or NUREG-1801 for operation from 40 to 60 years.

The NRC staff endorses NEI 17-01 as acceptable for complying with the requirements of 10 CFR Part 54 for preparing an SLRA. For additional information concerning the preparation of acceptable SLRAs, applicants may refer to NUREG-2192 or NUREG-2191 for operation from 60 to 80 years. Applicants for initial license renewal may also follow the guidance in NUREG-2191 and NUREG-2192, and they should inform the staff that they intend to do so.

Applicants may meet the intent of the license renewal rule for initial license renewal or subsequent license renewal using methods other than those described in Revision 6 of NEI 95-10 or NEI 17-01, respectively, as endorsed in this RG. However, the NRC staff will determine the acceptability of alternative methods on a case-by-case basis.

3. Selected Submission Requirements and Guidelines

Applicants must submit the LRA and SLRA in accordance with 10 CFR 54.17. The following general provisions, with the corresponding regulations, also apply to filing an application for a renewed operating license:

- As stated in 10 CFR 54.17(a), the application must be filed in accordance with 10 CFR Part 2, Subpart A; 10 CFR 50.4; and 10 CFR 50.30.
- As stated in 10 CFR 54.17(c), the applicant may not submit the application to the Commission earlier than 20 years before the expiration of the operating license currently in effect.
- For the timely renewal provisions of 10 CFR 2.109(b) an applicant must file a sufficient application at least 5 years before the expiration of the existing license.
- As stated in 10 CFR 54.17(d), the application for a renewed license may be combined with applications for other kinds of licenses.
- As stated in 10 CFR 54.17(e), the application may incorporate by reference information contained in previous applications for licenses or license amendments, statements, correspondence, or reports filed with the Commission, provided the references are clear and specific.

The information that an applicant develops and submits or retains for license renewal or subsequent license renewal should permit the NRC staff to determine that the applicant has met the requirements of 10 CFR Part 54. The standard format in which the applicant presents this information should allow optimal use of the applicant's resources, while facilitating the NRC staff's review of the LRA or SLRA.

Where practicable, licensees should electronically submit the entire document through, for example, the Electronic Information Exchange, e-mail, or CD ROM. If a licensee chooses to use an electronic submission, then the NRC staff recommends that all subsequent updates or submissions be performed on a total page replacement basis and the applicants should follow the guidance discussed below. The regulation in 10 CFR 50.4(a) specifies that "Electronic submissions must be made in a manner that enables the NRC to receive, read, authenticate, distribute, and archive the submission, and process and retrieve it a single page at a time." The NRC provides specific guidance on acceptable procedures for electronic submissions on its public Web site at http://www.nrc.gov/site-help/esubmittals.html. Users who are new to the process should select the "Getting Started" link, http://www.nrc.gov/site-help/e-submittals/getting-started.html, and access the "Reference Materials for Electronic Submissions" link at http://www.nrc.gov/site-help/electronic-sub-ref-mat.html. The "Reference Materials for Electronic Submissions" page also provides a link to the current version of the primary guidance document, "Guidance for Electronic Submissions to the NRC" (Ref. 23). Licensees should use the most recent processes and guidance when submitting documents in electronic format. Applicants may use the formatting specifications in NUREG-1379, "NRC Editorial Style Guide" (Ref. 24), in the development of LRAs and SLRAs.

For revisions and changes to the LRA, SLRA, updated FSAR, or subsequent FSAR updates, the applicant must follow the applicable requirements of 10 CFR 50.4, and 10 CFR 50.71, "Maintenance of records, making of reports." Per 10 CFR 50.4(b)(6), paper copy submissions of updated FSARs may be made using replacement pages. Under 10 CFR 50.4(a), all paper submissions to the Document Control Desk must be the signed originals. As stated in 10 CFR 50.71(e)(5), each updated FSAR replacement page shall include both a change indicator (a bold line vertically drawn in the margin adjacent to the portion that has changed), and a page change identification (with date changed or change number or both). Licensees that submit paper copies of their LRAs, SLRAs, or subsequent FSAR updates should follow 10 CFR 50.4(b)(6) and 50.71(e)(5). As discussed above, if a licensee chooses to use an electronic submission, then the NRC staff recommends that all subsequent updates or submissions be performed on a total page replacement basis.

Sensitive or proprietary information included in the LRA, SLRA, or updated FSAR Supplement, that the licensee seeks to have withheld from the public must be marked and submitted in accordance with 10 CFR 2.390, "Public inspections, exemptions, requests for withholding." Applicants must submit nonpublic, security-related information included in the LRA or SLRA related to safeguards information, as defined in 10 CFR 73.2, "Definitions," in accordance with 10 CFR 73.21, "Protection of Safeguards Information: Performance requirements" (Ref. 25).

D. IMPLEMENTATION

The NRC staff may use this regulatory guide as a reference in its regulatory processes, such as licensing, inspection, or enforcement. However, the NRC staff does not intend to use the guidance in this regulatory guide to support NRC staff actions in a manner that would constitute backfitting as that term is defined in 10 CFR 50.109, "Backfitting," and as described in NRC Management Directive 8.4, "Management of Backfitting, Forward Fitting, Issue Finality, and Information Requests," (Ref. 26), nor does the NRC staff intend to use the guidance to affect the issue finality of an approval under 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants." The staff also does not intend to use the guidance to support NRC staff actions in a manner that constitutes forward fitting as that term is defined and described in Management Directive 8.4. If a licensee believes that the NRC is using this regulatory guide in a manner inconsistent with the discussion in this Implementation section, then the licensee may file a backfitting or forward fitting appeal with the NRC in accordance with the process in Management Directive 8.4.

REFERENCES¹

- 1. U.S. Code of Federal Regulations (CFR), "Requirements for Renewal of Operating Licenses for Nuclear Power Plants," Part 54, Chapter I, Title 10, "Energy."
- Nuclear Energy Institute (NEI) 95-10, "Industry Guideline for Implementing the Requirements of 10 CFR Part 54—The License Renewal Rule," Revision 6, Washington, DC, June 2005 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML051860406)²
- NEI 17-01, "Industry Guideline for Implementing the Requirements of 10 CFR Part 54 for Subsequent License Renewal," Washington, DC, December 2017 (ADAMS Accession No. ML17339A599)
- 4. CFR, "Domestic Licensing of Production and Utilization Facilities," Part 50, Chapter I, Title 10, "Energy."
- 5. *Atomic Energy Act of 1954*, as amended, Title 42, "Public Health and Welfare," United States Code (U.S.C.) § 2011 et seq.
- 6. *Energy Reorganization Act of 1974*, Title 42 "Public Health and Welfare," U.S.C. § 5801 et seq.
- 7. CFR, "Agency Rules of Practice and Procedure," Part 2, Chapter I, Title 10, "Energy."
- 8. CFR, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions," Part 51, Chapter I, Title 10, "Energy."
- 9. National Environmental Policy Act of 1969, as amended, Title 42, "Public Health and Welfare," U.S.C. § 4321 et seq
- U.S. Nuclear Regulatory Commission (NRC), NUREG-1555, "Standard Review Plans for Environmental Reviews for Nuclear Power Plants," Supplement 1, "Operating License Renewal, Final Report," Revision 1, Washington, DC, June 2013 (ADAMS Accession No. ML13106A246)
- NRC, NUREG-1800, "Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants," Revision 2, Washington DC, December 2010 (ADAMS Accession No. ML103490036)
- 12. NRC, NUREG-1801, "Generic Aging Lessons Learned (GALL) Report," Revision 2, Washington, DC, December 2010 (ADAMS Accession No. ML103490041)

Publicly available NRC published documents are available electronically through the NRC Library on the NRC's public Web site at http://www.nrc.gov/reading-rm/doc-collections/ and through the NRC's Agencywide Documents Access and Management System (ADAMS) at http://www.nrc.gov/reading-rm/adams.html The documents can also be viewed online or printed for a fee in the NRC's Public Document Room (PDR) at 11555 Rockville Pike, Rockville, MD. For problems with ADAMS, contact the PDR staff at 301-415-4737 or (800) 397-4209; fax (301) 415-3548; or e-mail pdr.gov.

² Publications from NEI are available at their Web site: http://www.nei.org or by contacting the headquarters at Nuclear Energy Institute, 1201 F St., NW, Suite 1100, Washington DC 20004-1218, Phone: 202-739-8000, Fax 202-785-4019.

- NRC, NUREG-2191, Volumes 1 and 2, "Generic Aging Lessons Learned for Subsequent License Renewal (GALL-SLR) Report," Washington, DC, July 2017 (ADAMS Accession Nos. ML17187A031 and ML17187A204)
- 14. NRC, NUREG-2192, "Standard Review Plan for Review of Subsequent License Renewal Applications for Nuclear Power Plants– Final Report," Washington, DC, July 2017 (ADAMS Accession No. 17188A158)
- 15. NRC, Regulatory Guide 4.2, Supplement 1, "Preparation of Environmental Reports for Nuclear Power Plant License Renewal Applications," Washington, DC, June 2013. (ADAMS Accession No. ML13067A354)
- NRC, NUREG-1800, "Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants," Revision 0, Washington, DC, July 2001. (ADAMS Accession Nos. ML012070391 and ML012070409)
- NRC, NUREG-1801, "Generic Aging Lessons Learned (GALL) Report," Revision 0, Washington, DC, July 2001. (ADAMS Accession Nos. ML012060392, ML012060514, ML012060539, and ML012060521)
- 18. NRC, NUREG-1739, "Analysis of Public Comments on the Improved License Renewal Guidance Documents," Washington, DC, July 2001 (ADAMS Accession No. ML012080104)
- NRC, Regulatory Guide 1.188, "Standard Format and Content for Applications to Renew Nuclear Power Plant Operating Licenses," Revision 1, Washington, DC, September 2005 (ADAMS Accession No. ML051920430)
- 20. NRC, NUREG-2221, "Technical Bases for Changes in the Subsequent License Renewal Guidance Documents NUREG-2191 and NUREG-2192," Washington, DC, December 2017 (ADAMS Accession No. ML17362A126)
- NRC, NUREG-2222, "Disposition of Public Comments on the draft Subsequent License Renewal Guidance Documents NUREG-2191 and NUREG-2192," Washington, DC, December 2017 (ADAMS Accession No. ML17362A143)
- 22. International Atomic Energy Agency (IAEA), Safety Reports Series No. 82, "Ageing Management for Nuclear Power Plants: International Generic Ageing Lessons Learned (IGALL)," Vienna, Austria, 2015.³
- 23. NRC, "Guidance for Electronic Submissions to the NRC," Revision 8, Washington, DC, May 2017 (ADAMS Accession No. ML13031A056)
- 24. NRC, NUREG-1379, "NRC Editorial Style Guide," Revision 2, Washington, DC, May 2009 (ADAMS Accession No. ML093280744)
- 25. CFR, "Physical Protection of Plants and Materials," Part 73, Chapter I, Title 10, "Energy."

³ Copies of International Atomic Energy Agency (IAEA) documents may be obtained through their Web site: WWW.IAEA.Org/ or by writing the International Atomic Energy Agency, P.O. Box 100 Wagramer Strasse 5, A-1400 Vienna, Austria.

26. NRC, Management Directive 8.4, "Management of Backfitting, Forward Fitting, Issue Finality, and Information Requests," Washington, DC.