

August 4, 1999

FOR: The Commissioners
FROM: William D. Travers /s/ Executive Director for Operations
SUBJECT: REGULATORY GUIDE FOR UPDATED FINAL SAFETY ANALYSIS REPORTS IN ACCORDANCE WITH 10 CFR 50.71(e)

PURPOSE:

To obtain the Commission's approval to publish Regulatory Guide (RG) 1.181 ([Attachment 1](#)).

SUMMARY:

The staff recommends that the Commission approve publication of RG 1.181, "Content of the Updated Final Safety Analysis Report in Accordance with 10 CFR 50.71(e)." RG 1.181 endorses the industry guideline document developed by the Nuclear Energy Institute (NEI), NEI 98-03, Revision 1, "Guidelines for Updating Final Safety Analysis Reports," dated June 1999 ([Attachment 2](#)), without exception. The staff believes that NEI 98-03 presents an acceptable method for compliance with 10 CFR 50.71(e) and also gives suitable guidance for modifying the content and format of the updated final safety analysis report (UFSAR⁽¹⁾), giving licensees considerable flexibility and the opportunity to reduce the burden associated with maintaining the UFSAR. NEI 98-03, Revision 1, has incorporated all appropriate staff and public comments received on NEI 98-03, Revision 0, and draft regulatory guide DG-1083, "Content of the Updated Final Safety Analysis Report in Accordance with 10 CFR 50.71(e)."

BACKGROUND:

Section 50.34 (10 CFR 50.34), "Contents of Applications; Technical Information," contains requirements for the material to be submitted in applications for construction permits and operating licenses for nuclear power reactors. An application for a construction permit must contain a preliminary safety analysis report (PSAR) pursuant to 50.34(a). An application for an operating license must contain an FSAR in accordance with 50.34(b). For holders of operating licenses, 50.71(e) requires the FSAR to be periodically updated (i.e., the updated FSAR or UFSAR).⁽²⁾

Guidance for the organization and content of PSARs and FSARs has existed since June 30, 1966, when the Atomic Energy Commission issued "Guide to the Organization and Contents of Safety Analysis Reports." The most recent guidance document is RG 1.70, Revision 3, "Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants, LWR Edition," dated November 1978. Limited guidance for the format and content of UFSARs was previously issued in Generic Letter 80-110, "Periodic Updating of Final Safety Analysis Reports (FSARs)," dated December 15, 1980.

As a result of lessons learned from the Millstone experience and from other initiatives related to UFSARs, the NRC determined that additional guidance was needed about compliance with 50.71(e). The staff recommended specific actions in [SECY-97-036](#), "Millstone Lessons Learned Report, Part 2: Policy Issues," dated February 12, 1997. In a staff requirements memorandum (SRM) dated May 20, 1997, the Commission directed the staff, in part, to issue guidance for complying with 50.71(e) to ensure that UFSARs are updated to reflect changes to the design bases and to reflect the effects of other analyses performed since original licensing that should have been included under 50.71(e). The Commission suggested that this guidance include a risk-informed approach for prioritization and content of the UFSAR, allow removal of certain information from the UFSAR, and consider whether the period of enforcement discretion regarding UFSARs should be extended. In the SRM dated March 24, 1998, concerning [SECY-97-205](#), "Integration and Evaluation of Results From Recent Lessons-Learned Reviews," dated September 10, 1997, the Commission reemphasized the need for guidance for UFSARs and further requested that guidance be prepared for plants undergoing decommissioning.

The staff responded, in part, to the SRMs of May 20, 1997, and March 24, 1998, with [SECY-98-087](#). In that paper, the staff recommended that the Commission approve issuance of the staff's proposed generic letter as interim guidance on the content of UFSARs. The staff further proposed to continue to resolve staff issues with the preliminary version of NEI 98-03, with the goal of endorsing NEI 98-03 as the final guidance in a regulatory guide. The staff's proposed generic letter responded to the Commission's request for guidance on the content of the UFSAR, allowed removal of certain information, made the guidance applicable to plants undergoing decommissioning, and proposed a method for extending the enforcement discretion period for UFSARs that was risk informed (risk-informed prioritization). The staff noted that a risk-informed UFSAR content could not be achieved without rulemaking.

The staff recommended that the proposed generic letter be issued at that time because the staff could not endorse the preliminary version of NEI 98-03 without rulemaking. In particular, the staff had concerns with the industry positions regarding removal of certain historical information required to be in a UFSAR, removal of ill-defined "obsolete" and "less meaningful" information that may not have been allowed by the regulations, and the substitution of simplified schematics for piping and instrumentation diagrams without ensuring that the UFSAR continued to contain all required information.

In an SRM dated June 30, 1998, the Commission disapproved issuance of the proposed generic letter except under certain circumstances and directed the staff to continue to resolve differences between the proposed generic letter and NEI 98-03. The Commission also directed the staff to establish an enforcement discretion period for UFSARs for a 6- to 18-month period after the final guidance was issued, depending on risk significance.⁽³⁾

After several public meetings with the staff to resolve differences between the proposed generic letter and NEI 98-03, NEI submitted Revision 0 of NEI 98-03 to the staff for endorsement in October 1998. Upon finding Revision 0 acceptable, the staff drafted DG-1083, which proposed endorsing NEI 98-

03, Revision 0, and forwarded both documents to the Commission in [SECY-99-001](#), "Proposed Guidance for Updated Final Safety Analysis Reports in Accordance With 10 CFR 50.71(e)," dated January 5, 1999. In that paper, the staff recommended that the Commission approve issuance of DG-1083 for public comment. In an SRM dated February 16, 1999, the Commission approved the staff's recommendation.

DISCUSSION:

- [Public Comments](#)
- [Differences Between Revision 1 and Revision 0 of NEI 98-03](#)
- [Publication of RG 1.181](#)

PUBLIC COMMENTS

A total of 14 public comment letters were received on DG-1083. Thirteen were from licensees, and the other was from NEI. In general, most of the licensees supported NEI's comments and offered additional comments. When additional comments were provided, for the most part they concerned NEI 98-03, Revision 0, and not DG-1083.

The comments on NEI 98-03, Revision 0, were discussed with NEI at a public meeting on May 11, 1999, and were provided in a meeting summary dated May 19, 1999. The majority of the comments were of an editorial nature or corrected minor errors in NEI 98-03, Revision 0. When appropriate, NEI incorporated the minor changes into Revision 1. In addition, several substantive comments were received and were incorporated into Revision 1, as discussed further below.

Except for Regulatory Position C.5, "Incorporation by Reference," no substantive comments were provided on DG-1083, although some minor changes were made as suggested by the commenters.

DIFFERENCES BETWEEN REVISION 1 AND REVISION 0 OF NEI 98-03

Overall, NEI made few changes to NEI 98-03. The substantive changes concerned (1) incorporation by reference; (2) retention of information associated with systems, structures, and components (SSCs) of safety significance; (3) removal of drawings from the UFSAR; and (4) removal of commitments.

1. **Incorporation by Reference:** This topic received the most comments. Most comments concerned the proposal by the staff, as described in [SECY-99-001](#), to clarify NEI 98-03, Revision 0, by incorporating Regulatory Position C.5 in DG-1083. The staff position in DG-1083 was that since material incorporated by reference was part of the UFSAR, such material had to be on the docket and was subject to the requirements of 50.59 and 50.71(e), including the associated reporting requirements.

The concern of some commenters was that this approach departed from past practice and would impose a substantial burden with respect to keeping vendor and topical information up to date *on the docket*. Therefore, the consensus was that requiring maintenance of this information on the docket file would be inappropriate. The staff concurs with this comment and did not intend that all vendor and topical information be redundantly provided on each applicable licensee's docket file. Therefore, the staff suggested at the public meeting with NEI on May 11, 1999, that Revision 1 instead note that information incorporated by reference had to be on file with the NRC (but did not need to be maintained on each docket file). In addition, the staff suggested that NEI provide a specific example, using the Technical Requirements Manual (TRM), to demonstrate the impact of different approaches to referencing the TRM.

The staff finds that NEI has incorporated this comment (including the TRM example) into Revision 1 in an acceptable manner. Therefore, Regulatory Position C.5 is no longer needed in RG 1.181.

2. **Retention of Information Associated With SSCs of Safety Significance:** As noted in [SECY-99-001](#) and in the *Federal Register* notice for DG-1083, the staff proposed that NEI 98-03, Revision 0, be clarified to note that even when no explicit requirement existed, NEI 98-03 was not intended to be used to remove information associated with SSCs of safety significance from the UFSAR. Although retention of this information would be voluntary, the staff believed that this additional guidance would clarify the intent of NEI 98-03 with respect to removal of less meaningful and obsolete information.

In its comment letter, NEI stated its intent to incorporate language into Revision 1 consistent with that proposed by the staff. Three licensees were opposed to the inclusion of such guidance absent an explicit requirement. NEI did incorporate this clarification into Revision 1, and the staff finds the addition acceptable.

3. **Removal of Drawings:** Revision 1 includes additional guidance for the conditions under which it is acceptable to remove a drawing from the UFSAR. The criteria are consistent with the existing guidance in Revision 0 for the removal of descriptive information. The staff finds the additional guidance acceptable.
4. **Removal of Commitments:** At the public meeting with NEI on May 11, 1999, the staff noted that Revision 0 could be interpreted to allow the removal of *all* commitments from the UFSAR. The staff suggested that the guidance be clarified to limit the commitments that can be removed to those that are obsolete or less meaningful. NEI modified NEI 98-03 to address the staff's concern. The staff finds the clarification in Revision 1 acceptable.

PUBLICATION OF RG 1.181

The staff has found the guidance in NEI 98-03, Revision 1, to be acceptable and is proposing to endorse NEI 98-03 in RG 1.181 as one acceptable method for complying with 50.71(e). The guidance in NEI 98-03, Revision 1, is generally consistent with Revision 0 and DG-1083 and, where Revision 1 differs, the staff finds the alternative proposed by NEI to be acceptable. As previously noted, NEI incorporated the one clarification in DG-1083

(Regulatory Position C.5, "Incorporation by Reference") into Revision 1 such that RG 1.181 does not need that regulatory position. Therefore, RG 1.181 endorses NEI 98-03, Revision 1, without exception or clarification.

CONCLUSIONS:

The staff finds that the guidance in NEI 98-03, Revision 1, provides an acceptable method for compliance with 50.71(e). NEI 98-03 also contains provisions that allow licensees to improve and simplify the content and format of their UFSAR in a manner that is acceptable to the staff. The staff has developed a regulatory guide, RG 1.181, that endorses NEI 98-03, Revision 1, without exception.

IMPLEMENTATION:

As part of its regulatory oversight activities, the staff will monitor plant specific FSAR updates. The staff will pay particular attention to plants that implement Appendix A to NEI 98-03 to determine whether the guidance permits the removal of information that the staff believes is important to risk determinations or the conduct of regulatory business. The staff is also currently working on guidance to clarify the types of information that are considered design bases. Because this guidance will directly affect the content of the FSARs, and because of the difficulty in objectively defining what constitutes sufficient level of detail, the staff will also monitor the use of the design bases guidance for both the updating of the FSAR and the level of detail of the design basis. Based upon our activities, the staff will determine whether the guidance for design bases or FSAR updates or both needs to be modified.

RESOURCES:

The resources necessary to complete the activities related to issuing the final regulatory guide are currently budgeted for Fiscal Year 1999. No additional staff resources are necessary to train the appropriate staff beyond those resources previously identified in [SECY-97-205](#) and [SECY-98-087](#). Approximately 1.5 FTE have been projected for both FY2000 and FY2001 for staff activities to monitor licensee efforts to update the FSARs (about 40 hours per FSAR update).

COORDINATION:

The Office of the General Counsel has no legal objection to this paper or to publication of the proposed regulatory guide. The Office of the Chief Financial Officer has reviewed this Commission paper for resource implications and has no objections. The Committee to Review Generic Requirements and the Advisory Committee on Reactor Safeguards have endorsed the regulatory guide.

RECOMMENDATION:

The staff recommends that the Commission approve publication of the regulatory guide, RG 1.181, as one acceptable method for compliance with 50.71(e).

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Attachments: 1. [Regulatory Guide RG 1.181](#)
2. [Revision 1 of NEI 98-03](#)

ATTACHMENT 1

August 1999

REGULATORY GUIDE 1.181

(Draft was issued as DG-1083)

CONTENT OF THE UPDATED FINAL SAFETY ANALYSIS REPORT IN ACCORDANCE WITH 10 CFR 50.71(e)

- A. INTRODUCTION
- B. DISCUSSION
 - OBJECTIVE
 - DEVELOPMENT OF INDUSTRY GUIDELINE, NEI 98-03
- C. REGULATORY POSITION
 - 1. NEI 98-03
 - 2. OTHER DOCUMENTS REFERENCED IN NEI 98-03

- o 3. USE OF EXAMPLES IN NEI 98-03
- o 4. LICENSEES COMMITTED TO REGULATORY GUIDE 1.70
- o 5. USE OF OTHER METHODS
- D. IMPLEMENTATION
 - o CAUTION STATEMENT
 - o VALUE/IMPACT STATEMENT

A. INTRODUCTION

In 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," Section 50.34, "Contents of Applications; Technical Information," contains requirements for the contents of applications for construction permits and operating licenses for nuclear power reactors. An application for a construction permit must include a preliminary safety analysis report (PSAR) pursuant to 10 CFR 50.34(a). An application for an operating license must include a final safety analysis report (FSAR) in accordance with 10 CFR 50.34(b). For holders of operating licenses, 10 CFR 50.71(e) requires updated FSARs⁽⁴⁾ to be developed and periodically updated.

Guidance for the organization and contents of PSARs and FSARs has existed since June 30, 1966, when the "Guide to the Organization and Contents of Safety Analysis Reports" was issued. The most recent guidance document is Revision 3 of Regulatory Guide 1.70, "Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants (LWR Edition)," (November 1978). Limited guidance for the format and content of UFSARs was also provided in Generic Letter 80-110, "Periodic Updating of Final Safety Analysis Reports (FSARs)" (December 15, 1980).

As a result of lessons learned from the Millstone experience and other initiatives related to UFSARs, the NRC has determined that additional guidance regarding compliance with 10 CFR 50.71(e) is necessary. The staff recommended specific actions in SECY-97-036, "Millstone Lessons Learned Report, Part 2: Policy Issues," dated February 12, 1997. In a staff requirements memorandum dated May 20, 1997, the Commission directed the staff, in part, to issue guidance for complying with 10 CFR 50.71(e) so that UFSARs are updated to reflect changes to the design bases and to reflect the effects of other analyses performed since original licensing that should have been included under 10 CFR 50.71(e). This regulatory guide provides the guidance requested by the May 20, 1997, staff requirements memorandum.

The information collections contained in this regulatory guide are covered by the requirements of 10 CFR Part 50, which were approved by the Office of Management and Budget, approval number 3150-0011. The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

B. DISCUSSION

OBJECTIVE

The objectives of 10 CFR 50.71(e) are to ensure that licensees maintain the information in the UFSAR to reflect the current status of the facility and address new issues as they arise, so that the UFSAR can be used as a reference document in safety analyses.

DEVELOPMENT OF INDUSTRY GUIDELINE, NEI 98-03

On November 14, 1997, the Nuclear Energy Institute (NEI) provided a draft guidance document, NEI 98-03, "Draft Industry Update Guidelines for Final Safety Analysis Reports," to the NRC staff for information. In parallel with industry's efforts, the staff developed a proposed generic letter, "Interim Guidance for Updated Final Safety Analysis Reports in Accordance with 10 CFR 50.71(e)." This proposed generic letter and NEI's draft guideline were provided to the Commission in SECY-98-087,⁽⁵⁾ dated April 20, 1998. In SECY 98-087, the staff recommended that the Commission approve issuance of the proposed generic letter for public comment as interim guidance. The staff proposed to continue to work with NEI to resolve differences between the positions in the proposed generic letter and the draft industry guideline so that the industry guideline could be endorsed in a regulatory guide and thereby serve as permanent guidance for the content of UFSARs.

In a staff requirements memorandum dated June 30, 1998, the Commission disapproved issuance of the proposed generic letter and directed the staff to attempt to resolve differences between the draft industry guideline and the proposed generic letter so that the industry guideline could be endorsed.

Subsequently, the NRC staff held public meetings with NEI to resolve the differences between the documents, which resulted in NEI submitting Revision 0 of NEI 98-03 to the NRC staff for endorsement in November 1998. The NRC staff proposed endorsing Revision 0 of NEI 98-03 in the draft version, DG-1083, of this Regulatory Guide 1.181. DG-1083 was issued for public comment in March 1999.

After the public comment period, the staff held a public meeting with NEI to discuss the public comments received, the NRC staff comments, and the clarification of Revision 0 of NEI 98-03 in Regulatory Position 5 of DG-1083. NEI then submitted Revision 1 of NEI 98-03 in June 1999 for NRC endorsement in this regulatory guide. Revision 1 of NEI 98-03 incorporates the public comments, the NRC staff's comments, and Regulatory Position C.5 from DG-1083.

C. REGULATORY POSITION

1. NEI 98-03

Revision 1 of NEI 98-03, "Guidelines for Updating Final Safety Analysis Reports,"² dated June 1999, provides methods that are acceptable to the NRC staff for complying with the provisions of 10 CFR 50.71(e).

2. OTHER DOCUMENTS REFERENCED IN NEI 98-03

NEI 98-03 references other documents, but NRC's endorsement of NEI 98-03 should not be considered an endorsement of the referenced documents.

3. USE OF EXAMPLES IN NEI 98-03

NEI 98-03 includes examples to supplement the guidance. These examples are illustrative only, and the NRC's endorsement of NEI 98-03 should not be considered a determination that the examples are applicable for all licensees. A licensee should ensure that an example is applicable to its particular circumstances before implementing the guidance as described in an example.

4. LICENSEES COMMITTED TO REGULATORY GUIDE 1.70

This regulatory guide does not supersede any prior commitments made by licensees with respect to their FSARs (and by extension, their UFSARs), such as Regulatory Guide 1.70 (any revision) or its predecessor guidance documents. Therefore, a licensee that has made such a commitment to updated FSAR format and content must continue to meet this prior commitment, or the commitment should be modified in accordance with the licensee's commitment management process to allow full implementation of NEI 98-03.

5. USE OF OTHER METHODS

Licensees may use methods other than those proposed in Revision 1 of NEI 98-03 to meet the requirements of 10 CFR 50.71(e). The NRC will determine the acceptability of other methods on a case-by-case basis.

D. IMPLEMENTATION

The purpose of this section is to provide information to applicants and licensees regarding the NRC staff's plans for using this regulatory guide.

Except in those cases in which an applicant or licensee proposes or has previously established an acceptable alternative method for complying with specified portions of the NRC's regulations, the methods described in this guide will be used in the evaluation of licensee compliance with the requirements of 10 CFR 50.71(e).

CAUTION STATEMENT

Licensees are cautioned against possible deletion of information which may be important to risk-informed evaluation and decision making. Extent of the information which can be deleted without any adverse impact will be visited during efforts related to risk-informing Part 50.

VALUE/IMPACT STATEMENT

A separate Value/Impact Statement was not prepared for this regulatory guide. The Value/Impact Statement that was prepared for and printed with the draft of this guide, DG-1083, in March 1999, is still applicable. That Value/Impact Statement concluded that the value to individual licensees, the industry, the NRC, and the public that results from complete and accurate UFSARs outweighs the costs to licensees and the NRC that are presently associated with using UFSARs that are incomplete and inaccurate. Copies of the Value/Impact Statement are available for inspection or copying for a fee in the NRC's Public Document Room at 2120 L Street NW., Washington, DC, under Draft Regulatory Guide DG-1083. The PDR may be reached by telephone at (202)634-3273 or fax at (202)634-3343.

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1. The terminology for updated final safety analysis reports varies throughout the industry. The terms "updated FSAR, UFSAR, and USAR (updated safety analysis report)" are equivalent.
 2. Paragraph 50.71(f) extends the requirements of 50.71(e) to decommissioning facilities, that is, those nuclear power reactor licensees that have submitted the certification of permanent cessation of operations required under 50.82(a)(1)(i).
 3. The staff addressed this item with Enforcement Guidance Memorandum 98-007, "Extension of Exercise of Discretion for FSAR Discrepancies Identified While the Licensee Has a Defined Program for Identifying Such Discrepancies," dated September 15, 1998.
 4. The terminology for "updated FSARs" varies throughout the industry. In this guide, the terms updated FSAR, UFSAR, and USAR (updated Safety Analysis Report) are equivalent and have the same meanings.
 5. Copies are available for inspection or copying for a fee from the NRC Public Document Room at 2120 L Street NW., Washington, DC; the PDR's mailing address is Mail Stop LL-6, Washington, DC 20555; telephone (202)634-3273; fax (202)634-3343.