
POLICY ISSUE
(Notation Vote)

March 28, 2018

SECY-18-0042

FOR: The Commissioners
FROM: Victor M. McCree
Executive Director for Operations
SUBJECT: DRAFT FINAL NUREG/BR-0058, REVISION 5, "REGULATORY ANALYSIS
GUIDELINES OF THE U.S. NUCLEAR REGULATORY COMMISSION"

PURPOSE:

To request Commission approval to publish the final version of the Phase 1 portion of NUREG/BR-0058, Revision 5, "Regulatory Analysis Guidelines of the U.S. Nuclear Regulatory Commission" and five appendices (Enclosures 1-6). The Phase 1 revision to NUREG/BR-0058 is one element of the staff's plan for updating the agency's cost-benefit guidance, as directed by the Commission. This paper does not address any new commitments or resource implications.

SUMMARY:

This revision to NUREG/BR-0058 accomplishes three objectives. First, the update restructures and consolidates the U.S. Nuclear Regulatory Commission's (NRC) cost-benefit guidance into one NUREG and provides cost-benefit guidance for NRC's regulatory analyses, backfitting analyses, and National Environmental Policy Act (NEPA) reviews across NRC program offices. Second, the update incorporates improvements in methods for assessing factors that are difficult to quantify and includes relevant best practices identified in U.S. Government Accountability Office guidance and in recommendations in GAO-15-98, "Nuclear Regulatory Commission: NRC Needs to Improve Its Cost Estimates

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by Incorporating More Best Practices," dated December 12, 2014¹. Third, the update incorporates NRC experience and improvements in uncertainty analysis for use in cost-benefit analysis.

As described in SECY-14-0002, "Plan for Updating the U.S. Nuclear Regulatory Commission's Cost-Benefit Guidance," dated January 2, 2014 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13274A519), the Phase 1 update to the cost-benefit guidance originally included updating and incorporating NUREG-1409, "Backfitting Guidelines," into NUREG/BR-0058, Revision 5. In response to the staff requirements memorandum (SRM) to COMSECY-16-0020, "Revision of Guidance Concerning Consideration of Cost and Applicability of Compliance Exception to Backfit Rule," dated November 29, 2016 (ADAMS Accession No. ML16334A462), and because of a recent Executive Director for Operations tasking of the Committee to Review Generic Requirements (CRGR) to review the NRC's backfitting processes (ADAMS Accession No. ML17198C141), the staff plans to revise NUREG-1409 as a separate and parallel effort.

BACKGROUND:

Commission Direction

The 2011 accident at the Fukushima Dai-ichi nuclear power plant in Japan initiated discussion regarding how the NRC's regulatory framework would consider offsite property damage and the associated economic consequences caused by a significant radiological release from an NRC-licensed facility. In response to this discussion, the staff issued SECY-12-0110, "Consideration of Economic Consequences within the U.S. Nuclear Regulatory Commission's Regulatory Framework," dated August 14, 2012 (ADAMS Accession No. ML12173A478). In SECY-12-0110, the staff recommended enhancing the currency and consistency of the existing regulatory framework through updates to cost-benefit analysis guidance documents. This included harmonizing cost-benefit guidance across agency business lines.

In the SRM to SECY-12-0110, dated March 20, 2013 (ADAMS Accession No. ML13079A055), the Commission approved this recommendation and directed the staff to identify potential changes to current methodologies and tools to perform cost-benefit analysis in support of regulatory, backfit, and environmental analyses. The Commission also directed the staff to provide a regulatory gap analysis before developing new cost-benefit guidance.

In response to the SRM to SECY-12-0110, the staff issued SECY-14-0002, "Plan for Updating the U.S. Nuclear Regulatory Commission's Cost-Benefit Guidance," dated January 2, 2014 (ADAMS Accession No. ML13274A519). In SECY-14-0002, the staff identified potential changes to current methodologies and tools related to performing cost-benefit analysis in support of regulatory, backfit, and environmental analyses. The staff recommended a two-phased approach to revise the content and structure of cost-benefit guidance documents. The effort described in this paper, Phase 1, begins to align regulatory guidance across business lines by restructuring and incorporating policy revisions to NRC cost-benefit guidance. SECY-14-0002 describes Phase 1 as a restructuring of the three main

¹ GAO-15-98, "Nuclear Regulatory Commission: NRC Needs to Improve Its Cost Estimates by Incorporating More Best Practices," dated December 12, 2014, can be accessed at <http://www.gao.gov/assets/670/667501.pdf>.

cost-benefit guidance documents, where NUREG/BR-0184, "Regulatory Analysis Technical Evaluation Handbook," issued January 1997 (ADAMS Accession No. ML050190193), and NUREG-1409, would be incorporated into NUREG/BR-0058. However, in response to the SRM to COMSECY-16-0020 and the "Tasking in Response to Committee to Review Generic Requirements Report on the U.S. Nuclear Regulatory Commission's Implementation of Backfitting and Issue Finality Requirements," dated July 19, 2017 (ADAMS Accession No. ML17198C141), the staff determined that NUREG-1409 should be kept as a standalone document and the revision to NUREG-1409 will be addressed through a separate and parallel effort. Subsequently, in Phase 2, the staff will identify policy issues that could affect the NRC's cost-benefit guidance, present these issues to the Commission for consideration, and incorporate updates to guidance on conducting cost-benefit analyses in support of backfitting decisions.

In the SRM to SECY-12-0157, "Consideration of Additional Requirements for Containment Venting Systems for Boiling Water Reactors with Mark I and Mark II Containments," dated March 19, 2013 (ADAMS Accession No. ML13078A017), the Commission directed the NRC staff to seek detailed Commission guidance on the use of qualitative factors. In response to the SRM, the staff wrote SECY-14-0087, "Qualitative Consideration of Factors in the Development of Regulatory Analyses and Backfit Analyses," dated August 14, 2014 (ADAMS Accession No. ML14127A458). In SECY-14-0087, the staff proposed updating the cost-benefit guidance to include a set of methods that could be used for the consideration of qualitative factors within a cost-benefit analysis for regulatory and backfit analyses. In the SRM to SECY-14-0087, dated March 4, 2015 (ADAMS Accession No. ML15063A568), the Commission approved the staff's plans for updating guidance regarding the use of qualitative factors, including the treatment of uncertainties, and directed the staff to focus the update on capturing best practices for the consideration of qualitative factors. The Commission also directed the staff to provide a toolkit for analysts to help them clarify their thinking with regard to how they considered qualitative factors.

The staff issued SECY-14-0143, "Regulatory Gap Analysis of the Nuclear Regulatory Commission's Cost Benefit Regulations, Guidance and Practices," dated December 16, 2014 (ADAMS Accession No. ML14280A426), in response to the Commission's direction from SRM-SECY-12-0110 to provide a regulatory gap analysis. In SECY-14-0143, the staff described the review of current NRC guidance, methodologies, and tools used for cost-benefit determinations. The staff also described the results of its review of the NRC regulatory analyses that had been completed and identified differences across NRC business lines (e.g., nuclear material users, fuel cycle facilities, new and operating reactors) and procedures (i.e., regulatory analyses, backfit analyses, NEPA reviews). The staff's gap analysis identified where additional guidance is needed to ensure consistency across the agency. The staff will continue to use the gap analysis results, as appropriate, during Phase 2 of the cost-benefit guidance update.

Phase 1 and Phase 2 of the cost-benefit guidance update would also reference the revised dollar per person-rem conversion factor contained in SECY-17-0017, "Proposed Revision to NUREG-1530, Reassessment of NRC's Dollar per Person-Rem Conversion Factor Policy," dated January 30, 2017 (ADAMS Accession No. ML16147A293), if the Commission approves this revision. The enclosed revision to NUREG/BR-0058 currently references NUREG-1530, Revision 1, Draft Report for Comment (ADAMS Accession No. ML15237A211).

Additionally, Phase 1 and Phase 2 of the cost-benefit guidance update address environmental justice reviews in accordance with the 2004 Commission policy statement,

"The Treatment of Environmental Justice Matters in NRC Regulatory and Licensing Actions" (69 FR 52040).

External Stakeholder Interaction

The staff held two public meetings on the proposed cost-benefit guidance updates in July 2015 and May 2017. The summaries for these meetings can be found at ADAMS Accession Nos. ML15217A415 and ML17156A014, respectively. The staff also held a public workshop in March 2016 to discuss the Phase 1 changes. The workshop summary can be found at ADAMS Accession No. ML16084A167. Meeting participants included industry representatives, government and nongovernmental organizations, and other interested parties.

The NRC issued draft NUREG/BR-0058, Revision 5, for public comment in the *Federal Register* on April 17, 2017 (82 FR 18163). The staff received 3 comment submissions with a total of 58 individual comments from industry and members of the public. The NRC responses to these public comments are provided in Enclosure 7.

DISCUSSION:

The following are notable elements of the Phase 1 update to the cost-benefit guidance:

- (1) **Consolidating Cost-Benefit Guidance:** Revision 5 to NUREG/BR-0058 is a restructuring of the NRC cost-benefit guidance. The revision incorporates process information contained in NUREG/BR-0184 and provides guidance for performing cost-benefit analyses across the agency. The document provides additional discussion of cost-benefit guidance for NRC's regulatory analyses, backfit analyses, and NEPA reviews. The staff has incorporated detailed information in a series of appendices to NUREG/BR-0058, Revision 5, which will be issued and controlled separately from the main document. This will allow the appendices to be updated independently of the main body of the document. The staff plans to track revisions of Appendices A – E with an index that will be updated any time changes are made.
- (2) **Improvements in Methods:** Phase 1 of the cost-benefit guidance update focuses on improving methods for quantitative analyses, including the treatment of uncertainty and the development of realistic estimates of the cost of implementing proposed requirements. The revision provides guidance intended to enhance clarity, transparency, and consistency of analyses for the decisionmaker. The cost-benefit guidance update provides methods for assessing factors that are difficult to quantify, incorporates cost-estimating best practices, and expands on methods to quantify uncertainties. The update also includes relevant best practices identified in GAO-09-3SP, "GAO Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Capital Program Costs," issued March 2009², and recommendations from GAO-15-98.
- (3) **Appendices for NUREG/BR-0058, Revision 5:** The staff has developed the following appendices:

² GAO-09-3SP, "GAO Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Capital Program Costs," issued March 2009, can be accessed at <http://www.gao.gov/new.items/d093sp.pdf>.

- Appendix A, “Qualitative Factors Assessment Tools,” provides guidance and best practices for use in considering intangible costs and benefits (i.e., qualitative factors) to improve the clarity, transparency, and consistency of the NRC’s regulatory, backfit, and environmental analyses. The identification, characterization, and analysis of both monetized (e.g., measured in dollars) and qualitative (e.g., functional or nonmonetized) costs and benefits are essential for the evaluation and selection of the preferred alternative.
- Appendix B, “Cost Estimating and Best Practices,” provides expanded guidance on incorporating cost-estimating best practices, including estimating life-cycle costs. This guidance describes methods and procedures recommended for use in preparing cost estimates. This appendix also describes practices relative to estimating life cycle costs.
- Appendix C, “The Treatment of Uncertainty,” addresses and expands on the guidance for performing uncertainty and sensitivity analyses for cost-benefit analyses. Assessing and representing uncertainties are important components in conducting the analyses for decisionmakers. Various tools can be used to assess uncertainty and sensitivity and their effects on the outcomes or results.
- Appendix D, “Guidance on Regulatory Analysis Related to ASME Code Rules,” provides guidance on regulatory analysis related to American Society of Mechanical Engineers (ASME) code endorsements. The NRC periodically reviews and endorses consensus standards, such as new versions of ASME codes, and the staff must address the regulatory actions that endorse these consensus standards in a regulatory analysis. It is usually not necessary to address the individual provisions of the consensus standards. However, some aspects of these regulatory actions endorsing the consensus standards are backfits that must be addressed and justified individually.
- Appendix E, “Special Circumstances and Relationship to Other Procedural Requirements,” provides general guidance to assist the analyst in working through cost-benefit problems that are not explicitly addressed in the draft guidance. This appendix also discusses the relationship of regulatory analyses to certain statutory procedural requirements applicable to the NRC.

In conducting its regulatory analyses, the staff is already implementing best practices and lessons learned that are addressed in this revision of NUREG/BR-0058, when those changes have not involved policy issues.

RECOMMENDATIONS:

The staff recommends that the Commission approve final publication of NUREG/BR-0058, Revision 5 and the enclosed appendices. If approved, the staff would publish a notice in the *Federal Register* (Enclosure 8) informing the public of the availability of NUREG/BR-0058, Revision 5.

COORDINATION:

The Office of the General Counsel has reviewed this package and has no legal objection.

The staff briefed the CRGR and the Advisory Committee on Reactor Safeguards (ACRS) on the proposed changes to NUREG/BR-0058. The staff briefed the CRGR on January 10, 2017, the ACRS Regulatory Policies and Practices Subcommittee on February 7, 2017, and the ACRS Full Committee on March 9, 2017. The ACRS's letter on the proposed changes and the staff's response can be found at ADAMS Accession Nos. ML17108A415 and ML17103A389, respectively. The ACRS determined that the staff's proposed changes at the final stage were not sufficient to warrant further review. However, the ACRS plans to review the NUREG in its entirety during Phase 2 of the update.

/RA/

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Enclosures:

1. NUREG/BR-0058, Revision 5
2. Appendix A
3. Appendix B
4. Appendix C
5. Appendix D
6. Appendix E
7. NRC Response to Public Comments on
Draft NUREG/BR-0058, Revision 5
8. *Federal Register* Notice

DRAFT FINAL NUREG/BR-0058, REVISION 5, "REGULATORY ANALYSIS GUIDELINES OF THE U.S. NUCLEAR REGULATORY COMMISSION" DATED: MARCH 28, 2018.

ADAMS Accession Nos.: Package: ML17221A000; SECY: ML17221A003;
 FRN: ML17221A004, NUREG/BR-0058: ML17221A005; Appendix A: ML17221A006;
 Appendix B: ML17221A007; Appendix C: ML17221A008; Appendix D: ML17221A009;
 Appendix E: ML17221A010; Comment Response: ML17221A011 * via e-mail

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