

NUCLEAR REGULATORY COMMISSION

[NRC-2017-0091]

Regulatory Analysis Guidelines

AGENCY: Nuclear Regulatory Commission.

ACTION: NUREG; issuance.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is issuing NUREG/BR-0058, Revision 5, "Regulatory Analysis Guidelines of the U.S. NRC." This revision to NUREG/BR-0058 updates and restructures the NRC's cost-benefit guidance documents by incorporating information contained in NUREG/BR-0184, "Regulatory Analysis Technical Handbook," into NUREG/BR-0058 and provides cost-benefit guidance for NRC's regulatory analyses, backfit analyses, and National Environmental Policy Act (NEPA) reviews across NRC program offices. Additionally, the update incorporates improvements in methods for assessing factors that are difficult to quantify, incorporates relevant cost estimating best practices, and includes improvements in uncertainty analyses for use in cost-benefit analyses.

ADDRESSES: Please refer to Docket ID NRC-2017-0091 when contacting the NRC about the availability of information regarding this document. You may obtain publicly-available information related to this document using any of the following methods:

- **Federal Rulemaking Web Site:** Go to <http://www.regulations.gov> and search for Docket ID NRC-2017-0091. Address questions about NRC dockets to Carol Gallagher; telephone: 301-415-3463; e-mail: Carol.Gallagher@nrc.gov. For technical questions, contact

the individual(s) listed in the FOR FURTHER INFORMATION CONTACT section of this document.

- **NRC's Agencywide Documents Access and Management System (ADAMS):**

You may obtain publicly-available documents online in the ADAMS Public Documents collection at <http://www.nrc.gov/reading-rm/adams.html>. To begin the search, select "[ADAMS Public Documents](#)" and then select "[Begin Web-based ADAMS Search](#)." For problems with ADAMS, please contact the NRC's Public Document Room (PDR) reference staff at 1-800-397-4209, 301-415-4737, or by e-mail to pdr.resource@nrc.gov. The ADAMS accession number for each document referenced (if it is available in ADAMS) is provided the first time that it is mentioned in this document. In addition, for the convenience of the reader, the ADAMS accession numbers are provided in a table in the "Availability of Documents" section of this document.

- **NRC's PDR:** You may examine and purchase copies of public documents at the NRC's PDR, Room O1-F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852.

FOR FURTHER INFORMATION CONTACT: Pamela Noto, Office of Nuclear Material Safety and Safeguards, telephone: 301-415-6795, e-mail: Pamela.Noto@nrc.gov, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

SUPPLEMENTARY INFORMATION:

I. Discussion

Revision 5 to NUREG/BR-0058 is the first of two phases of updates to the NRC's cost-benefit guidance documents, namely NUREG/BR-0058, Revision 4, "Regulatory Analysis Guidelines of the U.S. NRC," and NUREG/BR-0184, "Regulatory Analysis Technical Handbook." This update identifies changes to current methods and tools related to performing cost-benefit analyses in support of regulatory analyses, backfitting analyses, and environmental analyses.

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 NRC staff recommended enhancing the currency and consistency of the agency's regulatory analysis guidance through updates to cost-benefit analysis guidance documents, including aligning cost-benefit guidance across the agency in both reactor and materials program areas, in SECY-12-0110, "Consideration of Economic Consequences in the NRC's Regulatory Framework," dated August 14, 2012. In the staff requirements memorandum (SRM) to SECY-12-0110, dated March 20, 2013, the Commission approved this recommendation and directed the NRC staff to identify potential changes to current methodologies and tools to perform cost-benefit analyses in support of regulatory, backfit, and environmental analyses. Further, the Commission directed the NRC staff to provide a regulatory gap analysis prior to developing new cost-benefit guidance.

In response to Commission direction, the NRC staff prepared SECY-14-0002, “Plan for Updating NRC’s Cost-Benefit Guidance;” dated January 2, 2014; SECY-14-0087, “Qualitative Consideration of Factors in the Development of Regulatory Analyses and Backfit Analyses;” dated August 14, 2014; and SECY-14-0143, “Regulatory Gap Analysis of the NRC’s Cost-Benefit Guidance and Practices,” dated December 16, 2014. Further details regarding these documents are provided in the discussion that follows.

In response to the SRM to SECY-12-0110, the NRC staff issued SECY-14-0002. In that SECY paper, the NRC staff identified potential changes to current methodologies and tools related to performing cost-benefit analyses in support of regulatory, backfit, and environmental analyses. The NRC staff recommended a two-phased approach to revise the content and structure of the cost-benefit guidance documents. Phase 1 begins to align regulatory guidance across the agency in both reactor and materials program areas by restructuring and pursuing policy revisions. SECY-14-0002 describes Phase 1 as a restructuring of the three main NRC cost-benefit guidance documents, where NUREG/BR-0184 and NUREG-1409, “Backfitting Guidelines,” would be incorporated into NUREG/BR-0058. However, in response to the SRM to COMSECY-16-0020, “Revision of Guidance Concerning Consideration of Cost and Applicability of Compliance Exception to Backfit Rule,” 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, the NRC staff determined that NUREG-1409 should be kept as a standalone document and the revision to NUREG-1409 will be addressed through a separate but parallel effort. Cost-benefit information related to backfitting will be incorporated into the proposed revision to NUREG/BR-0058 during Phase 2. Phase 1 now consists of revising and consolidating NUREG/BR-0058, Revision 4, and NUREG/BR-0184 into a single NUREG; updating data, methods, and references; and addressing audit findings and case-study recommendations. Subsequently,

Phase 2 will identify and discuss policy issues for Commission consideration that could affect the NRC's cost-benefit guidance.

The NRC staff wrote SECY-14-0087 in response to 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, which directed the NRC staff to seek guidance regarding the use of qualitative factors. In SECY-14-0087, the NRC staff proposed updating the cost-benefit guidance to include a set of methods that could be used for qualitative consideration of factors within a cost-benefit analysis for regulatory and backfit analyses. In the SRM to SECY-14-0087, dated March 4, 2015, the Commission approved the staff's plans for updating guidance regarding qualitative factors, including the treatment of uncertainties, and directed the update to focus on capturing best practices for the consideration of qualitative factors. The Commission also directed the NRC staff to develop a toolkit for the analyst to help them clarify their thinking with regard to how they considered qualitative factors. Appendix A, "Qualitative Factors Assessment Tools," of the revision to NUREG/BR-0058 provides this toolkit for considering qualitative factors.

In 2014, the U.S. Government Accountability Office (GAO) conducted a performance audit in which the NRC's cost-estimating procedures were reviewed. The GAO audit report, GAO-15-98, "NRC Needs to Improve Its Cost Estimates by Incorporating More Best Practices," recommended that the NRC align its cost estimating procedures with relevant cost estimating best practices identified in the "GAO Cost Estimating and Assessment Guide" (GAO-09-3SP). The NRC staff has addressed the GAO recommendations in Appendix B, "Cost Estimating and Best Practices," of the revision to NUREG/BR-0058.

This revision to NUREG/BR-0058 makes three main changes. First, the revision to NUREG/BR-0058 consolidates cost-benefit guidance that is used across the agency. The document provides additional discussion of cost-benefit guidance for NRC's regulatory analyses, backfit analyses, and NEPA reviews.

Second, this revision provides methods for assessing factors that are difficult to quantify, incorporates cost-estimating best practices, and expands on methods to quantify uncertainties. This revision provides guidance intended to enhance clarity, transparency, and consistency of analyses for the decisionmaker.

Finally, this revision uses appendices to provide detailed technical material that is subject to future changes. These appendices will be issued and controlled separately to facilitate the maintenance of this information. The following Appendices were developed during Phase 1: Appendix A, "Qualitative Factors Assessment Tools;" Appendix B, "Cost Estimating and Best Practices;" Appendix C, "The Treatment of Uncertainty;" Appendix D, "Guidance on Regulatory Analysis Related to American Society of Mechanical Engineers (ASME) Code Rules;" and Appendix E, "Special Circumstances and Relationship to Other Procedural Requirements."

The NRC staff held a Category 3 public meeting on July 16, 2015, to discuss the proposed structure and changes to the NRC cost-benefit guidance in Phase 1. The NRC presentation can be found in ADAMS under Accession No. ML15189A463, and the meeting summary can be found in ADAMS under Accession No. ML15217A415. The NRC staff held a Category 3 public workshop on March 3, 2016, to discuss NRC activities to improve its cost-benefit guidance including the newly developed qualitative factors assessment tools, cost estimating and best practices, and the treatment of uncertainty. The NRC presentation can be found in ADAMS under Accession No. ML16061A139, and the meeting summary can be found in ADAMS under Accession No. ML16084A167. The NRC staff published the draft NUREG/BR-0058, Revision 5, in the *Federal Register* (82 FR 18163, April 17, 2017) for a 60-day public comment period. The NRC also held a Category 3 public meeting on May 22, 2017, during the public comment period, to present proposed changes to the cost-benefit guidance update to inform the public's comments on the draft NUREG/BR-0058, Revision 5. The NRC presentation can be found in ADAMS under Accession No. ML17135A037, and the meeting summary can be

found in ADAMS under Accession No. ML17156A014. The NRC staff received three comment submissions with a total of 58 individual comments. Two submissions were from the Nuclear Energy Institute, and one submission was from a private citizen. The public comment response document can be found in ADAMS under Accession No. ML17221A011. The NRC staff briefed the Committee for Review of Generic Requirements (CRGR) on January 10, 2017. Additionally, the NRC staff met with the Advisory Committee on Reactor Safeguards (ACRS) Regulatory Policies and Practices Subcommittee on February 7, 2017, and with the ACRS Full Committee on March 9, 2017. The ACRS determined that the NRC 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.

II. Availability of Documents

The documents identified in the following table are available to interested persons through one or more of the following methods, as indicated.

DOCUMENT	ADAMS ACCESSION NO. / WEB LINK / FEDERAL REGISTER CITATION
NUREG/BR-0058, Revision 5, "Regulatory Analysis Guidelines of the U.S. NRC"	ML17221A000 (Package)
NRC Response to Public Comments on Draft NUREG/BR-0058, Revision 5	ML17221A011
NUREG/BR-0058, Revision 4, "Regulatory Analysis Guidelines of the U.S. NRC"	ML042820192
NUREG/BR-0184, "Regulatory Analysis Technical Evaluation Handbook"	ML050190193
SECY-14-0002, "Plan for Updating NRC's Cost-Benefit Guidance," January 2, 2014	ML13274A519
SECY-14-0087, "Qualitative Consideration of Factors in the Development of Regulatory Analyses and Backfit Analyses," September 11, 2014	ML14127A458 (Package)
SECY-14-0143, "Regulatory Gap Analysis of the NRC's Cost-Benefit Guidance and Practices," December 16, 2014	ML14280A426 (Package)
SECY-12-0110, "Consideration of Economic Consequences within the U.S. NRC's Regulatory Framework," August 14, 2012	ML12173A478 (Package)
SRM-SECY-12-0110, "Consideration of Economic Consequences within the U.S. NRC's Regulatory Framework," March 20, 2013	ML13079A055
SRM-SECY-14-0087, "Qualitative Consideration of Factors in the Development of Regulatory Analyses and Backfit Analyses," March 4, 2015	ML15063A568
NUREG-1409, "Backfitting Guidelines"	ML032230247
"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," July 19, 2017	ML17198C141

SRM-COMSECY-16-0020, "Revision of Guidance Concerning Consideration of Cost and Applicability of Compliance Exception to Backfit Rule," November 29, 2016	ML17198C141
GAO-15-98, "NRC Needs to Improve its Cost Estimates by Incorporating More Best Practices"	http://www.gao.gov/assets/670/667501.pdf
GAO-09-3SP, "GAO Cost Estimating and Assessment Guide"	http://www.gao.gov/new.items/d093sp.pdf
SRM-SECY-12-0157, "Consideration of Additional Requirements for Containment Venting Systems for Boiling Water Reactors with Mark I and Mark II Containments," March 12, 2013	ML13078A017
ACRS Regulatory Policies and Practices Subcommittee Transcripts, February 7, 2017	ML17058A357
ACRS Meeting Transcripts, March 9, 2017	ML17086A361

Dated at Rockville, Maryland, this [redacted]th day of [redacted] 2018.

For the Nuclear Regulatory Commission.

Annette Vietti-Cook,
Secretary of the Commission.

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

ADAMS Accession Number: ML17221A004

* via e-mail

OFFICE	NRR/DPR/PRMB/PM	NRR/DPR/PRMB/TL	NRR/DPR/PRMB/RS	NRR/DPR/PRMB/BC	NRR/DPR/DD*
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DATE	7/28/2017	8/8/2017	8/8/2017	8/8/2017	8/17/2017
OFFICE	RES/D*	NMSS/D*	NSIR/D*	NRO/D*	ADM*
NAME	MWeber	MDapas, (SMoore fo)	SWest, (MKohen for)	VOrdaz, (RTaylor for)	CCarpenter, (JShepherd-Vladimir for)
DATE	9/6/2017	9/13/2017	9/6/2017	9/5/2017	9/8/2017*
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DATE	9/11/2017	10/31/2017	3/5/2018	3/28/18	

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