



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

July 16, 2019

Dr. Peter C. Riccardella, Chairman  
Advisory Committee on Reactor Safeguards  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

SUBJECT: REVIEW OF NUCLEAR ENERGY INSTITUTE 96-07, APPENDIX D, "SUPPLEMENTAL GUIDANCE FOR APPLICATION OF 10 CFR 50.59 TO DIGITAL MODIFICATIONS," ISSUED NOVEMBER 2018, AND THE U.S. NUCLEAR REGULATORY COMMISSION'S ASSOCIATED DRAFT REVISION 2 TO REGULATORY GUIDE 1.187, "GUIDANCE FOR IMPLEMENTATION OF 10 CFR 50.59 'CHANGES, TESTS, AND EXPERIMENTS'"

Dear Dr. Riccardella:

Thank you for your letter dated June 20, 2019 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19171A323), about the Advisory Committee on Reactor Safeguards (ACRS) review of Nuclear Energy Institute (NEI) 96-07, Appendix D, "Supplemental Guidance for Application of 10 CFR 50.59 to Digital Modifications," and the U.S. Nuclear Regulatory Commission's (NRC's) associated draft Revision 2 to Regulatory Guide (RG) 1.187, "Guidance for Implementation of 10 CFR 50.59 'Changes, Tests, and Experiments.'" I appreciate the time and effort the ACRS devoted to this subject, as reflected in meetings held with the ACRS Subcommittee for Digital Instrumentation and Control (DI&C) on April 16, 2019, and the ACRS Full Committee on June 5, 2019.

Your letter contained four conclusions and recommendations; the staff's responses are provided below:

**Conclusion and Recommendation 1:**

Guidance for applying Title 10 of the *Code of Federal Regulations* (10 CFR) 50.59, "Changes, Tests and Experiments," to DI&C systems has been needed. This stems from the inherently different failure characteristics of systems that include DI&C equipment and from the unique and far-reaching potential impacts of DI&C system common-cause events.

**Staff Response:** The staff agrees with the ACRS that guidance for applying 10 CFR 50.59, "Changes, Tests and Experiments," to DI&C is needed. The staff's issuance of RG 1.187, Revision 2 (in final form), will complete the staff's actions associated with fulfilling this need. NEI 96-07, Appendix D and Regulatory Guide 1.187, Revision 2 will address potential common-cause failure.

**Conclusion and Recommendation 2:**

Draft Revision 2 to Regulatory Guide 1.187, that endorses NEI 96-07, Appendix D, with exceptions and clarifications, provides an acceptable and timely approach for applying 10 CFR 50.59 guidance when conducting DI&C modifications.

**Staff Response:** The staff agrees with this conclusion.

**Conclusion and Recommendation 3:**

A staff exception to NEI 96-07, Appendix D, requires consideration of more than the safety analysis within the updated final safety analysis report (UFSAR) and, thereby constrains its application. There is an opportunity for expanding the use of 10 CFR 50.59 for DI&C modifications by more clearly identifying the significance of different results caused by a malfunction of a Structure, System, and Component (SSC) important to safety as specified in Criterion 6. The use of risk-informed or other methods should be considered. This is a longer-term issue and may require a rule change.

**Staff Response:** The staff conducted a public meeting on June 25, 2019, which focused on the noted exception. Specifically, the purpose of the meeting was to conduct a tabletop exercise applying the guidance in Appendix D, Criterion 6, to DI&C modifications to determine whether different outcomes could be achieved when (1) applying Appendix D as written by the NEI and (2) applying RG 1.187, Revision 2 (with staff exceptions). The discussion during the public meeting highlighted areas in which the language in the guidance could be enhanced to provide more consistent understanding between NRC and industry. The NEI indicated that it would include revised language as part of its public comment submission. The staff will hold additional public meetings and reopen the comment period, if appropriate, to continue to clarify the guidance and address any gaps in how it will be applied, within the bounds of the current rule language, when performing 10 CFR 50.59 evaluations.

SECY-18-0060, "Achieving Modern Risk-Informed Regulation," Enclosure 5, "Additional Detail on Areas of Transformation," dated May 23, 2018 (ADAMS Accession No. ML18110A187) provides a recommendation to the Commission to revise 10 CFR 50.59 and other similar requirements to allow additional flexibility for licensees to make facility changes without prior NRC approval. Separately, the Office of Nuclear Reactor Regulation has tasked the Office of Nuclear Regulatory Research for support in developing the basis for further risk-informing the regulatory framework for instrumentation and control systems/components. This project is being tracked under a user need request, "User Need Request for 'Risk-Informed Reviews of Instrumentation and Control Systems/Components – Technical Basis and Regulatory Approaches,'" dated April 18, 2018 (ADAMS Accession No. ML18087A071).

**Conclusion and Recommendation 4:**

The staff should provide final Revision 2 to Regulatory Guide 1.187 for our review following resolution of public comments.

**Staff Response:** The staff will provide the final Revision 2 to RG 1.187 for ACRS review following the resolution of public comments.

The staff appreciates your review of NEI 96-07, Appendix D, and draft RG 1.187, Revision 2, and looks forward to future interactions with the ACRS on DI&C topics.

Sincerely,

/RA Michele G. Evans Acting for/

Ho K. Nieh, Director  
Office of Nuclear Reactor Regulation

cc: Chairman Svinicki  
Commissioner Baran  
Commissioner Caputo  
Commissioner Wright  
SECY  
EDO

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 DATED: July 16, 2019

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**ADAMS Accession No.: ML19184A545** **\*concurrence via e-mail**

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