

NUCLEAR REGULATORY COMMISSION

[NRC-2018-0076]

**Evaluating Electromagnetic and Radio-Frequency Interference in Safety-Related
Instrumentation and Control Systems**

AGENCY: Nuclear Regulatory Commission.

ACTION: Regulatory guide, issuance.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is issuing Revision 2 to Regulatory Guide (RG) 1.180, "Guidelines for Evaluating Electromagnetic and Radio-Frequency Interference in Safety-Related Instrumentation and Control Systems." RG 1.180 provides guidance on electromagnetic compatibility (EMC) practices and test methods that the staff of the NRC consider acceptable for qualifying safety-related instrumentation and control (I&C) systems for the expected electromagnetic environment in nuclear power plants. The RG would endorse, with certain exceptions, standards that were updated and corrected subsequent to the last time the NRC endorsed them in RG 1.180. More information on updates can be found in the "Supplementary Information" section below.

DATES: Revision 2 to RG 1.180 is available on December 27, 2019.

ADDRESSES: Please refer to Docket ID **NRC-2018-0076** 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 <https://www.regulations.gov> and search for Docket ID **NRC-2018-0076**. Address questions about NRC dockets IDs in Regulations.gov to Jennifer Borges; telephone: 301-287-9127; e-mail:

Jennifer.Borges@nrc.gov. For technical questions, contact the individuals 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 <https://www.nrc.gov/reading-rm/adams.html>. To begin the search, 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. Revision 2 to RG 1.180 and the regulatory analysis may be found in ADAMS under Accession Nos. ML19175A044 and ML17188A397 respectively.

- **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.

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FOR FURTHER INFORMATION CONTACT: David Dawood, Telephone: 301-415-2389, email: David.Dawood@nrc.gov, and Michael Eudy, Telephone: 301-415-3104, email: Michael.Eudy@nrc.gov. Both are staff members of the Office of Nuclear Regulatory Research, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

SUPPLEMENTARY INFORMATION:

I. Discussion

The NRC is issuing a revision to an existing guide in the NRC's "Regulatory Guide" series. This series was developed to describe and make available to the public information regarding methods that are acceptable to the NRC staff for implementing

specific parts of the agency's regulations, techniques that the NRC staff uses in evaluating specific issues or postulated events, and data that the NRC staff needs in its review of applications for permits and licenses.

Revision 2 of RG 1.180 was issued with a temporary identification of Draft Regulatory Guide, DG-1333. Revision 2 of RG 1.180 updates the guidance on EMC practices and test methods that the staff of the NRC consider acceptable for qualifying safety-related I&C systems for the expected electromagnetic environment in nuclear power plants. The revised RG endorses the current versions of previously endorsed military, Institute of Electrical and Electronics Engineers (IEEE), and International Electrotechnical Commission (IEC) specifications and standards; incorporates additional guidance for evaluating the effects of electrostatic discharge; and accounts for the evolution of the operational environment at nuclear power plants arising from the increased use of digital technology, including wireless communication for both personnel (personal digital assistants and smartphones) and industrial (remote I&C) applications.

Department of Defense, Federal, National Aeronautics and Space Administration, NASA, Department of Energy, and Government specifications, standards, handbooks, and publications are available free from www.EverySpec.com. Copies of IEEE documents may be purchased from the Institute of Electrical and Electronics Engineers Service Center, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855, or through the IEEE's public Web site at http://www.ieee.org/publications_standards/index.html. Copies of IEC documents may be obtained through its Web site at <http://www.iec.ch/> or by writing the IEC Central Office at P.O. Box 131, 3 Rue de Varembe, 1211 Geneva, Switzerland, telephone +41 22 919 02 11.

II. Additional Information

The NRC published a notice of the availability of DG-1333 in the *Federal Register* on April 24, 2018 (83 FR 17867) for a 60-day public comment period. The public comment period closed on June 25, 2018. Public comments on DG-1333 and the staff responses to the public comments are available under ADAMS under Accession No. ML19175A048.

III. Congressional Review Act

This RG is a rule as defined in the Congressional Review Act (5 U.S.C. 801-808). However, the Office of Management and Budget has not found it to be a major rule as defined in the Congressional Review Act.

IV. Backfitting and Issue Finality

Revision 2 to RG 1.180, would update the guidance on EMC practices and test methods that the staff of the NRC consider acceptable for qualifying safety-related I&C systems for the expected electromagnetic environment in nuclear power plants. This RG would not constitute backfitting as defined in title 10 of the Code of Federal Regulations (10 CFR) section 50.109 (the Backfit Rule) and is not otherwise inconsistent with the issue finality provisions in 10 CFR part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants." The subject of this RG, as described above, is an NRC-defined process that does not fall within the purview of subjects covered by either the Backfit Rule or the issue finality provision in 10 CFR part 52. Issuance of the RG would not constitute backfitting as defined in 10 CFR 50.109, or be otherwise inconsistent with the applicable issue finality provision in 10 CFR part 52, inasmuch as such applicants or potential applicants, with certain exceptions, are not within the scope of entities that are the subject of the Backfit Rule or an issue finality provision in part 52. The exceptions are whenever an applicant references a part 50 or part 52 license (e.g.,

a construction permit) and/or regulatory approval (e.g., a design certification or a standard design approval) with specified backfitting or issue finality provisions.

Dated at Rockville, Maryland, this 19th day of December, 2019.

For the Nuclear Regulatory Commission.

/RA/

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