

U.S. NUCLEAR REGULATORY COMMISSION

Final Regulatory Guide; Issuance, Availability

The U.S. Nuclear Regulatory Commission (NRC) has issued a revision to an existing guide in the agency's Regulatory Guide Series. This series has been developed to describe and make available to the public such information as methods that are acceptable to the NRC staff for implementing specific parts of the NRC's regulations, techniques that the staff uses in evaluating specific problems or postulated accidents, and data that the staff needs in its review of applications for permits and licenses.

Revision 2 of Regulatory Guide 1.152, entitled "Criteria for Use of Computers in Safety Systems of Nuclear Power Plants," describes a method that the staff of the U.S. Nuclear Regulatory Commission (NRC) deems acceptable for complying with the Commission's regulations for promoting high functional reliability, design quality, and cyber-security for the use of digital computers in safety systems of nuclear power plants. In this context, the term "computer" identifies a system that includes computer hardware, software, firmware, and interfaces.

The guidance provided in Revision 2 of Regulatory Guide 1.152 is consistent with General Design Criterion (GDC) 21, "Protection System Reliability and Testability," of Appendix A, "General Design Criteria for Nuclear Power Plants," to Title 10, Part 50, "Domestic Licensing of Production and Utilization Facilities," of the Code of Federal Regulations (10 CFR Part 50). Among other things, GDC 21 requires that protection systems (or safety systems) must be designed for high functional reliability, commensurate with the safety functions to be performed. In addition, Criterion III, "Design Control," of Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to 10 CFR Part 50 requires, among other things, that

quality standards must be specified, and design control measures must be provided, for verifying or checking the adequacy of design.

Revision 2 of Regulatory Guide 1.152 also contains the staff's regulatory position on IEEE Std 7-4.3.2-2003, "Standard Criteria for Digital Computers in Safety Systems of Nuclear Power Generating Stations," which was prepared by Working Group SC 6.4, "Application of Programmable Digital Computers to Safety Systems," of the Institute of Electrical and Electronics Engineers (IEEE) Nuclear Power Engineering Committee. This standard evolved from IEEE Std 7-4.3.2-1993 and reflects advances in digital technology. It also represents a continued effort by IEEE to support the specification, design, and implementation of computers in safety systems of nuclear power plants. In addition, IEEE Std 7-4.3.2-2003 specifies computer-specific requirements to supplement the criteria and requirements of IEEE Std 603-1998, "Standard Criteria for Safety Systems for Nuclear Power Generating Stations."

In Revision 2 of Regulatory Guide 1.152, the staff endorses IEEE Std 7-4.3.2-2003, with certain exceptions, as an acceptable method for satisfying the NRC's regulations with respect to (1) high functional reliability and design requirements for computers used in safety systems of nuclear power plants, and (2) independence between safety software and nonsafety software residing on the same computer.

The NRC previously solicited public comments on this revised guide by publishing a *Federal Register* notice (69 FR 75359) concerning Draft Regulatory Guide DG-1130 on December 16, 2004. Following the closure of the public comment period on March 14, 2005, the staff considered all stakeholder comments in the course of preparing Revision 2 of Regulatory Guide 1.152.

The NRC staff encourages and welcomes comments and suggestions in connection with improvements to published regulatory guides, as well as items for inclusion in regulatory guides that are currently being developed. You may submit comments by any of the following methods.

Mail comments to: Rules and Directives Branch, Office of Administration, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

Hand-deliver comments to: Rules and Directives Branch, Office of Administration, U.S. Nuclear Regulatory Commission, 11555 Rockville Pike, Rockville, Maryland 20852, between 7:30 a.m. and 4:15 p.m. on Federal workdays.

Fax comments to: Rules and Directives Branch, Office of Administration, U.S. Nuclear Regulatory Commission at (301) 415-5144.

Requests for technical information about Revision 2 of Regulatory Guide 1.152 may be directed to NRC Senior Program Manager, Satish Aggarwal, at (301) 415-6005 or SKA@nrc.gov.

Regulatory guides are available for inspection or downloading through the NRC's public Web site in the Regulatory Guides document collection of the NRC's Electronic Reading Room at <http://www.nrc.gov/reading-rm/doc-collections/>. Electronic copies of Revision 2 of Regulatory Guide 1.152 are also available in the NRC's Agencywide Documents Access and Management System (ADAMS) at <http://www.nrc.gov/reading-rm/adams.html>, under Accession #ML053070150.

In addition, regulatory guides are available for inspection at the NRC's Public Document Room (PDR), which is located at 11555 Rockville Pike, Rockville, Maryland; the PDR's mailing address is USNRC PDR, Washington, DC 20555-0001. The PDR can also be reached by telephone at (301) 415-4737 or (800) 397-4205, by fax at (301) 415-3548, and by email to PDR@nrc.gov. Requests for single copies of draft or final guides (which may be reproduced) or for placement on an automatic distribution list for single copies of future draft guides in specific divisions should be made in writing to the U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, Attention: Reproduction and Distribution Services Section; by email to DISTRIBUTION@nrc.gov; or by fax to (301) 415-2289. Telephone requests cannot be accommodated.

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(5 U.S.C. 552(a))

Dated at Rockville, Maryland, this 30th day of December, 2005.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION,

/RA/

James T. Wiggins, Deputy Director
Office of Nuclear Regulatory Research