[7590-01-P]

NUCLEAR REGULATORY COMMISSION

[NRC-2012-0195]

Software Requirement Specifications for Digital Computer Software and Complex Electronics used in Safety Systems of Nuclear Power Plants

AGENCY: Nuclear Regulatory Commission.

ACTION: Draft regulatory guide; request for comment.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC or the Commission) is issuing for public comment draft regulatory guide (DG), DG-1209, "Software Requirement Specifications for Digital Computer Software and Complex Electronics used in Safety Systems of Nuclear Power Plants." The DG-1209 is proposed Revision 1 of RG 1.172, dated September 1997. This revision endorses, with clarifications, the enhanced consensus practices for testing of computer software as described in the American National Standards Institute and Institute of Electrical and Electronics Engineers (ANSI/IEEE) Standard 830-1998, "IEEE Recommended Practice for Software Requirements Specifications."

DATES: Submit comments by November 23, 2012. Comments received after this date will be considered if it is practical to do so, but the NRC is able to ensure consideration only for comments received on or before this date. Although a time limit is given, comments and suggestions in connection with items for inclusion in guides currently being developed or improvements in all published guides are encouraged at any time.

ADDRESSES: You may access information and comment submissions related to this document, which the NRC possesses and are publicly available, by searching on *http://www.regulations.gov* under Docket ID **NRC-2012-0195**. You may submit comments by any of the following methods:

- **Federal Rulemaking Web Site:** Go to *http://www.regulations.gov* and search for Docket ID **NRC-2012-0195**. Address questions about NRC dockets to Carol Gallagher; telephone: 301-492-3668; e-mail: *Carol.Gallagher@nrc.gov*.
- **Mail comments to:** Cindy Bladey, Chief, Rules, Announcements, and Directives Branch (RADB), Office of Administration, Mail Stop: TWB-05-B01M, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.
- **Fax comments to:** RADB at 301-492-3446.

For additional direction on accessing information and submitting comments, see "Accessing Information and Submitting Comments" in the SUPPLEMENTARY INFORMATION section of this document.

FOR FURTHER INFORMATION CONTACT: Karl Sturzebecher, Office of Nuclear Regulatory Research, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; telephone: 301-251-7494 or e-mail *Karl.Sturzebecher@nrc.gov*

SUPPLEMENTARY INFORMATION:

I. Accessing Information and Submitting Comments

A. Accessing Information

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Please refer to Docket ID **NRC-2012-0195** when contacting the NRC about the availability of information regarding this document. You may access information related to this document, which the NRC possesses and are publicly available, by any of the following methods:

- **Federal Rulemaking Web Site:** Go to *http://www.regulations.gov* and search for Docket ID **NRC-2012-0195**.
- **NRC's Agencywide Documents Access and Management System (ADAMS):** You may access publicly available documents online in the NRC Library 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 draft regulatory guide is available electronically under ADAMS Accession Number ML103080963. The regulatory analysis may be found in ADAMS under Accession Number ML103080966.

Regulatory guides are not copyrighted, and NRC approval is not required to reproduce them.

- **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.

B. Submitting Comments

Please include Docket ID **NRC-2012-0195** in the subject line of your comment submission, in order to ensure that the NRC is able to make your comment submission available to the public in this docket.

The NRC cautions you not to include identifying or contact information in comment submissions that you do not want to be publicly disclosed. The NRC posts all comment submissions at *http://www.regulations.gov* as well as enters the comment submissions into ADAMS. The NRC does not edit comment submissions to remove identifying or contact information.

If you are requesting or aggregating comments from other persons for submission to the NRC, then you should inform those persons not to include identifying or contact information in their comment submissions that they do not want to be publicly disclosed. Your request should state that the NRC will not edit comment submissions to remove such information before making the comment submissions available to the public or entering the comment submissions into ADAMS.

II. Further Information

The NRC is issuing for public comment a draft guide in the NRC's “Regulatory Guide” series. This series was 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.

The DG entitled “Software Requirement Specifications for Digital Computer Software and Complex Electronics used in Safety Systems of Nuclear Power Plants” is temporarily identified by its task number, DG-1209. The DG-129 is proposed Revision 1 of RG 1.172,

"Software Requirements Specifications for Digital Computer Software used In Safety Systems Of Nuclear Power Plants," dated September 1997.

This RG endorses IEEE Standard 830-1998 with the exceptions stated in the regulatory positions. IEEE Std. 830-1998 describes methods acceptable to the NRC staff for use in complying with the NRC's regulations with respect to software requirement specifications for digital computers and complex electronics used in safety systems of nuclear power plants. In particular, the methods are consistent with part 50 of Title 10, of the *Code of Federal Regulations* (10 CFR), "Domestic Licensing of Production and Utilization Facilities," Appendix A, "General Design Criteria for Nuclear Power Plants," General Design Criterion 1, "Quality Standards and Records," which requires, in part, that a quality assurance program be established and implemented to provide adequate assurance that systems and components important to safety will satisfactorily perform their safety functions.

This DG is part of a series of 6 complimentary guides addressing the issue of digital software in power plant applications. The following is a complete list of all 6 of the DGs:

- DG-1267 is proposed revision 2 of RG 1.168, "Verification, Validation, Reviews, and Audits for Digital Computer Software used in Safety Systems of Nuclear Power Plants." DG-1267 is available in ADAMS at Accession number ML103160431;
- DG-1206 is proposed revision 1 of RG 1.169, "Configuration Management Plans for Digital Computer Software used in Safety Systems of Nuclear Power Plants." DG-1206 is available in ADAMS at Accession number ML103200044;
- DG-1207 is proposed revision 1 of RG 1.170, "Software Unit Testing for Digital

Computer Software Used in Safety Systems of Nuclear Power Plants." DG-1207 is available in ADAMS at Accession number ML083370243;

- DG-1208 is proposed revision 1 if RG 1.171, "Software Unit Testing for Digital Computer Software used in Safety Systems of Nuclear Power Plants." DG-1208 is available in ADAMS at Accession number ML103120751;
- DG-1209 is proposed revision 1 of RG 1.172, "Software Requirement Specifications for Digital Computer Software and Complex Electronics used in Safety Systems of Nuclear Power Plants." DG-1209 is available in ADAMS at Accession number ML103080963;
- DG-1210 is proposed revision 1 of RG 1.173, "Developing Software Life-Cycle Processes for Digital Computer Software used in Safety Systems of Nuclear Power Plants." DG-1210 is available in ADAMS at Accession number ML103120727;

Dated at Rockville, Maryland, this ___9th _____day of __August_____, 2012.

For the Nuclear Regulatory Commission.

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Regulatory Guide Development Branch,
Division of Engineering,
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