

NUCLEAR REGULATORY COMMISSION

[NRC-2015-0211]

Instrumentation and Controls Guidance

AGENCY: Nuclear Regulatory Commission.

ACTION: Standard review plan-final section revision; issuance.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is issuing a final revision to Chapter 7, "Instrumentation and Controls," of NUREG-0800, "Standard Review Plan (SRP) for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition."

DATES: The effective date of this SRP update is September 30, 2016.

ADDRESSES: Please refer to Docket ID **NRC-2015-0211** when contacting the NRC about the availability of information regarding this document. You may access 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-2015-0211**. Address questions about NRC dockets to Carol Gallagher; telephone: 301-415-3463; e-mail: Carol.Gallagher@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 <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. 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: Carolyn Lauron, telephone: 301-415-2736; e-mail: Carolyn.Lauron@nrc.gov or Mark Notich, telephone: 301-415-3053; e-mail: Mark.Notich@nrc.gov; both are staff of the Office of New Reactors, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

SUPPLEMENTARY INFORMATION:

I. Background

On September 16, 2015 (80 FR 55654), the NRC published for public comment the proposed revisions to Chapter 7 of the SRP. The NRC made no changes to the proposed revisions after the consideration of comments received. A summary of the comments and the

NRC staff's disposition of the comments are available in a separate document, "Response to Public Comments on Draft SRP Sections in Chapter 7."

The Office of New Reactors and the Office of Nuclear Reactor Regulation are revising these sections from their current versions. Details of specific changes in the proposed revisions are included at the end of each of the proposed sections.

The changes to this SRP chapter reflect current NRC staff's review methods and practices based on lessons learned from the NRC's reviews of design certification and combined license applications completed since the last revision of this chapter.

II. Backfitting and Finality Provisions

Issuance of these revised SRP sections does not constitute backfitting as defined in § 50.109 of title 10 of the *Code of Federal Regulations* (10 CFR), "Backfitting," (the Backfit Rule) and is not inconsistent with the issue finality provisions in 10 CFR part 52. The NRC's position is based upon the following considerations:

1. The SRP positions do not constitute backfitting, inasmuch as the SRP is internal guidance directed at the NRC staff with respect to their regulatory responsibilities.

The SRP provides guidance to the staff on how to review an application for the NRC's regulatory approval in the form of licensing. Changes in internal staff guidance are not matters for which either nuclear power plant applicants or licensees are protected under either the Backfit Rule or the issue finality provisions of 10 CFR part 52.

2. The NRC staff has no intention to impose the SRP positions on current licensees and regulatory approvals either now or in the future.

The staff does not intend to impose or apply the positions described in the SRP to existing (already issued) licenses and regulatory approvals. Therefore, the issuance of a final SRP – even if considered guidance that is within the purview of the issue finality provisions in 10 CFR part 52 – need not be evaluated as if it were a backfit or as being inconsistent with issue finality provisions. If, in the future, the staff seeks to impose a position in the SRP on holders of already issued licenses in a manner which does not provide issue finality as described in the applicable issue finality provision, then the staff must make the showing as set forth in the Backfit Rule or address the criteria for avoiding issue finality as described in the applicable issue finality provision.

3. Backfitting and issue finality do not – with limited exceptions not applicable here – protect current or future applicants.

Applicants and potential applicants are not, with certain exceptions, protected by either the Backfit Rule or any issue finality provisions under 10 CFR part 52. This is because neither the Backfit Rule nor the issue finality provisions under 10 CFR part 52 – with certain exclusions discussed in the next paragraph – were intended to apply to every NRC action which substantially changes the expectations of current and future applicants.

The exceptions to the general principle are applicable whenever an applicant references a 10 CFR part 52 license (e.g., an early site permit) and/or NRC regulatory approval (e.g., a design certification rule) with specified issue finality provisions. The staff does not, at this time, intend to impose the positions represented in the SRP in a manner that is inconsistent with any issue finality provisions. If, in the future, the staff seeks to impose a position in the SRP in a manner which does not provide issue finality as described in the applicable issue finality

provision, then the staff must address the criteria for avoiding issue finality as described in the applicable issue finality provision.

III. Congressional Review Act

This action 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. Availability of Documents

The documents identified in the following table are available to interested persons.

| Document | ADAMS Accession No. |
|---|----------------------------|
| Summary of Comments and NRC Staff Disposition of Comments – Response to Public Comments on Draft SRP Sections in Chapter 7 | ML16050A366 |
| SRP 7.0, “Instrumentation and Controls - Overview of Review Process,” Revision 7 | ML16020A049 |
| SRP 7.1, “Instrumentation and Controls – Introduction,” Revision 6 | ML16020A050 |
| Table 7-1, “Table 7-1 Regulatory Requirements, Acceptance Criteria, and Guidelines for Instrumentation and Control Systems Important to Safety,” Revision 6 | ML16020A103 |
| SRP 7.2, “Reactor Trip System,” Revision 6 | ML16020A059 |
| SRP 7.3, “Engineered Safety Features Systems,” Revision 6 | ML16020A082 |
| SRP 7.4, “Safe Shutdown Systems,” Revision 6 | ML16020A086 |
| SRP 7.5, “Information Systems Important to Safety,” Revision 6 | ML16020A088 |
| SRP 7.6, “Interlock Systems Important to Safety,” Revision 6 | ML16020A092 |
| SRP 7.7, “Control Systems,” Revision 6 | ML16020A095 |
| SRP 7.8, “Diverse Instrumentation and Control Systems,” Revision 6 | ML16020A096 |
| SRP 7.9, “Data Communication Systems,” Revision 6 | ML16020A097 |

| Document | ADAMS Accession No. |
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| App. 7.0-A, "Review Process for Digital Instrumentation and Control Systems," Revision 6 | ML16019A085 |
| App. 7.1-A, "Acceptance Criteria and Guidelines for Instrumentation and Controls Systems Important to Safety," Revision 6 | ML16019A088 |
| App. 7.1-B, "Guidance for Evaluation of Conformance to IEEE Std 279," Revision 6 | ML16019A091 |
| App. 7.1-C, "Guidance for Evaluation of Conformance to IEEE Std 603," Revision 6 | ML16019A107 |
| App. 7.1-D, "Guidance for Evaluation of the Application of IEEE Std 7-4.3.2," Revision 1 | ML16019A114 |
| BTP 7-1, "Guidance on Isolation of Low-Pressure Systems from the High-Pressure Reactor Coolant System," Revision 6 | ML16019A127 |
| BTP 7-2, "Guidance on Requirements of Motor-Operated Valves in the Emergency Core Cooling System Accumulator Lines," Revision 6 | ML16019A299 |
| BTP 7-3, "Guidance on Protection System Trip Point Changes for Operation with Reactor Coolant Pumps Out of Service," Revision 6 | ML16019A358 |
| BTP 7-4, "Guidance on Design Criteria for Auxiliary Feedwater Systems," Revision 6 | ML16020A028 |
| BTP 7-5, "Guidance on Spurious Withdrawals of Single Control Rods in Pressurized Water Reactors," Revision 6 | ML16020A033 |
| BTP 7-6, "Guidance on Design of Instrumentation and Controls Provided to Accomplish Changeover from Injection to Recirculation Mode," Revision 6 | ML16011A106 |
| BTP 7-8, "Guidance for Application of Regulatory Guide 1.22," Revision 6 | ML16020A044 |
| BTP 7-9, "Guidance on Requirements for Reactor Protection System Anticipatory Trips," Revision 6 | ML16011A062 |
| BTP 7-10, "Guidance on Application of Regulatory Guide 1.97," Revision 6 | ML16019A169 |
| BTP 7-11, "Guidance on Application and Qualification of Isolation Devices," Revision 6 | ML16019A184 |
| BTP 7-12, "Guidance on Establishing and Maintaining Instrument Setpoints," Revision 6 | ML16019A200 |
| BTP 7-13, "Guidance on Cross-Calibration of Protection System Resistance Temperature Detectors," Revision 6 | ML16019A240 |
| BTP 7-14, "Guidance on Software Reviews for Digital Computer-Based Instrumentation and Control Systems," Revision 6 | ML16019A308 |
| BTP 7-17, "Guidance on Self-Test and Surveillance Test Provisions," Revision 6 | ML16019A316 |
| BTP 7-18, "Guidance on the Use of Programmable Logic Controllers in Digital Computer-Based Instrumentation and Control Systems," Revision 6 | ML16019A327 |

| Document | ADAMS Accession No. |
|---|---------------------|
| BTP 7-19, "Guidance for Evaluation of Diversity and Defense-in-Depth in Digital Computer-Based Instrumentation and Control Systems," Revision 7 | ML16019A344 |
| BTP 7-21, "Guidance on Digital Computer Real-Time Performance," Revision 6 | ML16020A036 |

* No changes resulting from public comments. See documents in the package at ADAMS Accession No. ML16008B013 to see changes made since the last proposed revision.

Dated at Rockville, Maryland, this 25th day of August, 2016.

For the Nuclear Regulatory Commission.

/RA/

Joseph Colaccino, Chief,
New Reactor Rulemaking and Guidance Branch,
Division of Engineering Infrastructure
and Advanced Reactors,
Office of New Reactors.

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Joseph Colaccino, Chief,
New Reactor Rulemaking and Guidance Branch,
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and Advanced Reactors,
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ADAMS Accession No. ML16008B009 (FRN)

***via e-mail**

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NUCLEAR REGULATORY COMMISSION

NRC-2015-0211

SUBJECT: REVISIONS TO INSTRUMENTATION AND CONTROLS

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