

April 21, 2015

MEMORANDUM TO: Brian E. Thomas, Director
Division of Engineering
Office of Nuclear Regulatory Research

FROM: Michael Cheok, Director **/RA/**
Division of Construction Inspection
& Operational Programs
Office of New Reactors

SUBJECT: RESULTS OF PERIODIC REVIEW OF REGULATORY GUIDE
1.68.2 and 1.28

This memorandum documents the US Nuclear Regulatory Commission (NRC) periodic review of regulatory guides (RGs) 1.68.2, "Initial Startup Test Program to Demonstrate Remote Shutdown Capability for Water Cooled Nuclear Power Plants" and 1.28 "Quality Assurance Program Criteria (Design and Construction)." RG 1.68.2, published in April 2010, describes an initial startup test program acceptable to the NRC staff for demonstrating hot shutdown capability and the potential for cold shutdown from outside the control room. RG 1.28, published in June 2010, describes the methods that the NRC staff considers acceptable for establishing and implementing a quality assurance (QA) program for the design and construction of nuclear power plants and fuel reprocessing plants in accordance with the provisions of Title 10, of the *Code of Federal Regulations*, Part 50 Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants."

As discussed in Management Directive 6.6, "Regulatory Guides," the NRC staff reviews RGs approximately every 5 years to ensure that the RGs continue to provide useful guidance. Documentation of the NRC staff review is enclosed.

Based on the results of the periodic review, the staff concludes that no changes to RG 1.68.2 Revision 2 are warranted. The staff did not identify any technical or regulatory issues in the review.

Enclosure:
Regulatory Guide Periodic Review

CONTACT: Francis Talbot, NRO/DCIP/QVIB
301-415-3146

Ashley Thomas, NRO/DCIP/QVIB
301-415-6638

Based on the results of the periodic review, the staff concludes that a revision to RG 1.28 Revision 4 is warranted. RG 1.28 currently endorses NQA-1-2008 and NQA-1a-2009 addenda, "Quality Assurance Requirements for Nuclear Facility Applications". NQA-1 has since been revised. A comparison of NQA-1b-2011, NQA-1-2012 and NQA-1-2015 against NQA-1-2008 and NQA-1a-2009 addenda has been completed. The differences will be reviewed for NRC endorsement. RG 1.28 will be revised to reflect NRC endorsement of NQA-1b-2011, NQA-1-2012 and NQA-1-2015.

Enclosures:

1. Regulatory Guide Periodic Review 1.68.2
2. Regulatory Guide Periodic Review 1.28

Based on the results of the periodic review, the staff concludes that a revision to RG 1.28 Revision 4 is warranted. RG 1.28 currently endorses NQA-1-2008 and NQA-1a-2009 addenda, "Quality Assurance Requirements for Nuclear Facility Applications". NQA-1 has since been revised. A comparison of NQA-1b-2011, NQA-1-2012 and NQA-1-2015 against NQA-1-2008 and NQA-1a-2009 addenda has been completed. The differences will be reviewed for NRC endorsement. RG 1.28 will be revised to reflect NRC endorsement of NQA-1b-2011, NQA-1-2012 and NQA-1-2015.

Enclosures:

1. Regulatory Guide Periodic Review 1.68.2
2. Regulatory Guide Periodic Review 1.28

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MCheok

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OFFICE	NRO/DCIP/QVIB	NRO/DCIP/QVIB	NRO/DCIP/QVIB	NRO/DCIP	NRO/DCIP
NAME	FTalbot	AThomas	KKavanagh	AValentin	MCheok
DATE	04/15/2015	04/15/2015	04/15/2015	4/21/2015	04/21/2015

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Regulatory Guide Periodic Review

Regulatory Guide Number: **1.68.2**
Revision number: **2**

Title: **Initial Startup Test Program to Demonstrate Remote Shutdown Capability for Water Cooled Nuclear Power Plants**

Office/division/branch: **NRO/DCIP/QVIB**
Technical Lead: **Francis Talbot**

Staff Action Decided: **Reviewed with no issues identified**

1. What are the known technical or regulatory issues with the current version of the Regulatory Guide (RG)?

a. Is the RG useable and relevant?
Yes

b. Is the RG part of a rulemaking effort or related to a significant regulatory issue?
No current rulemaking efforts on 10 CFR 50, Appendix A, GDC 19, Control Room. RG 1.68 references RG 1.68.2 which requires ITP testing of the remote shutdown panel capability of the plant at low power conditions.

c. Do any of the following agency documents impact the RG? Have the applicable documents been revised or updated since the RG was last reviewed? Should established staff positions in these documents be incorporated into the RG so that the positions are made part of the agency's durable regulatory infrastructure?

- i. Findings resulting from inspections, particularly temporary instructions
- ii. Standard Review Plans (SRPs)
- iii. RGs
- iv. Branch Technical Positions
- v. Interim staff guidance documents
- vi. NUREGs
- vii. SERs
- viii. Technical Interface Agreements (TIAs)
- ix. Precedents set in licensing activities
- x. Exceptions granted to licensees by the NRC (relief requests, exemptions, etc.)
- xi. Incident reports
- xii. Generic communications including bulletins, circulars, generic letters, information notices, regulatory issue summaries, security advisories
- xiii. Lessons learned, from the NRC staff, industry or operating experience
- xiv. White papers
- xv. Industry or stakeholder requests or comments
- xvi. Staff recommendations for revising or deleting guidance

- xvii. Reports of Interactions (ROI)
- xviii. Requests for Additional Information (RAI)
- xix. Security Frequently Asked Questions (SFAQ)

Yes, RG 1.68.2 is currently cross referenced in RG 1.68 and NUREG-0800, SRP 14.2 which provides guidance for DC and COL applicant's developing the initial test program. RG 1.68 and SRP 14.2 have been updated but there should be no impact since RG 1.68.2 is already referenced in these guidance documents. No new staff positions need to be incorporated into RG 1.68 and/or NUREG-0800, SRP 14.2 since RG 1.68.2 is already referenced in these guidance documents.

RG 1.68.2 contains both preoperational and startup test guidance for the remote shutdown panel to verify that the remote shutdown panel can get the plant to hot and/or cold shutdown conditions when the control room must be evacuated due to certain design basis accident conditions (i.e., fire or radiation levels require evacuation of the control room).

- d. Are there significant precedents for staff positions resulting from licensing reviews that should be incorporated into the RG? No

The NRC staff did not identify any Part 50 plants that have committed to RG 1.68.2, Revision 2, dated April 2010. However, some Part 52 DC/COL applicants may have committed to RG 1.68.2, Revision 2. The NRC staff did not identify in any future update to RG 1.68.2, Revision 2, where the NRC staff regulatory positions need to be significantly changed.

- e. Are there significant topical reports or industry guidance that should be incorporated into the RG?

No references found. RG 1.68.2 does not endorse and industry standards.

- f. Does the RG endorse a consensus standard (e.g., IEEE Standard, ASME Code, etc.)? The latest standards can be accessed through the Technical Library search engine.

- i. Is the standard still current?
 - ii. If not, has the NRC approved use of a newer standard?
 - iii. If the standard or the RG has changed, do they remain in alignment?
 - iv. Is the consensus standard being revised by the issuing organization?

RG 1.68.2 does not endorse any industry standards.

- g. Are all of the references still current, applicable, and publicly available?

Yes. The reference are still current, applicable and publicly available.

- h. Are there relevant reports generated from inspection?

No

- i. Are there relevant lessons learned, including operating experience, from the NRC staff or industry?

No

- j. Have any exceptions been granted to licensees by the NRC for this RG? If so, should the exceptions be incorporated into a future RG revision?
No
- k. Have there been any incident reports involving the RG?
No problems have been reported with use of RG 1.68.2.
- l. Is the staff aware of any industry or stakeholder requests or comments on this RG?
There are no new industry or stakeholder requests or comments on RG 1.68.2 from when it was last updated.
- m. Are there any known staff requests to revise or delete this RG?
No
- n. Is the format correct? Compare the format with TEC-004, Rev. 0. Elements of the format review should include:
- i. Is the RG in the currently accepted format?
There are only minor format issues associated with RG 1.68.2 in Office of Research (RES) Office Instruction ADM-004 and/or TAC-004, Revision 0.

The RG does not meet harmonization guidance for RG interface with IAEA international standards.
 - ii. Does Section A, "Introduction," accurately state the purpose, scope, and applicable regulations?
Yes
 - iii. Does Section B, "Discussion," state the background and rationale considered in developing the staff position?
Yes
 - iv. Does Section C, "Regulatory Position" or "Staff Regulatory Guidance," describe acceptable methods, techniques, or data for meeting the requirements of the regulations cited in Section A?
Yes, Section C, Regulatory Positions used.
 - v. Does Section D, "Implementation," provide accurate discussion with respect to use, compliance, and backfit?
Yes
 - vi. Does the "Glossary" support the use of terminology within the RG?
Yes
 - vii. Does the "References" section reflect references used in establishing the regulatory position? Were any new references identified during the technical review?
Yes
 - viii. Is the document appropriately marked (OUO-SRI, SGI, Classified)?
This RG does not contain any OUO-SRI, SGI or classified information.

2. **What is the impact on internal and external stakeholders of not updating the RG for the known issues, in terms of anticipated numbers of licensing and inspection activities over the next several years?**

There are no known issues identified with this guide, therefore there is no impact on internal or external stakeholders.

3. **What is an estimate of the level of effort needed to address identified issues in terms of full-time equivalent (FTE) and contractor resources?**

There are no issues to be addressed.

4. **Based on the answers to the questions above, what is the staff action for this guide (Reviewed with no issues identified, Reviewed with issues identified for future consideration, Revise, or Withdraw)?**

Reviewed with no issues.

5. **Provide a conceptual plan and timeframe to address the issues identified during the review.**

There are no issues to be addressed.

RG 1.68.2, Revision 2 was last issued in April 2010

NOTE: This review was conducted in April 2015 and reflects the staff's plans as of that date. These plans are tentative and are subject to change.

Regulatory Guide Periodic Review

Regulatory Guide Number: **1.28**
Revision number: **4**

Title: **Quality Assurance Program Criteria (Design and Construction)**

Office/division/branch: **NRO/DCIP/QVIB**
Technical Lead: **Ashley Thomas**

Staff Action Decided: **Revise**

1. What are the known technical or regulatory issues with the current version of the Regulatory Guide (RG)?

a. Is the RG useable and relevant?

Yes

b. Is the RG part of a rulemaking effort or related to a significant regulatory issue?
There are no rulemaking efforts related to the RG contents.

c. Do any of the following agency documents impact the RG? Have the applicable documents been revised or updated since the RG was last reviewed? Should established staff positions in these documents be incorporated into the RG so that the positions are made part of the agency's durable regulatory infrastructure?

- i. Findings resulting from inspections, particularly temporary instructions
- ii. Standard Review Plans (SRPs)
- iii. RGs
- iv. Branch Technical Positions
- v. Interim staff guidance documents
- vi. NUREGs
- vii. SERs
- viii. Technical Interface Agreements (TIAs)
- ix. Precedents set in licensing activities
- x. Exceptions granted to licensees by the NRC (relief requests, exemptions, etc.)
- xi. Incident reports
- xii. Generic communications including bulletins, circulars, generic letters, information notices, regulatory issue summaries, security advisories
- xiii. Lessons learned, from the NRC staff, industry or operating experience
- xiv. White papers
- xv. Industry or stakeholder requests or comments
- xvi. Staff recommendations for revising or deleting guidance
- xvii. Reports of Interactions (ROI)
- xviii. Requests for Additional Information (RAI)
- xix. Security Frequently Asked Questions (SFAQ)

RG 1.28 is referenced by its revision number in NUREG- 0800, SRP 17.5. NUREG-0800, SRP 17.5 would require to be updated to reflect the current version of RG 1.28.

The endorsement of NQA-1b-2011, NQA-1-2012 and NQA-1-2015, via RG 1.28, would also require NUREG- 0800, SRP 17.5 to be updated to reflect NRC acceptance of the preoperational internal audit schedule included in NQA-1-2015.

- d. Are there significant precedents for staff positions resulting from licensing reviews that should be incorporated into the RG?
No
- e. Are there significant topical reports or industry guidance that should be incorporated into the RG?
No
- f. Does the RG endorse a consensus standard (e.g., IEEE Standard, ASME Code, etc.)? The latest standards can be accessed through the [Technical Library](#) search engine.
 - i. Is the standard still current?
 - ii. If not, has the NRC approved use of a newer standard? If the standard or the RG has changed, do they remain in alignment?
 - iii. Is the consensus standard being revised by the issuing organization?

RG 1.28 currently endorses ASME NQA-1-2008 and ASME NQA-1-2009 Addenda. The current version of ASME NQA-1 is NQA-1-2015. A comparison of NQA-1-2008 and NQA-1-2009a has been completed. An evaluation of the differences will be completed to determine NRC endorsement.

RG 1.28 currently includes Regulatory Position 2.a.1 regarding the schedule of internal audits, which has been adopted by NQA-1-2015. Additionally RG 1.28 includes Regulatory Position 2.b.5 regarding a 90 day grace period, which has also been adapted by NQA-1-2015.

- g. Are all of the references still current, applicable, and publicly available?
RG 1.28 references RG 1.33 Rev 2, which has been revised in June 2013 to Revision 3. All references are publically available.
- h. Are there relevant reports generated from inspection?
No
- i. Are there relevant lessons learned, including operating experience, from the NRC staff or industry?
No
- j. Have any exceptions been granted to licensees by the NRC for this RG? If so, should the exceptions be incorporated into a future RG revision?
No exceptions have been granted.
- k. Have there been any incident reports involving the RG?
No
- l. Is the staff aware of any industry or stakeholder requests or comments on this RG?
Yes, ASME submitted a letter on July 21, 2014 requesting revision to several RG's and NUREG-0800 which reference older versions of ASME Nuclear Codes and Standards (ML14231A021).

m. Are there any known staff requests to revise or delete this RG?

No

n. Is the format correct? Compare the format with TEC-004, Rev. 0. Elements of the format review should include:

- i. Is the RG in the currently accepted format?
- ii. Does Section A, "Introduction," accurately state the purpose, scope, and applicable regulations?
- iii. Does Section B, "Discussion," state the background and rationale considered in developing the staff position?
- iv. Does Section C, "Regulatory Position" or "Staff Regulatory Guidance," describe acceptable methods, techniques, or data for meeting the requirements of the regulations cited in Section A?
- v. Does Section D, "Implementation," provide accurate discussion with respect to use, compliance, and backfit?
- vi. Does the "Glossary" support the use of terminology within the RG?
- vii. Does the "References" section reflect references used in establishing the regulatory position? Were any new references identified during the technical review?
- viii. Is the document appropriately marked (OUO-SRI, SGI, Classified)?

RG 1.28 is in the correct format. This RG does not include a Glossary nor contain any OUO-SRI, SGI, or Classified information.

2. What is the impact on internal and external stakeholders of not updating the RG for the known issues, in terms of anticipated numbers of licensing and inspection activities over the next several years?

There are no known issues identified with this guide, therefore there is no impact on internal or external stakeholders.

3. What is an estimate of the level of effort needed to address identified issues in terms of full-time equivalent (FTE) and contractor resources?

NRC staff requires approximately .5 FTE over a two year time period to complete the technical evaluation of the differences between NQA-1-2008/NQA-1a-2009 and the latest three revisions (NQA-1b-2011, NQA-1-2012 and NQA-1-2015); and support the RG approval process. No contractor support is anticipated.

4. Based on the answers to the questions above, what is the staff action for this guide (Reviewed with no issues identified, Reviewed with issues identified for future consideration, Revise, or Withdraw)?

Revise

5. Provide a conceptual plan and timeframe to address the issues identified during the review.

A comparison of NQA-1b-2011, NQA-1-2012 and NQA-1-2015 against NQA-1-2008 and NQA-1a-2009 addenda has been completed. A technical review of the differences will be completed and evaluated for NRC endorsement. RG 1.28 will be revised to reflect NRC endorsement of NQA-1b-2011, NQA-1-2012 and NQA-1-2015 in approximately two years' time.

RG 1.28, Revision 4 was last issued in June 2010

NOTE: This review was conducted in April 2015 and reflects the staff's plans as of that date. These plans are tentative and are subject to change.