

August 19, 2016

COMSECY-16-0017

PLEASE RESPOND BY:
September 8, 2016

MEMORANDUM TO: Chairman Burns
Commissioner Svinicki
Commissioner Baran

FROM: Michael R. Johnson */RA/*
Deputy Executive Director for Reactor
and Preparedness Programs
Office of the Executive Director for Operations

SUBJECT: STATUS OF ONGOING EMERGENCY CORE COOLING
SYSTEM RULEMAKINGS UNDER TITLE 10 OF THE *CODE OF
FEDERAL REGULATIONS* SECTION 50.46a AND 50.46c, AND
GENERAL DESIGN CRITERION 35 AND REQUEST FOR
CLOSURE OF RELATED TASKING

The Commission's Staff Requirements Memorandum (SRM) M090204B, dated February 18, 2009, directed the staff to keep the Commission informed of the status of the following three ongoing rulemaking activities related to emergency core cooling system (ECCS) requirements: Title 10 of the *Code of Federal Regulations* (10 CFR) 50.46a, 10 CFR 50.46c, and General Design Criterion (GDC) 35 in Appendix A to 10 CFR Part 50. This direction is tracked as work item tracking system (WITS) task 200900039. In response to this tasking, the staff has provided semi-annual Notes to the Commissioners' Assistants with the status of these ECCS rulemaking activities. The most recent Note to the Commissioner's Assistants was provided on February 22, 2016 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16039A148). The enclosure to this memorandum provides a further update in response to WITS 200900039.

In addition to providing the required update, this memorandum requests Commission approval to terminate WITS 200900039. At the time the SRM direction was issued, the staff was actively engaged in rulemaking activities related to 10 CFR 50.46a, 10 CFR 50.46c, and GDC 35. These rulemaking activities have evolved since 2009, as described below.

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- The Commission approved the staff's recommendation to discontinue activities related to 10 CFR 50.46a in the April 13, 2016, SRM on SECY-16-0009, "Recommendations Resulting from the Integrated Prioritization and Re-Baselining of Agency Activities."
- The staff transmitted the draft final rule for 50.46c to the Commission on March 16, 2016, via SECY-16-0033, "Draft Final Rule – Performance-Based Emergency Core Cooling System Requirements and Related Fuel Cladding Acceptance Criteria (RIN 3150-AH42)."
- Following the discontinuation of 10 CFR 50.46a rulemaking, the staff is reevaluating the need for the revision to GDC 35 (decoupling the analysis requirement to assume that a loss of offsite power occurs coincident with a large-break loss of coolant accident). The staff has a separately tracked action to provide a notation vote paper to the Commission on the path forward (WITS items 201000174 and 200800120).

The staff considers that its ongoing commitments and activities are meeting the intent of the SRM direction to keep the Commission informed of the status of these three rulemaking activities. Therefore, there is no longer a need for separate semi-annual Notes to the Commissioners' Assistants tracked under WITS 200900039. The staff requests that the Commission approve the closure of this task.

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STATUS OF ONGOING EMERGENCY CORE COOLING SYSTEM RULEMAKINGS

Staff Requirements Memorandum (SRM) M090204B, dated February 18, 2009 (Agencywide Document Access and Management System (ADAMS) Accession No. ML090490812), directed the staff to keep the Commission informed of the status of the following three ongoing rulemaking activities related to emergency core cooling system (ECCS) requirements: Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.46a, 10 CFR 50.46c, and General Design Criterion (GDC) 35.

10 CFR 50.46a - Risk-Informed ECCS Requirements (Redefinition of Large Break Loss-of-Coolant Accident (LOCA))

The Commission issued an SRM dated April 13, 2016 (ADAMS Accession No. ML16104A158), on SECY-16-009, "Recommendations Resulting from the Integrated Prioritization and Re-Baselining of Agency Activities," dated January 31, 2016. In this SRM, the Commission approved the NRC staff's recommendation to discontinue the 10 CFR 50.46a rulemaking as part of the identification of work to shed, de-prioritize, or perform with fewer resources. The NRC staff is preparing a *Federal Register* notice to inform the public that the 10 CFR 50.46a rule is being discontinued.

As noted in SECY-16-0009, the requests made in the Petition for Rulemaking (PRM) 50-75 would have been addressed by the 10 CFR 50.46a rulemaking. However, given the termination of this rulemaking, the staff will separately disposition PRM 50-75.

10 CFR 50.46c - Rulemaking to Improve ECCS Acceptance Criteria

On March 16, 2016, the staff issued SECY-16-0033, "Draft Final Rule 10 CFR 50.46c, 'Emergency Core Cooling System Performance during Loss-Of-Coolant Accidents (LOCA)' and Associated Regulatory Guides" (ADAMS Accession No. ML15238A947). This policy paper provided the draft 50.46c final rule package, including three fuel-related draft regulatory guides (RGs) to the Commission for review and approval.

The NRC staff briefed the Commissioners' Assistants on multiple occasions to address questions regarding the 50.46c final rule package and provided written responses to questions from the Commissioners' Assistants regarding the treatment of manufacturing licenses in the final rule, backfit considerations, and clarifying changes to the language contained in the final rule package. There are no outstanding questions from the Commissioners' Assistants at this time.

The staff met with the Advisory Committee on Reactor Safeguards (ACRS) Metallurgy and Reactor Fuels subcommittee on March 22, 2016, and the full committee on April 7, 2016, to further discuss RG 1.229, "Risk-Informed Approach for Addressing the Effects of Debris on Post-Accident Long-Term Core Cooling." The NRC staff received a letter from the ACRS dated April 19, 2016 (ADAMS Accession No. ML16102A163), whereby the ACRS recommended issuance of RG 1.229 after the NRC staff addresses the following four ACRS recommendations.

ENCLOSURE

| No. | Recommendation |
|-----|---|
| 1 | Clarify expectations for the assessment of scenarios that involve recirculation from the containment sump, but are not initiated by a loss-of-coolant accident. |
| 2 | Clarify expectations for the assessment of uncertainties, with particular attention to how uncertainties about debris generation, transport, and deposition on strainers and downstream coolant flow paths are used to support the risk-informed conclusions. |
| 3 | Clarify how the “base PRA [probabilistic risk assessment]” or other techniques should be used to define the most limiting equipment operating configurations and flow scenarios for a simplified assessment. |
| 4 | Clarify that the post-assessment PRA models should be updated to include the risk from debris-related scenarios consistently with the scope and level of detail applied in these analyses. |

The NRC staff responded to the ACRS letter on June 3, 2016 (ADAMS Accession No. ML16125A410). The NRC staff stated its plans to modify RG 1.229 to address Recommendation 4 prior to initial issuance, but to postpone making changes to address Recommendations 1, 2, and 3 until the next revision of RG 1.229, which is expected in early 2017. The NRC staff explained that making changes to address Recommendations 1, 2, and 3, at this time, would require a level of effort that would delay the release of RG 1.229, which would be inconsistent with Commission direction on the cumulative effects of regulation. During the ACRS full committee meeting on July 8, 2016 (transcript available at ADAMS Accession No. ML16209A213), the ACRS did not object to addressing Recommendations 1, 2, and 3 in the next revision of RG 1.229.

On July 19 and 20, 2016, the NRC staff held a public meeting with the Nuclear Energy Institute (NEI) to discuss industry implementation guidance on the long-term core cooling methodology. NEI is considering submitting this guidance to the NRC staff for review in February 2017.

Revision to GDC 35 - Decouple the Analysis Requirement to Assume that a Loss of Offsite Power (LOOP) Occurs Coincident with a Large-Break LOCA

As stated above, the Commission approved the discontinuation of the 10 CFR 50.46a rule as part of the NRC’s re-baselining effort. On June 28, 2016, a public meeting was held to determine the current industry interest in a LOOP/LOCA rulemaking (see ADAMS Accession No. ML16203A003 for the meeting summary). Industry representatives conveyed that there is still uncertainty on how to resolve the open technical issues, which could necessitate significant resource expenditures. The NRC staff plans to conduct a follow-up public meeting on September 29, 2016, to continue discussions on the future of this rulemaking. The Commission has approved an extension and reset of the due dates for WITS items 201000174 and 200800120 to January 2017 to allow for sufficient time to complete these activities.