



POLICY ISSUE **(Information)**

August 27, 2019

SECY-19-0084

FOR: The Commissioners

FROM: Frederick D. Brown, Director
Office of New Reactors

SUBJECT: STATUS OF RULEMAKING TO ALIGN LICENSING PROCESSES AND
LESSONS LEARNED FROM NEW REACTOR LICENSING (RIN 3150-AI66)

PURPOSE:

This paper informs the Commission of the scope of the regulatory basis for the rulemaking that the Commission approved in the Staff Requirements Memorandum (SRM)-SECY-15-0002, "Staff Requirements—SECY-15-0002—Proposed Updates of Licensing Policies, Rules, and Guidance for Future New Reactor Applications," dated September 22, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15266A023). The objectives of this rulemaking are to align licensing processes, improve clarity, reduce unnecessary burden on applicants and staff, and, where appropriate, make potentially transformative changes.

SUMMARY:

In SECY-15-0002, dated January 8, 2015 (ADAMS Accession No. ML13281A382), the U.S. Nuclear Regulatory Commission (NRC) staff proposed policy and regulatory updates to ensure consistency in new reactor licensing reviews regardless of the licensing process an applicant chooses to use. The Commission approved the staff's recommendations in SRM-SECY-15-0002. Specifically, the Commission confirmed that its guidance in the Policy Statement on Severe Reactor Accidents Regarding Future Designs and Existing Plants and

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other Commission direction identified by the staff applies to new power reactor applications under Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities," in a manner consistent with design and license applications under 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants." In addition, the Commission approved the staff's recommendation to revise certain regulations in 10 CFR Part 50 for new power reactor applications to more closely align them with the requirements in 10 CFR Part 52.

Finally, the Commission approved the staff's recommendation to revise 10 CFR Part 52 and supporting regulations, including 10 CFR Part 50, to reflect lessons learned from recent new reactor licensing activities. The staff plans to conduct the alignment and lessons learned rulemakings as a single coordinated effort. The staff had previously informed the Commission that the staff would not provide a rulemaking plan because the Commission has already approved the rulemaking in SRM-SECY-15-0002. The staff commenced work on this rulemaking in October 2018, consistent with the Commission's direction in the SRM.

The staff has made extensive efforts to define the scope of the lessons learned portion of the regulatory basis for this rulemaking. These efforts include considering changes that reduce unnecessary burden on applicants and staff in performing the NRC's safety mission. The enclosure to this paper lists the lessons learned items that the staff is considering in the development of the regulatory basis. The list is composed of items from multiple sources, including feedback that external stakeholders provided during a public meeting on January 15, 2019, regarding the staff's plans for this rulemaking. The alignment items included in Enclosure 1 to SECY-15-0002 are discussed in this paper and will be included in the regulatory basis. The staff plans to issue the regulatory basis for public comment in summer 2020.

BACKGROUND:

For many years, new reactor licensing and guidance development activities have focused on the licensing processes in 10 CFR Part 52 rather than those in 10 CFR Part 50. As a result, some Commission decisions regarding new reactor licensing issues have been incorporated into 10 CFR Part 52, without similar requirements consistently being incorporated into 10 CFR Part 50. In the last several years, potential applicants considering both small modular reactor and non-light-water reactor designs have expressed interest in exploring the use of 10 CFR Part 50. Although no new potential applicant has committed to using the 10 CFR Part 50 licensing process, potential applicants continue to consider whether the 10 CFR Part 50 licensing process is a preferable approach for a first-of-a-kind facility.

In SECY-15-0002, the staff asked the Commission to confirm that its guidance in previous policy papers applies to new 10 CFR Part 50 power reactor applications in a manner consistent with 10 CFR Part 52 design and license applications. These policy papers include the August 8, 1985 "Policy Statement on Severe Reactor Accidents Regarding Future Designs and Existing Plants" (50 *Federal Register* (FR) 32138), SECY-89-013, "Design Requirements Related to the Evolutionary Advanced Light Water Reactors (ALWRs)," dated January 19, 1989 (ADAMS Accession No. ML003707947), and the Commission's additional direction in its SRMs associated with SECY-90-016, "Evolutionary Light Water Reactor (LWR) Certification Issues and Their Relationship to Current Regulatory Requirements," dated January 12, 1990 (ADAMS

Accession No. ML003707849)¹ and SECY-93-087, "Policy, Technical and Licensing Issues Pertaining to Evolutionary and Advanced Light Water Reactor (ALWR) Designs," dated April 2, 1993 (ADAMS Accession No. ML003708021).² In SRM-SECY-15-0002, the Commission confirmed that its guidance in the policy statement and other Commission direction identified by the staff apply to new 10 CFR Part 50 power reactor applications in a manner consistent with 10 CFR Part 52 design and license applications.

Enclosure 1 to SECY-15-0002 lists the regulations in 10 CFR Part 50 that the staff had recommended for modification to align them with the requirements in 10 CFR Part 52. In SRM-SECY-15-0002, the Commission approved the staff's recommendation to revise the regulations in 10 CFR Part 50 for new power reactor applications to more closely align them with the requirements in 10 CFR Part 52 and to incorporate the policies identified by the staff in Enclosure 1.

Since the 2007 update to 10 CFR Part 52,³ the NRC staff has catalogued over 100 items to consider addressing in a subsequent rulemaking, including corrections, clarifications, and new requirements. The staff identified these items primarily from 10 CFR Part 52 licensing reviews conducted by the NRC since 2007. Enclosure 2 to SECY-15-0002 provided several examples of corrections, clarifications, and new requirements. The staff committed in SECY-15-0002 to inform the Commission and other stakeholders about specific rule changes that it would consider. The staff recommended that the Commission direct it to revise 10 CFR Part 52 and supporting regulations, including 10 CFR Part 50, to reflect lessons learned from recent new reactor licensing activities. In SRM-SECY-15-0002, the Commission approved the staff's recommendation to revise 10 CFR Part 52 and supporting regulations, including 10 CFR Part 50, to reflect lessons learned from recent new reactor licensing activities. The staff plans to conduct the alignment and lessons learned rulemakings as a single coordinated effort.

In SRM-SECY-15-0002, the Commission directed the staff to evaluate the priority and schedule for rulemaking in the context of Project Aim 2020 to ensure that it uses agency resources effectively. Subsequently, this rulemaking was budgeted to start in fiscal year 2019. Rulemaking activities commenced in October 2018 consistent with the Commission's direction.

DISCUSSION:

Collection of Feedback on the Potential Scope of Rulemaking

Because SECY-15-0002 included items for alignment and only examples of lessons learned that the staff was planning to consider in a rulemaking, the staff's first rulemaking objective was to determine the rulemaking scope. The staff decided to collect all potential items that would be considered for inclusion in the development of the regulatory basis for the rulemaking. In addition to the items that had been catalogued since the 10 CFR Part 52 rule update in 2007, the team solicited potential lessons learned internally from staff across the agency.

The staff also held a Category 3 public meeting on January 15, 2019, to request feedback from external stakeholders on the scope of the regulatory basis for this rulemaking. In addition to providing public notice of the meeting and promoting it on social media, the staff directly contacted 3 nongovernmental organizations, 5 industry organizations, and 18 representatives

¹ SRM-SECY-90-016, dated June 26, 1990 (ADAMS Accession No. ML003707885).

² SRM-SECY-93-087, dated July 21, 1993 (ADAMS Accession No. ML003708056).

³ See "Licenses, Certifications, and Approvals for Nuclear Power Plants; Final Rule" (72 FR 49352; August 28, 2007)

from industry to notify them of the meeting. The staff also reached out to all Agreement States, non-Agreement States, State liaison officers, and Federally recognized Tribal nations. The staff offered stakeholders the opportunity to make formal presentations during the meeting. In response, the Nuclear Energy Institute (NEI) arranged for industry representatives from Southern Nuclear, Westinghouse, Tennessee Valley Authority, Kairos Power, and NuScale Power, to present items that NEI asked the NRC staff to include in its rulemaking (see ADAMS Accession No. ML19023A046 for a summary of the meeting). Several of the items presented by the industry representatives were similar to items identified in the staff's initial list of items to consider including in the scope of the regulatory basis.

Screening Process to Determine the Scope for Development of the Regulatory Basis

From the staff's outreach efforts inside and outside the NRC, the staff collected approximately 250 separate items to consider including in the regulatory basis for this rulemaking. To keep the scope of the rulemaking manageable while still making changes that will have an impact, the staff developed four screening criteria. These criteria are as follows: (1) alignment between 10 CFR Part 50 and 10 CFR Part 52, (2) lessons learned from 10 CFR Part 52 licensing activities since the 2007 rulemaking, (3) 10 CFR Part 52 transformational changes that were not lessons learned of the type included in Enclosure 2 to SECY-15-0002, and (4) changes that reduced unnecessary burden that did not impact other requirements and were therefore easy to implement. The scope of this rulemaking does not include any items outside these categories.

From the items that remained after the initial screening, the staff further assessed the list of items based on whether (1) the specific item would provide either a significant safety benefit or some measure of burden reduction (on staff or industry) while still maintaining the agency's safety mission, (2) the item could instead be included in the NRC's semiannual administrative rulemaking for corrections and minor changes, and (3) the item could instead be handled during the development of guidance. Based on this final screening, the staff identified 60 lessons learned items. Eight of these items are purely administrative updates and will be included in the semiannual administrative rulemaking for corrections and minor changes.

Scope of the Regulatory Basis Development

Alignment of 10 CFR Part 50 and 10 CFR Part 52

Enclosure 1 to SECY-15-0002 included four areas where the staff had proposed to align 10 CFR Part 50 requirements with the requirements in 10 CFR Part 52. The staff's regulatory basis will include a discussion of each of these items. A general description of each item is included below:

- Application of the Policy Statement on Severe Reactor Accidents to New 10 CFR Part 50 License Applications. In SRM-SECY-15-0002, the Commission confirmed that the guidance it provided in the policy statement and in other SRMs applied to new 10 CFR Part 50 power reactor applications in a manner consistent with 10 CFR Part 52 design and license applications. The staff is considering whether the regulatory requirements should be revised to incorporate these policies. This includes requiring construction permit (CP) and operating license (OL) applicants to include design features for the prevention and mitigation of severe accidents.

- Probabilistic Risk Assessment (PRA) Requirements. The staff will propose modifications to the regulations to align PRA requirements for new reactor applicants using the 10 CFR Part 50 licensing process with PRA requirements in 10 CFR Part 52.
- Three Mile Island (TMI) Requirements. The staff will determine how to modify the TMI requirements in 10 CFR 50.34(f) to provide 10 CFR Part 50 CP and OL applicants with the same exceptions given for 10 CFR Part 52 applicants.
- Fire Protection Design Features. The staff will determine how to modify the regulations for 10 CFR Part 50 CP and OL applicants to describe and analyze fire protection design features and to describe fire protection plans similar to the requirements for combined license (COL) applicants in 10 CFR 52.79(a)(6) and 10 CFR 52.79(a)(40).

Except for the TMI requirements exceptions, these items represent additional regulatory requirements for applicants using the 10 CFR Part 50 licensing process. The regulatory basis will include a regulatory analysis for each of these items (as well as the lessons learned items discussed below). The basis to make any changes to the regulations will be clearly articulated in the regulatory basis.

Lessons Learned

As stated above, Enclosure 2 to SECY-15-0002 provided several examples of corrections, clarifications, and new requirements. The enclosure to this paper provides the results of the staff's consideration of items that will be included in the regulatory basis. The 52 items in the enclosure to this paper are grouped into several topical areas that are described below:

- Probabilistic Risk Assessment (PRA) Requirements. The staff is considering modifying the alternative requirements associated with risk-informed initiatives to allow COL holders to use these alternatives. In addition, the staff is proposing to relax the time interval for COL holders to reference consensus standards in the development of a Level 1 and a Level 2 PRA prior to fuel load.
- Operator Licensing. The staff is considering clarifications in requirements for operator licensing and simulators based on experience with the ongoing licensing and construction of the new reactors at Vogtle Electric Generating Plant.
- Security. The changes under consideration would address issues encountered with new reactor applications and the applicability of certain requirements before fuel load.
- Emergency Planning. The changes being considered include the elimination of duplicative requirements, applicability of requirements, and clarification of information to include in applications.
- 10 CFR Part 52 Licensing Process. Development of the regulatory basis will include the following areas:
 - Design Certification (DC) Renewal and Expiration Date. The staff is considering revising requirements affecting the duration of a DC rule. The staff is considering a range of options, including the elimination of DC rule expiration dates and DC renewal requirements.

- Change Process. The staff is considering consolidating and simplifying the change process requirements for DCs and changes that will align the DC change process with the requirements in 10 CFR 50.59, "Changes, tests and experiments." In addition, the staff is considering adding a change process for early site permits (ESPs) and limited work authorizations.
- Design Scope and Standardization. The staff is considering whether it should modify the regulations on standardization to allow for greater flexibility and to maintain standardization of certified designs at a level appropriate for the agency's safety objectives. In addition, the staff is considering whether to add definitions for Tier 1 and Tier 2 information in the regulations consistent with SECY-19-0034, "Improving Design Certification Content," dated April 8, 2019 (ADAMS Accession No. ML19080A034), and to clarify the phrase "essentially complete design."
- Standard Design Approval. The staff is considering modifying the regulations to clarify the requirements for referencing and rescinding a standard design approval.
- Content of Applications. The staff is considering clarifying certain requirements for DC and COL applications and aligning those requirements with the application requirements for 10 CFR Part 50 CPs and OLs.
- Environmental Review. The staff is considering revising the regulations to allow for an environmental assessment of a COL application instead of an environmental impact statement when a COL references an ESP and meets certain additional conditions. In addition, the staff is considering modifying the regulations to allow a COL application to be submitted in two parts where the first part contains only an environmental report and does not include seismic and other siting information nor financial and emergency planning information.
- Applicability of Other Processes to the 10 CFR Part 52 Process. The staff will evaluate the need to add clarifying language to the regulations that defines the applicability of other requirements to ESPs, DCs, and COLs.
- Miscellaneous. The staff will address proposed clarifications for several miscellaneous provisions that would remove outdated requirements and clarify existing requirements.

Some of the changes described in the enclosure, while based on lessons learned from 10 CFR Part 52 licensing reviews, are transformational in nature. Specifically, the items to modify the design certification renewal requirements, and by association, the design certification expiration date, are lessons learned from issues associated with design certification renewal reviews. These significant changes to the Part 52 licensing process have the potential to significantly reduce unnecessary burden on applicants and staff and preserve the ability to reference a certified design until a potential COL or OL applicant is ready to apply for a license referencing that certified design. In addition, aligning the change process for DCs with 10 CFR 50.59, implementing standardization for certified designs at an appropriate level, and applying the strict definition for Tier 1 information (discussed in SECY-19-0034) would eliminate the challenges that changes during construction have posed for the facilities under construction referencing the AP1000 certified design. None of these changes would decrease safety.

OTHER CONSIDERATIONS:

In accordance with SRM-SECY-15-0129, "Staff Requirements—SECY-15-0129—Commission Involvement in Early Stages of Rulemaking," dated February 3, 2016 (ADAMS Accession No. ML16034A441), the staff provides the Commission with a rulemaking plan to initiate a rulemaking. However, the staff will not provide a rulemaking plan for this rulemaking because the Commission approved the rulemaking in SRM-SECY-15-0002, which pre-dated SRM-SECY-15-0129. In SECY-15-0002, the staff stated that it would inform the Commission of details of the specific proposed rule changes in accordance with the NRC's standard rulemaking practices. Because SECY-15-0002 provides only examples of lessons learned from 10 CFR Part 52 licensing, the staff is submitting this paper to inform the Commission and other stakeholders of all regulatory changes being considered in the development of the regulatory basis.

External stakeholders will have additional opportunities to provide comments on the scope of the rulemaking. The staff plans to conduct a public meeting after this paper is made publicly available to further support development of the regulatory basis. In addition, the Advisory Committee on Reactor Safeguards (ACRS) has asked the staff to participate in one of the ACRS's regular meetings in Fall 2019 to allow it to provide perspectives on its review of ESP, DC, and COL applications and on the impact of implementing the 10 CFR Part 52 process over the last several years.

During its scoping activities, the staff received one suggestion that concerns advanced reactors and decided not to include that item within the scope of the regulatory basis for this rulemaking. The Nuclear Energy Innovation and Modernization Act includes a provision that requires the NRC to complete a rulemaking by December 31, 2027, to establish a technology-inclusive regulatory framework for optional use by commercial advanced nuclear reactor applicants for new reactor licenses. Therefore, any item directly associated with advanced reactor licensing or technology specific to advanced reactors will be directed to that effort. The technology-inclusive regulatory framework rulemaking may adopt certain aspects of the Part 52 licensing process, such as design certification, which are within the scope of this rulemaking. The staff will coordinate decisions between the two rulemaking activities to ensure that the decisions made in one rulemaking do not conflict with the other.

This rulemaking is ranked as medium priority. Now that the staff has identified the scope of items for evaluation in the regulatory basis, the staff is assessing the level of effort necessary to complete the entire rule and will compare it to the budget included for performing this rulemaking. Any differences in budget execution will be addressed by normal agency budgeting and execution processes. Balancing the execution of the budget with the agency's priorities and available resources may cause future adjustments in the schedule.

NEXT STEPS:

The staff is proceeding with the development of a regulatory basis and associated draft regulatory analysis to support this rulemaking. Public meetings will be held with external stakeholders and the ACRS in the Fall 2019 to discuss the scope of the rulemaking as described in this paper.

The staff will prepare a Commissioners' Assistants Note to inform the Commission of its plan to publish the regulatory basis and draft regulatory analysis. The staff's goal is to publish the regulatory basis and draft regulatory analysis for public comment in Summer 2020. The staff

will plan a public meeting to present the contents of the regulatory basis and draft regulatory analysis to facilitate the submission of any public comments during the public comment period. After the comment period closes, the staff will review the comments received and consider them as the staff proceeds directly to developing the proposed rule. The complete schedule for this rulemaking will be available on the NRC's public Web site.

COORDINATION:

This paper has been coordinated with the Office of the General Counsel, which has no legal objection. The Office of the Chief Financial Officer has reviewed this paper for resource implications and has no objections.

A handwritten signature in black ink, appearing to read 'F. D. Brown', with a long horizontal flourish extending to the right.

Frederick D. Brown, Director
Office of New Reactors

Enclosure:

List of Lessons Learned Items
Included in the Scope of the
Regulatory Basis for Aligning
Licensing Processes and Lessons
Learned From New Reactor
Licensing

References

1. Staff Requirements Memorandum (SRM) to SECY-15-0002, "Staff Requirements—SECY-0002—Proposed Updates of Licensing Policies, Rules, and Guidance for Future New Reactor Applications," dated September 22, 2015, ADAMS Accession No. ML15266A023
2. SECY-15-0002, "Proposed Updates of Licensing Policies, Rules, and Guidance for Future New Reactor Applications," dated January 8, 2015, ADAMS Accession No. ML13281A382
3. SECY-89-013, "Design Requirements Related to the Evolutionary Advanced Light Water Reactors (ALWRs)," dated January 19, 1989, ADAMS Accession No. ML003707947
4. SECY-90-016, "Evolutionary Light Water Reactor (LWR) Certification Issues and Their Relationship to Current Regulatory Requirements," dated January 12, 1990, ADAMS Accession No. ML003707881
5. SRM to SECY-90-016, "Evolutionary Light Water Reactor (LWR) Certification Issues and Their Relationships to Current Regulatory Requirements," dated June 26, 1990, ADAMS Accession No. ML003707885
6. SECY-93-087, "Policy, Technical and Licensing Issues Pertaining to Evolutionary and Advanced Light Water Reactor (ALWR) Designs," dated April 2, 1993, ADAMS Accession No. ML003708021
7. SRM to SECY-93-087, "Policy, Technical and Licensing Issues Pertaining to Evolutionary and Advanced Light Water Reactor (ALWR) Designs," dated July 21, 1993, ADAMS Accession No. ML003708056
8. SECY-19-0034, "Improving Design Certification Content," dated April 8, 2019, ADAMS Accession No. ML19080A034
9. SRM-SECY-15-0129, "Staff Requirements—SECY-15-0129—Commission Involvement in Early Stages of Rulemaking," dated February 3, 2016, ADAMS Accession No. ML16034A441

SUBJECT: STATUS OF RULEMAKING TO ALIGN LICENSING PROCESSES AND
 LESSONS LEARNED FROM NEW REACTOR LICENSING (RIN 3150-A166)
 DATED 08/27/19

ADAMS Accession No: **ML19161A194**

ML19161A169 (Pkg) *via e-mail **NLO SECY-012

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