

## NRO15 – Alternate Site Reviews

This effort addresses the Commission's direction, in SRM-SECY-91-041, "Early Site Permit Review Readiness," dated April 9, 1991, to "consider the need for guidance on the number of alternate sites that must be considered and whether this number would depend on the nature (e.g., state, utility, etc.) of the ESP applicant permitted under Part 52."

The proposed rulemaking would revise the Commission's regulations to set standards for assessments of alternative sites for future power reactors. This type of standard, now lacking in Parts 50, 51, and 52, would strengthen the bases for acceptance of safety and environmental assessments of proposed reactor sites under Subpart A of Part 52 (Early Site Permits). The overall objective is to establish a more consistent approach for review of alternative sites to facilitate and stabilize the regulatory process. SRM-SECY-00-0075, "Staff Requirements – SECY-00-0075 – Proposed Rulemaking Activity Plan," dated June 12, 2000, directed the staff to submit a schedule for completion of the rulemaking. On August 30, 2000, an EDO memorandum to the Commission recommended that the rulemaking be given low priority and placed on hold. This rulemaking remains on hold at this time and is considered a low priority.

This rule is a LOW priority and scored 8 points (5, 2, 1, 0) because:

- A. Low contributor toward the safety goal AND supports strategy 4 (improve the NRC's regulatory programs and applying safety-focused research to anticipate and resolve safety issues relative to site selection and review).
- B. Indirect contributor toward the effectiveness objective and supports effectiveness strategy 8 (achieve efficiencies in the licensing process that enable the safe and secure use of nuclear material).
- C. Low interest to the Commission at this time (no action since 2000 and put on hold).
- D. No external stakeholder interest.

Start technical basis – TBD (ON HOLD)

## NRO16 – Emergency Preparedness Requirements for Small Modular Reactors

This effort addresses the staff's intent, as discussed in SECY-11-0152, "Development of an Emergency Planning and Preparedness Framework for Small Modular Reactors," dated October 28, 2011, to develop and implement a technology-neutral, dose-based, consequence-oriented emergency preparedness (EP) regulatory framework for SMR sites that takes into account the various designs, modularity, and co-location, as well as the size of the emergency planning zone (EPZ). In the SECY paper, the staff identified several likely policy issues that will be addressed in this rulemaking such as the advent of co-located SMR modules, development of a scalable EPZ, and dose consideration for establishing the size of the SMR EPZs. This rulemaking will amend 10 CFR Parts 50 and 52 to establish this framework and resolve these policy questions.

This rule is a MEDIUM priority and scored 29 points (10, 7, 7, 5) because:

- A. Moderate contributor toward safety goal AND supports strategies 3 (conduct NRC safety, security, and emergency preparedness programs in an integrated manner) and 5

(use sound science and state-of-the-art methods to establish, where appropriate, risk-informed and performance-based regulations).

- B. Moderate contributor toward the effectiveness objective and supports effectiveness strategy 1 (use state-of-the-art technologies and risk insights to improve the effectiveness and realism of NRC actions, with a goal of continuous improvement).
- C. High commission interest in SMRs and EP; awaiting Commission direction on the rule.
- D. High public interest in EP and specifically in the size of EPZs; public meetings held on this topic; high industry interest.

Start technical basis - TBD

Technical basis complete – 09/14

#### NRO17 – Insurance and Liability Requirements for Small Modular Reactors

This effort addresses a regulatory gap discussed in SECY-10-0034, "Potential Policy, Licensing, and Key Technical Issues for Small Modular Reactor Designs," dated March 28, 2010. In the SECY paper, the staff identified generic issues applicable to requirements for SMR insurance and liability, including ensuring sufficient insurance for all planned SMR configurations. This rulemaking will amend 10 CFR Part 140 to require a sufficient amount of insurance for all planned SMR facility configurations.

This rule is a MEDIUM priority and scored 26 points (7, 4, 10, 5) because:

- A. Moderate contributor toward safety goal AND supports strategy 6 (promote focused attention on safety matters and individual accountability of those engaged in regulated activities).
- B. Indirect contributor toward the effectiveness objective AND supports strategy 6 (anticipate challenges and promptly evaluate and respond to changes in the regulatory and technical environment).
- C. Addresses a significant regulatory gap (inadequate insurance available to resolve liability exposure for those sites employing multiple small modular reactors); awaiting Commission direction on the rule.
- D. Significant public and industry interest in insurance and liability in the post-Fukushima environment.

Start technical basis - TBD

Technical basis complete – 09/13

#### NROXX – Alignment of Part 50 and Part 52 Requirements for New Reactors

This effort addresses a regulatory gap regarding the content of applications for new nuclear power reactors. Over the past several years, new reactor applications and licensing have been focused on using the Part 52 licensing process. Several key changes were made to Part 52 to update the requirements for content of applications, such as post-TMI requirements, submittal and maintenance of a PRA, severe accident design features, fire protection plans and design features, and reliability assurance program. However, those changes were not carried through

into the Part 50 licensing/application requirements because it was anticipated that new reactor applicants would use the Part 50 process. The NRC now expects a license application for CP and OL to be submitted in the near future under the Part 50 process (TVA's application at the Clinch River site, and followed by a design certification of the B&W mPower SMR design), and would like to align the Part 50 requirements with those of Part 52 to ensure consistency of technical requirements for new reactors regardless of the licensing process used. The staff is preparing a SECY paper to obtain Commission approval to move forward with this rulemaking, and plans to deliver the paper to the Commission in December 2012. The scope of this rulemaking is being considered for inclusion into the Part 52 Licensing Lessons Learned Rulemaking.

This rule is a MEDIUM priority and scored 30 points (14, 7, 8, 1) because:

- A. Moderate contributor toward safety goal AND supports strategies 1 and 6 (1 - develop, maintain, and implement licensing and regulatory programs for reactors; 6 - promote focused attention on safety matters and individual accountability of those engaged in regulated activities).
- B. Moderate contributor toward the effectiveness objective AND supports strategies 1, 2, and 6 (1 - use state-of-the-art technologies and risk insights to improve the effectiveness and realism of NRC actions; 2 - provide clear and timely guidance to applicants and licensees to foster the submittal of high-quality and timely applications or license amendment requests; 6 - anticipate challenges and promptly evaluate and respond to changes in the regulatory and technical environment).
- C. Addresses a regulatory gap and conformance between Part 50 and Part 52 requirements; awaiting Commission direction on the rule; implied Congressional priority due to funds devoted to SMR development (mPower design to be used at Clinch River).
- D. Currently no public or industry interest, though some industry resistance expected; preliminary discussions with applicant indicate intent to volunteer information that exceeds current Part 50 requirements (i.e., in line with Part 52 requirements).

Start technical basis – 10/13 (pending Commission approval)

Technical basis complete – 09/14 (pending Commission approval)

#### AI77 – ITAAC Maintenance

This action is amending the Commission's regulations related to verification of nuclear power plant construction activities through inspections, tests, analyses, and acceptance criteria (ITAAC) under a combined license. The new provisions would require licensees to (1) report new information materially altering the basis for determining that a prescribed inspection, test, or analysis was performed as required, or finding that a prescribed acceptance criterion is met and (2) notify the NRC of completion of all ITAAC activities.

This rule is a HIGH priority and scored 34 points (15, 10, 7, 2) because:

- A. Moderate contributor toward safety goal AND supports strategies 1 (develop, maintain, and implement licensing and regulatory programs for reactors, fuel facilities, materials

users, spent fuel management, uranium recovery, and decommissioning activities to ensure the adequate protection of public health and safety and the environment) and 3 (conduct NRC safety, security, and emergency preparedness programs in an integrated manner), and 4 (improve NRC's regulatory programs and apply safety-focused research to anticipate and resolve safety issues).

- B. Significant contributor towards the effectiveness objective AND supports strategy 3 (reach high-quality and timely decisions) as it relates to the Commission's 52.103(g) finding prior to fuel load.
- C. Addresses a significant regulatory gap; NRC licensing initiative with future regulatory benefit.
- D. Moderate public interest and participation in public meetings.

Start technical basis – 11/09

Tech basis complete – 11/09

Proposed rule to the Commission – 08/10

Final rule to the Commission – 02/12

#### AI85 – ESBWR Design Certification

The ESBWR Design Certification rule will amend the Commission's regulations to Part 52 by issuing a new appendix for the initial certification of the ESBWR standard plant design.

Applicants or licensees intending to construct and operate a nuclear power plant using the ESBWR design may do so by referencing this design certification rule.

This rule is a HIGH priority and scored 33 points (15, 10, 5, 3) because:

- A. Moderate contributor toward safety goal AND supports strategies 1 (develop, maintain, and implement licensing and regulatory programs for reactors, fuel facilities, materials users, spent fuel management, uranium recovery, and decommissioning activities to ensure the adequate protection of public health and safety and the environment), 3 (conduct NRC safety, security, and emergency preparedness programs in an integrated manner), 4 (improve NRC's regulatory programs and apply safety-focused research to anticipate and resolve safety issues), and 5 (use sound science and state-of-the-art methods to establish, where appropriate, risk-informed and performance-based regulations).
- B. Significant contributor towards all three of the organizational excellence objectives (Openness, Effectiveness, and Operational Excellence).
- C. Supports an NRC licensing initiative with future regulatory benefit; moderate Commission and Congressional interest.
- D. Moderate public interest and participation; submittal of a design certification application and a combined license application referencing the design.

Start technical basis – 05/10

Tech basis complete – 05/10

Proposed rule to the Commission – 01/11

Final rule to the Commission - TBD

### AI82 – U.S. EPR Design Certification

The U.S. EPR Design Certification rule will amend the Commission's regulations to Part 52 by issuing a new appendix for the initial certification of the U.S. EPR standard plant design. Applicants or licensees intending to construct and operate a nuclear power plant using the U.S. EPR design may do so by referencing this design certification rule.

This rule is a HIGH priority and scored 33 points (15, 10, 5, 3) because:

- A. Moderate contributor toward safety goal AND supports strategies 1 (develop, maintain, and implement licensing and regulatory programs for reactors, fuel facilities, materials users, spent fuel management, uranium recovery, and decommissioning activities to ensure the adequate protection of public health and safety and the environment), 3 (conduct NRC safety, security, and emergency preparedness programs in an integrated manner), 4 (improve NRC's regulatory programs and apply safety-focused research to anticipate and resolve safety issues), and 5 (use sound science and state-of-the-art methods to establish, where appropriate, risk-informed and performance-based regulations).
- B. Significant contributor towards all three of the organizational excellence objectives (Openness, Effectiveness, and Operational Excellence).
- C. Supports an NRC licensing initiative with future regulatory benefit; moderate Commission and Congressional interest.
- D. Moderate public interest and participation; submittal of a design certification application and a combined license application referencing the design.

Start technical basis – 10/12

Tech basis complete – 10/12

### AI83 – U.S. APWR Design Certification

The U.S. APWR Design Certification rule will amend the Commission's regulations to Part 52 by issuing a new appendix for the initial certification of the U.S. APWR standard plant design. Applicants or licensees intending to construct and operate a nuclear power plant using the U.S. APWR design may do so by referencing this design certification rule.

This rule is a HIGH priority and scored 33 points (15, 10, 5, 3) because:

- A. Moderate contributor toward safety goal AND supports strategies 1 (develop, maintain, and implement licensing and regulatory programs for reactors, fuel facilities, materials users, spent fuel management, uranium recovery, and decommissioning activities to ensure the adequate protection of public health and safety and the environment), 3

(conduct NRC safety, security, and emergency preparedness programs in an integrated manner), 4 (improve NRC's regulatory programs and apply safety-focused research to anticipate and resolve safety issues), and 5 (use sound science and state-of-the-art methods to establish, where appropriate, risk-informed and performance-based regulations).

- B. Significant contributor towards all three of the organizational excellence objectives (Openness, Effectiveness, and Operational Excellence).
- C. Supports an NRC licensing initiative with future regulatory benefit; moderate Commission and Congressional interest.
- D. Moderate public interest and participation; submittal of a design certification application and a combined license application referencing the design.

Start technical basis – 08/12

Tech basis complete – 08/12

#### NRO14 – APR-1400 (KEPCO) Design Certification (Initial)

The APR-1400 (KEPCO) Design Certification rule will amend the Commission's regulations to Part 52 by issuing a new appendix for the initial certification of the APR-1400 standard plant design. Applicants or licensees intending to construct and operate a nuclear power plant using the APR-1400 design may do so by referencing this design certification rule.

This rule is a HIGH priority and scored 32 points (15, 10, 2, 5) because:

- A. Moderate contributor toward safety goal AND supports strategies 1 (develop, maintain, and implement licensing and regulatory programs for reactors, fuel facilities, materials users, spent fuel management, uranium recovery, and decommissioning activities to ensure the adequate protection of public health and safety and the environment), 3 (conduct NRC safety, security, and emergency preparedness programs in an integrated manner), 4 (improve NRC's regulatory programs and apply safety-focused research to anticipate and resolve safety issues), and 5 (use sound science and state-of-the-art methods to establish, where appropriate, risk-informed and performance-based regulations).
- B. Significant contributor towards all three of the organizational excellence objectives (Openness, Effectiveness, and Operational Excellence).
- C. Supports an NRC licensing initiative with a future regulatory benefit; little Commission interest at this time.
- D. Significant contributor industry interest as evidenced by the expectation of an FY12 design certification application submittal.

Start technical basis – 10/14

#### NRO09 – ABWR (General Electric) Design Certification (Renewal)

The ABWR (General Electric) Design Certification renewal will amend the Commission's regulations to Part 52 by renewing the certification of the ABWR (General Electric) standard plant design for an additional fifteen years. Applicants or licensees intending to construct and operate a nuclear power plant using the ABWR (General Electric) design may do so by referencing this renewed design certification rule.

This rule is a HIGH priority and scored 31 points (10, 10, 6, 5) because:

- A. Moderate contributor toward safety goal AND supports strategies 1 (develop, maintain, and implement licensing and regulatory programs for reactors, fuel facilities, materials users, spent fuel management, uranium recovery, and decommissioning activities to ensure the adequate protection of public health and safety and the environment), 3 (conduct NRC safety, security, and emergency preparedness programs in an integrated manner), 4 (improve NRC's regulatory programs and apply safety-focused research to anticipate and resolve safety issues), and 5 (use sound science and state-of-the-art methods to establish, where appropriate, risk-informed and performance-based regulations).
- B. Significant contributor towards all three of the organizational excellence objectives (Openness, Effectiveness, and Operational Excellence).
- C. Supports an NRC licensing initiative with a future regulatory benefit.
- D. Moderate public/industry interest, as evidenced by submittal of the design certification renewal application.

Start technical basis – 01/14

### NRO12 – Part 21 Restructure

Since its inception in 1977, Part 21 has presented compliance challenges to licensees, vendors, and the NRC staff. The NRC staff has noted a high rate of repetitive inspection findings related to Part 21, including commercial-grade dedication findings, despite the staff's attempts to clarify requirements through generic communications and extensive outreach efforts. Recent Part 21 exemption requests by nonreactor facilities further underscore the need to examine Part 21. In 2010, the staff established an agencywide working group to further explore these inspection findings and identify Part 21 potential areas for improvement. This rulemaking effort is intended to improve the clarity of Part 21 while maintaining the original intent of the rule and minimizing changes to currently compliant programs.

This rule is a HIGH priority and scored 33 points (15, 10, 6, 2) because:

- A. Moderate contributor toward safety goal AND supports strategies 1 (develop, maintain, and implement licensing and regulatory programs for reactors, fuel facilities, materials users, spent fuel management, uranium recovery, and decommissioning activities to ensure the adequate protection of public health and safety and the environment), 4 (improve NRC's regulatory programs and apply safety-focused research to anticipate

- and resolve safety issues), and 6 (promote focused attention on safety matters and individual accountability of those engaged in regulated activities).
- B. Significant contributor towards the effectiveness and operational excellence objectives.
  - C. Supports an NRC licensing initiative with a future regulatory benefit.
  - D. Moderate public interest and participation; industry skeptical on need for rulemaking vs. just providing guidance.

Start technical basis – 10/11

Tech basis complete – 09/12

#### NRO13 – 10 CFR 50, Appendix I

NRC staff has engaged a wide range of stakeholders on the potential issues associated with changes to radiation protection regulations in light of international recommendations. The staff has concluded that there are appropriate and scientifically justified changes that should be made in a number of specific areas in 10 CFR Part 20 and 10 CFR Part 50 Appendix I. These changes would re-establish coherence in the basis for the NRC regulations, be consistent with the current estimates of attributed radiation risk, and increase alignment with international recommendations and the regulatory practices of our international counterparts.

This rule is a MEDIUM priority and scored 30 points (15, 10, 5, 0) because it is:

- A. Moderate contributor to the safety goal AND supports strategies 4 (improve the NRC's regulatory programs and apply safety-focused research to anticipate and resolve safety issues) and 5 (use sound science and state-of-the-art methods to establish, where appropriate, risk-informed and performance-based regulations).
- B. Significant contributor toward the effectiveness objective and supports effectiveness strategies 1 (use state-of-the-art technologies and risk insights to improve the effectiveness and realism of NRC actions, with a goal of continuous improvement) and 4 (cooperate with Federal agencies, States, and Tribal authorities and international counterparts to gain insights and effectively resolve issues to enable the safe and beneficial use of radioactive materials).
- C. Moderate Commission interest – Commission direction to recommend action and anticipated direction/priority in an SRM.
- D. Public meetings held but no consensus on need or benefit.

Start technical basis – 06/12

#### AH81 – Risk Informing Part 50

This rulemaking action will provide a risk-informed, performance-based regulatory framework for nuclear power plants. Because Part 50 is currently large light water reactor-centric, this rulemaking is primarily intended for advanced reactors, but could be used by small modular reactors or any other non-large light water reactors. An ANPR was developed in the early

2000s, but the rulemaking effort has not advanced. This rulemaking could result in a new part (e.g., Part 53), a new subpart to Part 50, or other revision to Part 50 and/or Part 52.

The Commission approved the staff's latest recommendation to defer rulemaking for risk informed and performance-based part 50 reactor requirements for advanced reactors until after the development of the licensing strategy for the Next Generation Nuclear Plant (NGNP), or receipt of an application for a Pebble Bed Modular Reactor design certification or combined license. The Commission directed the staff to provide a recommendation on initiating rulemaking 6 months after the development of the licensing strategy for the NGNP is finalized. The staff informed the Commission that it will defer rulemaking until after NGNP licensing test review (approximately 2015-2017).

This rule is a MEDIUM priority and scored 25 points (15, 7, 3, 0) because:

- A. Significant contributor to the safety goal and supports strategies 1 (develop, maintain, and implement licensing and regulatory programs for reactors, fuel facilities, materials users, spent fuel management, uranium recovery, and decommissioning activities to ensure the adequate protection of public health and safety and the environment) and 4 (improve the NRC's regulatory programs and apply safety-focused research to anticipate and resolve safety issues).
- B. Moderate contributor toward the effectiveness objective AND supports strategy 1 (use state-of-the-art technologies and risk insights to improve the effectiveness and realism of NRC actions, with a goal of continuous improvement).
- C. Addresses a significant regulatory gap; moderate Commission and Congressional interest in licensing small modular and advanced reactor designs.
- D. No public interest at this time; applicants are currently planning to use the Part 50 and Part 52 licensing framework.

Start technical basis – TBD

#### NRO06 – Incorporation of Lessons Learned from New Reactor Licensing Process

The proposed rule would amend the Commission's regulations to part 52 to provide clarifications and various minor revisions and incorporate lessons learned during reviews of design certification and combined license applications.

This rule is a MEDIUM priority and scored 17 points (10, 7, 0, 0) because:

- A. Moderate contributor toward the safety goal AND supports strategy 1 (develop, maintain, and implement licensing and regulatory programs for reactors, fuel facilities, materials users, spent fuel management, uranium recovery, and decommissioning activities to ensure the adequate protection of public health and safety and the environment).
- B. Moderate contributor toward the effectiveness objective AND supports strategies 2 (provide clear and timely guidance to applicants and licensees to foster the submittal of high-quality and timely applications or license amendment requests) and 7 (continue to improve the NRC's regulatory and communication programs).
- C. No significant governmental interest.

D. No public interest.

Start technical basis – 04/11

NRO02 – ABWR (General Electric) Design Certification (Revision)

This rulemaking is a placeholder for a potential future amendment to the ABWR (General Electric) Design Certification. In 2009 GE showed interest in incorporating changes to the certified design based on lessons learned from the South Texas Project combined license application. By 2011, such interest is no longer present. However, the NRC is holding this item on the CPR list as a placeholder for a potential second ABWR design certification renewal. Until the scope of the rule is defined, the staff is assigning it a score of 0 for all factors. When the scope of the rule is decided, this rule priority will be updated accordingly.

This rule is a LOW priority and scored 0 points (0, 0, 0, 0) because:

- A. Does not contribute toward any goal.
- B. Does not contribute toward any objective.
- C. No contribution toward any consideration.
- D. No contribution toward any consideration.

Start technical basis – 10/14