RULEMAKING ISSUE
NOTATION VOTE

RESPONSE SHEET

TO: Brooke P. Clark, Secretary

FROM: Commissioner Wright

SUBJECT: SECY-23-0021: Proposed Rule: Risk-Informed, Technology-Inclusive Regulatory Framework for Advanced Reactors (RIN 3150-AK31)

Approved X **Disapproved** X **Abstain** ____ **Not Participating** ____

COMMENTS: **Below** ____ **Attached** X **None** ____

David A. Wright

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Signature

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Yes X

No ____

Commissioner Wright's Comments on SECY-23-0021, Proposed Rule: Risk-Informed, Technology-Inclusive Regulatory Framework for Advanced Reactors

I want to begin by recognizing not only the extensive work that the staff put in to accomplish this draft proposed rule, but also the significant history and efforts that came before it. In 2020, in response to the Nuclear Energy Innovation and Modernization Act (NEIMA), staff embarked on creating a rule that would establish a technology-inclusive regulatory framework for optional use by applicants for new commercial advanced nuclear reactors.[1] While this was a major step towards licensing advanced reactors, it was not the agency's first milestone in pursuing regulatory readiness in this area. Staff had established a vision and strategy in 2016,[2] and as this document noted, significant work had already been accomplished. This included a SECY paper describing licensing readiness for both light-water reactors (LWR) and non-LWRs,[3] an NRC-U.S. Department of Energy (DOE) jointly developed report to Congress discussing the Next Generation Nuclear Plant (NGNP) licensing strategy,[4] and a separate report to Congress regarding the strategy and approach for preparing for the licensing of non-LWRs.[5]

NEIMA catapulted NRC's efforts into a new dimension, underscoring the urgency and importance of establishing a transformative framework for licensing advanced reactors. In development of this draft proposed rule, I know staff spent countless hours in detailed internal discussion. Further, staff hosted 24 public meetings with external stakeholders and participated in 16 ACRS meetings on the Part 53 draft proposed rule

1 SECY-20-0032, "Rulemaking Plan on 'Risk-Informed, Technology-Inclusive Regulatory Framework for Advanced Reactors (RIN-3150-AK31; NRC-2019-0062).'"

2 "NRC Vision and Strategy: Safely Achieving Effective and Efficient Non-Light Water Reactor Mission Readiness," issued December 2016.

3 SECY-01-0188, "Future Licensing and Inspection Readiness Assessment," October 12, 2001 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML012640279).

4 "Next Generation Nuclear Plant Licensing Strategy – A Report to Congress," August 2008 (ADAMS Accession No. ML082290017).

5 "Report to Congress, Advanced Reactor Licensing," August 2012 (ADAMS- Accession No. ML12153A014).

development since September 2020.[6] Additionally, it cannot be overlooked that the majority of this work occurred while the staff, and the world, navigated the intense challenges and stresses of a global pandemic. For this, and for all the commitment that the staff continues to display, I want to emphasize my appreciation.

I do think it is important to reflect upon where we are in the state of nuclear, both in terms of the evolving technology as well as the increasing domestic and international demand, and to gauge if the draft proposed rule that the staff has submitted meets the needs of today and the expectations put forth in NEIMA. The paradigm has shifted. The prospects of new and advanced reactors are more concrete than they've ever been, and the demand is clear.

According to a recent report from the DOE, nuclear is a key component in reaching our decarbonization goals. The report notes that "U.S. domestic nuclear capacity has the potential to scale from ~100 GW in 2023 to ~300 GW by 2050—driven by deployment of advanced nuclear technologies. Power system decarbonization modeling, regardless of level of renewables deployment, suggests that the U.S. will need ~550–770 GW of additional clean, firm capacity to reach net-zero; nuclear power is one of the few proven options that could deliver this at scale, while creating high-paying jobs with concentrated economic benefits for communities most impacted by the energy transition."[7]

For deployment at this scale to occur, there must be a straightforward, flexible framework for licensing that prioritizes adequate protection of public health and safety and is also useful and usable by a wide variety of applicants and licensees. Creating this framework is a responsibility that rests squarely on the shoulders of the NRC, which has been reiterated by stakeholders on numerous occasions, including multiple letters and statements from members of Congress. It is imperative that we the NRC facilitate pathways for the safe licensing of advanced reactors, not impede its progress. One of the very fundamental purposes of NEIMA itself is to "develop the expertise and regulatory process necessary to allow innovation and the commercialization of advanced nuclear reactors," and my concern with the current draft proposed rule is that it will limit the

6 https://www.nrc.gov/reactors/new-reactors/advanced/rulemaking-and-guidance/part-53.html#keyDocs.

7 "Pathways to Commercial Liftoff: Advanced Nuclear," U.S. Department of Energy, March 2023 https://liftoff.energy.gov/wp-content/uploads/2023/03/20230320-Liftoff-Advanced-Nuclear-vPUB.pdf.

spectrum of applicants who find Part 53 a viable licensing approach due to the rule's complexity and specificity, thereby deterring innovation and development.

Further, while it's true that we're at an unprecedented time of growth and interest in advanced nuclear technology, in many ways we can and should apply key regulatory lessons learned from our past. Today's landscape in terms of nuclear potential is not altogether different than what the Atomic Energy Commission faced in 1956, when the first edition of 10 CFR Part 50 was issued.[8] As I noted during the commission meeting on May 16, 2023, the original Part 50 was six pages long.[9] Granted, Part 50 has evolved and grown considerably throughout the years, but that original Part 50 was conceptually technology-inclusive and performance-based, veritable goals of Part 53, and helped foster a vibrant and expanding nuclear field in the 1960s and 1970s. As noted in the Preface of "Safe Enough? A History of Nuclear Power and Accident Risk," "By the late 1960s, utility companies contracted for power reactors at a rate of about two dozen a year. In the early 1970s, the orders for gigantic thousand-megawatt units doubled. Nuclear power was projected to take the lion's share of new orders from coal plants – about 150 thousand megawatts plants by 1980 and more than five hundred by 1990."[10] These estimates are not unlike the predictions found in a recent NEI survey of 19 utilities that noted the need for over 99 gigawatts of new nuclear power by the 2050s in order to meet decarbonization goals, which translates to over 300 new small modular reactors (SMRs) over the next 25 years.[11]

Recognizing the challenges that went into establishing a licensing process in the 1960s, I want to underscore the very powerful tool at our disposable that was not yet fully conceptualized with the initial issuance of Part 50, and that is regulatory guidance.[12] Some internal stakeholders have noted that a potential drawback of creating a high-level rule with fewer detailed criteria is that it would result in a lack of predictability for applicants and reviewers. However, I would challenge that notion given the NRC's diligent practice of requiring guidance on at least one acceptable means of meeting a

8 21 Fed. Reg. 355 (Jan. 19, 1956).

9 The meeting's agenda, transcript, slides, and video recording are available at: https://www.nrc.gov/reading-rm/doc-collections/commission/tr/2023/index.html.

10 Wellock, Thomas R., "Safe Enough? A History of Nuclear Power and Accident Risk" (2021).

11 https://www.nei.org/news/2022/studies-and-models-show-demand-for-adv-nuclear.

12 As is noted in NUREG-1933, "Containing the Atom: Nuclear Regulation in a Changing Environment, 1963-1971", "On questions for which data or experience was insufficient to write standards, the AEC beginning in November 1970, began to issue 'safety guides.'"

regulatory requirement. A concrete example of this practice is NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition" or the SRP.[13] Staff use the SRP daily to review applicants and licensees' adherence to regulatory requirements, and the SRP provides both regulatory stability and consistency. Its stature and importance are memorialized in the regulations themselves, specifically in 10 CFR 50.34(h), which discusses conformance with the SRP. However, the interplay between regulation and guidance also facilitates flexibility as noted in 10 CFR 50.34(h)(2) and (3), which acknowledges that if there are any differences in the application from the SRP, the applicant shall identify those differences and evaluate how the proposed alternatives to the SRP criteria provide an acceptable method of complying with the Commission's regulations. Guidance is a fundamental pillar of our regulatory framework, and I believe that our approach to Part 53 should make the most of this established tool.

With Part 53, we not only have the opportunity but the responsibility to reimagine the licensing process for advanced nuclear reactors. We must consider the lessons learned that we've gained throughout our rich regulatory history, the experiences and insights from our international counterparts, and the feedback and perspectives of our external stakeholders. It is time to think differently and create a high-level rule that encourages innovation while providing adequate protection of public health and safety. We need a framework that can easily grow and evolve as our understanding and experiences with advanced reactors grow and evolve. We know that a new Part 53, in whatever its form, will need adjustments and revisions as our knowledge expands. While I'm not a proponent of an arbitrary page limit for the rule, I am concerned that an extremely detailed, lengthy initial rule will be cumbersome and confusing not only to interpret and implement, but also to maintain and update. A framework that provides the core performance-based principal criteria in rule language while leaving the details of the "how" to guidance enables greater flexibility and innovation. Further, Part 53 should accommodate various pathways for licensing commensurate with the wide range of technologies and electrical capacities currently anticipated.

Therefore, I cast my vote for an alternate approach to Part 53, one that allows the applicant to propose their own overall risk metric and safety case for the NRC's review and approval. Methods for identifying risk metrics and how applicants can demonstrate this safety case should be contained in guidance. This approach would allow the staff's

13 https://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr0800/index.html.

currently proposed Frameworks A and B in the draft proposed rule as possible licensing pathways but would also allow additional avenues for applicants to seek a license.

Enclosure 1 to my vote provides the body of this alternate approach, which the staff should use as the basis for revising the draft proposed rule. The rule language should be simple, useable, and useful, and it should allow an applicant to readily understand what is expected by the NRC. As the nuclear field and spectrum of interested stakeholders continue to expand, we cannot assume that prospective applicants will have had any prior experience going through the regulatory process, and Part 53 should be an accessible means for any entity to pursue an application. Enclosure 1 attempts to create regulatory requirements that are understandable and performance based. Furthermore, the good work that has gone into developing the draft proposal that the staff submitted will not be for nothing. Rather, the details contained in Frameworks A and B should be moved to guidance as acceptable methods of demonstrating this safety case. We must widen the aperture through which we're viewing advanced reactor licensing in the United States, and I believe this approach will enable us to do that.

For the past several years, the NRC has been undergoing a transformation, with the vision of becoming a modern, risk-informed regulator. A focus area for this transformation has been innovation, creating an agency of "innovators who make timely decisions that take into account different viewpoints and fully explored options," and one that is agile and adapts to changes in external factors.[14] Part 53 is the ideal chance to demonstrate these values and one in which the stakes are high. NEIMA has given us the opportunity to do something brand new, to challenge the status quo, and to exemplify the vision of being that modern, risk-informed regulator that the agency has strived to become. It's an exciting and critical time. As I've said on a number of occasions, we must meet this moment.

14 https://www.nrc.gov/about-nrc/plans-performance/modern-risk-informed-reg/trans-journey.html.

Enclosure 1: Blueprint for Proposed 10 CFR Part 53 Framework

The purpose of this enclosure is to provide an alternate framework for 10 CFR Part 53—one that allows the applicant to propose their own overall risk metric and safety case for the NRC's review and approval. Methods for identifying risk metrics and how applicants can demonstrate this safety case should be contained in NRC-endorsed-guidance. The intent of this enclosure is not to provide fully complete rule text; rather, it is meant to provide specific enough direction such that staff can understand the underlying philosophy of the approach and further refine the language so that it can be provided for public comment. This refinement includes identification of potential regulatory gaps, inconsistencies, and conforming changes to other regulations.

This draft proposed Part 53 presented here is organized by subparts. There is a short description at the beginning of each subpart and in selected sections, which is meant to provide the overall purpose but would not be included in the rule language. These descriptions could be used to develop the statements of consideration, including the section-by-section analysis. In some cases, there are placeholders for certain aspects of the rule, with the expectation that NRC staff will continue to expand on the subject and develop the regulatory text. I have noted some specific areas where staff should look to either further increase efficiencies by more fully exploring opportunities found in Parts 50 and 52[1] or to better align with recently enacted policy decisions.[2] In addition, some placeholders are used to acknowledge that staff should align the requirements in the associated subsection with those that are being developed as part of a separate rulemaking. To that end, I recognize that there are several ongoing, recently completed, or possibly anticipated rulemakings that directly relate to licensing of advanced reactors.[3] Staff should take a holistic look at these rulemakings and their schedules, identify key attributes (e.g., differences in scope, applicability, objectives), analyze any

1 For instance, a concept to further explore is that of efficiencies gained through licensing multiple, identical designs, as discussed in Appendix N to Part 50, *Standardization of Nuclear Power Plant Designs: Permits to Construct and Licenses to Operate Nuclear Power Reactors of Identical Design at Multiple Sites*. This is particularly true as potential applicants are expressing a desire for truly standardized reactors.

2 For instance, staff should incorporate updates from SRM-SECY-22-0001, "Rulemaking: Final Rule Emergency Preparedness for Small Modular Reactors and Other New Technologies (RIN-3150-AJ68; NRC-2015-0225)."

3 Examples include rulemakings regarding emergency preparedness for small modular reactors and other new technologies, physical security requirements for advanced reactors, generic environmental impact statements for advanced reactors, alignment for Parts 50 and 52, and decommissioning.

possible inconsistencies or areas of confusion, and provide an overview to the Commission offices.

The approach to Part 53 laid out in this enclosure is based on feedback received from internal and external stakeholders and incorporates perspectives from international counterparts, many of whom have had great success using high-level regulatory requirements and applicant-demonstrated safety cases. It further attempts to draw on plain language practices wherever possible, in order to both increase the clarity of NRC requirements and reduce the regulatory burden for new entrants.[4] Further, the concept and regulatory text draw inspiration, and at times sample language, from submissions provided to the Regulations.gov docket dedicated to Part 53[5] as well as feedback heard during the commission meeting on May 16, 2023.[6] Specifically, this approach bears similarities to the concepts developed as part of the Nuclear Energy Institute Task Force on Part 53[7] as well as the submission from the Nuclear Innovation Alliance,[8] though there are significant differences from both of those suggestions. As I have mentioned many times, involvement from potential end-users of this rule should be a critical component of Part 53 development, and I have seriously taken their feedback into account.

I recognize that this approach represents a significant shift in regulatory philosophy, but I believe this shift is warranted in order to provide licensing pathways that are commensurate with the wide range of technologies and electrical capacities currently anticipated. I hope this example text and framework serve as a vehicle for bold action by the NRC staff to create a rule that fulfills today's needs. I look forward to further discussing this proposal with my colleagues on the Commission, with the hopes of finding an innovative and timely path forward for Part 53.

4 While many requirements in our current rules are necessarily reemphasized in Part 53 for consistency, Part 53 presents an opportunity to create a new rule that avoids, where possible, ambiguous, confusing, or jargon-laden requirements.

5 https://www.regulations.gov/docket/NRC-2019-0062.

6 The meeting's agenda, transcript, slides, and video recording are available at: https://www.nrc.gov/reading-rm/doc-collections/commission/tr/2023/index.html.

7 NRC-2019-0062-0045 Comment (16) from Marcus Nichol on behalf of Nuclear Energy Institute on PR-53 – Risk-Informed, Technology-Inclusive Regulatory Framework for Advanced Reactors (ML21042B889).

8 NRC-2019-0062-0162 Comment (080) from Patrick White on behalf of the Nuclear Innovation Alliance FR Doc # 2020-24387 (ML21321A284).

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Proposed Framework for 10 CFR Part 53

10 C.F.R. § 53.001 – Purpose and Scope

(a) This part provides an optional use, technology-inclusive regulatory framework for the issuance, amendment, renewal, and termination of licenses, permits, certifications, and approvals for production and utilization facilities. These regulations are intended to fulfill the Commission's obligation under Section 103 of the Nuclear Energy Innovation and Modernization Act (132 Stat. 5565) and were developed using methods of evaluation that are flexible and practicable for application to a variety of reactor technologies, including, where appropriate, the use of risk-informed and performance-based techniques and other tools and methods.

(b) This part also provides notice to all persons that they may be individually subject to U.S. Nuclear Regulatory Commission enforcement action for violations of the provisions in § 53.703 if they

(1) knowingly provide goods or services:

(i) to any holder of or applicant—or any contractor, subcontractor, or consultant of any holder of or an applicant—for:

(A) an approval,

(B) a certification,

(C) a permit or a license,

(ii) that relate to the activities of a holder of or an applicant for:

(A) an approval,

(B) a certification,

(C) a permit or a license,

(c) The subparts of this part are designed to generally conform to the lifecycle of a production and utilization facility.

Subpart A of this part provides the safety objectives and application contents necessary to demonstrate the safety of a proposed facility.

Subpart B of this part identifies the different types of NRC approvals available under this part, including which specific elements of Subpart A must be included in an application for each type of approval.

Subpart C of this part identifies the actions required and findings that must be made by the NRC to issue a license.

Subpart D of this part identifies the obligations of licensees following the issuance of an NRC approval, certification, or license.

Subpart E of this part provides the standards, procedures, and obligations for the decommissioning of production and utilization facilities.

Subpart F of this part provides standards, application requirements, procedures, and obligations for obtaining and keeping reactor operator licenses.

Subpart G of this part provides general provisions applicable to all persons subject to the rules of this part.

Subpart A: Safety Objectives and Contents of Application

[The purpose of this subpart is to provide overall safety objectives, which include (1) fundamental dose limits and (2) a proposed method of demonstrating the safety of the facility. Further, it identifies the necessary contents of an application.

This subpart represents the fundamental principle of my recommended approach, which is to establish high-level, performance-based requirements that provide adequate protection of public health and safety while also providing flexibility to accommodate a range of designs. In order to be approved for a license, an applicant must demonstrate that their facility can be operated safely, and requirements for establishing that safety case are found in 10 CFR § 53.104.]

10 C.F.R. § 53.101 – Safety Objectives

[The purpose of this section is to first establish public, worker, and environmental dose limits. These limits are consistent with those provided in the staff's draft proposed rule as well as those found in alternate proposals submitted on the Part 53 docket; they also represent, as staff noted, consistency with long established limits provided throughout 10 CFR Parts 50 and 52.[9] This section then provides a requirement for a method of demonstrating the safety of the proposed facility.]

(a) Each application must demonstrate that the license, if approved, will meet the following requirements.

(1) *Public Dose Limits*. The following dose requirements apply to members of the public for acute exposures and chronic exposures. Acute exposures are those that result from abnormal plant operation (e.g., an accident), and chronic exposures are those that result from normal plant operation.

(i) *Acute Public Dose Requirements*. The acute public dose limit for an infrequent (i.e., not expected to occur during the life of the plant) event is 25 REM total effective dose equivalent (TEDE).

(A) An individual located at any point on the boundary of the exclusion area for any 2-hour period following the onset of the postulated fission product release, would not receive a radiation dose in excess of 0.25 Sv (25 rem) total effective dose equivalent (TEDE).

9 The NRC is currently reviewing a petition for rulemaking related to the dose limits throughout NRC regulations, and the language in this section should ultimately reflect the Commission direction on this petition.

(B) An individual located at any point on the outer boundary of the low population zone, who is exposed to the radioactive cloud resulting from the postulated fission product release (during the entire period of its passage), would not receive a radiation dose in excess of 0.25 Sv (25 rem) total effective dose equivalent (TEDE).

(ii) *Chronic Public Dose Requirements*. The contribution to the total effective dose equivalent to individual members of the public from normal plant operation must not exceed the public dose limits provided in part 20, subpart D of this chapter.

(2) *Worker Dose Limits*. The dose limits for workers are contained in part 20, subpart C of this chapter.

(3) *Environmental Emissions Limits*. The environmental emission release limits are contained in Appendix B to part 20 of this chapter.

(b) An applicant must identify and justify a method of demonstrating the safety of the proposed facility by either:

(1) Proposing a plant-level metric or set of metrics that will facilitate assessment of whether the proposed facility will provide an acceptable level of safety.

(i) Surrogate metrics that have been used to support risk-informed decision-making for light-water reactors (e.g., Core Damage Frequency, Large Early Release Frequency, Large Release Frequency, Conditional Containment Failure Probability) are acceptable.

(ii) The applicant may also propose a new metric or set of metrics.

(2) Including in the application a deterministic method of compliance.

(3) A combination of the approaches described in paragraphs (b)(1) and (b)(2) of this section.

(c) The NRC will include the approved method from paragraph (b) of this section in the final license. The method will not constitute a real-time requirement that must be continuously demonstrated by the licensee. Instead, this method will serve as the basis for the NRC's initial licensing decision and will be used to inform the NRC's decision-making in areas such as license amendments and

backfit determinations. Once approved, the method may not be changed by the licensee without prior NRC approval.

10 C.F.R. § 53.102 – Alternative Regulatory Requirements

[Given the array of potential designs that may come before the NRC, and in order to avoid the need for exemptions, this section is intended to allow for alternatives for each requirement in this subpart if any requirement is superfluous or not entirely applicable to a proposed design. Any alternative must demonstrate that it provides an equivalent or greater level of safety.]

(a) Applicants are permitted to develop alternative regulatory requirements for any requirement in this subpart.

(b) An applicant must explain how the alternative regulatory requirement results in an equivalent or greater level of safety for workers, the public, and the environment and demonstrate in its application how the alternative regulatory requirement will be met.

(c) Satisfactory demonstration of compliance with alternative regulatory requirements will be considered equivalent to demonstration of compliance with the original requirement in this subpart.

(d) Alternative regulatory requirements must be analytically and practicably self-consistent with existing safety basis limits in this subpart.

10 C.F.R. § 53.103 – General Information

[The intent of this section is for the applicant to provide general information about who they are, technical qualifications, the site, and the proposed facility that will be used as background information for the detailed technical analysis. Information such as financial qualifications and emergency plans have been placed in separate sections of this draft proposal.]

NRC applications must contain the following general information:

(a) Name of applicant.

(b) Address of applicant.

(c) Description of business or occupation of applicant.

(d) If applicant is:

(1) An individual—the citizenship of applicant.

(2) A partnership—the name, citizenship and address of each partner and the principal location where the partnership does business.

(3) A corporation or an unincorporated association—

(i) The State where it is incorporated or organized and the principal location where it does business;

(ii) The names, addresses and citizenship of its directors and of its principal officers; and

(iii) Whether it is owned, controlled, or dominated by an alien, a foreign corporation, or foreign government, and if so, give details.

(4) Acting as agent or representative of another person in filing the application—the identity of the principal and information required under this paragraph with respect to such principal.

(e) The technical qualifications of the applicant to engage in the proposed activities.

(f) The class and type of license applied for, what the facility will be used for, the requested term of the license, and a list of other licenses—except operator's licenses—issued or applied for in connection with the proposed facility.

(g) The specific number, type, and thermal power of the facilities.

(h) The types of cooling systems, intakes, and outflows that may be associated with each facility.

(i) The boundaries of the site.

(j) The location of the reactor.

(k) The seismic, meteorological, hydrologic, and geologic characteristics of the proposed site, including the most severe of the natural phenomena that have been historically reported for the site and surrounding area.

(l) The location and description of any nearby industrial, military, or transportation facilities and routes.

(m) The existing and future population profile of the area surrounding the site.

(n) The earliest and latest dates for completion of the construction or alteration.

(o) If the proposed activity is the generation and distribution of electric energy under a class 103 license—

(1) a list of the names and addresses of such regulatory agencies that may have jurisdiction over the rates and services incident to the proposed activity, and

(2) a list of trade and news publications which circulate in the area where the proposed activity will be conducted and which are considered appropriate to give reasonable notice of the application to those municipalities, private utilities, public bodies, and cooperatives, which might have a potential interest in the facility.

(p) If the application contains Restricted Data or other defense information, the application must be prepared in such manner that all Restricted Data and other defense information are separated from the unclassified information.

10 C.F.R. § 53.104 – Technical and Safety Information

[This section is intended to address the information needed to demonstrate that the facility can be operated safely. Even though these requirements are written at a high level, the application is expected to rigorously analyze hazards to the same extent as current reactors. Under this part, the applicant must demonstrate the safety of the facility to the satisfaction of the NRC, who has significant latitude in the breadth of its review. Consistent with agency practice, detailed explanations of what NRC considers acceptable to meet these requirements will be provided in NRC-approved guidance documents. Many terms in this section should be further defined in the § 53.701.]

(a) In order to demonstrate the safety of the proposed facility, an application must include a safety analysis report that explains how the facility, when operated, will meet the safety objectives. The level of detail in the application must be sufficient to support an independent review of the facility and operations. The safety analysis report must include:

(1) A general description of how the application is organized and a general discussion of how the application will demonstrate compliance with the facility safety objectives.

(2) A general description of the facility and the concept of operations. This includes a general summary description of the major facility systems, structures, and components (SSC), the practices and safety concepts, and how the facility's design and construction utilizes consensus standards.

(3) The principal design criteria for the facility.

(4) A description of how the SSCs present in the facility address the principal design criteria.

(5) A facility-specific description of how the facility will address internal and external hazards. This includes:

(i) The methodology used to identify potential hazards by a thorough and systematic process.

(ii) The hazards that were identified through this process.

(iii) An analysis of how either the design of the facility or how the operational programs will eliminate, reduce, mitigate, or control each hazard.

(iv) The assumptions used and uncertainties in these analyses and how the assumptions are sufficiently conservative.

(6) A description of the operation and interaction of the SSCs present in the facility, along with the methods used to eliminate, reduce, mitigate, or control transients that may occur.

(7) A description of how the design mitigates the effects of common-cause failure between components.

(8) A description of how the design addresses and mitigates the potential for operator errors through the use of human factors principles.

(9) A description of the required preoperational and start up testing.

(10) A description of the operational programs, including maintenance programs, necessary to support safe operation of the facility.

(11) A description of how the requirements of paragraphs (a)(1) through (a)(10) of this section, when considered together, comprehensively demonstrate compliance with the safety objectives.

(b) The applicant must submit proposed technical specifications that address the safety limits, limiting safety systems, and limiting control systems. The proposed technical specifications must be sufficiently detailed to demonstrate that, if met, the facility will meet the safety objectives.

10 C.F.R. § 53.105 – Security Information

[This section is intended to address the need to submit a physical security plan, safeguards contingency plan, training and qualification plan, and cybersecurity plan. This section does not specifically discuss what must be included because this may be duplicative of what is already required in 10 CFR Part 73. For example, 10 CFR § 73.55 requires that as of March 31, 2010, all OL and COL power reactor applicants under Part 50 or 52 "must amend their applications to include security plans consistent with this section." It is expected that changes will be made to Part 73 to identify what plans are needed and what is required for each plan. However, additional requirements may be necessary as the rule is further developed.]

(a) Each application must describe how the applicant will demonstrate compliance with the requirements of part 73 of this chapter.

10 C.F.R. § 53.106 – Environmental Information

[This section is intended to address the need to submit an Environmental Report to support the NRC's environmental review in Part 51. This section is intended to be a more general requirement, relying on a change to 10 CFR § 51.45 so that applications under this part are within its scope. However, additional requirements may be necessary as the rule is further developed.]

(a) Each application must contain the information required under part 51, subpart A of this chapter.

10 C.F.R. § 53.107 – Quality Assurance

[This section is intended to address the need to submit a quality assurance program description in support of an application. Given that there is an established understanding of the requirements of 10 CFR Part 50 Appendix B, this section specifically references this as an acceptable set of design criteria. However, the rule provides flexibility by allowing for alternative criteria if it can be demonstrated that the criteria are sufficient to support the baseline assumptions in the safety analysis report.]

(a) Applicants must identify the criteria and include a description of the quality assurance program used during the development of the application.

(b) Applicants must include the criteria and description of the quality assurance program that will apply to the design, fabrication, construction, and testing of the structures, systems, and components of the facility.

(1) Appendix B to part 50 of this chapter provides acceptable criteria for a nuclear power plant.

(2) Alternative criteria may be utilized if the applicant can demonstrate that the alternative criteria provide reasonable assurance that the safety assumptions relied upon in the safety analysis report will be met.

(3) The description of the quality assurance program must include a discussion of how the applicable criteria will be satisfied.

10 C.F.R. § 53.108 – Emergency Planning

[This section is intended to incorporate the current requirements for emergency planning, relying as much as possible on the preexisting standards in Part 50, while consolidating information required in 10 CFR § 50.33 and the staff's proposed § 53.855. Additionally, this early language attempts to incorporate the requirements of SRM-SECY-22-0001.]

(a) If the application is for an operating license or combined license for a nuclear power reactor, or if the application is for an early site permit and contains plans for coping with emergencies, the applicant must submit:

(1) radiological emergency response plans of State and local governmental entities in the United States that are wholly or partially within the plume exposure pathway emergency planning zone,

(2) the plans of State governments wholly or partially within the ingestion pathway emergency planning zone.

(3) If the application is for an early site permit that proposes major features of the emergency plans describing the emergency planning zones, then the descriptions of the emergency planning zones must meet the requirements of this paragraph.

(4) Generally, the plume exposure pathway emergency planning zone for nuclear power reactors will consist of an area about 10 miles (16 km) in radius and the ingestion pathway emergency planning zone will consist of an area about 50 miles (80 km) in radius. The exact size and configuration of the emergency planning zones surrounding a particular nuclear power reactor will be determined in relation to the local emergency response needs and capabilities as they are affected by such conditions as demography, topography, land characteristics, access routes, and jurisdictional boundaries. The size of the emergency

planning zones also may be determined on a case-by-case basis for gas-cooled reactors and for reactors with an authorized power level less than 250 MW thermal. The plans for the ingestion pathway will focus on such actions as are appropriate to protect the food ingestion pathway.

(b) Reactor applicants complying with § 50.160 of this chapter who apply for an operating license, combined license, or an early site permit must submit as part of the application the analysis used to determine whether the criteria of paragraphs (b)(1) through (b)(3) of this section are met and, if they are met, the size of the plume exposure pathway emergency planning zone.

(1) The plume exposure pathway emergency planning zone is the area within which:

(i) Public dose, as defined in § 20.1003 of this chapter, is projected to exceed 10 mSv (1 rem) total effective dose equivalent over 96 hours from the release of radioactive materials from the facility considering accident likelihood and source term, timing of the accident sequence, and meteorology; and

(ii) Pre-determined, prompt protective measures are necessary.

(2) If the application is for an operating license or combined license or if the application is for an early site permit and contains plans for coping with emergencies under this part, and if the plume exposure pathway emergency planning zone extends beyond the site boundary:

(i) The applicant must submit radiological emergency response plans of State, local, and participating Tribal governmental entities in the United States that are wholly or partially within the plume exposure pathway emergency planning zone.

(ii) The exact configuration of the plume exposure pathway emergency planning zone surrounding the facility must be determined in relation to the local emergency response needs and capabilities as they are affected by such conditions as demography, topography, land characteristics, access routes, and jurisdictional boundaries.

(3) If the application is for an early site permit that, under this part, proposes major features of the emergency plans and describes the emergency planning zone, and if the emergency planning zone extends beyond the site boundary, then the exact configuration of the plume exposure pathway emergency planning zone surrounding the facility

must be determined in relation to the local emergency response needs and capabilities as they are affected by such conditions as demography, topography, land characteristics, access routes, and jurisdictional boundaries.

(c) The application must include an emergency plan that demonstrates compliance with either § 50.47 of this chapter and Appendix E to part 50 of this chapter, or the applicable requirements of § 50.160 of this chapter.

10 C.F.R. § 53.109 – Financial Information

[The intent of this section is to identify the financial information necessary from applicants to determine if they are financially capable of performing the licensed activities.]

(a) The following information must be provided to demonstrate that an applicant is financially qualified to carry out, in accordance with regulations in this chapter, the activities for which the permit or license is sought.

(b) Each application submitted by a newly formed entity organized for the primary purpose of constructing or operating a facility must also include information showing:

(1) The legal and financial relationships the entity has or proposed to have with its stockholders or owners;

(2) The stockholders' or owners' financial ability to demonstrate compliance with any contractual obligation to the entity which they have incurred or proposed to incur; and

(3) Any other information considered necessary by the Commission to enable it to determine the applicant's financial qualification.

(c) If the application is for a construction permit, the applicant must submit information that demonstrates that the applicant possesses or has reasonable assurance of obtaining the funds necessary to cover estimated construction costs and related fuel cycle costs. This information must also include estimates of the total construction costs and related fuel cycle costs. The information must also identify the sources of funds to cover these costs.

(d) If the application is for an operating license, the applicant must submit information that demonstrates the applicant possesses or has reasonable assurance of obtaining the funds necessary to cover estimated operation costs

for the period of the license. The applicant must submit estimates for total annual operating costs for each of the first 5 years of operation of the facility. The applicant must also indicate the source(s) of funds to cover these costs. The applicant must also include information demonstrating how reasonable assurance will be provided that funds will be available to decommission the facility.

(1) For an electric utility applicant, this information does not need to be provided.

(e) If the application is for a combined license under this part, the applicant must submit the information required for both a construction permit and an operating license application.

(f) The Commission may require an applicant to submit additional or more detailed information about its financial arrangements and status of funds in order to determine its financial qualifications. This may include information regarding an applicant's ability to continue the conduct of the activities authorized by the license or to decommission the facility.

Subpart B: Types of Licenses

[The purpose of this subpart is to provide information regarding the classes and types of licenses for which entities can apply. Sample language and a suggested format are provided, but NRC staff should further refine and consider how best to communicate this information in the clearest, most user-friendly manner. For instance, this subpart includes a draft table that specifies which requirements in Subpart A pertain to which types of applications, with rule text identifying additions and exceptions to the table. Staff should work with stakeholders to understand if this format would be useful or if there is a different, more straightforward manner of displaying this information. Staff should seek public comment specifically on the format and optimal communication mechanism for the information contained in this subpart.]

10 C.F.R. § 53.201 – Classes of Licenses

[This draft language includes both Class 103 and Class 104 licenses and attempts to simplify the definitions. Staff should continue to refine this language and determine whether the scope of the rule should be limited to only a subset of potential licenses.]

(a) There are two classes of NRC licenses—class 104 licenses and class 103 licenses. A class 104 or class 103 license is required to—

- transfer or receive in interstate commerce,
- construct,
- manufacture,
- produce,
- transfer,
- acquire,
- possess, or
- use

a production or utilization facility.

(b) A license will be issued under this part to an applicant who the NRC determines meets the requirements of this part.

(c) A class 104 license is a license for certain medical therapy and research and development facilities. An applicant will qualify for a class 104 license for a license issued under this part if the applicant is proposing:

(1) A utilization facility for use in medical therapy;

(2) A production or utilization facility that:

(i) Is useful in the conduct of research and development activities of the types specified in section 31 of the Act; and

(ii) Is not an industrial or commercial facility under paragraph (d) of this section.

(d) A class 103 license is a license for industrial or commercial utilization or production facilities. A research and development facility specified in section 31 of the Act will be considered an industrial or commercial facility if 50 percent or more of the annual cost of owning or operating the facility—other than those for research and development or education and training— is devoted to (1) the production of materials, products, or energy for sale or commercial distribution or (2) the sale of services.

10 C.F.R. § 53.202 – Combining Licenses and Incorporation of Other Documents

(a) If desired, an applicant may combine requests for different types of licenses into one or more applications.

(b) An applicant may, in its application, incorporate by reference information contained in previous applications, statements, or reports. These references must be clear and specific.

10 C.F.R. § 53.203 – Types of Applications

[This section is intended to outline the different types of applications that may be sought under this part. As discussed above, staff should continue to seek feedback from stakeholders and further refine the language to ensure this subpart and division is understandable and provides sufficient clarity, incorporating suggested improvements.]

(a) Standard Design Approval

A standard design approval or design approval means an approval of a final standard design for a nuclear power reactor. The approval may be either for the final design for the entire reactor or the final design of the major portions thereof.

(b) Standard Design Certification

A standard design certification means an approval, codified in a rulemaking, of a standard design for a nuclear power facility. An approved standard design certification may be referred to as a certified standard design.

(c) Early Site Permit

An early site permit means an approval for a site for one or more nuclear power facilities. An early site permit is a partial construction permit.

(d) Limited Work Authorization

A limited work authorization is a type of license that, once issued, allows the holder to perform any of the following activities for an SSC of a facility for which either a construction permit or combined license is otherwise required under this chapter:

(1) The driving of piles,

(2) Subsurface preparation,

(3) Placement of backfill, concrete, or permanent retaining walls within an excavation, and

(4) Installation of the foundation, including placement of concrete.

(e) Construction Permit

A construction permit is a type of license that, once issued, allows the holder to construct a production or utilization facility.

(f) Operating License

An operating license is a type of license that, once issued, allows the holder to operate a production or utilization facility.

(g) Combined License

A combined license is a combined construction permit and operating license with conditions for a nuclear power facility issued under this part.

(h) Manufacturing License

A manufacturing license is a license, issued under this part, authorizing the manufacture of nuclear power reactors—but not their construction, installation, or operation at the sites on which the reactors are to be operated.

10 C.F.R. § 53.204 – Submitting an Application

[Instead of repeating similar requirements in different sections, the intent for this draft rule language relies on Subparts A and B working together. Subpart A identifies the overall safety requirements that the NRC expects for an operating facility. This section first identifies what elements of Subpart A need to be included in different applications using Table B–1. This section then provides additional or modified application-type-specific requirements. At this stage, this section is not intended to be fully comprehensive of all unique requirements for each application type. Staff should further refine this approach and seek feedback from stakeholders on the best way to increase clarity of the rule text.]

(a) Any person may submit an application for a standard design approval, standard design certification, limited work authorization, construction permit, operating license, combined license, or manufacturing license to the NRC staff for its review. With the exception of an operating license, these applications may be submitted regardless of whether another application has been filed.

(1) However, any person who is a citizen, national, or agent of a foreign country, or any corporation, or other entity which the Commission knows or has reason to believe is owned, controlled, or dominated by an alien, a foreign corporation, or a foreign government, is ineligible to obtain a license.

(b) Table B–1 of this section identifies the relevant portions of subpart A of this part that must be included with individual applications, with exceptions as identified in this section.

Table B–1: Application Content

Section of this part	Standard Design Approval	Standard Design Certification	Early Site Permit	Limited Work Authorization	Construction Permit	Operating License	Combined License	Manufacturing License
§ 53.101	×	×	×	×	×	×	×	×
§ 53.103(a) through (e)	×	×	×	×	×	×	×	×
§ 53.103(f)			×	×	×	×	×	×
§ 53.103(g)	×	×	×	×	×	×	×	×
§ 53.103(h)			×	×	×	×	×	×
§ 53.103(i)	×	×	×	×	×	×	×	×
§ 53.103(j)			×	×	×	×	×	×
§ 53.103(k)			×	×	×	×	×	×
§ 53.103(l)			×	×	×	×	×	×
§ 53.103(m)			×	×	×	×	×	×

Section of this part	Standard Design Approval	Standard Design Certification	Early Site Permit	Limited Work Authorization	Construction Permit	Operating License	Combined License	Manufacturing License
§ 53.103(n)				×	×			
§ 53.103(o)			×	×	×	×	×	×
§ 53.103(p)	×	×	×	×	×	×	×	×
§ 53.104(a)(1)	×	×	×	×	×	×	×	×
§ 53.104(a)(2)	×	×	×	×	×	×	×	×
§ 53.104(a)(3)	×	×	×	×	×	×	×	×
§ 53.104(a)(4)	×	×	×	×	×	×	×	×
§ 53.104(a)(5)	×	×	×	×	×	×	×	×
§ 53.104(a)(6)	×	×	×	×	×	×	×	×
§ 53.104(a)(7)	×	×	×	×	×	×	×	×
§ 53.104(a)(8)	×	×	×	×	×	×	×	×

Section of this part	Standard Design Approval	Standard Design Certification	Early Site Permit	Limited Work Authorization	Construction Permit	Operating License	Combined License	Manufacturing License
§ 53.104(a)(9)	×	×	×	×	×	×	×	×
§ 53.104(a)(10)			×	×	×	×		×
§ 53.104(a)(11)	×	×	×	×	×	×	×	×
§ 53.104(b)	×	×	×			×	×	×
§ 53.105				×		×	×	
§ 53.106	×	×	×	×	×	×	×	×
§ 53.107(a)	×	×	×	×	×	×	×	×
§ 53.107(b)				×	×	×	×	×
§ 53.108				×	×	×	×	×
§ 53.109(a)			×	×	×	×	×	×
§ 53.109(b)			×	×	×	×	×	×

Section of this part	Standard Design Approval	Standard Design Certification	Early Site Permit	Limited Work Authorization	Construction Permit	Operating License	Combined License	Manufacturing License
§ 53.109(c)				×	×			
§ 53.109(d)						×		
§ 53.109(e)							×	
§ 53.109(f)				×	×	×	×	

(c) *Specific Requirements for a Standard Design Approval*

(1) An application for a standard design approval may consist of either the final design for an entire facility or the final design of major portions thereof.

(2) Exceptions:

(i) The analyses required in subpart A of this part may be limited to those analyses necessary to demonstrate the safety of the major features or final design requested.

(ii) The application must identify the site parameters postulated for the design and utilize these site parameters in its analyses.

(iii) The application must describe, analyze, and evaluate the interfaces between the standard design and the balance of the proposed facility, including assumptions relied on to support the requirements in subpart A of this part.

(iv) For the requirements of § 53.103(i) of this part, the application must include representative boundaries based upon the analyzed site parameters.

(v) For the requirements of § 53.104(a)(11) of this part, the application must identify necessary assumptions about the operational programs used to support its analyses that will need to be met by an applicant referencing the standard design approval.

(d) *Specific Requirements for a Standard Design Certification*

(1) An application for a standard design certification must consist of the final design for an entire facility.

(2) The safety analysis report must include the following:

(i) The proposed inspections, tests, analyses, and acceptance criteria that are necessary and sufficient to provide reasonable assurance that, if the inspections, tests, and analyses are performed and the acceptance criteria are met, the facility has been constructed and will be operated in conformity with the combined license, the provisions of the Act, and the Commission's rules and regulations.

(ii) The methodology used to identify and evaluate the proposed inspections, tests, analyses, and acceptance criteria.

(3) Exceptions:

(i) The application must identify the site parameters postulated for the design and utilize these site parameters in its analyses.

(ii) The application must describe, analyze, and evaluate the interfaces between the standard design and the balance of the proposed facility, including assumptions relied on to support the requirements in subpart A of this part.

(iii) For the requirements of § 53.103(i) of this part, the application must include representative boundaries based upon the analyzed site parameters.

(iv) For the requirements of § 53.104(a)(11) of this part, the application must identify necessary assumptions about the operational programs used to support its analyses that will need to be met by an applicant referencing the standard design approval.

(e) *Specific Requirements for an Early Site Permit*

(1) The safety analysis report for an early site permit may also be referred to as a site safety analysis report.

(2) The safety analysis report must also include the following:

(i) The maximum levels of radiological and thermal effluents that each facility will produce.

(ii) The types of cooling systems, intakes, and outflows that may be associated with each facility.

(iii) That adequate security plans and measures can be developed for the facility.

(3) The application must identify the physical characteristics of the proposed site, such as egress limitations from the area surrounding the site, that could pose a significant impediment to the development of emergency plans. If physical characteristics are identified that could pose a significant impediment to the development of emergency plans, the application must identify measures that would, when implemented, mitigate or eliminate the significant impediment.

(i) The application may also propose major features of the emergency plans in accordance with the standards in § 53.108 of this part, such

as the exact size and configuration of the emergency planning zones, for review and approval by the NRC, in consultation with the Federal Emergency Management Agency in the absence of a complete and integrated emergency plan.

(ii) The application may also propose complete and integrated emergency plans for review and approval by the NRC, in consultation with the Federal Emergency Management Agency, in accordance with the requirements of § 53.108 of this part.

(4) Exceptions:

(i) For the requirements of § 53.101 of this part, the application may include a variety of potential metrics that may apply, depending on potential design. The application must demonstrate the acceptability of these metrics and specifically identify the assumptions used in this evaluation.

(ii) For the requirements of § 53.103(g) of this part, the application may identify a range of possible facilities.

(iii) For the requirements of § 53.103(j) of this part, the application may identify a range of locations of the facility.

(iv) For the requirements of §§ 53.104(a)(3) through (11) of this part, the application must identify the assumptions that were relied on in determining that the facility, if built, can meet the safety objectives, along with a supporting analysis.

(f) *Specific Requirements for a Limited Work Authorization*

(1) A limited work authorization may be submitted as part of a complete application for a construction permit or combined license, or as a partial application.

(2) An application for a limited work authorization must also include the following:

(i) [Reserved]

(3) Exceptions:

(i) The safety analysis report may be limited to those portions of the facility within the scope of the limited work authorization.

(ii) The level of detail and requirements necessary to meet the requirements in subpart A of this part should be commensurate with the level of detail in an application for a construction permit in paragraph (g) of this section.

(g) *Specific Requirements for a Construction Permit*

(1) The safety analysis report for a construction permit may also be referred to as a preliminary safety analysis report.

(2) A construction permit will constitute an authorization to the applicant to proceed with construction.

(3) The Commission may approve the safety of any design feature or specification if specifically requested by the applicant. However, a construction permit will not constitute Commission approval of the safety of any design feature or specification that has not been requested. The applicant, at its option, may request such approvals in its application for a construction permit or, from time to time, by amendment of its construction permit.

(4) The Commission may, in its discretion, incorporate in any construction permit provisions requiring the applicant to furnish periodic reports of the progress and results of research and development programs designed to resolve safety questions.

(5) The safety analysis report must also include the following:

(i) If the application references a standard design certification or standard design approval, the application must demonstrate that the plant parameters, site interface requirements, and operational assumptions will be met.

(ii) That adequate security plans and measures can be developed for the facility.

(6) Exceptions:

(i) For the requirements of §§ 53.104(a)(3) through (11) of this part, the safety analysis may be based on preliminary designs, plans, and assessments.

(ii) For the requirements of § 53.108 of this part, the application may include preliminary plans for coping with emergencies.

(h) *Specific Requirements for an Operating License*

(1) The safety analysis report must also include the following:

(i) If the application references a standard design certification or standard design approval, the application must demonstrate that the plant parameters, site interface requirements, and operational assumptions will be met.

(i) *Specific Requirements for a Combined License*

(1) An application for a combined license must also include the following:

(i) The proposed inspections, tests, analyses, and acceptance criteria that are necessary and sufficient to provide reasonable assurance that, if the inspections, tests, and analyses are performed and the acceptance criteria are met, the facility has been constructed and will be operated in conformity with the combined license, the provisions of the Act, and the Commission's rules and regulations. This includes inspections, tests, analyses, and acceptance criteria for emergency planning.

(ii) The methodology used to identify and evaluate the proposed inspections, tests, analyses, and acceptance criteria.

(iii) If the application references a standard design certification, the inspections, tests, analyses, and acceptance criteria contained in the certified design must apply to those portions of the facility which are approved in the design certification.

(iv) If the application references a standard design certification or standard design approval, the application must demonstrate that the plant parameters, site interface requirements, and operational assumptions will be met.

(j) *Specific Requirements for a Manufacturing License*

[Given the unique features of manufacturing licenses, staff should continue to identify the relevant requirements for a manufacturing license to determine what must be included in the application, consistent with the level of detail and information to other types of licenses.]

(1) An application for a manufacturing license must consist of the final design for an entire facility that will be manufactured, transported, and

installed at a site for which either a construction permit or a combined license has been issued.

(2) The safety analysis report must include the following:

(i) An analysis of the potential hazards that may arise as a result of transportation and installation of the reactor.

(ii) The proposed inspections, tests, analyses, and acceptance criteria that are necessary and sufficient to provide reasonable assurance that, if the inspections, tests, and analyses are performed and the acceptance criteria are met, the facility has been constructed and will be operated in conformity with the combined license, the provisions of the Act, and the Commission's rules and regulations. This includes inspections, tests, analyses, and acceptance criteria for emergency planning.

(iii) The methodology used to identify and evaluate the proposed inspections, tests, analyses, and acceptance criteria.

(3) Exceptions:

(i) The application must identify the site parameters postulated for the reactor and utilize these site parameters in its analyses.

(ii) The application must describe, analyze, and evaluate the interfaces between the manufactured reactor and the balance of the proposed facility, including assumptions relied on to support the requirements in subpart A of this part.

(iii) For the requirements of § 53.103(i) of this part, the application must include representative boundaries based upon the analyzed site parameters.

(iv) For the requirements of § 53.104(a)(11) of this part, the application must identify necessary assumptions about the operational programs used to support its analyses that will need to be met by an applicant referencing the standard design approval.

10 C.F.R. § 53.205 – Combining Applications for Multiple Sites Using a Common Design

[This section corresponds to the "duplicate plant" provisions 10 CFR Part 50, Appendix N, and Part 52, Appendix N. Changes have been included that are intended to increase the viability of this licensing pathway.

It is the intent that a common, preliminary design described in this section could be updated, in a common preliminary safety analysis report, to incorporate safety approvals of design features or specifications as construction progresses, using provisions similar to those found in 10 CFR § 50.35(b) and in this proposed draft § 53.204(g)(3) above.

Throughout the life of the application, new sites and applicants could continue to be included on the common application, relying on the common design and addressing site-specific requirements and distinctions. As operating licenses are issued, and these licensees separate from the common application, the common design applicant could continue to update the preliminary safety analysis report to request approval of ongoing improvements to the common design. The NRC can resolve these updates and approvals in separate, limited hearings and ACRS reviews, while the construction permit holder can move forward, incorporating these changes at risk. This section is therefore intended to provide flexibility throughout the application, construction, and operational stages of a facility while taking advantage of common designs and reaching consistent, timely resolution on common issues.

Finally, recognizing that site-specific differences will exist even within a common design, this draft makes clear that these site-specific differences *might* preclude a common review.[10] This draft further designates a single decisionmaker at the NRC with the authority to determine whether the applications may be reviewed under this section.]

(a) This section identifies how one or more applicants may submit a single application for licenses to construct and operate nuclear power reactors of essentially the same design located at different types.

10 Currently, Appendix N to Parts 50 and 52 state that an application "may not" be processed if two reactors are not identical. This requirement is ambiguous because it is not clear if an application "cannot" or "might not" be processed and does not identify who determines whether a design is sufficiently identical. However, as noted in the preamble to the proposed rule for Part 50 Appendix N, "may not" should be read permissively. 39 FR 13668, 13668 n.1 ("If the designs were not identical in any particular application, that application *might not* be processed under the proposed amendments."); *cf. id.* at 13699 (If the design . . . is not identical to the others, that application *may not* be processed under this appendix. . . ."). This draft attempts to remove this ambiguity.

(b) The provisions of this section apply to construction permits, operating licenses, and combined licenses. Each application should state that the applicant(s) wishes to have the application considered under this section and should list each application that should be treated together under this section. Applications for future sites may be added to an earlier submission.

(c) In addition to the information that must be submitted with the type of application identified elsewhere in this part, the application must identify the common design. As stated in § 53.202 of this part, the application may utilize information from other submissions in support of its application, but the relevant common design must be clearly identified in the application. Updates and amendments, including requests for approval of the safety of any design feature or specification, may be made to the common design in accordance with other provisions of this part.

(d) Each application submitted pursuant to this section must contain an environmental report which complies with the applicable provisions of part 51 of this chapter. This environmental report can incorporate a single environmental report on the environmental impacts of the common design.

(e) Upon a determination that each application is acceptable for docketing under § 2.101 of this chapter, each application will be docketed and a notice of docketing for each application with be published in the *Federal Register*, in accordance with § 2.104 of this chapter. The notice must state that the application will be processed under the provisions of this section and part 2, subpart D of this chapter. At the discretion of the Commission, a single notice of docketing for multiple applications may be published in the *Federal Register*.

(f) The NRC must evaluate the environmental impacts of each application in accordance with the requirements of part 51 of this chapter. Scoping under §§ 51.28 and 51.29 of this chapter may be conducted simultaneously and joint scoping may be conducted with respect to the environmental issues relevant to the common design.

(g) The ACRS must report on each of the applications as otherwise required by this part. Each report must be limited to those safety matters for each application which are not relevant to the common design. In addition, the ACRS must separately report on the safety of the common design. However, if the common design has already been reviewed by the ACRS as part of a previous NRC approval, the report does not need to address the safety of that portion of the common design.

(h) The Commission must designate a presiding officer to conduct the proceeding with respect to the health and safety, common defense and security, and environmental matters relating to the common design, including approvals incorporated into the common design. The hearing will be governed by the applicable provisions of part 2, subparts A, C, G, L, N, and Q of this chapter relating to applications for construction permits, operating licenses, and combined licenses. The presiding officer must issue a partial initial decision on the common design.

(i) If the design for the proposed reactor(s) in a particular application are not identical to each other, the application might not be processed under this section and part 2, subpart D of this chapter. The Director of the Office of Nuclear Reactor Regulation, or their designee, is the sole agency decisionmaker as to whether design differences between reactors are so substantial that an application cannot be processed under this section. However, design differences between the common design and the site-specific design may be subject to the site-specific hearings or ACRS reports.

Subpart C: Issuance of Licenses

[A placeholder is provided for this subpart. The purpose of this subpart is to identify the specific actions NRC will take to issue licenses granted under this part, including the Standards for review, comparable to the NRC staff's proposed § 53.090. Staff should develop the appropriate regulatory language that is in line with the same general philosophy, tone, and level of detail provided in the sample text of other subparts in this part.]

Subpart D: Operational Programs and Change Processes

[A placeholder is provided for this subpart. The subpart should include, at a minimum:

- Requirements for implementing and maintaining operational programs.
- Requirements for evaluating changes and a process for determining when prior NRC approval is required. The process should address licensee-proposed changes to the metric or set of metrics identified in § 53.101(b) as well as changes to the calculational framework used by the licensee to demonstrate that the metric or set of metrics has been met (e.g., computer codes, numeric thresholds or acceptance guidelines, initial and boundary conditions, and key assumptions).
- Requirements for evaluating changes to other licensee programs.
- Requirements for maintaining and updating licensing documents.
- The process and standards for submitting and issuing license amendments.
- Backfit and issue finality requirements comparable to those found in 10 CFR Parts 50 and 52.
- Provisions for changes during construction for a combined license.
- Requirements and standards for license transfers.
- Provisions for revocation, suspension, and modification of licenses.
- Reporting Requirements.
- Fitness for Duty Requirements.
- Enforcement requirements comparable to the NRC staff's proposed §§ 53.9000 and 53.9010.

Staff should focus on developing requirements that are clear, measurable, and enforceable, weighing the benefits of increased clarity against consistency with requirements in Parts 50 and 52.

Staff should also remove any requirements to weigh the benefits and special circumstances relating to departures and exemptions against the safety benefits of standardization.]

Subpart E: Decommissioning and License Termination

[A placeholder is provided for this subpart. The subpart, when developed by the staff, should reflect the approach found in draft language found in this enclosure, incorporating any new decommissioning requirements that are approved during development of the rule.]

Subpart F: Operator Licensing

[A placeholder is provided for this subpart. The subpart should incorporate the efficiencies and innovations included in the NRC staff's proposed Part 53 while incorporating the general philosophy, tone, and level of detail provided in the sample text of other subparts in this part.]

Subpart G: General and Administrative Provisions

[The purpose of this subpart is to provide general provisions applicable to all persons subject to the rules of this part. This section of Part 53 would be similar in concept to 10 CFR §§ 50.1–50.9 in 10 CFR Part 50.]

10 C.F.R. § 53.701 – Definitions

[This section should be completed with a list of terms found in this part and their associated definitions. New terms should be written as clearly as possible. Previously used terms should be consistent with other definitions in NRC regulations, but the staff should consider simplifying or updating definitions in this part if doing so would increase clarity of the rule. Staff should further consider alignment of any new definitions in a future rulemaking.]

10 C.F.R. § 53.702 – Written Communications

[For consistency with other NRC regulations, the language governing written communications has not been significantly altered from the parallel section found in Part 50. However, staff should consider improvements to these sections for increased clarity.]

(a) *General requirements*. All correspondence, reports, applications, and other written communications from an applicant or licensee to the Nuclear Regulatory Commission concerning the regulations in this part or individual license conditions must be sent:

(1) by mail addressed to: ATTN: Document Control Desk, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001;

(2) by hand delivery to the NRC's offices at: 11555 Rockville Pike, Rockville, Maryland, between the hours of 8:15 a.m. and 4 p.m. eastern time; or

(3) by electronic submission, for example, via Electronic Information Exchange, email, or CD-ROM.

(i) Electronic submissions must be made in a manner that enables the NRC to receive, read, authenticate, distribute, and archive the submission, and process and retrieve it a single page at a time.

(ii) Detailed guidance on making electronic submissions can be obtained by visiting the NRC's Web site at http://www.nrc.gov/site-help/e-submittals.html; by email to MSHD.Resource@nrc.gov; or by

writing the Office of the Chief Information Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001. The guidance discusses, among other topics, the formats the NRC can accept, the use of electronic signatures, and the treatment of nonpublic information.

If the communication is on paper, the signed original must be sent. If a submission due date falls on a Saturday, Sunday, or a Federal holiday, the next Federal working day becomes the official due date.

(b) *Distribution requirements*. Copies of all correspondence, reports, and other written communications concerning the regulations in this part or individual license conditions must be submitted to the persons listed in this section. The addresses for the NRC Regional Offices are listed in appendix D to part 20 of this chapter.

(1) *Reports and other communications*. All written communications, including responses to:

- generic letters,
- bulletins,
- information notices,
- regulatory information summaries,
- inspection reports, and
- miscellaneous requests for additional information

must be submitted to the following, unless otherwise specified in paragraphs (b)(2) through (b)(7) of this section:

- the NRC's Document Control Desk,
- the appropriate Regional Office, and
- the appropriate NRC Resident Inspector, if one has been assigned to the site of the facility.

If the written communication is on paper, the signed original must be submitted to the Document Control Desk.

(2) *Applications for permits and licenses, and amendments to applications*. Applications for

- permits,

- licenses,
- design approvals,
- design certifications, and
- amendments to any of these applications

must be submitted to the following, unless otherwise specified in paragraphs (b)(3) through (b)(7) of this section:

- NRC's Document Control Desk,
- the appropriate Regional Office, and
- the appropriate NRC Resident Inspector, if one has been assigned to the facility or the place of manufacture of a reactor licensed under this part.

If the application or amendment is on paper, the signed original must be submitted to the Document Control Desk.

(3) *Acceptance review application*. All written communications required for an application for determination of suitability for docketing must be submitted to:

- the NRC's Document Control Desk and
- the appropriate Regional Office.

If the communication is on paper, the signed original must be submitted to the Document Control Desk.

(4) *Security plan and related submissions*. All written communications as defined in paragraphs (b)(4)(i) through (iv) of this section, must be submitted to:

- the NRC's Document Control Desk and
- the appropriate Regional Office.

If the communication is on paper, the signed original must be submitted to the Document Control Desk.

(i) Physical security plan;

(ii) Safeguards contingency plan;

(iii) Cybersecurity plan;

(iv) Change to security plan, guard training and qualification plan, safeguards contingency plan, or cybersecurity plan made without prior Commission approval under this part;

(v) Application for amendment of physical security plan, guard training and qualification plan, safeguards contingency plan, or cybersecurity plan under this part.

(5) *Emergency plan and related submissions.* All written communications, as defined in paragraphs (b)(5)(i) through (iii) of this section, must be submitted to:

- the NRC's Document Control Desk,
- the appropriate Regional Office, and
- the appropriate NRC Resident Inspector if one has been assigned to the site of the facility.

If the communication is on paper, the signed original must be submitted to the Document Control Desk.

(i) Emergency plan;

(ii) Change to an emergency plan under this part;

(iii) Emergency implementing procedures.

(6) *Updated Final Safety Analysis Report*. Updates to the Final Safety Analysis Report must be submitted to:

- the NRC's Document Control Desk,
- the appropriate Regional Office, and
- the appropriate NRC Resident Inspector if one has been assigned to the site of the facility.

Paper copy submissions may be made using replacement pages. If the communication is on paper, the signed original must be submitted to the Document Control Desk. If any updates are submitted electronically, all subsequent updates must be submitted electronically on a total replacement basis.

(7) *Quality assurance related submissions*.

(i) Changes to a licensee's quality assurance program description or an NRC-accepted quality assurance topical report must be submitted to:

- the NRC's Document Control Desk,
- the appropriate Regional Office, and
- the appropriate NRC Resident Inspector if one has been assigned to the site of the facility.

If the communication is on paper, the signed original must be submitted to the Document Control Desk.

(ii) Changes to an NRC-accepted quality assurance topical report from nonlicensees (i.e., architect, engineers, NSSS suppliers, fuel suppliers, constructors, etc.) must be submitted to the NRC's Document Control Desk. If the communication is on paper, the signed original must be submitted to the Document Control Desk.

(8) *Certification of permanent cessation of operations*. Licensees must submit their certification of permanent cessation of operations, under this part, to the NRC's Document Control Desk. The certification must include the date on which operations have ceased or will cease. Licensees must make this submission under oath or affirmation.

(9) *Certification of permanent fuel removal*. Licensees must submit their certification of permanent fuel removal, under this part, to the NRC's Document Control Desk. The certification must state the date on which the fuel was removed from the reactor vessel and the disposition of the fuel. Licensees must make this submission under oath or affirmation.

(c) *Form of communications*. All paper copies submitted to meet the requirements set forth in paragraph (b) of this section must be typewritten, printed or otherwise reproduced in permanent form on unglazed paper. Exceptions to these requirements imposed on paper submissions may be granted for the submission of micrographic, photographic, or similar forms.

(d) *Regulation governing submission*. Licensees and applicants submitting correspondence, reports, and other written communications under the regulations of this part are requested but not required to cite whenever practical, in the upper right corner of the first page of the submission, the specific regulation or other basis requiring submission.

10 C.F.R. § 53.703 – Deliberate Misconduct

[For consistency with other sections of this chapter, the regulatory language governing deliberate misconduct, employee protection, and completeness and accuracy of information have not been altered from the parallel sections found in Part 50. However, staff should consider improvements to these sections, weighing the potential for increased clarity against the potential for confusion between this section and other NRC requirements.]

(a) Any licensee, applicant for a license, employee of a licensee or applicant; or any contractor (including a supplier or consultant), subcontractor, employee of a contractor or subcontractor of any licensee or applicant for a license, who knowingly provides to any licensee, applicant, contractor, or subcontractor, any components, equipment, materials, or other goods or services that relate to a licensee's or applicant's activities in this part, may not—

(1) Engage in deliberate misconduct that causes or would have caused, if not detected, a licensee or applicant to be in violation of any rule, regulation, or order; or any term, condition, or limitation of any license issued by the Commission; or

(2) Deliberately submit to the NRC, a licensee, an applicant, or a licensee's or applicant's contractor or subcontractor, information that the person submitting the information knows to be incomplete or inaccurate in some respect material to the NRC.

(b) A person who violates paragraph (a)(1) or (2) of this section may be subject to enforcement action in accordance with the procedures in part 2, subpart B of this chapter.

(c) For the purposes of paragraph (a)(1) of this section, deliberate misconduct by a person means an intentional act or omission that the person knows—

(1) Would cause a licensee or applicant to be in violation of any rule, regulation, or order; or any term, condition, or limitation, of any license issued by the Commission; or

(2) Constitutes a violation of a requirement, procedure, instruction, contract, purchase order, or policy of a licensee, applicant, contractor, or subcontractor.

10 C.F.R. § 53.704 – Employee Protection

(a) Discrimination by a Commission licensee, holder of a standard design approval, an applicant for a license, standard design certification, or standard design approval, a contractor or subcontractor of a Commission licensee, holder of a standard design approval, applicant for a license, standard design certification, or standard design approval, against an employee for engaging in certain protected activities is prohibited. Discrimination includes discharge and other actions that relate to compensation, terms, conditions, or privileges of employment. The protected activities are established in Section 211 of the Energy Reorganization Act and in general are related to the administration or enforcement of a requirement imposed under the Atomic Energy Act or the Energy Reorganization Act.

(1) The protected activities include but are not limited to—

(i) Providing the Commission or his or her employer information about alleged violations of either of the statutes named in paragraph (a) of this section or possible violations of requirements imposed under either of those statutes;

(ii) Refusing to engage in any practice made unlawful under either of the statutes named in paragraph (a) of this section or under these requirements if the employee has identified the alleged illegality to the employer;

(iii) Requesting the NRC to institute action against his or her employer for the administration or enforcement of these requirements;

(iv) Testifying in any Commission proceeding, or before Congress, or at any Federal or State proceeding regarding any provision (or proposed provision) of either of the statutes named in paragraph (a) of this section; and

(v) Assisting or participating in, or is about to assist or participate in, these activities.

(2) These activities are protected even if no formal proceeding is actually initiated as a result of the employee assistance or participation.

(3) This section has no application to any employee alleging discrimination prohibited by this section who, acting without direction from his or her

employer (or the employer's agent), deliberately causes a violation of any requirement of the ERA or the AEA.

(b) Any employee who believes that he or she has been discharged or otherwise discriminated against by any person for engaging in protected activities specified in paragraph (a)(1) of this section may seek a remedy for the discharge or discrimination through an administrative proceeding in the Department of Labor. The administrative proceeding must be initiated within 180 days after an alleged violation occurs. The employee may do this by filing a complaint alleging the violation with the Department of Labor, Wage and Hour Division. The Department of Labor may order reinstatement, back pay, and compensatory damages.

(c) A violation of paragraph (a), (c), or (f) of this section by a Commission licensee, a holder of a standard design approval, an applicant for a Commission license, standard design certification, or a standard design approval, or a contractor or subcontractor of a Commission licensee, holder of a standard design approval, or any applicant may be grounds for—

(1) Denial, revocation, or suspension of the license or standard design approval;

(2) Withdrawal or revocation of a proposed or final standard design certification;

(3) Imposition of a civil penalty on the licensee, holder of a standard design approval, or applicant (including an applicant for a standard design certification under this part following Commission adoption of final design certification rule) or a contractor or subcontractor of the licensee, holder of a standard design approval, or applicant; or

(4) Other enforcement action.

(d) Actions taken by an employer, or others, that adversely affect an employee may be predicated upon nondiscriminatory grounds. The prohibition applies when the adverse action occurs because the employee has engaged in protected activities. An employee's engagement in protected activities does not automatically render him or her immune from discharge or discipline for legitimate reasons or from adverse action dictated by nonprohibited considerations.

(e)

(1) Each holder or applicant for a permit, license, design certification, or design approval, must prominently post the revision of NRC Form “, "Notice to Employees," referenced in § 19.11(e)(1) of this chapter. This form must be posted at locations sufficient to permit employees protected by this section to observe a copy on the way to or from their place of work. Premises must be posted no later than 30 days after an application is docketed and remain posted while the application is pending before the Commission, during the term of the license, and for 30 days following license termination.

(2) Copies of NRC Form 3 may be obtained by writing to the Regional Administrator of the appropriate NRC Regional Office listed in appendix D to part 20 of this chapter, via email to Forms.Resource@nrc.gov, or by visiting the NRC's online library at http://www.nrc.gov/reading-rm/doc-collections/forms/.

(f) No agreement affecting the compensation, terms, conditions, or privileges of employment, including an agreement to settle a complaint filed by an employee with the Department of Labor pursuant to Section 211 of the ERA, may contain any provision which would prohibit, restrict, or otherwise discourage an employee from participating in protected activity as defined in paragraph (a)(1) of this section including, but not limited to, providing information to the NRC or to his or her employer on potential violations or other matters within NRC's regulatory responsibilities.

(g) Part 19 of this chapter sets forth requirements and regulatory provisions applicable to licensees, holders of a standard design approval, applicants for a license, standard design certification, or standard design approval, and contractors or subcontractors of a Commission licensee, or holder of a standard design approval, and are in addition to the requirements in this section.

10 C.F.R. § 53.705 – Completeness and Accuracy of Information

(a) Information provided to the Commission by a holder of a license, permit, design certification, or standard design approval under this part or an applicant for a license, permit, design certification, or standard design approval under this part, and information required by statute or by the Commission's regulations, orders, license conditions, or terms and conditions of a standard design approval to be maintained by the applicant or the licensee must be complete and accurate in all material respects.

(b) Each applicant or licensee, each holder of a standard design approval under this part, and each applicant for a standard design certification under this part following Commission adoption of a final design certification regulation, must notify the Commission of information identified by the applicant or licensee as having for the regulated activity a significant implication for public health and safety or common defense and security. An applicant, licensee, or holder violates this paragraph only if the applicant, licensee, or holder fails to notify the Commission of information that the applicant, licensee, or holder has identified as having a significant implication for public health and safety or common defense and security. Notification must be provided to the Administrator of the appropriate Regional Office within 2 working days of identifying the information. This requirement is not applicable to information which is already required to be provided to the Commission by other reporting or updating requirements.

10 C.F.R. § 53.706 – Specific Exemptions

(a) The Commission may, upon application by any interested person or upon its own initiative, grant exemptions from the requirements of the regulations of this part, which are authorized by law, will not present an undue risk to the public health and safety, and are consistent with the common defense and security.

(b) The Commission will not consider granting an exemption unless special circumstances are present. Special circumstances are present whenever:

(1) Application of the regulation in the particular circumstances conflicts with other rules or requirements of the Commission;

(2) Application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule;

(3) Compliance would result in undue hardship or other costs that are significantly in excess of those contemplated when the regulation was adopted, or that are significantly in excess of those incurred by others similarly situated;

(4) The exemption would result in benefit to the public health and safety that compensates for any decrease in safety that may result from the grant of the exemption;

(5) The exemption would provide only temporary relief from the applicable regulation and the licensee or applicant has made good faith efforts to comply with the regulation; or

(6) There is present any other material circumstance not considered when the regulation was adopted for which it would be in the public interest to grant an exemption. If such condition is relied on exclusively for demonstrating compliance with paragraph (b) of this section, the exemption may not be granted until the Executive Director for Operations has consulted with the Commission.

(c) Any person may request an exemption permitting the conduct of construction activities before the issuance of a construction permit. The Commission may grant such an exemption upon considering and balancing the following factors:

(1) Whether conduct of the proposed activities will give rise to a significant adverse impact on the environment and the nature and extent of such impact, if any;

(2) Whether redress of any adverse environment impact from conduct of the proposed activities can reasonably be effective should such redress be necessary;

(3) Whether conduct of the proposed activities would foreclose subsequent adoption of alternatives; and

(4) The effect of delay in conducting such activities on the public interest, including whether the power needs to be used by the proposed facility, the availability of alternative sources, if any, to meet those needs on a timely basis and delay costs to the applicant and to consumers.

(d) Issuance of an exemption under paragraph (c) of this section is not and must not be construed as a commitment to issue a construction permit.

(e) The Commission's consideration of requests for exemptions from requirements of the regulations of other parts in this chapter are governed by the exemption requirements of those parts.

10 C.F.R. § 53.707 – Interpretations

(a) Except as specifically authorized by the Commission in writing, no interpretation of the meaning of the regulations in this part by any officer or employee of the Commission other than a written interpretation by the General Counsel will be recognized to be binding upon the Commission.

10 C.F.R. § 53.708 – Jurisdictional Limits

(a) No permit, license, standard design approval, or standard design certification under this part will be deemed to have been issued for activities which are not under or within the jurisdiction of the United States.

10 C.F.R. § 53.709 – Attacks and Destructive Acts

(a) Licensees and applicants for NRC approvals under this part are not required to provide for design features or other measures for the specific purpose of protection against the effects of—

(1) Attacks and destructive acts, including sabotage, directed against the facility by an enemy of the United States, whether a foreign government or other person; or

(2) Use or deployment of weapons incident to U.S. defense activities.

10 C.F.R. § 53.710 – Rights related to special nuclear material

(a) No right to the special nuclear material must be conferred by a license issued under this part except as may be defined by the license.

(b) Neither a license issued under this part, nor any right thereunder, nor any right to utilize or produce special nuclear material may be transferred, assigned, or disposed of in any manner, either voluntarily or involuntarily, directly or indirectly, through transfer of control of the license to any person, unless the Commission, after securing full information, finds that the transfer is in accordance with the provisions of the Atomic Energy Act, as amended, and gives its consent in writing.

10 C.F.R. § 53.711 – License suspension and rights of recapture

(a) Any license issued under this part must be subject to suspension and to the rights of recapture of the material or control of the facility reserved to the Commission under Section 108 of the AEA in a state of war or national emergency declared by Congress.

10 C.F.R. § 53.712 – Information collection requirements; OMB approval

[A placeholder is provided for this section. Staff should develop the appropriate regulatory language.]