

REGULATORY ANALYSIS FOR FINAL RULE:
10 CFR PART 52, "LICENSES, CERTIFICATIONS, AND APPROVALS FOR
NUCLEAR POWER PLANTS"

Introduction

The Nuclear Regulatory Commission (NRC) is amending its regulations by revising the provisions applicable to the licensing, certifications, and approval processes for nuclear power plants in 10 CFR Part 52 and making necessary conforming amendments throughout the NRC's regulations. This is being done to enhance the NRC's regulatory effectiveness and efficiency in implementing its licensing and approval processes. The changes clarify the applicability of various requirements to each of the licensing processes (*i.e.*, early site permit, standard design approval, standard design certification, combined license, and manufacturing license).

This rulemaking is based on lessons learned during design certification and early site permit (ESP) reviews, and on discussions with stakeholders about the ESP, design certification, and combined license (COL) review processes. The NRC believes that this rulemaking action will improve the effectiveness and efficiency of the licensing and approval processes for future applicants.

This regulatory analysis has been prepared in accordance with the Regulatory Analysis Guidelines (RA Guidelines) of the NRC, NUREG/BR-0058, Revision 4, September 2004. The regulatory analysis consists of two parts. The first is an aggregate analysis of the final rule.

The second part is a screening review for disaggregation to identify any individual provisions whose costs are disproportionate to the potential benefits.

A. Aggregate Analysis-Summary of Results

Consistent with the RA Guidelines, the NRC performed an aggregate analysis of the rule. The analysis is based on a projected business scenario reflecting the NRC's expectations of 19 COL applications during the next 3 years and thereafter 1 COL applications per year would occur over the next 17 years. The net present value of the Part 52 rule modifications are estimated to result in costs to the industry of \$58,992 K and \$30,952 K using a 3-percent and a 7-percent discount rate, respectively. The provisions of the rule relating to Part 21 are estimated to result in net present value costs of \$3,873 K and \$2,363 K to the industry, using a 3-percent and a 7-percent discount rate, respectively. The net present value of the entire rule is estimated to result in net costs to the industry of \$29,726 K and \$204 K at a 3-percent and a 7-percent discount rate, respectively. In addition, the rule is estimated to be a one time net present value savings to the NRC of \$10,443 K.

The NRC concludes that the costs of the rule are justified in view of the quantitative savings and evaluation and discussion of qualitative benefits in Section 5.1. The analysis measures the incremental value of the rule vis-a-vis the current rule. A summary of the analysis is presented in Section 5.2.

B. Screening Review for Disaggregation

The NRC also performed a screening review for disaggregation in accordance with Section 4.3.2 of the RA Guidelines to determine if there are provisions whose costs are disproportionate to the benefits and whose inclusion in the aggregate analysis could mask the true impact. This analysis also responds to the Commission's direction in SRM-01-0134, dated July 23, 2001: "If there is a reasonable indication that a proposed change imposes costs disproportionate to the safety benefit attributable to that change, as part of the final rule package the Commission will perform an analysis of that proposed change in addition to the aggregate analysis of the entire rulemaking to determine whether this proposed change should be aggregated with the other proposed changes for the purposes of backfit analysis. That analysis will need to show that the individual change is integral to achieving the purpose of the rule, has costs that are justified in view of the benefits that would be provided, or qualifies for one of the exceptions in 10 CFR 50.109(a)(4)." The results of the analysis are documented in Section 5.2.

1. Statement of Problem and Objective

The NRC first published 10 CFR Part 52, "Early Site Permits, Standard Design Certifications, and Combined Licenses for Nuclear Power Plants" in April 1989. The NRC is revising these requirements through a reorganization, clarification, and rewrite of Part 52. The staff is also providing clarification and corrections to 10 CFR Parts 1, 2, 10, 19, 20, 21, 25, 26, 50, 51, 52 (including Appendices A, B, C, and D), 54, 55, 72, 73, 75, 95, 140, 170, and 171. The rule reflects lessons learned from the Commission's experience in design certification and early site permit reviews and input from stakeholders, as appropriate, on the combined license process,

and corrects known errors and omissions. This action is expected to improve the effectiveness and efficiency of Part 52 licensing processes for future applicants. The major objectives of this rulemaking are to—

- increase regulatory efficiency
- reduce unnecessary regulatory burden
- address issues and incorporate lessons learned from the Part 52 licensing processes
- make conforming changes throughout 10 CFR to reflect the revised licensing and regulatory approval processes
- address omissions and errors identified since the promulgation of Part 52
- clarify ambiguities in Part 52 to reflect the original intent of the NRC

This action will be applicable to future applicants for early site permits, design approvals, design certifications, combined license, and manufacturing license applications. The NRC issued the first early site permits prior to the effective date of the final Part 52 rule. In addition, there are applications for early site permits currently being considered by the NRC. The NRC has included a “grandfathering provision” in the final Part 52 rulemaking which provides that the early site permit provisions in Subpart A of Part 52 do not apply to early site permits whose applications were docketed before the effective date of the final Part 52 rulemaking, unless

requested by the early site permit applicant. In addition, the action will affect applicants for completed design certifications and design approvals.

2. Background

A. Original Promulgation of Part 52

The NRC promulgated 10 CFR Part 52 on April 18, 1989 (54 FR 15386), to reform the NRC's licensing process for future nuclear power plants. The rule added alternative licensing processes in 10 CFR Part 52 for early site permits, standard design certifications, and combined licenses. The processes in 10 CFR Part 52 resolve safety and environmental issues early in licensing proceedings and enhance the safety and reliability of nuclear power plants through standardization. The rule also moved the licensing processes in Appendices M, N, O, and Q of 10 CFR Part 50 to 10 CFR Part 52. In 1992, the Commission revised Part 52 (December 23, 1992; 57 FR 60975) to reflect provisions of the Energy Policy Act of 1992, P.L. 102-486. Subsequently, the NRC certified four nuclear plant designs under Subpart B of 10 CFR Part 52—the U.S. Advanced Boiling Water Reactor (ABWR) Design (May 12, 1997; 62 FR 25827), the System 80+ design (May 21, 1997; 62 FR 27867), the AP600 design (December 23, 1999; 64 FR 72015), and the AP1000 design (January 27, 2006; 71 FR 4464) and codified these designs in Appendices A, B, C, and D of 10 CFR Part 52, respectively.

The regulations in Part 52 provide for the certification of standardized reactor designs, making it possible to use the same design information for the licensing of several plants, and provide for the issuance of a single license for both construction and operation, eliminating the need for two applications and two submittals of design information. Part 52 also provides for the

approval of a nuclear power plant site in advance of the submission of any application for a construction permit for that site. The use of standardized designs allows a more focused review and the industry can transfer experience in maintenance and operation from one plant to another more easily. In summary, the principal objective of Part 52 was to increase the effectiveness and efficiency of the licensing process for nuclear power plants by early resolution of issues.

B. July 2003 Proposed Rulemaking

The NRC planned to revise 10 CFR Part 52 after the first standard design certification reviews. In SECY-98-282, "Part 52 Rulemaking Plan," dated December 4, 1998, the staff proposed to initiate a rulemaking to revise Part 52. In a staff requirements memorandum issued on January 14, 1999, the Commission approved the NRC staff's plan for revising 10 CFR Part 52. After the issuance of SECY-00-0092, "Combined License Review Process," dated April 20, 2000, stakeholders at public meetings raised other licensing issues with 10 CFR Part 52 Subparts A and C (early site permits and combined licenses, respectively). The NRC obtained considerable stakeholder comments on its planned action through three public meetings on the proposed rulemaking, and two postings of draft rule language on the NRC's rulemaking Web site. On July 3, 2003, (68 FR 40026) the NRC published a proposed rule that would clarify and/or correct 10 CFR Parts 1, 2, 10, 19, 20, 21, 25, 26, 50, 51, 52 (including Appendices A, B, and C), 54, 55, 72, 73, 75, 95, 140, 170, 171, revise portions of 10 CFR Part 52, and incorporate stakeholders comments.

3. Revised Proposed Rulemaking

Following the close of the public comment period on the July 2003 proposed rule, the NRC re-evaluated whether the proposed rule would meet the Commission's objective of improving the effectiveness of NRC's processes for licensing future nuclear power plants. First, public comments identified several concerns about whether the July 2003 proposed rule adequately addressed the relationship between Part 50 and Part 52 and clearly specified the applicable regulatory requirements for each of the licensing and approval processes in Part 52. In addition, during the public comment period and thereafter, the NRC gained additional insights about early site permits as a result of the NRC's review of the first three early site permit applications. The NRC also had the benefit of public meetings with external stakeholders on the development of NRC guidance on early site permits and combined licenses. The NRC therefore decided that a substantial rewrite and expansion of the original proposed rulemaking, to include changes throughout the entire body of NRC regulations in Title 10, Chapter 1, was desirable so that the Agency may more effectively and efficiently implement the licensing and approval processes for nuclear power plants in Part 52.

Accordingly, the NRC developed a revised proposed rule for public comment that superseded the July 2003 proposed rule. The revised proposed rule contained a reorganization and rewrite of Part 52, and conforming changes throughout the NRC's regulations to improve the organization, format, and language of Part 52, and clarified the applicability of various technical and regulatory requirements throughout Title 10, Chapter 1, to each of the processes in Part 52 (early site permit, standard design approval, standard design certification, combined license, and manufacturing license).

The revised proposed rule was published in the *Federal Register* (71 FR 12781) on March 13, 2006. The public comment period for the rule expired on May 30, 2006. The NRC received 19 comment letters from industry stakeholders, other Federal agencies, and individuals during the public comment period. The NRC has considered and resolved all of the public comments received during the comment period and has made modifications to the rule language, as appropriate.

This regulatory analysis considers two alternatives for amending the regulation for Part 52 and conforming changes throughout the 10 CFR.

4. Identification and Discussion of the Alternative Approaches

4.1 Alternative 1 - Take No Action

The no-action alternative is not to revise 10 CFR Part 52 and not to make conforming changes throughout 10 CFR. This action does not support the original intent of the Commission to revisit and update the rulemaking after gaining some experience with its use. Since the promulgation of 10 CFR Part 52 in April 1989, the NRC has approved four design certifications, and reviewed three early site permit applications. In addition, the Commission has held numerous public meetings to obtain input from stakeholders on the Part 52 regulatory processes.

The pros and cons of Alternative 1 are as follows:

Pros:

- The NRC will not incur the cost of the final rulemaking.

Cons:

- will not increase regulatory efficiency
- will not reduce unnecessary regulatory burden
- will not address issues and incorporate lessons learned from the Part 52 licensing processes
- will not make conforming changes throughout 10 CFR to reflect the revised licensing and approval processes
- will not address errors identified since the promulgation of Part 52
- will not clarify ambiguities in Part 52 to reflect the original intent of the NRC

4.2 Alternative 2 - Publish Revisions to Part 52

Alternative 2 reorganizes and rewrites Part 52 to incorporate lessons learned about Part 52 licensing and approval processes from reviewing design certification and early site permit applications, and from interactions with stakeholders on Part 52, including the combined license process. This rewrite includes conforming changes throughout 10 CFR to reflect the adoption of licensing, and regulatory approval processes in Part 52 and to clarify the relationship

between requirements in Part 52 and other requirements in the regulations. Although the rule is mainly focused on Part 52, the NRC made changes in many other parts of the regulations to clarify ambiguities and maintain consistency between the various licensing processes.

The pros and cons of Alternative 2 are as follows:

Pros:

- will increase regulatory efficiency
- will reduce unnecessary regulatory burden
- will address issues and incorporate lessons learned from the Part 52 licensing processes
- will make conforming changes throughout 10 CFR to reflect the revised licensing and approval processes
- will address errors identified since the promulgation of Part 52
- will clarify ambiguities in Part 52 to reflect the original intent of the NRC

Cons

- NRC will incur the cost of the final rulemaking.

The changes in this rulemaking can loosely be grouped in three categories: (i) conforming changes, format changes, reorganization, and clarifications that do not impose additional regulatory requirements, (ii) corrections, omissions, and additions that conform to the current NRC policy, and hence are not additional requirements, and (iii) changes that impose additional regulatory requirements that represent a departure from the old NRC policy. A regulatory analysis addresses only the incremental changes for measuring the impact of a rule.

Accordingly, this regulatory analysis addresses the changes described in the last group (iii).

The rule contains five changes that represent a departure from the old NRC policy and require further analysis—

- (1) update emergency preparedness requirements for a COL applicant referencing an ESP,
- (2) change the manufacturing licensing process concept; and require the development of inspection, testing, analyses, and acceptance criteria (ITAAC) for the manufacturing licensing application,
- (3) implement quality assurance requirements per 10 CFR Part 50, Appendix B, for ESP applicants,
- (4) implement reporting of defects requirements under Part 21 and Section 50.55(e) for design approval and design certification applicants, and
- (5) add requirements for combined license holders to maintain and upgrade the probabilistic risk assessment (PRA) over the lifetime of the facility.

Detailed discussions of these five changes are described below.

4.2.1 Update emergency preparedness requirements for a COL Applicant referencing an ESP

This amendment requires the COL applicant to update and correct emergency preparedness information approved in a reference ESP and to discuss whether the new information may materially change the bases for compliance with applicable NRC requirements. New information which materially changes the bases for compliance includes (1) information which substantially alters the bases for a previous NRC conclusion on the acceptability of a material aspect of emergency preparedness or an emergency preparedness plan, and (2) information which would constitute a sufficient basis for the Commission to modify or impose new terms and conditions for emergency preparedness.

This amendment requiring a COL applicant to update the ESP's emergency preparedness information and the corresponding discussion of bases of compliance in the combined license application constitutes a change from the existing rule. The detailed cost-benefit analysis of this amendment is provided in Section 5.1.1.

4.2.2 Change the manufacturing licensing process concept, require the development of ITAAC for the manufacturing license application

Appendix M of Part 52 currently sets forth the NRC's requirements for manufacturing licenses. Appendix M, which was first adopted by the NRC in 1973, provides for issuance of a license authorizing the manufacture of a nuclear power reactor to be incorporated into a nuclear power plant under a construction permit and operated under an operating license at a different

location from the place of manufacture. Under the current licensing regime in Appendix M, the NRC does not approve a final reactor design to be manufactured before issuing the manufacturing license. Rather, as in the Part 50 two-step licensing process, the NRC issues a manufacturing license based upon the review of a preliminary design equivalent to that provided in a construction permit application. Upon approval of the preliminary design and associated information, the NRC issues a manufacturing license authorizing the manufacture—but not the removal from the manufacturing site—of one or more nuclear power reactors. Thereafter, manufacturing can begin, although the NRC must approve the final design of the manufactured reactor by license amendment.

In view of the substantial re-organization and rewriting of 10 CFR generally, the NRC has reconsidered the efficacy of the current manufacturing license process in Appendix M and proposes substantial changes to enhance regulatory effectiveness and efficiency. The most important change in the manufacturing license concept implemented by the NRC is that a final reactor design must be submitted and approved before issuance of a manufacturing license. This approval of a final reactor design eliminates one step from the current two-step process of issuing a manufacturing license, and amending the license when a final design is submitted. The technical information required to be included in an application for a manufacturing license, as set forth in §§ 52.157 and 52.158, reflects both the expanded scope of approval to include the final design of the reactor to be manufactured, as well as lessons learned with respect to early site permits. Section 52.157 specifies the standard information required to be submitted in support of the design of a reactor. In addition, the application must address the provisions with respect to the demonstration by test, analysis, experience, or a combination thereof of simplified, inherent, passive, or other innovative means to accomplish safety functions, or the results of testing of a prototype plant, as set forth in revisions to § 50.43. Information which

must be submitted as part of an application, but is not typically considered part of a final safety analysis report, is identified in § 52.158. This includes proposed ITAAC to be used by the licensee that will construct and operate a nuclear power plant at its site using the manufactured reactor and an environmental report for the manufactured reactor. The environmental report must address severe accident mitigation design alternatives (SAMDAs), since the design approval phase is usually the most cost-effective stage for incorporating design features for addressing severe accidents.

The NRC is approving a reactor design for manufacture and the ITAAC for verifying that it has been acceptably manufactured and integrated into a nuclear power facility such that it can be safely operated in accordance with the approved manufactured reactor design, the NRC's regulations, and the requirements of the AEA.

The changes to the current Appendix M constitutes a change from the existing rule. The detailed cost-benefit analysis of this amendment is provided in Section 5.1.2.

4.2.3 Implement quality assurance requirements per 10 CFR Part 50, Appendix B, for ESP applicants

The previous regulations do not explicitly require implementing a Part 50, Appendix B, program in support of an ESP application, and there is no requirement to describe the applicant's quality assurance program in an ESP application. However, under the previous Part 52 regulatory process, activities associated with site safety had to be controlled by QA measures sufficient to provide reasonable assurance that future safety-related systems, structures, and components (SSCs) of a nuclear power plant that might be constructed on the site will perform adequately in

service. The regulations in 10 CFR 52.39, with certain specific exceptions, require the NRC to treat matters resolved in an ESP proceeding as resolved in making findings for issuance of a construction permit or combined license referencing that ESP. Because of this finality, conclusions made during the ESP phase will be relied upon for use in subsequent design, construction, fabrication, and operation of a reactor that might be constructed on the site for which an ESP is issued. Therefore, the level of quality used to control activities related to safety-related SSCs should be equivalent in substance in the ESP and COL phases. For these reasons, under the former rule, applicants had to apply quality controls to each ESP activity associated with the generation of design information for safety-related SSCs that were equivalent to those specified in Appendix B for similar activities.

The rule eliminates this ambiguity by the explicit requirement for an ESP applicant to establish and use quality control processes in accordance with 10 CFR Part 50, Appendix B, to conduct activities associated with an ESP. This constitutes a change from the existing rule. A detailed cost-benefit analysis of this amendment is provided in Section 5.1.3.

4.2.4 Implement reporting of defects requirements under Part 21 for design approval and design certification applicants under Part 52

The reporting requirements in Section 206 of the Energy Reorganization Act of 1974 (ERA), as amended (1974 ERA) are incorporated in 10 CFR Part 21 and § 50.55(e). Section 50.55(e) sets forth the Section 206 reporting requirements applicable to holders of a construction permit. The rule sets forth the NRC's plans on how reporting requirements to implement Section 206 will be applied to applicants for design approvals and design certifications.

The NRC believes that the extensions of NRC's reporting requirements implementing Section 206 of the ERA to Part 52 licensing and approval processes should be consistent with three key principles. First, the requirements should be legal obligations throughout the entire regulatory life of an NRC license, or a standard design approval or design certification. Second, defects must be reported whenever the information on potential defects will be most effective in ensuring the integrity and adequacy of the NRC's regulatory activities under Part 52 and the activities of entities subject to the Part 52 regulatory regime. Third, each entity conducting activities within the scope of Part 52 must develop and implement procedures and practices to ensure that it fulfills its Section 206 reporting obligations in an accurate and timely manner.

Reporting requirements for standard design approvals

A standard design approval represents the NRC staff's approval of a standard nuclear power reactor design or major portion thereof, which may then be referenced in a subsequent construction permit or combined license application. The NRC is imposing requirements to implement Section 206 on applicants for standard design approvals.

Reporting requirements for standard design certification

A standard design certification represents the NRC's approval by rulemaking of an acceptable nuclear power reactor design, which may then be referenced in a subsequent construction permit, operating license, combined license, or manufacturing license application. The NRC is imposing requirements to implement Section 206 on applicants for standard design certification.

4.2.5 Add requirements for combined license holders to maintain and upgrade the PRA over the lifetime of the facility

There are no current requirements governing PRAs developed by combined license holders. However, the former rule did require COL applications to contain a plant-specific PRA. In this rule, the requirement to submit a plant-specific PRA was replaced with a requirement in § 52.79(a)(46) to submit a description of the PRA and its results. In addition, the Commission has decided to require combined license holders to maintain and upgrade facility PRAs to meet endorsed standards over the lifetime of the facility. To implement this decision, new requirements are added in § 50.71(h). These new requirements are a culmination of the Commission's interest in use of risk-informed processes as articulated in its 1995 Policy Statement ("Use of Probabilistic Risk Assessment Methods in Nuclear Activities: Final Policy Statement," *Federal Register*, Vol. 60 (60 FR 42622), August 16, 1995). In the original Part 52 rule, each design certification holder was required to include as part of the application a design-specific PRA. The Commission has been engaged in an effort to improve PRA quality through support and endorsement of consensus standards on PRA methods.

These new provisions require each holder of a combined license, by the time of the scheduled fuel load date for the facility, to develop a plant-specific PRA. The PRA is to be both level 1 and level 2 and must cover those modes of operation and initiating events for which NRC-endorsed consensus standards are in effect 1 year prior to that date. In addition, the COL holder is required to maintain the PRA until permanent cessation of operations and to upgrade the PRA every 4 years, to cover initiating events and operational modes contained in NRC-endorsed consensus standards in effect 1 year prior to each required upgrade. Finally, each holder of a combined license is required to upgrade the PRA to cover all modes and all initiating events no

later than the date on which the licensee submits an application for a renewed license.

Although this provision does not require that the PRA be submitted to the NRC for review and approval, the requirement in § 52.79(a)(46) for COL applicants to submit a description of the PRA and its results effectively requires the development of the initial PRA. Therefore, the new burden being added with this amendment is the burden to maintain and upgrade the PRA over the lifetime of the facility.

5.1 Regulatory Impact—Cost-benefit of the action

Discussion in Section 4.2 identified five changes that represent a departure from previous NRC requirements. The cost-benefit analysis of the regulatory requirements associated with these five changes are based upon the NRC's assessment of the future business scenario as described below.

- Nineteen COL applications during the next 3 years and thereafter 1 COL application per year would be submitted over the next 17 years. It is assumed that 4 of those 19 anticipated COL's would be referencing an ESP during the next 3 years and all 19 would be referencing design certification or design certification applications.
- One ESP application would be submitted over the next 3 years.
- Four design certifications would be submitted over the next 3 years.
- Two manufacturing licenses would be submitted in the next 20 years.

5.1.1 Update emergency preparedness requirements for a COL applicant referencing an ESP

A COL applicant referencing an ESP must include an update of the emergency preparedness information and a discussion of whether the new information materially alters the basis for compliance with the relevant requirements. This additional requirement constitutes a change from the previous rule. The cost-benefit analysis of this amendment using the above mentioned assumptions is as follows:

Costs to Applicant

The NRC assumed that four COL applications referencing an ESP would be submitted over the next 3 years.

The NRC estimates that it will take an applicant approximately 4 staff-months for a one-time cost of \$67 K (4 staff-months x 4 weeks/month x 40 hrs/week x \$105/hr) per application for updating the emergency preparedness information of an ESP.

The business scenario discussed above would result in a present value of approximately \$253 K at a 3-percent discount rate. With a 7-percent discount rate, the estimate would be \$234 K.

Costs to NRC

NRC will not incur additional costs for reviewing the updated emergency preparedness of a referenced early site permit, since the NRC needs to review the updated information anyway,

particularly considering possibilities of significant lapse of time between the issuance of an ESP and the submittal of a COL.

Benefits to Applicant

The NRC believes that this amendment will reduce the overall regulatory burden of an applicant referencing an early site permit when reviewed in the context of the entire license review process, even though inclusion of the updated emergency preparedness information in the referencing license application is an additional burden on the applicant. The NRC, in absence of the updated information, can not adequately assess the state of emergency preparedness of the COL application referencing an ESP. To determine the adequacy of the state of emergency preparedness, the NRC needs to request the information of the applicant. The applicant would spend considerably more resources to compile, analyze, and submit the information at a later date, as compared to providing the information in the referencing application. This delayed submittal would also prolong the license review time. It is estimated that it would take at least 50 percent more effort to submit the information after issuance of the referencing license application, since the submittal would necessitate reassembly of the team, require review of the existing documents and then update potentially large number of changes to the original submittal.

Using the above business scenario, updating of the emergency preparedness information during the license review phase would increase the applicant's effort by 50 percent, or \$101 K (4 NRC-months x 4 weeks/month x 40 hr/week x 1.5 x \$105/hr) per application. The same business scenario, at a 3-percent discount rate would result in a present value of approximately \$379 K. With a 7-percent discount rate, the estimate would be \$351 K.

Benefits to NRC

The review of the submittal will have no additional impact on the NRC for the reasons discussed in the cost section, but the schedule delays might have an impact. No efforts have made to quantify the impact of potential schedule delay.

5.1.2 Changes in manufacturing licensing process concept require the development of ITAAC for the manufacturing license application

This amendment requires that a final reactor design be submitted and approved before issuance of a manufacturing license. The approval of a final reactor design eliminates the current two-step regulatory process of issuing a manufacturing license based on preliminary design information and amending the license when a final design is submitted. Approval of a final design ensures early consideration and resolution of technical matters before there is any substantial commitment of resources to manufacturing the reactor. The technical information that must be included in an application for a manufacturing license reflects both the expanded scope of approval to include the final design of the reactor to be manufactured and the lessons learned during the ESP applications reviews.

The amendment eliminates preparation and Agency review of the preliminary license application, but requires an expanded license application that needs to include additional technical information, namely: proposed ITAAC to be used by the licensee that will construct and operate a nuclear power plant at the site using the manufactured reactor and an environmental report. Under the previous regulatory process, the environmental reports were integral parts of the license application, and hence inclusion of these in the final safety analysis

report (FSAR), a part of the license application under the final rule, though not typical, are not considered an additional burden on the applicant. However, the development of ITAAC will be an additional burden. Under the final rule, elimination of the preliminary license application in itself will be a reduction in regulatory burden on both the applicant and the NRC.

The cost-benefit analysis of these amendments is as follows:

Cost to Applicant

It is assumed that an application for a manufacturing license under the final rulemaking is equivalent to the first step of the existing process (*i.e.*, license application and corresponding design report except for the development of the ITAAC). In other words, the preparation of a manufacturing license application under the rule would involve the same amount of work as for the first step under the previous regulatory regime except for developing the ITAAC. The requirement for developing the ITAAC as a part of the manufacturing license application constitutes a change to the existing regulations and would impose additional regulatory burden on applicants for a manufacturing license.

Using the business scenario of two applications for manufacturing license, the NRC estimates that the applicant would incur a one time cost of \$4,368 K (10 staff-years x 2080 hr/year x \$105/hr x 2 applications) for the development of ITAAC.

In total, applicants would incur a one time costs of \$4,368 K.

Cost to NRC

The NRC estimates that the Agency would incur a one time cost for reviewing the ITAAC \$746 K (2 staff-years x 1776 hr/year x \$105/hr x 2 applications).

In total, the Agency would incur a one-time cost of \$746 K.

Benefit to Applicant

The applicant would not be required to prepare and submit an amendment of a manufacturing license under the rule, reduce regulatory burden compared to the two-step licensing process of the existing regulations. The NRC estimates that the elimination of one step would result in a one-time reduction of \$32,760 K (75 staff-years x 2080 hr/year x \$105/hr x 2 applications).

Benefit to NRC

The NRC estimates that the Agency would avoid the one-time cost of reviewing the license application \$11,189 K (30 staff-years x 1776 hr/year x \$105/hr x 2 applications). The NRC rate is based on estimated in-house data.

It should be noted, developing an ITAAC adds burden for the manufacturing license applicant, it does not add burden to the ultimate operator of a nuclear power generating facility since the ITAAC are developed before the issuance of the operating license and included in the operating license costs. Put another way, the additional burden of the ITAAC actually shifts the burden

from one phase to another; *i.e.*, from operating license phase to the manufacturing license phase.

5.1.3 Implement Quality Assurance (QA) requirements per 10 CFR Part 50, Appendix B for ESP applicants

The rule requires an ESP applicant to implement a QA program under Part 50, Appendix B, to control ESP activities. The incremental burden of using the Part 50, Appendix B, program is shown below.

Costs to Applicant

The NRC estimates that each applicant would incur a one-time cost of establishing a Part 50, Appendix B, QA program of \$50 K (3 staff-months x 4 weeks/month x 40 hr/week x \$105/hr), and a cost of \$76 K (40 hr/month x 18 months x \$105/hr) to implement the QA program for the ESP activities for a total cost of \$126 K per applicant.

Using the above business scenario of one ESP application in the next 3 years at a 3-percent discount rate would result in a present value of approximately \$115 K. With a 7-percent discount rate, the estimate would be \$103 K.

Costs to NRC

The NRC would not incur any additional costs.

5.1.4 Implement reporting of defects requirements under Part 21 for design approval and design certification applicants

Part 21 implements the reporting requirements in Section 206 of the Energy Reorganization Act of 1974, as amended (1974 ERA). The Part 52 rule sets forth the Commission's requirement for applying reporting requirements implementing Section 206 of the 1974 ERA be applied to Part 52 licensing processes. The NRC's three key principles of reporting under Section 206 of the ERA are (i) a legal obligation exists throughout the entire regulatory life of a NRC license or a Part 52 approval, (ii) defects to be reported whenever the information on potential defects would be most "effective," and (iii) each entity conducting activities within the scope of Part 52 to develop and implement procedures and practices to ensure that it accurately and timely meets its Section 206 reporting obligations.

This amendment requires that applicants for standard design approvals and certifications make contractual agreements with contractors, subcontractors, consultants, and other suppliers of goods and services to notify them that they are subject to the NRC's regulatory requirements for developing and implementing reporting requirements and for timely and accurate reporting of any defects that they become aware of during and after completion of their scope of work. These requirements will impose additional regulatory burden on applicants and their contractors, subcontractors, consultants, and other suppliers of goods and services.

Each entity conducting activities under Part 52 is required to have a quality assurance (QA) program in place to control their specific activities. The QA programs of applicants and their contractors, subcontractors, consultants, and other suppliers must be modified to include procedures and practices for timely and accurate reporting of any defects that they become

aware of during and after completion of their scope of work. These programs must be capable of being implemented later when a product is referenced in a subsequent construction permit, an operating license, or a COL. The programs for reporting must also continue throughout the regulatory life of the referenced license.

The cost-benefit analysis of this amendment is as shown below:

Costs to Applicant

Design Certification

The NRC estimates that the one-time cost for setting up the procedures for reporting of defects would be \$101 K (320 hr x 3 vendors x \$105/hr) per applicant.

Per the business scenario assumption of four design certification applications to be referenced by COL applicants during the next 3 years. This would result in a net present value of \$380 K at a 3-percent discount rate and \$352 K at a discount rate of 7-percent.

Also, the NRC estimates that it would require 180 hr/year for an estimated two contractors to report defects and maintain records for the regulatory life of a design certification, and it is assumed that four design certification applicants would be affected for a cost \$151 K (180 hr/year x 2 vendors x \$105/hr x 4 applicants) annually for the next 40 years for a net present value of \$3,493 K at a 3-percent discount rate and \$2,011 K at a 7-percent discount rate.

In summary, at a 3-percent discount rate it would cost \$3,873 K (380 K + 3,493K) and \$2,363 K (352 K + 2,011 K) at a 7-percent discount rate.

Design Approvals

The estimated costs for a design approval would be the same as for design certification. However, the business scenario does not assume any design approval applications during the next 3 years. Therefore, the cost for design approval applicants is zero.

5.1.5 Add requirements for combined license holders to maintain and upgrade the PRA over the lifetime of the facility

Section 50.71(h) requires each holder of a combined license, by the time of the scheduled fuel load date for the facility, to develop a plant-specific PRA. The PRA is to be both level 1 and level 2 and must cover those modes of operation and initiating events for which NRC-endorsed consensus standards are in effect 1 year prior to that date. This does not impose additional burden on applicants, since applicants were required to prepare a plant-specific PRA to fulfill the requirement that a description of the PRA and its results be submitted as part of a COL application. In addition, the COL holder is required to maintain the PRA until permanent cessation of operations and to upgrade the PRA every 4 years, to cover initiating events and operational modes contained in NRC-endorsed consensus standards in effect 1 year prior to each required upgrade. Finally, each holder of a combined license is required to upgrade the PRA to cover all modes and all initiating events no later than the date on which the licensee submits an application for a renewed license. Note that this provision does not require that this

PRA be submitted to the NRC for review and approval. However, § 52.79(a)(46) does require COL applicants to submit a description of the PRA and its results.

The cost-benefit analysis of this amendment is as shown below:

Costs to Applicant

The cost is broken down to cover three additional activities addressed by this new provision:

(1) maintenance of the PRA until permanent cessation of operations; (2) upgrading of the PRA every 4 years to cover initiating events and operational modes contained in NRC-endorsed consensus standards in effect 1 year prior to each required upgrade; and (3) one-time upgrading of the PRA to cover all modes and all initiating events.

PRA Maintenance

The NRC estimates that the annual cost for maintaining the PRA would be \$63 K (600 hours per year x \$105/hr)/ COL. In accordance with the business scenario of 7 COLs for the first year, 6 COLs each for second and third year, and 1 COL annually for the next 17 years for an estimated 40-year operating life, the total burden would be \$44,959 K at 3 percent discount rate and \$22,100 K at 7 percent discount rate.

PRA Upgrades Every 4 Years

The NRC estimates that the cost for upgrading the PRA every 4 years to cover initiating events and operational modes contained in NRC-endorsed consensus standards would be \$50 K (480

hours per upgrade x \$105/hr)/COL. For 36 COLs over an estimated 40-year operating life, the total burden would be \$ 8,605 K at 3 percent discount rate and \$ 3,991 K at 7 percent discount rate.

PRA Upgrade to All Mode, All Initiating Events PRA

The NRC estimates that the one-time cost for upgrading the PRA to cover all modes and all initiating events would be \$252 K (2400 hours x \$105/hr) per COL. Over an estimated 40-year operating life, the total burden would be \$692 K at 3 percent discount rate and \$ 156 K.

In summary, at a 3-percent discount rate it would cost \$ 54,256 K (44,959 K + 8,605 K+ 692 K) and \$26,247 K (22,100 K + 3,991 K + 156 K) and at a 7-percent.

5.2 Aggregate Analysis

In accordance with the RA Guidelines, an aggregate analysis of all the significant provisions is shown in table below.

| Provisions | Impact Type | Monetary Impact | |
|--|-------------|-----------------------------|----------------|
| | | Applicant | NRC |
| | | All Values in Thousand \$'s | |
| | | 3%/7% @ | 3%/7% @ |
| (1) Update of emergency preparedness for an ESP | Costs | -253/-234 | 0 |
| | Savings | 379/351 | 0 |
| (2) Manufacturing license concept change, development of ITAAC | Costs | -4,368* | -746* |
| | Savings | 32,760/32,760* | 11,189/11,189* |
| (3) Implement QA program for ESP applicant | Costs | -115/-103 | 0 |
| | Savings | 0 | 0 |
| (4) Implement reporting of defects (Part 21) | Costs | -3873/-2363 | 0 |
| | Savings | 0 | |
| (5) PRA maintenance and upgrade | Costs | -54,256/-26,247 | 0 |
| | Savings | 0 | 0 |
| Total Part 21 amendments | | -3873/-2363 | 0 |
| Total Part 52 rulemaking amendments | | -58,992/-30,952 | 10,443/10,443 |
| Total All Parts rulemaking amendments | | -29,726/-204 | 10,443/10,443 |
| Net monetary impact at (3%/7% discount rate) | | -19,283/+10,239 | |

Costs are negative, savings are positive.

@ Discount Rate

* Indicates One-time Occurrence

5.3 Disaggregation Analysis

The NRC has prepared an analysis of the impact of the changes (Attachment A) that identifies each provision affected by the rulemaking and determines whether it is appropriate to include each change in the rule. This attachment details an analysis of each change and whether it is needed for the regulatory initiative to resolve the concerns and meet the stated objectives that are the focus of the regulatory initiative. The NRC also performed an analysis to identify any

individual provision that could impose cost disproportionate to the benefits attributable to each provision. The NRC has concluded that there are no provisions whose costs are disproportionate to the benefits and whose inclusion in the aggregate analysis could mask the impact of this rulemaking.

6. Decision Rationale

The NRC adopted Alternative 2. The basis for this rule is regulatory efficiency. Alternative 2 meets the objectives as stated in Section 1 - Statement of Objectives. A few salient features of the objectives are cited below.

Regulatory efficiency

- The regulatory requirements for license applications and supporting documents have been organized for consistency among the various licensing and regulatory processes of 10 CFR Part 52.
- The interconnection with other parts of Title 10 Chapter I are clearly described.
- Regulatory requirements for content of applications for regulatory approval are clearly expressed enabling applicants to address relevant issues completely, and provide sufficient information in license application and avoid burdensome and costly resubmittals of information during the license review.

Address issues and lessons learned with respect to the Part 52 licensing process:

- Resolves design development issues early in the process ensuring early considerations and resolution of technical matters before a substantial commitment of resources.
- Increases regulatory stability and predictability, saving resources.
- Facilitates regulatory process of standardization of nuclear power plants.

Make conforming changes throughout 10 CFR Chapter I to reflect the revised licensing and approval processes.

Address errors identified since the promulgation of Part 52.

Clarify ambiguities in Part 52 to reflect the original intent of the NRC.

7. Implementation Schedule

This rule will become effective 30 days after publication of the final rule in the *Federal Register*.

Attachment A
Disaggregation Analysis

| Section/Description | RE | RB | LL | CC | OR | CA |
|--|----|----|----|----|----|----|
| 10 CFR Part 1 | | | | | | |
| 1.4.3 Office of Nuclear Reactor Regulation | | | | X | | |
| 10 CFR Part 2 | | | | | | |
| 2.1 Scope | | | | X | | |
| 2.4 Definitions | | | | X | | |
| Subpart A | | | | | | |
| 2.100 Scope of subparts | | | | X | | |
| 2.101 Filing of applications | X | | | X | | X |
| 2.102 Administrative review of application | | | | X | | |
| 2.104 Notice of hearing | X | X | | X | | |
| 2.105 Notice of proposed action | X | | | X | | |
| 2.106 Notice of issuance | | | | X | | |
| 2.109 Effect of timely renewal application | X | | | X | | |
| 2.110 Filing and administrative action on submittals for standard design approval or early review of site suitability issues | | | | X | | |
| 2.111 Prohibition of sex discrimination | | | | X | | |
| Subpart B | | | | | | |
| 2.202 Orders | X | | | X | | |
| Subpart C | | | | | | |
| 2.309 Hearing requests, petitions to intervene, requirements for standing, and contentions | X | | | X | | |
| 2.310 Selection of hearing procedures | X | | | X | | |
| 2.339 Expedited decisionmaking procedure | X | | | X | | |
| 2.340 Initial decision in certain contested proceedings; immediate effectiveness of initial decisions; issuance of authorizations, permits, and licenses | X | X | | X | | |
| 2.341 Review of decisions and actions of a presiding officer | X | X | | X | | |
| 2.347 Ex parte communications | | | | X | | |
| 2.348 Separation of functions | | | | X | | |
| 2.390 Public inspections, exemptions, requests for withholding | | | | X | | |
| Subpart D | | | | | | |
| 2.400 Scope of subpart | X | X | | X | | |
| 2.401 Notice of hearing on construction permit or combined license applications pursuant to appendix N of 10 CFR parts 50 or 52 | X | X | | X | | |
| 2.402 Separate hearings on separate issues; consolidation of proceedings | X | X | | X | | |

Legend: RE - Increase Regulatory Efficiency; RB - Reduce Regulatory Burden; LL - Lesson Learned; CC - Conforming Changes throughout 10 CFR; OR - Correct Omissions and Error; CA - Clarify Ambiguous Language/Editorial

| Section/Description | RE | RB | LL | CC | OR | CA |
|---|----|----|----|----|----|----|
| 2.403 Notice of proposed action on applications for operating licenses pursuant to appendix N of 10 CFR part 50 | x | x | | x | | |
| 2.404 Hearings on applications for operating licenses pursuant to appendix N of 10 CFR part 50 | x | x | | x | | |
| 2.405 Initial decisions in consolidated hearings | x | x | | x | | |
| 2.406 Finality of decisions on separate issues | x | x | | x | | |
| 2.407 Applicability of other sections | x | x | | x | | |
| Subpart E | | | | | | |
| 2.500 Scope of subpart | | | | x | | |
| 2.501 Notice of hearing on application under subpart F of 10 CFR part 52 for a license to manufacture nuclear power reactors | x | x | | x | | |
| 2.502 Notice of hearing on application under a construction permit for nuclear power reactor manufactured at the site at which the reactor to be operated- Deleted | x | x | | x | | |
| 2.503 Finality of decision- Deleted | x | x | | x | | |
| 2.504 Applicability of other sections- Deleted | | | | x | | |
| Subpart F | | | | | | |
| 2.600 Scope of subpart | x | x | | x | | |
| 2.601 Applicability of other sections | x | x | | x | | |
| 2.602 Filing fees | x | x | | x | | |
| 2.603 Acceptance and docketing of application for early review of site suitability issues in a construction permit proceeding | x | x | | x | | |
| 2.604 Notice of hearing on application for early review of site suitability issues in construction permit proceeding | x | x | | x | | |
| 2.605 Additional considerations | x | x | | x | | |
| 2.606 Partial decision on site suitability issues | x | x | | x | | |
| 2.621 Acceptance and docketing of application for early review of site suitability issues in a combined license proceeding | x | x | | x | | |
| 2.623 Notice of hearing on application for early review of site suitability issues in combined license proceeding | x | x | | x | | |
| 2.625 Additional considerations | x | x | | x | | |
| 2.627 Partial decision on site suitability issues in combined license proceeding | x | x | | x | | |
| 2.629 Finality of partial decision on site suitability issues in combined license proceeding | x | x | | | | |

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| Section/Description | RE | RB | LL | CC | OR | CA |
|--|----|----|----|----|----|----|
| Subpart H | | | | | | |
| 2.800 Scope and applicability | x | | | x | | x |
| 2.801 Initiation of rulemaking | x | | | x | | x |
| 2.811 Filing of standard design certification application; required copies | x | | | x | | x |
| 2.813 Written communications | x | | | x | | x |
| 2.815 Docketing and acceptance review | x | | | x | | x |
| 2.817 Withdrawal of application | | | | x | | x |
| 2.819 Denial of application for failure to supply information | x | | | x | | x |
| 2.1202 Authority and role of NRC staff | x | | | x | | |
| 2.1211- Deleted | | | | x | | |
| 10 CFR Part 10 | | | | | | |
| 10.1 Purpose | | | | x | | |
| 10.2 Scope | | | | x | | |
| 10 CFR Part 19 | | | | | | |
| 19.1 Purpose | | | | x | | |
| 19.2 Scope | x | | | x | | |
| 19.3 Definitions | x | | | x | | |
| 19.11 Posting of notices to workers | x | | | x | | x |
| 19.14 Presence of representatives of licensees and regulated entities, and workers during inspections | x | | | x | | x |
| 19.20 Employee protection | | | | x | | |
| 19.31 Application for exemptions | | | | x | | |
| 19.32 Discrimination prohibited | | | | x | | |
| 10 CFR Part 20 | | | | | | |
| 20.1002 Scope | | | | x | | |
| 20.1401 General provisions and scope | | | | x | | |
| 20.1406 Minimization of contamination | | | | | | |
| 20.2203 Reports of exposures, radiation levels, and concentrations of radioactive material exceeding the constraints or limits | | | | x | | |
| 10 CFR Part 21 | | | | | | |
| 21.2 Scope | | | | x | | |
| 21.3 Definitions | | | x | x | | |
| 21.5 Communications | | | | x | | |
| 21.21 Notification of failure to comply or existence of a defect and its evaluation | | | | x | | |
| 21.51 Maintenance and inspections of records | x | | x | x | | |
| 21.61 Failure to notify | x | | x | x | | |

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| Section/Description | RE | RB | LL | CC | OR | CA |
|--|----|----|----|----|----|----|
| 10 CFR Part 25 | | | | | | |
| 25.35 Classified visits | | | | X | | |
| 10 CFR Part 26 | | | | | | |
| 26.2 Scope | | | | X | | |
| 26.10 General performance objectives | | | | X | | |
| Appendix A to Part 26 – guidelines for drug and alcohol testing programs | | | | | | |
| 10 CFR Part 50 | | | | | | |
| 50.2 Definitions | X | | X | X | | X |
| 50.10 License required | X | | X | X | | X |
| 50.23 Construction permits | | | | X | | |
| 50.30 Filing of application; oath or affirmation | X | | | X | | |
| 50.33 Contents of applications; general information | X | | | X | X | |
| 50.34 Contents of construction permit and operating license applications; technical information | X | | | X | X | X |
| 50.34a Design objectives for equipment to control releases of radioactive material in effluents—nuclear power reactors | | | | X | | |
| 50.36 Technical Specifications | X | | X | X | | |
| 50.36a Technical specifications on effluents from nuclear power reactors | X | | X | X | | |
| 50.36b Environmental conditions | | | | | | |
| 50.37 Agreement limiting access to classified information | | | | X | | |
| 50.40 Common standards | X | | | X | | |
| 50.43 Additional standards and provisions affecting class 103 licenses and certifications for commercial power | X | | | X | | |
| 50.45 Standards for construction permits, operating licenses, and combined licenses | | | | X | | |
| 50.46 Acceptance criteria for emergency core cooling systems for light-water nuclear power reactors | | | | X | | |
| 50.47 Emergency plans | X | | X | X | | X |
| 50.48 Fire protection | | | | X | | |
| 50.49 Environmental qualification of electric equipment important to safety for nuclear power plants | | | | X | | |
| 50.54 Conditions of licenses | X | | X | X | | |

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| Section/Description | RE | RB | LL | CC | OR | CA |
|--|----|----|----|----|----|----|
| 50.55 Conditions of construction permits, early site permits, combined licenses, and manufacturing licenses | x | | x | x | | x |
| 50.55a Codes and standards | | | | x | | |
| 50.59 Changes, tests, and experiments | | | | x | | |
| 50.61 Fracture toughness requirements for protection against pressurized thermal shock events | | | | x | | |
| 50.62 Requirements for reduction of risk from anticipated transients without scram (ATWS) events for light-water-cooled nuclear power plants | | | | x | | |
| 50.63 Loss of all alternating current power | | | | x | | |
| 50.65 Requirements for monitoring the effectiveness of maintenance at nuclear power plants | | | | x | | |
| 50.70 Inspections | | | | x | | |
| 50.71 Maintenance of records, making of reports | x | | | x | | |
| 50.72 Immediate notification requirements for operating nuclear power reactors | | | | x | | |
| 50.73 License event report system | | | | x | | |
| 50.75 Reporting and recordkeeping for decommissioning planning | | x | | x | | |
| 50.78 Installation information and verification | | | | x | | |
| 50.80 Transfer of licenses | | | | x | | |
| 50.81 Creditor regulations | | | | x | | |
| 50.90 Application for amendment of license, construction permit, or early site permit | | | | x | | |
| 50.91 Notice for public comment; state consultation | | | | x | | |
| 50.92 Issuance of amendment | | | | x | | |
| 50.100 Revocation, suspension, modification of licenses, permits, and approvals for cause | | | | x | | |
| 50.109 Backfitting | | | | x | | |
| 50.120 Training and qualification of nuclear power plant personnel | x | | | x | | |
| Appendix A to Part 50-General design criteria-nuclear power plants | | | | x | | |
| Appendix B to Part 50-Quality assurance criteria for nuclear power plants and fuel reprocessing plants | x | | x | x | | x |
| Appendix C to Part 50-A guide for the financial data and related information required to establish financial qualifications for construction permits and combined licenses | | | | x | | |

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| Section/Description | RE | RB | LL | CC | OR | CA |
|---|----|----|----|----|----|----|
| Appendix E to Part 50- Emergency planning and preparedness for production and utilization facilities | x | | x | x | | x |
| Appendix I to Part 50- Numerical guides for design objectives and limiting conditions for operation to meet the criterion “as low as is reasonably achievable” for radioactive material in light-water-cooled nuclear power reactor effluents | | | | x | | |
| Appendix J to Part 50-Primary reactor containment leakage testing for water-cooled reactors | | | | x | | |
| Appendix M to Part 50 [Removed and Reserved] | | | | x | | |
| 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 | | | | x | | |
| Appendix O to Part 50 [Removed and Reserved] | | | | x | | |
| Appendices S to Part 50- Earthquake engineering criteria for nuclear power plants | | | | x | | |
| 10 CFR Part 51 | | | | | | |
| 51.17 Information collection requirements; OMB approval | | | | x | | |
| 51.20 Criteria for and identification of licensing and regulatory actions requiring environmental impact statements | x | | | x | | |
| 51.22 Criterion for categorical exclusion; identification of licensing and regulatory actions eligible for categorical exclusion or otherwise not requiring environmental review | x | | x | x | | |
| 51.23 Temporary storage of spent fuel after cessation of reactor operation—generic determination of no significant environmental impact | | | | x | | |
| 51.26 Requirement to publish notice and conduct scoping process | x | | x | x | | |
| 51.27 Notice of intent | x | | x | x | | |
| 51.29 Scoping-environmental impact statement and supplement to environmental impact statement | x | | x | x | | |
| 51.30 Environmental assessment | x | x | | x | | |
| 51.31 Determinations based on environmental assessment | x | x | x | x | | |
| 51.32 Finding of no significant impact | x | x | x | x | | |
| 51.45 Environmental report | x | | x | x | | |
| 51.50 Environmental report—construction permit, early site permit, or combined license stage | x | | x | x | | |

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| Section/Description | RE | RB | LL | CC | OR | CA |
|---|-----------|-----------|-----------|-----------|-----------|-----------|
| 51.51 Uranium fuel cycle environmental data—Table S-3 | | | | X | | |
| 51.52 Environmental effects of transportation of fuel and waste—Table S-4 | | | | X | | |
| 51.53 Postconstruction environmental reports | X | | | X | | |
| 51.54 Environmental report-manufacturing license | X | X | | X | | |
| 51.55 Environmental report—standard design certification | X | | X | X | | |
| 51.66 Environmental report—number of copies; distribution | | | | X | | |
| 51.71 Draft environmental impact statement-contents | X | | | X | | |
| 51.75 Draft environmental impact statement-construction permit, early site permit, or combined license | | | | X | | |
| 51.76 [Removed and Reserved] | X | X | | X | | |
| 51.92 Supplement to the final environmental impact statement | X | | | X | | |
| 51.95 Postconstruction environmental impact statements | X | | | X | | |
| 51.105 Public hearings in proceedings for issuance of construction permits or early site permits | X | X | X | X | | |
| 51.105a Public hearings in proceedings for issuance of manufacturing licenses | X | X | | X | | |
| 51.107 Public hearings in proceedings for issuance of combined licenses | X | | X | X | | |
| 51.108 Public hearings on Commission findings that inspections, tests, analyses, and acceptance criteria of combined licenses are met | X | | X | X | | |
| 10 CFR Part 52 | | | | | | |
| 52.0 Scope; applicability of 10 CFR Chapter I provisions | X | | X | X | | X |
| 52.1 Definitions | X | | X | X | X | |
| 52.2 Interpretations | X | | | X | | |
| 52.3 Written communications | X | | | X | | |
| 52.4 Deliberate misconduct | X | | | X | | |
| 52.5 Employee protection | X | | | X | | |
| 52.6 Completeness and accuracy of information | X | | | X | | |
| 52.7 Specific exemptions | X | | | X | | |
| 52.8 Combining licenses; elimination of repetition | X | | | X | | |
| 52.9 Jurisdictional limits | X | | | X | | |
| 52.10 Attacks and destructive acts | X | | | X | | |

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| Section/Description | RE | RB | LL | CC | OR | CA |
|---|----|----|----|----|----|----|
| 52.11 Information collection requirements-OMB Approval | | | | X | | |
| Subpart A - Early Site Permits | | | | | | |
| 52.11 Scope of subpart | | | | X | | |
| 52.13 Relationship to other subparts | X | | | X | | X |
| 52.15 Filing of applications | X | | X | X | | X |
| 52.16 Contents of applications-general information | X | | | X | | |
| 52.17 Contents of applications-technical information | X | | X | X | X | X |
| 52.18 Standard for review of applications | X | | | X | | |
| 52.21 Administrative review of applications; hearings | | | | X | | |
| 52.24 Issuance of early site permit | X | | X | X | | |
| 52.25 Extent of activities permitted | X | | | X | | |
| 52.27 Duration of permit | X | | | X | | |
| 52.28 Transfer of early site permit | X | | X | | | |
| 52.29 Application for renewal | | | | | X | |
| 52.31 Criteria for renewal | X | | | | X | |
| 52.33 Duration of renewal | | | | X | | X |
| 52.35 Use of site for other purposes | | X | | X | | X |
| 52.39 Finality of early site permit determinations | X | | | X | | |
| Subpart B - Standard Design Certifications | | | | | | |
| 52.41 Scope of subpart | X | | | X | | |
| 52.43 Relationship to other subparts | X | | X | X | | |
| 52.45 Filing of applications | X | | X | X | | X |
| 52.46 Contents of applications; general information | X | | | X | | |
| 52.47 Contents of applications; technical information | X | | X | | | X |
| 52.48 Standards for review of applications | X | | X | | | X |
| 52.51 Administrative review of applications | X | | | X | | |
| 52.53 Referral to the Advisory Committee on Reactor Safeguards (ACRS) | | | | | | X |
| 52.54 Issuance of standard design certification | X | | X | | | X |
| 52.55 Duration of certification | | | | | | X |
| 52.57 Application for renewal | | | | | | X |
| 52.59 Criteria for renewal | X | | | | X | |
| 52.63 Finality of standard design certifications | X | X | | | X | |
| Subpart C - Combined License | | | | | | |
| 52.73 Relationship to other subparts | X | | | X | | |
| 52.75 Filing of applications | | | | | | |
| 52.77 Contents of applications; general information | X | | | | X | |

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| Section/Description | RE | RB | LL | CC | OR | CA |
|--|-----------|-----------|-----------|-----------|-----------|-----------|
| 52.79 Contents of applications; technical information in final safety analysis report | x | | x | | x | x |
| 52.80 Contents of applications; additional technical information | x | | | x | | |
| 52.81 Standards for review of applications | x | | | x | | |
| 52.83 Finality of referenced NRC approvals; partial initial decision of site suitability | x | | x | | | x |
| 52.85 Administrative review of applications; hearings | x | | | | | |
| 52.87 Referral to the Advisory Committee on Reactor Safeguards (ACRS) | | | | | | x |
| 52.89 Reserved | x | | | | | x |
| 52.91 Authorization to conduct site activities | x | | | | | |
| 52.93 Exemptions and variances | x | | | x | | x |
| 52.97 Issuance of combined licenses | | | x | | | |
| 52.98 Finality of combined licenses; information requests | x | | | | | |
| 52.99 Inspection during construction | x | | | | | x |
| 52.103 Operation under a combined license | x | | | | | x |
| 52.104 Duration of combined license | x | | | | | |
| 52.105 Transfer of combined license | x | | | | | |
| 52.107 Application for renewal | x | | | | | |
| 52.109 Continuation of combined license | x | | | | | |
| 52.110 Termination of license | x | | | | | |
| Subpart D - Reserved | | | | | | |
| Subpart E - Standard Design Approvals | | | | | | |
| 52.131 Scope of subpart | x | | | x | | |
| 52.133 Relationship to other subparts | x | | | x | | |
| 52.135 Filing of applications | x | | | x | | |
| 52.136 Contents of applications; general information | x | | | x | | |
| 52.137 Contents of applications; technical information | x | | | x | | x |
| 52.139 Standards for review of applications | x | | | x | | x |
| 52.141 Referral to the Advisory Committee on Reactor Safeguards (ACRS) | x | | | x | | |
| 52.143 Staff approval of design | x | | | x | | |
| 52.145 Finality of standard design approvals; information requests | x | | | x | | x |
| 52.147 Duration of design approval | x | | | x | | |
| Subpart F- Manufacturing Licenses | | | | x | | |
| 52.151 Scope of subpart | x | | | x | | |

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| Section/Description | RE | RB | LL | CC | OR | CA |
|---|----|----|----|----|----|----|
| 52.153 Relationship to other subparts | x | | | x | | |
| 52.155 Filing of applications | x | x | | x | | |
| 52.156 Contents of applications; general information | x | x | | x | | |
| 52.157 Contents of applications; technical information in final safety analysis report | x | | | x | | |
| 52.158 Contents of application: additional technical information | x | | | x | | x |
| 52.159 Standards for review of application | x | | | x | | x |
| 52.161 Reserved | | | | x | | |
| 52.163 Administrative review of applications; hearings | x | | | x | | |
| 52.165 Referral to the Advisory Committee on Reactor Safeguards (ACRS) | x | | | x | | |
| 52.167 Issuance of manufacturing license | x | | | x | | |
| 52.169 Reserved | | | | x | | |
| 52.171 Finality of the manufacturing license; information requests | x | x | | x | | |
| 52.173 Duration of manufacturing license | x | | | x | | |
| 52.175 Transfer of manufacturing license | x | | | x | | |
| 52.177 Application for renewal | x | | | x | | |
| 52.179 Criteria for renewal | x | | | x | | |
| 52.181 Duration of renewal | x | | | x | | |
| Subpart G - Reserved | | | | | | |
| Subpart H - Violations | | | | | | |
| 52.301 Violations | | | | x | | |
| 52.303 Criminal penalties | | | | x | | |
| Appendices A, B, C, and D Design Certifications for ABWR, System 80+, AP600, and AP1000 | x | | | x | x | x |
| Appendices E-M to Part 52 - Reserved | | | | x | | |
| Appendix N to Part 52 Standardization of Nuclear Power Plant Designs: Combined Licenses to Construct and Operate Nuclear Power Reactors of Identical Design at Multiple Sites | | | | x | | |
| Appendix Q - Removed | x | | | | | |
| 10 CFR Part 54 | | | | | | |
| 54.1 Purpose | | | | x | | |
| 54.3 Definition | | | | x | | |
| 54.17 Filing of application | | | | x | | |
| 54.27 Hearings | | | | x | | |
| 54.31 Issuance of a renewed license | | | | x | | |

Legend: RE - Increase Regulatory Efficiency; RB - Reduce Regulatory Burden; LL - Lesson Learned; CC - Conforming Changes throughout 10 CFR; OR - Correct Omissions and Error; CA - Clarify Ambiguous Language/Editorial

| Section/Description | RE | RB | LL | CC | OR | CA |
|---|----|----|----|----|----|----|
| 54.35 Requirements during term of renewed license | | | | X | | |
| 54.37 Additional records and record keeping requirements | | | | X | | |
| 10 CFR Part 55 | | | | | | |
| 55.1 Purpose | | | | X | | |
| 55.2 Scope | | | | X | | |
| 55.5 Communications | | | | X | | |
| 10 CFR Part 72 | | | | | | |
| 72.210 General license issued | | | | X | | |
| 72.218 Termination of licenses | | | | X | | |
| 10 CFR Part 73 | | | | | | |
| 73.1 Purpose and scope | | | | X | | |
| 73.2 Definitions | | | | | | |
| 73.50 Requirements for physical protection of licensed activities | | | | X | | |
| 73.56 Personnel access authorization requirements for nuclear power plants | | | | X | | |
| 73.57 Requirements for criminal history checks of individuals granted unescorted access to a nuclear power facility or access to Safeguards Information by power reactor licensees. | | | | X | | |
| Appendix C - Licensee Safeguards Contingency Plans | | | | X | | |
| 10 CFR Part 75 | | | | | | |
| 75.6 Maintenance of record and delivery of information, reports, and other communications | | | | X | X | |
| 10 CFR Part 95 | | | | | | |
| 95.5 Definitions | | | | X | | |
| 95.13 Maintenance of records | | | | X | | |
| 95.19 Changes to security practices and procedures | | | | X | | |
| 95.20 Grant, denial, or termination of facility clearance | | | | X | | |
| 95.23 Termination of facility clearance | | | | X | | |
| 95.31 Protective personnel | | | | X | | |
| 95.33 Security education | | | | X | | |
| 95.34 Control of visitors | | | | X | | |
| 95.35 Access to matters classified as National Security Information and Restricted Data | | | | X | | |
| 95.36 Access by representatives of the International Atomic Energy Agency or by participants in other international agreements | | | | X | | |

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| Section/Description | RE | RB | LL | CC | OR | CA |
|---|----|----|----|----|----|----|
| 95.37 Classification and preparation of documents | | | | X | | |
| 95.39 External transmission of documents and material | | | | X | | |
| 95.43 Authorized to reproduce | | | | X | | |
| 95.45 Changes in classification | | | | X | | |
| 95.49 Security of automatic data processing systems | | | | X | | |
| 95.51 Retrieval of classified matter following suspension or revocation of access authorization | | | | X | | |
| 95.53 Termination of facility clearance | | | | X | | |
| 95.57 Reports | | | | X | | |
| 95.59 Inspections | | | | X | | |
| 10 CFR Part 140 | | | | X | | |
| 140.2 Scope | | | | X | X | |
| 140.10 Scope | | | | X | | |
| 140.11 Amounts of financial protection for certain reactors | | | | X | | |
| 140.12 Amount of financial protection required for other reactors | | | | X | | |
| 140.13 Amount of financial protection required of certain holders of construction permits and combined licenses under 10 CFR Part 52. | | | | X | | |
| 140.20 Indemnity agreements and liens | | | | X | | |
| 140.31 Scope | | | | X | | |
| 140.81 Scope and purpose | | | | | | |
| 140.93 Appendix C - Form of indemnity agreement with licensees furnishing proof of financial protection in the form of licensee's resources | | | | X | | |
| 140.96 Appendix F - Indemnity locations | | | | X | | |
| 10 CFR Part 170 | | | | X | | |
| 170.2 Scope | | | | X | | |
| 10 CFR Part 171 | | | | | | |
| 171.15 Annual Fees: Reactor licenses and independent spent fuel storage licenses | | | | X | | |

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