

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

Primary Requirement in the Regulations (10 CFR)	Category/Item Summary
Probabilistic Risk Assessment Requirements	
50.69(b)	This paragraph specifies applicability requirements for using the provisions for risk-informed categorization and treatment of structures, systems, and components. The staff is considering revising this provision to allow COL holders to use these alternative requirements.
50.71(h)	This paragraph requires COL holders to develop a Level 1 and a Level 2 PRA that includes initiating events and modes for which there is NRC endorsed guidance as of 1 year prior to initial fuel loading and 1 year prior to each 4-year update. The staff is considering revising this paragraph to increase the “1 year prior” to “4 years prior”. This change would align this requirement with the timeframe under which consensus standards are updated and reduce burden.
Operator Licensing	
50.54(i-1) 55.53(e) and (f) 55.4	This paragraph (10 CFR 50.54(i-1)) requires the licensee to have an operator requalification program in effect 3 months after the issuance of an OL or after a finding is made under 10 CFR 52.103(g) that all inspections, tests, analyses, and acceptance criteria (ITAAC) are met. The staff is considering adding a new requirement (10 CFR 50.54(i-2)) for holders of a CP or COL to establish the requalification program after the first initial operator licensing examinations have been administered at the facility. This was raised as an issue after the first Advanced Passive 1000 (AP1000) operator license examinations because there is no regulatory requirement for applicants who defer completion of experience requirements between completion of the licensing examination and completion of the licensing process to demonstrate applicant knowledge retention and proficiency during plant construction. Additionally, the staff is considering amending 10 CFR 55.53(e) and (f) and 10 CFR 55.4 to clarify the activities that can be performed by operators and senior operators at new reactors under construction to meet proficiency requirements.
55.31(a)(5) and 55.46	These paragraphs require evidence that the license operator applicant has manipulated either plant controls or the controls of a plant-referenced simulator. The staff is considering revising these requirements for facilities constructing new reactors to have operators undergoing licensing complete the required control manipulations on the plant after fuel load. Based on AP1000 experience, it is not possible to complete the required control manipulations on the plant until after fuel load.

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55.45(b)	This paragraph describes the requirements for administering the operator test in a plant walkthrough in either a Commission-approved simulator, a plant-reference simulator, or the actual plant. The staff is considering allowing COL holders the option of developing plant walkthrough test items (i.e., job performance measurements (JPMs) used for the in-plant portion of the operating exam) using an alternative method for cold plants. (Note that cold licensing of operators provides the method for operations personnel to acquire the knowledge and experience required for licensed operator duties during the unique conditions of new plant construction and initial operation.)
55.46	This paragraph includes requirements for plant simulation facilities. The staff is considering a revision to this paragraph to include a new classification of simulators that can be used for the same purposes as a plant-referenced simulator while a new reactor facility is under construction. The purpose of this change is to avoid undue delay in conducting operator license examinations.
Security	
26.4(f)	This paragraph establishes the applicability of the fitness-for-duty program for individuals who are constructing or directing the construction of safety- or security-related structures, systems, and components. The staff is considering modifying 10 CFR 26.4(f) to allow escorted access to visitors performing safety- or security-related work activities in a construction area similar to the operational plant provisions in 10 CFR 73.55(g)(7). The staff is considering this change to reduce unnecessary burden on COL holders undergoing construction and to align 10 CFR Part 26, "Fitness for Duty Programs," with the approach used in 10 CFR 73.55, "Requirements for physical protection of licensed activities in nuclear power reactors against radiological sabotage."
73.55(a)(4)	This paragraph establishes the implementation requirement for physical protection of licensed activities in nuclear power reactors against radiological sabotage. The staff is considering changing the applicability of 10 CFR 73.55(a)(4) to "before fuel load" instead of "before fuel is allowed onsite." The staff is considering this change to reduce unnecessary burden associated with implementing the requirements of 73.55 for unirradiated fuel.
Emergency Planning	
50.54(q)	The referenced section requires, in part, 10 CFR Part 52 licensees to follow and maintain the effectiveness of an emergency plan. The staff is considering clarifying that the regulation pertaining to the emergency plan change process provided by 10 CFR 50.54(q) applies to licensees during construction as well as operations and decommissioning. In addition, the staff will propose to add 10 CFR 50.54(q)(2) to the introductory paragraph of 10 CFR 50.54, "Conditions of Licenses," on provisions that are not required until after the 10 CFR 52.103(g) finding is made.

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Part 50, Appendix E, Section IV.B	The referenced section establishes the requirements for the content of emergency plans with respect to the initial emergency action levels and classification scheme, and subsequent changes. The staff is considering modifications to the requirements to clarify when NRC approval of an initial set of emergency action levels and classification scheme, and subsequent changes is applicable. The reason for the proposed change is to align Part 52 with Part 50 requirements
Part 50, Appendix E, Section IV.F.2.a.ii	The referenced paragraph establishes the requirements for the content of emergency plans with respect to provisions for the conduct of emergency preparedness exercises. The staff is considering modifying the regulation to remove an inconsistency with respect to the 5-percent power emergency planning ITAAC that is included in all previously issued COLs consistent with the Standard Review Plan (NUREG 0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition") guidance and the language in 10 CFR Part 50, Appendix E, Sections IV.F.2.a.ii and IV.F.2.a.iii. The staff is considering this change to clarify under what conditions the provisions of 10 CFR 50.54(gg) apply.
Part 50, Appendix E, Section IV.F.2.a.iii	The referenced paragraph establishes the requirements for the content of emergency plans with respect to provisions for the conduct of emergency preparedness exercises. The staff is considering modifying the regulation to clarify when subsequent full participation exercises for each subsequent 10 CFR Part 52 reactor (at the same site) using the same technology, emergency response organization (ERO), or similar facilities are required. The staff is considering this change because subsequent exercises for each subsequent reactor may not be needed for the same technology or ERO or similar facilities.
52.17(b)(1), 52.18, and 100.20(a)	The regulations in 10 CFR 52.18, "Standards for review of applications," state that a determination on the siting criteria in 10 CFR 52.17(b)(1) will be made by the Commission in consultation with the Federal Emergency Management Agency (FEMA). However, this is not consistent with the language of 10 CFR 52.17(b), which specifies the circumstances in which consultation with FEMA is required. Additionally, this review process would be inconsistent with a license review involving the siting criteria under 10 CFR 100.20(a), which would not require outside consultation. Therefore, the staff is considering revising these requirements to address inconsistencies among 10 CFR 52.17(b)(1), 10 CFR 52.18, and 10 CFR 100.20(a) as to when FEMA consultation is required.
52.17(b)(1)	This paragraph establishes requirements for contents of applications for early site permits (ESPs) pertaining to site characteristics that could pose a significant impediment to the development of emergency plans. The staff is considering revising this requirement to align with the siting criteria in 10 CFR 100.21(g).

Primary Requirement in the Regulations (10 CFR)	Category/Item Summary
52.17(b)(4)	This paragraph establishes requirements for the technical content of ESP applications with respect to the site safety analysis report (SSAR). The staff is considering modifying the requirement that the SSAR include a description of contacts and arrangements made with Federal, State, and local governmental agencies with emergency planning responsibilities and the need for certifications from these agencies. The staff is considering this change because it may be premature to request such detailed information at the ESP phase and there is no corresponding safety benefit. In addition, the staff would like to clarify the requirements regarding obtaining certifications from State and local officials.
100.20(a)	The referenced paragraph requires the SSAR to identify physical characteristics that could pose a significant impediment to the development of emergency plans. The staff is considering removing the requirement from this paragraph. The reason for the deletion is that this requirement is already included in 10 CFR Part 50 and 10 CFR Part 52 and is therefore redundant.
10 CFR Part 52 Licensing Process: Design Certification Renewal and Design Certification Expiration Date	
52.59	This section of the regulations provides requirements for renewing approved design certification rules (DCRs). The staff is considering whether the requirements to renew a certified design should be modified or eliminated. The staff is considering the modification or elimination of these requirements based on the experience gained from the evaluation of the application concerning the Advanced Boiling-Water Reactor DC renewal. A modification or elimination of the requirements in 10 CFR 52.59, "Criteria for renewal," would affect the requirements of 10 CFR 52.55, "Duration of certification," which specify the duration of a DCR.
10 CFR Part 52 Licensing Process: Change Process	
52.39(e)	This paragraph states that the holder of an ESP may not make changes to the ESP, including the SSAR, without Commission approval. The staff is considering establishing a change process for ESPs and limited work authorizations (LWAs) similar to 10 CFR 50.59, "Changes, tests, and experiments" (i.e., 50.59-like). This would allow non-safety significant changes to be made without NRC approval.
Part 52, Subpart B or C	The current requirements to change the information within the scope of a certified design are contained within each DC appendix in 10 CFR Part 52. The staff is considering the need to maintain the 10 CFR 50.59-like process in the individual appendices versus moving these requirements into either Subparts B or C of 10 CFR Part 52. The reason the staff is considering the change is to simplify the change process in 10 CFR Part 52 and to more closely align the 10 CFR Part 52 change process with the change process in 10 CFR Part 50.

Primary Requirement in the Regulations (10 CFR)	Category/Item Summary
Part 52 Appendices A-E, Sections IV.A.2.a and VIII.A	These paragraphs require COL applicants referencing a design control document (DCD) to include as part of its application a plant-specific DCD containing the same type of information and using the same organization and numbering as the generic DCD and to establish the change process for Tier 1 information. The staff is considering revising these requirements to eliminate the need for unnecessary exemption requests related to format inconsistencies between a COL and the referenced DCD and to provide a more flexible change process for Tier 1 that does not decrease the level of safety.
Part 52 Appendices A-E, Sections VIII.5.B.a and VIII.5.B.b	The requirements in the referenced sections of each DC appendix refer to the change process for Tier 2 information. The staff is considering modifying each 10 CFR Part 52 DC appendix to adopt the “prior to implementing a proposed change” provision in 10 CFR 50.59(c)(2) in lieu of the “proposed departure” provision in Section VIII.5.B of each existing DC appendix. The reason for this change is to align the change processes for design information included for plants that are licensed under 10 CFR Part 50 and 10 CFR Part 52.
Part 52 Appendices A-E, Section VIII	Section VIII of each 10 CFR Part 52 DC appendix provides requirements for changes and departures from the information within the scope of the certified design. The staff is considering modifications to Section VIII to include applicability provisions like those found in 10 CFR 50.59(c). The staff is considering the change because the current requirements in this section do not apply to changes to the facility or procedures as compared with the more specific criteria in 10 CFR 50.59(c).
Part 52 Licensing Process: Design Scope and Standardization	
52.1 and 52.47(a)	In 10 CFR 52.1, “Definitions,” the NRC provides definitions applicable to 10 CFR Part 52. In 10 CFR 52.47(a), the NRC specifies that the application must provide an FSAR. The staff is proposing to modify the requirements in these paragraphs for applications received after the date of this rulemaking to add definitions for Tier 1 and Tier 2 (and Tier 2*) consistent with the definitions provided in SECY-19-0034, “Improving Design Certification Content,” dated April 8, 2019. In addition, the staff is proposing to revise 10 CFR 52.47, “Contents of applications; technical information,” to require the applicant’s FSAR to identify Tier 1, Tier 2, and Tier 2* information. The reason for this change is to codify the lesson learned on the appropriate use of Tier 1 and Tier 2*.
52.41(c)(1) and (2)	These paragraphs specify that an application for certification of a nuclear power plant design that is either evolutionary or that differs significantly from light-water reactor designs must provide an essentially complete nuclear power reactor design except for site-specific elements. The staff is considering further clarifying the phrase “essentially complete design.” The staff is considering a change to clarify that the intent of this phrase, consistent with previous Commission policy, is to require design certification applications to include sufficient design information to resolve all technical issues based on a graded approach that prioritizes safety significance.

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52.63(a)(1)(vii)	This paragraph specifies that a change in a design certification may not be imposed unless it contributes to an increase in standardization of the certified information. The staff is considering whether this provision should be modified or eliminated. The staff is considering this change because lessons learned in the evaluation of licensing amendments for facilities referencing the AP1000 certified design showed that this requirement is an increased burden without a corresponding benefit to maintaining reasonable standardization.
52.79(d) and Part 52 Appendices A-E, Section IV	In 10 CFR 52.79(d), the NRC provides requirements for COLs that reference a standard DC. Section IV of each 10 CFR Part 52 DC appendix provides additional requirements and restrictions to COL applicants that reference the specific appendix. The staff is considering revising 10 CFR 52.79(d) to cover how applicants could include or incorporate by reference generic DCD information and delete Section IV. The reason for the change is for clarification and consolidation of references.
52.79(d) and Part 52 Appendices A-E, Section IV.A.2.d	In 10 CFR 52.79(d), the NRC specifies requirements for COLs that reference a standard DC. Section IV.A.2.d of each 10 CFR Part 52 DC appendix provides requirements to COL applicants that reference the specific appendix. The staff is considering revising 10 CFR 52.79(d) to accurately reflect the terms “site parameters” and “site characteristics” as they relate to the information required to be included in a COL application.
Part 52 Appendices A-E, Section IX	This paragraph provides requirements to COL applicants that reference the specific 10 CFR Part 52 appendix regarding ITAAC. The staff is considering modifying the language in all the corresponding DC appendices, except for Appendix E, to delete the requirements and hold the section in reserve. The reason for proposing this change is to be consistent with the language in 10 CFR Part 52, Appendix E, Section VI.B.7, which concluded that these requirements were duplicative of the requirements in other portions of 10 CFR Part 52.
10 CFR Part 52 Licensing Process: Standard Design Approval	
52.133(a), 52.43(b), and 52.145(a)	This paragraph states that an applicant for a CP or COL may reference a standard design approval. The staff is considering clarifying that one or more standard design approvals may be referenced in DCs and CP and COL applications. The reason for considering the change is that these provisions are not explicitly included in the current regulations.
52.147	This paragraph specifies the length of a standard design approval (SDA). The staff is considering revising this paragraph to allow the NRC to rescind the SDA in the event that an associated DCR is issued. The reason for considering this change is to reduce the burden on the applicant and the staff to rescind the SDA once a DCR is issued for the design that was approved by the SDA.

Primary Requirement in the Regulations (10 CFR)	Category/Item Summary
10 CFR Part 52 Licensing Process: Content of Applications	
50.34(h) and 52.47(a)(9)	These paragraphs require an applicant to evaluate its application against the Standard Review Plan revision in effect 6 months before the docket date of the application and to specify how differences between the application and the acceptance criteria included in the Standard Review Plan provide an acceptable method for complying with the regulations. The staff is considering whether this requirement is necessary.
50.100	A provision in this paragraph specifies that COLs are subject to the timely completion of construction requirements in 10 CFR 50.55(b). The staff is proposing to modify the provision in 10 CFR 50.100, "Revocation, suspension, modification of licenses, permits, and approvals for cause," for COLs because the 2007 revision to 10 CFR 50.33(h) removed the requirement for a COL applicant to specify the earliest and latest date for completion of construction. The purpose of the change is to remove the reference to COLs from this provision in 10 CFR 50.100 in conformance with the 2007 revision to 10 CFR 50.33(h).
52.47(a)	The requirements in this paragraph include a provision that the application for a DC include an FSAR that describes the facility. The staff is considering modifying this regulation to allow applicants to submit a DCD. The reason for the change is that all but one DC applicant has submitted a DCD with its DC application.
52.79	The requirements of 10 CFR 52.79(c) and (d) include a provision that the COL applicant demonstrate that the site characteristics fall within the site parameters specified in the certification or approval. The requirements of 10 CFR 52.79(b) include a provision that the COL applicant demonstrate that the design of the facility falls within the site characteristics and design parameters specified in the ESP. The staff is considering modifying the requirements in 10 CFR 52.79, "Contents of applications; technical information in final safety analysis report," to clarify the demonstration that needs to be made for a COL applicant referencing both a DC or standard design approval and an ESP. The reason the staff is considering the change is to align the demonstration requirements.
Environmental Review	
2.101(a)(5)	The requirements of this paragraph provide the applicant an option to submit an application under the requirements of 10 CFR Part 50 or 10 CFR 52 in two parts. The staff is considering modifying the requirements of this paragraph to permit the first part of a phased COL application to consist solely of the environmental report plus the general administrative information specified in 10 CFR 50.33(a) through (e). The reason for this change is because it is not necessary for the applicant to submit seismic and other siting information plus financial and emergency planning information to the NRC to review an environmental report that is performed in the preparation of an environmental impact statement.

Primary Requirement in the Regulations (10 CFR)	Category/Item Summary
51.50(a)	This paragraph requires applicants of a CP to include an environmental report with the application. The staff is considering revising this paragraph to allow environmental reviews for CPs to reference a completed environmental assessment from a certified design. The reason for considering this change is to reduce unnecessary burden.
51.75(c)(1) and conforming changes in 51.92(b) and 51.92(e)	These paragraphs specify what is required to be included in an environmental report at the COL stage with or without referencing an ESP. The staff is considering modifying these requirements to specify under what conditions the NRC shall prepare an environmental assessment in lieu of an environmental impact statement for a COL referencing an ESP. The reason for considering this change is to reduce unnecessary burden.
Applicability of Other Processes to the 10 CFR Part 52 Process	
2.4	This section provides definitions for 10 CFR Part 2, "Agency Rules of Practice and Procedure." The staff is considering amending the definition of a contested proceeding. The reason for the change is that the current definition does not include a hearing related to ITAAC under 10 CFR 52.103, "Operation under a combined license."
50.71(e)(3)(iii)	The requirements of this paragraph specify that applicants for a COL shall periodically update the FSAR originally submitted as part of the application. The staff is considering several changes, including (1) modifying this paragraph to clarify the applicability of these requirements to COL holders that are not actively pursuing construction and for applications that have been submitted to the Commission but the applicant has requested that their review be suspended but not withdrawn, (2) allowing COL applicants that must submit annual FSAR updates flexibility in the timing of their submittals, (3) aligning the reporting frequencies between 10 CFR 50.59 and 10 CFR 50.71(e), and (4) ensuring that any FSAR changes that impact specific ITAAC are docketed no later than the ITAAC closure notification (ICN) for the associated ITAAC (including by submission with the ICN as an acceptable option). The reason for the changes is that this paragraph does not specifically address COL holders or the status of suspended applications.
50.109	Certain provisions in this section address design approvals and manufacturing licenses. The staff is considering revising this section to clarify that issue finality for design approvals and manufacturing licenses is covered solely in 10 CFR 52.145, "Finality of standard design approvals; information requests," and 10 CFR 52.171, "Finality of manufacturing licenses; information requests," respectively. This change would eliminate any confusion regarding the appropriate criteria for imposing new requirements on design approvals and manufacturing licenses.

Primary Requirement in the Regulations (10 CFR)	Category/Item Summary
Part 140	This part provides requirements for financial protection and indemnity agreements as well as insurance. The staff is considering revising the regulations in Subpart B and the associated appendices to 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements," to address challenges faced during COL licensing due to ambiguous language and applicability to greenfield sites and to revise monetary amounts and other provisions in the indemnity agreements that are out of date.
Miscellaneous Lessons Learned Items	
2.106(b)(2)(ii)	The requirements of this paragraph direct the Director of the Office of New Reactors to provide a notice of issuance of the finding regarding ITAAC. The staff is considering revising the language in this paragraph to more accurately reflect the 10 CFR 52.103(g) finding as described in 10 CFR Part 52.
21.3	This section provides definitions of terms used in 10 CFR Part 21. Although the definition of a license in 10 CFR 50.2, "Definitions," clearly covers an ESP, COL, or manufacturing license under 10 CFR Part 52, the staff proposes to add "or Part 52" to the definitions of "Critical characteristics," "Dedicating entity," and "Dedication," in 10 CFR 21.3, "Definitions," to be consistent with the definitions of "Basic component," "Defect," and "Substantial safety hazard" in 10 CFR 21.3. This change would specify that the definitions are applicable "to nuclear power plants licensed pursuant to 10 CFR Part 50" or 10 CFR Part 52 of this chapter.
50.34(f)(2)(iv)	This paragraph requires applicants to have a plant safety parameter display console that will display to operators the minimum set of parameters defining the safety status of the plant. The staff is considering revising this paragraph to require a plant safety parameter module (safety parameter display system (SPDS)). This change will eliminate the need for exemptions given that an integrated SPDS, rather than a standalone console, reflects state-of-the-art control room design practices for new reactors.
50.36(a)(1)	This paragraph specifies requirements for applicants to include technical specifications (TS) and a summary statement of the TS bases in their application. It is not clear what change process licensees should use for changes to the TS bases document before the 10 CFR 52.103(g) finding. A licensee may be using the TS bases control program to effect changes to the TS bases document, but the TS bases control program is not in effect until after the 10 CFR 52.103(g) finding. The staff is considering clarifying whether the licensee should be using the TS bases control program to implement changes to the TS bases prior to the 10 CFR 52.103(g) finding.
50.46(a)(3)	The requirements of this section include a provision that certain applicants or holders of certain licensees or approvals shall estimate the effect of any change to or error in an acceptable evaluation model or in the application of such a model to determine whether the change or error is significant. The staff is considering a change to this provision such that vendors with an approved DC, standard design approval, and a manufacturing license are not required to report errors in emergency core cooling system (ECCS) models until a COL, CP, or OL applicant references use of the applicable ECCS model.

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50.55a	The current requirements in this section include a provision to require American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) repairs to the facility be conducted in accordance with ASME Code, Section III, until the 10 CFR 52.103(g) finding is made. The staff is considering removing the condition from 10 CFR 50.55a, "Codes and standards," which requires maintaining Section III for all systems until the 10 CFR 52.103(g) finding. The reason the staff is considering this change is to permit the transition to ASME Code, Section XI, for repair and replacement activities once all ASME Code, Section III, activities have been completed for each individual system.
52.6(b)	The paragraph provides requirements for completeness and accuracy of information from a 10 CFR Part 52 applicant or licensee. The staff is considering modifying the recipients of this notification that are referenced in this paragraph to include either the Executive Director for Operations or the Office of Nuclear Reactor Regulation Office Director. The reason for the change is that this requirement also applies to DCs and standard design approvals that do not have regional involvement.
52.47(a)(21) and 52.79(a)(20)	The requirements of these paragraphs specify that an applicant shall include in its application the resolution of applicable unresolved safety issues and medium- and high-priority generic safety issues. The staff is proposing to revise both paragraphs to reflect that the NRC has discontinued the use of the priority ranking model for generic issues and has instead implemented a screening process using the risk criteria in Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis" (Management Directive 6.4, "Generic Issues Program," issued 1999).
52.79(a)(4), 52.79(a)(5), and 52.79(a)(23)	The staff is considering revising the application submission requirements of one or more of these paragraphs to account for multimodule small modular reactors to produce a mix of electricity and process steam. The reason for this change is that at least one potential applicant for a COL referencing a small module reactor is contemplating such an arrangement at its facility.
52.97(a)(2)	This paragraph allows for the closeout of ITAAC included in a DC or ESP that are referenced in a COL application. The staff is proposing a minor revision to clarify the wording for ITAAC closeout to be consistent with the language in 10 CFR 52.103(g) that the ITAAC "are met."
52.98(d)	The requirements of this paragraph address the finality of a COL referencing a manufacturing license. The staff is proposing to modify the language to clarify the reference to a manufacturing license and Subpart F. The reason for the change is to clarify the existing requirements.