Financial Qualifications for Reactor Licensing Rulemaking

RIN Number: 3150-AJ43
NRC Docket ID: NRC-2014-0161

Draft Regulatory Basis Document

June 2015

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Abbreviations

10 CFR	Title 10 of the *Code of Federal Regulations*
AEA	Atomic Energy Act
AFCP	Applicant Financial Capacity Plan
ADAMS	Agencywide Documents Access and Management System
COL	Combined license
CP	Construction permit
cROP	Construction reactor oversight process
FQ	Financial qualifications
NEI	Nuclear Energy Institute
NINA	Nuclear Innovation North America, LLC
NRC	U.S. Nuclear Regulatory Commission
NRR	Office of Nuclear Reactor Regulation
NUREG	NRC Technical Report Designation
OMB	Office of Management and Budget
OL	Operating license
PUC	Public Utilities Commission
ROP	Reactor oversight process
RES	Office of Nuclear Regulatory Research
SRM	Staff requirements memorandum
QA	Quality assurance
VIP	Vendor inspection program

1. Executive Summary

On April 24, 2014, the Commission issued the staff requirements memorandum (SRM) for SECY-13-0124, "Staff Requirements —SECY-13-0124—Policy Options for Merchant (Non-Electric Utility) Plant Financial Qualifications" (Ref. 1). The SRM approved the U.S. Nuclear Regulatory Commission (NRC) staff's recommendation to conduct a rulemaking to amend Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities," financial qualifications (FQ) requirements to conform to 10 CFR Part 70, "Domestic Licensing of Special Nuclear Material," standards.[1] The rulemaking would permit the NRC, when issuing a reactor license for applicants with 50 percent or less funding at the time of application under 10 CFR Part 50 or 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants," to include a license condition that would ensure that funding is available before beginning reactor construction rather than at the time of licensing.

The changes to the current regulations envisioned by the NRC would require the applicant to submit a plan for financing the construction and operation of the facility. The plan would have to demonstrate that the applicant has both a well-articulated understanding of the size of the project it is undertaking and the capacity to obtain the necessary financing when the applicant is ready to start construction. In addition, this approach would allow the issuance of a license, with license conditions, for applicants with no identified sources of funding at the time of licensing.

[1] 10 CFR 70.23(a)(5) states, "…that the applicant appears to be financially qualified to engage in the proposed activities in accordance with the regulations in this part."

2. Background

The Commission derives its authority to review license applicants' FQ from Section 182a of the Atomic Energy Act (AEA) of 1954, as amended (Ref. 2). Section 182a of the AEA provides, in part, that "[e]ach application for a license hereunder shall be in writing and shall specifically state such information as the Commission, by rule or regulation, may determine to be necessary to decide such of the technical and financial qualifications of the applicant, the character of the applicant, the citizenship of the applicant, or any other qualifications of the applicant as the Commission may deem appropriate for the license."

Under 10 CFR 50.33(f) (Ref. 3), 10 CFR Part 50 (Ref. 4), and Appendix C to 10 CFR Part 50, "A Guide for the Financial Data and Related Information Required to Establish Financial Qualifications for Construction Permits and Combined Licenses" (Ref. 5), an applicant for an initial license[2] must demonstrate that it possesses or has "reasonable assurance" that it can obtain the funds necessary to construct and operate a nuclear power plant. These requirements also apply to applicants for combined licenses (COLs) for new reactors under 10 CFR Part 52, which refers to the FQ requirements in 10 CFR Part 50.[3] Under 10 CFR 50.33(f) and Appendix C of 10 CFR Part 50, an applicant must identify the sources of its funding in the license application.

To establish their FQ, electric utility[4] (utility) applicants have historically relied on state regulation of utility rates to recover the cost of reactor construction and operation. Widespread deregulation of electricity markets in the past two decades, however, has resulted in a new class of nuclear "non-electric utility" license applicants for facilities known as "merchant plants" that sell the power they generate on the open market at unregulated prices. Unlike utilities, developers of merchant plants must rely on alternative forms of financing such as their own internal resources or third-party project finance investors. A "merchant applicant" is a non-regulated entity (i.e., non-regulated power producer) that engages in the business of production, manufacturing, generating, buying, aggregating, marketing, or brokering electricity for sale at wholesale or for retail sale to the public. A non-regulated power producer is not subject to regulation as a public utility (e.g., regulated electric utility) except as specifically provided in the general laws.

Nuclear Innovation North America, LLC (NINA) and the Nuclear Energy Institute (NEI) raised an issue with the FQ requirements for merchant plants in 2012 via letters (Ref. 6 and 7, respectively). NINA and NEI stated it is difficult, if not impossible, for merchant plant COL applicants to secure project funding to meet FQ requirements in advance of initial license issuance. The failure of an applicant to meet FQ requirements would generally preclude the applicant from obtaining the COL.

In SECY-13-0124, "Policy Options for Merchant (Non-Electric Utility) Plant Financial Qualifications," dated November 22, 2013 (Ref. 8), the NRC staff provided the Commission with

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[2] "Initial license" refers to the first submittal of an application for a nuclear reactor license and does not include the request for a renewal or extension of the term of an existing operating license.

[3] 10 CFR 52.77 requires COL applicants to provide all the information required under 10 CFR 50.33.

[4] "Electric utility" is defined in 10 CFR 50.2, "Definitions," as "any entity that generates or distributes electricity, either directly or indirectly, through rates established by the entity itself or by a separate regulatory authority."

options to address whether an applicant should be issued an initial license if it has insufficient (or no) funding identified at the time of licensing.

In an April 24, 2014, SRM, "Staff Requirements—SECY-13-0124 - Policy Options For Merchant (Non-Electric Utility) Plant Financial Qualifications" (Ref. 1), the Commission approved the NRC staff's recommendation to conduct a rulemaking to amend the nuclear reactor FQ requirements in 10 CFR Part 50 to conform to 10 CFR Part 70 standards for fuel cycle facilities. As directed by the Commission, the proposed rulemaking would require the applicant to submit a plan for financing the construction and operation of the facility. The plan would demonstrate that the applicant has both a well-articulated understanding of the size of the project it is undertaking and the capacity to obtain the necessary financing when the applicant is ready to start construction. The rule would permit the NRC, when issuing a reactor license for applicants with 50 percent or less funding at the time of application, to include a license condition that would ensure funding is available prior to beginning construction, rather than at the time of license issuance.

3. Current Regulatory Framework

3.1 Current Required Financial Qualifications Information

The NRC's regulations governing FQ reviews of applications for licenses to construct or operate nuclear power plants are in 10 CFR 50.33(f). Guidance for construction permit (CP) FQ reviews is provided in Appendix C to 10 CFR Part 50. Financial qualifications review for change of status are governed by 10 CFR 50.76, "Change of Status." Financial qualifications review for transfers of licenses are governed by 10 CFR 50.80, "Transfer of licenses."

Below is a summary of pertinent 10 CFR Part 50 requirements for FQ information:

Section 50.33(f)—Initial License Applications. The requirements of 10 CFR 50.33(f) specify that an applicant submit to the NRC information sufficient to demonstrate the FQ of the applicant to carry out the activities for which the permit or license is sought.

> Construction permit applicants are required to submit information that demonstrates that the applicant possesses or has reasonable assurance of obtaining the funds necessary to cover estimated construction costs and related fuel cycle costs. Appendix C to 10 CFR Part 50 provides more specific directions for evaluating the FQ of CP applicants.
>
> Operating license (OL) applicants are required under 10 CFR 50.33(f)(2) to submit information that demonstrates that they possess or have reasonable assurance of obtaining the funds necessary to cover estimated operating costs for the period of the license. In addition, the applicant shall submit estimates for total annual operating costs for each of the first 5 years of operation of the facility, and indicate the source(s) of funds to cover these costs.
>
> Under 10 CFR Part 52, applicants may apply for a COL authorizing both construction and operation of a reactor. In accordance with 10 CFR 52.77, "Contents of Applications; General Information," all such applications must contain all of the information required under 10 CFR 50.33, "Contents of Applications; General Information," including FQ information required for CP and OL applicants.

Section 50.76—Licensee's Change of Status; Financial Qualifications. Section 50.76 applies to any utility licensee holding a reactor OL (including a renewed license) if the licensee intends to cease being a utility in any manner not involving a license transfer under 10 CFR 50.80. This section requires the utility to provide to the NRC, no later than seventy-five (75) days before its change of status, the same FQ information required for obtaining an initial OL as specified in 10 CFR 50.33(f)(2). This information must address the first full 5 years of operation after the date the licensee ceases to be a utility.

Section 50.80 —LicenseTransfers. Section 50.80 requires NRC review of, and written consent to, direct as well as indirect transfers of OLs, including licenses for nuclear power plants owned or operated by utilities. When the transfer involves a change in the entity listed on the NRC license, the applicant must also apply for a license amendment under 10 CFR 50.90, "Application for Amendment of License, Construction Permit, or Early Site Permit." Section 50.80(b) requires license transfer applicants to include as much of the information with respect to, among other things, the FQ of the proposed holder of the license, as would be required if the application were for an initial license as required in 10 CFR 50.33(f).

3.2 Financial Qualifications Review Process

The NRC performs a financial review of applications for CPs for both utilities and merchant plants, and for OLs for merchant plant applicants. These reviews are described in NUREG-1577, Rev. 1, "Standard Review Plan on Power Reactor Licensee Financial Qualifications and Decommissioning Funding Assurance" (Ref. 9).

3.2.1 Construction Permit Applicants

As provided in 10 CFR 50.33(f)(1) and Appendix C to 10 CFR Part 50, the NRC confirms that the CP applicant has provided at least three types of information: (1) an estimate of construction costs, including not only those for the plant itself, but general and overhead costs, including any transmission and distribution costs ascribable to the plant and the cost of the first core load of nuclear fuel; (2) the source(s) of construction funds, including a financial plan describing internal and external sources of funds; and (3) the applicant's latest published annual financial reports, together with any current interim financial statements that are pertinent, including income, balance sheet, and cash flow statements. The NRC considers utilities with annual recovery of cost of capital on construction work in process to be financially qualified.[5]

In addition, the NRC determines whether an applicant is subject to the requirements of 10 CFR 50.33(f)(4) and Section II of Appendix C (II) to 10 CFR Part 50. These regulations require a newly-formed entity to specifically identify the sources of funds to pay the cost of constructing the facility. With respect to each source, the applicant is required to provide information showing: (1) the legal and financial relationships it has or proposes to have with its stockholders, corporate affiliates, and others (such as financial institutions) upon which it is relying for financial assistance; (2) if the sources of funds relied upon include parent companies or other corporate affiliates, information to support the financial capability of each company or affiliate to meet its commitments to the applicant; (3) any other information considered necessary by the Commission to enable it to determine an applicant's FQ; and (4) the applicant's statements of assets, liabilities, and capital structure as of the date of the application.

[5] *See, e.g.*, NUREG-2153, Volume 1, "Final Safety Evaluation Report Related to the Combined Licenses for Virgil C. Summer Nuclear Station, Units 2 and 3." (Agencywide Documents Access and Management System [ADAMS] Accession No. ML13275A125)

As provided in 10 CFR 50.33(f)(4), additional information is required of newly-formed entities when they are organized for the primary purpose of constructing or operating a nuclear power plant. Therefore, the NRC reviews information that is typically contained in operating or participation agreements and reviews the ability of the plant owners to meet their obligations to the operating company. As explained in Appendix C to 10 CFR Part 50, an entity that has been newly formed to build and operate a nuclear plant will not have a history of operating experience and may be unable to submit financial statements reflecting the financial results of past operations.

Ultimately, the NRC determines the FQ of a CP applicant based on the adequacy of the relevant information provided and the applicant's ability to meet the standards stipulated in the NRC's regulations.

3.2.2 Operating License Applicants

Utilities applying for an OL are exempt under 10 CFR 50.33(f) from FQ reviews. Utilities are generically presumed to be financially qualified for operations. In the 1984 final rule, "Elimination of Review of Financial Qualifications of Electric Utilities in Operating License Review and Hearings for Nuclear Power Plants," the Commission concluded that the "...review of financial qualifications for all electric utilities at the operating license stage is unnecessary due to the ability of such utilities to recover… sufficient costs of safe operation through the rate making process."

In contrast, non-utility merchant plant OL applicants are required under 10 CFR 50.33(f)(2) to submit information that demonstrates that they possess or have reasonable assurance of obtaining the funds necessary to cover estimated operating costs for the period of the license. The NRC confirms that non-utility merchant OL applicants have submitted estimates for total annual operating costs for their facilities' first 5 years of operation, and have identified the source(s) of funds to cover these costs. Information on the sources of funds typically includes: projections of the market price of power in the plant's service area; any long-term power purchase contracts the applicant has for the plant; contracts or other arrangements with transmission system operators or grid reliability authorities that designate the plant as a "must-run" facility; government-required charges designated for nuclear plant operations (e.g., non-bypassable wires charges); corporate revenue from other sources that may be used at the nuclear plant; and any other information relevant to its revenue sources. The NRC evaluates this information for reasonableness and will compare it to plants of similar size, design, and location.

If applicable, the NRC may also consider information from Moody's, Standard & Poor's, and Value Line or other widely-accepted organizations that evaluate credit and financial risk, to inform their review. If a license applicant has an "investment-grade" rating or equivalent from at least two of these sources, or has demonstrated that its proposed production and operations are reasonable in view of the electricity supply and demand environment information as presented in the application, the NRC will find such applicants financially qualified. If an applicant cannot meet these criteria, the NRC will also consider other relevant financial information. This could include information on cash or cash equivalents that would be sufficient to pay fixed operating costs during an outage of at least 6 months, the amount of decommissioning funds collected or guaranteed for the plant in relation to the current estimated decommissioning cost, and any other relevant factors.

An OL applicant that is a newly-formed entity organized for the primary purpose of operating the facility is required to submit the information described in 10 CFR 50.33(f)(4). The NRC will issue FQ findings on such OL applicants based on the information submitted.

4. Statement of the Problem

The current NRC reactor FQ requirements and review process were developed before the electricity markets in the United States were deregulated. While the current rules contemplate applications from non-utility merchant plants, no nuclear power merchant plant applicant has received an initial license as of the writing of this regulatory basis document. All current nuclear power reactor licensees were found to be financially qualified at initial licensing on the basis of their status as rate-regulated utilities. However, merchant plant applicants, unlike utility applicants that can recover costs through the ratemaking process, may not have a predictable source of funds for construction or operation at time of licensing. Without identified sources of funds, merchant plant applicants cannot meet the initial FQ requirements.

5. Alternatives Considered and Approach Selected to Address Problem

5.1 Alternatives Considered

The NRC considered the following alternatives for the FQ review for merchant plant applicants. The first two alternatives were identified in SECY-13-0124.

Alternative 1—Status Quo: No Changes to 10 CFR Part 50 or Appendix C to 10 CFR Part 50 and Current Initial Licensing Process

The status quo option would result in no changes to the FQ demonstration requirements in 10 CFR Parts 50 and 52. As stated in 10 CFR 50.33, "Contents of Applications; General Information," applicants, including merchant plants with no identified funding sources, shall submit information that demonstrates that they possess or have reasonable assurance of obtaining the funds necessary to cover estimated construction costs, operation costs for the period of the license, and related fuel cycle costs.

The primary advantage to this option is that it would allow the NRC to review FQ based on information submitted by the applicant with identified available funding sources and not speculative future financing. However, this option may result in the denial of licenses to applicants that do not currently have the funds necessary to construct and operate a nuclear power plant.

Alternative 2—Conduct Rulemaking

The NRC considered engaging in rulemaking to amend or rescind the 10 CFR Part 50 FQ demonstration requirements. The different rulemaking approaches are discussed below.

> *Alternative 2.1: Rulemaking to Rescind Financial Qualification Requirements for Power Reactor Initial Licensing*
>
> The current regulatory framework distinguishes between utilities and merchant plants. Current regulations impose a greater burden on merchant plants than utilities to

demonstrate FQ. Utilities recover their costs through rate-setting and do not face the same type of financial pressures as merchant plants. Accordingly, the current regulatory framework assumes that utilities do not need a detailed FQ review. However, the NRC is not aware of any evidence to support the notion that utilities, with guaranteed rate recovery, are more likely to spend money on safety measures than are merchant plants.

This rulemaking approach would rescind the FQ requirements for the initial licensing of merchant plant applicants in light of the lack of evidence to support their efficacy, the robustness of other NRC methods for ensuring safety, the potential for unwarranted barriers to licensing, and the questionable usefulness of initial FQ information given that an applicant's financial arrangements may change after license issuance. This approach is consistent with Executive Orders 13563, "Improving Regulation and Regulatory Review," and 13579, "Regulation and Independent Regulatory Agencies," (Refs. 10 and 11, respectively) suggesting that regulations be made more effective and less burdensome while still achieving regulatory objectives.

Alternative 2.2: Rulemaking to Amend Financial Qualification Requirements for Power Reactor Licensing to Apply an Indicator for Ongoing Oversight

Under this approach, the NRC would no longer conduct FQ reviews as a component of an initial licensing decision. Instead, the NRC would monitor the overall financial health of the licensee over the construction and operating life of the plant, taking action as needed. The NRC currently conducts general reviews of all licensees by screening trade papers, industry newsletters, and various public sources for business, finance, and economic news to determine whether to seek additional information from licensees to ensure that they have sufficient financial resources to operate their plants safely. While the NRC does not systematically review licensees' FQ or financial conditions after license issuance, it does monitor licensees throughout the terms of their licenses for indications of financial distress that may affect operational safety. However, removing existing FQ requirements for license issuance, and relying on one or more indicators of financial distress for post-licensing monitoring, would be an untried oversight process. Additionally, implications of this approach on the current operating fleet would have to be resolved.

Alternative 2.3: Rulemaking to Conform Power Reactor Financial Qualification Requirements to 10 CFR Part 70 Standard

The NRC considered amending 10 CFR 50.33(f) FQ requirements by deleting Appendix C and conforming the remaining 10 CFR Part 50 requirements to the 10 CFR Part 70 review standard of "appears to be financially qualified." This amendment would change the licensing standard of FQ review to allow licensing based on the applicant's financial capacity, as further discussed in Section 7. In addition, this approach would allow the issuance of a license, with license conditions, for applicants with no identified sources of funding at the time of licensing. The license conditions would be such that the NRC's review of a licensee's compliance with them could be ministerial[6] in nature to verify that funding had been obtained before beginning reactor construction.

[6] "Ministerial" has been defined by the Commission through case law to mean that "verification efforts should be able to verify compliance without having to make overly complex judgments…". *Private Fuel Storage, LLC*, CLI-00-13, 52 NRC 23, 34 (2000).

Alternative 2.4: Deferring Financial Qualification Demonstrations Until After COL Issuance

This approach would defer the FQ review until after COL issuance, but before beginning reactor construction. The COL holder would need to obtain adequate financing of construction and operating costs in accordance with current regulations. This approach does not appear to be legally viable because a substantive post-licensing review would not be a "ministerial act," and therefore would not preserve hearing rights in accordance with the AEA. In addition, a post-licensing review and corresponding hearing opportunity would be inconsistent with the issue finality required for issuance of a license under 10 CFR Part 52.

Alternative 3—Issue Exemptions

One alternative to conducting a rulemaking would be to issue exemptions under 10 CFR 50.12, "Specific Exemptions," for CP/OL applicants and 10 CFR 52.7, "Specific Exemptions," for COL applicants, to entities that cannot satisfy the existing 10 CFR Part 50 FQ requirements. The NRC issues exemptions on a case-by-case basis to individual entities when special circumstances are present. However, the inability to meet FQ requirements for 10 CFR Part 50 or 10 CFR Part 52 applicants could affect multiple entities that are similarly situated in that none of them would be able to demonstrate at the time of licensing that it possesses or has reasonable assurance of obtaining the funds necessary to cover the estimated costs of constructing and operating a reactor. Because the FQ issue could affect a class of entities, it is a generic issue. Generic issues should not be resolved through exemptions, but through rulemaking.[7] Therefore, exemptions to the FQ requirements, in the absence of rulemaking, are not a viable alternative to rulemaking.[8]

Alternative 4—Use of a License Condition Proposed by Industry

In a letter dated November 13, 2012, NEI requested Commission guidance to clarify the application of FQ requirements for new nuclear plant development by merchant plants. Because the NRC's current regulations require a finding of reasonable assurance of the availability of adequate funds before issuance of a COL, NEI recommended that the Commission issue guidance allowing the use of a license condition to satisfy the NRC FQ requirements and allow issuance of the license.

In summary, the proposed license condition would state that before beginning reactor construction, the licensee shall make available for NRC inspection draft copies of documents demonstrating adequate and available funding to complete construction and commence operations based on an updated estimate of the total project costs. In addition, the financial

[7] See Capitol Airways, Inc. v. Civil Aeronautics Bd., 292 F.2d 755, 758 (D.C. Cir. 1961) (concluding that where an agency issues numerous, permanent or unusually broad exemptions, it crosses the line into rulemaking); *Metropolitan Edison Co.* (Three Mile Island Nuclear Station), Unit 1, CLI-80-16, 11 NRC 674 (1980) (when a case presents no "special circumstances" peculiar to the case, but rather generic questions common to all light water power reactors, the questions are best resolved by rulemaking); *Delta Airlines v. United States*, 490 F. Supp. 907, 912-13 (N.D. Ga. 1980) (indicating that excessive use of exemptions amounts to rulemaking).

[8] In accordance with SRM-13-0124, the NRC anticipates issuing exemptions to applicants that wish to utilize the approach set forth in this document before the completion of the rulemaking.

closing documents would need to identify the legal and financial relationships between the licensee and the entities providing funding, a debt service reserve, and a revolving credit facility.

Under the current regulations, it may be difficult for applicants that have no identified sources of funding to prepare an acceptable license condition with the financial detail required by 10 CFR Part 50, Appendix C . Therefore, the NRC does not believe the industry proposed license condition is a feasible alternative to meet the current regulations.

5.2 Approach Selected—Rulemaking to Conform Power Reactor Financial Qualifications Requirements to 10 CFR Part 70 Standard

Based on the considerations discussed above, the NRC selected the alternative to conduct rulemaking to amend the current Part 50 FQ requirements to conform to the 10 CFR Part 70 review standard, "appears to be financially qualified." This approach is consistent with Commission direction in SRM-SECY-13-0124. The rulemaking would require the applicant to submit a plan for how it will proceed to finance the construction and operation of the facility to ensure that it has both a well-articulated understanding of the size of the project it is undertaking and the financial capacity to obtain the necessary financing before beginning reactor construction.

5.2.1 Scope of the Rulemaking

The scope of the rulemaking is inclusive of all entities that are currently subject to 10 CFR 50.33(f). This includes applicants for COLs, CPs, OLs, and license transfers. Similarly, as further explained in Section 7.2.3, any new applicants for non-power reactors and utilization facilities would be affected. However, entities that already possess a CP, OL, or COL would not be affected by the proposed changes unless they apply for a license transfer.

Specifically, amendments to 10 CFR 50.33(f) would remove the requirement for a power reactor applicant to demonstrate that it possesses or can provide reasonable assurance of obtaining the funds necessary for construction and operation. In addition, the requirements in 10 CFR Part 50, Appendix C, would be deleted.

Under the proposed approach, the NRC would conduct a review to determine if the applicant appears to be financially qualified. Section 7 contains further details regarding this approach.

5.2.2 Regulatory Objective

The regulatory objective of the rulemaking is to remove an unnecessary impediment to licensing while ensuring the protection of the public health and safety. The NRC proposes accomplishing this by amending the standard of 10 CFR Part 50.33(f) from "reasonable assurance of obtaining the funds" for construction and operations to a standard of "appears to be financially qualified."

6. Basis for Proceeding with Rulemaking Alternative to Conform Power Reactor Financial Qualifications Requirements to 10 CFR Part 70 Standard

6.1 No Identified Direct Correlation Between Initial Financial Qualifications Review and Later Safe Operating Performance

SECY-79-299, “Generic Issue of Financial Qualifications: Licensing of Production and Utilization Facilities” (Ref. 12), explains that the NRC has not found a direct correlation between licensees’ pre-licensing financial reviews and later safe construction or operating performance and that, historically, the NRC has declared the correlation to be indirect. During construction of the current operating fleet, multiple entities experienced substantial cost overruns, with the cost of construction vastly exceeding the construction cost estimates that were used to determine their FQ. Due to rising costs, as well as other factors, multiple entities chose to suspend or cancel construction. However, there is no evidence that cost overruns led to safety problems during construction. For operations, one would expect to see regulated utilities, which are not subject to the same type of financial pressures as non-regulated utilities, operating more safely. Our experience to date has demonstrated this is not true. A recent academic paper on "Corporate Incentives and Nuclear Safety" (Ref. 13) confirmed this finding, showing that there is no indication that non-regulated utilities are operating any less safely than those regulated utilities with guaranteed rate recovery.

6.2 Existing NRC Safety Review Processes and Programs

The revised review standard would not compromise public health and safety because the NRC maintains a number of programs and processes that more directly ensure safe plant construction and operation. These include a detailed technical licensing review, the construction reactor oversight process (cROP), the reactor oversight process (ROP), the resident inspector program, the operating experience (OpE) program, the vendor inspection program (VIP), and the quality assurance (QA) inspection program. As further explained below, these direct programs and processes have evolved over the last 40 years, reducing the need to rely on the FQ indirect measure of safety.

6.2.1 NRC Licensing Review Process

In 1989, the NRC adopted a streamlined licensing process that incorporates lessons learned from its two-step licensing process of issuing a CP and later granting an OL, as described in NUREG/BR-0164, “NRC-Independent Regulator of Nuclear Safety” (Ref. 14). The new process, codified in 10 CFR Part 52, allows for a single license, consisting of a combined CP and OL, or COL, to be issued with full public participation. Most importantly, the COL process requires resolution of technical and safety issues before the beginning of reactor construction. Before initial operation, a newly-constructed nuclear plant must complete a series of tests and undergo NRC inspections to ensure consistency with the COL, which contains requirements for inspections, testing, analyses, and acceptance criteria. In part because it authorizes both construction and operation in a single license, the approval of a COL involves a much more detailed approval process than the approval of a CP. Accordingly, it is much easier for an inspector to determine whether the construction is deviating from the approved plan; as compared to the CP process wherein the CP holder has considerably more flexibility in how it constructs the unit, and the ultimate NRC approval comes at the OL stage.

6.2.2 Construction Reactor Oversight Process

The Construction Reactor Oversight Process (cROP) was fully implemented in July 2013. The cROP is a risk-informed tiered approach that helps provide reasonable assurance that the facility has been constructed and will operate in conformance with the license, as described in Inspection Manual Chapter (IMC) 2506, “Construction Reactor Oversight Process General Guidance and Basis Document” (Ref. 15). Resident inspectors oversee day-to-day licensee and contractor activities throughout construction, and other NRC specialists conduct periodic onsite inspections to ensure that the facilities are being constructed in accordance with the approved design. The current cROP provides a more risk-informed robust oversight regime than what was utilized by the NRC during construction of the current operating fleet.

6.2.3 Reactor Oversight Process

The Reactor Oversight Process (ROP) is the agency’s program to inspect, measure, and assess the safety and security performance of operating commercial nuclear power plants, and to respond to any decline in their performance. The program was implemented in 2000, with the goal of providing an objective, risk-informed, understandable, and predictable approach to the oversight of nuclear power plant performance, as described in NUREG-1649, “Reactor Oversight Process” (Ref. 16). Once a new reactor begins operating and throughout its operating life, the ROP verifies that the plant is operating in accordance with the license and NRC regulations. Under the ROP, the NRC expects licensees to effectively address all issues that arise, whether of low or high safety significance. As the number of issues at a plant increases, the frequency of NRC inspections increases. The agency’s supplemental inspections and other actions (if needed) ensure that significant performance issues are addressed promptly. The NRC has found that this is a more effective oversight process than its predecessor programs.

6.2.4 Resident Inspector Program

The NRC launched its Resident Inspector Program in 1978 to increase the agency's knowledge of conditions at plants, improve the NRC's ability to independently verify the performance of plant personnel and equipment, and enhance the NRC's incident response capability. Further information on this program can be found in the “Backgrounder on NRC Resident Inspectors Program” (Ref. 17). Accordingly, the inspectors serve as the agency's initial evaluators of plant events or incidents and as the first point of contact for plant employees’ allegations of safety violations.

On a daily basis, the resident inspectors scrutinize activities at the plants and check on adherence to Federal safety requirements. That oversight can include, among other things: visiting the control room and reviewing operator logbook entries; watching operators conduct plant manipulations; performing visual assessments of conditions in one or more areas of the plant; observing tests of or repairs to important systems or components; asking plant employees whether they have any safety concerns; and checking corrective action documents to ensure that problems have been identified and appropriate fixes have been implemented. Resident inspectors also bring identified safety-significant issues promptly to the attention of plant management and communicate them, if necessary, to NRC management. The NRC will consider whether enforcement action is warranted based on the significance of the issue.

6.2.5 Reactor Operating Experience Program

The NRC's Operating Experience Program serves to collect, evaluate, communicate, and apply operating experience information in a systematic, timely, and coordinated manner to support the NRC's goal of ensuring safety. The program is delineated in Management Directive 8.7, "Reactor Operating Experience Program: (Ref. 18)." The program reviews information from a variety of sources related to domestic and international reactor operating experience and evaluates its relevance for the safe operation of U.S. reactor plants. Operating experience program evaluations provide insights to improve NRC safety assessments and inform decisions on how best to improve licensing, inspection, and other regulatory programs. In addition, the coordinated use of information collected under this program facilitates providing accurate, timely, and balanced information to the public and other interested parties on actual or potential hazards to health and safety.

6.2.6 Vendor Inspection Program

The NRC's Vendor Inspection Program (VIP) was relocated to NRC headquarters offices from Region IV in 1984 and verifies that reactor applicants and licensees are fulfilling their regulatory obligations to provide effective oversight of the supply chain, as described in the "Vendor Inspection Program Plan," Rev.11 (Ref. 19). To accomplish this, the program performs a number of activities, including: targeting inspections of safety-related activities performed under a vendors' quality assurance programs; identifying and selecting vendors to sample the effectiveness of their domestic and international supply chains, both for the current fleet and new reactor construction; and ensuring that vendor inspectors obtain the knowledge and skills necessary to perform effective inspections.

The VIP Plan establishes an overall approach, including goals, priorities, performance metrics, and resource management strategies for VIP activities. Key parts of the plan include: (1) the objectives of the VIP, including overarching goals linked to the NRC's statutory mission of protecting public health and safety and common defense and security; (2) the organization, staffing, training, and qualification of the vendor inspection staff; (3) the needed infrastructure, including inspection and regulatory guidance and tools such as information systems for quality assurance, inspection planning and scheduling, and self-assessment tracking; and (4) communication and coordination activities with internal and external stakeholders.

6.2.7 Quality Assurance Inspection Program

As a result of quality-related problems in the construction of some nuclear power plants, in late 1969, the Atomic Energy Commission issued a directive to the regional compliance offices to implement the "General Facility Under Construction Inspection Program." In 1972, a procedure entitled "QA During Design and Construction," was issued. In 1973, and following a major revision in 1975, detailed inspection procedures were issued covering pre-docketing and pre-construction permit inspections. However, major changes have recently been made to refine and prioritize the inspection procedures, to increase inspection coverage with resident inspectors and team inspections, and to direct more inspection effort to independently confirm the quality of hardware and completed work.

Under the current NRC QA Inspection Program, the NRC performs inspections specifically to determine whether licensees and their contractors are meeting the agency's QA requirements, as described on NUREG/BR-0164, "NRC-Independent Regulator of Nuclear Safety" (Ref. 14). These inspections ensure that licensee and contractor QA plans, instructions, and procedures

for specific safety-related activities conform to the licensee's QA program and are implemented as prescribed in its QA program description. The NRC has established QA inspection procedures specifically for new reactor applications, and conducts inspections for early site permit and COL applications. The agency also conducts QA audits for pre-design certification and pre-COL reviews. Written reports documenting the scope, observations, and findings of the NRC's inspections and audits are available to the public.

6.3 Applicants' Financial Arrangements

Historically, the NRC review of FQ was solely a review to determine if the applicant had enough capital to construct and operate the plant safely. It did not determine if the project was financially viable or if the project was likely to be completed. Indeed, many licensees did cease construction for financial reasons.

The current requirements under Appendix C of 10 CFR Part 50 call for the applicant to describe in detail the legal and financial relationships with its stakeholders, corporate affiliates, or others (such as financial institutions) upon which the applicant is relying for financial assistance. Moreover, Appendix C calls for information to support the financial capability of each such entity to meet its commitment to the applicant.

After closely examining this issue, the NRC has determined that the details of these arrangements go well beyond the NRC's mandate of ensuring safety. The NRC fully expects that applicants and financiers will perform extensive due diligence on the project and the corresponding financial arrangements. Indeed, financiers' views on the financial risk of the project will influence the terms of financing (e.g., interest rates, equity commitment). These are not the concerns of the NRC, because NRC's role is solely to ensure the plant is constructed to operate safely.

6.4 Conclusion

As presented above, the NRC has not found a direct correlation between licensees' pre-licensing financial reviews and later safe construction and operating performance. Moreover, through its licensing process and oversight programs described above, the NRC directly assures that new reactor construction and operations are conducted safely and in accordance with the license and NRC regulations. Accordingly, as further discussed in Section 7 below, the NRC believes that the proposed rulemaking to allow for licensing based on a judgment of financial capacity will provide the NRC assurance that finances will not have an adverse impact on safety.

7. Proposed Financial Qualifications Requirements

This section describes the considerations for applicants to meet the proposed FQ review standard, proposed changes to current review guidance and processes, and other factors on which the NRC is requesting public comment.

7.1 New Review Standard - Appears to be Financially Qualified and the Demonstration of Financial Capacity

The revised FQ review standard will reflect the financial capacity of the applicant to obtain the necessary funding for the project. Financial capacity will be reflected in an Applicant Financial

Capacity Plan (AFCP) along with the construction cost estimate at the time of application. The AFCP and cost estimate should provide the NRC with adequate information to conclude that the applicant appears to be financially qualified. An applicant's financial capacity is not a predictive finding of the likelihood of an applicant ultimately obtaining financing. Rather, it reflects the applicant's level of understanding of the size and scope of the project, including the level of capital necessary to undertake the project, and it reflects the organizational and human resources, experience, skills, and expertise required to obtain proper financing and ultimately finance the project, when appropriate.

In order for the NRC to find that an applicant appears to be financially qualified, the applicant must satisfactorily demonstrate its financial capacity by providing the following:

- Construction cost estimate – The NRC will require a cost estimate to ensure that the applicant understands the size and scope of the project. The cost estimate should be detailed enough to provide the NRC a good understanding of the costs and cost assumptions associated with construction.

- Applicant Financial Capacity Plan – The NRC will require a high-level summary discussion with information detailed enough to conclude that the applicant has both an understanding of the project requirements and the financial capacity to obtain financing. The plan should include:

    - A description of the management team, including personnel on the team and any consultants. The description should reflect the team's experience and expertise in the areas of finance, capital sourcing, and large build projects. Detailed discussion should address:

        - The applicant's relationship, or those of its consultants, with potential sources of project funding; and
        - Past experiences with financing the construction and operation of large energy or other infrastructure projects.

    - A description of the anticipated funding methods and sources, and a discussion of past successes, if applicable, with such financing used in past energy or other large build projects. These methods may include, but are not limited to:

        - rate recovery arrangement;
        - commitments on the part of project finance funding sources, as well as any commitments from Federal and State government agencies, and documentation of such commitments, if applicable;
        - power sales contracts, power purchase arrangements, and other planned sales of electricity;
        - other guarantees; and/or
        - license conditions.

The NRC staff views the applicant's management team and past experiences with infrastructure projects as a key component for demonstrating financial capacity. Such information demonstrates an understanding of the complexities of this type of project, the challenges in raising capital, and the need for ensuring financing before beginning reactor construction.

The NRC staff views methods of funding as a component of establishing financial capacity. The NRC staff will further discuss below how different classes of applicants can show their method of funding in order to establish their financial capacity.

7.2 Classes of Applicants

The revised requirements will affect the following classes of applicants:

7.2.1 Merchant Applicants

The NRC understands that most merchant plant applicants will not have any committed sources of funding at the time of application and that they intend to establish financing for their projects after obtaining the license. Merchant applicants in many cases will likely pursue funding through the project finance model[9] to establish all funding for the project at one time using multiple sources of capital. The project finance approach is often used to underwrite long-term financing of infrastructure and industrial projects based upon the projected cash flow of the project rather than on the balance sheets of its sponsors. This approach usually involves a number of equity investors, known as "sponsors," as well as a "syndicate" of banks or other lending institutions that provide loans to the project. Loans made to fund the project are generally secured by the project assets, rather than from the general assets or creditworthiness of the project sponsors, and are paid entirely from the project's cash flow.

However, the NRC staff recognizes the possibility that an applicant, particularly one with an aggressive construction schedule, may present an application that contains committed sources of funding. The NRC staff thinks it is unlikely that an applicant will have partial funding at the time of application, but recognizes that this is theoretically possible. Accordingly, the NRC staff has decided to distinguish between applicants that have more than 50 percent of their financing versus those with 50 percent or less financing at the time of application.

7.2.1.1 Financial Qualifications Review of Construction for Merchant Applicants with 50 Percent or Less Financing at the Time of Application

For those applicants with 50 percent or less committed funding sources at the time of application, the NRC expects that the applicant will provide:

- a construction cost estimate and
- an AFCP with proposed license condition(s)

The cost estimate and AFCP are intended to demonstrate an applicant's financial capacity as described in Section 7.1. The NRC expects that the applicant will propose license conditions that will ensure that funding is available before beginning reactor construction.[10] The NRC will use these license conditions in order to find that the applicant has financial capacity when funding is not otherwise committed.

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[9] See discussion of project finance, "Transcript of Public Meeting on Financial Qualifications for Merchant Plant Combined License Applicants," dated January 8, 2013, beginning with Mr. Kenneth Hansen's discussion on page 17 of the transcript (ADAMS Accession No. ML13022A446).

[10] The use of license conditions is not mandated by the regulations. Therefore, it is possible that an applicant could propose an alternative approach. The NRC will consider such approaches on a case-by-case basis.

An example of such license condition, which would need to be met by the licensee before beginning reactor construction, is:

- The licensee[11] will notify the NRC at least 60 days prior to its anticipated date of construction that the license condition has been fulfilled and that the following are available for inspection:
    - An updated cost estimate;
    - Documentation justifying any variances from the original cost estimate provided in the application; and
    - Documentation demonstrating that the licensee has secured financing to meet the updated cost estimate for the project. This documentation should include closing documents or documented proof of parent and affiliate assurances, or capital from other sources that reflect financing for the project.

An updated cost estimate is the basis for determining that the licensee has the funds necessary to begin reactor construction. The documentation demonstrating that the licensee has secured financing ensures the availability of funds to begin reactor construction.

As discussed in Section 6.3, the NRC staff does not believe that it needs a more detailed financial review in order to fulfill its public health and safety mission. Accordingly, the NRC will not review levels of equity, evaluate the creditworthiness of investors, or perform other detailed financial analyses as currently required by Appendix C of 10 CFR Part 50. The purpose in meeting this license condition is to confirm the licensee's financial capacity. For an applicant with 50 percent or less funding at the time of application, this condition will ensure that adequate funds are available before beginning reactor construction.

7.2.1.2 Financial Qualifications Review of Construction for Merchant Applicants with More Than 50 Percent Financing

For those applicants with more than 50 percent committed funding sources at the time of application, the NRC expects that the applicant will provide:

- a construction cost estimate and
- an AFCP with documentation demonstrating commitments of financing equal to more than 50 percent of the construction cost estimate.

The cost estimate and AFCP are intended to demonstrate an applicant's financial capacity as described in Section 7.1. The NRC staff view is that an applicant with commitments for at least 50 percent of its construction funding has made a sufficient demonstration of financial capacity. In fact, having such commitments is a stronger showing of financial capacity than the license condition outlined in Section 7.2.1.1. Accordingly, where the applicant has identified such commitments, a license condition requiring documentation for the remaining portion of the construction funding is not necessary. This is because the purpose of the NRC staff's review is

[11] Throughout this document the NRC uses the term "licensee" to refer to an applicant that has obtained its license. As used in this document the term "licensee" should also be understood to include holders of CPs.

not to ensure that the project is completed; rather it is to ensure that an applicant has the financial capacity to obtain financing when the project moves forward.

7.2.1.3 Financial Qualifications Review of Operations for Merchant Applicants

The NRC expects that the information to be submitted for operations would be similar to what is currently required in 10 CFR 50.33(f)(2). The NRC staff's review of 5-year projected costs of operations along with projected sources of funding for those 5 years is a well-established financial review approach, and the NRC is not aware of any concerns with the use of this standard. Therefore, for operations, the NRC expects that the applicant will provide:

- an estimate of total annual operating cost for each of the first 5 years of operations; and
- documentation of sources of funds to cover each of the first 5 years of operations. Such sources could come from, but are not limited to, power purchase agreements, parent assurances, and/or projected revenue from the anticipated sale of power.

The documentation reflecting available funds to cover operating and maintenance expenses ensures that the licensee can operate and maintain the plant after completion of construction.

If an applicant does not have finalized sources of funds for operations, the applicant could propose a license condition for operations. The applicant will submit an estimate for total annual operating cost for each of the first 5 years of operations along with a license condition. An example of such license condition is:

- The licensee will notify the NRC at least 60 days prior to initial loading of fuel that the license condition has been fulfilled and that the following are available for inspection:
    - An updated cost estimate for each of the first 5 years of operations;
    - Documentation justifying any variance from the original cost estimate provided in the application; and
    - Documentation of sources of funds to cover each of the first 5 years of operations. Such sources could come from, but are not limited to, power purchase agreements, parent assurances, and/or projected revenue from the anticipated sale of power.

If the applicant does not have finalized sources of funding for operations at the time of application, this condition will ensure that adequate funds are available prior to initial fuel loading.

7.2.2 Utilities

Utilities need only provide FQ for construction because utilities are qualified for operations based on the availability of rate recovery.

The NRC considers a utility that has rate recovery for construction to be financially qualified. In this circumstance, the only submittal that the NRC expects is the demonstration of the availability of rate recovery for construction. To the extent the utility does not have rate recovery

for construction, the NRC will treat the applicant in the same manner that it treats merchant applicants and will expect the utility to submit the information discussed in Section 7.2.1.

7.2.3 Non-power Production and Utilization Facilities

Non-power production and utilization facilities include all existing non-power reactors licensed under 10 CFR 50.21(a) and (c) and proposed production and utilization facilities licensed under 10 CFR 50.22 for the production of medical radioisotopes, such as molybdenum-99.

So far, no one has raised a concern with the NRC regarding the FQ requirements for non-power production and utilization facilities. It does not appear that applicants for this type of facility have had the same difficulty meeting current requirements for initial licensing that current merchant plant applicants are experiencing. Historically, applicants for non-power production and utilization facilities have had immediate construction plans and funding to complete their construction and operation. Moreover, the funding required to construct and operate non-power production and utilization facilities is at least an order of magnitude less than power reactors.

Some of the considerations discussed in Section 6 do not apply to non-power production and utilization facilities (e.g., resident inspector program). Moreover, there is precedent for requiring more extensive FQ review for this class of applicants. In 2004, while eliminating FQ requirements for license renewal of power reactors, the NRC made a decision to continue to apply FQ requirements for license renewal of non-power reactors while it was eliminating FQ for license renewal of power reactors.

Because it appears that the current requirements are working for this class of applicants, the NRC expects that this class of applicants will show they are financially qualified by demonstrating their availability of funds at the time of licensing. The NRC anticipates that some of the current requirements of Appendix C of 10 CFR Part 50 will be placed in guidance for this class of applicants.

7.2.4 License Transfers

The NRC staff's review of license transfer applications is conducted pursuant to 10 CFR 50.80. Currently, 10 CFR 50.80(b)(1) requires an applicant to submit the same FQ information as would be required if the application was for an initial license. Information needed to demonstrate FQ varies depending on whether the license transfer is for a CP, OL, or COL. The NRC does not propose to change 10 CFR 50.80.

A transfer of a license for a facility that is either under construction or where construction has not yet begun would be reviewed as discussed in Section 7.2.1 and 7.2.2, depending on whether the applicant is a merchant or a utility. The NRC anticipates that license conditions will be utilized as appropriate for facilities that have not yet begun construction. If an applicant proposes to transfer a CP for a facility that has already commenced construction, the NRC staff will evaluate the applicant's financial capacity on a case-by-case basis. The NRC staff will determine whether or not the use of license conditions is appropriate depending on the specific circumstances of the applicant.

A transfer of a license to a merchant applicant for a facility where construction has been completed but where operations have not yet begun would be reviewed as discussed in

Section 7.2.1.3. The NRC will consider the use of license conditions for a facility that has not completed fuel load.[12] The transfer of a license for a facility to a utility applicant where construction has been completed but where operations have not yet begun does not require an FQ review.

A transfer of a license to a merchant applicant for a facility that is operating would be reviewed as discussed in Section 7.2.1.3. The NRC does not anticipate that there will be a significant change from its current practice regarding its review of a license transfer application for operating facilities. Currently, an applicant for a license transfer must demonstrate reasonable assurance of obtaining the funds necessary to cover estimated operating costs. This demonstration is typically achieved by providing the source of funds necessary to cover the cost of 5 years of operations. Similarly, the NRC expects that an applicant will provide the source of funds for 5 years of operations under the new proposed requirement. This is consistent with how reviews are conducted for facilities licensed under 10 CFR Part 70. The review of a license transfer application during operation will be completed in the same way license transfer reviews are currently performed. The NRC does not currently anticipate using license conditions because it does not envision a circumstance where these conditions would be needed. The transfer of a license for a facility that is currently operating to a utility applicant does not require an FQ review.

7.2.5 Change of Status

The NRC staff's review of a change of status application is conducted pursuant to 10 CFR 50.76. A change of status is when a licensee ceases to be an electric utility. The NRC does not anticipate that there will be a significant change in its review of change of status applications. The standard for change of status applicants is shifting from a finding of "reasonable assurance" to a finding of "appears to be financially qualified," and the review will follow a similar approach explained in Section 7.2.4 for OL transfer.

7.3 Summary

The NRC staff believes that this new review standard, as discussed in Section 7.1, will remove an unnecessary impediment to licensing and provides a new process for efficient FQ reviews for the various classes of applicants described in Section 7.2. The NRC staff also believes that this new review standard will maintain the public health and safety and will meet the Commission's direction as described in the SRM for SECY-13-0124.

8. Stakeholder Involvement

During the development of SECY-13-0124, the NRC conducted public outreach to inform the development of the options presented to the Commission. The NRC held public meetings on October 11, 2012 (Ref. 20) and January 8, 2013 (Ref. 21), to seek industry and public feedback regarding the FQ requirements of 10 CFR 50.33(f) as applied to merchant plant applicants. The second meeting focused on the proposed alternative of using license conditions to meet the current requirements.

[12] An example of when a license condition might be appropriate would be if the applicant for the license transfer did not have a schedule for loading fuel.

The NRC plans to conduct early interactions with the public by formally requesting comments on this draft regulatory basis and the draft rule language found in Enclosure 1. The NRC conducted a public meeting on April 29, 2015 to discuss Section 7 of this document (Ref. 22). Stakeholders and members of the public did not raise major concerns with the proposed financial qualifications requirements. No formal comments were solicited during this meeting.

In addition, another public meeting will be held to further discuss the draft regulatory basis. The NRC will consider the comments in its development of the final regulatory basis.

9. Additional Analyses

9.1 Backfitting and Issue Finality

Guided by the Commission's direction in its staff requirements memorandum for SECY-13-0124, the NRC intends to develop a proposed rule that would amend 10 CFR Part 50 FQ requirements to conform to 10 CFR Part 70 standards of "appears to be financially qualified." The rulemaking would permit the NRC, when issuing a reactor license for applicants with 50 percent or less funding at the time of application under 10 CFR Part 50 or 10 CFR Part 52, to include a license condition that would require funding to be available before beginning reactor construction rather than at the time of licensing.

The changes to the regulations under consideration by the NRC would not meet the definition of "backfitting" as that term is defined in 10 CFR Part 50.109, "Backfitting," nor would it be inconsistent with the issue finality provisions of 10 CFR Part 52.[13] "Backfitting" is defined in 10 CFR 50.109(a)(1) as:

> the modification of or addition to systems, structures, components, or design of a facility … or the procedures or organization required to design, construct or operate a facility; any of which may result from a new or amended provision in the Commission's regulations or the imposition of a regulatory staff position interpreting the Commission's regulations that is either new or different from a previously applicable staff position.

The changes under consideration would be changes to the NRC's regulatory review process for reviewing license applications. This process is not a system, structure, component, or design of a facility, nor is it a procedure or organization required to design, construct, or operate a facility. Therefore, the NRC's proposed changes to the 10 CFR Part 50 FQ demonstration requirements would not constitute backfitting under the Backfit Rule.

Even if the Backfit Rule could somehow be read to apply to the NRC's license application procedures, the changes described in this regulatory basis would still not constitute backfitting. The Backfit Rule is intended to ensure that once the NRC issues a license, the NRC does not arbitrarily change *post hoc* the terms and conditions for operating under the license or in the regulations that applied when the license was issued.[14] Accordingly, an applicant for a license has no backfitting protection *per se* stemming from the Backfit Rule until the license has been

[13] Hereinafter, references to the Backfit Rule include references to the issue finality provisions of 10 CFR Part 52.

[14] "Early Site Permits; Standard Design Certifications; and Combined Licenses for Nuclear Power Reactors; Final Rule," *Federal Register*, Vol. 54, No. 73, April 18, 1989, pp. 15385-15386.

issued.[15] Therefore, a rule changing requirements for a license application would not provide any basis for the Backfit Rule to apply.

9.2 Regulatory Flexibility Analysis

The Regulatory Flexibility Act (Ref. 23), enacted in September 1980, requires agencies to consider the impact of their regulatory proposals on small entities, analyze alternatives that minimize small entity impacts, and make their analyses available for public comment.

None of the licensees and CP holders fall within the definition of "small entities" set forth in the size standards established by the NRC in 10 CFR 2.810 (Ref. 24). Therefore, this rulemaking would not have a significant economic impact on a substantial number of small entities.

9.3 Compliance with NEPA

The proposed rule is an amendment to Part 50 that is categorically excluded consistent with 10 CFR 51.22(c)(3)(i) as it relates to procedures for filing and reviewing applications for licenses or CPs. Therefore no further environmental review is necessary.

9.4 Safety Goal Evaluation

Safety goal evaluations are applicable to regulatory initiatives considered to be generic safety enhancement backfits subject to the substantial additional protection standard in 10 CFR 50.109(a)(3). This regulatory basis describes potential regulatory changes that would not qualify as generic safety enhancement backfits because the changes under consideration would be changes to the NRC's regulatory review process for reviewing license applications. Therefore, no safety goal evaluation is needed.

9.5 Peer Review of Regulatory Basis

The Office of Management and Budget's (OMB) Final Information Quality Bulletin for Peer Review (Ref. 25) requires each Federal agency to subject "influential scientific information" to peer review prior to dissemination. The OMB defines "influential scientific information" as "scientific information the agency reasonably can determine will have or does have a clear and substantial impact on important public policies or private sector decisions." The regulatory basis document does not contain "influential scientific information." Therefore, there is no need for a peer review of the regulatory basis.

9.6 Regulatory Analysis

Enclosure 4 of this document includes a draft regulatory analysis for a proposed rulemaking. This draft analysis does not make a recommendation with respect to cost-beneficial alternatives.

[15] The exception to this principle is a COL applicant that references an already-issued design certification or early site permit, but this exception is not applicable to the financial qualifications requirements.

10. Conclusion

The NRC finds that there is a sufficient regulatory basis to proceed with rulemaking to amend the current reactor FQ requirements to 10 CFR Part 70 standards. The current FQ requirements would generally preclude a class of applicants, merchant plants, from obtaining a license without securing project funding in advance of initial license issuance. The NRC expects that this new review standard will remove an unnecessary impediment to licensing and provide a new process for efficient FQ reviews for the various classes of applicants described in Section 7.2. In addition, this new review standard will maintain the public health and safety and meets Commission direction as described in SRM-SECY-13-0124.

11. References

1. U.S. Nuclear Regulatory Commission, Staff Requirements SECY-13-0124 - Policy Options for Merchant (Non-Electric Utility) Plant Financial Qualifications, Commission Paper SRM-SECY-13-0124, April 24, 2014, ADAMS Accession No. ML14114A358.

2. Atomic Energy Act (AEA) of 1954, Amended, § 182a, 42 U.S.C. § 2011 et seq. (1954).

3. *U.S. Code of Federal Regulations*, "Domestic Licensing of Production and Utilization Facilities," Part 50, Chapter I, Title, 10, "Energy," § 50.33, "Contents of applications; general information."

4. *U.S. Code of Federal Regulations*, "Domestic Licensing of Production and Utilization Facilities," Part 50, Chapter I, Title, 10, "Energy."

5. *U.S. Code of Federal Regulations*, "Licenses, Certifications, and Approvals for Nuclear Power Plants," Part 52, Chapter I, Title, 10, "Energy," Appendix C, "A Guide for the Financial Data and Related Information Required to Establish Financial Qualifications for Construction Permits and Combined Licenses."

6. McBurnett, Mark A., Nuclear Innovation North America, LLC (NINA), letter to R. William Borchardt, U. S. Nuclear Regulatory Commission, May 31, 2012, ADAMS Accession No. ML12158A229.

7. Ginsberg, Ellen C., Nuclear Energy Institute (NEI), letter to Chairman Allison M. McFarlane, U. S. Nuclear Regulatory Commission, November 13, 2012, ADAMS Accession No. ML12334A187.

8. U.S. Nuclear Regulatory Commission, *Policy Options for Merchant (Non-Electric Utility) Plant Financial Qualifications*, Commission Paper SECY-13-0124, November 22, 2013, ADAMS Accession No. ML13093A158.

9. U.S. Nuclear Regulatory Commission, "Standard Review Plan on Power Reactor Licensee Financial Qualifications and Decommissioning Funding Assurance," NUREG-1577, Rev. 1, December 13, 2001, ADAMS Accession No. ML013330264.

10. Executive Order 13563, "Improving Regulation and Regulatory Review," *Federal Register,* Vol. 76, No. 14, January 18, 2011, pp. 3821-3823.

11. Executive Order 13579, "Regulation and Independent Regulatory Agencies," *Federal Register,* Vol. 76, No. 135, July 11, 2011, pp. 41587-41588.

12. U.S. Nuclear Regulatory Commission, *Generic Issue of Financial Qualifications: Licensing of Production and Utilization Facilities*, Commission Paper SECY-79-299, April 27, 1979, ADAMS Accession No. ML12236A723.

13. Hausman, Catherine. 2014. "Corporate Incentives and Nuclear Safety," *American Economic Journal: Economic Policy*, 6(3): 178-206.

14. U.S. Nuclear Regulatory Commission, "NRC – Independent Regulator of Nuclear Safety," NUREG/BR-0164, Rev. 9, June 2012, ADAMS Accession No. ML12335A261.

15. U.S. Nuclear Regulatory Commission, “Construction Reactor Oversight Process General Guidance and Basis Document,” Inspection Manual Chapter (IMC) 2506, March 16, 2015, ADAMS Accession No. ML15055A477.

16. U.S. Nuclear Regulatory Commission, “Reactor Oversight Process,” NUREG-1649, Revisions 5, February 2014.

17. U.S. Nuclear Regulatory Commission, “Backgrounder on NRC Resident Inspectors Program,” March 2014. (http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/resident-inspectors-bg.pdf)

18. U.S. Nuclear Regulatory Commission, Management Directive 8.7, “Reactor Operating Experience Program,” September 27, 2012, ADAMS Accession No. ML122750292.

19. U.S. Nuclear Regulatory Commission, “Vendor Inspection Program Plan,” Rev. 11, March 2015, ADAMS Accession No. ML15084A432.

20. U.S. Nuclear Regulatory Commission, “Meeting to Discuss Financial Qualifications For Merchant Plant Combined License Applicants,” Public Meeting Transcript, October 11, 2012, ADAMS Accession No. ML12291A816.

21. U.S. Nuclear Regulatory Commission, “Meeting to Discuss Financial Qualifications For Merchant Plant Combined License Applicants,” Public Meeting Transcript, January 8, 2013, ADAMS Accession No. ML13022A446.

22. U.S. Nuclear Regulatory Commission, “Meeting to Discuss the Proposed Financial Qualifications Requirements Included in the Draft Regulatory Basis for the Rulemaking on Financial Qualifications for Reactor Licensing,” Public Meeting Summary, May 6, 2015, ADAMS Accession No. ML ML15126A402.

23. Regulatory Flexibility Act, Pub. L. No. 96-354, 94 Stat. 1164 (codified at 5 U.S.C. § 601).

24. *U.S. Code of Federal Regulations*, “Agency Rules of Practice and Procedure,” Part 2, Chapter I, Title, 10, “Energy,” § 2.810, “NRC size standards.”

25. Office of Management and Budget, “Final Information Quality Bulletin for Peer Review,” *Federal Register*, Vol. 70, No. 10, January 14, 2005, pp. 2664-2677.

Enclosure 1—Draft Rule Language

The NRC is making this draft rule language available to the public to solicit public comments and provide preparatory material for an upcoming public meeting. The release of the draft rule language will facilitate discussions at the public meeting. This language does not represent a final NRC staff position, nor has it been reviewed by the Commission. Therefore, the draft rule language may undergo significant revision during the rulemaking process. Italicized text represents proposed revisions to existing regulatory language.

§ 50.33 Contents of applications; general information.

Each application *must include the following information*:

(a) Name of applicant;

(b) Address of applicant;

(c) Description of business or occupation of applicant;

(d)(1) If applicant is an individual, state *individual's* citizenship.

(2) If applicant is a partnership, state *the* name, citizenship*,* and address of each partner and the principal location where the partnership does business.

(3) If applicant is a corporation or an unincorporated association, *include the following information*:

(i) The state where *applicant* is incorporated or organized and the principal location where *applicant* does business;

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

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

(4) If the applicant is acting as agent or representative of another person in filing the application, identify the principal and furnish information required under this paragraph with respect to such principal.

(e) The class of license applied for, the use to which the facility will be put, the period of time for which the license is sought, and a list of other licenses, except operator's licenses, issued or applied for in connection with the proposed facility.

(f) *Information* sufficient to demonstrate to the Commission *that* the applicant *appears to be financially qualified* to carry out, in accordance with regulations in this chapter, the activities for which the permit or license is sought. As applicable, the following should be provided:

(1) An *electric utility's application* for a construction permit *or combined license must include the following:*

(i) Estimates of the total construction costs of the facility and related fuel cycle costs, and

(ii) An Applicant Financial Capacity Plan that will inform the NRC's review of whether the applicant appears to be financially qualified to engage in the proposed activities in accordance with the regulations in this part.

(2) *All other applications must include the following:*

(i) For a construction permit:

(A) Estimates of the total construction costs of the facility and related fuel cycle costs,

(B) An Applicant Financial Capacity Plan that will inform the NRC's review of whether the applicant appears to be financially qualified to engage in the proposed activities in accordance with the regulations in this part, and

(ii) For an operating license:

(A) Estimates for the total annual operating costs for each of the first *5* years of operation of the facility*, and*

(B) A plan for how the applicant *intends to cover the estimated operating costs, including documentation of sources* of funds to cover *each of the first 5 years of operation.*

(iii) An applicant for a combined license must submit the information in (i) and (ii).

(3) An applicant seeking to renew or extend the term of an operating license for a power reactor *is* not *required to* submit the *same* financial information that is *necessary* in an application for an initial license. *However, applicants* to renew or extend the term of an operating license for a nonpower reactor *must* include the financial information that is required in an application for an initial license.

(4) The Commission may request an *applicant or licensee to submit* information *regarding the applicant or* licensee's ability to conduct the activities authorized by the license or to decommission the facility.

Redline/Strikeout Version Showing Differences Between the Current Rule and the Draft Rule Language

The NRC is making this draft rule language available to the public to solicit public comments and provide preparatory material for an upcoming public meeting. The release of the draft rule language will facilitate discussions at the public meeting. This language does not represent a final NRC staff position, nor has it been reviewed by the Commission. Therefore, the draft rule language may undergo significant revision during the rulemaking process.

§ 50.33 Contents of applications; general information.

Each application ~~shall state~~must include the following information:

(a) Name of applicant;

(b) Address of applicant;

(c) Description of business or occupation of applicant;

(d)(1) If applicant is an individual, state individual's citizenship.

(2) If applicant is a partnership, state the name, citizenship, and address of each partner and the principal location where the partnership does business.

(3) If applicant is a corporation or an unincorporated association, ~~state~~include the following information:

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

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

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

(4) If the applicant is acting as agent or representative of another person in filing the application, identify the principal and furnish information required under this paragraph with respect to such principal.

(e) The class of license applied for, the use to which the facility will be put, the period of time for which the license is sought, and a list of other licenses, except operator's licenses, issued or applied for in connection with the proposed facility.

(f) ~~Except for an electric utility applicant for a license to operate a utilization facility of the type described in § 50.21(b) or § 50.22, information~~ Information sufficient to demonstrate to the Commission ~~the financial qualification of~~that the applicant appears to be financially qualified to carry out, in accordance with regulations in this chapter, the activities for which the permit or license is sought. As applicable, the following should be provided:

(1) ~~If the application is~~An electric utility's application for a construction permit~~, the applicant shall submit information that demonstrates that the applicant possesses or has reasonable assurance of obtaining the funds necessary to cover estimated construction costs and related fuel cycle costs. The applicant shall submit estimates~~ or combined license must include the following:

(i) ~~estimates~~Estimates of the total construction costs of the facility and related fuel cycle costs, and~~shall indicate the source(s) of funds to cover these costs.~~

(ii) An Applicant Financial Capacity Plan that will inform the NRC's review of whether the applicant appears to be financially qualified to engage in the proposed activities in accordance with the regulations in this part.

(2) All other applications must include the following:

(i) For a construction permit:

(A) Estimates of the total construction costs of the facility and related fuel cycle costs,

(B) An Applicant Financial Capacity Plan that will inform the NRC's review of whether the applicant appears to be financially qualified to engage in the proposed activities in accordance with the regulations in this part, and

~~(2)~~(ii) ~~If the application is for~~For an operating license~~, the applicant shall submit information that demonstrates the applicant possesses or has reasonable assurance of obtaining the funds necessary to cover estimated operation costs for the period of the license. The applicant shall submit estimates for~~:

(A) Estimates for the total annual operating costs for each of the first ~~five~~5 years of operation of the facility~~. The~~, and

(B) A plan for how the applicant ~~shall also indicate the source(s)~~intends to cover the estimated operating costs, including documentation of sources of funds to cover ~~these costs.~~each of the first 5 years of operation.

(iii) An applicant for a combined license must submit the information in (i) and (ii).

(3)~~(4)~~ An applicant seeking to renew or extend the term of an operating license for a power reactor ~~need~~is not required to submit the same financial information that is ~~required~~necessary in an application for an initial license. However,~~Applicants~~ applicants to renew or extend the term of an operating license for a nonpower reactor ~~shall~~must include the financial information that is required in an application for an initial license.

~~(3) If the application is for a combined license under subpart C of part 52 of this chapter, the applicant shall submit the information described in paragraphs (f)(1) and (f)(2) of this section.~~

~~(4) Each application for a construction permit, operating license, or combined license submitted by a newly-formed entity organized for the primary purpose of constructing and/or operating a facility must also include information showing:~~

~~(i) The legal and financial relationships it has or proposes to have with its stockholders or owners;~~

~~(ii) The stockholders' or owners' financial ability to meet any contractual obligation to the entity which they have incurred or proposed to incur; and~~

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

(4)~~(5) The Commission may request an established entity or newly-formed entity to submit additional or more detailed information respecting its financial arrangements and status of funds if the Commission considers this information appropriate. This may include~~ The Commission may request an ~~entity~~ an applicant or licensee to submit information regarding the applicant or ~~a~~ licensee's ability to ~~continue the~~ conduct ~~of~~ the activities authorized by the license ~~and~~ or to decommission the facility.

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

General Information

This appendix is intended to appraise applicants for construction permits and combined licenses for production or utilization facilities of the types described in § 50.21(b) or § 50.22, or testing facilities, of the general kinds of financial data and other related information that will demonstrate the financial qualification of the applicant to carry out the activities for which the permit or license is sought. The kind and depth of information described in this guide is not intended to be a rigid and absolute requirement. In some instances, additional pertinent material may be needed. In any case, the applicant should include information other than that specified, if the information is pertinent to establishing the applicant's financial ability to carry out the activities for which the permit or license is sought.

It is important to observe also that both § 50.33(f) and this appendix distinguish between applicants which are established organizations and those which are newly formed entities organized primarily for the purpose of engaging in the activity for which the permit is sought. Those in the former category will normally have a history of operating experience and be able to submit financial statements reflecting the financial results of past operations. With respect, however, to the applicant which is a newly formed company established primarily for the purpose of carrying out the licensed activity, with little or no prior operating history, somewhat more detailed data and supporting documentation will generally be necessary. For this reason, the appendix describes separately the scope of information to be included in applications by each of these two classes of applicants.

In determining an applicant's financial qualification, the Commission will require the minimum amount of information necessary for that purpose. No special forms are prescribed for submitting the information. In many cases, the financial information usually contained in current annual financial reports, including summary data of prior years, will be sufficient for the Commission's needs. The Commission reserves the right, however, to require additional financial information at the construction permit stage, particularly in cases in which the proposed power generating facility will be commonly owned by two or more existing companies or in which financing depends upon long-term arrangements for sharing of the power from the facility by two or more electrical generating companies.

Applicants are encouraged to consult with the Commission with respect to any questions they may have relating to the requirements of the Commission's regulations or the information set forth in this appendix.

I. Applicants Which Are Established Organizations

A. Applications for Construction Permits or Combined Licenses

1. Estimate of construction costs. For electric utilities, each applicant's estimate of the total cost of the proposed facility should be broken down as follows and be accompanied by a statement describing the bases from which the estimate is derived:

(a) Total nuclear production plant costs	$.....
(b) Transmission, distribution, and general plant costs	$.....
(c) Nuclear fuel inventory cost for first core[1]	$.....
Total estimated cost	$.....

[1]Section 2.790 of 10 CFR Part 2 and § 9.5 of 10 CFR Part 9 indicate the circumstances under which information submitted by applicants may be withheld from public disclosure.

If the fuel is to be acquired by lease or other arrangement than purchase, the application should so state. The items to be included in these categories should be the same as those defined in the applicable electric plant and nuclear fuel inventory accounts prescribed by the Federal Energy Regulatory Commission or an explanation given as to any departure therefrom.

Since the composition of construction cost estimates for production and utilization facilities other than nuclear power reactors will vary according to the type of facility, no particular format is suggested for submitting such estimates. The estimate should, however, be itemized by categories of cost in sufficient detail to permit an evaluation of its reasonableness.

2. *Source of construction funds*. The application should include a brief statement of the applicant's general financial plan for financing the cost of the facility, identifying the source or sources upon which the applicant relies for the necessary construction funds, e.g., internal sources such as undistributed earnings and depreciation accruals, or external sources such as borrowings.

3. *Applicant's financial statements*. The application should also include the applicant's latest published annual financial report, together with any current interim financial statements that are pertinent. If an annual financial report is not published, the balance sheet and operating statement covering the latest complete accounting year together with all pertinent notes thereto and certification by a public accountant should be furnished.

II. Applicants Which Are Newly Formed Entities

A. Applications for Construction Permits or Combined Licenses

1. *Estimate of construction costs*. The information that will normally be required of applicants which are newly formed entities will not differ in scope from that required of established organizations. Accordingly, applicants should submit estimates as described above for established organizations.

2. *Source of construction funds*. The application should specifically identify the source or sources upon which the applicant relies for the funds necessary to pay the cost of constructing the facility, and the amount to be obtained from each. With respect to each source, the application should describe in detail the applicant's legal and financial relationships with its stockholders, corporate affiliates, or others (such as financial institutions) upon which the applicant is relying for financial assistance. If the sources of funds relied upon include parent companies or other corporate affiliates, information to support the financial capability of each such company or affiliate to meet its commitments to the applicant should be set forth in the application. This information should be of the same kind and scope as would be required if the parent companies or affiliates were in fact the applicant. Ordinarily, it will be necessary that copies of agreements or contracts among the companies be submitted.

As noted earlier in this appendix, an applicant which is a newly formed entity will normally not be in a position to submit the usual types of balance sheets and income statements reflecting the results of prior operations. The applicant should, however, include in its application a statement of its assets, liabilities, and capital structure as of the date of the application.

~~III. Annual Financial Statement~~

~~Each holder of a construction permit for a production or utilization facility of a type described in § 50.21(b) or § 50.22 or a testing facility, and each holder of a combined license issued under part 52 of this chapter, is required by § 50.71(b) to file its annual financial report with the Commission at the time of issuance. This requirement does not apply to licensees or holders of construction permits for medical and research reactors.~~

~~IV. Additional Information~~

~~The Commission may, from time to time, request the applicant, whether an established organization or newly formed entity, to submit additional or more detailed information respecting its financial arrangements and status of funds if such information is deemed necessary to enable the Commission to determine an applicant's financial qualifications for the license.~~

Enclosure 2—Questions Considered During Development of Regulatory Basis and Requesting Public Comments

E2-1. Is the U.S. Nuclear Regulatory Commission (NRC) considering an appropriate approach for the objective described in the draft regulatory basis?

E2-2. Are there other regulatory problems within or related to the scope of the rulemaking efforts that the NRC should consider? Are there other approaches or alternatives the NRC should consider to resolve those regulatory problems?

E2-3. In its staff requirements memorandum, SRM-SECY-13-0124, the Commission directed the staff to "consider performing a detailed study to determine whether there exists any significant correlation between NRC's financial qualifications review and later safe operations and use of nuclear materials, since the original rule was first promulgated in 1968." The NRC seeks comment on whether it should conduct the study, and if so, how the study could be conducted. The NRC also seeks any examples where a licensee's financial health at the time of licensing review can be correlated to a degradation of nuclear safety or the environment after receipt of its license.

Enclosure 3—Historical Background on Financial Qualifications and the Electric Generation Market Structure

E3.1 Regulatory History: 1954–1968—Initial U.S Nuclear Regulatory Commission (NRC)

Financial qualifications reviews originated in a regulation adopted by the Atomic Energy Commission in 1956, pursuant to its authority under § 182a of the Atomic Energy Act of 1954 (AEA), as amended. Under the AEA, the Commission is authorized to require from applicants: "Such information as the Commission ... may determine to be necessary to decide such of the technical and FQ of the applicant ... as the Commission may deem appropriate." The 1956 rule stated that license applicants must be "technically and financially qualified to engage in the proposed activities."

The 1956 rule remained unchanged until 1968, when the Commission enacted the first major overhaul of its financial qualifications requirements by introducing explicit criteria and guidance for demonstrating compliance with Title 10 of the *Code of Federal Regulations* (10 CFR) 50.33, "Contents of Applications; General Information." The Commission revised 10 CFR 50.33(f) and added Appendix C, "A Guide for the Financial Data and Related Information Required To Establish Financial Qualifications for Constructions Permits and Combined Licenses," to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities." These changes imposed more detailed financial qualifications regulations requiring each applicant to submit:

> [i]nformation sufficient to demonstrate to the Commission the financial qualifications of the applicant to carry out, in accordance with the regulations in this chapter, the activities for which the permit or license is sought. If the application is for a construction permit, such information shall show that the applicant possesses the funds necessary to cover estimated construction costs and related fuel cycle costs or that the applicant has reasonable assurance of obtaining the necessary funds, or a combination of the two. If the application is for an operating license, such information shall show that the applicant possesses the funds necessary to cover estimated operating costs or that the applicant has reasonable assurance of obtaining the necessary funds, or a combination of the two.

The information required included estimates of costs, identification of sources of funds, and financial statements.

E3.2 Regulatory History: 1978–1984—Elimination of NRC Financial Qualifications Review for Electric Utility Operators

In 1978, the Commission accepted for review a determination by a licensing board and appeals board that the Public Service Utility Company of New Hampshire had demonstrated the requisite "reasonable assurance" of obtaining the necessary funds for construction of Seabrook Station.[1] The Commission ultimately agreed with both boards, and its analysis set the stage for half a decade of revisions to the financial qualifications rule.

[1] See *Seabrook*, CLI-78-1, 7 NRC 1 (1978).

In *Seabrook*, the Commission conducted a comprehensive review of the statutory and regulatory history of the financial qualifications requirements set forth in 10 CFR 50.33(f). Referring to Appendix C, the Commission noted that the "'reasonable assurance' concept embodied in the regulation is more flexible than many of the Commission's safety criteria," as the appendix makes clear that "[t]he kind and depth of information described in this guide is not intended to be a rigid and absolute requirement . . . ." The Commission also explained that the reasonable assurance concept "does not normally contemplate refined analyses of an applicant's likely future ability to meet specific costs."[2]

The Commission found that the utilities seeking the Seabrook construction permit were financially qualified to receive it (a finding that was later affirmed on appeal).[3] In addition, the Commission indicated that the case raised general questions about the relationship between financial qualifications and safety and about how the status of an applicant as a public utility bears on that relationship. The Commission directed the staff to initiate a rulemaking proceeding "in which the factual, legal, and policy aspects of the FQ issue may be reexamined."[4]

E3.2.1 Elimination of Financial Qualifications Review for Electric Utility Operators

As a result of the Commission-directed reexamination of the financial qualifications status of public utilities, the NRC staff prepared SECY-79-299, "Generic Issue of Financial Qualifications: Licensing of Production and Utilization Facilities," dated April 27, 1979 (Ref. 12). The NRC staff recommended amending the regulations to provide that those electric utility applicants would be deemed financially qualified for a construction permit: (1) when the applicant's rates for service are determined by state and/or Federal regulatory agencies (or are self-determined), and (2) when the applicant's most senior long-term debt is rated "A" or higher by both of the major securities rating services. An applicant that satisfies the first criterion (rate-setting) would be deemed financially qualified for an operating license. Applicants satisfying the specified criteria for either a construction permit or an operating license would not be subject to extensive FQ reviews by the staff. Further inquiry and adjudication of an applicant's or a licensee's FQ would be foreclosed after the Commission determines that compliance with the criteria has been demonstrated.

On August 18, 1981, the Commission published a notice of proposed rulemaking to eliminate FQ reviews for electric utilities for both construction permits (regardless of the ratings given their bonds) and operating licenses (with the possible exception of retaining FQ review for decommissioning costs).[5] In the statement of considerations for this proposed rule, the Commission said its existing FQ review "has done little to identify substantial health and safety concerns at nuclear power plants."[6] The Commission's final rule, published March 31, 1982,

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2 CLI-78-1, 7 NRC at 9-10.

3 *New England Coalition on Nuclear Pollution v. NRC*, 582 F.2d 87 (1st Cir.1978).

4 *Seabrook*, CLI-78-1, 7 NRC at 20.

5 "Financial Qualifications; Domestic Licensing of Production and Utilization Facilities," 46 FR 41786 (August 18, 1981).

6 "Financial Qualifications; Domestic Licensing of Production and Utilization Facilities," 46 FR. 41786 (August. 18, 1981).

established a presumption that electric utilities are financially qualified to build and operate nuclear plants because they have access to rate-based revenue.[7]

Following publication of the final rule, the New England Coalition on Nuclear Pollution and others filed a petition for review in Federal court. In 1984, the DC Circuit Court granted the petition and remanded the rule for further proceedings, finding that the Commission had not established a reasonable basis for its categorical presumption that electric utilities are financially qualified to build and operate reactors. In its ruling, the Court noted that:

> …the mere fact that some public utilities, when financially unstable, chose to abandon or defer proposed nuclear facilities instead of completing them inadequately, does not lead to the conclusion that all financially unstable public utilities… will generally do so;[8]

In response to the Court's actions, the Commission published a new proposed rule in April 1984.[9] In the proposed rule, the Commission questioned the nexus between FQ reviews and safety and invited "all interested parties to comment on whether FQ review might be eliminated completely for all license or permit applicants including, but not limited to, electric utilities, on the ground that no link has been shown between financial qualification reviews and assurance of safety."[10]

The Commission went on to say that its experience:

> [L]eads it to question whether pre-licensing reviews of applicants' future ability to pay for the cost of safety measures provide any significant additional assurance of safety beyond the assurance provided by the pre-licensing review of facility structures, systems, and components, operating and materials handling procedures, and technical qualifications, and by the Commission's inspection and enforcement program.[11]

Following the notice and comment period, the Commission amended its regulations to eliminate the financial qualifications review for electric utility applicants for operating licenses, while leaving intact the financial qualifications review for both electric utilities and merchant plants seeking construction permits. In background information provided in the proposed and final rules, the Commission addressed its rationale for maintaining financial qualifications requirements for utility applicants seeking construction permits:

> … the financial difficulties experienced at some [utility] plants under construction do suggest that elimination of FQ reviews at the construction permit stage is a matter that will require further study by the Commission. … [T]he Commission

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7 "Elimination of Review of Financial Qualifications of Electric Utilities in Licensing Hearings for Nuclear Power Plants," 47 FR 13750 (Mar. 31, 1982).

8 *New England Coalition on Nuclear Pollution v. NRC*, 727 F.2d 1127 (D.C. Cir. 1984).

9 "Elimination of Review of Financial Qualifications of Electric Utilities in Operating License Reviews and Hearings for Nuclear Power Plants," 49 FR. 13044 (Apr. 2, 1984).

10 Id. at 13045–13046.

11 "Elimination of Review of Financial Qualifications of Electric Utilities in Operating License Reviews and Hearings for Nuclear Power Plants," 49 FR 13044 (Apr. 2, 1984).

> has decided that its response on [the court's] remand will focus on financial qualifications reviews at the operating license stage.

In consideration of financial qualifications review at the utility "operating license stage," the Commission stated:

> … review of financial qualification for all electric utilities at the operating license stage is unnecessary due to the ability of such utilities to recover … sufficient costs of safe operation through the ratemaking process. It is well established that public utility commissions (PUCs) are legally bound to set a utility's rates such that all reasonable costs of serving the public are recovered…

Therefore, from the date of the final rule published on September 12, 1984, to today, NRC performs financial qualifications review of applicants for construction permits for both utility and merchant plants, and for applicants for operating licenses for merchant plants.

E3.3 Regulatory History: 1985 – Present

E3.3.1 Reconsideration of Merchant Plant Financial Qualifications in Response to Restructuring of the Electric Utility Industry

Between 1997 and 2002, as States increasingly deregulated their electricity markets, the Commission addressed financial qualifications requirements both for existing nuclear plants and potential new ones.

In 1997, the NRC staff addressed the issue of merchant plant financial qualifications in SECY-97-253, "Policy Options for Nuclear Power Reactor Financial Qualifications in Response to Restructuring of the Electric Utility Industry." In that paper, the NRC staff noted that while the NRC has viewed financial qualifications determinations for plant operations as being of secondary importance for ensuring the protection of public health and safety, "[w]ith the advent of restructuring, some of the basic assumptions underlying the NRC's FQ regulations are being reconsidered."[12] Citing the Maine Yankee plant as a recent example, the NRC staff noted:

> [E]lectricity rates set by competition in a free market may not provide the same degree of assurance of adequate funds for safe operation and decommissioning as traditional cost-of-service ratemaking. Even in the absence of full rate deregulation, some companies will be under increasing cost pressure. For example, the "Independent Safety Assessment of Maine Yankee Atomic Power Company" (NRC Staff Report; October 1996) concluded: "Economic pressure to be a low-cost energy producer has limited available resources to address corrective actions and some plant improvement upgrades."[13]

Accordingly, SECY-97-253 recommended a rulemaking to extend financial qualifications review requirements for operating licenses (OLs) to cover post-OL reviews for merchant plant licensees. Under this option, such licensees would have been required to submit periodically

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[12] SECY-97-253 – Policy Options For Nuclear Power Reactor Financial Qualifications In Response To Restructuring of the Electric Utility Industry, p. B-2-4, (Oct. 24, 1997). (ADAMS Accession No. ML12263A738)

[13] Ibid., p. B-5.

the same kinds of information required at the OL review stage throughout their facility's operating life. "Because of the likely advent of deregulation and full competition among electricity generators," the paper said, "the staff does not believe that a one-time 'snapshot' of a non-electric utility applicant's financial ability to operate safely at the time of its OL application necessarily provides meaningful information about its financial qualifications in the future." Noting the similar degree of uncertainty for the industry as a whole, however, the NRC staff also cautioned that "[b]ecause of the uncertainty surrounding future deregulation, … whichever [of the three presented] option[s] is chosen will likely be an interim step and may need to be modified as the thrust of deregulation becomes clearer."[14]

The four-member Commission deadlocked on the NRC staff's recommendation, with two Commissioners voting in favor of the NRC staff's recommended option and two voting to make no change. In SRM-SECY-97-253, the Commission said it did not provide "the necessary majority for the staff to proceed with a proposed rulemaking …. Therefore, the NRC's existing regulatory framework … [was] maintained."[15]

E3.3.2 Discontinuation of Financial Qualifications Requirements for License Renewals

In a 2004 rulemaking,[16] the NRC discontinued financial qualifications reviews for power reactors at the license renewal stage, except in very limited circumstances. This rule affected merchant plant licensees. The objective of the rule was to "…reduce unnecessary regulatory burden on licensees seeking renewal of operating licenses…" The Commission stated in the rulemaking that "[t]he NRC performs financial qualifications reviews during initial licensing because the startup of a nuclear power reactor is a major financial undertaking that has significant implications for a company's financial health." The Commission also stated that "the NRC believes that there are no unique financial circumstances associated with license renewal because the NRC has no information indicating a licensee's revenues change due to license renewal."

The rule also added a new requirement that utility licensees are to notify the NRC and submit information on their FQ if they are reorganizing as, or changing their status to, merchant plant entities without a license transfer. The rule was intended to ensure that utility licensees reorganizing or changing their status continue to be financially qualified to operate their facilities and maintain the public health and safety.

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14 Ibid., p. B-5.

15 Staff Requirements Memorandum, SECY-97-253 -- Policy Options For Nuclear Power Reactor Financial Qualifications in Response to Restructuring of the Electric Utility Industry (Jan. 15, 1998) (ADAMS Accession No. ML003752225).

16 Financial Information Requirements for Applications to Renew or Extend the Term of an Operating License for a Power Reactor," 69 FR 4439 (Jan. 30, 2004)

Enclosure 4—Draft Regulatory Analysis

Draft Regulatory Analysis in Support of the Regulatory Basis for Financial Qualifications for Reactor Licensing Rulemaking

U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Division of Policy and Rulemaking

May 2015

Enclosure 4

Foreword

The financial qualifications rules for reactors are identified in Part 50 of Title 10 of the *Code of Federal Regulations,* Part 50, “Domestic Licensing of Production and Utilization Facilities,” 50.33(f), and Appendix C, “A Guide for the Financial Data and Related Information Required To Establish Financial Qualifications for Construction Permits and Combined Licenses.” In the staff requirements memorandum (SRM) to SECY-13-0124, the Commission approved the staff recommendation to engage in rulemaking to develop a standard of review for financial qualifications during initial licensing for power reactors that is not below the financial qualifications standard set forth in 10 CFR 70.23, “Requirements for the Approval of Applications,” for applicants to have and maintain special nuclear material.

Table of Contents

Abbreviations and Acronyms

ADAMS	Agencywide Documents Access and Management System
B&W	Babcock & Wilcox
BLS	U.S. Bureau of Labor Statistics
CFR	*Code of Federal Regulations*
COL	Combined license
CP	Construction permit
CPI	Consumer price index
cROP	Construction reactor oversight process
ESP	Early site permit
FTE	Full-time equivalent
FY	Fiscal year
LLC	Limited liability corporation
NAC	No adverse comments
NEI	Nuclear Energy Institute
NINA	Nuclear Innovation North America, LLC
NM	New Mexico
NRC	U.S. Nuclear Regulatory Commission
OL	Operating license
OMB	Office of Management and Budget
PRP	Potentially responsible parties
RA	Regulatory analysis
RA Guidelines	NUREG/BR-0058, “Regulatory Analysis Guidelines of the U.S. Nuclear Regulatory Commission,” September 2004
RA Handbook	NUREG/BR-0184, “Regulatory Analysis Technical Evaluation Handbook,” January 1997
RAI	Requests for additional information
RIS	Regulatory information summary
ROP	Reactor oversight process
SAC	Significant adverse comments
SMR	Small modular reactor
SRM	Staff requirements memorandum
STPNOC	South Texas Project Nuclear Operating Company
TVA	Tennessee Valley Authority

1. Introduction

In this document, the U.S. Nuclear Regulatory Commission (NRC) presents the regulatory analysis for the NRC's rulemaking to conform Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50.33(f) and 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," Appendix C, "A Guide for the Financial Data and Related Information Required To Establish Financial Qualifications for Construction Permits and Combined Licenses," to 10 CFR Part 70, "Domestic Licensing of Special Nuclear Material," standards. Specifically, the rulemaking would change the financial qualifications standards from reasonable assurance that an applicant "is financially qualified" to construct and operate a nuclear reactor or non-power production facility,[1] to an applicant that "appears to be financially qualified" analogous to the definition found in 10 CFR 70.23, "Requirements for the Approval of Applications," for fuel cycle facilities.

1.1 Statement of the Problem and Objective

1.1.1 Background

The NRC's requirements at 10 CFR 50.33(f) require applicants for a construction permit, operating license, or combined license to be financially qualified to engage in the proposed activities. No consideration of financial qualifications is necessary for an electric utility[2] applicant for an operating license because electric utilities[3] are generically presumed to be financially qualified for operations because the "rate process assures that funds needed for safe operation will be made available to regulated utilities."[4] Appendix C to Part 50 applies to all applicants for construction permits and combined licenses and describes the general kinds of financial data and other related information that will demonstrate the financial qualifications of the applicant.

The NRC's reactor financial qualifications requirements were promulgated before the electricity markets in the United States became deregulated following implementation of the Energy Policy Act of 1992. All nuclear power reactor licensees at that time were found to be financially qualified based on their status as regulated electric utilities. However, merchant applicants, unlike electric utility applicants that have access to ratemaking, do not have a predictable

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1 Non-power production and utilization facilities include all existing non-power reactors licensed under 10 CFR 50.21(a) and (c) and proposed production and utilization facilities licensed under 10 CFR 50.22, "Class 103 Licenses; for Commercial and Industrial Facilities," for the production of medical radioisotopes, such as molybdenum-99. As discussed in Section 7.2.3 of the regulatory basis document, the NRC staff is unaware of concerns related to the financial qualifications (FQ) review for these applicants. It does not appear that this type of applicant has had the same difficulty meeting the current requirements as is being experienced by current merchant plant applicants.

2 As defined in 10 CFR 50.2, "Definitions," an "electric utility" means any entity that generates or distributes electricity and which recovers costs of electricity generation through rates established by the entity itself or by a separate regulatory authority.

3 Utility rates are set through a process called a rate case. Rate cases are concerned with two primary issues, the rate level, or amount of money the utility is allowed to collect, and rate design, or how rates are structured to match the utility's revenue requirements.

4 *Federal Register,* 49 FR 35749, September 12, 1984.

source of funds for construction or operation.[5] The NRC's regulations require applicants for construction permits (CPs) and later operating licenses (OLs) under 10 CFR Part 50, or COLs under 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants," to have reasonable assurance of financing at the time of the submittal of the application for an initial license. By letters dated May 31, 2012, and November 13, 2012, Nuclear Innovation North America, LLC (NINA) and the Nuclear Energy Institute (NEI), respectively, said that it is difficult for merchant plant applicants to secure project financing to meet financial qualifications requirements in advance of the receipt of the initial license. The difficulty is caused, in part, by perceptions from the financial community that the NRC's licensing process is uncertain. For the purpose of this regulatory analysis, an initial license is intended to mean either a CP and a subsequent OL licensed under 10 CFR Part 50, or a COL licensed under 10 CFR Part 52. For additional discussion on this issue refer to SECY-13-0124, "Policy Options for Merchant (Non-Electric Utility) Plant Financial Qualifications," (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13057A006).

1.1.2 Problem Statement

Current NRC regulations have specific requirements that must be met in order to demonstrate that initial license applicants have reasonable assurance of financial qualifications as a condition precedent to receipt of a license. The nuclear industry asserts that this has created an impediment to initial licensing for merchant applicants that cannot be resolved absent a change in Commission policy or regulation. The problem is whether or to what degree the NRC can modify its review process in the area of financial qualifications while ensuring the protection of public health and safety.

1.1.3 Objective

In the SRM to SECY-13-0124, the Commission directed the NRC staff to engage in a rulemaking to amend the 10 CFR Part 50 financial qualifications standard of review to "appears to be financially qualified." The NRC is considering alternative financial qualifications approaches in which applicants would be able to comply with NRC's financial qualification requirements for the initial issuance of a CP, OL, or COL that is protective of public health and safety.

2. Identification and Preliminary Analysis of Alternative Approaches

The NRC has identified four alternatives, with sub-alternatives, for consideration. Three of the alternatives, including the sub-alternatives, were discussed in detail in SECY-13-0124. A fourth alternative was established during the development of the regulatory basis for this rulemaking.

[5] A merchant applicant is a non-regulated entity (i.e., non-regulated power producer) that engages in the business of production, manufacturing, generating, buying, aggregating, marketing, or brokering electricity for sale at wholesale or for retail sale to the public. A non-regulated power producer is not subject to regulation as a public utility (e.g., regulated electric utility) except as specifically provided in the general laws.

2.1 Alternative 1—Status Quo: No Changes to 10 CFR Part 50 or Appendix C to Part 50 and Current Initial Licensing Process

This alternative would not amend the regulations under 10 CFR 50.33(f) and Appendix C to Part 50. The regulation under 10 CFR 50.33(f) requires applicants to demonstrate that there is reasonable assurance of obtaining the funds necessary to construct and operate a nuclear reactor or a non-power production and utilization facility. "Electric Utility" applicants, as defined under 10 CFR 50.2, are exempt from OL reviews. Appendix C to Part 50 provides specific direction of what applicants should provide for CP, OL, and COL applications. Further discussion of the requirements can be found in Section 3.2 of the draft regulatory basis.

This alternative would keep the threshold for financial qualifications at its current level. Merchant applicants would continue to be required to submit FQ information (i.e., financial *pro formas* and committed funding for construction and future operation) with their applications. The NRC would review the adequacy of the applicant's plans to provide construction funding and make a finding on both the adequacy of the amount of the applicant's proposed funding and the mechanism or mechanisms proposed for providing funding assurance.

This alternative requires no changes to NRC's current regulatory structure for initial licensing. Merchant applicants could still apply for licenses, and would incur costs associated with developing the portion of the application describing how the applicant would comply with the NRC's financial qualifications requirements. However, the impediments to initial licensing would still be in place as described in Section 1.1.2 of this regulatory analysis, and merchant applicants would not likely succeed in complying with the NRC's financial qualifications regulations. Further, this alternative is contrary to the direction the Commission provided to the NRC staff in its SRM to SECY-13-0124 to amend the NRC's financial qualifications regulations. As a result, the NRC did not estimate and evaluate the cost and benefits of this alternative.

2.2 Alternative 2—Rulemaking

This alternative, which reflects four possible sub-alternatives, involves the NRC undertaking a rulemaking to amend its regulations. The NRC would issue a proposed rule for public comment, evaluate and respond to comments received on the proposed rule, and issue a final rule. The rulemaking process allows for several opportunities for public interaction, feedback, and comment as directed by the Commission in its SRM to SECY-13-0124.

2.2.1 Alternative 2.1—Rulemaking to Rescind Financial Qualifications Requirements for Power Reactor Initial Licensing

This alternative would propose to rescind the financial qualifications requirements for initial licensing. By rescinding financial qualifications requirements at initial licensing, otherwise qualified applicants would not be denied a license solely due to lack of financing. The regulations that would be rescinded are 10 CFR 50.33(f)(1) through (4) and Appendix C to 10 CFR Part 50. However, the NRC requirements under 10 CFR 50.33(f)(5)[6] and 10 CFR

[6] 10 CFR 50.33(f)(5) allows the NRC to request financial information to assess the availability of funds that the licensee has to manage licensed activities in a manner that is protective of public health and safety.

50.71(b)[7] would be maintained because they remain effective throughout the duration of the license.

The NRC has historically viewed financial qualifications requirements as an indirect method of ensuring safe operations.[8] Therefore, rescinding financial qualifications requirements at initial licensing may not result in any degradation of safety due to NRC's rigorous construction and operations inspection and oversight program.

2.2.2 Alternative 2.2—Rulemaking to Amend Financial Qualifications Requirements for Power Reactor Licensing to Ongoing Oversight Indicator

This alternative would end financial qualifications reviews as a part of the initial licensing decision and create new financial health performance indicators to monitor the financial viability of the licensee over the construction and operating life of the plant. The new financial health performance indicators would be based on open source financial information and would be incorporated into the construction reactor oversight process (cROP) and the reactor oversight process (ROP).

The NRC would develop guidance on how it would monitor and evaluate licensees' financial performance using these indicators during construction and operation and create a structure for enforcement actions. The indicators and their use in regulatory oversight would be vetted through a notice and comment process.

More entities would be affected by this alternative than the other alternatives, such as those entities that have not received a COL or OL by the time a final rule is effective, and those licensees that currently hold a CP, OL or COL. If this alternative is chosen, it may require a backfit analysis for those licensees who currently hold a CP, OL, or COL.[9] Further discussion of this alternative can be found in Section 3.3.1 of this regulatory analysis.

2.2.3 Alternative 2.3—Rulemaking to Conform Power Reactor Financial Qualifications Requirements to 10 CFR Part 70 Standards

NUREG-1577, "Standard Review Plan on Power Reactor Licensee Financial Qualifications and Decommission Funding Assurance," revision 1 (ADAMS Accession No. ML013330264), describes the manner in which the NRC reviews an applicant's financial qualifications as required under 10 CFR 50.33(f). This NUREG states that applicants applying to construct a power reactor should provide an estimate for the construction costs, sources of construction funds, and annual financial reports for the NRC to review. The current NRC process for finding a power reactor applicant financially qualified for operations uses *pro-forma* cash flow analyses to cover the first 5 years of operations and the sources of these funds. If an applicant can prove that it has the necessary funds to build the reactor or non-power production and utilization facility and can cover its operational costs, the NRC will find the licensee financially qualified to receive an OL or COL. In the SRM to SECY-13-0124, the Commission directed the NRC staff

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7 10 CFR 50.71(b) requires holders of CPs and OLs to submit annual financial reports, including certified financial statements, to the NRC unless the reports are sent to the U.S. Securities and Exchange Commission or the Federal Energy Regulatory Commission.

8 SECY-79-299, Generic Issue of Financial Qualifications: Licensing of Production and Utilization Facilities. April 27, 1979 (ADAMS Accession No. ML12236A723).

9 Per 10 CFR 50.109(a)(1)(i).

to "develop a standard of review that approximates, as appropriate, the approach currently used for 10 CFR Part 70." This alternative would result in an intermediate level of financial qualifications review (a greater level of review than simply rescinding the rule, but less than the current level of review under 10 CFR 50.33(f)) and would utilize license conditions as appropriate. This approach would resolve the impediment to licensing.

This option would require an applicant to provide a financial plan that includes a cost estimate. The estimate will show that the applicant understands the size of the project undertaking and has a plan to demonstrate the capacity to obtain the necessary financing when the applicant is ready to begin construction. To that end, the merchant applicant with 50 percent or less funding would also propose license conditions to ensure that necessary funds are available prior to beginning reactor construction. The potential license conditions that would be required are discussed in Section 7.2.1.1 of the regulatory basis document.

2.2.4 Alternative 2.4—Deferring Financial Qualifications Demonstrations Until After COL Issuance

This alternative would not amend the regulations under 10 CFR 50.33(f) and Appendix C to Part 50. This alternative would keep the threshold for financial qualifications at its current level. In this alternative, licensing technical reviews would be completed but the license would be held in abeyance until the NRC finds that the financial qualifications requirements are met. Because construction could not begin until funding is fully in place and the financial qualifications requirements are satisfied, this alternative would provide reasonable assurance of safety consistent with previous Commission decisions on financial qualifications for power reactor licenses. When determining financing for a project, full funding for construction of the project would need to be secured, including funding to cover contingencies for delays and cost overruns. The financial closing and NRC finding would also require that certain measures be in place to assure adequate sources of funding to support operations, such as cash reserves for debt payments and working capital requirements.

Section 185b. of the Atomic Energy Act, as amended, requires all safety findings to be made prior to license issuance. Also, the Commission has stated that all issues material to licensing must be resolved at the initial licensing stage. Therefore, this alternative is not legally justifiable. As a result, the NRC did not estimate and evaluate the cost and benefits of this alternative.

2.3 Alternative 3—Issue Exemptions on a Case-by-Case Basis

This alternative would require an applicant to request a regulatory exemption under 10 CFR 50.12, "Specific Exemptions," or 10 CFR 52.7, "Specific Exemptions," to 10 CFR 50.33(f) justifying that:[10]

> (a) The Commission may, upon application by any interested person or upon its own initiative, grant exemptions from the requirements of the regulations of this part, which are--
>
> (1) Authorized by law, will not present an undue risk to the public health and safety, and are consistent with the common defense and security.

[10] The regulation cited is 10 CFR 50.12. The exemption criteria for 10 CFR 52.7 are listed in 10 CFR 50.12.

(2) The Commission will not consider granting an exemption unless special circumstances are present.[11]

This alternative was not discussed as an option in SECY-13-0124. However, during the development of the regulatory basis, the NRC identified that issuing exemptions was a potential alternative. Applicants for a CP or OL could apply for specific exemptions under 10 CFR 50.12, while COL applicants would apply for exemptions under 10 CFR 52.7. As discussed in Section 1.1.2 of this regulatory analysis, the issue of financial qualifications is a generic issue. Issues generic to a class of licensees should be addressed through the NRC's rulemaking process. Exemptions would be issued on a case-by-case basis depending on the specific circumstances of each applicant's exemption request. However, without a clear approach to rulemaking, it is not clear that an applicant can meet any of the six specific exemption criteria listed in 10 CFR 50.12(a)(2)(i)-(vi). Because regulation by exemption for generic issues is not a sound regulatory approach, the NRC did not estimate and evaluate the cost and benefits of this alternative.[12]

2.4 Alternative 4—Use of License Conditions under Current Regulations

In its November 13, 2012, letter, NEI proposed issuance of guidance, under the current regulations for financial qualifications, to allow the use of license conditions to satisfy the financial qualifications requirements and allow issuance of the license.[13] The Commission must be able to make the necessary findings to issue a CP under 10 CFR 50.50, or a COL under 10 CFR 52.97. The conditions must be specific enough such that an extended review and approval is not necessary and can be done through a ministerial act.[14] Also, Commission precedent does not allow for material issues to licensing to be deferred. These issues must be resolved at initial licensing.[15] As discussed in SECY-13-0124, the NRC does not believe that a viable license condition could be drafted that would demonstrate compliance with 10 CFR Part 50, Appendix C, and whose approval can be demonstrated by a ministerial act. Therefore, this alternative is not legally justifiable, and the NRC did not estimate and evaluate the cost and benefits of this alternative.

3. Estimation and Evaluation of Costs and Benefits/Presentation of Results

This section describes the analysis conducted to identify and evaluate the benefits and costs of the regulatory Alternatives 2.1, 2.2, and 2.3 compared to the regulatory baseline. While the regulatory baseline (complying with the NRC's current financial qualifications requirements) does have its relative benefits and costs, as stated in Section 2.1, the NRC is not analyzing those benefits and costs in this regulatory analysis. Section 3.1 identifies the attributes expected to be affected by the action. Section 3.2 describes how the analysis evaluates the

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[11] There are six special circumstances listed in 10 CFR 50.12(a)(2)(i)-(vi).

[12] Page 8 of Enclosure 4 to SECY-13-0124 states: "If the Commission directs the staff to undertake rulemaking as discussed in Option 2, any exemption requests would not be reviewable until a clear rulemaking approach is determined."

[13] The NRC's analysis of the proposed license conditions can be found in Enclosure 2 to SECY-13-0124.

[14] *Private Fuel Storage, LLC*, CLI-00-13, 52 NRC at 34.

[15] *Hydro Resources, Inc.* (Albuquerque, NM), CLI-00-08, 51 NRC 227 (2000).

values and impacts. Finally, Section 3.3 presents the details of the calculations used to generate the estimated values and impacts.

3.1 Estimate Accuracy and Analysis Limitations

For this regulatory analysis, the NRC developed an order-of-magnitude estimate for each cost and benefit based on the limited information that is available. This estimate contains sufficient detail for a net benefit assessment to support the regulatory basis while minimizing estimation of costs. The results are considered preliminary at the regulatory basis stage of the rulemaking process. Limited sensitivity analyses and no uncertainty analyses were performed. Should the NRC continue to pursue this topic in the rulemaking process, these analyses will be included and revised based on feedback and comments during the regulatory basis and proposed rule phases of the process.

3.2 Methodology

The methodology for a regulatory analysis is specified by various guidance documents. The two documents that govern the NRC's voluntary regulatory analysis process are NUREG/BR-0058, "Regulatory Analysis [RA] Guidelines of the U.S. Nuclear Regulatory Commission," Revision 4, September 2004 (RA Guidelines, ADAMS Accession No. ML042820192), and NUREG/BR-0184, "Regulatory Analysis Technical Evaluation Handbook," January 1997 (RA Handbook, ADAMS Accession No. ML050190193). The regulatory analysis identifies all attributes related to the regulatory action and analyzes them either quantitatively or qualitatively.

For this regulatory analysis, the NRC developed estimates to quantify the various factors considered. The NRC then discounted the estimated cash flows and monetized benefits projected to be incurred in future years to the current year of the regulatory action. Finally, the NRC summed the net present value estimates of the costs and the benefits for each alternative and compared them.

In addition, to the extent that there are important qualitative considerations of factors that cannot be quantified, these considerations of factors are discussed in qualitative terms. Based on the consideration of each attribute and its quantified costs and benefits, the NRC will typically make a recommendation for each alternative. However, for the purposes of this regulatory analysis, the NRC did not make a recommendation because of the high level of the estimates and the preliminary results provided within this regulatory analysis. The NRC will make a recommendation after seeking public comment on this regulatory basis document.

3.3 Assumptions

The assumptions provided in this section were used to develop this regulatory analysis.

3.3.1 Affected Entities

The NRC assumes that the alternatives will affect multiple entities. The NRC provides a low, best, and high estimate of the number of initial license applicants for Alternative 2. For the purpose of this analysis, the NRC considers an "applicant" as each reactor unit in a license application. While there may be some efficiencies gained from each successive application submittal, review, and approval, the NRC assumes for simplicity that all applications are equal. For Alternatives 2.1 and 2.3, the NRC assumes that the affected entities for the "low" estimate are four merchant and eight utility applicants for new reactors whose applications are currently

under review, but this number does not include suspended or withdrawn applications. In the "best" estimate for Alternatives 2.1 and 2.3, the NRC includes the affected entities in the low estimate plus five potential license applicants for small modular reactors (SMR) and those currently working through the early site permit (ESP) process. These estimates are based on recent public information such as responses to regulatory information summary (RIS) RIS-2013-08 indicating industry interest in initial licensing of SMRs. For the "high" amount of initial license plant applications for Alternatives 2.1 and 2.3, the NRC included the low and best estimate for initial license applications, plus 17 applications that are suspended or withdrawn. The NRC notes that this regulatory analysis does not include the benefits and costs to potential future applicants unknown to the NRC during the promulgation of this rule. The NRC also notes that using the current, suspended, and withdrawn applications is simply for modeling, and these categories are not intended as a measure of the status of those applications. Finally, while these estimates are subject to change based on relative interest in applying for a nuclear power plant license, the NRC considers them demonstrative only and does not intend to adjust them as the rulemaking progresses.

As discussed in section 2.2.2 of this regulatory analysis, alternative 2.2 would end financial qualifications reviews as part of licensing actions and place the reviews in an ongoing oversight indicator. Therefore, this alternative would affect all operating plants and future plants, including those that received COLs (Vogtle Units 3 and 4 and V.C. Summer Units 2 and 3) and CPs which are on hold.

The NRC notes that this proposed rule would affect licensees that are contemplating a license transfer under 10 CFR 50.80. The information necessary for license transfer applications is similar to the information necessary for initial licenses. The NRC is unable to predict when future license transfers might occur. However, not all potential applicants for new reactors may submit an application. Therefore, the estimates are inclusive of future license transfers.

Table 1: Affected Entities for Alternatives 2.1 and 2.3

Affected Entities Assumption for Alternative 2	Amount of New Applications and License Transfers	Non-Power Production and Utilization Facilities	Total
Low Estimate	12	21	33
Best Estimate	17	21	39
High Estimate	34	21	56

Table 2: Estimated Affected Entities for Alternatives 2.2

Affected Entities Assumption for Alternative 2.2	Amount of New Applications and License Transfers	Amount of Entities with CPs[16]	Operating Nuclear Power Plants	Total
Low Estimate	16	1	99	116
Best Estimate	20	1	99	120
High Estimate	38	1	99	138

[16] Watts Bar Unit 2. If Watts Bar Unit 2 receives an OL, it will still be an affected entity.

With respect to Alternative 2.1, there would be a net savings for non-power production and utilization facilities. Alternative 2.2 would not affect non-power production and utilization facilities. Alternative 2.3 would have no change in costs compared to the regulatory baseline because there would be no change in the resource requirements with respect to non-power production and utilization facilities.

3.3.2 Timeframes for Alternatives

The NRC assumes that rulemaking activities (including a proposed and final rule) would be completed in fiscal year (FY) 2018. The NRC also assumes that the proposed rule and guidance would be issued in FY 2016.

With respect to Alternative 2.2 for the low estimate, the NRC assumes that all 116 affected entities would review the proposed rule and draft guidance in 2017 and would implement the final rule in 2019. For the best estimate, 117 entities would review the proposed rule and draft guidance in 2017, while 113 (including the 116 in the low estimate plus Watts Bar Unit 2, Vogtle 3 and 4, and V.C. Summer Units 2 and 3) would implement the new rule in 2019. The four new plants would implement the rule starting in 2022. For the high estimate, the assumptions are the same, except that 17 more plants would implement the rule in the 2024 and beyond.

Table 3: Timeframe for Affected Entities in Alternative 2.2[17]

Affected Entities Estimate	Fiscal Year	Activity	Entities
Low	2017	Proposed Rule and Draft Guidance Review	116
	2019	Post-Final Rule and Regulatory Guide Implementation	116
Best	2017	Proposed Rule and Draft Guidance Review	120
	2019	Post-Final Rule and Regulatory Guide Implementation	116
	2022	Post-Final Rule and Regulatory Guide Implementation	4
High	2017	Proposed Rule and Draft Guidance Review	138
	2019	Post-Final Rule and Regulatory Guide Implementation	117
	2022	Post-Final Rule and Regulatory Guide Implementation	4
	2024	Post-Final Rule and Regulatory Guide Implementation	17

With respect to Alternative 2.3, for the low estimate, the NRC assumes that these four merchant applicants will provide updated information to meet the new rule in 2018 and that it will take

[17] The NRC assumes that for Alternative 2.1, the affected entities would follow a similar schedule for providing comments on the proposed rule in 2017. Because Alternative 2.1 would rescind the rule, there would be no implementation costs following final rule promulgation.

approximately one year to approve or deny any plan provided. The NRC also assumes a fifth merchant applicant will provide its financial plans in 2019, assuming the ESP is granted. Based on industry response to RIS-2013-08, the NRC assumes that the SMR merchant applicants will submit initial license applications in the 2022 timeframe. For the purposes of creating a bounding analysis, the NRC assumes that the rest of the initial license applications will be submitted in the 2024 timeframe. All affected entities would be reviewing the proposed rule and draft guidance and the final rule and draft guidance.

Table 4: Timeframe for Estimated Affected Entities in Alternative 2.3

Affected Entities Estimate	Fiscal Year	Activity	Entities
Low	2017	Proposed Rule and Draft Guidance Review	33
	2018	Financial Qualification Submittals	4
	2019	Post-Final Rule and Regulatory Guide Implementation	33
Best	2017	Proposed Rule and Draft Guidance Review	39
	2018	Financial Qualification Submittals	4
	2019	Financial Qualification Submittals	1
	2019	Post-Final Rule and Regulatory Guide Implementation	39
	2022	Financial Qualification Submittals	2
High	2017	Proposed Rule and Draft Guidance Review	56
	2018	Financial Qualification Submittals	4
	2019	Financial Qualification Submittals	1
	2019	Post-Final Rule and Regulatory Guide Implementation	56
	2022	Financial Qualification Submittals	2
	2024	Financial Qualification Submittals	3

The NRC notes that using the current, suspended, and withdrawn applications are simply for modeling and have not intended these examples to be a measure of the status or potential timing of those applications.

3.3.3 Base Year of Analysis

The base year of the analysis is FY 2015. Therefore, all quantified benefits and costs will be inflated or discounted to FY 2015.

3.3.4 Labor Rates

Throughout this analysis, various labor rates are used. These rates are used consistently for each alternative, and their derivations are described below.

The NRC labor rates are determined by the calculation methodology in NUREG/CR-4627, "Generic Cost Estimates," Revision 2, February 1992. This methodology considers only

variable costs that are directly related to the implementation, operation, and maintenance of the analyzed activity. Currently, the NRC hourly labor rate is $124, based on actual FY 2014 incomes, fringe benefits, and other indirect expenses.

Licensee labor rates were obtained from national wage data available on the Bureau of Labor Statistics Web site (http://www.bls.gov). Depending on the industry and the occupation (e.g., manufacturing, health, and safety), an appropriate mean hourly labor wage was selected. The wage was then increased using a multiplier of 2.0 to account for benefits (insurance premiums, pension, and legally-required benefits) to calculate the burdened labor rate. Because exact hourly wages are difficult to obtain and may not be sufficiently recent, nationwide mean hourly wages are used.

For all licensee labor, the hourly wages were based on the U.S. Bureau of Labor Statistics (BLS) May 2013 Occupational Employment Statistics and was inflated to FY 2015 dollars using the BLS Consumer Price Index (CPI) inflation calculator to October 2014. The table below lists the occupations, their pay, and the source of the information. All of the wages from the BLS were multiplied by a multiplier of 2.0 to calculate the burdened labor rate.

Table 5: Labor Rates Assumptions

Occupation	Mean Hourly Wage (2013 $)	Mean Hourly Wage (2015 $)	Burdened Labor Rate (2015 $)	Table from BLS
Financial Analyst	$44.05	$44.98	$89.96	May 2013, Table 13-2051. Financial Analysts.
Lawyer	$63.46	$64.79	$129.58	May 2013, Table 23-1011. Lawyers.
Executives	$85.77	$87.64	$175.28	May 2013, Table 11-1011. Chief Executives.
Licensing Engineer	$65.65	$67.08	$134.16	May 2013, Table 11-9041. Architectural and Engineering Managers.
Licensing Manager	$55.81	$57.03	$114.06	May 2013, Table 11-1021. General and Operations Managers.

3.3.5 Present Value Calculations

The present value calculations determine how much society would need to invest today to ensure that the designated dollar amount is available in a given year in the future. By using discount factors for the costs and benefits, it allows for future costs and benefits to be valued equally. Based on the Office of Management and Budget's (OMB) guidance, Circular No. A-4, dated September 17, 2003, present value calculations are shown using both 3 percent and 7 percent real discount rates are shown where the decision rationale is based on the 7 percent real discount rate. Although the NRC is not bound to follow OMB guidance, historically the NRC has voluntarily complied with the present value calculations developed in OMB Circular No. A-4 and has stated such in RA Guidelines and the RA Handbook.

3.4 Alternative 2—Rulemaking

3.4.1 Industry Implementation

The affected industry entities would incur costs from the proposed and final rules. First, the affected entities' personnel would provide comments on the proposed rule and draft guidance and participate in public meetings. The industry would also incur costs from reading and

understanding the final rule and final regulatory guide. For the purposes of this initial estimate, the NRC assumes the following industry implementation hours for each sub alternative.

Table 6: Hours Required per Entity for Rulemaking

Alternative	Stage	Financial Analyst	Lawyer	Executive	Licensing Engineer	Licensing Manager	Total per Entity
Alternative 2.1	Proposed Rule	80	40	8	40	40	208
Alternative 2.2	Proposed Rule	80	80	24	80	80	572
	Implementing Final Rule	160	20	8	20	20	
Alternative 2.3	Proposed Rule	120	60	16	60	60	464
	Implementing Final Rule	80	20	8	20	20	

The NRC assumes that the industry would provide comments and review draft guidance in 2017. Implementation of the rule and the regulatory guide is estimated to occur in 2019. Because Alternative 2.1 requires rescinding the rule, entities would have no costs or effort after the rule is rescinded. Overall, the level of effort of Alternative 2.1 is lower than the status quo because the rule would be rescinded. In the proposed rule stage, licensee financial analysts would spend 80 hours understanding, preparing, and providing comments to the NRC on the proposed rule and guidance. Industry lawyers would spend 40 hours reviewing the proposed rule and potential comments developed by the financial analysts. An industry executive would spend 8 hours, and the licensing manager and engineers would each spend 40 hours understanding, preparing, and providing comments to the NRC on the proposed rule and guidance.

As discussed in Section 3.3.1 of this regulatory analysis, Alternative 2.2 would affect all CPs, OLs, COLs, and applicants. Licensee financial analysts would spend 80 hours understanding, preparing, and providing comments to the NRC on the proposed rule and guidance. Industry lawyers would spend 80 hours reviewing the proposed rule and potential comments developed by the financial analysts. An industry executive would spend 24 hours and licensing managers and engineers would each spend 80 hours understanding, preparing, and providing comments to the NRC on the proposed rule and guidance. During the implementation of Alternative 2.2 (after the NRC publishes a final rule and final guidance), the industry would incur further costs for creating internal procedures for complying with the new financial oversight indicators. For the purpose of this regulatory analysis, the NRC assumes that an industry financial analyst will spend approximately 160 hours to understand the final rule and create procedures to comply with the amended regulations. The NRC assumes that an industry lawyer will spend 60 hours reviewing the rule and assisting the financial analyst with preparation of those procedures. An industry executive would spend approximately 8 hours total reviewing and approving those procedures. The licensing engineer and licensing manager would each spend 20 hours reviewing, concurring, and implementing those procedures.

For Alternative 2.3, licensee financial analysts would spend 120 hours understanding, preparing, and providing comments to the NRC on the proposed rule and guidance. Industry lawyers would spend 60 hours reviewing the proposed rule and potential comments developed by the financial analysts. An industry executive would spend 16 hours and a licensing manager and engineers would each spend 60 hours understanding, preparing, and providing comments to the NRC on the proposed rule and guidance. During the implementation of Alternative 2.3

(after the NRC publishes a final rule and final guidance), the industry would incur further costs when applying for license conditions and answering any requests for additional information (RAI) the NRC develops. For the purpose of this regulatory analysis, the NRC assumes that an industry financial analyst will spend approximately 80 hours to draft this portion of the license application and 80 hours to prepare a response to the RAI(s). The NRC assumes that an industry lawyer will spend 40 hours reviewing the license application for compliance and 20 hours reviewing the RAI response. An industry executive would spend approximately 8 hours total reviewing, commenting, and approving each license application. The licensing engineer and licensing manager would each spend 20 hours reviewing and concurring on the license application and another 20 hours each reviewing the RAI responses prior to submittal to the NRC.

The NRC has not attempted to quantify the costs for merchants obtaining financing for construction of a facility. The NRC assumes, for merchant applicants, that the cost of obtaining financing under any of the alternatives listed in Table 7 would be lower than the status quo due to the difficulty merchant applicants would have in obtaining financing prior to licensing. These cost savings could be significant for these applicants.

Table 7: Total Industry Implementation Costs

Sub Alternatives	Total Industry Implementation Costs	Undiscounted (2015 $)	3% Discount Rate (2015 $)	7% Discount Rate (2015 $)
Alternative 2.1	Rulemaking + Low Entities Estimate	$780,000	$740,000	$680,000
	Rulemaking + Medium Entities Estimate	$920,000	$870,000	$810,000
	Rulemaking + High Entities Estimate	$1,300,000	$1,200,000	$1,100,000
Alternative 2.2	Rulemaking + Low Entities Estimate	$7,300,000	$6,700,000	$6,100,000
	Rulemaking + Medium Entities Estimate	$7,600,000	$7,000,000	$6,300,000
	Rulemaking + High Entities Estimate	$8,800,000	$8,000,000	$7,200,000
Alternative 2.3	Rulemaking + Low Entities Estimate	$1,900,000	$1,700,000	$1,600,000
	Rulemaking + Medium Entities Estimate	$2,300,000	$2,100,000	$1,900,000
	Rulemaking + High Entities Estimate	$3,300,000	$3,000,000	$2,700,000

* Table values rounded to two significant figures.

3.4.2 Industry Operation

Alternative 2.1 would avoid further industry operational costs for preparing submittals or responding to financial qualifications reviews for initial licensing. Alternative 2.2 would have larger industry operations costs, compared to the status quo, because the industry would respond to NRC inspections, oversight, and potential enforcement processes within the cROP and ROP. These costs would also fall on a larger population of affected entities than the other alternatives. Alternative 2.3 would have larger industry operations costs than Alternative 2.1, but significantly less than Alternative 2.2.

The analysis considers the remaining duration of the licenses and discounts to present day dollars. The average remaining duration for operating nuclear plant licenses, including a license renewal, is approximately 24 years. The NRC assumes a new reactor would operate for 40 years, plus one license renewal period of 20 years, for a total of 60 years. Non-power production and utilization facilities have operating licenses that last for a maximum of 40 years and potential maximum license renewal periods of 20 years.

3.4.3 NRC Implementation

The NRC would incur costs for rule promulgation and guidance creation. The NRC estimates that rulemaking would require 945 hours in FY 2015 and 1,260 hours in FY 2016 for proposed rule development and 215 hours in FY 2017 and 100 hours in FY 2018 for resolving public comments and issuing the final rule, assuming no significant adverse comments are received. Once the outcome of the rule can be anticipated, under Alternative 2 the NRC staff could seek Commission approval to grant a license exemption to financial qualifications requirements based on submitted exemptions requests.

The NRC would also issue draft and final regulatory guidance with the proposed and final rules. The NRC estimates, assuming there are no significant adverse comments, that it would require 500 hours in FY 2016 to prepare the draft guide (DG) and 110 hours in FY 2017 and 80 hours in FY 2018 for final regulatory guide (RG) development. If the NRC receives significant adverse comments, then development of the final regulatory guide would require 400 hours of effort in FY 2017 and 100 hours of effort in FY 2018. The NRC notes that besides regulatory guide development, NUREG-1577, Revision 1, would need to be revised. For the purposes of this analysis, the NRC assumes that a draft revision to NUREG-1577 would cost the same as developing a DG and the cost of developing a final revision to NUREG-1577 would cost the same as final RG development.

Alternative 2.1 would not have any DG, RG, or NUREG-1577, Revision 1, costs and therefore would save $124,000 in guidance creation costs compared to Alternative 2.3 in undiscounted dollars (1000 hours x $124 per hour).

Alternative 2.2 would require a DG, a RG, a revision to NUREG-1577, and additional guidance for ongoing oversight and enforcement procedures. The NRC assumes, for the purposes of this regulatory analysis, that additional guidance creation and training for Alternative 2.2 would therefore cost $124,000 greater than that for Alternative 2.3 in undiscounted dollars.

For Alternative 2.3, the NRC would incur costs for reviewing and issuing safety evaluations. The NRC assumes that each application submittal would require approximately 280 hours of review. This resource burden is considered to encompass utility and merchant plant applicants, as well as non-power production and utilization facility applicants. Three scenarios were considered based on the number of merchant applicants that would use this alternative. For the low number of applicants scenario, the NRC assumes that the first license would be issued in 2018. For the middle number of applicants scenario, the NRC would also review one license application in 2020 and two in 2022. For the high number of applicants scenario, the NRC would review three additional license applications in 2024.

These estimates are averages assuming past rulemaking activities. Alternative 2.1 would have the lowest required guidance resource estimates, followed by Alternative 2.3, and Alternative 2.2 would have the highest resource requirement because revisions to the cROP and ROP guidance and inspection manuals would be required as well. Alternative 2.3 has

higher implementation costs than Alternatives 2.1 and 2.2 because it would require NRC review and approval of license applications. Table 8 summarizes the NRC implementation costs for Alternative 2.

Table 8: Total NRC Implementation Costs for Alternative 2

Alternative	Scenario	No. of Applicants	Undiscounted (2015 $)	3% Discount Rate (2015 $)	7% Discount Rate (2015 $)
Alternative 2.1	No Significant Adverse Comments	N/A	$310,000	$300,000	$300,000
	Significant Adverse Comments		$400,000	$390,000	$370,000
Alternative 2.2	No Significant Adverse Comments	N/A	$570,000	$550,000	$530,000
	Significant Adverse Comments		$770,000	$740,000	$700,000
Alternative 2.3	No Significant Adverse Comments	Low	$620,000	$590,000	$560,000
		Medium	$730,000	$680,000	$630,000
		High	$830,000	$760,000	$680,000
	Significant Adverse Comments	Low	$790,000	$750,000	$700,000
		Medium	$890,000	$830,000	$770,000
		High	$990,000	$910,000	$820,000

* Table values rounded to two significant figures.

3.4.4 NRC Operation

Choosing Alternative 2.1 would eliminate further operational costs for the NRC, resulting in a net savings from the status quo (Alternative 1). However, if the NRC chooses Alternative 2.2, NRC operational costs would continue for inspections and enforcement during plant construction and operations depending on the circumstances of an individual licensee's financial status and the structure of the oversight program. For simplicity, the NRC assumes that ongoing oversight of licensee financial status would be similar to oversight of other financial audits the NRC has historically performed. Recently, the NRC staff recommended to the Commission to sunset the decommissioning trust fund spot-check program (herein identified as spot-check program).[18] The spot-check program performed approximately six audits (i.e. spot-checks) annually of licensee decommissioning trust funds. Maintaining the spot-check program costs NRC 0.3 FTE annually, or approximately $37,000 a year ($124,000 x 0.3) (ADAMS Accession No. ML14210A554). For the purposes of this analysis, the NRC assumes that ongoing oversight, as identified under Alternative 2.2, would cost approximately the same amount to the NRC as the spot-check program did annually. This oversight would begin after the final rule is implemented in 2018. Table 9 shows the NRC operations costs for Alternative 2.2 over 60

[18] SECY-15-0005, Recommendation to Sunset the Decommissioning Trust Fund Spot-Check Program. January 15, 2015 (ADAMS Accession No. ML14210A554).

years, beginning in 2018. The estimates in Table 9 are most likely low because the NRC performed approximately six spot-checks annually, while this alternative would be for all operating reactors and those under construction.

Table 9: Total NRC Operations Costs for Alternative 2.2 over 60 years

	Undiscounted (2015 $)	3% Discount Rate (2015 $)	7% Discount Rate (2015 $)
Total	$2,300,000	$1,000,000	$490,000

Choosing Alternative 2.3 would align reactor financial qualifications reviews with fuel cycle facilities financial qualifications reviews. The NRC operational costs for Alternative 2.3 would be significantly less than Alternative 2.2, but more than Alternative 2.1. The operations costs would be similar to the regulatory baseline. The NRC plans to quantify the NRC operational costs when additional information is available regarding each of these sub-alternatives.

3.4.5 Regulatory Efficiency

Alternative 2.1 would provide regulatory efficiency because it is rescinding the financial qualifications requirement. The NRC would rescind these regulations if it determines there is no nexus between safe plant construction and operation, and financial qualifications at initial licensing. Therefore, rescinding the rule would streamline the regulations. Alternative 2.2 would add another performance indicator to the cROP and ROP, which may not result in promoting regulatory efficiency. Alternative 2.3 would increase regulatory efficiency because the financial qualifications review would be substantially more targeted on the pertinent financial considerations..

3.4.6 Attributes Not Affected

The following attributes are not affected by any of the alternatives presented: (1) public health (accident), (2) public health (routine), (3) occupational health (accident), (4) occupational health (routine), (5) offsite property, (6) onsite property, (7) other government, (8) general public, (9) improvements in knowledge, (10) antitrust considerations, and (11) safeguards and security considerations, (12) environmental considerations, and (13) other considerations.

3.5 Totals

This section provides the totals both quantitatively and qualitatively for each of the alternatives.

3.5.1 Summary Table

For the summary table, any number or word in parentheses is considered a cost, or negative impact, to that attribute from the alternative. Any number or word without parentheses is considered a benefit, positive impact, to that attribute. The acronym “N/A” means not applicable, and the attribute was not affected by that alternative.

Table 10: Summary of Totals for Alternatives

Attribute	Alternative	Undiscounted Costs (2015 $)			3 Percent Discount Rate (2015 $)			7 Percent Discount rate (2015 $)		
		Low	Mid	High	Low	Mid	High	Low	Mid	High
Industry Implementation	2.1	($780)	($920)	($1,300)	($740)	($870)	($1,300)	($680)	($810)	($1,200)
	2.2	($7,300)	($7,600)	($8,800)	($6,700)	($7,000)	($8,000)	($6,100)	($6,300)	($7,200)
	2.3	($1,900)	($2,300)	($3,300)	($1,700)	($2,100)	($3,000)	($1,600)	($1,900)	($2,700)
NRC Implementation	2.1(NAC)*	($440)			($430)			($410)		
	2.1(SAC)*	($520)			($510)			($490)		
	2.2(NAC)*	($570)			($550)			($530)		
	2.2(SAC)*	($770)			($740)			($700)		
	2.3(NAC)*	($620)	($730)	($830)	($590)	($680)	($760)	($560)	($630)	($680)
	2.3(SAC)*	($790)	($890)	($990)	($750)	($830)	($910)	($700)	($770)	($820)
NRC Operation	2.1	Discussed qualitatively below								
	2.2	($2,300)			($1,000)			($490)		
	2.3	Discussed qualitatively below								
Net Quantitative Total	2.1(NAC)	($1,200)	($1,400)	($1,700)	($1,200)	($1,300)	($1,700)	($1,100)	($1,200)	($1,600)
	2.1(SAC)	($1,300)	($1,400)	($1,800)	($1,300)	($1,400)	($1,800)	($1,200)	($1,300)	($1,700)
	2.2(NAC)	($10,000)	($10,000)	($12,000)	($8,300)	($8,600)	($9,600)	($7,100)	($7,300)	($8,200)
	2.2(SAC)	($10,000)	($11,000)	($12,000)	($8,400)	($8,700)	($9,700)	($7,300)	($7,500)	($8,400)
	2.3(NAC)	($2,500)	($3,000)	($4,100)	($2,300)	($2,700)	($3,800)	($2,200)	($2,500)	($3,400)
	2.3(SAC)	($2,700)	($3,200)	($4,300)	($2,500)	($2,900)	($3,900)	($2,100)	($2,700)	($3,500)

Qualitative Attribute	Alternative	Discussion of Qualitative Costs	Discussion of Qualitative Benefits	Net Benefit
Industry Operation	2.1	No costs	Averted costs compared to status quo	Benefit
	2.2	Significant industry operational costs that are similar to responding to other performance indicators in the cROP and ROP	None	(Cost)
	2.3	Significant reduction in costs compared to the status quo	None	Benefit
NRC Operation	2.1	No costs	Averted costs compared to status quo	Benefit
	2.2	Discussed quantitatively in Table 10	None	(Cost)
	2.3	Similar costs to the status quo	None	No change
Regulatory Efficiency	2.1	N/A	Increase in regulatory efficiency because regulations are being removed	Benefit
	2.2	Adding performance indicators to the cROP and ROP or other procedure would decrease regulatory efficiency	None	(Cost)
	2.3	None	Increase regulatory efficiency because the financial qualification review would be substantially more targeted on the pertinent financial considerations	(Cost)
Net Qualitative Benefit (Cost)	2.1	Alternative 2.1 has more benefits than costs. The benefits tend to fall on the licensee or applicant and the NRC. Therefore, this alternative has a net qualitative benefit.		Net Benefit
	2.2	Alternative 2.2 has a net qualitative cost. Its benefits lie in improvements in knowledge of the current financial state of the licensee. However, there are significant costs placed on the licensees because most of the activity in this area occurs after commencement of reactor construction and continues throughout the duration of the license.		(Net Cost)
	2.3	Alternative 2.3 has a net qualitative benefit. Its benefits come from reducing the burden on the applicant to a ministerial review of financial plans prior to commencement of reactor construction.		Net Benefit

* NAC stands for no adverse comments. SAC stands for significant adverse comments.

** All table values rounded to two significant figures and are in thousands of dollars.

3.6 Disaggregation

A disaggregation was not performed for this draft regulatory analysis.

4. Decision Rationale for Selection of Proposed Action

The decision rationale for the selection of the alternative is based on quantitative and qualitative factors. Specifically, the costs of the rule are provided quantitatively and qualitatively and the benefits are provided only qualitatively.

In general, Alternative 2.1 and Alternative 2.3 are considered to be cost-beneficial alternatives relative to the no-action alternative (Alternative 1) as the qualitative benefits outweigh the quantitative and qualitative costs for each of the alternatives. Alternative 2.2 has significantly higher costs to comply with the regulation compared to the other alternatives and may require a backfit analysis if it affects those licensees that hold a CP, OL, or COL.

4.1 Cost-Beneficial Alternatives

Alternative 2.1 and Alternative 2.3 are cost-beneficial alternatives in a qualitative sense. However, Alternatives 2.2 and 2.3 have the highest quantitative costs. Therefore, to provide the NRC's recommended alternative, the cost-beneficial alternatives are analyzed relative to each other.

4.1.1 Quantitative Comparison

Table 10 summarizes the quantitative costs. All of the alternatives have quantitative costs for NRC implementation for rulemaking and guidance development that are within the same order of magnitude. However, Alternative 2.3 has higher NRC implementation costs due to the review and approval of licensee submittals. The industry accrues costs from commenting on the proposed rule and guidance and implementing the final rule. Alternative 2.1 would have the lowest costs because there would be no costs once the rule is rescinded. Alternative 2.2 has the highest quantified costs due to the costs for industry implementation and NRC operations. Alternative 2.1 would have a net savings for NRC operations compared to the status quo after the proposed rule stage, while Alternative 2.3 would have similar NRC operations costs as the status quo.

4.1.2 Qualitative Comparison

As discussed in Table 10, Alternative 2.1 has a net qualitative benefit where most of the benefits fall onto the applicant or licensee. Alternative 2.2 has net qualitative costs in industry operation and regulatory efficiency. Alternative 2.2 also has potentially large qualitative costs in industry operations due to ongoing oversight. This is not discussed quantitatively but may be if additional information is received through the rulemaking process. Alternative 2.3 has net qualitative benefit due to a reduction in industry operation costs balanced by the decrease in regulatory efficiency. Overall, Alternative 2.3 has a greater qualitative benefit than Alternative 2.1.

4.2 Decision Rationale for Selection of Cost-Beneficial Alternative

This is a draft document for a potential rulemaking. Therefore, for the purpose of this regulatory analysis, the NRC will not make a recommendation with respect to cost-beneficial alternatives.

Alternative 2.3 appears to have the greatest qualitative benefits compared to Alternatives 2.1 and 2.2. However, Alternative 2.3 also has larger quantitative costs compared to Alternative 2.1. Alternative 2.1 appears to have higher qualitative costs compared to Alternative 2.3. The majority of the benefits for Alternative 2.1 accrue to the licensee or applicant. Alternative 2.2 has significantly higher quantitative costs than either Alternative 2.1 or 2.3. Alternative 2.2 also has higher qualitative costs than Alternatives 2.1 and 2.3. The NRC will make a recommendation after seeking public comment on the regulatory basis document.

5. Backfitting

Alternatives 2.1 and 2.3 are not considered backfits as defined in 10 CFR 50.109, "Backfitting," because they would only affect current and new applicants for a license or applicants for a renewed license for a non-power production or utilization facility. However, Alternative 2.2 would be a backfit because it would create a new performance indicator in the ROP and cROP for those plants currently operating or under construction. For the purpose of the regulatory basis document, the NRC did not complete a thorough backfit analysis. However, the NRC does not believe this alternative would qualify as a cost-justified substantial safety enhancement as defined in 10 CFR 50.109(a)(3) because the financial qualifications nexus to safety is at most "indirect" as discussed in SECY-79-299, "Generic Issue of Financial Qualifications: Licensing of Production and Utilization Facilities (ADAMS Accession No. ML12236A723).

6. References

1. Ms. Ellen Ginsburg, Nuclear Energy Institute letter to Dr. Allison M. McFarlane, Chairman, NRC, dated November 13, 2012 (ADAMS Accession No. ML12334A187).

2. Mr. Mark A. McBurnett, Nuclear Innovation North America LLC, letter to Mr. R. William Borchardt, Executive Director for Operations, NRC, dated June 28, 2012 (ADAMS Accession No. ML12180A544).

3. SECY-13-0124, "Policy Options for Merchant (Non-Electric Utility) Plant Financial Qualifications," (ADAMS Accession No. ML13057A006).

4. SECY-15-0005, "Recommendation to Sunset the Decommissioning Trust Fund Spot-Check Program," (ADAMS Accession No. ML14210A554).

5. Staff Requirements Memorandum (SRM) to SECY-13-0124, "Policy Options for Merchant (Non-Electric Utility) Plant Financial Qualifications," (ADAMS Accession No. ML14114A358).

6. U.S. Nuclear Regulatory Commission, "Information Digest, 2014-2015," NUREG-1350, Volume 26, August 2014 (ADAMS Accession No. ML14240A480).

7. U.S. Nuclear Regulatory Commission, "Regulatory Analysis Technical Evaluation Handbook," NUREG/BR-0184, January 1997 (ADAMS Accession No. ML050190193).

8. U.S. Nuclear Regulatory Commission "Regulatory Analysis Guidelines of the U.S. Nuclear Regulatory Commission," NUREG/BR-0058, Revision 4, September 2004 (ADAMS Accession No. ML042820192).

9. U.S. Nuclear Regulatory Commission, "Generic Cost Estimates," NUREG/CR-4627, Revision 1 and 2, February 1992 (ADAMS Accession No. ML13137A259).

10. U.S. Office of Management of the Budget, "Regulatory Analysis," Circular A-4, issued September 2003.

11. Energy Policy Act, 42 U.S.C. h. 134 § 13201 et seq.

12. SECY-79-299, "Generic Issue of Financial Qualifications: Licensing of Production and Utilization Facilities." April 27, 1979 (ADAMS Accession No. ML12236A723)