POLICY ISSUE
NOTATION VOTE

November 22, 2013 SECY-13-0124

FOR: The Commissioners

FROM: Mark A. Satorius
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SUBJECT: POLICY OPTIONS FOR MERCHANT (NON-ELECTRIC UTILITY) PLANT FINANCIAL QUALIFICATIONS

PURPOSE:

The purpose of this paper is to provide policy options relating to the U.S. Nuclear Regulatory Commission (NRC) process for evaluating the financial qualifications for merchant plant initial license applicants. Financial qualifications requirements are promulgated at Title 10 of the *Code of Federal Regulations* (10 CFR) 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." This paper does not address financial qualifications requirements for current licensees or for other types of applicants such as those for non-power reactors or license transfers.

SUMMARY:

Under 10 CFR 50.33(f) and 10 CFR Part 50, Appendix C, applicants for initial licenses must demonstrate "reasonable assurance" that funds necessary to construct and operate a nuclear power plant are possessed or can be obtained. The sources of the funding must be provided in the application. Historically, applicants have relied on rate recovery to establish financial qualifications.

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The advent of 1990s deregulation has created a new class of “non-electric utility” initial license applicants. “Non-electric utility” applicants will be referred to as “merchant plant” applicants in this paper. These merchant plants sell the power they generate on the open market. Unlike traditional utility applicants, these merchant plant applicants have no defined rate-payer base, and cannot rely on such a base to demonstrate financial qualifications, per se. These merchant plant projects must, therefore, rely on traditional project-based financing or internal resources to advance their plants.

The industry asserts that in order to obtain financing, a merchant applicant needs to have already obtained a license, making it difficult if not impossible to identify the sources of funding, as required by the regulations.

The staff has identified two options for financial qualifications policy review for merchant plant applicants. These options are to retain the status quo, or to engage in rulemaking to amend or rescind, as appropriate, the financial qualifications regulations for initial license issuance. Additionally, industry proposed a “project finance” based license condition scenario. The staff, in coordination with the Office of the General Counsel, has concluded that the license condition proposal offered by industry is legally challenging and possibly infeasible and is not presented as an option. In order for a license condition to be viable, it must be able to be satisfied through a ‘ministerial’ act rather than a substantive post-license review. It appears to the staff that the industry proposed license condition would require a substantive, post-license, review and thus, is not a viable option.

The scope of this paper is limited to considering the nature of the NRC’s review of the financial qualifications of an applicant for a construction permit (CP) or operating license under 10 CFR Part 50 or for a combined license (COL) under 10 CFR Part 52. Accordingly, it does not address financial qualifications requirements either for current operating reactor licensees or for other types of applicants such as those for non-power reactors or license transfers.

If the Commission is willing to consider alternative ways to review an applicant’s financial qualifications, including whether such review is necessary or useful (in effect, to license initial license applicants with insufficient or no identified funding at the time their license is issued), then Option 2 would be appropriate. If the Commission does not wish to allow such applicants to receive licenses, then the status quo should be maintained. If the status quo is selected (Option 1), the Commission might consider setting an expiration date on unexecuted COLs or, alternatively, providing for a post-licensing, pre-construction confirmation of financial qualifications. Either of these status quo reforms could be accomplished using license conditions and would provide additional assurance that a licensee’s financial qualifications remain viable at the time of construction.

A non-concurrence on this paper, which is attached as Enclosure 1, advocates for maintaining the status quo (Option 1). The non-concurrence advocates for maintaining the status quo in light of long-standing Commission precedent that has required the submission of financial qualifications information in order to obtain a license and potential risks associated with the ability of financially stressed licensees to operate and decommission safely. The staff agrees that the current regulations and Commission precedent require the submission of financial information. However, after reviewing the experience to date with the financial qualification

requirements, the staff believes that a reexamination of the efficacy of those requirements is appropriate.

Thus, the staff recommends that the Commission authorize the staff to begin a rulemaking effort to amend or rescind, as appropriate, the financial qualifications regulations for initial license issuance.

BACKGROUND:

Nuclear Innovation North America, LLC (NINA) raised an issue related to financial qualification requirements in a 2012 letter, as did the Nuclear Energy Institute (NEI) in a subsequent 2012 letter. These stakeholders said it is difficult, if not impossible, for merchant plant COL applicants to secure project funding to meet financial qualifications requirements in advance of initial license issuance because of perceptions from the financial community that the licensing process is uncertain. For this paper, "initial license" is intended to mean, a CP and an OL under 10 CFR Part 50, or a COL under 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants." Both NINA and NEI, in the letters they submitted to the NRC in 2012, refer to this as a generic issue of reactor, specifically merchant generator, COL issuance. There are no references in their letters to other types of applicants.

The major policy issue raised for Commission consideration is whether an applicant should be issued a COL if it has insufficient (or no) funding identified at the time the license is to be issued. The issue involves an additional policy consideration specific to COL applications because COLs do not expire, thereby allowing COL licensees to defer construction indefinitely. Such a deferral calls into question the efficacy of pre-license financial qualifications reviews.

The advent of deregulation has created a class of merchant plant licensees that are not regulated by a state public service commission with a rate-payer financial base. Industry has asserted that, in many, if not all, merchant plant cases, financiers will not commit project funding without an NRC license in hand. However, 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. Industry asserts that this has created an impediment to initial licensing[1] for merchant plant applicants that cannot be resolved absent a change in Commission policy or regulation.

The Commission derives its authority to review license applicants' financial qualifications from Section 182a. of the Atomic Energy Act (AEA) of 1954, as amended. 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." The legislative history

[1] *See* Letter from Ellen Ginsberg to Chairman Macfarlane titled Request for Commission Guidance to Clarify Application of Financial Qualifications Requirements in the Context of New Nuclear Plant Developed by Merchant Generators regarding South Texas (Nov. 13, 2012) (ML12241A675).

does not offer any background on the AEA's purpose for authorizing the Commission to require information on financial qualifications.

Under 10 CFR 50.33(f), utility applicants are exempt from review of their financial qualifications for reactor operation. Utility applicants can demonstrate financial qualifications for construction by showing that they are allowed to recover their construction costs.[2] By contrast, applications from merchant plant applicants are substantively reviewed to ensure compliance with 10 CFR 50.33, "Contents of Applications; General Information," and 10 CFR Part 50, Appendix C for both construction and operation. These merchant plant financial qualifications reviews are conducted using the standard review plan guidance contained in NUREG-1577, "Standard Review Plan on Power Reactor Licensee Financial Qualifications and Decommissioning Funding Assurance," Revision 1, March 1999.

The staff has engaged in public outreach on this policy question to inform the development of the options presented. The NRC held two public meetings: one in October 2012 and the second in January 2013. The first meeting explored the question of whether an impediment to licensing[3] exists and, if so, whether it is a generic issue. The second meeting focused on the viability of the license condition proposals advanced by NINA and NEI.[4]

DISCUSSION:

Demonstration of financial qualification before issuance of a license is required by current NRC regulations but is not required, per se, by the AEA. The AEA Section 182a. states that an applicant for a license must provide "information that the Commission, by rule or regulation, *may determine to be necessary* to decide technical and financial qualifications of the applicant as the Commission *may deem appropriate for the license*." (Emphasis added). The AEA grants broad discretion to the Commission to determine what information it deems appropriate for issuance of the license.

As stated earlier, industry has asserted that the current financial qualifications regulations have created an impediment to initial licensing. The asserted impediment is that, without a license, these applicants cannot demonstrate financial qualifications in the detail required by the current regulation, yet the regulations require that demonstration before an initial license can be issued. Further, the fact that COLs have no expiration date allows COL holders to "bank" their licenses indefinitely and thereby undermines the usefulness of pre-licensing financial qualifications reviews. A one-time review performed, in the case of "banked COLs", potentially years before the commencement of construction, has little if any relevance to the financial qualification of the COL holder when that construction actually begins.

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2 *See*, e.g., Final Safety Evaluation Report for Combined Licenses for Virgil C. Summer Nuclear Station Units 2 and 3, p.1-38 – 1-39, (Aug. 17, 2011) (ML110310049).

3 Final Safety Evaluation Report for Combined Licenses for Virgil C. Summer Nuclear Station Units 2 and 3, p.1-38 – 1-39, (Aug. 17, 2011) (ML110310049).

4 Both meetings were transcribed. The October 2012 transcript can be found at ADAMS Accession No. ML12291A282, and the January 2013 transcript can be found at ADAMS Accession No. ML13022A446.

While it is unquestionably the duty of applicants to demonstrate that they meet NRC regulations, the extent of regulations concerning financial qualifications is within the discretion of the Commission. The discretionary nature of the Commission's financial qualifications determination has been validated by the Commission itself, and in Federal court. "*Section 182a. of the AEA does not impose any financial qualifications requirement on license applicants; it merely authorizes the Commission to impose such financial requirements as it may deem appropriate.*"[5] The First Circuit has stated that "*[t]he Act gives the NRC complete discretion to decide what financial qualifications are appropriate.*"[6] The Commission's interpretation of the financial qualifications requirements has evolved into what exists today.

Regulatory Development of Financial Qualifications

Financial qualifications reviews originated in a regulation adopted by the Atomic Energy Commission in 1956, pursuant to its authority under the AEA to require from applicants: "Such information as the Commission ... may determine to be necessary to decide such of the technical and financial qualifications of the applicant ... as the Commission may deem appropriate."[7] The 1956 rule stated that license applicants must be "technically and financially qualified to engage in the proposed activities."[8]

In 1968, the Commission revised 10 CFR 50.33(f) and added Appendix C to Part 50. 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.[9]

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5 *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 & 2), CLI-78-1, 7 NRC 1, 8-9 (1978).

6 *New England Coalition on Nuclear Pollution v. NRC*, 582 F.2d 87, 93 (1st Cir. 1978).

7 Atomic Energy Act (AEA) of 1954, 42 U.S.C. 2011, 83 Pub. L. 703, Section 182a., as amended.

8 10 CFR 50.40(b) (Supp.1956).

9 "Part 50-Licensing of Production and Utilization Facilities," 33 Fed. Reg. 9704 (July 4, 1968).

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

In 1978, the Commission issued its seminal *Seabrook* decision, which included an extensive discussion of the financial qualifications review. The Commission explained that "the 'reasonable assurance' concept embodied in the regulation is more flexible than many of the Commission's safety criteria," and "does not normally contemplate refined analyses of an applicant's likely future ability to meet specific costs."[10]

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).[11] 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 financial qualifications issue may be reexamined."[12]

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 staff prepared SECY-79-299, "Generic Issue of Financial Qualifications: Licensing of Production and Utilization Facilities," dated April 27, 1979. The staff recommended amending the regulations to provide that an electric utility applicant:

> (1) whose rates for service are determined by state and/or federal regulatory agencies (or are self-determined), and (2) whose most senior long-term debt is rated "A" or higher by both of the major securities rating services would be deemed financially qualified for a construction permit. 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 financial qualifications reviews by the staff. Further inquiry and adjudication of an applicant's or a licensee's financial qualifications would be foreclosed after the Commission determines that compliance with the criteria has been demonstrated.[13]

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10 CLI-78-1, 7 NRC at 9-10 (1978).

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

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

13 SECY-79-299, Generic Issue of Financial Qualifications: Licensing of Production and Utilization Facilities, p. 10. (Apr. 27, 1979) (ML12236A723).

On August 18, 1981, the Commission published a notice of proposed rulemaking stating it was considering eliminating financial qualifications review for electric utilities for both construction permits (regardless of the ratings given their bonds) and operating licenses (with the possible exception of retaining financial qualifications review with respect to decommissioning costs).[14] In the statement of consideration for this proposed rule, the Commission stated its belief that "its existing financial qualifications review has done little to identify substantial health and safety concerns at nuclear power plants.[15] The Commission adopted this proposal as its final rule.[16] It was also recognized that the financial qualifications of an electric utility are presumed because they have access to rate-based revenues.[17]

Following publication of the final rule, the New England Coalition on Nuclear Pollution and others filed a petition for review in Federal court. The DC Circuit Court granted the petition and remanded the rule for further proceedings.[18]

In response, the Commission published a new proposed rule "Elimination of Review of Financial Qualifications of Electric Utilities in Operating License Reviews and Hearings for Nuclear Power Plants" and again invited public comment.[19] In the new proposed rule, the Commission questioned the nexus between financial qualifications reviews and safety and invited "all interested parties to comment on whether financial qualifications 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."[20] The Commission went on to say that its:

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14 "Financial Qualifications; Domestic Licensing of Production and Utilization Facilities," 46 Fed. Reg. 41786 (Aug. 18, 1981).

15 "Financial Qualifications; Domestic Licensing of Production and Utilization Facilities," 46 Fed. Reg. 41786 (Aug. 18, 1981).

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

17 46 Fed. Reg. at 41788.

18 *New England Coalition on Nuclear Pollution v. NRC*, 727 F.2d 1127 (D.C. Cir. 1984). The court stated: In its notice of proposed rulemaking, the Commission had based its proposal on two premises: "first, that regulated utilities (or those able to set their own rates) will be able to meet the costs for safe construction and operation of a nuclear power production or utilization facility'" through the ratemaking process and, second, "that there was no demonstrated relationship between financial qualifications and safety, direct inspection and enforcement being a more effective means of achieving the latter goal." In the statement of basis and purpose accompanying the rule, "the Commission chose to abandon, rather than defend, the first premise of its proposed rule….. [T]hat premise was essential because it explained why public utilities could reasonably be treated differently, which was the whole object of the rule." *New England Coalition*, 727 F.2d at 1130. (Internal citations omitted).

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

20 *Id.* at 13045–13046.

> experience leads 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. However, the Commission has not conducted any detailed study to determine if there exists any significant correlation between its financial qualifications reviews and later safe operation and use of nuclear materials. Therefore, the Commission does not propose such a rule at this time, but it might consider doing so later if there is adequate support.[21]

Following the notice and comment period, the Commission amended the 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.

Merchant Plant Financial Qualifications in Response to Restructuring

The 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 which it recommended rulemaking to enhance the financial qualifications reviews for merchant plant applicants. In that paper, the staff stated that the "NRC also has viewed the determination of licensee financial qualifications for plant operations as being of secondary importance as a means of ensuring the protection of public health and safety."[22] The staff expressed concern that industry restructuring and the loss of "natural monopoly" status by electric utility generators, as defined by 10 CFR 50.2, "Definitions," might affect whether power reactor licensees would continue to be able to provide necessary funds for to operate and decommission their nuclear plants safely.

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21 "Elimination of Review of Financial Qualifications of Electric Utilities in Operating License Reviews and Hearings for Nuclear Power Plants," 49 Fed. Reg. 13044 (Apr. 2, 1984). The statement of consideration on the question of the safety nexus to financial qualification reviews included two additional Commissioner views. First, Commissioner Frederick M. Bernthal stated that "[a]s a general policy matter, I have always questioned whether the NRC has the necessary resources and expertise to justify its involvement in assessing financial qualifications of applicants…. However, denying a license for lack of financial qualifications in this context means that the Commission would be prejudging the ability of applicant to construct and operate the plant consistent with public health and safety; the Commission would be denying a license because of *the possibility* that the applicant might cut corners on safety…. I question whether the Commission should require any financial review *unless* there is an independent concern about the management integrity of an applicant." Next, Commissioner Asselstine stated "that he does not believe that the Commission now has sufficient documented evidence to support a final rule to exclude financial qualification reviews at the operating license stage" *See* 49 Fed. Reg. 13046 (Apr. 2, 1984). (Emphasis in the original).

22 SECY-97-253, SECY-97-253 – Policy Options For Nuclear Power Reactor Financial Qualifications In Response To Restructuring of the Electric Utility Industry, p. B-2, (Oct. 24, 1997) (ML12263A738).

The staff also recommended that the NRC should continue to distinguish between electric utilities and non-electric utilities.

In SRM-SECY-97-253, the Commission did not provide "the necessary majority for the staff to proceed with a proposed rulemaking …. Therefore, the NRC's existing regulatory framework … [was] maintained." Maintaining that framework preserved the distinction between electric utilities and merchant plants.

Financial Qualifications for License Renewals

In a 2004 rulemaking, which discontinued financial qualification reviews for power reactors at the license renewal stage except in very limited circumstances, the Commission stated 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….these reviews form part of the licensing basis that the licensee must maintain for the 40 year term of the initial license and for any license renewal period."[23]

However, in that same statement of consideration, the Commission stated that "[t]he NRC believes that its primary tool for evaluating and ensuring safe operations at nuclear power reactors is through its inspection and enforcement programs…."[24] Further, the Commission stated that "[t]he NRC has not found a consistent correlation between licensees' poor financial health and poor safety performance. If a licensee postpones inspections and repairs that are subject to NRC oversight, the NRC has the authority to shut down the reactor or take other appropriate action if there is a safety issue."[25]

Merchant Plant Financial Qualification Reviews for Advanced Reactors

In the context of modular plant licensing, merchant plant licensing, and high-temperature gas reactor licensing, the staff addressed financial qualification reviews for merchant plants in SECY-02-0180, "Legal and Financial Policy Issues Associated with Licensing New Nuclear Power Plants." In its discussion, the staff reiterated that the Commission "has the authority to determine by regulation that a given class of non-electric-utility applicants for nuclear power plant licenses shall not be required to submit financial qualifications information." However, the staff went on to say that "the staff has not identified a reasonable basis for establishing such a class of applicants. The staff recommends that non-electric-utility applicants continue to be required to submit financial qualifications information in accordance with 10 CFR 50.33(f)."

In SECY-02-0180, the staff considered whether the financial qualification requirements should be retained for non-electric utility applicants. The staff stated that:

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

[24] *Id.* at 4442.

[25] *Id.* at 4443.

> [n]onutilities face more competition in the marketplace than utilities and are not guaranteed a return by a State public service commission. The financial information required to fulfill 10 CFR 50.33(f) is information that the applicant will have at its disposal. The NRC seeks to review financial information in order to have reasonable assurance that the facility will have the resources to operate safely. The staff believes it is premature to categorize any applicant as having reasonable assurance before examining such assets or parental guarantees.[26]

The staff made its recommendation because "the staff [had] not identified a reasonable basis for establishing such a class of applicants [of non-utility applicants exempt from submitting financial qualifications information]."[27]

In SRM-SECY-02-0180, the Commission accepted the staff's recommendation and retained the requirement that merchant plant applicants submit financial qualifications information in accordance with 10 CFR 50.33(f).

While the staff has not denied an applicant an initial license or license transfer because of financial qualifications deficiencies, the staff has asked questions about the financial information submitted in their applications. There have been previous instances in which the staff required license transfer applicants to provide additional financial support before the transfer request was approved. This additional support took the form of draft financial support agreements which, upon staff review and approval, were incorporated as conditions to the license transfer.[28]

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[26] SECY-02-0180, SECY-02-0180 – Legal and Financial Policy Issues Associated with Licensing New Nuclear Power Plants, p. 3, (Oct. 7, 2002) (ML022130093).

[27] *Id.*

[28] The NRC staff has previously made only three findings of reasonable assurance of financial qualifications for plants with a negative income statement as part of an indirect license transfer. The first finding is summarized in the April 11, 2008, Safety Evaluation for an indirect transfer of control and related to a restructuring of Entergy Corporation (ADAMS Accession No. ML080920596) addressed a negative net income statement for Vermont Yankee Nuclear Power Station (VY). The NRC staff found VY financially qualified, based in part on additional financial arrangements provided by Support Agreements put in place by Entergy Corporation, the parent company of VY, and access to a line of credit. The second finding is summarized in the October 30, 2009, Safety Evaluation for direct and indirect transfers of control and related to corporate restructuring and EDF Inc.'s acquisition of a 49.99-percent ownership interest in Constellation Energy Nuclear Group, LLC (CENG) (ADAMS Accession No. ML093010003); it) addressed a negative net income statement for R.E. Ginna Nuclear Power Plant (Ginna). The NRC staff found Ginna financially qualified, based in part on additional financial arrangements provided by Support Agreements from Constellation Energy Group, Inc. and E.D.F. International SAS (EDFI), and a Master Demand Note. The third finding is summarized in the February 15, 2012, Safety Evaluation for the indirect transfer of control and related to a merger between Exelon Corporation and Constellation Energy Group, Inc. (ADAMS Accession No. ML113560408); it) addressed a negative net income statement for Ginna. The NRC staff found Ginna financially qualified, based in part on financial arrangements provided by a revised support agreement to specify the agreement between Exelon Generation and the CENG subsidiary licensees, in addition to the support agreement when combined with the EDFI support agreement and the master demand note.

Commission history and precedent has consistently shown an ongoing concern for the potential of degraded safety in the face of degraded financial qualifications. However, this history also consistently indicates a Commission belief that any nexus between safety and the NRC's review of financial qualifications is indirect and of secondary importance to ensuring public health and safety. Furthermore, it is clear that Section 182a. of the AEA grants the Commission much flexibility in the arena of financial qualifications requirements.

Given the number of merchant plant COL applications currently under review, as well as the potential for new small modular reactor (SMR) merchant plant applicants, the staff believes financial qualifications requirements for initial licensing merit consideration by the Commission.[29] This paper presents options for Commission consideration for use in such future new reactor licensing decisions. One option, advocated by NINA/NEI, but not listed as an option in this paper, is the use of a license condition in the absence of any identified sources of funds.

License Conditions

License conditions have historically been used as part of licensing, and there is Commission precedent to that effect in the context of financial qualification reviews. In the PFS and LES cases,[30] license conditions were used to meet the financial qualifications requirements. However the Commission suggested that the types of conditions used in those cases would not be appropriate for reactor licensing. Specifically, the Commission stated that its decision was "outside the reactor context" and that the Commission would "not require such applicants [as PFS] to meet the detailed Part 50 requirements."[31]

In contrast to the general language of the 10 CFR Part 70 financial qualification regulations, the 10 CFR Part 50 financial qualification regulations are far more detailed and comprehensive. They contain several paragraphs of requirements. They require every applicant at the construction stage to submit financial information demonstrating that it actually "possesses or has reasonable assurance of obtaining the funds necessary to cover estimated construction costs and related fuel cycle costs."[32]

The standard review plan for financial qualifications determinations allows for the use of license conditions under the current 10 CFR Part 50 financial qualifications regime. NUREG-1577, "Standard Review Plan on Power Reactor Licensee Financial Qualifications and Decommissioning Funding Assurance," Revision 1, states that, "[i]f the reviewer determines that

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29 Additionally, the staff has previously stated that, "[i]f the staff determines that the existing regulatory framework becomes ineffective or inefficient in addressing operational financial qualifications in the context of rate deregulation, it will inform the Commission and recommend approaches for the Commission's consideration." *See* SECY-98-153 at 6.

30 *Louisiana Energy Services, LP* (Claiborne Enrichment Center), CLI-97-15, 46 NRC 294, 299-300 (1997); and *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-00-13, 52 NRC 23, 29-30 (2000).

31 *Private Fuel Storage, LLC,* CLI-00-13, 52 NRC at 30.

32 10 CFR 50.33(f)(1).

a license applicant does not meet these financial qualification standards, he or she will either deny issuance or transfer of the OL, *condition the OL*, or recommend initiation of other regulatory action to mitigate financial qualifications concerns."[33] (Emphasis added).

Under the current regulations, it may be theoretically possible to craft a license condition in the absence of any identified sources of funds that would satisfy the requirements for an appropriate license condition, but resolving the details would be significantly legally and technically challenging so as to render this approach infeasible. The industry has submitted a proposed generic license condition. The staff's analysis of this license condition is contained in Enclosure 2.[34]

The Commission must be able to make the findings in 10 CFR 52.97, "Issuance of Combined Licenses," before issuing the COL. As a legal matter, any such conditions imposed under 10 CFR 52.97(c) must be specific enough so that determination of whether they are satisfied is a ministerial act.[35] Thus, any license condition imposed could not require a submittal for staff review and approval. Section 185b. requires all safety findings to be made before COL issuance, which would manifestly not be done if there was a condition to submit the substantive basis for determining financial qualifications later. Similarly, Commission precedent states that it is unacceptable to have issues material to licensing deferred, even with another hearing opportunity. The Commission stated that all issues material to licensing had to be resolved at initial licensing—not delayed until later.[36] It does not appear feasible to develop a viable license condition which would both demonstrate compliance with the current requirements of 10 CFR Part 50, Appendix C, and whose satisfaction could be shown by ministerial act.

Crafting an acceptable license condition, under the current regulations, becomes even more challenging when "newly formed entities" are the merchant plant applicants.[37] As discussed above, Appendix C of 10 CFR Part 50 was added to the NRC regulations in 1968.[38] This appendix was added to, among other considerations, require more detailed financial information for "newly formed entities." The statement of consideration for Appendix C stated that "[w]ithout limitation on the generality of the foregoing requirements, each application for a construction permit or an operating license submitted by an *entity organized for the primary purpose of*

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33 NUREG-1577 at 10.

34 A list of references is included in Enclosure 3.

35 "[W]e must insist that the condition be precisely drawn so that the verification of compliance becomes a largely ministerial act rather than an adjudicatory act – that is, the Staff verification efforts should be able to verify compliance without having to make overly complex judgments …" (*Private Fuel Storage, LLC*, CLI-00-13, 52 NRC at 34).

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

37 Currently, the NRC is reviewing COL applications from several "newly formed entities" including UniStar Nuclear Energy (Calvert Cliffs Unit 3), and Nuclear Innovation North America LLC (South Texas Project, Units 3 & 4).

38 "Part 50-Licensing of Production and Utilization Facilities," 33 Fed. Reg. 9704 (July 4, 1968).

constructing or operating a facility shall include information showing the legal and financial relationships it has or proposes to have with its stockholders or owners, and their financial ability to meet any contractual obligation to such entity which they have incurred or propose to incur, and any other information necessary to enable the Commission to determine the applicant's financial qualifications."[39] (Emphasis added to define "newly formed entity").

In its present form, 10 CFR Part 50, Appendix C, states that, because newly formed entities have "little or no prior operating history, somewhat more detailed data and supporting documentation will generally be necessary [to demonstrate financial qualifications]." This "more detailed data and supporting documentation" includes an estimate of construction costs and the source of the funds to support those costs. Appendix C requires that these applicants "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."

Further, this specificity is documented with "copies of agreements or contracts" for all the companies contributing to the funding plan.[40]

For those applicants described above with insufficient or no identified sources of funding, it may be difficult to prepare an acceptable license condition containing the level of financial information detail required by Appendix C that can be satisfied by operation of a ministerial act given those applicants' lack of identified sources of funds and the attendant documentation for such sources.

The staff has carefully reviewed the NEI proposal for a generic COL financial qualifications license condition and, as further described in Enclosure 2, does not believe this proposed condition meets the current regulations.

OPTIONS:

The options described below discuss licensing approaches for addressing financial qualifications for merchant plant applicants.

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

The status quo option would result in no changes to the financial qualifications demonstration requirements in 10 CFR Parts 50 and 52. Under this option, no additional NRC resources would be expended at this time to address merchant plant applicant financial qualifications. Selection of this option would retain the current requirement to submit information that some staff members have argued is relevant and needed to ensure protection of public health and safety.

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39 "Part 50-Licensing of Production and Utilization Facilities," 33 Fed. Reg. 9704 (July 4, 1968).

40 10 CFR Part 50, Appendix C, Section II(A).

The current financial qualifications demonstration review process is consistent with the AEA and Commission precedent. In appropriate circumstances, license conditions are permitted under the current regulations.[41] Exemptions also are permitted when properly justified under the requirements of 10 CFR 50.12, "Specific Exemptions."

Continuing the status quo does not, per se, preclude all merchant plant applications. Rather, it requires merchant plant applicants, including those with no identified funding sources, to meet current requirements. While some have asserted that it is impossible for merchant applicants to obtain sufficient funding before a license is issued, and thus impossible to meet the current regulations, at the time the current merchant plants were docketed, they all had identified some sources of funds.

Evolving energy markets have affected this proposed funding as the applications have been under review.[42]

Pros and Cons

The status quo provides that a license will be issued only when the COL applicant(s), "possesses or has reasonable assurance of obtaining the funds necessary to cover estimated construction costs and related fuel cycle costs"… as well as "estimated operation costs for the period of the license."[43] Additionally, this option will ensure that COLs are only issued when the detailed requirements of Appendix C are met, which is particularly relevant for newly formed entities. If the NRC believes that the current financial qualifications determination requirements are sound and support the NRC's mission, then those applicants that cannot meet financial qualifications determination requirements are justifiably denied a license.

The primary advantage to this option is that it would allow the NRC to continue to make financial qualifications determinations based on facts instead of speculating about future financing. Further, the status quo would require minimal additional resources.

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41 License conditions may be used to meet financial qualifications under the current regulations. The 10 CFR 50.33, "Contents of Applications; General Information," provisions require that an applicant must provide a plan indicating their method for providing reasonable assurance. The requirements are not prescriptive, in that an applicant does not necessarily need to provide evidence of a firm financial commitment. Rather, reasonable assurance may be achieved, depending on the particular facts, by presentation of commitment letters for equity contributions to the project, a purchase power agreement for the power offtake or some combination of such items. License conditions would then be used to 1) verify final executed financial documents when draft documents have been used as the financial qualifications bases; and 2) verify the existence of additional documentation required by the proposed financial plan.

42 *See* Calvert Cliffs, Unit 3, COL Application, Part 1: General Information, p.8 of 44 (Mar. 14, 2008) (ML081020911); Comanche Peak Units 3 and 4, COL Application, Part 1, p.12 of 34 (Sept. 19, 2008) (ML082681092); Nine Mile Point, Unit 3, COL Application, Part 1, p. 14 of 50 (Sept. 30, 2008) (ML082900641); and South Texas Project, Units 3 & 4, COL Application, Part 1, p.9 of 30 (Sept. 24, 2008) (ML082830951).

43 10 CFR 50.33(f)(1)-(3).

The primary disadvantage of the status quo is that this option may result in the denial of licenses for reasons that are not necessary for ensuring public health and safety, in light of the NRC's many other mechanisms for ensuring safe plant operation. Since 10 CFR 50.33(f) requires applicants to identify sources of funding for construction and operation, some applicants may not meet the financial qualification requirements and, thus would not receive licenses based, perhaps solely, on financial qualification considerations.

Additionally, the current approach appears to negate the usefulness of the pre-licensing financial qualifications determination review for those COL-holders who choose to "bank" their licenses for an indeterminate timeframe before beginning construction. Regulations in 10 CFR 52.104, "Duration of Combined License," state that a COL is "issued for a specified period not to exceed 40 years from the date on which the Commission makes a finding that acceptance criteria are met under 52.103(g) or allowing operation during an interim period under the combined license under 52.103(c)." A COL-holder is not required to begin construction at a set time and could defer construction for an indeterminate length of time. Since, pursuant to 10 CFR 52.104, the 40-year clock does not start until plant operation begins, the pre-license financial qualifications determination review might be completely irrelevant and inapt when construction actually commences, or as construction proceeds. The status quo option would not, under this scenario, serve the intended function of assuring the level of financing expected by the current regulations. However, if the status quo option is selected, the Commission might consider setting, by license condition, an expiration date on unexecuted COLs or, alternatively, providing for a post licensing, preconstruction confirmation of financial qualifications.[44] A license condition to provide for post licensing, preconstruction confirmation of financial qualifications would not encounter the same difficulties as discussed above with the NEI proposed license condition since all of the detailed financial information, and the corresponding NRC review of that information, would have been completed at the licensing stage. The condition would simply verify that the information that had previously been provided continued to be valid.

Either of these status quo reforms would provide additional assurance that a licensee's financial qualifications at the time of construction remains viable.

Option 2—Rulemaking (Recommended Staff Option)

As stated elsewhere in this paper, the Commission has the statutory authority to revise or reform financial qualifications reviews requirements as it "may deem appropriate for the license." In the 57 years since the initial promulgation of the financial qualifications demonstration rules, there does not appear to have been a clear demonstration of a direct relationship between the financial qualifications demonstration and plant safety. To the extent that such a nexus does exist, it has been characterized as indirect.[45]

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[44] Such a condition would not be necessary for Part 50 CP applicants, since a CP does expire, and thus does not allow for indefinite deferral of construction.

[45] SECY-79-299, Generic Issue of Financial Qualifications: Licensing of Production and Utilization Facilities, p. 10, (Apr. 27, 1979) (ML12236A723).

The staff recommendation is to engage in a rulemaking effort to amend or rescind the 10 CFR Part 50 financial qualifications demonstration requirements. Such an effort would involve stakeholder interactions to develop a detailed regulatory and technical basis for any revisions to the NRC's financial qualifications demonstration requirements. Approaches that a rulemaking effort might take are summarized below. A detailed discussion of these approaches is included as Enclosure 4.

Approach A: Rulemaking to Rescind Financial Qualification Requirements for Initial Licensing

This approach would rescind the financial qualification requirements for initial licensing. The financial qualifications requirements have always been viewed as an additional indirect method of ensuring safety. However, since these requirements were initially promulgated the NRC's programs and processes for ensuring safe plant operation have matured and become more robust. The current direct regulatory methods provide a vigorous framework for ensuring the safe operation of all plants – utilities and merchant plants alike.

The current regulatory framework distinguishes between electric utilities and merchant plants. Current regulations impose a significantly heavier burden on merchant plants to demonstrate financial qualifications. The reasoning is that utilities recover money through rate setting, and thus do not face the same type of financial pressures as merchant plants, presumably reducing the disincentives that such financial pressure might be assumed to create with respect to spending money on ensuring safety. While it is certainly true that nuclear plant operators may choose not to spend money on safety measures, there is no evidence to support the idea that nuclear plant operators choose not to spend money on safety measures because they are short on funds. In particular, there is no evidence to support the notion that electric utilities, with guaranteed rate recovery, are more likely to spend money on safety measures.

Thus, as further discussed in Enclosure 4, one option for the Commission is to rescind the financial qualification requirements for initial licensing in light of the lack of evidence to support the efficacy of our current financial qualification requirements, the robustness of our other methods for ensuring safety, the potential barriers to licensing, and the questionable usefulness of initial financial qualifications information given that an applicant's financial arrangements may change before construction is initiated. This is consistent with executive orders suggesting that regulations be made more effective and less burdensome while still achieving regulatory objectives.

Approach B: Rulemaking to Amend Financial Qualifications to an Ongoing Oversight Indicator

Using this rulemaking approach, the NRC would no longer conduct financial qualifications reviews as a component of an initial licensing decision. Instead, the staff would conduct activities to monitor the overall financial health of the licensee as an ongoing process over the construction and operating life of the plant. Relying on such post-license monitoring as the sole financial review would be a new mechanism of oversight.[46]

[46] Under the current financial qualifications rules, the NRC may request, post-license and, on a case-by-case basis, "information regarding a licensee's ability to continue the conduct of the activities authorized by the license and to decommission the facility". (10 CFR 50.33(f)(5)).

In this approach, indicators of financial distress would result in licensee engagement to explore whether the licensee's financial distress has any implications for safe construction or operation. Certain measures could be set forth in staff guidance. Additionally, there could be dialogue between NRC financial reviewers, NRC regional offices, and licensees, as appropriate, to ensure the staff is aware of any licensees experiencing financial distress. This approach is further explored in Enclosure 4.

Approach C: Rulemaking to Conform Reactor Financial Qualification Requirements to 10 CFR Part 70 Standards

Under this rulemaking approach, the staff would amend the 10 CFR Part 50 financial qualifications regulations to remove the detailed requirements found in Appendix C and change the pre-licensing standard of financial qualifications review to one that would allow licensing based on a less-detailed financial plan. This approach would facilitate the use of license conditions similar to those previously found acceptable by the Commission in nonreactor contexts.

If, under this rulemaking approach, the requirement in Appendix C of 10 CFR Part 50 for detailed submittal of financial information was removed and the Part 50 financial qualifications regulatory language was conformed to the 10 CFR Part 70 financial qualifications review standard, legally viable license conditions would be possible for those applicants with no identified pre-licensing sources of funds. License conditions, which would be ministerial in nature, could then be used to ensure that the plan was executed prior to beginning construction.

RECOMMENDATION:

Reviewing the financial qualifications of reactor applicants has been part of the NRC's regulatory regime since 1956. Over these decades, changes have been made as circumstances warranted. Most notably, the Commission rescinded the review of financial qualifications for electric utilities when the Commission believed, for reasons discussed above, that such a review was "excessive for a significant portion of NRC's utility applicants".[47]

The advent of merchant plant initial license applicants represents another change that warrants Commission consideration. The question of whether financial qualification reviews are relevant and necessary for merchant plant generators has been periodically considered by the staff and the Commission for over 20 years. The current situation is distinct from past considerations because of the emergence of those applicants with insufficient or no identified sources of funding. Further, this issue is exacerbated by the ability of COL holders to "bank" their licenses for an indeterminate length of time before beginning construction. The longer the time from initial license issuance to commencement of construction, the less relevant the pre-licensing financial qualifications review will be when construction actually begins.

[47] SECY-79-299, Generic Issue of Financial Qualifications: Licensing of Production and Utilization Facilities, Enclosure 7(A), (Apr. 27, 1979) (ML12236A723).

Therefore, the staff recommends that the Commission authorize the staff to begin a rulemaking effort to implement some variant of Option 2 as discussed above. This option would allow the staff to engage in a rulemaking effort to amend or rescind, as appropriate, the financial qualification regulations for initial license issuance thereby resolving the industry-asserted impediment to licensing which currently exists for some merchant plant applicants.

RESOURCES:

If the staff recommendation is chosen by the Commission, a rulemaking will commence. There are no resources currently budgeted for a rulemaking on this topic. The staff will utilize the Planning, Budgeting, and Performance Management (PBPM) process to obtain the required resources to implement Commission direction on this issue. A detailed breakdown of estimated resources for current and future years is provided in Enclosure 5.

COORDINATION:

The Office of the General Counsel has reviewed this paper and has no legal objection. The Office of the Chief Financial Officer has reviewed the rulemaking option in this paper for resource implications and has no objections.

/RA/

Mark A. Satorius
Executive Director
for Operations

Enclosures:
1. NCP-2013-002, Non-concurrence: "Policy Options for Merchant Plant Financial Qualifications"
2. Analysis of NEI License Condition Proposal
3. References
4. Detailed Discussion of Option 2 Approaches
5. Resource Estimate (Non-Public – Predecisional Information)

Enclosure 2 - Analysis of NEI License Condition Proposal

Summary

On November 13, 2012, the Nuclear Energy Institute (NEI) submitted a letter to U.S. Nuclear Regulatory Commission (NRC) Chairman Allison M. Macfarlane requesting Commission guidance to clarify the application of financial qualifications requirements for new nuclear plant development by merchant plants.[1]

In the letter, NEI stated that merchant plant applicants face difficulty in obtaining investors and lenders without a combined license (COL). (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12334A187).

Because the current financial qualifications requirements in Title 10 of the *Code of Federal Regulations* (10 CFR) 50.33, "Contents of Applications; General Information," 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 financial qualifications requirements and allow issuance of the license. Specifically, NEI stated that a license condition could be included in the COL to meet the requirements of 10 CFR 50.33(f) and 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." NEI attached proposed generic license conditions to their submission.

The following presents the staff's analysis of NEI's proposal in light of NRC financial qualifications requirements.

NEI Proposed License Conditions

Appendix A of NEI's letter included the following proposed generic license condition for merchant (non-electric utility) applicants. Following is the staff's evaluation of the proposed license condition.

Appendix A: Example of Financial Qualifications License Condition. [The Licensee] is financially qualified in accordance with 10 CFR 50.33(f) and Part 50, Appendix C, based upon satisfaction of the following license condition prior to commencing construction authorized by the license:

Construction pursuant to this license shall not commence before funding is substantially committed at a Financial Closing with Lenders in connection with a Project Financing for the Facility. At least 30 days prior to the Financial Closing, the Licensee shall make available for NRC inspection, draft copies of documents to be executed at the Financial Closing of the Project Financing that demonstrate the following:

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[1] The term "merchant plants" is not defined in NRC regulations. NRC regulations refer to "non-electric utilities" to distinguish from utilities which have access to a source of funds via ratemaking.

1. ***One or more Qualified Financial Institutions (Lenders) will provide funding that, when combined with equity either already paid or committed, is adequate to complete construction and commence operations[.]***

Staff Evaluation of NEI Appendix A: Condition 1

NEI describes a "qualified financial institution" as "an institution with a senior, unsecured and unenhanced credit rating of A or better by Standard & Poor's or Fitch's or A2 or higher by Moody's, or a rating meeting other comparable international standards."

To make a finding of financial qualification, the staff must make an independent assessment of the "adequacy of the information provided and the applicant's ability to meet the standards stipulated in the NRC's regulations" (NUREG-1577, "Standard Review Plan on Power Reactor Licensee Financial Qualifications and Decommissioning Funding Assurance," Revision 1, dated March 1999).

The NEI proposal appears to indicate that the staff's assessment of the proposed lender will be based on its senior secured credit rating. The staff may consider credit ratings as a factor in its independent evaluation, but the staff may not rely *solely* on an entity's bond rating as proposed by NEI. An entity's bond rating provides useful insight regarding an entity's financial position. However, depending on the particular facts and circumstances, the staff's finding would be based on an evaluation of other factors in addition to its credit rating. These factors would include an evaluation of the financial plan describing internal and external sources of funds, a review of annual financial reports, including income, balance sheet, and cash flow statements (Appendix C, Section I(A)(3) and NUREG-1577). The evaluation may include the amount of funding to be provided by each source of funds, liquidity, debt-to-income ratios, recent material events, and financial performance over time. For an applicant that is a newly formed entity, the applicant would need to provide additional information such as the assets, liabilities, and capital structure of the entity. The staff would likely take into consideration whether a purchase power agreement has been finalized for the project.

Further the NEI statement that funding must be adequate "to commence operations" does not appear to meet the NRC requirement that sources of funds be sufficient "for the period of the license" (10 CFR 50.33) The staff must assess, at a minimum, the first 5 years of projected revenue and operational costs.

NEI License Condition 2: The Lenders' Independent Engineer has provided an updated estimate of the Total Project Costs[.]

The staff must likewise make an independent assessment of the reasonableness of the cost estimate provided by the applicant and cannot rely solely on the Lender's Independent Estimate for its finding. Per NRC requirements under 10 CFR 50.33, the applicant must submit estimates of the total construction costs of the facility and related fuel cycle costs. For a newly formed entity, the applicant must provide an estimate including total nuclear production plant costs, transmission, distribution and general plan costs and nuclear fuel inventory costs for the first core. Information describing the bases of the estimate must also be included. The NRC staff would need to develop guidance on what information would be sufficient to comply with Appendix C of Part 50.

Further, per the guidance in NUREG-1577, the staff must make an evaluation of the cost estimate. Because of the significant uncertainty in any cost estimate, the staff may need to evaluate the methodology used to develop the cost estimate; specifically, the information included in or excluded from the cost estimate, such as the level of contingency included in the assumptions. It is also unclear if the independent engineer's cost estimate would be "overnight" costs, which would not include cost escalation or financing costs. Cost escalation and proposed construction dates also would need to be identified and evaluated. The NRC staff reviews studies from independent sources and collects projected construction cost estimates from all COL applications, as they are submitted, for comparison and reasonableness. Without the detailed information required by regulation, the staff would be unable to make an accurate "apples to apples" comparison to support its finding.

2. ***The legal and financial relationships between the Licensee and the entities providing funding are identified in the Financial Closing documents, which also must demonstrate that the Licensee has available funds in a total amount that is not less than the amount of Total Project Costs estimated by the Lenders 'Independent Engineer, through: (1) loans committed by one or more Qualified Financial Institutions, and (2) equity either funded or committed in a manner acceptable to the Qualified Financial Institutions (e.g., escrows, guarantees, letters of credit, etc..)[.]***

As described previously, the staff would not be able to use the independent engineer's cost estimate alone to make its finding regarding the reasonableness of the amount funds required to construct. Further, the staff would need to consider additional factors beyond the acceptability of the funding by the lenders. This may include the creditworthiness of each lender, the specific terms of the funding documents or funding method, and the amount of funding provided. For example, the staff would need to evaluate additional information to approve a financial guarantee backed by a newly formed entity that lacks an established financial record. The staff would need to review the entity's assets, liabilities, and capital structure, and take into consideration its revenue analysis to determine if it had the financial capacity for raising and managing capital at the level required for construction and operation.

If the independent engineer's cost estimate was prepared as an "overnight" estimate, the staff would not be able to evaluate the financing costs related to the cost estimate which would be a component of the pro-forma revenue analysis. Further, regarding the legal and financial relationships between the parties, the staff must evaluate the aggregate risk of the funding portfolio, as well as the individual sources of funds.

3. ***In order to provide financial support during operations, provisions are made in the Financial Closing for the following to be maintained upon initial plant operation (1) a debt service Reserve in an amount not less than one year's worth debt service payments; and (2) a revolving credit facility of at least $100 million for operating and maintenance expenses, with a Lenders' requirement that a zero balance be maintained at least once per year.***

Although the staff would likely require conditions to ensure sufficient funds for operations, the proposed license condition does not address funding contingency amounts which would be required for the period of construction. Although a debt service reserve and credit facility may some circumstances meet the guidance of NUREG-1577 for the “period of operations” (*see* 10 CFR 50.33(f)(2)), without an assessment of the income statement and cash flow, the staff would not be able to determine if additional financial support may be needed. Furthermore, the staff would need to assess the creditworthiness of the entity providing the credit facility. Finally, based on a comparison of plants of similar design, $100 million may be insufficient to provide sufficient contingency for cost overruns.

Enclosure 3 - References

SECY Papers

1. SECY-79-299, April 27, 1979, "Generic Issue of Financial Qualifications: Licensing of Production and Utilization Facilities," Agencywide Documents Access and Management System (ADAMS) Accession No. ML12236A723.

2. SECY-97-253, October 24, 1997, "Policy Options for Nuclear Power Reactor Financial Qualifications in Response to Restructuring of the Electric Utility Industry," ADAMS Accession No. ML12263A738.

3. SRM-SECY-97-253, January 15, 1998, "Policy Options for Nuclear Power Reactor Financial Qualifications in Response to Restructuring of the Electric Utility Industry," ADAMS Accession No. ML003752225.

4. SECY-98-153, June 29, 1998, "Update of Issues Related to Nuclear Power Reactor Financial Qualifications in Response to Restructuring of the Electric Utility Industry," ADAMS Accession No. ML12264A790.

5. SECY-02-0180, October 7, 2002, "Legal and Financial Policy Issues Associated with Licensing New Nuclear Power Plants," ADAMS Accession No. ML023600088.

6. SRM-SECY-02-0180, March 31, 2003, "Legal and Financial Policy Issues Associated with Licensing New Nuclear Power Plants," ADAMS Accession No. ML030900371.

Cases

7. *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 & 2), CLI-78-1, 7 NRC 1 (1978).

8. *Louisiana Energy Services, LP* (Claiborne Enrichment Center), CLI-97-15, 46 NRC 294 (1997).

9. *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-00-13, 52 NRC 23 (2000).

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

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

Federal Register Publications

12. Final Rule, *Part 50 – Licensing of Production and Utilization Facilities, Financial Qualifications*, 33 Fed. Reg. 9704 (July 4, 1968).

13. Proposed Rule, *Financial Qualifications; Domestic Licensing of Production and Utilization Facilities*, 46 Fed. Reg. 41786 (August 18, 1981).

14. Final Rule, *Elimination of Review of Financial Qualifications of Electric Utilities in Licensing Hearings for Nuclear Power Plants*, 47 Fed. Reg. 13750 (March 31, 1982).

15. Proposed Rule, *Elimination of Review of Financial Qualifications of Electric Utilities in Operating License Review and Hearings for Nuclear Power Plants*, 49 Fed. Reg. 13044 (April 2, 1984).

16. Final Rule, *Financial Information Requirements for Applications To Renew or Extend the Term of an Operating License for a Power Reactor*, 69 Fed. Reg. 4439 (January 30, 2004).

Statutes

17. Atomic Energy Act of 1954 as amended, 42 USC 2011 et. seq., Section 182.a.

Regulations

18. Title 10, US Code of Federal Regulations, *Energy*, Chapter 1, Nuclear Regulatory Commission, *passim.*

Other Documents

19. Letter from NEI, November 13, 2012, *Request for Commission Guidance to Clarify Application of Financial Qualifications Requirements in the Context of New Nuclear Plant Development by Merchant Generators*, Ellen C. Ginsberg, Esq., ADAMS Accession No. ML12334A187.

20. Transcript, *Financial Qualifications for Merchant Plant Combined License Applicants Public Meeting*, October 11, 2012, ADAMS Accession No. ML12291A816 (ADAMS Accession No. ML12286A282 package).

21. Transcript, *Public Meeting on Financial Qualifications for Merchant Plant Combined License Applicants*, January 8, 2013, ADAMS Accession No. ML13022A446 (ADAMS Accession No. ML13009A008 package).

Enclosure 4 – Detailed Discussion of Option 2 Approaches

As stated in the body of the paper, several approaches to the staff's recommended rulemaking option were developed. The detailed discussion of these approaches, including their benefits and detriments, is provided below.

Approach A: Rulemaking to Rescind Financial Qualifications Requirements for Initial Licensing[1]

Since the initial promulgation of the financial qualifications demonstration regulations, the NRC's programs and processes for ensuring safe plant operation have matured and become more robust. Individually and collectively, these processes and programs provide a vigorous framework for ensuring the safe operation of all plants – utilities and merchant plants alike.

This recognition of the efficacy of direct methods for ensuring plant safety has existed in Commission precedent for nearly 35 years. The Commission observed in 1979 in its *Seabrook* decision that "recent experience does not suggest that a utility short of funds will cut corners on safety. In the past few years, many utilities in the process of constructing nuclear facilities have experienced unforeseen financial difficulties. Common responses have been to slow down construction or to suspend construction altogether."[2] In 1981, the Commission stated that:

> [T]echnical reviews and inspection efforts are effective, direct methods of discovering deficiencies that could affect the public health and safety. While analysis of financial qualifications has been viewed in the past as possibly an additional method of determining an applicant's ability to satisfy safety requirements, experience has failed to show a clear relationship between the NRC's review of an applicant's financial qualifications and the applicant's ability to safely construct and operate a nuclear power plant.[3]

The construction experience of the 1970's and 1980's similarly does not support the idea that there is a link between the review of financial qualifications and safety.

As a result of lessons learned from years of plant operating experience, as well as from the accidents at Three Mile Island and Chernobyl, the NRC developed and implemented a number of direct method programs and processes to further ensure plant safety. These include the resident inspector program, the operating experience program, the construction reactor

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1 To reiterate, this option is limited to initial licensing only. If the Commission selects a rulemaking option, the scope of the rulemaking would require careful review to ensure no adverse effects on financial qualifications determinations in other contexts, such as decommissioning funding and license transfers.

2 *Seabrook,* CLI-78-1, 7 NRC at 19.

3 "Financial Qualifications: Domestic Licensing of Production and Utilization Facilities," 46 Fed. Reg. 41786, 41788 (Aug. 18, 1981).

oversight process (cROP), the reactor oversight process (ROP), the vendor inspection process, and a quality assurance inspection program.

Moreover, given the stringent nature of NRC's regulations and rigorous license application review, the process of preparing an application capable of meeting those requirements arguably reflects on whether an applicant is financially prepared to construct and operate the facility. Preparing a docketable application, and engaging in the licensing process in and of itself already provides some indication of an applicant's financial capacity.

The current regulatory framework distinguishes between electric utilities and merchant plants. Current regulations impose a significantly heavier burden on merchant plants to demonstrate financial qualifications. The reasoning is that utilities recover money through rate setting, and thus do not face the same type of financial pressures as merchant plants, presumably reducing the disincentives that such financial pressure might be assumed to create with respect to spending money on ensuring safety. While it is certainly true that nuclear plant operators may choose not to spend money on safety measures, there is no evidence to support the idea that nuclear plant operators choose not to spend money on safety measures because they are short on funds. In particular, there is no evidence to support the notion that electric utilities, with guaranteed rate recovery, are more likely to spend money on safety measures.

The advent of the divestiture of nuclear plants coincides with the beginning of the Reactor Oversight Process.[4] By the end of 2007 there were 56 operating electric utilities and 48 operating merchant plants.[5] A review of the NRC docket since 2007 indicates that there have not been any further transfers of nuclear power plants from electric utility to merchant status. A review of the ROP historical performance data demonstrates that no merchant plants have entered the "multiple degraded cornerstone" category, nor have they been subject to the 0350 process.[6] By contrast, since 2000, nine electric utility plants have been in the multiple degraded cornerstone category, and two have been subject to the 0350 process.[7] While the ROP does not include direct measurement of a licensee's finances and thus does not directly compare financial health with safety concerns at a facility, there does not appear to be a significant correlation between whether a plant is an electric utility or a merchant plant and whether the plant will be in the "degraded cornerstone" category. If there is any correlation, the merchant plants are slightly less likely to be in the degraded cornerstone category. The percentage of

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4 The first nuclear plant was divested in July, 1999. *See* Deregulation, Consolidation, and Efficiency; Evidence from U.S. Nuclear Power; Lucas Davis and Catherine Wolfram, August 2011, HASS WP217 (Revised Version Forthcoming in Journal of Economic Perspectives), Appendix Table 1. (http://ei.haas.berkeley.edu/pdf/working_papers/WP217.pdf).

5 *Id.* The merchant plants are listed in the appendix referenced in footnote 13 of the Davis paper. The number of utilities is derived by subtracting the number of merchant plants from 104.

6 The 0350 process refers to plants subject to oversight pursuant to inspection manual chapter 0350, "Oversight of Reactor Facilities in a Shutdown Condition due to Significant Performance and/or Operational Concerns."

7 Two plants, Indian Point 2 and Perry 1 were divested while they were in the multiple repetitive degraded cornerstone category.

electric utilities in the "degraded cornerstone" category ranged from a low of 4 percent to a high of 20 percent.[8] Since 2000 there have been 4 years where no merchant plants were in the "degraded cornerstone" category, and the year that had the highest percentage of the merchant plants in the "degraded cornerstone" category resulted in 10 percent of the merchant plants being in that status. Therefore, evidence suggests that merchant plant performance may exceed that of electric utility performance over the time frame reviewed.

These data from the ROP are consistent with some recent academic research. One recent academic study indicates that the current fleet is operating more safely after deregulation than before. The study states that:

> [i]n the past two decades, a dramatic change to the nuclear power industry has taken place: approximately half of all U.S. nuclear power plants have been sold off by price-regulated utilities and now operate in competitive markets. Surprisingly, there is little evidence on how ownership transfers have affected safety. … Using data on a variety of safety measures …, [the paper concluded that] no evidence [existed] that safety deteriorated; for some measures, it even improved following divestiture. Moreover, for given levels of generation, safety substantially improved. Ownership transfers led to the alignment of private incentives to increase operating efficiency, and these gains do not appear to have come at the cost of public safety.[9]

Pros and Cons

> The primary advantage to this option is that it allows the Commission to focus on its primary mission of safety, and focuses resources on "direct methods of discovering deficiencies." It also directly addresses the efficacy challenge created by the one-time, pre-licensing, financial qualifications review for those COL-holders that choose to defer construction, and it directly addresses the merchant plant "impediment to licensing" asserted to exist by industry. Since financial qualifications rules were initially promulgated, the Commission's programs and processes for ensuring plant safety have continued to improve. To the extent that a nexus exists between a demonstration of financial qualifications and safety, rescission of the current financial qualifications determination regulations would not result in a decrease in safety because these more direct activities would continue to uncover any safety deficiencies during construction and subsequent operation that might occur for whatever reason.

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[8] Since the number of merchant plants and electric utilities vary from year to year the raw numbers are not a useful measure. So the numbers are presented as percentages; i.e., 20 percent of electric utilities in the "degraded cornerstone" category means that in one year, 20 percent of all electric utility plants spent at least one quarter in the degraded cornerstone category.

[9] Hausman, Catherine, *Corporate Incentives and Nuclear Safety*, WP223R, March 2013. This paper is part of the Energy Institute at Haas working paper series. Energy Institute at Haas is a joint venture of the Haas School of Business and the UC Energy Institute. Ms. Hausman is a PhD candidate in Agricultural and Resource Economics and research assistant at the University of California, Berkeley. Used with permission of the author. (http://ei.haas.berkeley.edu/pdf/working_papers/WP223.pdf).

This approach is also consistent with Executive Orders 13563 and 13579, which recommended that agencies review existing regulations and determine how existing regulations can be made more effective or less burdensome while achieving regulatory objectives.

The current approach has been in place since 1956 and is one part of the NRC's overall conservative approach to ensuring safe plant operation. The primary disadvantage of Approach A is that, by rescinding the Commission's financial qualifications demonstration regulations, there may be public perception challenges that the Commission is sacrificing safety for applicant expediency and that the financial qualifications review will no longer be an additional method of ensuring safety.

Approach B: Rulemaking to Amend Financial Qualifications to an Ongoing Oversight Indicator

As stated in the summary above, this rulemaking approach would end financial qualifications reviews as a component of an initial licensing decision in lieu of post-license activities to monitor the overall financial health of the licensee over the construction and operating life of the plant. This post-license monitoring would be a new mechanism of oversight;[10] the sole licensing-basis financial review.

Indicators of financial distress would be used to trigger licensee engagement to explore whether such financial distress has any implications for safe construction or operation of the plant. Certain measures of financial distress could be set forth in staff guidance. Additionally, there could be dialogue between NRC financial reviewers, NRC regional offices, and licensees, as appropriate, to ensure the staff is made aware of any licensees experiencing financial distress. Examples of such indicators might be Securities and Exchange Commission filings indicating significant losses, loss of power purchasing clientele, or significant market adjustments that undermine the value of the power produced. These indicators would inform the staff's ongoing review and oversight of construction and operational activities.

It would be necessary for the staff to develop detailed guidance to identify and validate the "indicators" that would signify financial stress and trigger licensee engagement. This approach would entail revising 10 CFR 50.33 and Part 50, Appendix C, to reflect this revised process.

Pros and Cons

As with Approach A, the primary benefits of this approach would be that it would focus Commission resources on the resolution of safety issues, and ensure that licenses are not denied for non-safety reasons. It would also allow for resolution of the concerns about the timeliness of financial qualification demonstrations with respect to COL holders that may "bank" their licenses for future construction.

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[10] Under the current financial qualifications rules, the NRC may request, post-license and, on a case-by-case basis, "information regarding a licensee's ability to continue the conduct of the activities authorized by the license and to decommission the facility". (10 CFR 50.33(f)(5)).

To the extent any nexus exists between financial qualifications demonstration and safety, this option allows for increased review and monitoring. This approach may counteract any public perception that the NRC is relaxing its oversight requirements to the detriment of safety.

The primary detriment with this approach is the subjective nature of open source financial information[11] and the challenges of correlating how that data relates to safe construction and operation of the plant. Such data is not necessarily performance based, it is subject to interpretation that may lead to a staff decision based on false positives or false negatives, and it is inherently complex. Further, identifying indicators of financial stress and validating the quality of those indicators would be challenging. It would be necessary for the NRC to develop guidance that could be objectively applied to such information to ensure its relevance before engaging a licensee. Such guidance may also have to identify what an appropriate level of financing is such that it could be determined when a licensee is in financial distress. Financial indicators currently used by the NRC to evaluate the efficacy of licensee decommissioning funding may be useful guidance under this option. Finally, even in those cases where the open source financial information is relevant and properly validated, such data, standing alone, may not be predictive of any adverse impact on the safety or security of the plant.

Approach C: Rulemaking to Conform Reactor Financial Qualifications Requirements to 10 CFR Part 70 Standards

This approach would require the Commission to amend the 10 CFR Part 50 financial qualifications regulations to change the pre-licensing standard of financial qualifications review to one that would allow licensing based on a less-detailed financial plan, and facilitate the use of license conditions similar to those previously found acceptable by the Commission in nonreactor contexts.

The current 10 CFR Part 50 standard of review for new reactor financial qualifications is one of "reasonable assurance." Specifically, 10 CFR 50.33(f) states that that applicants "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 [and] estimated operation costs for the period of the license."[12] (Emphasis added). The detailed information necessary to support a reasonable assurance standard is defined for applicants in Appendix C of 10 CFR Part 50. Absent this detailed information, a determination of financial qualification is not possible pursuant to the current regulations. Furthermore, under the current 10 CFR Part 50 regulations, the use of a license condition to mitigate the lack of identified funding is problematic because any contemplated license condition—including that

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[11] In this context, "open source financial information" is defined as regulatory filings such as those made to the Securities and Exchange Commission (SEC) and the Federal Energy Regulatory Commission (FERC).

[12] 10 CFR 50.33(f)(1)-(3).

proposed by NEI/NINA—cannot be satisfied by operation of a "ministerial act."[13] The complexity of the information required under current regulations would, most likely, require a substantive post-licensing review of that information to satisfy the condition. Such a substantive post-licensing review undermines the pre-licensing "reasonable assurance" financial qualifications determination, and it is inconsistent with the one-step licensing process required for COLs.

However, license conditions were used in both Private Fuel Storage and Louisiana Energy Services (LES) (*Claiborne Enrichment Facility*) as a method to fulfill the financial qualifications requirements. In both of these cases the applicants were not subject to 10 CFR Part 50 and did not need to meet the detailed Part 50 Appendix C requirements.[14] Under 10 CFR Part 70, "Domestic Licensing of Special Nuclear Material," the financial qualifications standard of review is that of "appears to be financially qualified".[15] This standard is less stringent than the "reasonable assurance" demonstration currently in Part 50, Appendix C.

If, under this rulemaking approach, the requirement in Appendix C of 10 CFR Part 50 for detailed submittal of financial information was removed and the Part 50 financial qualifications regulatory language was conformed to the 10 CFR Part 70 financial qualifications review standard, legally viable license conditions would be possible for those applicants with no identified pre-licensing sources of funds. Such an approach would not need to use identical license conditions to those found in PFS/LES.[16] Rather, the regulation could require the applicant to submit a plan for how it intended to finance the construction and operation of the facility. The purpose of submittal of this plan would not be to ensure, as the current Appendix C requirements do, that an applicant currently had access to financing. Rather, it would ensure that the applicant had both a well-articulated understanding of the size of the project it was undertaking, and the financial capacity to obtain the necessary financing when it was ready to begin construction. License conditions, which would be ministerial in nature, could then be used to ensure that the plan was executed prior to beginning construction. This approach could thereby remain consistent both with Commission precedent on the use of solely "ministerial" license conditions and with the requirement that safety findings for a COL not be deferred to a later stage. The intention to use license conditions to fulfill this requirement could be set forth in the statements of consideration or in the rule text itself.

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13 "[W]e must insist that the condition be precisely drawn so that the verification of compliance becomes a largely ministerial act rather than an adjudicatory act – that is, the Staff 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).

14 *Louisiana Energy Services, LP* (Claiborne Enrichment Center), CLI-97-15, 46 NRC 294, 299-300 (1997); and *Private Fuel Storage, LLC* , CLI-00-13, 52 NRC at 29-30. PFS is licensed pursuant to Part 72, which does not contain the detailed Appendix C requirements.

15 *See* 10 CFR 70.23(a)(5).

16 For example, in *Private Fuel Storage, LLC* the applicant was required to submit sample contracts with licensees. Such sample contracts would not be necessary with a revised regulation.

Pros and Cons

The primary benefit of this rulemaking approach is that it would provide for some intermediate level of financial qualification review if the Commission does not wish to completely eliminate such a review at the licensing stage. By requiring initial license applicants to describe (and the NRC staff to review) their financial plans with respect to construction and operation of the facility, it would also provide a mechanism for those applicants with insufficient or no identified sources of funding to receive an appropriately conditioned license and thereby resolve the industry asserted impediment to initial license issuance, while still ensuring a degree of NRC oversight of financial qualifications that the Commission considers appropriate to maintain safety. For those applicants with identified funding, the information requirements for the application would be modified to align with the lesser level of detail required by 10 CFR 70.23(a)(5). Legally sufficient license conditions could be crafted consistent with the AEA, Commission regulations, Commission precedent, and established NRC guidance.

The primary detriment of amending the pre-license financial qualifications review to conform with the 10 CFR Part 70 standard of review would be the practical difficulties in implementing this changed standard for reactor licensees. Determining the range of what could constitute an acceptable plan for an initial reactor licensee, and what an appropriate license condition would be, is likely to be challenging. Secondarily, as with Approach A, there is the potential for adverse public perception that the Commission is relaxing regulatory requirements to the detriment of safety. Moreover, to the extent the Commission does not believe that a financial qualification review is necessary to maintain safety, this change would create a regulatory burden on licensees without a corresponding safety benefit.

Non-Concurrence Approach

In the non-concurrence filed on May 13, 2013, another rulemaking approach was suggested.[17] This approach would entail deferring the financial qualifications demonstration review to a time, after COL issuance, but before the commencement of construction. This approach would require the COL holder, before beginning construction, to 1) obtain adequate financing of construction and operating costs, and 2) certify that the funding will comply with the restrictions against foreign ownership, domination, and control required by 10 CFR 50.38. This approach does not appear to be legally viable because a post-licensing substantive review is not a "ministerial act". A financial qualifications rule change that creates a post-licensing review and corresponding hearing opportunity undermines the rationale behind Part 52 by returning the licensing process for merchant plants to a two-step process – step one being the issuance of the COL itself followed by, in step two, a financial qualifications review that, depending on the outcome, could delay construction or negate the COL.[18]

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[17] *See* Enclosure 1 at page 6 of 25 in the section titled "*If the Commission decides to revise its existing policies applicable to new merchant transmission projects, it should consider maintaining financial qualifications in the NRC licensing basis*."

[18] Some staff members have expressed concern that, given the license renewal rule discussed above, deviation from the status quo might create differing financial qualification standards between initial licensing

Additional Considerations Relevant to All Rulemaking Approaches

There are several additional considerations relevant to all three of the rulemaking approaches presented in this document. First, in any rulemaking approach undertaken, there is a need to consider whether certain classes of licensees—nonpower reactor licensees, for example—should be excluded from any changes made to 10 CFR Part 50 financial qualifications demonstration requirements. In many cases, nonpower reactors are research and test reactors (RTR's) that are operated by universities or other entities. These RTRs do not have either a rate-payer base or the ability to sell power for profit and, thus, their financial paradigm is different from the power reactor scenarios discussed in this paper.

Second, it will be necessary in any rulemaking approach pursued to consider whether financial qualifications regulatory changes should be applied equally to initial licensing of electric utility applicants and whether such changes should be applied to license transfer reviews.

Third, a careful examination of decommissioning funding regulations must be made as part of any rulemaking efforts to ensure that there are no emergent and unintended consequences that would undermine or erode those decommissioning funding rules.

Fourth, changes to financial qualifications demonstration requirements for reactors may elicit similar requests for relief by nonreactor applicants and licensees.

Finally, with regard to current merchant plant applicants, consideration of the use of exemptions from current financial qualifications demonstration regulations for those applicants during the pendency of the rulemaking process would be necessary. 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. Given that any rulemaking effort contemplated would likely take 3 to 5 years to complete, current applicants may find their applications stalled—until public comments from the proposed rule are received and evaluated—if no clear basis for granting an exemption is evident. As discussed below, the staff has concluded that the recommended option is to undertake rulemaking. If the Commission chooses to narrow the scope of the rulemaking approach to one of the three suggested approaches, the benefit of that narrowed scope may be that a basis for granting applicant exemption requests from current financial qualifications regulations may exist earlier. The timeline of the rulemaking effort itself may also be abbreviated. Alternatively, narrowing the scope of the rulemaking approaches may foreclose consideration of some of the other viable approaches discussed above.

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and license renewal unless extensive change is made to the regulatory framework. Such concerns, if identified, can be addressed as part of the rulemaking process should the Commission direct the staff to pursue the rulemaking option.