

Standard Review Plan on Power Reactor and Non- Power Production or Utilization Facility Financial Qualifications and Decommissioning Funding Assurance

Draft Report



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ABSTRACT

The U.S. Nuclear Regulatory Commission (NRC) is issuing this revision to the Standard Review Plan (SRP) on Power Reactor and Non-power Production or Utilization Facility (NPUF) Licensee Financial Qualifications (FQ) to provide guidance and establish procedures for the NRC staff's review of whether an applicant for, or holder of, a nuclear facility license issued under sections 103 or 104 of the Atomic Energy Act of 1954, as amended (AEA or Act), appears to be financially qualified to carry out activities for which the permit or license is sought.

This revision to the SRP addresses the amended FQ requirements under 10 CFR 50.33(f). Specifically, the revision to the SRP:

- includes guidance to reflect a new review standard of “appears to be financially qualified” for power reactor and NPUF applicants and licensees;
- removes the guidance for staff to verify that power reactor applicants possess, or have reasonable assurance of obtaining, the funds necessary for construction and operations;
- clarifies guidance for reviewing construction cost estimates;
- establishes provisions for reviewing an Applicant Financial Capacity Plan (AFCP); and
- includes guidance for evaluation of funding at time of application, including provisions for review of license conditions if proposed by the applicant or licensee.

The NRC will use this SRP as the basis for conducting FQ reviews associated with applications for new facilities licensed under Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, “Domestic Licensing of Production and Utilization Facilities,” and 10 CFR Part 52, “Licenses, Certifications, and Approvals for Nuclear Power Plants,” and applications for the approval of direct or indirect transfers of facility licenses.

As additional background, in the staff requirements memorandum (SRM) to SECY-13-0124, “Staff Requirements – SECY-13-0124 – Policy Options for Merchant (Non-Electric Utility) Plant Financial Qualifications,” dated April 24, 2014, the Commission approved staff's recommendation to engage in a rulemaking to amend the financial qualifications requirements in 10 CFR Part 50 to conform to the financial qualifications standards in 10 CFR Part 70, “Domestic Licensing of Special Nuclear Material.” In SECY-13-0124, the Commission stated that the rulemaking should seek a standard of review that approximates, as appropriate, the approach currently used for 10 CFR Part 70 applicants but does not reduce the standard of review below that of “appears to be financially qualified,” as set forth in 10 CFR 70.23, “Requirements for the Approval of Applications,” for the NRC's domestic licensing of special nuclear material. Accordingly, the NRC is providing this preliminary draft guidance for review. Final guidance will be issued as part of any future rulemaking to implement the Commission's direction.

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ACRONYMS AND ABBREVIATIONS

AFCP	applicant financial capacity plan
ADAMS	Agencywide Documents Access and Management System
AEA	Atomic Energy Act
CFR	Code of Federal Regulations
COL	combined license
CP	construction permit
DG	draft guide
FQ	financial qualifications
FRN	Federal Register notice
FY	fiscal year
NPUF	non-power production or utilization facilities
NRC	U.S. Nuclear Regulatory Commission
OL	operating license
RIS	regulatory information summary
SRM	staff requirements memorandum

1.0 AREAS OF REVIEW

1.1 General

The NRC amended its FQ requirements to address the following four applicant types: 1) electric utility applicant for a CP, 2) all other applicants (merchant plant and NPUF applicants) for a CP, 3) merchant plant and NPUF applicants for an OL, and 4) merchant plant applicants for a COL. These requirements reflect a review standard of “appears to be financially qualified,” consistent with 10 CFR Part 70. The regulations at 10 CFR 50.33(f)(3) and (f)(4) identify the FQ requirements at time of license renewal, and also the use of license condition(s) if an application does not identify greater than 50 percent funding.

Under the amended FQ regulations, an applicant is required to submit a plan that describes how it would proceed to finance the construction and operation of the facility. The plan would ensure that the applicant has both a well-articulated understanding of the size and scope of the project it is undertaking and the financial capacity to obtain the necessary financing before beginning licensed activities.

1.2 Applicable Statutory and Regulatory Provisions

- The NRC derives its authority to review the FQ of applicants for, or holders of, a construction permit (CP), an OL, or a COL from the following sections of the Atomic Energy Act of 1954 (AEA), as amended (Ref. 4).
 - Section 182a. of the AEA states, in part, the following:

Each 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.
 - Section 103a states, in part, the following:

The Commission is authorized to issue licenses to persons applying therefor to transfer or receive in interstate commerce, manufacture, produce, transfer, acquire, possess, use, import, or export under the terms of an agreement for cooperation arranged pursuant to [AEA] section 123, utilization or production facilities for industrial or commercial purposes.
 - Section 104a states, in part, the following:

The Commission is authorized to issue licenses to persons applying therefore for utilization facilities for use in medical therapy.
 - Section 104b states, in part, the following:

As provided for in [AEA] subsection 102b. or 102c., or where specifically authorized by law, the Commission is authorized to issue licenses under this

subsection to persons applying therefor for utilization and production facilities for industrial and commercial purposes.

- Section 104c states, in part, the following:

The Commission is authorized to issue licenses to persons applying therefor for utilization and production facilities useful in the conduct of research and development activities of the types specified in [AEA] section 31 and which are not facilities of the type specified in subsection 104b.

- 10 CFR, Part 50, “Domestic Licensing of Production and Utilization Facilities”
 - 10 CFR 50.33, “Contents of applications; general information,” requires the applicant to submit certain identifying information related to the business of the applicant and financial information related to the construction and operation of a proposed facility.
 - 10 CFR 50.33(f) requires an applicant to provide information “sufficient to demonstrate to the Commission that the applicant appears to be financially qualified to carry out...the activities for which the permit or license is sought.”
 - 10 CFR 50.33(f)(1) requires an electric utility applicant for a construction permit or combined license to include estimates of the total construction costs of the facility and related fuel cycle costs, and an applicant financial capacity plan to “inform...whether the applicant appears to be financially qualified to engage in the proposed activities....”
 - 10 CFR 50.33(f)(2) requires applicants, excluding utilities, to provide for a construction permit, a construction cost estimate with related fuel cycle costs and an applicant financial capacity plan. For an operating license, the applicant must provide an estimate of the total annual operating costs for each of the first 5 years of operation of the facility, and an applicant financial capacity plan to cover these costs, including sources of funding. Applicants for a combined license must submit the information for both a construction permit and operating license under this section.
 - 10 CFR 50.33(f)(3) states that, “If the application requests to renew or extend the term of an operating license for a power reactor, the applicant is not required to submit the same financial information that is necessary in an application for an initial license.”
 - 10 CFR 50.33(f)(4) states that, “If the application does not identify greater than 50 percent funding, the applicant must provide proposed license conditions that would allow the NRC to verify that sufficient funding has been obtained at least 60 days prior to the start of licensed activities.”
 - 10 CFR 52.77, “Contents of applications; general information,” identifies the information that must be contained in an application for a COL, citing 10 CFR 50.33.

- 10 CFR 50.76, “Licensee’s change of status; financial qualifications,” applies to any utility licensee holding a reactor OL, if the licensee intends to cease being a utility in any manner not involving a license transfer under 10 CFR 50.80, “Transfer of Licenses.” This section requires the utility to provide to the NRC, no later than 75 days before its change of status, the same FQ information required for obtaining an initial OL, as specified in 10 CFR 50.33(f)(2)(ii). This information must address the first full 5 years of operation after the date the licensee ceases to be a utility.
- 10 CFR 50.80, “Transfer of licenses,” cites 10 CFR 50.33 and identifies the information required in an application to transfer a production or utilization facility.

Related Guidance

- Draft Regulatory Guide (DG)-9004, “Financial Qualification for Power Reactors and Non-power Production or Utilization Facility,” provides guidance to applicants and licensees on acceptable methods for meeting the amended FQ requirements under 10 CFR 50.33(f) and in determining whether they appear to be financially qualified to conduct activities for which the permit or license is sought. Appendices A, C, and D of this regulatory guide provide templates for AFCP’s referenced throughout this SRP, and Appendix B provides an example of a Construction Cost Estimate included for reference.

1.3 Definitions

Applicant Financial Capacity Plan (AFCP)

A plan, developed by the licensee or applicant, that reflects the applicant’s level of understanding of the size and scope of the project, including the level of capital necessary to undertake the project, and the organizational and human resources, experience, skills, and expertise required to obtain proper financing and ultimately finance the project. The AFCP should provide a high-level summary discussion with information detailed enough to conclude that the applicant has both an understanding of the project requirements and the financial capacity to obtain or provide financing, when appropriate.

Electric Utility

Under 10 CFR 50.2, “Definitions,” any entity that generates or distributes electricity and which recovers the cost of this electricity, either directly or indirectly, through rates established by the entity itself or by a separate regulatory authority.

Merchant

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

“Merchant plants” sell the power they generate on the open market at unregulated prices. Unlike utilities, developers of merchant plants must rely on alternative forms of financing, such as their own internal resources or third-party project finance investors.

Non-Power Production or Utilization Facility (NPUF)

Non-power reactors, testing facilities, and other production or utilization facilities, licensed under the authority of Section 103, Section 104a, or Section 104c of the Atomic Energy Act of 1954, as amended (AEA), that are not nuclear power reactors. NRC collectively refers to these facilities as non-power production or utilization facilities (NPUFs).

Preliminary Draft

2.0 REVIEW OF FINANCIAL QUALIFICATIONS FOR INITIAL LICENSING

This section provides guidance for how staff performs Financial Qualifications (FQ) reviews for license applications of new facilities under 10 CFR Parts 50 and 52.

2.1 FQ for Utilities

At initial licensing, utilities must provide FQ information for construction because they are presumed financially qualified for operations based on the availability of rate recovery for these costs.

Availability of rate recovery for utility reactor construction provides useful information that staff needs to perform its application review; however such information does not in and of itself satisfy NRC FQ requirements. In the past, State and local public utility commissions have provided rate recovery for all reasonable operating costs to licensees. However, for construction, FQ requirements remain in place for utilities, because financial difficulties experienced at some plants at the time of construction suggest that financial qualification reviews for construction may require further study. This element is discussed further in "Elimination of Review of Financial Qualifications of Electric Utilities in Operating License Reviews and Hearings for Nuclear Power Plants." See 49 FR 13044, April 2, 1984.

To the extent that the utility does not have access to rate recovery for construction, the reviewer should treat the applicant in the same manner as a merchant or NPUF applicant and should expect the utility applicant to submit information as described below.

2.1.1 *Construction Permits*

A. Areas of Review

The reviewer should evaluate information that demonstrates that an applicant appears to be financially qualified to construct the proposed reactor facility. Areas of review include the information required of the applicant by 10 CFR 50.33(f), a construction cost estimate and an applicant financial capacity plan (for construction).

B. Acceptance Criteria

The application should include the following information:

- Estimates of the total construction costs of the facility and related fuel cycle costs that:
 - Demonstrate size and scope of the project; and
 - Include bases and assumptions for costs associated with construction of the facility

- An AFCP that includes a high-level summary discussion with information detailed enough to conclude that the applicant has both an understanding of the project requirements and the financial capacity to obtain or provide financing, when appropriate.
 - An applicant with commitments greater than 50 percent of its construction funding has made a sufficient demonstration of financial capacity. Accordingly, where the applicant has identified such commitments, a license condition requiring documentation for the remaining portion of the construction funding is not necessary.
 - If the applicant possesses financing of 50 percent or less at the time of application, an AFCP with proposed license conditions should be submitted. The staff will use the license condition(s) to find that the applicant has financial capacity when funding is not otherwise committed. The reviewer should reference Sections 4.0, "REVIEW OF PROPOSED FQ LICENSE CONDITIONS," and 5.0, "REVIEW OF APPLICANT FINANCIAL CAPACITY PLANS," of this SRP for guidance on reviewing proposed license conditions and AFCPs, respectively.

C. Review Procedure

1) Initial Review and Determination

The reviewer should first analyze all of the information submitted by the applicant to determine compliance with 10 CFR 50.33(f), which includes a construction cost estimate and an AFCP.

Construction Cost Estimate – As part of the analysis, the reviewer should evaluate the cost estimate for acceptability. The reviewer should determine whether the applicant provided a cost estimate similar to Appendix B, "Construction Cost Estimate," to DG-9004, a construction cost estimate template found to be acceptable by the staff. The cost estimate should consider key cost drivers for construction, including production costs, transmission and distribution costs and general plant costs, and the initial costs associated with the first core fuel load.

Typically, construction cost estimates provided to the NRC are often reported in terms of "overnight" costs. Overnight costs are considered to be the cost of a construction project if no interest was incurred during the period of construction, as if the project was completed "overnight." An alternate definition of overnight costs is the present value cost that would have to be paid as a lump sum, up front, to completely pay for a construction project. Overnight costs often include: engineering, procurement and construction costs, owners' costs (land, cooling infrastructure, associated buildings, site works, switchyards, project management, licenses, etc.) and contingencies. These costs are often reported in terms of dollars per power output, either megawatt (MWe) or kilowatt (kWe) electric.

To determine the acceptability of an applicant's construction cost estimate, the staff will compare the applicant's estimate to benchmarks for construction of such projects presented by peer reviewed academic or government studies. One example study includes the 2009 update to the Massachusetts Institute of Technology (MIT) interdisciplinary study titled, "The Future of Nuclear Power." Comparing costs of similar

technology projects previously reviewed by NRC may also prove useful in evaluating these cost estimates. The staff's review of this information is not to be an onerous one but sufficient to determine that the applicant's construction cost estimate appears to be reasonable. The staff's review should ensure that the applicant's cost estimate is close to, or within the range of, construction cost estimates reflected in benchmarks (or *reference costs*) as discussed above.

To make use of such *reference costs*, staff should ensure that applicant cost estimates *per unit of electric capacity* (kWe or MWe) are comparable to the unit of electric capacity reflected in the *reference costs*. Such *unit of electric capacity* is often reported in terms kWe or MWe. As an example, for staff performing a review of a construction cost estimate for an AP1000 design reactor, the staff may consider the *reference cost* or range of *reference costs* identified in the MIT study, as installed and expressed as overnight costs, for such a reactor construction project. An applicant's cost estimate would likely be provided for all proposed reactors on site, and often in units of MWe capacity. Accordingly, staff would compare such *reference costs* to the applicant's construction cost estimate by applying the following four steps:

- First, divide the total overnight cost estimate provided by the applicant, among the number of reactors proposed by the applicant, thus providing for a construction dollar cost per reactor (e.g., billions of dollars per reactor.)
- Second, ensure that the *per unit electric capacity* for each reactor of, say, 1,000 MWe, can be compared to the *reference cost* estimate(s). For instance, where *reference cost* data is reported per kWe installed, staff should ensure that data provided by the applicant for the proposed facility similarly reflects costs per kWe installed, for making comparisons. Colloquially speaking, this ensures that an apples-to-apples comparison can be made by staff. In the case of MWe installed capacity reported by the applicant, staff would convert, by multiplying by 1,000, the applicant's MWe capacity per reactor, to determine the applicant's kWe capacity per reactor (e.g., 1,000,000 kWe per reactor). (If the applicant reports cost data in kWe per reactor and *reference cost* data is reported in kWe, no such conversion is necessary.)
- Third, divide the total construction cost estimate provided by the applicant, per reactor (from step 1 above), by the kWe capacity per reactor, derived in step 2 above. This final calculation will result in a dollars per kWe capacity overnight construction cost estimate for the applicant's project (e.g., \$6,500/kWe, installed).
- Fourth, compare the overnight construction cost estimate from step 3 above, with the *reference costs*. Staff would evaluate if the value derived from this analysis (from step 3 above) is within the range of construction cost values cited or derived from the *reference costs*.

Applicant cost estimates that are significantly below such *reference costs*, would require a request for additional information to determine from the applicant why its estimate does not appear reasonable based on such comparisons.

Applicant Financial Capacity Plan (for Construction) - As part of its analysis, the reviewer should evaluate the AFCP. The reviewer should determine whether the applicant provided an AFCP similar to Appendix A, "Applicant Financial Capacity Plan for Construction," to DG-9004, a plan found to be acceptable by the staff. Staff's review of this information and acceptance criteria should be performed using guidance in Section

5.0 of this SRP. As required, the reviewer should reference Section 4.0 of this SRP for guidance on reviewing proposed license conditions.

2) Supplemental Review

Based on the staff's initial review of information, if the reviewer finds or has reason to believe that the applicant does not appear to be financially qualified to construct the proposed facility, the reviewer should request additional information, as necessary, to assist in making this final FQ determination.

3) Supplemental Determination

If, after reviewing additional information provided by the applicant in response to requests for additional information cited in the "Supplemental Review," the reviewer determines that the applicant appears to be financially qualified to construct the proposed facility, no additional review is necessary. The reviewer should document the determination that the applicant appears to be financially qualified to construct the proposed facility, and meets the FQ requirements for a CP.

2.1.2 *Operating Licenses and Combined Operating Licenses*

An applicant that qualifies as a utility is not subject to FQ for operations based on the availability of rate recovery. Therefore, no FQ review for operations is required. However, a utility COL applicant is still subject to the review of information related to construction of the proposed facility, as discussed in Section 2.1.1 above.

2.2 **FQ for All Other Applicants (Merchant Plants and NPUFs)**

2.2.1 *Construction Permits*

A. Areas of Review

The reviewer should evaluate information that demonstrates that an applicant appears to be financially qualified to construct the proposed reactor facility. Areas of review include the information required of the applicant by 10 CFR 50.33(f), a construction cost estimate and an applicant financial capacity plan (for construction).

B. Acceptance Criteria

The application should include the following information:

- Estimates of the total construction costs of the facility and related fuel cycle costs that:
 - Demonstrate size and scope of the project; and
 - Include bases and assumptions for costs associated with construction of the facility
- An AFCP which includes a high-level summary discussion with information detailed enough to conclude that the applicant has both an understanding of the project

requirements and the financial capacity to obtain or provide financing, when appropriate.

- An applicant with commitments greater than 50 percent of its construction funding requirements has made a sufficient demonstration of financial capacity. Accordingly, where the applicant has identified such commitments, a license condition requiring documentation for the remaining portion of the construction funding is not necessary.
- If the applicant possesses financing of 50 percent or less at the time of application, an AFCP with proposed license conditions should be submitted. The staff will use the license condition(s) to find that the applicant has financial capacity when funding is not otherwise committed. The reviewer should reference Sections 4.0 and 5.0 for guidance on reviewing proposed License Conditions and AFCPs, respectively.

C. Review Procedure

1) Initial Review and Determination

The reviewer should first analyze all of the information submitted by the applicant to determine compliance with 10 CFR 50.33(f).

Construction Cost Estimate - As part of its analysis, the reviewer should evaluate the construction cost estimate for acceptability. The reviewer should determine whether the applicant provided a cost estimate similar to Appendix B to DG-9004, a construction cost estimate template found to be acceptable by the staff. The cost estimate should consider key cost drivers for construction, including production costs, transmission and distribution costs and general plant costs, and the initial costs associated with the first core fuel load. The construction cost review for this applicant will be similar to one performed for utility applicants for construction; the reviewer should thus refer to details provided in Section 2.1.1 C.1 of this SRP, "Review Procedure – Initial Review and Determination," provided for utilities, for evaluating the applicant's construction cost estimate.

Applicant Financial Capacity Plan - As part of the FQ analysis, the reviewer should also evaluate the AFCP, as described in Section 5.0 of this SRP. The reviewer should refer to Appendix A to DG-9004 for guidance on developing an AFCP for a CP. To determine that an applicant appears to be financially qualified, the information provided in the application should demonstrate the applicant has an understanding of the complexity of the type of proposed project, the challenges in raising capital, and the need to ensure financing before the start of reactor construction. The AFCP review for this applicant will be similar to one performed for utility applicants; the reviewer should also refer to details provided in Section 2.1.1 C.1 of this SRP, "Review Procedure – Initial Review and Determination," provided for utilities, for evaluating the applicant's AFCP. As necessary, the reviewer should reference Section 4.0 for guidance on reviewing proposed License Conditions.

2) Supplemental Review

Based on the staff's initial review of information, if the reviewer finds or has reason to believe that the applicant does not appear to be financially qualified to construct the proposed facility, the reviewer should request additional information, as necessary, to assist in making a final FQ determination.

3) Supplemental Determination

If, after reviewing additional information provided by the applicant in response to requests for additional information cited in the "Supplemental Review," the reviewer determines that the applicant appears to be financially qualified to construct the proposed facility, no additional review is necessary. The reviewer should document the determination that the applicant appears to be financially qualified to construct the proposed facility, and meets the FQ requirements for a CP.

2.2.2 *Operating Licenses*

A. Areas of Review

The reviewer should evaluate information that demonstrates that an applicant appears to be financially qualified to operate the proposed reactor facility. Areas of review include the information required of the applicant by 10 CFR 50.33(f), estimates for the total annual operating costs for each of the first 5 years of operation, and an applicant financial capacity plan (for operations).

B. Acceptance Criteria

The application should include the following information:

- Estimates for the total annual operating costs for each of the first 5 years of operation of the facility, and
- An AFCP which includes a high-level summary discussion with information detailed enough to conclude that the applicant has both an understanding of the project requirements, a plan for how the applicant intends to cover estimated operating costs, and the financial capacity to obtain or provide financing, when appropriate.
 - a. An applicant with commitments greater than 50 percent of funding required for the first 5 years of operations has made a sufficient demonstration of financial capacity. Accordingly, where the applicant has identified such commitments, a license condition requiring documentation for the remaining portion of operations funding is not necessary.
 - b. If the applicant possesses commitments of 50 percent or less of funding required for the first 5 years of operations at the time of application, an AFCP with proposed license conditions should be submitted. The staff will use the license condition(s) to find that the applicant has financial capacity when funding is not otherwise

committed. The reviewer should reference Sections 4.0 and 5.0 for guidance on reviewing proposed License Conditions and AFCPs, respectively.

C. Review Procedure

1) Initial Review and Determination

The reviewer should first analyze all of the information submitted by the applicant to determine compliance with 10 CFR 50.33(f). Additionally, the reviewer, as part of the FQ analysis, should evaluate the AFCP, as described in Section 5.0 of this SRP. The reviewer should refer to Appendix C, "Applicant Financial Capacity Plan for Operations," to DG-9004, an AFCP template found to be acceptable by the staff. As required, the reviewer should reference Section 4.0 for guidance on reviewing proposed License Conditions.

To determine that an applicant appears to be financially qualified, the information provided in the application should demonstrate the applicant has both an understanding of the operational requirements of the facility and the financial capacity to obtain or provide financing for operations, when appropriate. If an applicant does not have committed sources of funds for operations greater than 50 percent of funding requirements for the first 5 years of operations, the applicant should propose a license condition for operations.

Within the AFCP, the applicant should provide documentation of sources of funds to cover each of the first 5 years of operations. In the case of a power reactor applicant, such sources of funds could come from, but are not limited to, power purchase agreements, parent assurances, projected revenue from the anticipated sale of power, and other revenue and funding streams. In the case of an NPUF, such sources of funds could come from, but are not limited to, the anticipated sale of products and services, commitments from Federal, State, or other government entities, and other guarantees.

For NPUFs, the applicant should provide estimates of operating costs. The applicant can exclude from the analysis those overhead services that are provided to all departments of the university or company without internal transfer of funding (e.g., cleaning, utilities, and in some organizations, health physics coverage), but the applicant should indicate that these costs are excluded and should discuss the reasons for their exclusion. The applicant should include in the costs the overhead that is allocated to departments (e.g., a certain percentage of direct salaries for benefits or a percentage of the total budget). The applicant for a new facility can use similar operating facilities to develop cost estimates. The 5-year estimates should be sufficiently detailed to show categories of spending, such as salaries, benefits and overhead, equipment, and supplies. If possible, the applicant should break the estimates down by functional area, such as reactor operations, utilization, health physics, and administration.

The NPUF applicant should submit the latest financial statements of the university or the company as part of the evidence reflecting its ability to fund the operations of the facility. If gifts or grants are to be used to fund operations, the applicant should submit copies of these documents if they are available.

2) Supplemental Review

Based on the staff's initial review of information, if the reviewer finds or has reason to believe that the applicant does not appear to be financially qualified to operate the proposed facility, the reviewer should request additional information, as necessary, to assist in making a final FQ determination.

3) Supplemental Determination

If, after reviewing additional information provided by the applicant in response to requests for additional information cited in the "Supplemental Review," the reviewer determines that the applicant appears to be financially qualified to operate the proposed facility, no additional review is necessary. The reviewer should document the determination that the applicant appears to be financially qualified to operate the proposed facility, and meets the FQ requirements for an OL.

2.2.3 Combined Licenses

An applicant for a COL must submit information reflected in paragraphs 10 CFR 50.33(f)(2)(i) and (ii) of the requirements. Accordingly, applicants must provide a construction cost estimate, estimated operating costs for the first 5 years of operations, and an AFCP for a COL. At the time of application, for applicants with commitments of 50 percent or less funding required for construction and/or with commitments of 50 percent or less funding required the first 5 years of operations, an AFCP with proposed license conditions should be submitted as appropriate. The reviewer should refer to Appendix D, "Applicant Financial Capacity Plan for a Combined Construction and Operating License Application," to DG-9004, for guidance on developing an AFCP for a COL.

A. Areas of Review

The reviewer should evaluate information that demonstrates that an applicant appears to be financially qualified to construct and operate the proposed reactor facility. Areas of review include the information required of the applicant by 10 CFR 50.33(f), a construction cost estimate, estimates for the total annual operating costs for each of the first 5 years of operation, and an applicant financial capacity plan (addressing both construction and operations).

B. Acceptance Criteria

The application should include the following information, as applicable:

- Estimates of the total construction costs of the facility and related fuel cycle costs that:
 - Demonstrate size and scope of the project; and
 - Include bases and assumptions for costs associated with construction of the facility

- Estimates for the total annual operating costs for each of the first 5 years of operation of the facility, and
- An AFCP which includes a high-level summary discussion with information detailed enough to conclude that the applicant has both an understanding of the project requirements and the financial capacity to obtain or provide construction financing, when appropriate, and a plan for how the applicant intends to cover estimated operating costs, and the financial capacity to obtain or provide such financing.

C. Review Procedure

1) Initial Review and Determination

The reviewer should first analyze all of the information submitted by the applicant to determine compliance with 10 CFR 50.33(f).

Construction Cost Estimate - As part of its analysis, the reviewer should evaluate the cost estimate for acceptability. The reviewer should determine whether the applicant provided a construction cost estimate similar to Appendix B to DG-9004, a construction cost estimate template found to be acceptable by the staff. The cost estimate should consider key cost drivers for construction, including production costs, transmission and distribution costs and general plant costs, and the initial costs associated with the first core fuel load. The construction cost review for this applicant will be similar to one performed for utility applicants for construction; the reviewer should thus refer to details provided in Section 2.1.1 C.1 of this SRP, "Review Procedure – Initial Review and Determination," provided for utilities, for evaluating the applicant's construction cost estimate.

Cost of Operations - To determine that an applicant appears to be financially qualified, the information provided in the application should demonstrate the applicant has both an understanding of the operational requirements of the facility and the financial capacity to obtain or provide financing for operations, when appropriate. If an applicant does not have committed sources of funds for operations greater than 50 percent of funding requirements for the first 5 years of operations, the applicant should propose a license condition for operations.

Within the AFCP, the applicant should provide documentation of sources of funds to cover each of the first 5 years of operations. In the case of a power reactor applicant, such sources of funds could come from, but are not limited to, power purchase agreements, parent assurances, projected revenue from the anticipated sale of power, and other revenue and funding streams. In the case of an NPUF, such sources of funds could come from, but are not limited to, the anticipated sale of products and services, commitments from Federal, State, or other government entities, and other guarantees.

COL Applicant Financial Capacity Plan – Addressing Construction

As part of the FQ analysis, the reviewer should also evaluate the AFCP, as described in Section 5.0 of this SRP, in addressing construction financial capacity. The reviewer should refer to Appendix D to DG-9004 for an example of an AFCP developed for a COL applicant. To determine that an applicant appears to be financially qualified, the

information provided in the application should demonstrate the applicant has an understanding of the complexity of the type of proposed project, the challenges in raising capital, and the need to ensure financing before the start of reactor construction and operations.

The AFCP review for the construction portion of a merchant COL application will be similar to one performed for a utility CP or COL applicant; the reviewer should refer to details provided in Section 2.1.1 C.1 of this SRP, "Review Procedure – Initial Review and Determination," provided for utilities, for evaluating the applicant's AFCP for construction. As necessary, the reviewer should reference Section 4.0 for guidance on reviewing proposed License Conditions.

COL Applicant Financial Capacity Plan – Addressing Operations

As part of the FQ analysis, the reviewer should also evaluate the AFCP, as described in Section 5.0 of this SRP, in addressing operations financial capacity. The reviewer should refer to Appendix D to DG-9004 for an example of an AFCP template developed for a COL applicant and found to be acceptable by the staff. To determine that an applicant appears to be financially qualified, the information provided in the application should demonstrate the applicant has both an understanding of the operational requirements of the facility and the financial capacity to obtain or provide financing for operations, when appropriate. Within the AFCP, the applicant should identify the sources of funds to cover each of the first 5 years of operations, and provide documentation if available. In the case of a power reactor applicant, such sources of funds could come from, but are not limited to, power purchase agreements, parent assurances, projected revenue from the anticipated sale of power, and other revenue and funding streams. In the case of an NPUE, such sources of funds could come from, but are not limited to, the anticipated sale of products and services, commitments from Federal, State, or other government entities, and other guarantees.

If an applicant does not have committed sources of funds for operations greater than 50 percent of funding requirements for the first 5 years of operations, the applicant should propose a license condition for operations.

Additional information for performing this portion of the FQ review is provided in Section 2.2.2 C.1 of this SRP.

2) Supplemental Review

Based on the staff's initial review of information, if the reviewer finds or has reason to believe that the applicant does not appear to be financially qualified to construct and operate the proposed facility, the reviewer should request additional information, as necessary, to assist in making a final FQ determination.

3) Supplemental Determination

If, after reviewing additional information provided by the applicant in response to requests for additional information cited in the "Supplemental Review," the reviewer determines that the applicant appears to be financially qualified to construct and operate the proposed facility, no additional review is necessary. The reviewer should document the determination that the applicant appears to be financially qualified to construct and operate the proposed facility, and meets the FQ requirements for a COL.

3.0 REVIEW OF FINANCIAL QUALIFICATIONS FOR LICENSE RENEWAL AND LICENSE TRANSFERS

There are no financial qualification (FQ) requirements for holders of operating licenses (OLs) or combined licenses (COLs) seeking renewal under 10 CFR Part 54, "Requirements for Renewal of Operating Licenses for Nuclear Power Plants."

Section 3.1 provides guidance for how the NRC conducts FQ reviews for license applications for direct or indirect transfers of facility licenses under 10 CFR 50.80.

3.1 License transfer

10 CFR 50.80(b)(1) requires an applicant to submit the same FQ information as would be required if the application were for an initial license. Information needed to demonstrate FQ varies, depending on whether the license transfer is for a CP, OL, or COL.

- For applications for transfer of a license for a facility that is either under construction or where construction has not yet begun, the reviewer should perform the appropriate procedure described in either Section 2.1 or 2.2 of this guidance, for utility or all other applicants, respectively.
- For applications for transfer of a license to a merchant or NPUF for a facility where construction has been completed but where operations have not yet begun, the reviewer should perform the procedure described in Section 2.2.2, specific to the information required of a merchant or NPUF applicant.
- For applications for transfer of a license for a facility to a utility where construction has been completed but where operations have not yet begun, no FQ information is necessary as no FQ review is required.
- For applications for transfer of a license to a merchant or NPUF for a facility that is operating, the reviewer should perform the procedure described in Section 2.2.2, specific to the information required of a merchant or NPUF applicant.

4.0 REVIEW OF PROPOSED FQ LICENSE CONDITIONS

4.1 Areas of Review

For those applicants for, or holders of, a CP, OL, or COL, who do not identify greater than 50 percent funding at the time of application, the reviewer should evaluate proposed license conditions that demonstrate adequate funding will be obtained prior to the start of reactor construction or operations, as applicable.

4.2 Acceptance Criteria

The application should include a proposed license condition for either construction, operations, or both, that is contained in the AFCP and is commensurate with the size and scope of the proposed facility.

4.3 Review Procedures

Based on the information obtained by the NRC staff as part of its review under Sections 2.0 and 3.0 of this document, including the staff's finding that an applicant has not identified greater than 50 percent funding at the time of application, the reviewer should request a license condition(s), unless already presented in the application.

4.3.1 *License Condition for Construction*

In the event that the applicant does not identify greater than 50 percent funding for construction of the proposed facility, the reviewer should ensure that a license condition for construction is contained in the application. The license condition should demonstrate that adequate funding has been obtained before the start of reactor construction.

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

[THE APPLICANT] shall notify the NRC at least 60 days prior to its anticipated date of construction that this license condition has been fulfilled and that the following are available for inspection:

(i) An updated cost estimate.

(ii) Documentation justifying any material variances from the original cost estimate provided in the application; and

(iii) Documentation demonstrating that the licensee has secured financing to fund the updated cost estimate for the project. This documentation will include operative closing documents, and may include documented proof of parent and affiliate assurances, or capital from other sources (as required to close the financing) that reflect financing for the project.

The purpose of the updated construction cost estimate and documentation justifying material variances from the original cost estimate, is to confirm that the licensee has adequate funding

necessary for reactor construction. The documentation demonstrating that the licensee has secured financing ensures the initial availability of such financing for these activities.

Alternative license conditions, as deemed appropriate by the staff and approved by the Commission, may be considered on a case-by-case basis as identified by the staff's review.

When developing the final license condition(s), the reviewer should consider the totality of facts surrounding the licensing action, as well as Commission precedent and applicable statutes and regulations.

4.3.2 License Conditions for Operations

In the event that the applicant does not identify greater than 50 percent funding for operation of the proposed facility, the reviewer should ensure that a license condition for operations is contained in the application. The license condition should demonstrate that adequate funding has been obtained before the start of reactor operations.

The following is an example of such a license condition, which would need to be met by the licensee before beginning reactor operations:

[THE APPLICANT] shall notify the NRC at least 60 days prior to the scheduled initial loading of fuel that this license condition has been fulfilled and that the following are available for inspection:

- (i) An updated cost estimate for each of the first 5 years of operation.*
- (ii) Documentation justifying any material variance from the original cost estimate provided in the application, and*
- (iii) Documentation of sources of funds to cover each of the first 5 years of operations. Such funds may come from, but are not limited to, power purchase agreements, parent assurances, and/or revenues from the anticipated sale of power.*

The purpose of the updated operations cost estimate and documentation justifying material variances from the original cost estimate, is to confirm that the licensee has adequate funding necessary for reactor operations.

Alternative license conditions, as deemed appropriate by the staff and approved by the Commission, may be considered on a case-by-case basis as identified by the staff's review.

When developing the final license condition(s), the reviewer should consider the totality of facts surrounding the licensing action, as well as Commission precedent and applicable statutes and regulations.

5.0 REVIEW OF APPLICANT FINANCIAL CAPACITY PLANS

5.1 Areas of Review

The reviewer should evaluate information that demonstrates whether an applicant's proposed AFCP sufficiently demonstrates the wherewithal and ability of the applicant to undertake the proposed action.

Areas of review should include the following:

- Provisions of a proposed AFCP with respect to the applicant's financial qualifications and understanding of the scope of the proposed action.
- Any proposed license conditions as an acceptable approach to resolving FQ concerns.

5.2 Acceptance Criteria

The AFCP should include aspects of the following, as applicable:

- The type or source of funding anticipated to provide the required capital for construction, operation, or combination of construction and operation of the proposed facility
- A description of the management organization, including personnel associated with the organization and any consultants, as applicable
- A description reflecting the experience and expertise of organizations that contribute to the financial capacity of the applicant in the areas of finance, capital sourcing, and development and completion of other similar projects, including large-build projects in the case of power reactor applicants
- The applicant's relationship, or those of its consultants, with potential sources of project funding, and/or the potential for other government, academic, or corporate sources of capital, as applicable
- Pertinent information, as applicable, about individuals affiliated with the project or applicant and their expertise as it relates to similar projects of size, scope, and possible finance sourcing

5.3 Review Procedures

Based on information obtained by staff as part of its review under Section 2.0 of this SRP for initial licenses or under Section 3.0 of this SRP for license transfers, the reviewer should compare the AFCP provided by the applicant to the generic AFCP in Appendix A, C, or D, as applicable, to DG-9004.

To determine that an applicant appears to be financially qualified, the information provided in the application should demonstrate (consistent with the examples in DG-9004) that the applicant has an understanding of the complexity of the type of proposed project, the challenges in raising capital, and the need to ensure financing before the start of reactor construction. Applicant information should reflect the applicant's level of understanding of the size and scope of the

project, including the capital necessary to undertake the project, and the organizational and human resources, experience, skills, and expertise required to obtain proper financing and ultimately finance the project, when appropriate.

Additionally, the reviewer should incorporate any individual measures proposed in the AFCP, in the form of a proposed license condition, in the recommendation regarding whether the applicant is financially qualified to undertake the proposed action (see Section 4.0 of this guidance document).

Preliminary Draft

6.0 EVALUATION FINDINGS

The reviewer should verify that the applicant has provided sufficient information to satisfy the regulations and this SRP. In consideration of this guidance, the reviewer should draft an analysis and recommendation, based on the applicable information specified in Sections 2.0 and 3.0 of this SRP. The analysis and recommendation should discuss the applicant's financial capacity to undertake the proposed action. The reviewer should also describe whether the NRC should impose conditions before granting the application.

Examples of evaluation findings related to FQ are as follows:

- FQ evaluation finding; no license conditions required –

The NRC staff reviewed the information provided in the application regarding FQ, including the applicant's AFCP [and additional information provided in letter(s) dated (Month Day, Year)] (ADAMS Accession No. MLXXXXXXXXXX). Based on this review, the staff finds that the [Applicant(s)] appear(s) to be financially qualified to construct, as applicable, and operate the proposed facility.

- FQ evaluation finding; license condition(s) required –

The NRC staff reviewed the information provided in the application regarding FQ, including the applicant's AFCP [and additional information provided in letter(s) dated (Month Day, Year)] (ADAMS Accession No. MLXXXXXXXXXX). Based on this review, the staff finds that the [Applicant(s)] appear(s) to be financially qualified to construct, as applicable, and operate the proposed facility, subject to the following license condition(s):

[INSERT LICENSE CONDITION(S)]

7.0 **REFERENCES**

1. *U.S. Code of Federal Regulations* (CFR), “Class 104 licenses; for medical therapy and research and development facilities;” and “Class 103 licenses; for commercial and industrial facilities;” 10 CFR Parts 50.21 and 50.22, respectively.
2. CFR, “Domestic Licensing of Production and Utilization Facilities,” Part 50, Chapter 1, Title 10, “Energy.”
3. CFR, “Licenses, Certifications, and Approvals of Nuclear Power Plants,” Part 52, Title 10, “Energy.”
4. Atomic Energy Act (AEA) of 1954, as amended (Public Law 83-703), Sections 103, “Commercial Licenses”; 104, “Medical Therapy and Research and Development”; and 184, “Inalienability of Licenses” (42 U.S.C. 2133, 2134, and 2234).
5. U.S. Nuclear Regulatory Commission, “Staff Requirements—SECY-13-0124—Policy Options for Merchant (Non-Electric Utility) Plant Financial Qualifications,” Commission Paper SRM-SECY-13-0124, April 24, 2014, Agencywide Documents Access Management System (ADAMS) Accession No. ML14114A358.