

U.S. NUCLEAR REGULATORY COMMISSION

DRAFT REGULATORY GUIDE DG-9004



Proposed New Regulatory Guide

Technical Leads:
Richard Turtill

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FINANCIAL QUALIFICATION FOR POWER REACTORS AND NON-POWER PRODUCTION OR UTILIZATION FACILITIES

A. INTRODUCTION

Purpose

This draft regulatory guide (DG) describes methods that the staff of the U.S. Nuclear Regulatory Commission (NRC) considers acceptable for determining whether an applicant for, or holder of, a nuclear facility license issued under Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, "Domestic Licensing of Production and Utilization Facilities" (Ref. 1), Section 50.21, "Class 104 Licenses; for Medical Therapy and Research and Development Facilities," or 10 CFR 50.22, "Class 103 Licenses; for Commercial and Industrial Facilities," appears to be financially qualified.

Applicability

This DG applies to applicants and licensees subject to 10 CFR Part 50, and 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants" (Ref. 2).

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" (Ref. 3).

Applicable Regulations and Statutes

- 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).

This DG is being issued in draft form to involve the public in the development of regulatory guidance in this area. It has not received final staff review or approval and does not represent an NRC final staff position. Public comments are being requested on this DG and its associated regulatory analysis. Comments should be accompanied by appropriate supporting data. Comments may be submitted through the Federal rulemaking Web site, <http://www.regulations.gov>, by searching for draft regulatory guide DG-9004. Alternatively, comments may be submitted to the Rules, Announcements, and Directives Branch, Office of Administration, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001. Comments must be submitted by the date indicated in the *Federal Register* notice.

Electronic copies of this DG, previous versions of this guide, and other recently issued guides are available through the NRC's public Web site under the Regulatory Guides document collection of the NRC Library at <http://www.nrc.gov/reading-rm/doc-collections/reg-guides/>. The DG is also available through the NRC's Agencywide Documents Access and Management System (ADAMS) at <http://www.nrc.gov/reading-rm/adams.html>, under Accession No. ML17240A362. The regulatory analysis may be found in ADAMS under Accession No. ML17172A559.

- 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 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.” This requirement also states that, “However, applications to renew or extend the term of an operating license for a non-power reactor must include the financial information that is required 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

- NUREG-1577, “Standard Review Plan on Power Reactor Licensee Financial Qualifications and Decommissioning Funding Assurance” (Ref. 5), provides guidance on conducting financial qualifications reviews.

Purpose of Regulatory Guides

The NRC issues DGs to describe to the public methods that the staff considers acceptable for use in implementing specific parts of the agency’s regulations, to explain techniques that the staff uses in evaluating specific problems or postulated events, and to provide guidance to applicants. Regulatory guides are not substitutes for regulations and compliance with them is not required. Methods and solutions that differ from those set forth in DGs will be deemed acceptable if they provide a basis for the findings required for the issuance or continuance of a permit or license by the Commission.

Paperwork Reduction Act

This DG provides guidance for implementing the mandatory information collections in 10 CFR Parts 50, 52, or 54 that are subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et. seq.). These information collections were approved by the Office of Management and Budget (OMB) under control numbers 3150-0011, 3150-0151, and 3150-0155. Send comments regarding this information collection to the Information Services Branch, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollects.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0123), Office of Management and Budget, Washington, DC 20503-0001.

Office of the Chief Information Officer (OCIO) will review this paragraph to ensure that the correct control number is being used. The list of OCIO control numbers are located here:
<http://fusion.nrc.gov/ois/team/CSD/FPIB/ICT/Shared Documents/Clearance List.xlsx>

Public Protection Notification

The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the document requesting or requiring the collection displays a currently valid OMB control number

B. DISCUSSION

Reason for Issuance

This revision of the guide (Revision 0) addresses new FQ requirements under 10 CFR 50.33(f), whereby applicants for, or holders of, a CP, OL, or COL must demonstrate they “appear to be financially qualified.” This FQ requirement is consistent with the requirements under 10 CFR Part 70, “Domestic Licensing of Special Nuclear Material” (Ref. 6), for material licensees.

General Discussion

The NRC developed its reactor FQ requirements and review process before the electricity markets in the United States were deregulated. Although the rules contemplated applications from nonutility merchant plants, no nuclear power merchant plant applicant had met the requirements for the FQ regulations. However, on February 12, 2016, the Commission issued a COL for South Texas Project, Units 3 and 4, a merchant plant. The South Texas Project application relied on an exemption from current FQ requirements, which allowed the NRC to find that the applicants were financially qualified. The exemption was based on direction given in a draft regulatory basis published in the *Federal Register* on June 17, 2015 (80 FR 34559) (Ref. 7), and staff requirements memorandum (SRM) for SECY-13-0124, “Policy Options for Merchant (Non-Electric Utility) Plant Financial Qualifications” (Ref. 8). SRM-13-0124 states that “the staff should consider utilizing an exemption process to address existing and emergent cases...during the pendency of the rulemaking process and that anticipates the outcome of the proposed changes to the current financial qualification regulations.”

All current operating nuclear power reactor licensees were found to be financially qualified at initial licensing based on their status as rate-regulated utilities. However, merchant plant applicants, unlike utility applicants that can recover costs through the ratemaking process, might not have a predictable source of funds for construction or operation at the time of initial licensing. Without identified sources of funds, merchant plant applicants could not meet the initial FQ requirements.

Similarly, applicants for non-power production or utilization facilities (NPUFs) may rely on multiple sources of funding to finance construction and operation of a proposed facility. Like merchant plant applicants, an applicant for an NPUF may have unpredictable sources of funds at the time of initial licensing. This may impact the applicant’s ability to meet the NRC’s FQ requirements.

Background

During the COL licensing process for the South Texas Project, Units 3 and 4, the applicant raised an issue related to FQ requirements (letter dated May 31, 2012 from Mark A. McBurnett, Nuclear Innovation North America, LLC (NINA), to R. William Borchardt, NRC, ADAMS Accession No. ML12158A229), (Ref. 9), as did other industry representatives (letter dated November 13, 2012 from Ellen C. Ginsberg, Nuclear Energy Institute, to NRC Chairman Macfarlane, ADAMS Accession No. ML12334A187) in a subsequent 2012 letter, (Ref. 10). These stakeholders said it is difficult, if not impossible, for merchant plant COL applicants to secure project funding to meet FQ requirements in advance of an initial license issuance because of perceptions in the financial community that the licensing process is uncertain. These stakeholders referred to this as a generic issue of reactor, specifically merchant generator, COL issuance. These letters did not refer to any other types of applicants.

The major policy issue that the Commission needed to consider was whether the NRC should issue a COL to an applicant if it has insufficient (or no) funding identified at the time that the license is to be

issued. The issue involved an additional policy consideration specific to COL applications because COLs do not expire, thereby allowing COL licensees to defer construction indefinitely. Such a deferral called into question the efficacy of prelicense FQ reviews.

Financial Qualifications and Commission Authority

The Commission derives its authority to review license applicants' FQ from Section 182a. of the Atomic Energy Act 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 FQ 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." Demonstration of FQ is not required, *per se*, by the AEA, and the legislative history does not offer any background on the AEA's purpose for authorizing the Commission to require information on FQ. Moreover, the First Circuit has stated that "[t]he Act gives the NRC complete discretion to decide what financial qualifications are appropriate." (Ref. 11). The Commission's interpretation of the FQ requirements has evolved, since the 1950s, into what exists today.

Under 10 CFR 50.33(f), utility applicants are exempt from review of their FQs for reactor operation. However, the NRC reviews utility applications for reactor construction and merchant plant applications for reactor construction and operation to ensure compliance with 10 CFR 50.33, "Contents of applications; general information." The NRC conducts these FQ reviews using the standard review plan guidance in NUREG-1577. The NRC also reviews NPUF applications for construction and operation to ensure compliance with 10 CFR 50.33(f). The NRC conducts these FQ reviews using guidance in NUREG-1537, "Guidelines for Preparing and Reviewing Applications for the Licensing of Non-Power Reactors, Format and Content." Changes in guidance to financial qualification requirements for power reactor and NPUF applicants will be incorporated into revised NUREG-1577 following implementation of the final rule.

Regulatory Development of Financial Qualifications

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 FQ 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..." (Ref. 12 at 4440). The commission further stated that "[t]hese 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." (Ref. 12 at 4440).

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..." (Ref. 12 at 4442). Further, the Commission stated that "[t]he NRC has not found a consistent correlation between licensees' poor financial health and poor safety performance." (Ref. 12 at 4443). The commission further stated "[i]f 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." (Ref. 12 at 4443).

Commission history and precedent have consistently shown an ongoing concern for the potential of degraded safety in the face of degraded FQ, while reflecting the position that any nexus between safety and the NRC's review of FQ is indirect and of secondary importance to ensuring public health and safety. In the October 2016 regulatory basis developed in support of the 2017 proposed rule titled, "Financial

Qualifications Requirements for Reactor Licensing,” ADAMS Accession No. ML15322A185 (Ref. 13), staff reiterated that the NRC maintains a number of oversight programs and processes that directly ensure safe plant construction and operation. These include a detailed technical licensing review, the Construction Reactor Oversight Process, the Reactor Oversight Process, the Resident Inspectors Program, the Reactor Operating Experience Program, the Vendor Inspection Program, and the Quality Assurance Inspection Program. These direct programs and processes that have evolved over the last 40 years, have reduced the need for reliance on more substantive FQ requirements to provide an additional, indirect measure of safety. These well-established and reliable direct mechanisms for identifying potential safety issues during power reactor construction and operation support the staff’s conclusion that the level of review required in current FQ requirements are adequate to protect public health and safety. Similarly, for NPUFs, the NRC performs routine inspections, during both construction and operation.

Financial Qualification Requirements and Guidance to Industry

The NRC amended FQ requirements to address the following four individual applicant types: (1) electric utility applicant for a CP (10 CFR 50.33(f)(1)), (2) all other applicants (merchant plant and NPUF applicants) for a CP (10 CFR 50.33(f)(2)(i)), (3) merchant plant and NPUF applicants for an OL (10 CFR 50.33(f)(2)(ii)), and (4) merchant plant applicants for a COL (10 CFR 50.33(f)(2)(iii)). These financial qualification requirements reflect a review standard consistent with 10 CFR Part 70 of “appears to be financially qualified.” The regulations at 10 CFR 50.33(f)(3) and (f)(4) identify the FQ requirements at time of license renewal and regulatory criteria required for use of license condition(s) to address FQ, respectively.

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.

For applicants that cannot demonstrate that they have sufficient funding, the NRC would issue licenses (CP, OL, or COL) with specific FQ license conditions. The license conditions would be sufficient and specific to permit a ministerial review to verify that the licensee’s financing plan is executed and funding is available prior to the start of construction or operations. For construction, financial capacity would be reflected in an applicant financial capacity plan (AFCP), along with a construction cost estimate that the applicant would provide at the time of application. The AFCP and cost estimate would give the NRC adequate information to determine whether the applicant appears to be financially qualified. The AFCP 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. The plan also reflects the organizational and human resources, experience, skills, and expertise required to obtain proper financing and to ultimately finance the project, when appropriate. Similarly, for operations, financial capacity would be reflected in an AFCP, along with estimates of annual operating costs for the first 5 years of operation of the facility. The AFCP and operating cost estimates would give the NRC adequate information to determine whether the applicant appears to be financially qualified to safely operate the facility. The AFCP reflects the applicant’s ability to understand the operational requirements of the facility and the financial capacity to obtain or provide financing for operations. For the NRC to find that an applicant appears to be financially qualified for a CP, OL, or COL, the applicant must satisfactorily demonstrate its financial capacity by providing either a construction cost estimate or an estimate of operating costs, and an AFCP, including license conditions, as appropriate. The following sections present details regarding the content and substance of the AFCP.

Harmonization with International Standards

The NRC staff reviewed guidance from the International Atomic Energy Agency and the International Organization for Standardization and did not identify any standards that provided useful guidance to NRC staff, applicants, or licensees specific to the topic of FQ.

Preliminary Draft

C. STAFF REGULATORY GUIDANCE

This section describes a methodology for implementing the general requirements for making an FQ determination for applicants and licensees that must comply with 10 CFR Parts 50 and 52.

Regulatory Guidance Position 1 includes guidance for applicants and licensees on providing information related to FQ as required by the regulations, including a plan for financing the construction and operation of the facility. Regulatory Guidance Position 2 provides guidance on the proposal of license conditions to applicants and licensees with funding of 50 percent or less at the time of application.

1.0 Financial Qualification

1.1 Reporting of Financial Qualification Information

For all applicants for, or holders of, a CP, OL, or COL under 10 CFR Part 50 and 10 CFR Part 52, the minimum information required to address financial qualification requirements about the applicant or licensee is listed in 10 CFR 50.33(f), which states:

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

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

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

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

2) All other applications must include the following:

(i) For a construction permit:

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

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

(ii) For an operating license:

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

(B) An Applicant Financial Capacity Plan describing how the applicant intends to cover the estimated operating costs, including information about sources of funds to cover each of the first 5 years of operation.

(iii) An applicant for a combined license must submit the information in paragraphs (f)(2)(i) and (ii).

3) 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. However, applications to renew or extend the term of an operating license for a non-power reactor must include the financial information that is required in an application for an initial license.

4) 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.

1.2 Financial Qualifications for Utilities

Utilities need only provide FQ information for construction, because they are presumed qualified for operations based on the availability of rate recovery for these costs. This is because of the ability of utilities to recover, to a sufficient degree, all or a portion of the costs of operation through ratemaking. From past experience, 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, dated April 2, 1984 (Ref. 14).

1.2.1 *Construction Permits and Combined Licenses for Utilities*

For utility applicants, the applicant would provide the following:

- a construction cost estimate (see Appendix B), that demonstrates that the applicant understands the size and scope of the project, including related fuel cycle costs, and that sufficiently provides the NRC with a reasonable understanding of the total costs and cost assumptions associated with construction of the facility; and
- an AFCP (see Appendix A), that includes a high-level summary discussion with enough detailed information to conclude that the applicant has understands both the project requirements and the financial capacity to obtain or provide financing, when appropriate.

If the AFCP reflects funding of 50 percent or less than the construction cost estimate, the AFCP should contain a proposed license condition (see Section 2.0), to ensure that funding is available before beginning reactor construction. The NRC would use the license condition(s) to find that the applicant has financial capacity when funding is not otherwise committed.

- The AFCP may include aspects of the following: (1) the type or source of funding anticipated to provide the required capital for the project; (2) a description of the management organization, including personnel associated with the organization and any consultants, as applicable; (3) 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; (4) 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, or a combination of these, as applicable; and (5) 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.

The NRC expects both a construction cost estimate and an AFCP from utility applicants. The availability of rate recovery provides important information for NRC to perform its application review, but it alone does not satisfy NRC FQ requirements. To the extent that the utility does not have rate recovery for construction, the NRC would treat the applicant in the same manner that it treats merchant and NPUF applicants.

1.3 Merchant and Non-power Production or Utilization Facilities Applicants

The NRC understands that most merchant plant applicants may not have committed sources of funding at the time of application and that they intend to establish financing for their projects after obtaining the license. The NRC staff also recognizes the possibility that an applicant, particularly one with an aggressive construction schedule, may submit an application that contains committed sources of funding.

At this time, NPUFs include all existing non-power reactors licensed under 10 CFR 50.21(a) and (c), and proposed production or utilization facilities to be licensed under 10 CFR 50.22, for the production of medical radioisotopes, such as molybdenum-99. The NRC recognizes that applicants for NPUFs may have difficulties similar to those of merchant plant applicants in raising capital and meeting more stringent FQ requirements.

1.3.1 *For Construction - Merchant Applicants and Non-power Production or Utilization Facilities Applicants with Financing of Greater than 50 Percent at Time of Application*

For those applicants with greater than 50 percent committed funding sources at the time of application, the applicant would provide the following information:

- a construction cost estimate (see Appendix B), that demonstrates that the applicant understands the size and scope of the project, including related fuel cycle costs, and sufficiently provides the NRC with a reasonable understanding of the total costs and cost assumptions associated with construction of the facility; and
- an AFCP (see Appendix A), which includes a high-level summary discussion with enough detailed information to conclude that the applicant understands both the project requirements and the financial capacity to obtain or provide financing, when appropriate.

If the AFCP reflects funding of 50 percent or less than the construction cost estimate, the AFCP should contain a proposed license condition (see Section 2.0) to ensure that funding is available before beginning reactor construction. The NRC would use the license condition(s) to find that the applicant has the financial capacity when funding is not otherwise committed.

The NRC staff believes that an applicant with commitments greater than 50 percent of its construction funding has sufficiently demonstrated 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.

For NPUFs, the applicant can obtain estimates of construction costs from the facility designers as part of the design contract, from construction bids received from contractors to build the facility, or from costs, adjusted for inflation, for similar completed projects. Construction costs to install an NPUF in an existing building should take into account the cost of the NPUF and support systems and any modifications to the existing building. The regulations at 10 CFR 50.10, “License required: limited work authorization,” allow the construction of multipurpose buildings (e.g., construction of a college laboratory building that will house the NPUF) without the issuance of a CP. If the building funding has been committed, the applicant should specify the costs for that section of a multipurpose building used to house the NPUF and should indicate that the costs are considered covered costs.

The applicant can obtain fuel cycle cost estimates for NPUFs from an analysis of the proposed operations and from an analysis of proposals from fuel vendors and/or from manufacturers of SNM targets, as applicable, and from providers of other services needed for the fuel cycle. The applicant can also quote the recent costs of operating similar NPUFs. The applicant should estimate fuel cycle costs, even if the NPUF receives fuel assistance from the U.S. Department of Energy (DOE).

If the NPUF applicant relies on university funds for construction, it should provide a statement signed by the chief financial officer of the university asserting this. If the applicant intends to use gifts or grants, the applicant should submit copies of these documents. If the applicant relies on government (federal, state, local) funds for construction, it should provide Statements of Intent and/or other assurances and documentation citing those government funding sources. This guidance also applies to fuel cycle costs. If DOE will be supplying fuel for the NPUF and support for the fuel cycle, the applicant should submit a letter from DOE stating this fact, or a copy of the DOE grant that supports the fuel cycle costs. Such documentation provides supporting evidence reflecting an applicant’s financial capacity for construction.

1.3.2 For Construction - Merchant Applicants and Non-power Production or Utilization Facilities Applicants with Financing of 50 Percent or Less at Time of Application

For those applicants with 50 percent or less committed funding sources at the time of application, the applicant would provide the following information:

- a construction cost estimate (see Appendix B), that demonstrates that the applicant understands the size and scope of the project, including related fuel cycle costs, and sufficiently provides the NRC with a reasonable understanding of the total costs and cost assumptions associated with construction of the facility; and
- an AFCP (see Appendix A), that includes a high-level summary discussion with enough detailed information so that the NRC could conclude that the applicant has both the understanding of the project requirements and the financial capacity to obtain or provide financing, when appropriate.

If the AFCP reflects funding of 50 percent or less than the construction cost estimate, the AFCP should contain a proposed license condition (see Section 2.0) to ensure that funding is available before beginning power reactor or NPUF construction. The NRC would use the license condition(s) to find that the applicant has financial capacity when funding is not otherwise committed.

The cost estimate and AFCP are intended to demonstrate an applicant's financial capacity. The NRC expects that the applicant would propose a license condition (or conditions) to ensure that funding is available before beginning power reactor or NPUF construction. The NRC would use the license condition(s) to find that the applicant has financial capacity when funding is not otherwise committed.

Section 1.3.1 provides recommendations for developing NPUF construction cost estimates, including fuel cycle costs, and for documenting the source of the funding when applicable.

1.3.3 For Operations - Merchant Applicants and Non-power Production or Utilization Facilities Applicants

For operations, the applicant would provide the following information:

- an estimate of total annual operating costs for each of the first 5 years of operations; and
- an AFCP (see Appendix C), that includes a high-level summary discussion with enough detailed information to conclude that the applicant understands both 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 the funding requirements for the first 5 years of operations, the applicant should propose a license condition for operations. Section 2.0, provides guidance on developing proposed license condition(s).

Within the AFCP, the applicant would document the sources of funds to cover each of the first 5 years of operations, including a license condition, as appropriate. In the case of a power reactor applicant, the sources of funds could be from, but are not limited to, power purchase agreements, parent assurances, projected revenue from the anticipated sale of power, other revenue and funding streams, or a combination of these. In the case of an NPUF, such sources of funds could be, but are not limited to, the anticipated sale of products and services, commitments from Federal, State, other Government entities, or documentation of such commitments, and/or other guarantees, or a combination of these.

The NRC would use the license condition(s) to find that the applicant has the financial capacity when funding is not otherwise committed.

For NPUFs, the applicant can estimate operating costs from an analysis of the proposed operation that accounts for the operating time and the experimental program, if applicable. The applicant can exclude from the analysis those overhead services that are provided to all departments of the university or company without the internal transfer of funding (e.g., cleaning, utilities, and in some organizations, health physics coverage), but it should indicate that these costs are excluded and should discuss the reasons for the exclusion. The applicant should include overhead costs allocated for facility operations (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 NPUF 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 that reflects its ability to fund the operations of the facility. If the applicant intends to use gifts or grants to fund operations, it should submit copies of these documents.

1.3.4 For Combined License Applications - Merchant Applicants

For merchant COLs, the applicant is to provide the information in Sections 1.3.1 or 1.3.2 as applicable, for construction, and in Section 1.3.3 for operations. Appendix D, provides guidance on developing an AFCP.

1.4 License Transfers

For license transfers, 10 CFR 50.80(b)(1) requires an applicant to submit the same FQ information that 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 (including, but not limited to, permits under 10 CFR Parts 50 and Part 52), for a facility that is either under construction or has not yet begun construction, applicants would provide the same information that is described in this guidance, depending on whether the applicant is a utility, merchant, or an NPUF.
- For applications for transfer of a license (including, but not limited to, permits under 10 CFR Parts 50 and Part 52), to a merchant or NPUF applicant for a facility that has completed construction but has not yet begun operations, applicants would provide the same information that is described in Section 1.3.3, specific to a merchant or an NPUF applicant.
- For applications for transfer of a license (including, but not limited to, permits under 10 CFR Part 50 and Part 52), to a utility for a facility that has completed construction but has not yet begun operations, no FQ information is necessary, because no FQ review is required.
- For applications for transfer of a license (including, but not limited to, permits under 10 CFR Part 50 and Part 52), to a merchant or an NPUF for a facility that is operating, applicants would provide the same information that is described in Section 1.3.3, specific to a merchant or an NPUF applicant.

2.0 Applicant Use of License Condition(s)

The NRC believes that an applicant with commitments of greater than 50 percent funding for proposed licensed activities has sufficiently demonstrated financial capacity. The NRC will not require such an applicant to propose license conditions with its application because the purpose of the NRC's review is not to ensure that the project is completed, but to verify that an applicant has the financial capacity to obtain financing. The NRC contemplated various levels of funding that would indicate that an applicant would be able to obtain the remaining funds needed. The NRC has decided to establish a threshold at greater than 50 percent funding. Given the high costs of nuclear power plant construction and operation, the NRC believes that an applicant that can demonstrate that it possesses greater than 50 percent of its required funding at the time of application has reasonably and sufficiently demonstrated financial capacity. Similarly, applicants for NPUFs may rely on multiple sources of funding to finance the construction and operation of a proposed facility. Like merchant plant applicants, an applicant for an NPUF may have unpredictable sources of funds at the time of initial licensing, which could impact the applicant's ability to meet the NRC's current initial FQ requirements.

Applicants for, or holders of, a CP, OL, or COL, with 50 percent or less of its funding identified at the time of application should propose license conditions to demonstrate that they have obtained adequate funding before the start of licensed activities, as applicable.

The following is an example of such a license condition, which the licensee would need to meet before beginning power reactor or NPUF construction:

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

- (i) an updated cost estimate,
- (ii) documentation that justifies any material variances from the original cost estimate provided in the application, and
- (iii) documentation that demonstrates 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.

Similarly, if an applicant does not have finalized sources of funds for operations, the applicant should propose a license condition that addresses financing for operations. The following is an example of a license condition that the licensee would need to meet before loading fuel and beginning power reactor [or NPUF] operations:

[THE APPLICANT] shall notify the NRC at least 60 days before the scheduled initial loading of fuel [or 60 days before the scheduled use of SNM beyond receipt, as applicable, for some NPUF applicants] 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, revenues from the anticipated sale of power, or any combination of these. [For NPUF applicants, such funds may come from sale of medical isotopes, educational and research generated revenue, parent or other assurance sources, or any combination of these.]

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.

Preliminary Draft

D. IMPLEMENTATION

The purpose of this section is to provide information to applicants and licensees regarding the NRC's plans for using this regulatory guide.

Methods or solutions that differ from those described in this regulatory guide may be deemed acceptable if they provide sufficient basis and information for the NRC staff to verify that the proposed alternative demonstrates compliance with the appropriate NRC regulations. Current licensees may continue to use guidance the NRC found acceptable for complying with the identified regulations as long as their current licensing basis remains unchanged. The matters covered in this regulatory guide are not within the purview of the Backfit Rule, 10 CFR 50.109, or the issue finality provisions in 10 CFR Part 52.

Preliminary Draft

GLOSSARY

The following definitions are for use in this DG only and may not be applicable to other NRC guidance or regulatory documents.

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 it reflects the organizational and human resources, experience, skills, and expertise required to obtain proper financing and ultimately finance the project. The AFCP is to 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	<p>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.</p> <p>"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.</p>
Non-power production or utilization facility	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).

REFERENCES¹

1. U.S. Code of Federal Regulations (CFR), “Domestic Licensing of Production and Utilization Facilities,” Part 50, Chapter 1, Title 10, “Energy.”
2. CFR, “Licenses, Certifications, and Approvals of Nuclear Power Plants,” Part 52, Chapter 1, Title 10, “Energy.”
3. CFR, “Requirements for Renewal of Operating Licenses for Nuclear Power Plants,” Part 54, Chapter 1, Title 10, “Energy.”
4. Atomic Energy Act (AEA) of 1954, as amended (Public Law 83-703), (42 U.S.C. §§ 2133, 2134, and 2234).
5. Nuclear Regulatory Commission (NRC), NUREG-1577, “Standard Review Plan on Power Reactor Licensee Financial Qualifications and Decommissioning Funding Assurance.”
6. CFR, “Domestic Licensing of Special Nuclear Material,” Part 70, Chapter 1, Title 10, “Energy.”
7. NRC, Federal Register Notice (FRN), “Financial Qualifications for Reactor Licensing,” June 17, 2015, (80 FR 34559).
8. NRC, “Policy Options for Merchant (Non-Electric Utility) Plant Financial Qualifications,” SECY-13-0124 (ADAMS Accession No. ML13057A006).
9. McBurnett, Mark A., Nuclear Innovation North America, LLC (NINA), letter to R. William Borchardt, U.S. Nuclear Regulatory Commission, May 31, 2012 (ADAMS Accession No. ML12158A229).
10. Ginsberg, Ellen C., Nuclear Energy Institute, letter to Chairman Macfarlane, U.S. Nuclear Regulatory Commission, November 13, 2012 (ADAMS Accession No. ML12334A187).
11. *New England Coalition on Nuclear Pollution v. NRC*, 582 F.2d 87, 93(1st Cir. 1978.)
12. NRC, FRN, “Financial Information Requirements for Applications to Renew or Extend the Term of an Operating License for a Power Reactor,” January 30, 2004 (69 FR 4439).
13. NRC, “Financial Qualifications Requirements for Reactor Licensing,” Regulatory Basis Document, October 2016 (ADAMS Accession No. ML15322A185).
14. NRC, FRN, “Elimination of Review of Financial Qualifications of Electric Utilities in Operating License Reviews and Hearings for Nuclear Power Plants,” April. 2, 1984 (49 FR 13044).

¹ Publicly available NRC published documents are available electronically through the NRC Library on the NRC’s public Web site at <http://www.nrc.gov/reading-rm/doc-collections/> and through the NRC’s Agencywide Documents Access and Management System (ADAMS) at <http://www.nrc.gov/reading-rm/adams.html>. The documents can also be viewed online or printed for a fee in the NRC’s Public Document Room (PDR) at 11555 Rockville Pike, Rockville, MD. For problems with ADAMS, contact the PDR staff at 301-415-4737 or (800) 397-4209; fax (301) 415-3548; or e-mail pdresource@nrc.gov.

APPENDIX A

APPLICANT FINANCIAL CAPACITY PLAN FOR CONSTRUCTION (TEMPLATE)

The information presented in this template reflects examples of narratives that the applicant financial capacity plan (AFCP) should include for construction. Examples provided are not intended to be prescriptive or exhaustive.

1.0 PURPOSE

In Section 1.0, the applicant will briefly describe the construction to be undertaken and the purpose of the AFCP in support of the application.

This plan demonstrates [APPLICANT/LICENSEE'S NAME] level of understanding of the size and scope of the construction of [PROPOSED NEW POWER REACTOR UNIT(S) OR NPUF], including the level of capital necessary to undertake the project. The plan also discusses the organizational and human resources, experience, skills, and expertise required to obtain proper financing and ultimately finance the project. The plan describes the management team as it pertains to financing, and the team's experience and expertise in the areas of finance, capital sourcing, and large build projects.

2.0 DESCRIPTION OF MANAGEMENT TEAM (FOR FINANCING PURPOSES)

In Section 2.0, the applicant will describe the management organization, including the personnel associated with the organization and any consultants, as applicable. The description should include 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. It should also discuss the applicant's relationship, or those of its consultants, with potential sources of project funding, or the potential for other government, academic, or corporate sources of capital, or a combination of these, as applicable. The information should reflect past experience with projects of similar size, scope, and possible finance sourcing.

This section discusses [APPLICANT/LICENSEE'S NAME] management team for the financing of construction of [PROPOSED NEW REACTOR UNIT(S) OR NPUF]. The management team includes experienced financing professionals from [APPLICANT/LICENSEE'S NAME]'s ultimate owners, [COMPANY/UNIVERSITY/OTHER ORGANIZATION'S NAME], as well as representatives and financial advisors from consultants [CONSULTANT NAME(S)]. This section describes their experience with potential sources of project funding, including financing of the construction and operation of energy and other infrastructure projects. When market and other conditions indicate that construction of [PROPOSED NEW REACTOR UNIT(S) OR NPUF] can proceed, [APPLICANT/LICENSEE'S NAME] will apply for a loan from the [NAME OF GOVERNMENT OR OTHER FINANCIAL INSTITUTION AND/OR LOAN PROGRAM], and for other financing.

[APPLICANT/LICENSEE'S NAME] also anticipates obtaining a loan issued by [NAME OF OTHER PRIVATE, GOVERNMENT OR OTHER FINANCIAL INSTITUTION AND/OR LOAN PROGRAM].

2.1 [APPLICANT/LICENSEE NAME OR NAME OF PARTICIPATING CONSULTANT, CONTRACTOR, OR OTHER PARTY – Party 1]’s Experience with, and Financing of, the Construction of Large Infrastructure, Energy, and Other Such Projects

[APPLICANT/LICENSEE’S NAME] has substantial experience with arranging the financing for the construction and operation of [PROPOSED NEW REACTOR UNIT(S) OR NPUF]. [APPLICANT/LICENSEE’S NAME] negotiated a detailed loan guarantee term sheet and conditional loan commitment with the [NAME OF GOVERNMENT OR OTHER FINANCIAL INSTITUTION AND/OR LOAN PROGRAM]. Financing, that was negotiated and completed in [MONTH/YEAR], and was used to finance the now-complete [PROJECT OR NAME OF FACILITY], in collaboration with private financing. [APPLICANT/LICENSEE’S NAME] has also had experience negotiating with the [OTHER BANK, INTERNATIONAL LOAN PROGRAM, ETC.], to provide loans and insurance for [PROPOSED NEW REACTOR UNIT(S)]. [APPLICANT/LICENSEE’S NAME] previously received support letters from both [OTHER BANK, INTERNATIONAL LOAN PROGRAM, ETC.] Finally, [APPLICANT/LICENSEE’S NAME] has been managing the engineering, procurement, and construction (EPC) contract and procurement of long lead items. To date, beginning in [20xx], [APPLICANT/LICENSEE NAME] has spent [XXX dollars] in pursuit of local permits, procurement of long lead materials, and payment of services associated with [PROPOSED NEW REACTOR UNIT(S)].

2.2 [APPLICANT/LICENSEE NAME OR NAME OF PARTICIPATING CONSULTANT, CONTRACTOR, OR OTHER PARTY – Party 2]’S Experience with, and Financing of, the Construction of Large Infrastructure, Energy, and Other Such Projects

[XYZ] has substantial experience in developing large energy infrastructure projects. As discussed in its 2014 Annual Report, [XYZ] had more than [\$XX] billion in total operating revenues and more than [\$XX] billion in long term debt. [XYZ] manages more than 13,500 megawatts of installed electrical capacity.

2.3 Experience of Consultants [EACH CONSULTANT NAME]

Throughout the project, [XYZ] has used many expert consultants to support various aspects of project development and will continue to do so as needed and appropriate. For example, one of [XYZ]’s current contractors for business development is [ACCOUNTING OR AUDITING FIRM]. [ACCOUNTING OR AUDITING FIRM] is a large consulting firm that provides numerous financial services including assisting clients in developing strategies and plans for the financing of projects. [ACCOUNTING OR AUDITING FIRM]’s practice does the following:

- serves all of the top 10 and 96 percent of the Fortune 1000 power and utilities companies;
- audits six of the top 10 Fortune 1000 power and utilities companies;
- provides accounting and enterprise risk services to 79 percent of the Fortune 1000 power and utilities companies; and
- provides consulting services to 83 percent of the Fortune 1000 power and utilities companies.

2.4 Summary of Experience of the [APPLICANT/LICENSEE’S NAME] Management Team

In summary, [APPLICANT/LICENSEE’S NAME]’s management team understands the project finance requirements, as indicated by its draft term sheet for a [NAME OF GOVERNMENT OR OTHER FINANCIAL INSTITUTION AND/OR LOAN PROGRAM] loan guarantee for construction of the

proposed reactor Units 1 and 2, and the involvement of [APPLICANT/LICENSEE'S NAME]'s owners in the construction of large power plants, including nuclear power facilities.

3.0 DESCRIPTION OF ANTICIPATED FUNDING METHODS AND SOURCES

In Section 3.0, the applicant will describe its anticipated access to capital and likely funding methods and sources for the project. This section should also include the past experience of the applicant and its associated contractors and consultants in negotiating, securing, and managing capital for other similar projects.

This section describes the anticipated funding methods and sources, and discusses past successes with such financing in energy and other large build projects. As previously discussed, [APPLICANT/LICENSEE'S NAME] anticipates obtaining funding through project financing that involves one or more loans issued under the [NAME OF GOVERNMENT OR OTHER FINANCIAL INSTITUTION AND/OR LOAN PROGRAM], combined with funding from [OTHER BANK, INTERNATIONAL LOAN PROGRAM, ETC.] As discussed in the following sections, [APPLICANT/LICENSEE'S NAME] has substantial experience negotiating with these organizations and successfully obtaining financing.

3.1 Experience of [APPLICANT/LICENSEE'S NAME – Company 1]

[APPLICANT/LICENSEE'S NAME] had previously negotiated a detailed loan guarantee term sheet and conditional loan commitment with the [NAME OF GOVERNMENT OR OTHER FINANCIAL INSTITUTION AND/OR LOAN PROGRAM].

3.2 Experience of [APPLICANT/LICENSEE'S NAME – Company 2]

[NAME OF OTHER FINANCE PARTNER AFFILIATED WITH PROJECT] has successfully financed three major solar projects with loans issued by three international banks and two U.S. based financial institutions. Table A.1 below includes the projects and capital contributions from the listed banks and other financial institutions.

Table A.1 Projects and Capital Contributions from Banks and Other Financial Institutions

Name of Project	Bank/Financial Institution	Capital Contributions (\$)	Years of Construction and/or Operation

4.0 CONCLUSIONS

[APPLICANT/LICENSEE'S NAME]'s management team understands of the complexities of financing a large nuclear power plant, the challenges in raising capital, and the need for ensuring financing before beginning reactor construction. Members of [APPLICANT/LICENSEE'S NAME]'s management have successfully obtained capital through various financing alternatives to fund power plants. [APPLICANT/LICENSEE'S NAME]'s management team has the capacity to obtain similar financing for Units 1 and 2 of the proposed project.

Based on the information in its application and presented in this AFCP [including proposed license conditions if presented], [APPLICANT/LICENSEE'S NAME]'s believes that it satisfies the NRC's financial qualification requirements in 10 CFR 50.33(f) and appears to be financially qualified.

APPENDIX B

CONSTRUCTION COST ESTIMATE (EXAMPLE)

*** Table B.1 Key Construction Cost Drivers**

	Unit 1	Unit 2
Production Plant Cost	\$ XXX	\$ XXX
General Plant Costs, Including Transmission and Distribution	\$ XXX	\$ XXX
Initial Fuel Load Cost	\$ XXX	\$ XXX
Escalation	\$ XXX	\$ XXX
Contingency	\$ XXX	\$ XXX
Total Cost	\$ XXX	\$ XXX

*** Key Assumptions:**

1. The costs shown are for two units.
2. Unit X commercial operation is for the 20XX timeframe.
3. Unit X commercial operation is for the 20XX timeframe (for multiple units).
4. Estimates of production plant cost and transmission, distribution, general plant costs are shown as overnight costs (i.e., excluding inflation and financing) in 20XX dollars.
5. Cost estimates for initial fuel load represent the sum of cash flows at the projected time of payment as detailed in Table B.1 excluding allowances for funds used during construction
6. Estimated plant costs are not firmed or fixed. The estimated plant costs are informed by: (a) project pricing from the [Name of Source] (escalated to current year); (b) evaluation of owner's costs including costs for transmission system ties and upgrades; and (c) an analysis of the level of contingency considered appropriate for the remaining level of uncertainty associated with a project of such magnitude.

* For NPUF applicants, construction cost estimate line items and Key Assumptions will differ from those presented here, which reflect those cost drivers and assumptions anticipated for the construction of a power reactor.

APPENDIX C

APPLICANT FINANCIAL CAPACITY PLAN FOR OPERATIONS (TEMPLATE)

Information presented in this template reflects examples of the narrative that the applicant financial capacity plan (AFCP) should include for operations. The examples provided are not intended to be prescriptive or exhaustive.

1.0 PURPOSE

In Section 1.0, the applicant will provide briefly describe the anticipated operations at the facility and the purpose of the AFCP in support of the application.

This plan demonstrates [APPLICANT/LICENSEE'S NAME]'s level of understanding of the scope of operations of [PROPOSED NEW POWER REACTOR UNIT(S) OR NPUF], including the level of funding necessary to cover the cost of operations. [PROPOSED NEW REACTOR UNIT(S)] is expected to operate at an estimated gross electrical power output of approximately 2,485 megawatts electric (MWe).

2.0 DESCRIPTION OF COSTS OF OPERATIONS, INCLUDING INCOME STATEMENT AND OTHER FINANCIAL STATEMENTS AS NECESSARY (FOR FUNDING PURPOSES)

In Section 2.0, the applicant should provide information that reflects the total annual operating costs for each of the first 5 years of operation of the facility.

Table C.1 includes the total costs of operations for each of the first 5 years of operation of the facility.

**** Table C.1 Total Annual Operating Costs for Unit [X]**

	Unit X	Year 20XX	Year 20XX	Year 20XX	Year 20XX	Year 20XX
Total Revenue:	\$ XXX	\$ XXX	\$ XXX	\$ XXX	\$ XXX	\$ XXX
Operating Expenses:	\$ XXX	\$ XXX	\$ XXX	\$ XXX	\$ XXX	\$ XXX
Income before Taxes:	\$ XXX	\$ XXX	\$ XXX	\$ XXX	\$ XXX	\$ XXX
Net Income:	\$ XXX	\$ XXX	\$ XXX	\$ XXX	\$ XXX	\$ XXX
Plant Type/ Thermal Capacity						
Total Annual Cost	\$ XXX	\$ XXX	\$ XXX	\$ XXX	\$ XXX	\$ XXX

**** Key Assumptions:**

1. The costs shown are for single unit.

2. Unit X commercial operation is for the 20XX timeframe.
3. The applicant should provide estimates of operating costs for each of the first 5 years of operation of the facility.

****** For NPUF applicants, annual operating cost line items and Key Assumptions will differ from those presented here, which reflect those cost drivers and assumptions anticipated for the operation of a power reactor. For NPUFs, 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.

3.0 DESCRIPTION OF ANTICIPATED FUNDING METHODS AND SOURCES

In Section 3.0, the applicant will describe the anticipated 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, or other revenue and funding streams, or a combination of these. 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; documentation of such commitments, or other guarantees, or a combination of these. For NPUFs, the applicant should submit the latest financial statements of the university or the company as part of the description of financial capacity in support of operations. If the applicant intends to use gifts or grants to fund operations, it should submit copies of these documents, if they are available.

[APPLICANT NAME'S] anticipated revenues from competitive sales of energy, capacity and ancillary services provide reasonable assurance of an adequate source of funds to meet all of anticipated expenses for Unit [X]. Note that the [APPLICANT NAME'S] output from Unit(s) [X] is sold in the PJM market.

The revenues in the projected income statements are based on sale of electricity of [APPLICANT NAME'S] proposed 2,485 MWe rated capacity for Unit [X]. The capacity factors for 2018-2022 were derived from the equivalent planned outage factor (EPOF), the equivalent unplanned outage factor (EUOF), and utilization factors, as shown in the table in proprietary document Attachment XX. The number of planned outage days for each unit in each year, was taken from [APPLICANT NAME'S] 5-year business plan. The projected EUOF is based on the average unplanned outage rate over the last 5 years of other nuclear facilities owned and operated by [APPLICANT NAME].

4.0 CONCLUSIONS

Based on information provided in our application and presented in this AFCP [including proposed license conditions if presented], [APPLICANT/LICENSEE'S NAME] believes future operations, sales, and funding capacity meet the financial cost requirements presented by Units 1 and 2. The costs will be met by the sale of electricity as presented above. Accordingly, [APPLICANT/LICENSEE'S NAME] believes that it satisfies the NRC's financial qualification requirements in 10 CFR 50.33(f) and appears to be financially qualified.

APPENDIX D

APPLICANT FINANCIAL CAPACITY PLAN FOR A COMBINED CONSTRUCTION AND OPERATING LICENSE APPLICATION (TEMPLATE)

Information presented in this template reflects examples of the narrative that the applicant financial capacity plan (AFCP) should include in the combined construction and operating license (COLA) application. The examples provided are not intended to be prescriptive or exhaustive.

1.0 PURPOSE

In Section 1.0, the applicant will describe the construction to be undertaken, the operational capacity and other operations considerations, and the purpose of the AFCP in support of the application.

This plan demonstrates [APPLICANT/LICENSEE'S NAME] level of understanding of the size and scope of construction of [PROPOSED NEW REACTOR UNIT(S)], including the level of capital necessary to undertake the project and the level of funding necessary to cover the cost of operations. The plan also discusses the organizational and human resources, experience, skills, and expertise required to obtain proper financing and to ultimately finance the project. The plan describes the management team in regard to financing, and the team's experience and expertise in the areas of finance, capital sourcing, and large build projects. This plan also demonstrates [APPLICANT/LICENSEE'S NAME] level of understanding of the scope of operations of [PROPOSED NEW REACTOR UNIT(S)], including the level of funding necessary to cover the cost of operations. [PROPOSED NEW REACTOR UNIT(S)] is expected to operate at an estimated gross electrical power output of approximately 2,485 megawatts electric (MWe).

2.0 DESCRIPTION OF MANAGEMENT TEAM (FOR FINANCING PURPOSES)

In Section 2.0, the applicant will describe the management organization, including personnel associated with the organization and any consultants, as applicable. The description should include 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. It should also discuss the applicant's relationship, or those of its consultants, with potential sources of project funding, or the potential for other government, academic, or corporate sources of capital, or a combination of these, as applicable. The information should reflect past experience with projects of similar size, scope, and possible finance sourcing.

This section discusses [APPLICANT/LICENSEE'S NAME]'s management team for the financing of the construction of [PROPOSED NEW REACTOR UNIT(S)]. The management team includes experienced financing professionals from [APPLICANT/LICENSEE'S NAME]'s ultimate owners, [COMPANY'S NAME], as well as representatives and financial advisors from consultants [CONSULTANT NAME(S)]. This section describes their experience with potential sources of project funding, including financing of the construction and operation of large energy and other infrastructure projects. When market and other conditions indicate that the construction of [PROPOSED NEW REACTOR UNIT(S)] can proceed, [APPLICANT/LICENSEE'S NAME] will apply for a loan from the

[NAME OF GOVERNMENT OR OTHER FINANCIAL INSTITUTION AND/OR LOAN PROGRAM], and other financing.

[APPLICANT/LICENSEE'S NAME] also anticipates obtaining a loan issued by [NAME OF OTHER PRIVATE, GOVERNMENT OR OTHER FINANCIAL INSTITUTION AND/OR LOAN PROGRAM].

2.1 [APPLICANT/LICENSEE NAME OR NAME OF PARTICIPATING CONSULTANT, CONTRACTOR, OR OTHER PARTY – Party 1]’s Experience with, and Financing of, the Construction of Large Infrastructure, Energy, and Other Such Projects

[APPLICANT/LICENSEE'S NAME] has substantial experience with arranging the financing for the construction and operation of [PROPOSED NEW REACTOR UNIT(S)]. APPLICANT/LICENSEE'S NAME] negotiated a detailed loan guarantee term sheet and conditional loan commitment with the [NAME OF GOVERNMENT OR OTHER FINANCIAL INSTITUTION AND/OR LOAN PROGRAM]. Financing, was negotiated and completed in [MONTH/YEAR], and was used to finance the now-complete [PROJECT OR NAME OF FACILITY], in collaboration with private financing. [APPLICANT/LICENSEE'S NAME] has also had experience negotiating with the [OTHER BANK, INTERNATIONAL LOAN PROGRAM, ETC.], to provide loans and insurance for [PROPOSED NEW REACTOR UNIT(S)]. [APPLICANT/LICENSEE'S NAME] previously received support letters from both [OTHER BANK, INTERNATIONAL LOAN PROGRAM, ETC.] Finally, [APPLICANT/LICENSEE'S NAME] has been managing the engineering, procurement, and construction (EPC) contract and procurement of long lead items. To date, beginning in [20XX], [APPLICANT/LICENSEE NAME] has spent [\$XXX] in pursuit of local permits, procurement of long lead materials, and payment of services associated with [PROPOSED NEW REACTOR UNIT(S)].

2.2 [APPLICANT/LICENSEE NAME OR NAME OF PARTICIPATING CONSULTANT, CONTRACTOR, OR OTHER PARTY – Party 2]’s Experience with, and Financing of, the Construction of Large Infrastructure, Energy, and Other Such Projects

[XYZ] has substantial experience in developing large energy infrastructure projects. As discussed in its 2014 annual report, [XYZ] had more than [\$XX] billion in total operating revenues and more than [\$XX] billion in long term debt. [XYZ] manages more than 13,500 megawatts (MW) of installed electrical capacity.

2.3 Experience of Consultants [EACH CONSULTANT NAME]

Throughout the project, [XYZ] has used many expert consultants to support various aspects of project development and will continue to do so as needed and appropriate. For example, one of [XYZ's] current contractors for business development is [ACCOUNTING OR AUDITING FIRM]. [ACCOUNTING OR AUDITING FIRM] is a large consulting firm that provides numerous financial services including assisting clients in developing strategies and plans for the financing of projects. [ACCOUNTING OR AUDITING FIRM]'s practice does the following:

- serves all of the top 10 and 96 percent of the Fortune 1000 power and utilities companies,
- audits six of the top 10 Fortune 1000 power and utilities companies,
- provides accounting and enterprise risk services to 79 percent of the Fortune 1000 power and utilities companies, and
- provides consulting services to 83 percent of power and utilities companies on the Fortune 1000.

2.4 Summary of Experience of [APPLICANT/LICENSEE'S NAME] Management Team

In summary, [APPLICANT/LICENSEE'S NAME]'s management team understands the project finance requirements, as indicated by its draft term sheet for a [NAME OF GOVERNMENT OR OTHER FINANCIAL INSTITUTION AND/OR LOAN PROGRAM] loan guarantee for the construction of proposed reactor Units 1 and 2, and the involvement of [APPLICANT/LICENSEE'S NAME]'s owners in the construction of large power plants, including nuclear power facilities.

3.0 DESCRIPTION OF ANTICIPATED FUNDING METHODS AND SOURCES FOR CONSTRUCTION

In Section 3.0, the applicant will describe the anticipated access to capital, and likely funding methods and sources for the project. This section should also include the past experience of the applicant and associated its contractors and consultants, in negotiating, securing, and managing capital for other, similar projects.

This section describes the anticipated funding methods and sources, discusses past successes with such financing in energy and other large build projects. As previously discussed, [APPLICANT/LICENSEE'S NAME] anticipates obtaining funding through a project financing that involves one or more loans issued under the [NAME OF GOVERNMENT OR OTHER FINANCIAL INSTITUTION AND/OR LOAN PROGRAM], combined with funding from [OTHER BANK, INTERNATIONAL LOAN PROGRAM, ETC.] As discussed in the following sections, [APPLICANT/LICENSEE'S NAME] has substantial experience negotiating with these organizations and successfully obtaining financing.

3.1 Experience of [APPLICANT/LICENSEE'S NAME – Company 1]

[APPLICANT/LICENSEE'S NAME] had previously negotiated a detailed loan guarantee term sheet and conditional loan commitment with the [NAME OF GOVERNMENT OR OTHER FINANCIAL INSTITUTION AND/OR LOAN PROGRAM].

3.2 Experience of [APPLICANT/LICENSEE'S NAME – Company 2]

[NAME OF OTHER FINANCE PARTNER AFFILIATED WITH PROJECT] has successfully financed three major solar projects with loans issued by three international banks and two U.S. based financial institutions. Table D.1 includes projects and capital contributions from the listed banks and other financial institutions.

Table D.1 Projects and Capital Contributions from Banks and Other Financial Institutions

Name of Project	Bank/Financial Institution	Capital Contributions (\$)	Years of Construction and/or Operation

4.0 DESCRIPTION OF COSTS OF OPERATIONS, INCLUDING INCOME STATEMENT AND OTHER FINANCIAL STATEMENTS AS NECESSARY (FOR FUNDING PURPOSES)

In Section 4.0, the applicant should provide information that reflects the total annual operating costs for each of the first 5 years of operation of the facility.

Table D.2 includes the total annual operating costs for each of the first 5 years of operation of the facility.

Table D.2 Total Annual Operating Costs for Unit [X]

	Unit X	Year 20XX	Year 20XX	Year 20XX	Year 20XX	Year 20XX
Total Revenue:	\$ XXX	\$ XXX	\$ XXX	\$ XXX	\$ XXX	\$ XXX
Operating Expenses:	\$ XXX	\$ XXX	\$ XXX	\$ XXX	\$ XXX	\$ XXX
Income Before Taxes:	\$ XXX	\$ XXX	\$ XXX	\$ XXX	\$ XXX	\$ XXX
Net Income:	\$ XXX	\$ XXX	\$ XXX	\$ XXX	\$ XXX	\$ XXX
Plant Type/ Thermal Capacity						
Total Annual Cost	\$ XXX	\$ XXX	\$ XXX	\$ XXX	\$ XXX	\$ XXX

Key assumptions:

1. Costs shown are for a single unit.
2. Unit X commercial operation is for the 20XX timeframe.
3. The applicant should provide estimates of operating costs for each of the first 5 years of operation of the facility.

4.1 Description of anticipated funding methods and sources for operations

In Section 4.1, the applicant will describe the anticipated 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, or other revenue and funding streams, or a combination of these.

[APPLICANT NAME'S] anticipated revenues from competitive sales of energy, capacity and ancillary services provide reasonable assurance of an adequate source of funds to meet all anticipated expenses of Unit [X]. Note that the [APPLICANT NAME'S] output from XYP Units [X] is sold in the PJM market.

The revenues in the projected income statements are based on sale of electricity of [APPLICANT NAME'S] proposed 2,485 MWe rated capacity for Unit [X]. The capacity factors for 2018-2022 were derived from the equivalent planned outage factor (EPOF), the equivalent unplanned outage factor (EUOF), and utilization factors, as shown in the table in proprietary document Attachment XX. The number of planned outage days for each unit in each year, was taken from [APPLICANT NAME'S] 5-year business plan. The projected EUOF is based on the average unplanned outage rate over the last 5 years of other nuclear facilities owned and operated by [APPLICANT].

5.0 CONCLUSIONS

[APPLICANT/LICENSEE'S NAME]'s management team understands the complexities of financing a large nuclear power plant, the challenges in raising capital, and the need for ensuring financing before beginning reactor construction. Members of [APPLICANT/LICENSEE'S NAME]'s management team have successfully obtained capital through various financing alternatives to fund power plants. [APPLICANT/LICENSEE'S NAME]'s management team has the capacity to obtain similar financing for Units 1 and 2 of the proposed project.

In addition, based on the information provided in our application and presented in this AFCP, [APPLICANT/LICENSEE'S NAME]'s believes that our future operations, sales, and funding capacity meet the financial cost requirements presented by Units 1 and 2. The costs will be met by the sale of electricity as presented above.

Based on information in its application and in accordance with this AFCP, [including proposed license conditions if presented], [APPLICANT/LICENSEE'S NAME] believes that it satisfies the NRC's FQ requirements in 10 CFR 50.33(f) and appears to be financially qualified.