ATTACHMENT 2

REGULATORY ANALYSIS

REGULATORY ANALYSIS

Proposed Rule - 10 CFR Part 50

Financial Information
For Applications To Renew Or Extend The Term
Of An Operating License For A Power Reactor

Table of Contents

1. Introduction

The U.S. Nuclear Regulatory Commission (NRC) has initiated a rulemaking to amend 10 CFR Part 50 regulations pertaining to financial qualifications reviews for nuclear power plants. NRC is proposing two amendments in this rulemaking that address financial qualifications reviews for non-electric utility power reactor licensees. The first amendment reduces the regulatory burden on non-electric utility power reactor licensees by eliminating the requirement that these entities submit financial qualifications information when applying for a license renewal. The second amendment creates a section to 10 CFR Part 50, a requirement segregated from 10 CFR 50.33(f)(2), that provides a formal mechanism requiring the submission of financial qualifications information in situations where electric utilities transition to non-electric utility status without a license transfer.

The remainder of this introduction is divided into two sections. Section 1.1 describes the problems addressed by the proposed rule and the objectives of the rulemaking. Section 1.2 provides background information on the current regulations for financial qualifications information submissions for nuclear power reactor licensees.

1.1 Statement of the Problem and Objective of the Rulemaking

NRC has determined that the existing regulations in 10 CFR Part 50 should be modified to reduce regulatory burden by eliminating unnecessary submissions of financial qualifications information and to provide regulatory clarity by establishing a formal process to review financial qualifications information in certain circumstances in which the rule currently is unclear. Specifically, amendments to Section 50.33(f) would reduce the regulatory burden and a new 10 CFR 50.76 would establish a formal process to review financial qualifications information for electric utility licensees that transition to non-electric utility status without a license transfer.

Section 50.33(f)(2) requires non-electric utility power reactor applicants for license renewals to submit financial qualifications information with their applications. NRC has concluded that the financial review of non-electric utility power reactor applicants for license renewal is unnecessary for the following reasons. NRC's current regulations provide for a review of financial qualifications at several stages during a license, such as at initial license application, license transfer, and at any time NRC determines that the licensee's financial health requires a review. Thus the current regulations allow NRC to monitor and evaluate changes in licensees' financial status. In addition, because license renewal is not accompanied by a change in a licensee's financial condition, it does not warrant a financial review. By amending Section 50.33(f)(2) to eliminate the requirement for submission of financial qualifications information from non-electric utility power reactors renewing an operating license, NRC would remove unnecessary burden and treat all power reactor licensees consistently.

Section 50.76 would establish a formal process to review the financial qualifications of electric utilities making a transition to non-electric utility status without a license transfer. NRC's current regulations do not provide for a formal process to review financial qualifications of electric utility power reactor licensees that transition to non-electric utility status. The establishment of a formal review process is important because when an electric utility licensee transitions to non-electric utility status, the licensee would no longer be regulated on a cost of service basis by a state public utility commission (PUC) or the Federal Energy Regulatory Commission (FERC), both of which establish rates that ensure sufficient funds for safe operations. Non-electric utility power reactor licensees are subject to rates set by the open market. Although NRC is concerned about the impacts of deregulation on its power reactor licensees' financial condition,

it has not found a consistent relationship between a licensee's financial health and general indicators of safety.[1] NRC believes that establishing a formal review requirement would enhance public confidence while maintaining regulatory efficiency and effectiveness. NRC already has an informal monitoring process that involves NRC staff monitoring the financial trade press for potentially relevant information on changes in reactor licensee financial strength. The proposed action would complete a set of requirements for NRC's review of financial qualifications that would allow total coverage of all relevant triggering events for power reactor licensees, including initial operating license application, transfer of the license to another entity, transition from electric utility to non-electric utility status without a license transfer, and evidence of a decline in the financial status of a licensee. Exhibit 1-1 shows the financial qualifications submission requirements for these four triggering events. Providing this coverage of all relevant triggering events is expected to enhance public confidence.

Exhibit 1-1: Power Reactor Financial Qualification Submission Requirements

Event	Requirements for Electric Utilities	Requirements for Non-Electric Utility Entities
Initial License to Operate	Rate making process governed by state PUCs and/or FERC ensures sufficient funds are available for operation and thus financial qualifications are not required to be submitted.	Financial qualifications are submitted with the initial licensing application for NRC's review.
License Transfer	A license transfer to another electric utility does not require submission of financial qualifications for the reasons stated under Initial Licensing.	Financial qualifications are submitted for review as part of the license transfer process.
Transition from an Electric Utility to a Non-Electric Utility	Not applicable	Section 50.76 would establish a formal process for NRC to review the financial qualifications of the new non-electric utility entity during the transition process.
Evidence of a Decline in Licensee Financial Status	Financial qualifications information is submitted upon request of NRC.	Financial qualifications information is submitted upon request of NRC.

[1] NRC's *Final Policy Statement on the Restructuring and Economic Deregulation of the Electric Utility Industry* discusses its concerns regarding deregulation of power reactor licensees. The policy statement was published in the Federal Register, Vol. 62, No.160, August 19, 1997, page 44071.

1.2 Current Regulations Governing Submission of Financial Qualifications Information for Power Reactor Licensees

NRC has regulations in place to evaluate a power reactor applicant's or licensee's financial qualifications at several points in the lifetime of the license. The regulations include the review of financial qualifications information at initial operating licensing (Section 50.33(f)(2)), before license transfer (Section 50.80), and where circumstances warrant an ad hoc request for additional financial information (Section 50.33(f)(4)). The following paragraphs discuss the financial qualifications information submission requirements of these three sections of 10 CFR.

Section 50.33(f)(2) - Initial Operating License Applications. Section 50.33(f)(2) requires non-electric utility applicants for initial operating licenses for nuclear power plants to submit financial qualifications information (i.e., projections of revenues and expenses for the first 5 years of operations) with their applications. Applicants that are electric utilities are exempt from these requirements because the ratemaking process assures that funds needed for safe operation would be made available to regulated electric utilities.

Section 50.80 - License Transfers. Section 50.80 requires applicants seeking to transfer a power reactor operating license from an electric utility to a non-electric utility to submit financial qualifications information. License transfers from one electric utility to another electric utility are exempt from submitting financial qualifications information because the ratemaking process assures that funds needed for safe operation would be made available to regulated electric utilities.

Section 50.33(f)(4) - Ad Hoc Reviews. Section 50.33(f)(4) allows NRC to request from licensees financial qualifications information that would allow NRC to assess the ability of the licensee to manage licensed activities in a manner that does not compromise the health and safety of the public. These requests are made independently of initial licensing or the renewal process and afford NRC the ability to review the financial qualifications information of a licensee at any time, particularly if a licensee's financial status declines.

2. Identification and Preliminary Analysis of Alternative Approaches

The following discussion describes the regulatory options being considered in this proposed rulemaking for each of the two amendments, with analysis presented in Section 3.

2.1 Option 1 - No Action

2.1.1 Amendment to 10 CFR 50.33(f)

Under Option 1, the no-action alternative, NRC would not amend the current regulations on financial qualifications reviews of non-electric utility applications for renewal of operating licenses for nuclear power plants. Non-electric utility power reactors applying for license renewals would continue to be required to submit financial qualifications information and NRC would continue to review this information. Option 1 is rejected because it continues to require the submission of financial qualifications information and thus maintains an unnecessary burden on non-electric utility power reactor licensees and NRC. Thus Option 1 results in higher costs to both non-electric utility licensees and the NRC.

2.1.2 Section 10 CFR 50.76

Under Option 1, the no-action alternative, NRC would not create a section, requiring electric utility licensees that transition to non-electric utility status without a license transfer to submit financial qualifications information. Electric utility power reactors that transition to non-electric utility status would continue to make this transition without submitting financial qualifications information. Option 1 is rejected because it does not meet NRC's program goal of regulatory efficiency and effectiveness since NRC would not have a formal system in place to determine whether electric utility power reactor licensees, who transition to non-electric utility status without a license transfer, remain financially qualified to conduct the activities under the license.

2.2 Option 2 - Proposed Action

2.2.1 Amendment to 10 CFR 50.33(f)

Under Option 2, NRC would provide relief through rulemaking from the current financial qualifications information submission requirements for non-electric utility applicants for license renewal, based on NRC's ability to obtain financial qualifications information through other means as necessary. Specifically, NRC would eliminate the requirement that non-electric utility power reactor applicants submit financial qualifications information in license renewal applications. Option 2 is preferred over Option 1 because it would provide regulatory relief for non-electric utility power reactor licensees and reduce NRC's costs.

2.2.2 Section 10 CFR 50.76

Under Option 2, NRC would add a new requirement, segregated from Section 50.33(f)(2), for electric utility licensees that transition to non-electric utility status without a license transfer to submit financial qualifications information at the time of transition. Option 2 is preferred over Option 1 because it meets NRC's program goal of regulatory efficiency and effectiveness since NRC would have a formal system in place to determine whether electric utility power reactor licensees, who transition to non-electric utility status without a license transfer, remain financially qualified to conduct the activities under the license.

3. Estimation and Evaluation of Values and Impacts

This section describes the analysis conducted to identify and evaluate the values (benefits) and impacts (costs) of the two regulatory options. Section 3.1 identifies the attributes expected to be affected by the proposed rulemaking. Section 3.2 describes how the analysis evaluates the values and impacts. Finally, Section 3.3. presents the details of the calculations used to generate the estimated values and impacts.

3.1 Identification of Affected Attributes

This section identifies the factors within the public and private sectors that the regulatory alternatives (discussed in Section 2) are expected to affect. These factors are classified as "attributes" using the list of potential attributes provided by NRC in Chapter 5 of its *Regulatory*

Analysis Technical Evaluation Handbook.[2] Each attribute listed in Chapter 5 of the handbook was evaluated. The regulatory action is expected to affect the following attributes:

- *Industry Implementation* -- If the proposed rule amendments are implemented, power reactor licensees would incur a cost to read and familiarize themselves with the regulations.

- *Industry Operation* -- The proposed action to amend Section 50.33(f)(2) would result in a savings to non-electric utility power reactor licensees who apply for power reactor license renewals. The proposed action to create a Section 50.76, would result in a new cost for electric utility to non-electric utility transitions not involving an operating license transfer. Under Section 50.76 licensees would be required to submit the financial qualifications information that is required in Section 50.33(f)(2).

- *NRC Operation* -- The proposed action to amend Section 50.33(f)(2) would result in a savings to NRC, since a review of financial qualifications information would no longer be required. NRC would incur costs associated Section 50.76, which requires the review of financial qualifications information and issuance of a finding of financial qualification for each electric utility power reactor licensee that transitions to non-electric utility status without a license transfer.

- *Regulatory Efficiency* -- The proposed amendment to Section 50.33(f)(2) would reduce unnecessary burden on regulated entities. The proposed amendment to Section 50.76 would provide for greater regulatory clarity. The benefits accruing to this attribute are evaluated qualitatively.

Attributes that are *not* expected to be affected by the rulemaking options include the following:

- Public Health (Routine);
- Public Health (Accident);
- Occupational Health (Routine);
- Occupational Health (Accident);
- Off-site Property;
- On-site Property;
- NRC Implementation;
- Other Government;
- General Public;
- Improvements in Knowledge;
- Antitrust Considerations;
- Safeguards and Security Considerations; and
- Environmental Considerations.

NRC believes that the proposed rule would not adversely affect safeguards against radiation exposure to humans and property (i.e., public health and safety) because licensees still would be required to have the financial resources to operate their reactors safely. No changes in the types or quantities of effluents that may be released offsite would result from this rulemaking,

[2] Regulatory Analysis Technical Evaluation Handbook, Final Report, NUREG/BR-0184, Office of Nuclear Regulatory Research, January 1997.

nor would there be any anticipated increase in the allowable individual or cumulative occupational radiation exposure. The remaining attributes are not affected primarily because the proposed changes are administrative in nature.

3.2 Analytical Methodology

This section describes the process used to evaluate values and impacts associated with the proposed rule. The *values* (benefits) of the rule include any desirable changes in affected attributes (e.g., reduction of regulatory burden) while the *impacts* (costs) include any undesirable changes in affected attributes (e.g., monetary costs). As described in Section 3.1, the attributes expected to be affected include the following:

- Industry Implementation;
- Industry Operation;
- NRC Operation; and
- Regulatory Efficiency.

This analysis relies on a qualitative evaluation for the affected attribute Regulatory Efficiency.[3]

The remaining three attributes (industry implementation, industry operation, and NRC operation) are evaluated quantitatively. Quantitative analysis requires a baseline characterization, including factors such as the anticipated number of non-electric utility power reactor license renewal applications and the number of electric utility to non-electric utility transitions without a license transfer. The analysis proceeds quantitatively for these attributes using the assumptions discussed in Section 3.2.2.

3.2.1 Model Design

This section describes the cost model used to calculate the values and impacts for the affected attributes of the proposed rule. The *values* are considered to be savings related to (1) non-electric utility licensees applying for license renewal no longer having to prepare and submit financial qualifications information, and (2) NRC no longer having to review the financial qualifications information and issue a finding. These savings are due to the amendments to Section 50.33(f)(2). Although the proposed action would result in enhanced regulatory efficiency, these benefits were not quantified.

The *impacts* of the proposed action are considered to be costs related to (1) electric utility power reactor licensees that transition to non-electric utility status without a license transfer preparing and submitting financial qualifications information, and (2) NRC's review of the financial qualifications information and issuance of a financial qualifications finding. These impacts are due to the amendments to Section 50.76. The additional impact of reading the regulations is also included in the analysis.

[3] The regulatory efficiency attribute is evaluated qualitatively by definition. See NRC's *Regulatory Analysis Technical Evaluation Handbook*, Section 5.5.14.

The analytical results are primarily driven by the number of non-electric utilities applying for license renewal and to a somewhat lesser extent the following four parameters, which are listed in descending order based on their effect on the results:

1. NRC's burden for reviewing financial qualifications information; and

2. The year when the license renewal application is submitted in relation to initial license expiration;

3. The licensee's burden for preparing and submitting financial qualifications information;

4. The number of licensees that transition from electric utility to non-electric utility status without license transfers.

There is a great deal of uncertainty associated with how many non-electric utility applications for license renewal will be submitted, since this is a business decision made by individual licensees. To account for this uncertainty, and the uncertainty in the four other parameters listed above, the analysis estimates reasonable lower and upper bounds for these parameters. The results also are presented with reasonable lower and upper bound values and impacts as well as best estimate values and impacts.

The values and impacts to licensees and NRC from the proposed action were assessed as follows:

- *Estimate the costs to all power reactor licensees due to reading the regulations.*

  For power reactor licensees, costs are calculated by multiplying the time required to review the new regulations by the hourly wage rate for licensee staff and by the total number of power reactor licensees.

- *Estimate the savings to non-electric utility power reactor licensees and NRC from no longer having to prepare and review financial qualifications information.*

  For non-electric utility power reactor licensees, savings are calculated by multiplying the time required to prepare and submit the financial qualifications information by the hourly wage rate for licensee staff and by the number of non-electric utility power reactor license renewal applications.

  For NRC, savings are calculated by multiplying the time required to review the financial qualifications information and issue a finding, by the hourly wage rate for NRC staff and by the number of non-electric utility power reactor license renewal applications.

- *Estimate the costs to NRC and electric utilities that transition to non-electric utility status without a license transfer.*

  For electric utility power reactor licensees, costs are calculated by multiplying the time required to prepare and submit the financial qualifications information by the

hourly wage rate for licensee staff and by the number of electric utility power reactors that transition to non-electric utility status without a license transfer.

For NRC, costs are calculated by multiplying the time required to review the financial qualifications information by the hourly wage rate for NRC staff and by the number of electric utility power reactors that transition to non-electric utility status without a license transfer. Pre-decisional costs of analyzing and developing the revised requirements are not included in this analysis.[4]

3.2.2 Data and Assumptions

The following sections present the data and assumptions used in the analysis described in Section 3.2.1.

Power Reactor Licensees

- Power reactors are located at 65 sites containing 103 operating commercial power reactors.[5]

- Each site containing power reactors is assumed to apply for license renewal independent of other power reactors that may be owned by the same licensee.

- Eleven power reactor operating licensees, who own 26 power reactors at 15 sites, have already applied for or have announced they will apply for renewal before January 2003, which is the projected effective date of the final rule. These reactors are not included in the analysis. Eight power reactors at four sites have already received a renewed operating license: Arkansas Nuclear One 1, Calvert Cliffs 1 and 2, Edwin I. Hatch 1 and 2, and Oconee 1, 2, and 3. NRC is currently reviewing the renewal applications for 15 reactors at eight sites: Catawba 1 and 2, Fort Calhoun, McGuire 1 and 2, North Anna 1 and 2, Peach Bottom 2 and 3, St. Lucie 1 and 2, Surry 1 and 2, and Turkey Point 3 and 4. Three operating licensees have announced their intention to file for license renewal prior to 2003. These operating licensees own three reactors: Ginna, H.B. Robinson 2, and Summer 1.

- Unless available information indicates otherwise, each licensee is assumed to renew the operating licenses for all power reactors at a given location at the same time. For example, Baltimore Gas and Electric applied for reactor license renewals for both its Calvert Cliffs 1 and 2 reactors at the same time although the reactors have different initial license termination years, 2014 and 2016 respectively. However, Entergy Nuclear Generation Company filed for renewal of its Arkansas Nuclear One Unit 1 reactor but did not file for renewal of its Arkansas Nuclear One Unit 2 reactor at the same time. Based on the number of

[4] Costs that are already incurred, such as all pre-decisional activities performed by NRC, are considered "sunk" costs and are not included in the analysis. See NRC's *Regulatory Analysis Technical Evaluation Handbook*, Section 5.5.9.

[5] Information regarding the number of reactors and their license expiration dates was obtained from NUREG-1350, NRC Information Digest, 2000 Edition.

reactor sites (i.e., 65) and the fact that Entergy did not apply for license renewal for both Arkansas Nuclear One Units 1 and 2 at the same time, the analysis assumes there will be a maximum of 66 applications for license renewal. Because 15 sites have already applied for license renewal or plan to apply for license renewal prior to January 2003, the analysis includes only the 51 remaining potential license renewals during the time period of the analysis (i.e., 2003 through 2035, which is the latest initial license expiration date for an operating power reactor license).

- The licensees for all operating power reactors are assumed to renew the initial operating license of each reactor.[6]

- Only one license renewal/extension is sought for each reactor. Due to the uncertainties associated with the number of non-electric utility licensees that might seek a second license renewal and the timing of a second renewal application, the analysis only models one license renewal for each reactor. This assumption may result in the total net benefit of the proposed action being underestimated because the savings from the second license renewal applications from non-electric utility power reactor licensees are not included.

- Unless available information indicates otherwise, licensees file for operating license renewals 14 years before the initial licenses expire or in 2003, whichever is later. In the case of multiple reactors located at the same site, the applications are filed 14 years before the earliest license expiration date. The average and median number of years before initial license expiration that an application for renewal is submitted or is planned to be submitted is 14 years for the 54 reactors for which information is available. The lower and upper bounds for this parameter are assumed to be 10 years and 20 years, respectively. (see NUREG-1437, Volume 1, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants." Issued in May 1996, ". . . most utilities are expected to begin preparation for license renewal about 10 to 20 years before expiration of their original operating licenses.")

- The number of operating license renewal applications per year from non-electric utility applicants is assumed to be 20 percent of license renewal applicants that year. The actual number of renewal applications from non-electric utility applicants is expected to be correlated with the total number of renewal applications received from all power reactor licensees in any one year. The number of non-electric utility renewal applications is expected to be low because most renewals are expected to occur before electric utility power reactor licensees become non-electric utility licensees. Thus the analysis assumes a value of 20 percent of all renewal applications in each year. The lower and upper bounds for this parameter are assumed to be 10 percent and 30 percent, respectively. Due to the low number of licensees applying for license renewal in any one year, the calculation for the number of non-electric utility applicants is

[6] On June 8, 2000, Mr. William D. Magwood, IV, Director for the Department of Energy's Office of Nuclear Energy, Science, and Technology, in an address to the Subcommittee on Energy and Power, Committee on Commerce, U.S. House of Representatives, stated that the "overwhelming majority of the Nation's 103 operating plants can be expected to apply for and receive license renewals...".

rounded to the nearest whole number. Thus the number of non-electric utility renewal applications will not necessarily equal 20 percent of the total number of all potential renewal applications, which is estimated to be 51.

- Power reactor licensees require 100 hours to prepare the financial qualifications information.[7] The lower and upper bounds for this parameter are assumed to be 50 hours and 200 hours, respectively.

- The average labor rate for licensee staff is $80.00 per hour.[8]

- The number of electric utility power reactor licensees that transition to non-electric utilities without a license transfer is one every ten years, or five transitions, for the 50 year period 2003 to 2052. Information on the potential number of transitions to non-electric utility status is unavailable because such a transition is a business decision that is unlikely to be made public prior to the actual transition. To date there have been no such transitions that have not been accompanied by an application for license transfer. The lower and upper bounds for this parameter are one transition every 20 years, or three transitions, and one transition every five years, or 10 transitions, respectively. The first transition is assumed to occur in 2003 for the lower bound, best estimate, and upper bound calculations.

- Power reactor licensees require four hours each to review and familiarize themselves with the amended regulations.

- Exhibit 3-1 shows the actual or modeled license renewal application submission dates for each reactor. Information on actual or planned renewal application dates were obtained from the Nuclear Energy Institute (NEI) and NRC Nuclear Reactor Regulation staff for 54 power reactors. These 54 power reactors are identified with their license renewal dates in bold. The 34 modeled renewal dates are the anticipated dates for renewal. The actual date of renewal for each of these 34 sites may be different by five or more years.

Exhibit 3-1: Regulatory Analysis License Renewal Application Dates by Licensee

Licensee	Reactor name	Initial License Expiration Date	Actual or Modeled Application Filing Date[a]
AmerenUE	Callaway 1	Oct-18-2024	Oct-2010

[7] The hours estimate is based on information obtained from the Nuclear Energy Institute (NEI), which indicated that assembling financial qualifications information required 40 hours for a research reactor at a university. This application was not submitted to NRC. Since NRC may request additional information or clarification of the financial information once submitted, the stated time to prepare the financial information may underestimate the actual time required. Therefore, given that a company's financials are typically more complex than a university's and that the benchmark research reactor application was not submitted, the analysis uses an estimate of 100 hours for preparing the financial qualifications information.

[8] The labor rate is based on the Nuclear Reactor Regulation (NRR) NRC staff average hourly rate.

Licensee	Reactor name	Initial License Expiration Date	Actual or Modeled Application Filing Date[a]
AmerGen Energy Company	Clinton 1	Sep-29-2026	Sep-2012
	Oyster Creek	Dec-15-2009	Jan-2003
	Three Mile Island 1	Apr-19-2014	Jan-2003
Arizona Nuclear Power Project	Palo Verde 1	Dec-31-2024	Dec-2010
	Palo Verde 2	Dec-09-2025	
	Palo Verde 3	Mar-25-2027	
Carolina Power & Light Co.	Brunswick 1	Sep-08-2016	**Mar-2004**
	Brunswick 2	Dec-27-2014	
	H.B. Robinson 2	Jul-31-2010	**Jun-2002**
	Shearon Harris 1	Oct-24-2026	Oct-2012
Constellation Nuclear	Calvert Cliffs 1	Jul-31-2014	**Apr-1998**
	Calvert Cliffs 2	Aug-31-2016	
	Nine Mile Point 1	Aug-22-2009	**Oct-2003**
	Nine Mile Point 2	Oct-31-2026	
Detroit Edison Co.	Fermi 2	Mar-20-2025	Mar-2011
Dominion Generation	Millstone 2	Jul-31-2015	Jan-2003
	Millstone 3	Nov-25-2025	
	North Anna 1	Apr-01-2018	**May-2001**
	North Anna 2	Aug-21-2020	
	Surry 1	May-25-2012	**May-2001**
	Surry 2	Jan-29-2013	
Duke Power Co.	Catawba 1	Dec-06-2024	**Jun-2001**
	Catawba 2	Feb-24-2026	
	McGuire 1	Jun-12-2021	**Jun-2001**
	McGuire 2	Mar-03-2023	
	Oconee 1	Feb-06-2013	**Jul-1998**
	Oconee 2	Oct-06-2013	
	Oconee 3	Jul-19-2014	
Energy Northwest	Washington Nuclear 2	Dec-20-2023	**Dec-2007**
Entergy Nuclear Generation Company	Arkansas Nuclear 1	May-20-2014	**Feb-2000**
	Arkansas Nuclear 2	Jul-17-2018	**Sep-2003**
	Grand Gulf 1	Jun-16-2022	Jun-2008
	Indian Point 2	Sep-28-2013	Jan-2003
	Indian Point 3	Dec-15-2015	
	James A. FitzPatrick	Oct-17-2014	Jan-2003
	Pilgrim 1	Jun-08-2012	**Dec-2004**
	River Bend 1	Aug-29-2025	Aug-2011
	Waterford 3	Dec-18-2024	Dec-2010

Licensee	Reactor name	Initial License Expiration Date	Actual or Modeled Application Filing Date[a]
Exelon Energy Co.	Braidwood 1	Oct-17-2026	Oct-2012
	Braidwood 2	Dec-18-2027	
	Byron 1	Oct-31-2024	Oct-2010
	Byron 2	Nov-06-2026	
	Dresden 2	Jan-10-2006	**Mar-2003**
	Dresden 3	Jan-12-2011	
	LaSalle County 1	May-17-2022	May-2008
	LaSalle County 2	Dec-16-2023	
	Limerick 1	Oct-26-2024	Oct-2010
	Limerick 2	Jun-22-2029	
	Peach Bottom 2	Aug-08-2013	**Jul-2001**
	Peach Bottom 3	Jul-02-2014	
	Quad Cities 1	Dec-14-2012	**Mar-2003**
	Quad Cities 2	Dec-14-2012	
FirstEnergy Nuclear Operating Company	Beaver Valley 1	Jan-29-2016	**Sep-2004**
	Beaver Valley 2	May-27-2027	
	Davis-Besse	Apr-22-2017	**Dec-2004**
	Perry 1	Mar-18-2026	Mar-2012
Florida Power & Light Co.	St. Lucie 1	Mar-01-2016	**Nov-2001**
	St. Lucie 2	Apr-06-2023	
	Turkey Point 3	Jul-19-2012	**Sep-2000**
	Turkey Point 4	Apr-10-2013	
Florida Power Corp.	Crystal River 3	Dec-03-2016	Jan-2003
Indiana/Michigan Power Co.	D.C. Cook 1	Oct-25-2014	**Nov-2003**
	D.C. Cook 2	Dec-23-2017	
Nebraska Public Power District	Cooper 1	Jan-18-2014	**Apr-2005**
North Atlantic Energy Service Corp.	Seabrook 1	Oct-17-2026	Oct-2012
Nuclear Management Co.	Duane Arnold	Feb-21-2014	Jan-2003
	Kewaunee	Dec-21-2013	Jan-2003
	Monticello	Sep-08-2010	Jan-2003
	Palisades	Mar-14-2007	Jan-2003
	Point Beach 1	Oct-05-2010	Jan-2003
	Point Beach 2	Mar-08-2013	
	Prairie Island 1	Aug-09-2013	Jan-2003
	Prairie Island 2	Oct-29-2014	
Omaha Public Power District	Fort Calhoun	Aug-09-2013	**Jan-2002**
Pacific Gas & Electric Co.	Diablo Canyon 1	Sep-22-2021	Sep-2007
	Diablo Canyon 2	Apr-26-2025	

Licensee	Reactor name	Initial License Expiration Date	Actual or Modeled Application Filing Date[a]
Pennsylvania Power & Light Co.	Susquehanna 1	Jul-17-2022	**Mar-2005**
	Susquehanna 2	Mar-23-2024	
Public Service Electric & Gas Co.	Hope Creek 1	Apr-11-2026	**Dec-2007**
	Salem 1	Aug-13-2016	**Dec-2007**
	Salem 2	Apr-18-2020	
Rochester Gas & Electric Corp.	Ginna	Sep-18-2009	**Jul-2002**
South Carolina Electric & Gas Co.	Summer 1	Aug-06-2022	**Aug-2002**
Southern California Edison Company	San Onofre 2	Oct-18-2013	Jan-2003
	San Onofre 3	Oct-18-2013	
Southern Nuclear Operating Co.	Edwin I. Hatch 1	Aug-06-2014	**Mar-2000**
	Edwin I. Hatch 2	Jun-13-2018	
	Joseph M. Farley 1	Jun-25-2017	**Sept-2003**
	Joseph M. Farley 2	Mar-31-2021	
	Vogtle 1	Jan-16-2027	Jan-2013
	Vogtle 2	Feb-09-2029	
STP Nuclear Operating Co.	South Texas Project 1	Aug-20-2027	Aug-2013
	South Texas Project 2	Dec-15-2028	
Tennessee Valley Authority	Browns Ferry 2	Jun-28-2014	**Dec-2003**
	Browns Ferry 3	Jul-02-2016	
	Sequoyah 1	Sep-17-2020	**Dec-2007**
	Sequoyah 2	Sep-15-2021	
	Watts Bar 1	Nov-09-2035	Nov-2021
TXU Electric Company	Comanche Peak 1	Feb-08-2030	Feb-2016
	Comanche Peak 2	Feb-02-2033	
VT Yankee Nuclear Power Corp.	Vermont Yankee	Mar-21-2012	Jan-2003
Wolf Creek Nuclear Operating Corp.	Wolf Creek 1	Mar-11-2025	Mar-2011

Source: NRC, Information Digest, 2000 Edition, NUREG-1350, Vol.12. (Source of data in table except where noted.)

[a] Sources for actual renewal dates are NEI's website "License Renewal" at www.nei.org/doc.asp?catnum=3&catid=14, and "License Renewal Filings: Completed and Announced" at www.nei.org/documents/License_Renewal_Filings.pdf, and NRC NRR staff.

NRC

- NRC requires 200 hours to review one licensee's financial qualifications information.[9] The lower and upper bounds for this parameter are assumed to be 150 hours and 250 hours, respectively.

- The average labor rate for NRC staff is $80.00 per hour.[10]

Miscellaneous

- The analysis assumes the rule will become effective in January 2003. Based on this assumption, all future costs and savings are discounted back to January 2003, using a 7 percent discount rate.[11] All dollar amounts in the analysis are stated in 2002 dollars.

- The analysis uses a time horizon of 2052 for estimating the costs of electric utility to non-electric utility transitions without a license transfer. Although electric utilities may transition to non-electric utility status after 2052, due to discounting the costs back to 2003, costs incurred after 2052 will not have a material effect on the results.

3.3 Analysis

This section outlines the derivation of the values and impacts for the two regulatory options. Under the proposed action, each of the four attributes is discussed individually. However, some values and impacts are addressed qualitatively for reasons discussed in Section 3.2.

3.3.1 Option 1 - No action

By definition, this option does not result in any values or impacts.

3.3.2 Option 2 - Proposed Action

Industry Implementation

Impact: Read the amended regulations.

- (65 reactor sites) x (4 hours per site) x ($80.00 per hour) = $20,800

This amount is assumed to be incurred in the year that the rule becomes effective (i.e., 2003) and thus the amount is not discounted.

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[9] The hours estimate is based on the time it takes NRR/NRC staff to review financial qualifications information submissions and render a finding.

[10] The labor rate is based on the NRR/NRC staff average hourly rate.

[11] A discount rate of 7 percent was used in accordance with NRC's Regulatory Analysis Technical Evaluation Handbook, NUREG/BR-0184, January 1997, page B.2.

Industry Operation

Value: Non-electric utility power reactor operating license applicants will no longer submit financial qualifications information in license renewal applications.

- (100 hours per applicant) x ($80.00 per hour) = $8,000 per applicant

The number of non-electric utility applicants is estimated by taking 20 percent of all expected renewal applications in each year and rounding to the nearest whole number. Exhibit 3-2 shows the lower bound, best estimate, and upper bound number of all renewal applicants and the estimated number of non-electric utility applicants for each year. The differences in the number of all applicants for the lower bound, best estimate, and upper bound shown in Exhibit 3-2 are due to the timing of the renewal application submission in relation to the initial license expiration date.

For each of the nine non-electric utility applicants in the analysis, the $8,000 amount is then discounted back from the date of the application to January 2003.[12] These discounted amounts are added across all nine applicants to yield a total savings of $59,600. Exhibit 3-3 shows the number of non-electric utility applicants in each year and the licensee savings (both discounted and not discounted) associated with these applications. The lower and upper bounds for the total discounted amounts are estimated to be $15,300 and $235,300, respectively. In the lower bound estimate there are five non-electric utility renewal applications and in the upper bound there are 16 non-electric utility renewal applications. The lower and upper bound estimates represent the combined lower and upper bound values for the five parameters that are changed in the analysis, as described in Section 3.2.1.

Impact: When an electric utility to non-electric utility transition occurs that does not involve the transfer of a license, the licensee will incur a cost to prepare financial qualifications information.

- (100 hours per transition) x ($80.00 per hour) = $8,000 per transition

The number of transitions to non-electric utility status is estimated by assuming there is one transition every ten years for the 50 year period. Thus, in the best estimate, there are five transitions. For each of the five transitions in the analysis, this $8,000 amount is then discounted back from the date of the transition to January 2003.[12] These discounted amounts are added across all five transitions to yield a total incurred cost of $15,700. Exhibit 3-4 shows the number of transitions in each year and the licensee costs (both discounted and not discounted) associated with these transitions. The lower and upper bounds for this impact are estimated to be costs of $5,300 and $53,900, respectively. In the lower bound estimate there are three transitions, and in the upper bound estimate there are ten transitions. The lower and upper bound estimates represent the combined lower and upper bound values for the five parameters that are changed in the analysis, as described in Section 3.2.1.

[12] The individual amounts are discounted back to 2003 using the following formula: Discounted Savings = Savings x $(1/(1+r)^t)$. Where "Savings" is the undiscounted amount, "r" is the discount rate of seven percent, and "t" is the difference in time between when the application was submitted and the year 2003.

Exhibit 3-2: Number of Operating License Renewal Applications by Year

Year	Number of Applications					
	Lower Bound		Best Estimate		Upper Bound	
	All Applications	Non-Electric Utility Applications	All Applications	Non-Electric Utility Applications	All Applications	Non-Electric Utility Applications
2003	16	2	21	4	24	7
2004	7	1	4	1	9	3
2005	3	0	2	0	5	2
2006	1	0	0	0	5	2
2007	4	0	5	1	6	2
2008	0	0	2	0	0	0
2009	0	0	0	0	0	0
2010	0	0	5	1	1	0
2011	1	0	3	1	0	0
2012	2	0	5	1	0	0
2013	0	0	2	0	0	0
2014	5	1	0	0	0	0
2015	3	0	0	0	1	0
2016	5	1	1	0	0	0
2017	2	0	0	0	0	0
2020	1	0	0	0	0	0
2021	0	0	1	0	0	0
2025	1	0	0	0	0	0
Total	51	5	51	9	51	16

Note: The years 2018, 2019, 2022, 2023, and 2024 are not included in the table because the analysis models that no renewal applications would be submitted in these years. The table stops at the year 2025 because no renewal applications are modeled to be submitted after this year. The differences in the number of applicants for the lower bound, best estimate, and upper bound are due to the timing of the renewal application submission in relation to the initial license expiration date.

Exhibit 3-3: Number of Non-Electric Utility Operating License Renewal Applications Per Year and the Savings Associated with the Applications

Year	Number of Non-Electric Utility Applications	Licensee Savings	Discounted Licensee Savings	NRC Savings	Discounted NRC Savings
2003	4	$ 32,000	$ 32,000	$ 64,000	$ 64,000
2004	1	$ 8,000	$ 7,500	$ 16,000	$ 15,000
2005	0	$ 0	$ 0	$ 0	$ 0
2006	0	$ 0	$ 0	$ 0	$ 0
2007	1	$ 8,000	$ 6,100	$ 16,000	$ 12,200
2008	0	$ 0		$ 0	$ 0
2009	0	$ 0		$ 0	$ 0
2010	1	$ 8,000	$ 5,000	$ 16,000	$ 10,000
2011	1	$ 8,000	$ 4,700	$ 16,000	$ 9,300
2012	1	$ 8,000	$ 4,400	$ 16,000	$ 8,700
Total	9	$ 72,000	$ 59,600	$ 144,000	$ 119,100

Note: The table stops at the year 2012 because no renewal applications from non-electric utility applicants are modeled to be submitted after this year.
Numbers are rounded to the nearest 100 and may not add to the total due to rounding.
The savings are discounted at a rate of seven percent.

Exhibit 3-4: Number of Transitions to Non-Electric Utility Status Per Year and the Costs Associated with the Transitions

Year	Number of Transitions	Licensee Cost	Discounted Licensee Cost	NRC Cost	Discounted NRC Cost
2003	1	$ 8,000	$ 8,000	$ 16,000	$ 16,000
2013	1	$ 8,000	$ 4,100	$ 16,000	$ 8,100
2023	1	$ 8,000	$ 2,100	$ 16,000	$ 4,100
2033	1	$ 8,000	$ 1,100	$ 16,000	$ 2,100
2043	1	$ 8,000	$ 500	$ 16,000	$ 1,100
Total	5	$ 40,000	$ 15,700	$ 80,000	$ 31,400

Note: Only the years where a transition is modeled in the analysis are included in the table.
Numbers are rounded to the nearest 100 and may not add to the total due to rounding.
The savings are discounted at a rate of seven percent.

NRC Operation

Value: NRC will no longer incur costs associated with reviewing financial qualifications information in applications for non-electric utility power reactor operating license renewals.

- (200 hours per applicant) x ($80.00 per hour) = $16,000 per applicant

The number of non-electric utility applicants is estimated by taking 20 percent of all expected renewal applications in each year and rounding to the nearest whole number. Exhibit 3-2 shows the lower bound, best estimate, and upper bound number of all renewal applicants and the estimated number of non-electric utility applicants for each year. The differences in the number of all applicants for the lower bound, best estimate, and upper bound shown in Exhibit 3-2 are due to the timing of the renewal application submission in relation to the initial license expiration date.

For each of the nine non-electric utility applicants in the analysis, the $16,000 amount is then discounted back from the date of the application to January 2003. These discounted amounts are added across all nine applicants to yield a total savings of $119,100. Exhibit 3-3 shows the number of non-electric utility applicants in each year and NRC's savings (both discounted and not discounted) associated with these applications. The lower and upper bounds for this value are estimated to be $45,900 and $294,200, respectively. In the lower bound estimate there are five non-electric utility renewal applications and in the upper bound there are 16 non-electric utility renewal applications. The upper bound estimate is significantly higher in part because the renewal applications are submitted sooner than in the best estimate and thus yield larger savings on a discounted dollar basis. The lower and upper bound estimates represent the combined lower and upper bound values for the five parameters that are changed in the analysis, as described in Section 3.2.1.

Impact: NRC will incur the costs associated with the review of financial qualifications information for each electric utility to non-electric utility transition not involving a license transfer.

- (200 hours per transition) x ($80.00 per hour) = $16,000 per transition

The number of transitions to non-electric utility status is estimated by assuming there is one transition every ten years for the 50 year period. Thus, in the best estimate, there are five transitions. For each of the five transitions in the analysis, this $16,000 amount is then discounted back from the date of the transition to January 2003. These discounted amounts are added across all five transitions to yield a total incurred cost of $31,400. Exhibit 3-4 shows the number of transitions in each year and NRC's costs (both discounted and not discounted) associated with these transitions. The lower and upper bounds for this impact are estimated to be costs of $15,900 and $67,300, respectively. In the lower bound estimate there are three transitions, and in the upper bound estimate there are ten transitions. The lower and upper bound estimates represent the combined lower and upper bound values for the five parameters that are changed in the analysis, as described in Section 3.2.1.

Regulatory Efficiency

Value: Improved consistency of regulations and reduction in burden for non-electric utility power reactors applying for license renewal.

4. Results

The quantitative results for the affected attributes, industry operation and NRC operation, are presented in Exhibits 4-1 and 4-2 by the 10 CFR sections that would be changed in the proposed action. Because the industry implementation attribute is affected by amendments to both sections this attribute is included only in the combined summary table, Exhibit 4-3. Exhibits 4-1 and 4-2 show that the benefits are due to the changes in Section 50.33(f)(2) and the costs are due to the changes in Section 50.76. The total net benefit of the proposed action is summarized in Exhibit 4-3. As these exhibits show, there are no benefits or impacts associated with Option 1 (the no-action alternative). One attribute, regulatory efficiency, could be analyzed only on a qualitative basis.[13] Exhibit 4-4 summarizes the qualitative results of the analysis.

Exhibit 4-1: Quantitative Results for Amendments to §50.33(f)(2) (Present Value)

Attribute	Option 1:No Action	Option 2: Proposed Action[a]
Industry Operation		
Values	$0	$59,600
Impacts	$0	$0
NRC Operation		
Values	$0	$119,100
Impacts	$0	$0
Total	**$0**	**$178,700**

[a] Numbers may not add to the total due to rounding.

[13] See Section 3.2 for a discussion of the reasons that quantitative analysis is not feasible for some of the affected attributes.

Exhibit 4-2: Quantitative Results for Amendments to Section 50.76 (Present Value)

Attribute	Option 1: No Action	Option 2: Proposed Action[a]
Industry Operation		
Values	$0	$0
Impacts	$0	($15,700)
NRC Operation		
Values	$0	$0
Impacts	$0	($31,400)
Total	**$0**	**($47,200)**

[a] Numbers may not add to the total due to rounding.

Exhibit 4-3: Quantitative Results for All Amendments (Present Value)

Attribute	Option 1: No Action	Option 2: Proposed Action[a]
Industry Operation		
Values	$0	$59,600
Impacts	$0	($15,700)
NRC Operation		
Values	$0	$119,100
Impacts	$0	($31,400)
Industry Implementation		
Values	$0	$0
Impacts	$0	($20,800)
Total	**$0**	**$110,800**

[a] Numbers may not add to the total due to rounding.

Exhibit 4-4: Qualitative Results

Regulatory Options	Qualitative Values/Impacts
Option 1: No Action	***Values:*** None ***Impacts:*** None
Option 2: Proposed Action	***Values:*** *Regulatory Efficiency* - Increase in regulatory certainty, consistency, and clarity. Increase in the consistency of treatment of licensees. ***Impacts:*** None

Option 2 would result in both qualitative and quantitative benefits over the no-action option. The qualitative benefits include increased regulatory efficiency relative to the no-action option. In particular, Option 2 provides greater regulatory certainty and clarity than the no-action option, and would ensure consistent treatment across power reactor licensees. Greater regulatory clarity is gained because the current regulations do not address the transition from electric utility to non-electric utility status. These increases in regulatory efficiency are believed to be significant. Under Option 2, the elimination of the need for non-electric utility power reactor license renewal applicants to submit financial qualifications information is expected to save these licensees $59,600 in preparation costs and to save NRC $119,100 in review costs.

Option 2 also has impacts to both electric utility power reactor licensees and NRC due to a new requirement for submitting financial qualifications information. These impacts are incurred only when an electric utility power reactor licensee transitions to non-electric utility status without a license transfer. The deregulation of the electric industry makes this type of transition possible. However, the probability of such a transition occurring is expected to be low because these transitions are expected to also include a license transfer, which are addressed under Section 50.80. The new requirement is expected to cost electric utility licensees $15,700 in preparation costs and to cost NRC $31,400 in review costs. In addition, reviewing the new regulations would cost all power reactor licensees a total of $20,800.

The total net benefit of Option 2 is estimated to be $110,800. The reasonable lower and upper bounds on the net benefit are estimated to be savings of $19,200 and $387,600, respectively. The lower and upper bound estimates include the combined lower or upper bound values for each of the parameters varied in the analysis. Exhibit 4-5 summarizes the parameter lower and upper bound values used in the analysis.

Exhibit 4-5: Parameter Values

Parameter	Lower Bound	Best Estimate	Upper Bound
Number of years prior to licensee expiration that renewal application is submitted (years)	10 yrs	14 yrs	20 yrs
NRC burden to review financial qualifications information (hours)	150 hrs	200 hrs	250 hrs
Licensee burden to prepare financial qualifications information (hours)	50 hrs	100 hrs	200 hrs
Percent of renewal applications that are from non-electric utility licensees (%)	10%	20%	30%
The number of transitions of utilities from electric utility to non-electric utility status during the 50 year analytical period	3 transitions	5 transitions	10 transitions

5. Backfit Analysis

The NRC has determined that the backfit rule does not apply to this proposed rule. The proposed rule would (1) permissively relax the current requirement in Section 50.33(f) for submission of financial qualifications information by entities other than electric utilities seeking renewal of their nuclear power plant operating licenses, and (2) impose a new requirement for submission of financial information on electric utilities who hold operating licenses for nuclear power reactors, who cease to be electric utilities in a manner other than a license transfer under 10 CFR 50.80. Such information collection and reporting requirements do not constitute regulatory actions to which the backfit rule applies. In addition, with respect to the permissive relaxation in § 50.33(f), such relaxations do not "impose" a requirement, which is an essential element of "backfitting" as defined in Section 50.109(a)(1).

Accordingly, the proposed rule's provisions do not constitute a backfit and a backfit analysis need not be performed. However, the staff has prepared a regulatory analysis that identifies the benefits and costs of the proposed rule and evaluates other options for addressing the identified issues. As such, the regulatory analysis constitutes a "disciplined approach" for evaluating the merits of the proposed rule and is consistent with the intent of the backfit rule.

6. Decision Rationale

1. Option 1, the no-action alternative, with respect to non-electric utility power reactors, would retain the existing requirement for nuclear licensees to submit financial qualifications information with their renewal applications. Option 2 would remove the requirement for non-electric utility power reactors to submit financial qualifications information with their operating license renewal applications, thus reducing the burden on non-electric utility power reactor licensees. Relative to Option 1, this aspect of

Option 2 would yield net benefits to licensees and NRC without additional risk to the public.

2. Option 1, the no-action alternative, with respect to electric utility power reactor licensees that make the transition to non-electric utility status, would retain the existing lack of a requirement for electric utilities to submit financial qualifications information during the transition process. Option 2 would establish a requirement for the submission of financial qualifications information for electric utility power reactor licensees that make the transition to non-electric utility status without a license transfer. Thus, this aspect of Option 2 may yield a net cost to licensees and NRC. Although the analysis included ten transitions in a 50 year period, due to the uncertainty that any electric utility will make the transition to non-electric utility status without a license transfer, these costs to licensees and NRC may never be incurred.

3. The requirement established by Option 2 would complete a set of requirements for NRC's review of financial qualifications that would allow total coverage of all relevant triggering events during the normal operating life of licensed power reactors. The relevant triggering events are initial operating licensing, license transfer to another entity, transition from electric utility to non-electric utility status, and evidence of a decline in licensee financial status. Exhibit 1-1 shows the financial qualifications submission requirements for these four triggering events. Providing this coverage of all relevant triggering events is expected to enhance public confidence.

4. The proposed requirements under Option 2 would result in enhanced regulatory efficiency because they would (1) provide greater regulatory certainty and clarity than Option 1, (2) ensure consistent treatment among all power reactor licensees, and (3) provide more appropriate requirements for non-electric utility power reactor licensees.

5. For the reasons discussed in (1) through (4) above, the proposed option is superior to the no-action alternative.

7. Implementation

The action would be enacted through a Proposed Rule Notice, public comments, and a Final Rule, with promulgation of the Final Rule expected by January 2003. Implementation can begin immediately following the enactment of the final rulemaking. No impediments to implementation of the recommended alternative have been identified. In addition, no Regulatory Guides for licensees are expected to be needed. Activities required of licensees by the proposed action do not qualify as backfits as discussed in Section 5.