

---

---

# **Regulatory Analysis for the Proposed Rule: Categorical Exclusions from Environmental Review**

**NRC-2018-0300; RIN 3150-AK54**

---

---

## **U.S. Nuclear Regulatory Commission**

Office of Nuclear Material Safety and Safeguards

Division of Rulemaking, Environmental, and Financial Support

**June 2024**



## **ABSTRACT**

The purpose of the rule is to amend the categorical exclusions in Part 51 of Title 10 of the *Code of Federal Regulations* (10 CFR), “Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions.” The rule would establish new, and amend existing, categorical exclusions to (1) minimize inefficiencies and address inconsistencies in the application of categorical exclusions across licensing and regulatory programs and (2) eliminate the need to prepare environmental assessments (EAs) for U.S. Nuclear Regulatory Commission (NRC) regulatory actions that have no significant effect on the human environment.

This regulatory analysis provides an evaluation of the costs and benefits of the rule and implementing guidance relative to the baseline case, a “no action” alternative.



## EXECUTIVE SUMMARY

The NRC is proposing to amend the categorical exclusions in Part 51 of Title 10 of the *Code of Federal Regulations* (10 CFR), “Environmental protection regulations for domestic licensing and related regulatory functions.” Part 51 contains regulations that implement the National Environmental Policy Act of 1969 (NEPA), as amended, for domestic licensing and related regulatory functions. Categorical exclusions are addressed in 10 CFR 51.22, “Criterion for categorical exclusion; identification of licensing and regulatory actions eligible for categorical exclusion or otherwise not requiring environmental review.” Categorical exclusions established by the NRC are listed in 10 CFR 51.22(c). For every Federal action, NEPA requires an EA or environmental impact statement (EIS) to be completed unless a categorical exclusion applies. Except in special circumstances, an EA or EIS is not required for any action within a category included in 10 CFR 51.22(c).

NEPA also established the Council on Environmental Quality (CEQ). In 2010, CEQ recommended that agencies periodically review categorical exclusions to assure they are still relevant or to determine if there are additional eligible actions. The NRC last evaluated and updated the agency’s list of categorical exclusions in 2010. This rule would create new or revised categorical exclusions by identifying actions that do not meet the threshold for an EA or EIS, thereby eliminating the preparation of EAs for NRC actions that are minor, administrative, or procedural in nature and reducing the regulatory costs of NEPA reviews.

This regulatory analysis provides an evaluation of the costs and benefits of the rule and implementing guidance relative to the baseline case, the “no action” alternative.

The NRC staff has made the following key findings:

- **Rule Analysis:** The rule recommended by the staff would result in additional costs and benefits as shown in [Error! Reference source not found.](#) **Table ES-1.**

**Table ES-1 Total Costs and Benefits for Alternative 2**

Entity	Total (2022 dollars) <sup>a</sup>		
	Undiscounted	7% NPV	3% NPV
NRC	\$493,300	\$71,000	\$266,200
CEQ	(\$12,900)	(\$10,500)	(\$11,800)
<b>Net Benefit (Cost)</b>	<b>\$480,400</b>	<b>\$60,500</b>	<b>\$254,400</b>

<sup>a</sup> Values rounded to the nearest hundred dollars.

- **Nonquantified Benefits:** Based upon the assessment of total costs and benefits, the NRC concludes that the rule, if issued, would increase regulatory clarity for both NRC and industry. The revised rule would result in a more consistent implementation of the NRC’s regulatory program. Additionally, the rule would ensure that the NRC’s environmental review program is aligned with CEQ’s best practices.
- **Uncertainty Analysis:** The regulatory analysis contains a Monte Carlo simulation analysis that shows the mean net benefit for this rule is \$60,400 with 90-percent confidence that the net benefit is between (\$189,300) and \$321,300 using a 7-percent discount rate. The

amount of NRC time averted to develop EAs is the factor responsible for the largest variation in averted costs followed by the amount of time for the NRC to prepare and issue the final rule.

- Decision Rationale: Relative to the no-action baseline, the NRC concludes that the rule is justified from a quantitative standpoint because its provisions will result in net averted costs (i.e., net benefits) to the NRC. In addition, the NRC concludes that the rule is also justified when considering nonquantified costs and benefits because the significance of the nonquantified benefits in regulatory clarity, responsiveness to stakeholder feedback, and alignment with CEQ best practices outweighs those of the nonquantified costs.
- Implementation: The NRC expects that the effective date of the final rule would be in year 2024. The applicable NRC internal procedures will be revised in year 2024.

# TABLE OF CONTENTS

<b>ABSTRACT</b> .....	<b>I</b>
<b>EXECUTIVE SUMMARY</b> .....	<b>III</b>
<b>LIST OF FIGURES</b> .....	<b>XI</b>
<b>LIST OF TABLES</b> .....	<b>XI</b>
<b>ABBREVIATIONS AND ACRONYMS</b> .....	<b>XIII</b>
<b>1 STATEMENT OF PROBLEM AND OBJECTIVE</b> .....	<b>1</b>
1.1 Description of the Proposed Action .....	2
1.2 Need for the Proposed Action .....	3
1.3 Existing Regulatory Framework .....	4
<b>2 IDENTIFICATION AND PRELIMINARY ANALYSIS OF ALTERNATIVE APPROACHES</b> .....	<b>5</b>
2.1 Alternative 1: No Action Alternative .....	5
2.2 Alternative 2: Rulemaking to Amend Categorical Exclusions from Environmental Review .....	5
2.3 Alternative 3: Development of Enhanced Regulatory Guidance Without Rulemaking to Clarify Categorical Exclusion Requirements .....	5
<b>3 ESTIMATION AND EVALUATION OF COSTS AND BENEFITS</b> .....	<b><u>67</u></b>
3.1 Identification of Affected Attributes .....	<u>67</u>
3.1.1 Industry Operation .....	<u>67</u>
3.1.2 NRC Implementation .....	<u>67</u>
3.1.3 NRC Operation .....	<u>67</u>
3.1.4 Regulatory Clarity .....	<u>68</u>
3.1.5 Other Government Entities .....	<u>78</u>
3.1.6 Environmental Considerations .....	<u>78</u>
3.1.7 Attributes with No Effects .....	<u>78</u>
3.2 Analytical Methodology .....	<u>79</u>
3.2.1 Regulatory Baseline .....	<u>89</u>
3.2.2 Affected Entities .....	<u>89</u>
3.2.3 Base Year .....	<u>89</u>
3.2.4 Discount Rates .....	<u>840</u>
3.2.5 Cost/Benefit Inflaters .....	<u>940</u>
3.2.6 Labor Rates .....	<u>944</u>
3.2.7 Sign Conventions .....	<u>1044</u>

3.2.8	Analysis Horizon .....	<a href="#">1011</a>
3.3	Industry Operations .....	<a href="#">1012</a>
3.4	NRC Implementation .....	<a href="#">1012</a>
3.5	NRC Operation .....	<a href="#">1012</a>
3.6	Regulatory Clarity .....	<a href="#">1113</a>
3.7	Other Government Entities .....	<a href="#">1114</a>
3.8	Environmental Considerations .....	<a href="#">1214</a>
<b>4</b>	<b>SUMMARY OF THE RESULTS.....</b>	<b><a href="#">1316</a></b>
4.1	Summary .....	<a href="#">1316</a>
4.1.1	Quantified Net Benefits .....	<a href="#">1316</a>
4.1.2	Non-quantified Benefits .....	<a href="#">1316</a>
4.2	Uncertainty Analysis .....	<a href="#">1417</a>
4.2.1	Uncertainty Analysis Assumptions .....	<a href="#">1417</a>
4.2.2	Uncertainty Analysis Results .....	<a href="#">1518</a>
4.2.3	Summary of Uncertainty Analysis.....	<a href="#">1821</a>
4.3	Disaggregation.....	<a href="#">1821</a>
<b>5</b>	<b>DECISION RATIONALE AND IMPLEMENTATION.....</b>	<b><a href="#">1922</a></b>
<b>6</b>	<b>REFERENCES.....</b>	<b><a href="#">2023</a></b>
<b>APPENDIX A</b>	<b>MAJOR ASSUMPTIONS AND INPUT DATA.....</b>	<b><a href="#">A-1</a></b>

## LIST OF FIGURES

Figure 1 Total NRC Net Benefits (Costs) (7-percent NPV)—Alternative 2 .....	<a href="#">1548</a>
Figure 2 Total CEQ Net Benefits (Costs) (7-percent NPV)—Alternative 2 .....	<a href="#">1649</a>
Figure 3 Total Net Benefits (Costs) (7-percent NPV)—Alternative 2 .....	<a href="#">1649</a>
Figure 4 Top Cost Drivers for which Uncertainty Impacts the Total Net Costs (7-Percent NPV)—Alternative 2 .....	<a href="#">1720</a>





## LIST OF TABLES

Table ES-1 Total Costs and Benefits for Alternative 2.....	iii
Table 2 CPI-U Inflator .....	<u>911</u>
Table 3 NRC Implementation.....	<u>1042</u>
Table 4 NRC Operations Costs .....	<u>1143</u>
Table 5 CEQ Implementation.....	<u>1214</u>
Table 6 Summary of Totals.....	<u>1346</u>
Table 7 Descriptive Statistics for Uncertainty Results (7-Percent NPV) .....	<u>1720</u>



## ABBREVIATIONS AND ACRONYMS

ADAMS	Agencywide Documents Access and Management System
BLS	Bureau of Labor Statistics (U.S. Department of Labor)
CEQ	Council on Environmental Quality
CFR	<i>Code of Federal Regulations</i>
CPI-U	consumer price index for all urban consumers
EA	environmental assessment
EIS	environmental impact statement
FONSI	finding of no significant impact
FR	<i>Federal Register</i>
NEPA	National Environmental Policy Act
NMSS	Office of Nuclear Material Safety and Safeguards
NPV	net present value
NRC	U.S. Nuclear Regulatory Commission
NUREG	an NRC technical report designation
OMB	U.S. Office of Management and Budget
PERT	program evaluation and review technique
RAI	request for additional information



# 1 STATEMENT OF PROBLEM AND OBJECTIVE

The U.S. Nuclear Regulatory Commission (NRC) is proposing to amend the categorical exclusions in Part 51 of Title 10 of the *Code of Federal Regulations* (10 CFR), “Environmental protection regulations for domestic licensing and related regulatory functions.” Part 51 contains regulations that implement the National Environmental Policy Act of 1969 (NEPA)<sup>1</sup>, as amended, for domestic licensing and related regulatory functions. Categorical exclusions<sup>2</sup> are addressed in 10 CFR 51.22, “Criterion for categorical exclusion; identification of licensing and regulatory actions eligible for categorical exclusion or otherwise not requiring environmental review.” Categorical exclusions established by the NRC are listed in 10 CFR 51.22(c). For every Federal action, NEPA requires an environmental assessment (EA) or environmental impact statement (EIS) to be completed unless a categorical exclusion applies. Except in special circumstances, an EA or EIS is not required for any action within a category included in 10 CFR 51.22(c).

NEPA also established the Council on Environmental Quality (CEQ)<sup>3</sup> and in 2010 CEQ recommended that agencies periodically review categorical exclusions to assure they are still relevant or if there are additional eligible actions. The NRC last evaluated and updated the agency’s list of categorical exclusions in 2010. In accordance with this recommendation, the NRC conducted a review of the NRC activities, including findings of no significant impact (FONSIs) in EAs completed during the 12-year period from 2010 to 2021. This review identified actions that resulted in FONSIs and identified several recurring categories of regulatory actions that are not addressed in 10 CFR 51.22, and have no significant effect on the human environment, either individually or cumulatively.

This rule would establish new, and amend existing, categorical exclusions for licensing, regulatory, and administrative actions that individually or cumulatively do not have a significant effect on the human environment. The rule would address inefficiencies and inconsistencies in the application of categorical exclusions across licensing and regulatory programs and reduce regulatory costs by reducing the number of unnecessary EAs and providing the same level of environmental review across regulatory programs.

This regulatory analysis provides an evaluation of the NRC rule and two alternatives, a “no action” alternative, for which the NRC would not conduct rulemaking and continue to apply the existing NRC approved list of categorical exclusions in 10 CFR 51.22 and corresponding guidance, and a non-rulemaking alternative for which the NRC would revise guidance to address inconsistencies in the implementation of existing categorical exclusions. The no action alternative is the baseline to which the proposed action is compared.

---

<sup>1</sup> NEPA requires Federal agencies to undertake an assessment of the environmental effects of their proposed actions prior to deciding whether to approve or disapprove the proposed action.

<sup>2</sup> A “categorical exclusion” is a category of actions that do not have a significant effect on the human environment, as defined by a federal agency in its procedures implementing NEPA.

<sup>3</sup> On September 24, 2003, the CEQ NEPA Task Force published a report, “Modernizing NEPA Implementation” (Task Force Report) (CEQ, 2003), that recommended Federal agencies examine their categorical exclusion regulations to identify potential revisions that would eliminate unnecessary and costly EAs. The Task Force Report recommends the use of information from past actions to establish the basis for the no significant effects and provides criteria for identifying new categorical exclusions.

## 1.1 Description of the Proposed Action

The proposed action would establish new, and amend existing, categories of actions identified as having no significant effect on the human environment and allow agency resources to be directed toward higher priority activities. The proposed action would remove certain categorical exclusions that are no longer necessary and clarify certain categories of actions to address inconsistencies in their application by various NRC programs and staff.

Specifically, the proposed action would add new categories of actions that are excluded from the requirement to prepare an EA to improve the clarity and utility of existing categorical exclusions. The staff has identified the following potential new categorical exclusions:

1. NRC actions that are administrative, procedural, or solely financial in nature, which would include:
  - a. Termination of licenses that were issued but for which no construction or pre-construction activities have begun or where all decommissioning activities have been completed.
  - b. Actions on or changes to requirements for decommissioning funding plans under Parts 30, , “Rules of General Applicability to Domestic Licensing of Byproduct Material,” 40, “Domestic Licensing of Source Material,” 50, “Domestic Licensing of Production and Utilization Facilities,” 70, “Domestic Licensing of Special Nuclear Material,” or 72, “Licensing Requirements for the Independent Storage of Spent Nuclear Fuel, High-Level Radioactive Waste, and Reactor-Related Greater Than Class C Waste.”
2. Issuance of amendments to 10 CFR 72.214, “List of approved spent fuel storage casks,” for new, amended, revised, or renewed certificates of compliance for cask designs used for spent fuel storage.
3. Approvals provided for under the requirements of 10 CFR 50.55a, “Codes and standards.”
4. Changes to requirements for fire protection, emergency planning, physical security, cybersecurity, or quality assurance.
5. Changes to extend implementation dates. Revisions to categorically exclude actions authorizing licensees to delay implementation of certain new NRC requirements, for example, where the new requirements were previously found to not result in an environmental impact.

The NRC evaluated all existing categorical exclusions and determined that two existing categorical exclusions are no longer necessary because they are obsolete and the other existing categorical exclusions remain valid. The NRC is proposing to remove 10 CFR 51.22(c)(17), “Issuance of an amendment to a permit or license under 10 CFR Parts 30, 40, 50, 52, “Licenses, Certifications, and Approvals for Nuclear Power Plants,” or 70, which deletes any limiting condition of operation or monitoring requirement based on or applicable to any matter subject to the provisions of the Federal Water Pollution Control Act.”

The NRC is also proposing to remove 10 CFR 51.22(c)(18), "Issuance of amendments or orders authorizing licensees of production or utilization facilities to resume operation, provided the basis for the authorization rests solely on a determination or redetermination by the Commission that applicable emergency planning requirements are met."

The NRC has also reorganized the list of categorical exclusions in 10 CFR 51.22(c) to eliminate redundancy and add clarity. The reorganization eliminates distinctions in categorical exclusions between license amendments, exemptions, rulemaking, and other forms of NRC actions, to ensure that categorical exclusions are based on the activities that would be authorized rather than the administrative and legal differences between the different forms of NRC approvals. The reorganization removes the overlapping similar actions and consolidates similar actions into one categorical exclusion.

The NRC Offices have internal instructions or procedures on how to implement provisions of these regulations. Under the proposed action, the NRC would review its internal documents to support the rule change. In addition to internal procedures, NUREG-1748, "Environmental Review Guidance for Licensing Actions Associated with NMSS Programs," (NRC, 2003) and NUREG-1757, "Consolidated Decommissioning Guidance: Decommissioning Process for Materials Licensees," Volume 1 (NRC, 2006) would need to be reviewed to support the rule change. However, revisions to NUREG-1748 and NUREG-1757 are comprehensive in scope and are not driven by this rulemaking. These revisions began prior to the development of this rule and therefore will not be included in this regulatory analysis. The NRC will publish *Federal Register* (FR) notices announcing the availability of the revised NUREG documents when completed.

## **1.2 Need for the Proposed Action**

In addition to the proposed action meeting the intent of the CEQ's recommendations for periodic review and updates to categorical exclusions, the Office of Nuclear Material Safety and Safeguards (NMSS) reviewed its environmental programs and organization to identify potential opportunities to continue to meet our NEPA obligations while saving time in the process, reducing resources, and identifying other enhancements. One opportunity identified was evaluating the possibility of creating new or revised categorical exclusions. By identifying those actions that do not meet the threshold for an EA or EIS, the staff will ensure that it is focused on those actions with possibly new or significant environmental impacts. This rule is a direct result of that review.

The staff has identified recurring actions that may be eligible for categorical exclusion. These types of actions would not result in environmental impacts. Other potential candidates for categorical exclusions include those where the staff has concluded after completing numerous EAs there are no findings of significant impacts, such as for spent fuel storage cask certificate of compliance renewals and amendments.

In addition, the staff believes that activities with the same environmental impacts, regardless of the regulatory process, should be eligible for the same categorical exclusions. For example, the current categorical exclusions explicitly list license amendments, exceptions, or amendments to regulations. However, if a licensing action such as an exemption is not specifically listed in the regulation, the action is not eligible for that categorical exclusion regardless of whether it has similar environmental impacts to another action for which a categorical exclusion already exists.



Further, the staff has identified several instances when different staff or program offices have cited different, potentially overlapping, categorical exclusions for similar or even identical actions (e.g., 10 CFR 51.22(c)(9) versus (c)(25)). In other cases, application of some criteria in a categorical exclusion can create unnecessary work. For example, having to apply the “no significant hazards considerations” criterion in non-reactor exemption actions (10 CFR 51.22(c)(25)(i)) even though the “no significant hazards considerations” process only applies to reactors.

Revisions to the categorical exclusions would: (1) clarify and address inconsistencies in the application of categorical exclusions across licensing and regulatory programs and (2) eliminate the need to prepare EAs for NRC regulatory actions that have no significant effect on the human environment.

### **1.3 Existing Regulatory Framework**

Part 51 of 10 CFR contains NRC’s regulations implementing NEPA for domestic licensing and related regulatory functions. For every Federal action, NEPA requires an EA or EIS be completed unless a categorical exclusion applies. An EA documents an agency’s assessment of whether a proposed action would significantly affect the quality of the human environment. If the EA supports a FONSI, the environmental review process is complete. If the proposed action would significantly affect the quality of the human environment, then an EIS must be prepared to describe the reasonably foreseeable environmental impacts of the proposed action.

NEPA also established CEQ to, among other things, provide guidance on NEPA implementation. CEQ defines a categorical exclusion as a:

...category of actions which do not individually or cumulatively have a significant effect on the human environment, and which have been found to have no such effect in procedures adopted by a Federal agency...and for which, therefore, neither an environmental assessment nor an environmental impact statement is required (40 CFR 1508.4).

In a December 6, 2010, *Federal Register* (FR) notice ([75 FR 75628](#)), CEQ issued its final guidance on categorical exclusions and recommended that agencies periodically review categorical exclusions to assure their continued appropriate use and usefulness. The review would also aid in determining if the existing categorical exclusions are still relevant or if there are additional eligible actions.

Categorical exclusions are addressed at 10 CFR 51.22, and categorical exclusions established by the NRC are listed in 10 CFR 51.22(c). Except in special circumstances, an EA or EIS is not required for any action within a category included in 10 CFR 51.22(c).

## **2 Identification and Preliminary Analysis of Alternative Approaches**

The NRC analyzed two alternatives to the rule as described in this section.

### **2.1 Alternative 1: No Action Alternative**

The no action alternative is to maintain the status quo. Under the no action alternative, the NRC would not pursue a categorical exclusion-specific rulemaking and would rely on the existing NRC approved list of categorical exclusions in 10 CFR 51.22(c) and corresponding guidance to regulate the identification of licensing and regulatory actions eligible for categorical exclusion or otherwise not requiring environmental review. This alternative would result in no new direct costs to the NRC or the industry and serves as the baseline for this analysis.

This alternative would not address the staff identified implementation inconsistencies in applying the categorical exclusion regulations and does not meet the regulatory principle of clarity, which calls for agency positions to be readily understood and easily applied. In addition, this alternative would not meet CEQ's recommendation that all agencies periodically review their categorical exclusions to ensure that their categorical exclusions remain current and valid.

### **2.2 Alternative 2: Rulemaking to Amend Categorical Exclusions from Environmental Review**

Under this alternative, the NRC staff would issue a rule that would establish new, and amend existing, categories of actions identified as having no significant effect on the human environment in 10 CFR 51.22. The rule would add new categories of actions that are excluded from the requirement to prepare an EA or EIS and clarify categories of actions to address inconsistencies in the application by various NRC programs and staff. Revisions to the categorical exclusions would increase consistency and provide the same level of environmental review across regulatory programs. The rulemaking would benefit the NRC, applicants, and licensees by reducing the number of EAs performed by the NRC and reducing the regulatory costs of environmental information requirements from applicants and licensees.

### **2.3 Alternative 3: Development of Enhanced Regulatory Guidance Without Rulemaking to Clarify Categorical Exclusion Requirements**

Under this alternative, the NRC staff would develop new instructions or procedures to provide clarity in the staff's implementation of existing categorical exclusions.

However, this alternative does not meet the regulatory objective because this alternative would not resolve inconsistencies in the application of categorical exclusions across licensing and regulatory programs and would not reduce the number of unnecessary EAs. Moreover, this alternative would minimally meet the CEQ recommendation that agencies periodically review their categorical exclusions. New categorical exclusions cannot be added, and existing categorical exclusions cannot be amended, through guidance. For these reasons, this alternative is not considered viable and is not evaluated further.

### **3 ESTIMATION AND EVALUATION OF COSTS AND BENEFITS**

This section examines the costs and benefits expected to result from the NRC's rule. All costs and benefits are monetized, when possible. The total costs and benefits are then summed to determine whether the difference between the costs and benefits results in a positive benefit. In some cases, costs and benefits are not monetized because meaningful quantification is not possible.

#### **3.1 Identification of Affected Attributes**

This section identifies the components of the public and private sectors, commonly referred to as attributes, that are expected to be affected by Alternative 2, the rulemaking alternative, identified in Section 2. Alternative 2 would apply to all NRC applicants and licensees performing licensing actions that need to be considered for categorical exclusions. The NRC staff developed an inventory of the impacted attributes using the list in NUREG/BR-0058, draft Revision 5, "Regulatory Analysis Guidelines of the U.S. Nuclear Regulatory Commission," issued January 2020 (NRC, 2020).

The rule would affect the following attributes:

##### **3.1.1 *Industry Operation***

This attribute accounts for the projected net economic effect on all affected entities caused by routine and recurring activities required by Alternative 2. These activities include a reduction in environmental information requirements from NRC applicants and licensees and a reduction in responses to requests for additional information (RAIs) from the NRC.

##### **3.1.2 *NRC Implementation***

This attribute accounts for the projected net economic effect on the NRC to place the alternative into operation. To implement Alternative 2, the NRC incurs a cost relative to Alternative 1 (i.e., no action alternative, current regulatory baseline) to issue a rule.

##### **3.1.3 *NRC Operation***

This attribute accounts for the projected net economic effect on the NRC caused by routine and recurring activities required by Alternative 2. The rule may result in reductions in operating costs to the NRC because the new categories of action would reduce the number of EAs performed by the NRC.

##### **3.1.4 *Regulatory Clarity***

This attribute accounts for regulatory clarity resulting from the implementation of Alternative 2 compared to Alternative 1. Alternative 2 would improve regulatory clarity by eliminating redundancy and clarifying which NRC actions are categorically excluded by removing overlapping similar actions and consolidating similar actions into one categorical exclusion.

### 3.1.5 *Other Government Entities*

Per 40 CFR 1507.3(a), "Agency NEPA procedures," Federal agencies must consult with CEQ on proposed rules for NEPA procedures, including when they establish new or revised categorical exclusions. An agency can only adopt new or revised NEPA implementing procedures after CEQ has issued a determination that the procedures are in conformity with NEPA and CEQ regulations. As an independent regulatory agency, the NRC is not bound by CEQ's regulations, including the requirement to receive a conformity determination. The NRC staff will consult with CEQ during the development of the rule.

### 3.1.6 *Environmental Considerations*

This attribute accounts for environmental improvements resulting from the implementation of Alternative 2 compared to Alternative 1. Alternative 2 would eliminate existing categorical exclusions that are no longer necessary or have proven to no longer meet the criteria for a categorical exclusion. The NRC evaluated all existing categorical exclusions and determined that two existing categorical exclusions are no longer necessary because they are obsolete and the other existing categorical exclusions remain valid.

### 3.1.7 *Attributes with No Effects*

Attributes that are not expected to contribute to the results under any of the alternatives include:

- Industry Implementation
- Public Health (Accident)
- Public Health (Routine)
- Occupational Health (Accident)
- Occupational Health (Routine)
- Offsite Property
- Onsite Property
- General Public
- Improvements in Knowledge
- Safeguards and Security Considerations
- Other Considerations

## 3.2 **Analytical Methodology**

This section describes the process used to evaluate costs and benefits associated with the proposed alternatives. The benefits include any desirable changes in affected attributes (e.g., monetary savings, improved safety, and improved security). The costs include any undesirable changes in affected attributes (e.g., monetary costs, increased exposures).

Of the six affected attributes, the analysis quantitatively evaluates three—NRC implementation, NRC operation, and other government entities. Quantitative analysis requires a baseline characterization of the affected society, including factors such as the number of affected entities, the nature of the activities currently performed, and the types of systems and procedures that applicants and licensees would consider or would no longer implement because of the proposed alternatives. Where possible, the NRC calculated costs for these attributes using distributions to quantify the uncertainty in these estimates. The detailed cost tables used in this regulatory analysis are included in the individual sections for each of the provisions. The

NRC evaluated the remaining attribute qualitatively because the benefits relating to regulatory efficiency are not easily quantifiable or because the data necessary to quantify and monetize the impacts of this attribute is not available.

### 3.2.1 *Regulatory Baseline*

This regulatory analysis provides the incremental impacts of the rule relative to a baseline that reflects anticipated behavior if the NRC does not undertake regulatory or nonregulatory action. Section 3 of this regulatory analysis presents the estimated incremental costs and benefits of the alternatives compared to this baseline. This regulatory baseline is the No-Action Alternative (i.e. Alternative 1).

### 3.2.2 *Affected Entities*

The NRC estimates that the rule would affect all NRC applicants and licensees performing licensing actions that need to be considered for categorical exclusions. However, the proposed amendments would not impose any new requirements on NRC applicants or licensees but instead would provide for more timely NRC action.

### 3.2.3 *Base Year*

All monetized costs are expressed in 2022 dollars. The NRC's implementation costs to prepare and issue a final rule are expected to be incurred in years 2023 and 2024. Ongoing costs of operation related to Alternative 2 are assumed to begin no earlier than 30 days after publication of the final rule in the FR unless otherwise stated, and they are modeled on an annual cost basis. Estimates are made for recurring annual operating expenses. The values for annual operating expenses are modeled as a constant expense for each year of the 10-year analysis horizon. The staff performed a discounted cash flow calculation to discount these annual expenses to 2022 dollar values.

### 3.2.4 *Discount Rates*

In accordance with guidance from U.S. Office of Management and Budget (OMB) Circular No. A-4, "Regulatory Analysis," issued September 2003 (OMB, 2003), and NUREG/BR-0058 (NRC, 2020), net present value (NPV) calculations are used to determine how much society would need to invest today to ensure that the designated dollar amount is available in a given year in the future. By using NPV calculations, costs and benefits are valued to a reference year for comparison, regardless of when the cost or benefit is incurred in time. The choice of a discount rate and its associated conceptual basis is a topic of ongoing discussion within the Federal Government. Based on OMB Circular No. A-4 and consistent with NRC past practice and guidance, present-worth calculations in this analysis use 3-percent and 7-percent real discount rates. A 3-percent discount rate approximates the real rate of return on long-term government debt, which serves as a proxy for the real rate of return on savings to reflect reliance on a social rate of time preference discounting concept.<sup>4</sup> A 7-percent discount rate approximates the marginal pretax real rate of return on an average investment in the private

---

<sup>4</sup> The "social rate of time preference" discounting concept refers to the rate at which society is willing to postpone a marginal unit of current consumption in exchange for more future consumption.

sector, and it is the appropriate discount rate whenever the main effect of a regulation is to displace or alter the use of capital in the private sector. A 7-percent rate is consistent with an opportunity cost<sup>5</sup> of capital concept to reflect the time value of resources directed to meet regulatory requirements.

### 3.2.5 Cost/Benefit Inflat

The staff estimated the analysis inputs from sources as referenced in Appendix A, which are provided in prior-year dollars. To evaluate the costs and benefits consistently, these inputs are put into 2022 base-year dollars. The most common inflator is the consumer price index for all urban consumers (CPI-U) developed by the U.S. Department of Labor, Bureau of Labor Statistics (BLS). Using the CPI-U, the prior-year dollars are converted to 2022 base year dollars. For 2022, the currently reported CPI-U values have been averaged together; the entirety of CPI-U for 2022 has not been determined by BLS. The formula to determine the amount in 2022 dollars is as follows:

$$\frac{CPI - U_{2022}}{CPI - U_{2021}} \times Value_{2021} = Value_{2022}$$

**Table 2 CPI-U Inflat** Table 2 summarizes the values of CPI-U used in this regulatory analysis.

**Table 2 CPI-U Inflat**

Year	CPI-U Annual Average <sup>a</sup>
2021	270.97
2022	284.12

<sup>a</sup> BLS, “Archived Consumer Price Index Supplement Files: February 2022 Historical CPI-U, Historical Consumer Price Index for All Urban Consumers (CPI-U): U.S. City Average, All Items” (BLS, 2022).

### 3.2.6 Labor Rates

For the purposes of this regulatory analysis, the NRC applied incremental cost principles to develop labor rates that include only labor and material costs that are directly related to the implementation and operation and maintenance of the rule requirements. This approach is consistent with the guidance in NUREG/CR-3568, “A Handbook for Value-Impact Assessment,” issued December 1983 (NRC, 1983b), and general cost-benefit methodology. The NRC incremental labor rate is \$143 per hour for fiscal year 2022.<sup>6</sup>

<sup>5</sup> “Opportunity cost” represents what is foregone by undertaking a given action. If the licensee personnel were not engaged in revising procedures, they would be performing other work activities. Throughout the analysis, the NRC estimates the opportunity cost of performing these incremental tasks as the industry personnel’s pay for the designated unit of time.

<sup>6</sup> The NRC labor rates presented herein differ from those developed under the NRC’s license fee recovery program (10 CFR Part 170, “Fees for facilities, materials, import and export licenses, and other regulatory services under the Atomic Energy Act of 1954, as amended”). NRC labor rates for fee recovery purposes are appropriately designed for full-cost recovery of the services rendered and as such include nonincremental costs (e.g., overhead, administrative, and logistical support costs).

### 3.2.7 Sign Conventions

The sign conventions used in this analysis are that all favorable consequences for the Alternative 2 are positive and all adverse consequences are negative. Negative values are shown using parentheses (e.g., negative \$500 is displayed as (\$500)).

### 3.2.8 Analysis Horizon

The analysis horizon is 10 years based on the CEQ recommendation that agencies review their categorical exclusions at least every 7 years plus 3 years to complete the rulemaking.

## 3.3 Industry Operations

While the rule would apply to all NRC regulatory actions, the regulatory changes to 10 CFR 51.22(c) would not impose any new requirements on NRC applicants or licensees and therefore, should not increase costs to industry. The benefits of this action include a reduction in environmental information requirements from NRC applicants and licensees and a reduction in responses to RAIs from the NRC.

## 3.4 NRC Implementation

NRC implementation costs within the scope of this analysis of Alternative 2 are the costs of preparing a final rule, as well as efforts on the development of internal procedures resulting from the rule. Internal procedures would be revised following the issuance of the final rule. Costs already incurred, including those activities performed by the NRC in making the regulatory decision (e.g., development of the proposed rule and associated guidance for public comment), are viewed as “sunk” costs and are excluded from this analysis.

**Table 3 NRC Implementation**

Year	Activity	No. of Hours	Labor Rate	Total (2022 dollars) <sup>ab</sup>		
				Undiscounted	7% NPV	3% NPV
2023	NRC prepare and issue final rule	3,048	\$143	(\$435,900)	(\$355,800)	(\$398,900)
2024	NRC prepare and issue final rule	3,048	\$143	(\$435,900)	(\$332,500)	(\$387,300)
2024	NRC prepare and issue internal procedures	863	\$143	(\$123,300)	(\$94,100)	(\$109,600)
<b>NRC Net Implementation Benefits (Costs)</b>				<b>(\$995,100)</b>	<b>(\$782,400)</b>	<b>(\$895,700)</b>

<sup>a</sup> Values rounded to the nearest hundred dollars.

<sup>b</sup> NRC activities performed to prepare and issue the proposed rule and associated supplemental guidance are sunk costs and not included in this analysis.

## 3.5 NRC Operation

The NRC will receive averted costs (benefit) resulting from a reduction in the development of EAs and a reduction in the number of RAIs during environmental reviews. Based on historical data, the NRC expends a total of 1,040 hours a year to complete EAs and RAIs (1,037 hours a year for EAs and 3 hours a year for RAIs), for the six proposed categorical exclusion categories.

The NRC estimates time saved from the reduction in the development of 21 EAs per year and 1 RAI per year over the next 10 years. The potential incremental savings are calculated in Table 4.

**Table 4 NRC Operations Costs**

Year	Activity	No. of RAI Hours Saved/Year	No. of EA Hours Saved/Year	Labor Rate	Total (2022 dollars) <sup>a</sup>		
					Undiscounted	7% NPV	3% NPV
2024-2033	NRC time saved in development of EAs/RAIs	3	1,037	\$143	\$1,488,400	\$853,400	\$1,161,900
<b>NRC EA Development Incremental Benefit (Cost)</b>					<b>\$1,488,400</b>	<b>\$853,400</b>	<b>\$1,161,900</b>

<sup>a</sup> Values rounded to the nearest hundred dollars.

### **3.6 Regulatory Clarity**

Alternative 2 would clarify the scope of existing categories of categorical exclusions and eliminate distinctions in categorical exclusions between license amendments, exemptions, rulemaking, and other forms of NRC actions, to ensure that categorical exclusions are based on the activities that would be authorized rather than the administrative and legal differences between the different forms of NRC approvals. Broadening these categorical exclusions increases the applicability of the categorical exclusion to other means for conveying NRC decisions. The reorganized regulations also remove overlapping similar actions and consolidate similar actions into a single categorical exclusion.

The rule would remove the “no significant hazards consideration” determination in 10 CFR 51.22(c)(9) and (25)(i) and (v). Only two of the three criteria for determining if an amendment involves a no significant hazard consideration have a nexus to environmental effects. The rule would merge the categorical exclusion in existing 10 CFR 51.22(c)(9) and (25) into a proposed 10 CFR 51.22(d) and eliminate the criterion for no significant hazards considerations. The criterion in the current 10 CFR 51.22(c)(25) would be retained to ensure that the two criteria in no significant hazard considerations related to potential effects on the environment would be unchanged by the rule. Therefore, the removal of the no significant hazards considerations criterion clarifies the categorical exclusions without changing the potential for environmental effects of the actions that are categorically excluded.

The rule would also revise the “no significant construction impact” criterion in 10 CFR 51.22(c)(6), (11), (12(i)), and (25)(iv) to “provided that any ground disturbance is limited to previously disturbed areas.” Based on NRC experience, this change provides clarification by explicitly stating the relevant consideration in the regulations. The revised regulations should result in improved regulatory clarity.

### **3.7 Other Government Entities**

CEQ regulations in 40 CFR 1507.3(b) include a process for Federal agencies to consult with the CEQ whenever they amend their NEPA procedures, including when they establish new or revised categorical exclusions. The process concludes with a determination on the final rule from CEQ that the amended procedures conform to NEPA and CEQ regulations (a “conformity determination”).



The NRC staff will consult with CEQ on the proposed rule providing a draft *Federal Register* notice and supporting documentation. CEQ would provide comments for the NRC to consider before issuing the proposed rule for comment. These are sunk costs for the proposed rule and not included in the analysis.

The NRC will request a conformity determination from CEQ on the final rule and will provide the final rule package to CEQ for a 30-day review. CEQ would incur costs to complete its 30-day review of the final rule and provide the NRC with a written statement that the categorical exclusions in the rule were developed in conformity with NEPA and CEQ regulations. The estimated costs for CEQ’s conformity determination of the final rule are in Table 5.

**Table 5 CEQ Implementation**

Year	Activity	No. of Hours	Labor Rate	Total (2022 dollars) <sup>a</sup>		
				Undiscounted	7% NPV	3% NPV
2023	CEQ review and conformity determination on final rule	92	\$140	(\$12,900)	(\$10,500)	(\$11,800)
<b>CEQ Net Implementation Benefit (Cost)</b>				<b>(\$12,900)</b>	<b>(\$10,500)</b>	<b>(\$11,800)</b>

<sup>a</sup> Values rounded to the nearest hundred dollars.

### 3.8 Environmental Considerations

Alternative 2 would eliminate existing categorical exclusions that are no longer necessary or have proven to no longer meet the criteria for a categorical exclusion. The NRC evaluated all existing categorical exclusions and determined that two existing categorical exclusions are no longer necessary because they are obsolete. The remaining existing categorical exclusions continue to be valid. The NRC has concluded its activity to amend applicable NRC licenses and permits to delete limiting conditions of operation or monitoring requirements pertaining to nonradiological discharge pollutants of the Federal Water Pollution Control Act and no longer includes limiting conditions subject to the provisions of the Federal Water Pollution Control Act in NRC permits and licenses. The NRC has determined that this categorical exclusion is no longer necessary, therefore the rule would remove 10 CFR 51.22(c)(17), “Issuance of an amendment to a permit or license under parts 30, 40, 50, 52, or 70, which deletes any limiting condition of operation or monitoring requirement based on or applicable to any matter subject to the provisions of the Federal Water Pollution Control Act.”

The rule would also remove 10 CFR 51.22(c)(18), “Issuance of amendments or orders authorizing licensees of production or utilization facilities to resume operation, provided the basis for the authorization rests solely on a determination or redetermination by the Commission that applicable emergency planning requirements are met.” This categorical exclusion was established in the NRC 1984 NEPA implementing regulations to support the implementation of a 1980 emergency planning rule. That emergency planning rule has been fully implemented; therefore, the NRC has determined that this categorical exclusion is no longer applicable.

The elimination of these two existing categorical exclusions would not result in any incremental costs to industry or the NRC because these activities have already been completed or are no longer included in EAs and therefore no further action should occur.

## 4 SUMMARY OF THE RESULTS

### 4.1 Summary

This regulatory analysis identifies both quantifiable and nonquantifiable costs and benefits that would result from Alternative 2 (rulemaking). Although quantifiable costs and benefits appear to be more tangible, decisionmakers should not discount costs and benefits that cannot be quantified. Such benefits or costs can be as important as or even more important than benefits or costs that can be quantified and monetized.

#### 4.1.1 *Quantified Net Benefits*

[Error! Reference source not found.](#) ~~Table 6~~ provides a summary of the estimated quantified benefits and costs for Alternative 2, compared to the regulatory baseline (Alternative 1).

#### 4.1.2 *Non-quantified Benefits*

In addition to the quantified costs, the NRC has analyzed numerous benefits and costs that could not be monetized but would affect the general public, industry, and the NRC. These benefits are summarized in [Error! Reference source not found.](#) ~~Table 6~~, which provides the quantified and qualified costs and benefits for Alternative 2. The quantitative analysis used best-estimate values.

**Table 6 Summary of Totals**

Net Monetary Savings or (Costs)	Non-quantified Benefits or (Costs)
<b>Alternative 1: No Action</b> \$0	None
<b>Alternative 2:</b>  <b>NRC: (all provisions)</b> \$71,000 using a 7% discount rate \$266,200 using a 3% discount rate  <b>CEQ: (all provisions)</b> (\$10,500) using a 7% discount rate (\$11,800) using a 3% discount rate  <b>Net Benefit (Cost): (all provisions)</b> \$60,500 using a 7% discount rate \$254,400 using a 3% discount rate	<b>Benefits:</b> <ul style="list-style-type: none"> <li>• <b>Regulatory Clarity</b>—Alternative 2 would result in clarification of the scope of existing categories of categorical exclusions and eliminate distinctions in certain categorical exclusions, to ensure that categorical exclusions are based on the activities that would be authorized rather than the administrative and legal differences between the different forms of NRC approvals. Broadening these categorical exclusions increases the applicability of the categorical exclusion to other means for conveying NRC decisions.</li> <li>• <b>Environmental Considerations</b>—Alternative 2 would eliminate existing categorical exclusions that are no longer necessary or have proven to no longer meet the criteria for a categorical exclusion. The NRC determined that two existing categorical exclusions are no longer necessary because they are obsolete. The remaining existing categorical exclusions continue to be valid.</li> </ul>

Net Monetary Savings or (Costs)	Non-quantified Benefits or (Costs)
	<ul style="list-style-type: none"> <li>• <b>Responsive to Stakeholder Feedback on Categorical Exclusion Regulations.</b></li> <li>• <b>Align with CEQ Best Practices.</b></li> </ul> <p><u>Costs:</u></p> <ul style="list-style-type: none"> <li>• None identified.</li> </ul>

## 4.2 Uncertainty Analysis

The NRC completed a Monte Carlo sensitivity analysis for this regulatory analysis using the specialty software @Risk. The Monte Carlo approach answers the question, “What distribution of net costs and benefits results from multiple draws of the probability distribution assigned to key variables?”

### 4.2.1 *Uncertainty Analysis Assumptions*

The NRC provides the following analysis of the variables with the greatest uncertainty on estimates of values. As noted above, the NRC performed this analysis with a Monte Carlo simulation analysis using the @Risk software program. Monte Carlo simulations involve introducing uncertainty into the analysis by replacing the point estimates of the variables used to estimate base case costs and benefits with probability distributions. By defining input variables as probability distributions instead of point estimates, the influence of uncertainty on the results of the analysis (i.e., the net benefits) can be effectively modeled.

The probability distributions chosen to represent the different variables in the analysis were bounded by the range-referenced input and the NRC staff’s professional judgment. When defining the probability distributions for use in a Monte Carlo simulation, summary statistics are needed to characterize the distributions. These summary statistics include: (1) the minimum, most likely, and maximum values of a program evaluation and review technique (PERT) distribution,<sup>7</sup> (2) the minimum and maximum values of a uniform distribution, and (3) the specified integer values of a discrete population. The NRC used the PERT distribution to reflect the relative spread and skewness of the distribution defined by the three estimates.

Appendix A identifies the data elements, the distribution and summary statistic, and the mean value of the distribution used in the uncertainty analysis.

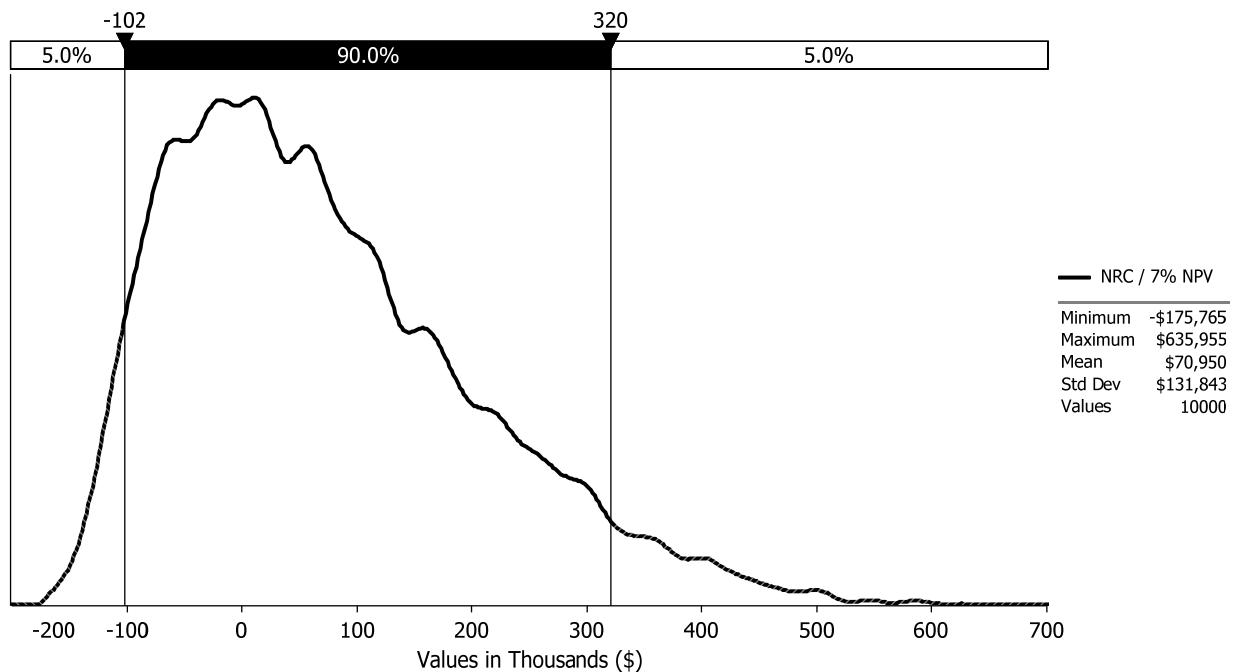
---

<sup>7</sup> A PERT distribution is a special form of the beta distribution with specified minimum and maximum values. The shape parameter is calculated from the defined “most likely” value. The PERT distribution is similar to a triangular distribution in that it has the same set of three parameters. Technically, it is a special case of a scaled beta (or beta general) distribution. The PERT distribution is generally considered superior to the triangular distribution when the parameters result in a skewed distribution because the smooth shape of the curve places less emphasis in the direction of skew. Similar to the triangular distribution, the PERT distribution is bounded on both sides and, therefore, may not be adequate for some modeling purposes if the capture of tail or extreme events is desired.

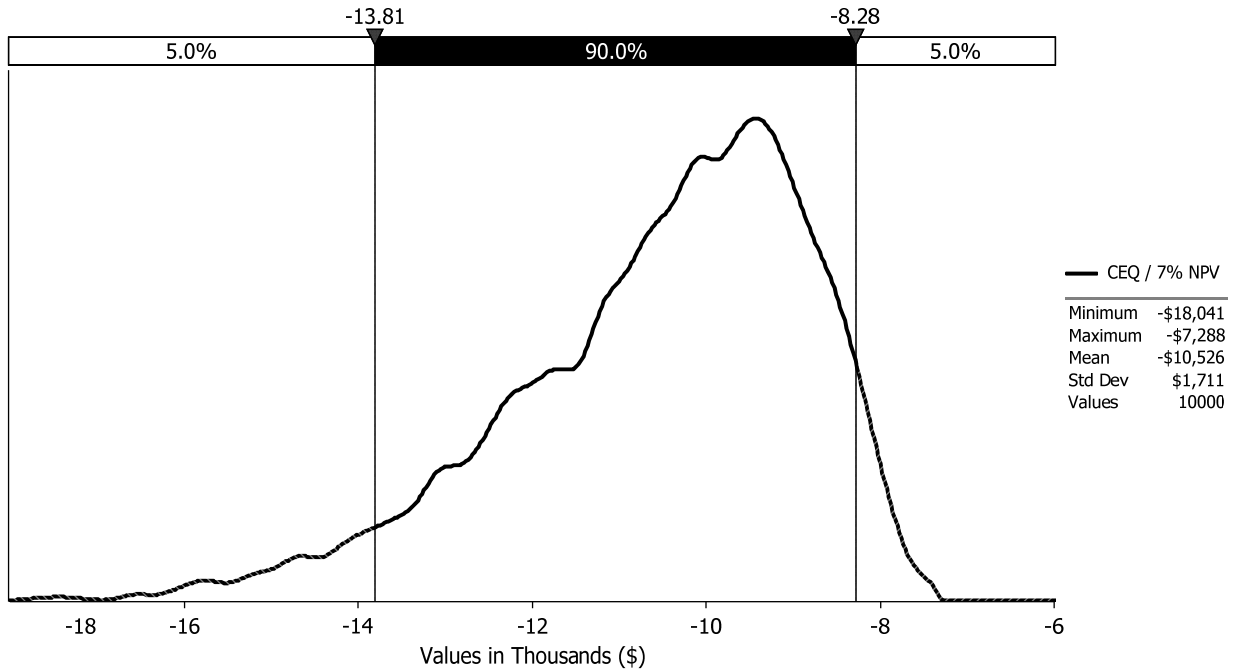
#### 4.2.2 Uncertainty Analysis Results

The NRC performed the Monte Carlo simulation by repeatedly recalculating the results 10,000 times. For each iteration, the values identified in Appendix A were chosen randomly from the probability distributions that define the input variables. The values of the output variables were recorded for each iteration, and these values were used to define the resultant probability distribution.

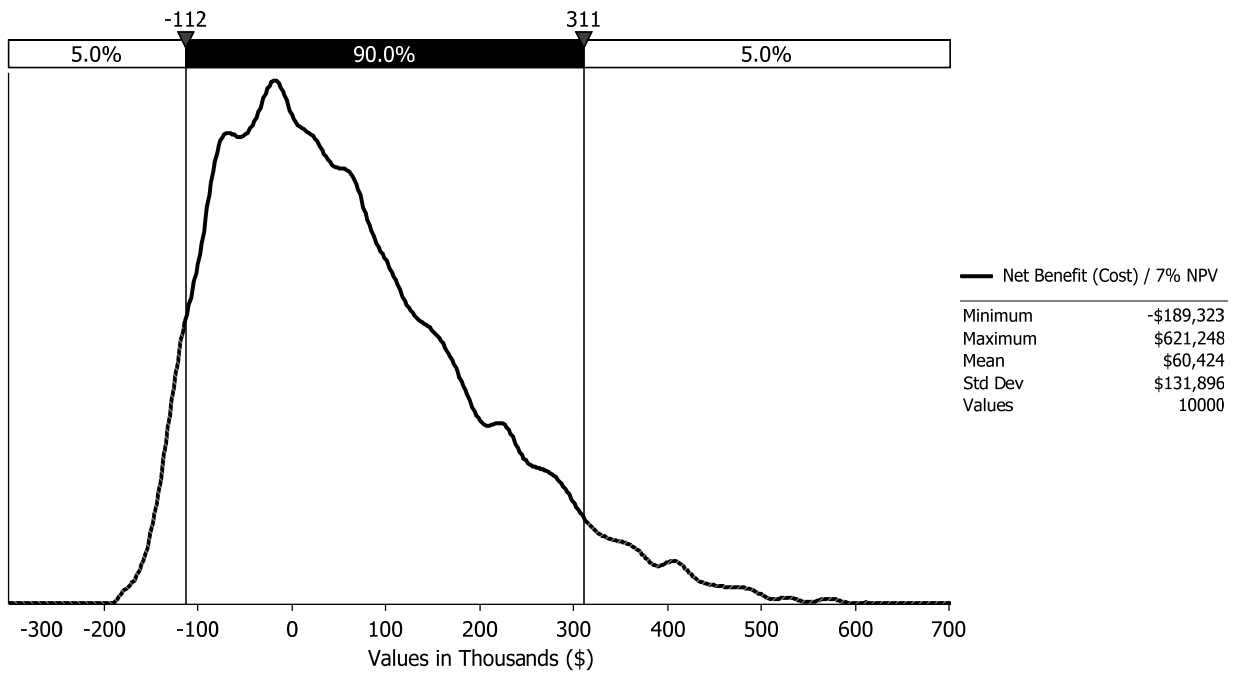
For the analysis shown in each figure below, the NRC ran 10,000 simulations in which it changed the key variables to assess the resulting effect on costs and benefits. Figures 1 through 3 display the histograms of the incremental costs and benefits from the regulatory baseline (Alternative 1) for each affected entity and the total net benefit of the rule. The analysis shows that the NRC has a 99 percent likelihood to incur benefits that exceed the costs and that only CEQ would incur costs if this rule is issued.



**Figure 1 Total NRC Net Benefits (Costs) (7-percent NPV)—Alternative 2**



**Figure 2 Total CEQ Net Benefits (Costs) (7-percent NPV)—Alternative 2**



**Figure 3 Total Net Benefits (Costs) (7-percent NPV)—Alternative 2**

Table 7 presents descriptive statistics on the uncertainty analysis.

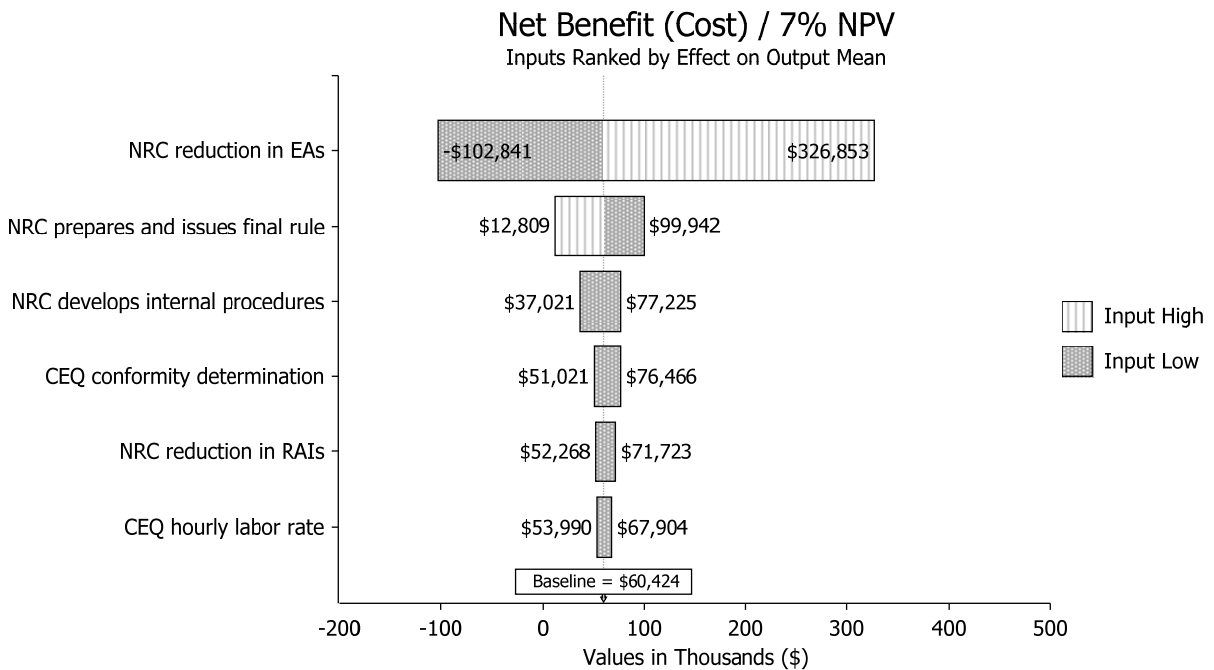
Formatted

**Table 7 Descriptive Statistics for Uncertainty Results (7-Percent NPV)**

Uncertainty Result	Incremental Cost-Benefit (2022 Thousand Dollars)				
	Min	Mean	Max	5%	95%
Net CEQ Benefit (Cost)	(\$18)	(\$11)	(\$7)	(\$14)	(\$8)
Net NRC Benefit (Cost)	(\$176)	\$71	\$636	(\$102)	\$320
Total Net Benefit (Cost)	(\$189)	\$60	\$621	(\$112)	\$311

This table displays the key statistical results, including the 90-percent confidence interval in which the net benefits would fall between the 5-percent and 95-percent values.

Figure 4 shows a tornado diagram that identifies the cost drivers for this rule. This figure ranks the variables based on their contribution to the uncertainty in cost. The largest cost driver is the amount of NRC time averted to develop EAs followed by the amount of time for the NRC to prepare and issue the final rule. These two variables are the largest cost drivers and generate the largest variations in the total net benefit due to uncertainty. The remaining cost drivers show diminishing variation on the total net benefit.



**Figure 4 Top Cost Drivers for which Uncertainty Impacts the Total Net Costs (7-Percent NPV)–Alternative 2**

#### 4.2.3 *Summary of Uncertainty Analysis*

The simulation analysis shows that the estimated mean benefit (i.e., positive averted costs or savings) for this rule is \$60,400 with 90-percent confidence that the net benefit is between (\$189,300) and \$321,300 using a 7-percent discount rate. The NRC's quantitative estimates show that the rule alternative is only cost beneficial for the NRC.

#### **4.3 Disaggregation**

To comply with the guidance in NUREG/BR-0058, Section 4.3.2, "Criteria for the Treatment of Individual Requirements," the NRC performed a screening review to determine whether the final rule would be unnecessary to achieve the objectives of the rulemaking. The staff did not identify any unnecessary or unrelated provisions; therefore, it did not perform a disaggregation for this regulatory analysis.

## **5 DECISION RATIONALE AND IMPLEMENTATION**

The assessment of total costs and benefits discussed previously leads the NRC to the conclusion that the rule, if implemented, would maintain protection of the environment, increase regulatory clarity in the environmental review process for both NRC and industry, and increase the consistency and reduce the regulatory burden for the NRC. Based solely on quantified costs and benefits, the regulatory analysis shows that the rulemaking is justified because the total quantified benefits of the regulatory action will exceed the costs of the final action, for all discount rates up to 7-percent. Considering nonquantified costs and benefits, the regulatory analysis shows that the rulemaking is justified because the number and significance of the nonquantified benefits outweigh the nonquantified costs. Therefore, integrating both quantified and nonquantified costs and benefits indicates that the benefits of the rule outweigh the identified quantitative and qualitative impacts attributable to the rule.

The NRC estimates that the effective date of the rule would be in 2024. The applicable internal procedures will be revised in year 2024.



## 6 REFERENCES

*Code of Federal Regulations* (CFR), “Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions,” Part 51, Chapter I, Title 10, “Energy.”

Office of Management and Budget (OMB), Circular No. A-4, “Regulatory Analysis,” September 2003. Available at [https://obamawhitehouse.archives.gov/omb/circulars\\_a004\\_a-4/](https://obamawhitehouse.archives.gov/omb/circulars_a004_a-4/).

Office of NEPA Policy and Compliance, “Modernizing NEPA Implementation,” The NEPA Task Force Report to the Council on Environmental Quality, September 2003. Available at <https://ceq.doe.gov/docs/ceq-publications/report/finalreport.pdf>.

U.S. Department of Labor, Bureau of Labor Statistics (BLS), “SOC Code: Standard Occupational Classification Code,” U.S. Department of Labor, January 2021a. Available at <http://www.bls.gov/soc/home.htm>; last accessed on March 22, 2022.

BLS, “Archived Consumer Price Index Supplement Files: February 2022 Historical CPI-U, Historical Consumer Price Index for All Urban Consumers (CPI-U): U.S. City Average, All Items,” U.S. Department of Labor, March 2022. Available at <https://www.bls.gov/cpi/tables/>; last accessed on May 17, 2022.

U.S. Nuclear Regulatory Commission (NRC), “A Handbook for Value-Impact Assessment,” NUREG/CR-3568, December 1983 (ML062830096).

NRC, “Environmental Review Guidance for Licensing Actions Associated with NMSS Programs,” NUREG-1748, August 2003 (ML032450279).

NRC, “Consolidated Decommissioning Guidance: Decommissioning Process for Materials Licensees,” NUREG-1757, Volume 1, Revision 2, September 2006 (ML063000243).

NRC, “Regulatory Analysis Guidelines of the U.S. Nuclear Regulatory Commission,” NUREG/BR-0058, draft Revision 5, January 2020 (ML19261A277).

## APPENDIX A MAJOR ASSUMPTIONS AND INPUT DATA

Description	Mean estimate	Distribution	Low Estimate	Most Likely Estimate	High Estimate	Source or Basis of Estimate
<b>General Input</b>						
Analysis base year	2022					NRC assumption.
Year NRC rule is effective	2024					NRC assumption.
Timeframe of analysis (years)	10					Timeframe is consistent with CEQ and 3 years for rulemaking.
Alternative discount factor	3%					NUREG/BR-0058, OMB guidance
Principal discount factor	7%					NUREG/BR-0058, OMB guidance
NRC staff hourly labor rate	\$143					NRC calculation.
No. of EA/FONSI since 2010 to 2021	256					NRC estimate.
CEQ weighted hourly rate	\$140.16	Pert	\$119.47	\$139.90	\$161.92	BLS.gov tables. BLS.gov tables. Hourly rate was inflated to 2022 dollars using values of CPI-U. The NRC then applied a multiplier of 2.4, which included fringe and indirect management costs, resulting in the displayed labor rate.
<b>Alternative 1 Input Data for Alternative 2 Averted Costs</b>						
<b>NRC Inputs</b>						
# of EAs avoided/year	21					NRC estimate. Assume the same distribution of EAs over the last 12 years to occur over the next 10 years.
# of RAIs avoided/year	1					NRC estimate. Assume 5 percent of EAs have an RAI.
<b>Alternative 2 Input Data</b>						
<b>NRC Implementation - Finalize Internal Procedures</b>						
Hours to develop internal procedures	863	Pert	675	750	1,500	NRC estimate.
Number of years	1					NRC estimate.
<b>NRC Implementation - Develop/Issue Final Rule</b>						
Hourly rate for NRC	\$143					NRC calculation.

Description	Mean estimate	Distribution	Low Estimate	Most Likely Estimate	High Estimate	Source or Basis of Estimate
Hours to develop/issue final rule	3,048	Pert	2,743	3,048	3,353	NRC estimate.
Number of years	1					NRC estimate.
<b>NRC Operation - Environmental Assessment Development/Reviews</b>						
Hourly rate for NRC	\$143					NRC calculation.
Reduction in EAs developed (hours)	1,037	Pert	812	902	1,804	NRC estimate. Assume 25 hours to develop a simple EA and 100 hours to develop a moderate EA.
Number of years	1					NRC estimate.
<b>NRC Operation - Request for Information</b>						
Hourly rate for NRC	\$143					NRC calculation.
Reduction in RAI development and review (hours)	3	Pert	3	3	6	NRC estimate. Assume 3 hours to develop and review an environmental RAI.
Number of years	1					NRC estimate.
<b>CEQ Inputs</b>						
CEQ review and conformity determination on final rule (hours)	92	Pert	72	80	160	NRC estimate.

