
Environmental Assessment and Finding of No Significant Impact for the Final Rule—Regulatory Improvements for Production and Utilization Facilities Transitioning to Decommissioning

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ABBREVIATIONS

ANPR	advance notice of proposed rulemaking
CFR	<i>Code of Federal Regulations</i>
DFP	decommissioning funding plan
EA	environmental assessment
EP	emergency preparedness
FOCD	foreign ownership, control, or domination
FONSI	finding of no significant impact
FR	<i>Federal Register</i>
ISFSI	independent spent fuel storage installation
NEPA	National Environmental Policy Act
NRC	U.S. Nuclear Regulatory Commission

1 INTRODUCTION

The U.S. Nuclear Regulatory Commission (NRC) is amending its regulations related to the decommissioning of production and utilization facilities. This final rule applies to both current and future nuclear power reactors and nonpower production or utilization facilities and fuel reprocessing plants. The final rule amends language in the following parts of Title 10 of the *Code of Federal Regulations* (10 CFR):

- 10 CFR Part 20, “Standards for Protection Against Radiation”
- 10 CFR Part 26, “Fitness for Duty Programs”
- 10 CFR Part 50, “Domestic Licensing of Production and Utilization Facilities”
- 10 CFR Part 51, “Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions”
- 10 CFR Part 52, “Licenses, Certifications, and Approvals for Nuclear Power Plants”
- 10 CFR Part 72, “Licensing Requirements for the Independent Storage of Spent Nuclear Fuel, High-Level Radioactive Waste, and Reactor-Related Greater Than Class C Waste”
- 10 CFR Part 73, “Physical Protection of Plants and Materials”
- 10 CFR Part 140, “Financial Protection Requirements and Indemnity Agreements”

The NRC issued the proposed rule for public comment in Volume 87 of the *Federal Register* (FR), page 12254, on March 3, 2022 (87 FR 12254; NRC, 2022a). On May 6, 2022, the NRC published a correction related to the removal of license conditions and withdrawal of orders (87 FR 27025; NRC, 2022b), and on May 17, 2022, extended the comment period to August 30, 2022 (87 FR 29840; NRC, 2022c). The NRC revised the (proposed) rule language in response to public comments. The final rule changes did not alter the staff’s conclusions in the environmental assessment (EA) and finding of no significant impact (FONSI) that was published along with the proposed rule.

Under 10 CFR Part 50 and 10 CFR Part 52, the NRC requires current and future holders of commercial nuclear power plant operating licenses and current and future holders of combined licenses, respectively, to comply with a variety of regulatory requirements related to decommissioning. Reactor decommissioning requirements are codified in 10 CFR 50.82, “Termination of license,” and 10 CFR 52.110, “Termination of license.” Associated decommissioning funding requirements are codified in 10 CFR 50.75, “Reporting and recordkeeping for decommissioning planning.” A nuclear power reactor licensee formally begins the decommissioning process when it certifies its permanent cessation of operations and permanent removal of fuel from the reactor vessel under 10 CFR 50.82(a)(1) or 10 CFR 52.110(a). Once the NRC docket these certifications, an NRC license issued under 10 CFR Part 50 or 10 CFR Part 52 no longer authorizes operation of the reactor.

For nonpower production or utilization facilities, 10 CFR 50.82(b) requires that a licensee apply for license termination within 2 years following permanent cessation of operation. Each application for termination of a license must be accompanied, or preceded, by a proposed

decommissioning plan. Under some circumstances, the licensee can apply for a possession-only license amendment under 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit," after operations have ended and before decommissioning starts. The possession-only license amendment grants the licensee authority to possess but not to operate the facility. Otherwise, the NRC's regulations do not state when a nonpower production or utilization facility licensee is no longer authorized to operate, other than at license termination.

The NRC has prepared this EA and FONSI in compliance with the NRC's environmental protection regulations in 10 CFR Part 51, which implement the National Environmental Policy Act of 1969 (NEPA). This EA evaluates and documents potential environmental impacts resulting from the proposed action, the final rule related to regulatory improvements for production and utilization facilities transitioning to decommissioning, and potential environmental impacts from alternatives to the proposed action.

1.1 Background

In 1988, the NRC published "General Requirements for Decommissioning Nuclear Facilities" (53 FR 24018; NRC 1988a) (1988 Final Rule), in which the NRC amended its regulations to provide specific requirements for the decommissioning of nuclear facilities. Specifically, the 1988 Final Rule established regulations on acceptable decommissioning alternatives, planning for decommissioning, decommissioning timeliness, assurance of the availability of funds for decommissioning, and environmental review requirements related to decommissioning. The amended regulations provided a regulatory framework for more efficient and consistent licensing actions related to decommissioning. To support the 1988 Final Rule, the NRC prepared NUREG-0586, "Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities," issued August 1988 (NRC 1988b), which generically addressed the environmental impacts of nuclear power reactor decommissioning.

On July 29, 1996, the NRC published "Decommissioning of Nuclear Power Reactors" (61 FR 39278; NRC 1996) (1996 Final Rule) to amend its regulations for reactor decommissioning to clarify ambiguities, codify procedures that reduced regulatory burden, provide greater flexibility, and allow for greater public participation in the decommissioning process. The 1996 Final Rule made fundamental changes to power reactor decommissioning by streamlining the process and reducing both licensee and NRC resource expenditures while maintaining safety, protecting the environment, and encouraging public involvement. In the 1996 Final Rule, the NRC explained that the degree of regulatory oversight required for a nuclear power reactor during its decommissioning stage is considerably less than that required for the facility during its operating stage due to the removal of fuel from the reactor vessel during the decommissioning stage. The NRC issued a FONSI for the 1996 Final Rule (61 FR 39296; NRC, 1996). The NRC concluded that the environmental impacts associated with power reactor decommissioning activities are expected to be minor and should be bounded by previous site-specific environmental analyses.

In November 2002, the NRC issued Supplement 1 to NUREG-0586, which considered the technological advances in decommissioning since 1988 and experience gained from decommissioning and addressed changes to the decommissioning regulations made in the 1996 Final Rule (NRC 2002a, 2002b).

1.2 Proposed Action

The proposed action is a rulemaking to amend the NRC's regulations related to production and utilization facilities transitioning to decommissioning. The rulemaking action amends language in 10 CFR Parts 20, 26, 50, 51, 52, 72, 73, and 140. The rulemaking (1) continues to provide reasonable assurance of adequate protection of public health and safety and the common defense and security at decommissioning production and utilization facilities, (2) ensures that the requirements for decommissioning production and utilization facilities are clear and appropriate, (3) adopts regulations to address generic issues applicable to all decommissioning production and utilization facilities that have historically been addressed through similarly worded exemptions and license amendments, and (4) identifies, defines, and resolves additional areas of concern deemed relevant by the NRC staff related to the regulation of decommissioning licensees under 10 CFR Part 50 and 10 CFR Part 52.

1.3 The Need for the Proposed Action

By issuing this decommissioning rule, the NRC is establishing regulations that maintain safety and security at production and utilization sites transitioning to decommissioning without the need to grant specific exemptions or license amendments in certain regulatory areas, as well as address other issues deemed relevant by the NRC staff.

This proposed action also responds to the Commission direction to the NRC staff to proceed with an integrated rulemaking on nuclear power reactor decommissioning (NRC 2014a). The Commission stated that the rulemaking should address: issues discussed in SECY-00-0145, "Integrated Rulemaking Plan for Nuclear Power Plant Decommissioning," dated June 28, 2000 (NRC 2000), such as the graded approach to emergency preparedness (EP); lessons learned from nuclear facilities that have already gone through (or are currently going through) the decommissioning process; whether the NRC should approve a licensee's post-shutdown decommissioning activities report; the appropriateness of the three existing decommissioning options and the timeframes associated with those options; and the role of State and local governments and nongovernmental stakeholders in the decommissioning process.

In addition, experience has demonstrated that licensees for decommissioning nuclear power reactors seek several exemptions and license amendments per site to establish a long-term licensing basis for decommissioning. Nonpower production or utilization facility licensees typically seek license amendments in decommissioning to change their 10 CFR Part 50 operating licenses to possession-only licenses. The proposed rule would establish regulations that maintain safety and security at sites transitioning to decommissioning without the need to grant specific exemptions or license amendments in certain regulatory areas.

The NRC is not making any changes in 10 CFR Part 51 affecting nonpower production or utilization (e.g., research and test reactors) and fuel reprocessing facilities. Nonpower production or utilization and fuel reprocessing facility licensees must continue to submit license amendment requests for license termination, including requesting approval of a decommissioning plan, and licensees must submit an environmental report. The NRC would continue to conduct a NEPA review and prepare the appropriate documentation.

2 ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION

The final rule includes some regulatory actions that meet the criterion for categorical exclusion in paragraph (c) of 10 CFR 51.22, “Criterion for categorical exclusion; identification of licensing and regulatory actions eligible for categorical exclusion or otherwise not requiring environmental review.” The NRC has determined that these regulatory actions would not have a significant effect on the human environment and no special or extraordinary circumstances exist that would have a significant effect on the human environment; therefore, it would be appropriate to exclude these amendments from further environmental review. Table 1 lists the final rule amendments that meet the criterion for 10 CFR 51.22(c) categorical exclusion. Accordingly, the NRC has not conducted an environmental review for these final rule amendments.

Table 1 Applicability of 10 CFR 51.22 Categorical Exclusion Criterion to Final Rule Amendments

Amended regulations	Applicable 10 CFR 51.22 criterion
10 CFR Part 26	(c)(1), (c)(3)
10 CFR 50.2	(c)(2), (c)(3)
10 CFR 50.54(bb)	(c)(3)
10 CFR 50.59(d)	(c)(3)
10 CFR 50.71(c)	(c)(3)
10 CFR 50.75(f)	(c)(3)
Elimination of 10 CFR 50.75(f)(2)	(c)(2)
10 CFR 50.82(a)	(c)(2), (c)(3)
10 CFR 50.109	(c)(2)
10 CFR Part 50, Appendix A	(c)(3)
10 CFR Part 20, Appendix G	(c)(3)
10 CFR 51.53	(c)(3)
10 CFR 51.95	(c)(3)
10 CFR 52.63	(c)(3)
10 CFR 52.110	(c)(2)
10 CFR 72.72	(c)(3)
10 CFR 72.218	(c)(3)
10 CFR Part 140	(c)(1)

Final rule amendments to the regulations related to EP, physical security, cybersecurity, decommissioning trust funds, financial protection requirements, and foreign ownership, control, or domination (FOCD) do not meet the criteria for categorical exclusion and require the NRC to conduct an environmental review to determine the potential effect on the human environment. The following sections discuss the potential environmental impact of amending these regulations.

2.1 Emergency Preparedness

The final rule offers an alternative, graded approach to the current requirements of 10 CFR 50.47, “Emergency plans,” and 10 CFR Part 50, Appendix E, “Emergency Planning and Preparedness for Production and Utilization Facilities,” as they pertain to onsite and offsite radiological EP. The final rule provides the following four levels of emergency planning standards that coincide with significant milestones that reflect the gradual reduction of the radiological risk during decommissioning of power reactors:

- (1) post-shutdown emergency plan;
- (2) permanently defueled emergency plan;
- (3) independent spent fuel storage installation (ISFSI)-only emergency plan; and
- (4) no emergency plans required.

These changes do not apply to nonpower production or utilization facilities.

The NRC is providing an alternative set of requirements for EP based on the reduction in radiological risk for nuclear power plants as they proceed through decommissioning. This new approach reduces a licensee’s burden of maintaining planning and resources to respond to accidents that are no longer likely, or even possible. The NRC derived the graded approach to EP based in part on previously approved exemptions from the current operating reactor regulatory requirements for which findings of reasonable assurance have already been made. The final rule incorporates those reasonable assurance findings into paragraph (q)(8) of 10 CFR 50.54, “Conditions of licenses.” Therefore, emergency plans that meet the requirements in 10 CFR 50.54(q)(8)(i), (ii), or (iii) would not be reductions in plan effectiveness and would not require NRC prior approval. The NRC’s regulatory approach to emergency plan changes to transition between decommissioning levels and within a decommissioning level relies on the current change process in 10 CFR 50.54(q)(3) or (4).

The NRC has completed several EAs and FONSI’s associated with the approval of EP-related exemptions at specific sites and has consistently concluded that the exemptions would not increase probability of consequences of accidents, and there would be no significant change in the type or amount of effluent released offsite nor any significant increase in public or occupational exposure. The EAs also concluded that there would be no significant nonradiological impacts.¹ Because NRC’s previous analyses for EP exemptions indicated that there would be no significant impacts, the NRC concludes that the final rule changes related to EP requirements would not have any significant impacts on the environment.

2.2 Physical Security

The final rule amends language in 10 CFR Parts 50, 72, and 73 related to physical security requirements that apply once a production or utilization facility enters decommissioning. This rulemaking would not decrease the physical security standards and requirements applicable to operating nuclear reactors. The changes for decommissioning power reactors allow for a graded approach and alternatives for physical security of the facility.

¹ Examples of EAs and FONSI’s related to EP exemptions include “La Crosse Boiling Water Reactor, Environmental Assessment and Finding of No Significant Impact Regarding an Exemption Request” (78 FR 46378, July 31, 2013; NRC 2013), “Entergy Nuclear Operations, Inc.; Vermont Yankee Nuclear Power Station” (80 FR 47960, August 10, 2015; NRC, 2015a), and “Omaha Public Power District; Fort Calhoun Station, Unit No. 1” (82 FR 56060, November 27, 2017; NRC, 2017d).

These changes include the following:

- changes to 10 CFR Part 73 to allow a licensed senior operator, certified fuel handler, individual specifically designated by the facility licensee, or organizationally senior individual, depending on which level of decommissioning the facility is in, to temporarily suspend security measures during certain emergency conditions or during severe weather;
- removal of requirements for licensees to have a physical protection program to prevent significant core damage once the licensee has certified that the fuel has been removed from the reactor core;
- removal of the requirement that a licensee must designate the control room as a “vital area” once vital equipment has been removed;
- allowing continuous communication between the alarm stations and the certified fuel handler, senior on-shift licensee representative, or both in lieu of the existing requirement to have continuous communication between the alarm stations and the control room;
- adding the option for a general license ISFSI to transition to the requirements in 10 CFR 73.51, “Requirements for the physical protection of stored spent nuclear fuel and high-level radioactive waste,” for specific license ISFSIs; and
- defining terms in 10 CFR 50.54(p) used to make changes to physical security plans.

The NRC concludes that, because the final rule changes related to physical security requirements are limited to personnel and administrative changes, there would be no significant impact on the environment.

2.3 Cybersecurity

Changes to cybersecurity in 10 CFR 73.54, “Protection of digital computer and communication systems and networks,” and 10 CFR 73.55, “Requirements for physical protection of licensed activities in nuclear power reactors against radiological sabotage,” clarify the cybersecurity requirements applicable to a nuclear power reactor during each stage of the decommissioning process. The NRC is extending the requirements in 10 CFR 73.54 through Level 1 of the graded approach.

These changes do not change the design-basis requirements for the structures, systems, and components in a facility that function to limit the release of radiological effluents during and following postulated accidents. This rulemaking does not affect the standards and requirements applicable to radiological releases and effluents, and those standards and requirements continue to apply to the structures, systems, and components affected by this rule change. Therefore, the NRC concludes that the final rule changes related to cybersecurity would not have any significant impact on the environment.

2.4 Decommissioning Funding Assurance

The final rule includes several changes regarding decommissioning funding for nuclear power reactors. The purpose of the decommissioning funding assurance requirement is to ensure that

a licensee can provide reasonable assurance that sufficient funds will be available for radiological decommissioning. The changes modify decommissioning funding reporting requirements, clarify decommissioning funding assurance requirements, and eliminate duplicative regulations. Additionally, the final rule removes the requirement for NRC approval of ISFSI decommissioning funding plans (DFPs) submitted subsequent to the initial DFP under paragraph (c) of 10 CFR 72.30, "Financial assurance and recordkeeping for decommissioning."

The final rule modifies the reporting frequency in 10 CFR 50.75 for nuclear power reactors to be consistent with the decommissioning funding assurance reporting frequency for ISFSIs in 10 CFR 72.30(c). For ISFSI funding reports, this final rule modifies the submittal dates to align with those in 10 CFR 50.75. The final rule clarifies that although the regulations establish a continuing obligation to provide reasonable assurance of decommissioning funding, when a licensee identifies a shortfall in the report required by 10 CFR 50.75(f)(1), the next report for licensees that are not "electric utilities" as defined in § 50.2, or the report two reports later for licensees that are electric utilities, may not have a shortfall. The NRC is making administrative changes regarding the submission of notifications and to reduce duplicative language in 10 CFR 50.75(f)(1) and (f)(2). These changes do not alter the requirement to maintain sufficient funds for radiological decommissioning. These changes are administrative in nature and have no impact on the physical environment; there would be no environmental impact from these changes.

Regarding the removal of the requirement for NRC approval of subsequent ISFSI DFPs, the NRC has prior documentation of the impacts of review and approval of ISFSI DFPs. As part of the review and approval of an ISFSI DFP upon its submittal every 3 years, the NRC must prepare an EA and FONSI. The NRC has issued approximately 70 final EAs and FONSIs and concluded that approving an ISFSI DFP has no significant impact on the environment because such an approval does not change the scope or nature of the operation of the ISFSI and does not authorize changes to licensed routine operations, maintenance activities, or construction activities. Further, the NRC's approval of a DFP does not result in any changes in the types, characteristics, or quantities of radiological or nonradiological effluents or solid waste. A licensee must still ensure that adequate funding is available for facility and ISFSI decommissioning. Because the NRC's previous approvals of ISFSI DFPs have resulted in no environmental impact and because the final rule change does not alter the fact that a licensee must maintain sufficient funding for ISFSI decommissioning, the NRC concludes that the final rule change related to ISFSI DFPs would not have any significant impacts on the environment.

2.5 Financial Protection Requirements

The final rule allows certain licensees with decommissioning nuclear power reactors to reduce the insurance amounts that they are required to maintain without obtaining exemptions from the NRC's regulations. The changes codify a two-step graded reduction approach. Under paragraph (a)(5) of 10 CFR 140.11, "Amounts of financial protection for certain reactors," and 10 CFR 50.54(w)(5), once certain criteria are satisfied (e.g., after the spent fuel has decayed for 10 months for boiling-water reactors or 16 months for pressurized-water reactors), a licensee could reduce its financial protection to the amounts in the second level of the graded approach. The changes to 10 CFR Part 140 for offsite insurance are categorically excluded, in accordance with 10 CFR 51.22(c)(2), and therefore have no potential environmental impacts. The changes to 10 CFR Part 50 for onsite financial protection are conforming changes to be consistent with the offsite financial protection requirements in 10 CFR Part 140. The changes have no nexus to the physical environment as they are administrative in nature; therefore, the NRC concludes

that the final rule changes related to financial protection requirements would not have any significant impacts on the environment.

2.6 Foreign Ownership, Control, or Domination

The FOCD prohibition is a financial ownership restriction and is neither a technical nor an operational requirement. The changes to 10 CFR 50.38, "Ineligibility of certain applicants," specify that the FOCD prohibition no longer applies to entities seeking a license for a production or utilization facility after the licensee no longer has authority to operate the facility and the facility has been modified to be incapable of being a production or utilization facility without significant plant alterations. This eliminates the need for an application for the transfer of such a facility to address the FOCD requirement. This change has no nexus to the physical environment, as it is administrative in nature, and would have no environmental impact. Thus, the NRC concludes that the final rule changes related to FOCD would not have any significant impacts on the environment.

3 ENVIRONMENTAL IMPACTS OF ALTERNATIVES TO THE PROPOSED ACTION—NO ACTION ALTERNATIVE

Under the no-action alternative, the NRC would not pursue a rulemaking related to nuclear production and utilization facility decommissioning. Licensees would continue to be required to meet current regulations or seek relief using the existing regulatory framework (e.g., change requests under 10 CFR 50.59, “Changes, tests and experiments,” license amendment, or exemption requests). Under the no-action alternative, the NRC would continue to analyze the environmental impacts of exemptions and license amendment requests on a case-by-case basis. For already completed license amendment and exemption requests related to EP requirements and approval of ISFSI DFPs, the NRC has concluded that impacts to the environment would not be significant, as cited in sections 2.1 and 2.4 of this EA.

4 AGENCIES AND PERSONS CONSULTED

The NRC requested public comment on the proposed rule and draft EA and held public meetings during the comment period. The NRC considered public comments as it finalized the rule and EA.

The NRC published an advance notice of proposed rulemaking (ANPR) in November 2015 (80 FR 72358; NRC 2015b). The ANPR sought public comment on specific questions and issues with respect to possible revisions to the NRC's requirements related to reactor decommissioning. The NRC issued letters informing all state liaison officers of the ANPR. The NRC also held a public meeting on December 9, 2015, to solicit comments. The NRC considered public comments on the ANPR in the draft regulatory basis (NRC 2017a).

Upon completion of the ANPR, the NRC identified regulatory improvements for nuclear power reactors transitioning to decommissioning in amendments to regulations in the draft regulatory basis. The NRC published the draft regulatory basis in March 2017 seeking public comment on specific questions and issues with respect to possible revisions to NRC regulations (NRC 2017a). A public meeting was held on the draft regulatory basis in May 2017 (NRC 2017b). The NRC also issued letters to all state liaison officers and tribes within 50 miles of reactors to provide notification of the draft regulatory basis. The NRC received 40 public comment submissions on the draft regulatory basis. The NRC finalized the regulatory basis, which was published in the *Federal Register* in November 2017 (82 FR 56056; NRC 2017c).

The final rule changes are administrative with no impact on the human or physical environment. Rule changes would have no effect on listed species or critical habitat. Therefore, Section 7 consultation under the Endangered Species Act (1973) is not warranted. Similarly, these rule changes would not affect any historic properties. Therefore, no consultation is required under Section 106 of the National Historic Preservation Act (1966).

5 FINDING OF NO SIGNIFICANT IMPACT

The NRC's proposed action (rulemaking) would maintain safety and security at nuclear production and utilization facilities transitioning to decommissioning without the need to grant specific exemptions or license amendments in certain regulatory areas. The rulemaking meets the need for the proposed action because it reduces the need for exemption and license amendment requests and supports the principles of good regulation, including openness, clarity, and reliability. The NRC also determined the rulemaking would not have a significant effect on the quality of the human environment and is not a major Federal action; therefore, an environmental impact statement is not required.

The final rule amends language in 10 CFR Parts 20, 26, 50, 51, 52, 72, 73, and 140 to address a graded approach to EP, lessons learned from nuclear facilities that have already gone through (or are currently going through) the decommissioning process, whether the NRC should approve a licensee's post-shutdown decommissioning activities report, the appropriateness of the three existing decommissioning options and the timeframes associated with those options, and the role of State and local governments and nongovernmental stakeholders in the decommissioning process. The final rule changes evaluated in this EA include actions described in section 2 that meet the criterion for categorical exclusion, and actions described in sections 2.1–2.6 (emergency preparedness, physical security, cybersecurity, decommissioning funding assurance, financial protection requirements, and FOCD). Based on the impact analyses presented in this EA, the NRC concludes the proposed action (rulemaking) would result in no significant impact on the environment.

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