Regulatory Analysis for Final Rule: Limited Work Authorizations for Nuclear Power Plants RIN 3150-AI05

1. Statement of the Problem and Objective

Background

The regulations in 10 CFR 50.10 broadly define the concept of "construction" and set out a procedure that allows applicants for construction permits or combined licenses[1] to request permission to undertake certain limited construction activities prior to issuance of the underlying construction permit or combined license. Permission to undertake these construction activities is known as a limited work authorization (LWA). The provisions of § 50.10(e) allow the NRC to authorize the commencement of both safety-related (known as "LWA-2" activities) and non safety-related (known as "LWA-1" activities) on-site construction activities, provided that the agency has completed a final environmental impact statement on the issuance of the construction permit or combined license and the presiding officer in the construction permit or combined license proceeding has made the requisite environmental and, in the case of an LWA-2, safety-related findings.

On March 13, 2006, the NRC published a proposed rule amending its regulations applicable to the licensing and approval process for new nuclear power plants in order to enhance the agency's regulatory effectiveness and efficiency (71 FR 12782). The March 2006 proposed rule did not suggest major changes to the provisions of § 50.10 dealing with LWAs.[2] However, in commenting on the March 2006 proposed rule, industry stakeholders raised significant issues regarding both the scope of activities that are currently considered construction under § 50.10 and the process for obtaining an LWA.[3] Specifically, industry suggested that the broad concept of "commencement of construction" in § 50.10(c) is based on an outdated interpretation of the National Environmental Policy Act of 1969, as amended (NEPA), and not on the NRC's authority to regulate in the interest of radiological health and safety and the common defense and security under the Atomic Energy Act of 1954, as amended (AEA). Therefore, the industry

---

[1]Reference to combined licenses was added to § 50.10(e) in the proposed rule amending 10 CFR Part 52 (71 FR 12782; March 13, 2006).

[2]Stakeholders did not raise issues relating to perceived problems either with the LWA process or, more generally, with the definition of construction during the period leading to the March 2006 proposed rule.

[3]*See* Letter from Adrian P. Heymer, Nuclear Energy Institute to Annette L. Vietti-Cook, Secretary, U.S. Nuclear Regulatory Commission, *Pre-Licensing Construction Activity and Limited Work Authorization Issues relating to NRC Proposed Rule, "Licenses, Certifications and Approvals for Nuclear Power Plants," 71 Fed. Reg. 12, 782 (March 13, 2006)(RIN 3150-AG24)*(May 25, 2006). This letter was ultimately docketed and treated as a petition for rulemaking (PRM-50-82).

stakeholders suggested that the NRC abandon the concept of "commencement of construction" currently found in § 50.10(c) and limit construction to the activities described in § 50.10(b). In addition, the industry stakeholders suggested a phased approach to the application and approval procedures for obtaining LWAs. This approach would allow an LWA to be issued before the completion of the final environmental impact statement (FEIS) and adjudicatory hearing on the underlying construction permit or combined license.

Problem

Industry stakeholders supported their suggested changes to the LWA process, stating that the current business environment requires that new plant applicants seek to minimize the time between a decision to proceed with a combined license application and the start of commercial operation. In order to achieve this goal, the industry stakeholders stated that non safety-related "LWA-1" activities would need to be initiated up to two years before the activities currently defined as "construction" in § 50.10(b) would begin. In the view of these stakeholders, the current LWA approval process could unnecessarily constrain the industry's ability to use modern construction practices and needlessly add eighteen (18) months to estimated construction schedules for new plants where an early site permit (ESP) is not referenced in the combined license application.

In addition to the practical concerns posed by the existing regulatory structure, the broad definition of "commencement of construction" currently provided in § 50.10(c) and the approval required in § 50.10(e)(1) present a legal authority issue. Specifically, if the AEA does not provide the agency authority to require that an applicant obtain permission to engage in site preparation activities that are not reasonably related to radiological health and safety or common defense and security, and NEPA does not provide such authority, the NRC would be acting outside of its statutory authority by regulating such activities.

Objective

The final rule addresses the concerns raised by industry stakeholders and focuses NRC resources on the agency's statutory responsibility to protect radiological health and safety and the common defense and security by limiting the definition of construction to activities reasonably within the agency's statutory authority under the AEA. In addition, the final rule provides for a phased application and approval procedure, which allows the LWA to issue after completion of a limited environmental impact statement (EIS) that addresses the impacts of only the proposed LWA activities.

2. Identification of Regulatory Alternatives

This regulatory analysis evaluates the values and impacts of three regulatory alternatives. The following subsections describe these three alternatives.

2.1 No Action Alternative

The no action alternative retains the current regulations described above. As explained above,

the current regulations require NRC authorization and completion of the FEIS on the underlying combined license or construction permit request before applicants can undertake most site preparation activities. The no action alternative serves as the baseline against which the other alternatives (describe below) are measured.

2.2 Proposed Action Alternative

Under the alternative proposed in this final rule, the NRC would revise its regulations defining construction in 10 CFR 50.10(b) and (c) by narrowing the scope of activities that are considered construction. Therefore, fewer site preparation activities would require NRC approval before being undertaken by an applicant. This change would partially address the scheduling concerns raised by industry stakeholders and focus NRC resources by limiting the definition of construction to include only those site preparation activities falling within the agency's AEA authority to regulate in the interest of radiological health and safety and the common defense and security. Under the final rule, these activities would include:

- the driving of piles;
- subsurface preparation;
- installation of foundations;
- placement of backfill, concrete, or permanent retaining walls within an excavation; or
- in-place assembly, erection, fabrication or testing

for any of the following structures, systems, components (SSCs), and facilities:

- safety-related SSCs, as defined in 10 CFR 50.2;
- SSCs relied upon to mitigate accidents or transients or used in plant emergency operating procedures;
- SSCs whose failure could prevent safety-related SSCs from fulfilling their safety-related function;
- SSCs whose failure could cause a reactor scram or actuation of a safety-related system;
- SSCs necessary to comply with 10 CFR Part 73;
- SSCs necessary to comply with 10 CFR 50.48 and criterion 3 or 10 CFR Part 50, Appendix A; and
- on-site emergency facilities, that is, technical support and operations support centers, necessary to comply with 10 CFR 50.47 and 10 CFR Part 50, Appendix E.

In addition, the final rule would allow issuance of an LWA authorizing site preparation activities meeting the revised definition of construction after submittal of an abbreviated environmental report and preparation of a limited EIS by the NRC staff. This EIS would be limited in scope and only address the environmental impacts associated with the proposed LWA activities. A more comprehensive EIS, considering the environmental impacts associated with the LWA activities and the underlying licensing action would be completed prior to issuing the combined license or construction permit.

2.3 Full Environmental Review Prior to Issuance of LWA

This alternative is identical to the proposed action alternative, except that it would require issuance of a comprehensive FEIS prior to the NRC granting any LWA. Like the proposed action alternative, this alternative would ensure that the NRC is acting within its statutory authority, but would only partially address the scheduling concern raised by industry.

3. Analysis of Values and Impacts

The three subsections below identify and analyze the values and impacts associated with the proposed and the alternative actions identified. Since the proposed action alternative and the full environmental review alternative represent a reduction in the current requirements, much of the analysis will be focused on determining whether: (1) the public health and safety and the common defense and security would continue to be adequately protected if the proposed reduction in the requirements were implemented and (2) the cost savings attributed to the action would be substantial enough to justify taking the action. (NUREG/BR-0058, Rev. 4 at 5-6).

3.1 Adequate Protection of Public Health and Safety and Common Defense and Security.

3.1.1 Redefining the Concept of Construction (Proposed Action and Full Environmental Review Alternatives)

The proposed action and full environmental review alternatives both result in a reduction in the current regulatory requirements due to a reduction in the number of activities that require NRC approval, in the form of an LWA, prior to being undertaken.

Prior to 1972 the definition of construction was limited to the activities currently defined as construction in § 50.10(b). These activities include pouring the foundation for, or the installation of, any portion of the permanent facility on the site. However, that definition was expanded considerably to include a wide variety of site preparation activities in 1972 with the promulgation of § 50.10(c). As promulgated, § 50.10(c) prohibited the "commencement of construction" of a production or utilization facility until a construction permit had been issued. The term "commencement of construction" includes "any clearing of land, excavation or other substantial action that would adversely affect the natural environment of a site and [the] construction of nonnuclear facilities (such as turbogenerators and turbine buildings) for use in connection with the facility. . . ." Two years after the promulgation of § 50.10(c), the NRC promulgated § 50.10(e) (39 FR 14506; April 24, 1974). This provision created the current LWA process, which was added to allow site preparation, excavation and certain other on-site activities to proceed prior to issuance of a construction permit.

The expansion of the definition of construction in 1972 was driven by the Commission's

interpretation of its responsibilities under NEPA, not the AEA (37 FR 5746). [4] However, since the promulgation of § 50.10(c), the legal effect of NEPA has been more thoroughly delineated by the courts. Specifically, subsequent judicial decisions have made it clear that NEPA is a procedural statute and does not expand the authority provided to an agency by its organic statute.[5] Therefore, while NEPA may require the NRC to consider the environmental effects caused by the exercise of its permitting/licensing authority, the statute cannot be the source of the expansion of the NRC's authority to require construction permits or other forms of permission, including an LWA, for activities that are not related to radiological health and safety or preservation of the common defense and security.

Since the blanket inclusion of site preparation activities in the definition of "commencement of construction" in § 50.10(c) was not driven by the radiological health and safety or common defense and security jurisdiction provided to the NRC in the AEA, the redefinition of construction will not have a negative impact on radiological health and safety or the common defense and security. To the contrary, the final rule reflects an effort to align the definition of construction with the NRC's responsibilities under the AEA by including only those activities with a reasonable nexus to radiological health and safety or common defense and security.

Therefore, there is reasonable assurance that public health and safety and common defense and security would continue to be adequately protected if the proposed reduction in current regulatory requirements was implemented by adopting either the proposed action or the full environmental review alternatives.

3.1.2 Issuance of LWA After Partial Environmental Review (Proposed Action Alternative)

The proposed action alternative also relaxes the current regulatory requirements by allowing an LWA to issue after issuance of a partial EIS, limited to addressing the impacts of the LWA activities. The current regulations require that a FEIS, addressing the underlying licensing action (i.e. issuance of a construction permit or combined license) be issued prior to the grant of an LWA. This relaxation in the current regulations is not expected to result in a reduction in the

---

[4] *See also, The Carolina Power and Light Company* (Shearon Harris Nuclear Power Plant, Units 1, 2, 3 and 4), 7 AEC 939, 943 (June 11, 1974)(hereinafter *Shearon Harris*)("The regulations were revised in 1972, not because of any requirements of the Atomic Energy Act, but rather to implement the precepts of NEPA which had then recently been enacted."); *Kansas Gas and Electric Company* (Wolf Creek Nuclear Generating Station, Unit No. 1), 5 NRC 1, 5 (Jan. 12, 1977)(explaining that NEPA led AEC to amend its regulations in several respects, including the changes to 50.10(c)).

[5] *See, e.g., Kitchen v. Federal Communications Commission*, 464 F.2d 801, 802 (D.C. Cir. 1972); *Natural Resources Defense Counsel v. U.S. Environmental Protection Agency*, 822 F.2d 104, 129 (D.C. Cir 1987); *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350-52 (1989).

protection of public health and safety or common defense and security. First, an EIS is drafted by the NRC in order to comply with its responsibilities under NEPA, not the AEA. The impacts evaluated in an EIS are primarily impacts on the natural environment, whereas impacts on radiological health and safety and the common defense and security are primarily addressed in other documents that must be completed by the NRC in order to meet its obligations under the AEA (e.g., Safety Evaluation Report). In addition, the regulations implementing the proposed action alternative specifically prohibit the issuance of an LWA from influencing the Commission's ultimate licensing decision and require redress of the effects of the LWA activity if a construction permit or combined license is not ultimately issued. Since the effects of the LWA activities will be assessed prior to issuance of the LWA, and the effects of the entire action– including issuance of an LWA – will be evaluated prior to issuance of a combined license or construction permit, any additive or synergistic environmental impacts of the LWA activities and the remaining construction and operation activities will be considered prior to issuance of any additional approvals. Therefore, no reduction in the protection of public health and safety or common defense and security is reasonably expected to result from adoption of the phased approach put forward in the proposed action alternative.

3.2 Cost Savings.

3.2.1 Cost Savings Resulting from the Reduction in the Number of LWA Applications (Proposed Action and Full Environmental Review Alternatives).

The proposed action and full environmental review alternatives both result in a reduction in the current regulatory requirements due to a reduction in the number of activities that require NRC approval in the form of an LWA prior to being undertaken. Therefore, some costs savings are expected in situations where an applicant does not request an LWA to engage in activities that were previously defined as construction.[6] Specifically, these savings would result from eliminating the applicant's and agency's costs associated with filing and processing applications to engage in LWA activities that are no longer considered construction.[7]

3.2.2 Cost Savings Resulting from Avoiding Construction Delays Associated with Definition of Construction (Proposed Action and Full Environmental Review Alternatives)

Applicants' ability to perform pre-construction site preparation activities without obtaining prior permission from the NRC will lower the cost of construction by reducing the time interval

---

[6]Although the scope of the LWA request will likely be narrowed, any cost savings realized in a situation where an applicant requests an LWA before applying for a construction permit or combined license are expected to be insignificant.

[7]Industry has estimated the cost of preparing an LWA request to be $150,000 and the cost associated with supporting NRC review of an LWA request to be $25,000.

between the outlay of capital for new plant construction and cost recovery realized through plant operation. The definition of construction in the final rule will minimize this time interval by allowing pre-construction, site preparation activities to proceed in parallel with the NRC's licensing process.

3.2.3 Cost Savings Resulting from Avoiding Delays Associated with Requiring Preparation of a Comprehensive FEIS Before Issuing an LWA (Proposed Action Alternative)

The time interval between the outlay of capital for new plant construction and cost recovery will be further reduced by allowing issuance of an LWA after preparation of a limited EIS, which addresses only the environmental impacts of, and alternatives to, the proposed LWA activities. The time saved will be equal to the difference between the time required to prepare a comprehensive FEIS on the underlying licensing action (i.e. issuance of a construction permit or combined license) and the time required to prepare the limited EIS described above.

3.3 Public Perception (Proposed Action and Full Environmental Review Alternatives)

As explained above, the NRC does not believe that redefining construction will jeopardize radiological health and safety or common defense and security. Certain public stakeholders (e.g. electric utilities, independent power producers, and nuclear power plant vendors) will likely view the proposed changes in a positive light due to the anticipated positive effect on construction schedules for new nuclear power plants and a reduction of unnecessary regulatory burden. However, reducing the agency's involvement in pre-construction site preparation activities may reduce assurance in other segments of the public that these activities are being conducted in an environmentally responsible manner. These segments of the public may view the Commission's definition of construction, which is necessarily constrained by the jurisdiction delegated to the agency under the AEA, as overly technical or overly narrow. Finally, there is a risk that some segments of the public will perceive commencement of site preparation activities as an indication that the NRC has made a decision to approve a license or permit application before formal review of the application is complete.

4. Results and Decision Rationale

4.1 Results

	No Action Alternative	Proposed Action Alternative	Full Environmental Review Prior to Issuance of LWA Alternative
Effect on Adequate Protection of Public Health and Safety	None	None	None

	No Action Alternative	Proposed Action Alternative	Full Environmental Review Prior to Issuance of LWA Alternative
Cost Savings	None	Savings associated with definition of construction. Savings associated with phased EIS.	Savings associated with definition of construction.
Public Perception	None	Reduced public assurance that site preparation activities will be conducted in an environmentally responsible manner. Overly narrow/technical NRC definition of construction. Perception that NRC has decided to approve an application before formal evaluation of the application is complete.	Reduced public assurance that site preparation activities will be conducted in an environmentally responsible manner. Overly narrow/technical NRC definition of construction. Perception that NRC has decided to approve an application before formal evaluation of the application is complete.

4.2 Decision Rationale

The NRC believes that its statutory authority under the AEA is limited to regulating activities that have a reasonable nexus to radiological health and safety and common defense and security. As reflected in the proposed definition of construction, the NRC does not believe that certain site-preparation activities fall within its statutory authority. In addition, the NRC does not believe that NEPA expands its licensing authority to allow regulation of these site-preparation activities. Therefore, the NRC has no authority to require that private entities obtain permission from the agency prior to undertaking these activities. While narrowing the scope of activities that are considered construction may result in decreased public assurance that environmental values are being protected by the NRC, the agency is obliged to act within the scope of its statutory authority. Therefore, the no action alternative is not a viable option.

As to the remaining alternatives, neither alternative will impair the NRC's ability to fulfill its statutory obligation to ensure that radiological health and safety and the common defense and security are protected. However, the proposed action alternative provides additional cost reduction and efficiency by eliminating delays associated with requiring completion of the FEIS on the underlying licensing action before an applicant is granted permission to engage in LWA activities. Therefore, the proposed action alternative has been selected.

5. Implementation

The final rule is being implemented after publication of a proposed rule (71 FR 61229; October 17, 2006). As reflected in the statements of consideration, public comments on the proposed rule were solicited, considered, and resolved in drafting the final rule. This final rule is being published as a stand-alone document.

The resources to implement this rulemaking were as follows;

Office	Fiscal Year	FTE Estimate
OGC	FY-2006	0.2
OGC	FY-2007	0.1
NRO	FY-2006	<0.1
NRO	FY-2007	0.3

Plant specific implementation will be achieved through individual licensing actions. Inspection of licensee implementation will be performed through the normal inspection process.