February 23, 2009

MEMORANDUM TO: Edwin M. Hackett, Executive Director
Advisory Committee on Reactor Safeguards
Advisory Committee on Nuclear Waste and Materials

James E. Lyons, Chairman
The Committee to Review Generic Requirements

FROM: William B. Burton, Branch Chief ***/RA/***
Rulemaking and Guidance Development Branch
Division of New Reactor Licensing
Office of New Reactors

SUBJECT: TRANSMITTAL OF FINAL INTERIM STAFF GUIDANCE – NOTICE OF AVAILABILITY OF THE FINAL INTERIM STAFF GUIDANCE ESP/COL-ISG-004 ON THE LIMITED WORK AUTHORIZATION

The purpose of this memorandum is to transmit the Notice of Availability and final version of ESP/COL-ISG-004, "Interim Staff Guidance on the Definition of Construction and on Limited Work Authorizations (LWA)" for Advisory Committee on Reactor Safeguards (ACRS) and Committee to Review Generic Requirements (CRGR) review and consideration.

The NRC staff has issued its ISG ESP/COL-ISG-004 in a final form. The draft form of the ISG and a supplement were published for public comments on March 31, 2008, and August 19, 2008 (Agencywide Documents Access and Management System (ADAMS) accession nos. ML080780414 and ML082190045) respectively. The staff received a number of comments from external stakeholders which are addressed in the final attached version. This transmittal satisfies the ACRS request in your memorandum dated October 8, 2008 (ADAMS accession no. ML082810057), that we provide the final guidance document as issued for the committees' consideration one final time.

If the ACRS or CRGR determines that there is a need to revisit the final guidance, please inform the technical contact and the Office of New Reactors who will support a subsequent ACRS and CRGR briefing.

Enclosure:
As stated

CONTACTS: Jerry N. Wilson, DNRL/NRO
301-415-3145

Ram Subbaratnam, DNRL/NRO
301-415-1478

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Nuclear Regulatory Commission

Office of New Reactors

Notice of Availability of the Final Interim Staff Guidance COL/ESP-ISG-04 on the Definition of Construction and on Limited Work Authorizations

[NRC-2008-0472]

AGENCY: Nuclear Regulatory Commission (NRC)

ACTION: Notice of Availability

SUMMARY: The NRC is issuing its Final Interim Staff Guidance (ISG) COL/ESP-ISG-004 (ML090060897). This ISG provides guidance regarding the definition of construction and the delineation of preconstruction activities and those activities requiring prior approval of the U.S. Nuclear Regulatory Commission (NRC or the Commission). In addition, this ISG provides guidance regarding the information to be submitted by any applicant for a limited work authorization (LWA).

The NRC staff issues ISGs to facilitate timely implementation of the current staff guidance and to facilitate activities associated with review of applications for early site permits and combined licenses for the Office of New Reactors. The NRC staff will also incorporate COL/ESP-ISG-004 into the next revisions of the Regulatory Guide 1.206, “Combined License Applications for Nuclear Power Plants,” and related guidance documents.

ADDRESSES: The NRC maintains an Agencywide Documents Access and Management System (ADAMS), which provides text and image files of NRC’s public documents. These documents may be accessed through the NRC’s Public Electronic Reading Room on the

Internet at http://www.nrc.gov/reading-rm/adams.html. Persons who do not have access to ADAMS or who encounter problems in accessing the documents located in ADAMS should contact the NRC Public Document Room reference staff at 1-800-397-4209, 301-415-4737, or by e-mail at pdr.resource@nrc.gov.

FOR FURTHER INFORMATION CONTACT: Ms. Nanette V. Gilles, Division of New Reactor Licensing, Office of the New Reactors, U.S. Nuclear Regulatory Commission, Washington, DC, 20555-0001; telephone 301-415-1180 or e-mail at Nanette.Gilles@nrc.gov.

SUPPLEMENTARY INFORMATION: The NRC posts its issued staff guidance on the NRC external web page (http://www.nrc.gov/reading-rm/doc-collections/isg/).

Dated at Rockville, Maryland, this day of 2009.

For the Nuclear Regulatory Commission,

Patrick M. Madden, Deputy Director
Division of New Reactor Licensing
Office of New Reactors

Interim Staff Guidance on the Definition of Construction and on Limited Work Authorizations

Purpose:

The purpose of this document is to provide interim staff guidance (ISG) regarding the definition of construction and the delineation of preconstruction activities and those activities requiring prior approval of the U.S. Nuclear Regulatory Commission (NRC or the Commission). It is important to recognize that the NRC may have regulatory authority over some preconstruction activities such as the requirement to verify such activities by inspections, tests, analyses, and acceptance criteria (ITACC) (e.g., procurement of components). In addition, this ISG provides guidance regarding the information to be submitted by any applicant for a limited work authorization (LWA). Although much of the guidance contained in this ISG is equally applicable to construction permit applications, this guidance does not address such applications but only those applications for nuclear power facilities submitted under Title 10, Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants," of the *Code of Federal Regulations* (10 CFR Part 52). This guidance replaces the previous guidance on LWAs issued in June 2007 in Regulatory Guide (RG) 1.206, "Combined License Applications for Nuclear Power Plants (LWR Edition)."

Background:

Regulations in 10 CFR 50.10, "License Required; Limited Work Authorization," govern the issuance of LWAs for nuclear power plants and specify the information to be included in an LWA application. The NRC amended the LWA process in 10 CFR 50.10 on October 9, 2007 (72 *Federal Register* (FR) 57415). The LWA process allows applicants for and holders of early site permits (ESPs) and applicants for combined licenses (COLs) to request approval to perform certain limited construction activities before the issuance of a COL. The revised LWA rule became effective on November 8, 2007. The major change in the revised LWA rule was a change to the definition of construction in 10 CFR 50.10(a) to exclude those activities that have no reasonable nexus to radiological health and safety or common defense and security (e.g., site clearing and grading).

On April 8, 2008, the NRC staff issued proposed COL/ESP–ISG–004, "Interim Staff Guidance on Limited Work Authorizations," for public comment (73 FR 19118). The NRC staff received two comment letters on the proposed ISG. One letter was from the Nuclear Energy Institute (NEI) (Agencywide Documents Access and Management System (ADAMS) ML081350613). The second comment letter was from Jon Cudworth of TETRA TECH NUS, Inc. (ADAMS ML081350671). In response to some of these written comments and to requests from external stakeholders during a June 12, 2008 public workshop on the proposed ISG, the NRC staff issued a supplemental proposed ISG for use and comment on August 27, 2008 (73 FR 50659). The NRC staff received one additional comment letter on the supplemental proposed ISG from NEI (ADAMS ML082750347). The NRC staff has provided responses to all of these comments in a separate document entitled, "Response to Public Comments on COL/ESP-ISG-4, 'Interim Staff Guidance on the Definition of Construction and on Limited Work Authorizations'" (ADAMS ML083540279).

Issue:

While preparing RG 1.206, the NRC was considering significant changes to its regulations related to LWAs. Therefore, the NRC staff agreed to prepare additional guidance related to LWAs and their relationship to COL applications and ESPs for inclusion in a future revision of RG 1.206 or another guidance document. This ISG provides that additional guidance.

Interim Staff Guidance:

The NRC staff will revise RG 1.206 as indicated below, although it may include portions of the guidance applicable to ESP applicants and holders in a separate guidance document.

The NRC staff will add the following material on the definition of construction to the discussion section of RG 1.206.

Discussion:

As stated in 10 CFR 50.10(c), no person may begin the construction of a production or utilization facility on a site on which the facility is to be operated until that person has been issued either a COL, an ESP authorizing the activities under 10 CFR 50.10(d), or an LWA. As defined in 10 CFR 50.10(a), "construction" means the activities in paragraph (1) below and does not mean the activities in paragraph (2) below.

(1) Activities constituting construction are the driving of piles, subsurface preparation, placement of backfill, concrete, or permanent retaining walls within an excavation, installation of foundations, or in-place assembly, erection, fabrication, or testing, which are for:

(i) Safety-related structures, systems, or components (SSCs) of a facility, as defined in 10 CFR 50.2;

(ii) SSCs relied upon to mitigate accidents or transients or used in plant emergency operating procedures;

(iii) SSCs whose failure could prevent safety-related SSCs from fulfilling their safety-related function;

(iv) SSCs whose failure could cause a reactor scram or actuation of a safety-related system;

(v) SSCs necessary to comply with 10 CFR Part 73;

(vi) SSCs necessary to comply with 10 CFR 50.48 and Criterion 3 of 10 CFR Part 50, Appendix A; and

(vii) Onsite 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.

(2) Construction does not include:

(i) Changes for temporary use of the land for public recreational purposes;

(ii) Site exploration, including necessary borings to determine foundation conditions or other preconstruction monitoring to establish background information related to the suitability of the site, the environmental impacts of construction or operation, or the protection of environmental values;

(iii) Preparation of a site for construction of a facility, including clearing of the site, grading, installation of drainage, erosion and other environmental mitigation measures, and construction of temporary roads and borrow areas;

(iv) Erection of fences and other access control measures;

(v) Excavation;

(vi) Erection of support buildings (such as, construction equipment storage sheds, warehouse and shop facilities, utilities, concrete mixing plants, docking and unloading facilities, and office buildings) for use in connection with the construction of the facility;

(vii) Building of service facilities, such as paved roads, parking lots, railroad spurs, exterior utility and lighting systems, potable water systems, sanitary sewerage treatment facilities, and transmission lines;

(viii) Procurement or fabrication of components or portions of the proposed facility occurring at other than the final, in-place location at the facility;

(ix) Manufacture of a nuclear power reactor under a manufacturing license under Subpart F of Part 52 to be installed at the proposed site and to be part of the proposed facility.

In accordance with 10 CFR 50.10(a)(2)(ii), the NRC does not consider site investigations that are required by 10 CFR 100.23(c) to be construction. Also, the above definition of construction excludes excavation. Excavation includes the removal of any soil, rock, gravel, or other material below the final ground elevation to the final parent material. Thus, all these excavation activities may be conducted without a COL, LWA, or ESP authorizing LWA activities. However, placing permanent, nonstructural dewatering materials, mudmats, or engineered backfill in advance of

the placing the foundation and associated permanent retaining walls for SSCs within the scope of the definition of construction is not an excavation activity and is considered to fall within the scope of construction. Any person or entity that excavates should be aware that the NRC expects any subsequent application requesting construction authorization to accurately document and address the excavation process and the conditions exposed by excavation, to ensure that the NRC will have an adequate basis for evaluating the relevant portions of the application. The NRC staff may also discuss with applicants and prospective applicants the possibility of voluntarily allowing it access to the site during excavation activities to assist in its evaluation of the relevant portions of the application.

Construction includes installation of the foundation, including soil compaction; the installation of permanent drainage systems and geofabric; the placement of backfill, concrete (e.g., mudmats), or other materials that will not be removed before placement of the foundation of a structure; the placement and compaction of a subbase; the installation of reinforcing bars to be incorporated into the foundation of the structure; the erection of concrete forms for the foundations that will remain in place permanently (even if nonstructural); and the placement of concrete or other material constituting the foundation of any SSC within the scope of the definition of construction. The term “permanent” in this context includes anything that will exist in its final, in-place plant location after fuel load.

Construction also includes the “onsite, in-place” fabrication, erection, integration, or testing activities for any in-scope SSC. The terms “onsite, in place, fabrication, erection, integration, or testing” are intended to describe the historical process of constructing a nuclear power plant in its final, onsite plant location, where components or modules are integrated into the final, in-plant location. The definition is intended to prevent persons from having to obtain a COL, LWA, or ESP authorizing LWA activities to fabricate, assemble, and test components and modules in a shop building, warehouse, or laydown area, even if located onsite. However, the installation or integration of that SSC into its final plant location would require a COL, LWA, or ESP authorizing LWA activities. Finally, construction does not include manufacturing a nuclear power reactor under Subpart F, “Manufacturing Licenses,” of 10 CFR Part 52, even if the manufacturing is accomplished onsite, so long as the manufacturing is not done in place, at the final (permanent) plant location on the site.

Construction includes driving piles for SSCs that are described in the definition. Hence, an applicant must obtain permission from the NRC in the form of a COL, LWA, or ESP authorizing LWA activities to drive piles for such SSCs. However, driving piles that do not ensure the structural stability or integrity of an SSC within the scope of the definition of “construction” (e.g., piles driven to support the erection of a bridge for a temporary or permanent access road) would not be considered “construction” under this section; therefore, those piles may be driven without a COL, LWA, or ESP authorizing LWA activities.

In the LWA rule, the scope of SSCs falling within the definition of construction was derived from the scope of SSCs that are included in the program for monitoring the effectiveness of maintenance at nuclear power plants, as defined in 10 CFR 50.65(b), and supplemented with additional criteria (10 CFR 50.10(a)(1)(v–vii)). The supplementary information published with the 2007 final LWA rule contained a discussion of the definition of construction and guidance on the delineation of preconstruction and construction activities. As discussed in the supplementary information, the NRC selected the criteria used in the definition of construction to

take advantage of the work done during the development and implementation of the maintenance rule (10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants"). Like the LWA rule, the maintenance rule defines a scope of SSCs that have some nexus to radiological health and safety (safety significance).

The NRC selected the maintenance rule criteria for use in the definition of construction, in part because the criteria are well understood and there is good agreement on their implementation. In addition, the NRC has prepared guidance for implementing the maintenance rule in RG 1.160, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," issued March 1997, and that guidance has been tested. This RG endorses industry guidance provided in Revision 2 of NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," issued April 1996. For these reasons, the NRC has decided that the maintenance rule guidance can also be applied to determinations of SSCs that are within the scope of the definition of construction. Also, the NRC recognizes that determinations of which SSCs fall within the definition of construction will depend on the design of the facility.

In determining whether SSCs fall within the criteria in 10 CFR 50.10(a)(1)(v–vii), the maintenance rule guidance should not be used. For these criteria, SSCs are considered within the definition of "construction" if they are designed to comply with 10 CFR Part 73, "Physical Protection of Plants and Materials"; 10 CFR 50.48, "Fire Protection"; Criterion 3, "Fire Protection," of Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities"; 10 CFR 50.47, "Emergency Plans"; or Appendix E, "Emergency Planning and Preparedness of Production and Utilization Facilities," to 10 CFR Part 50.

In addition to the criteria in 10 CFR 50.10(a)(1)(i–vii) that are used to determine the scope of SSCs that fall within the definition of construction, the final LWA rule also specifies criteria in 10 CFR 50.10(a)(1) for construction activities that take place within the necessary excavation for SSCs that fall within the definition of construction. A necessary excavation is the portion of an excavation that provides sufficient construction access to the structures that are within the definition of construction. Applicants should ensure that these preconstruction activities are separate from, and do not result in adverse interactions with, construction-related SSCs, including influence on the stability (static and dynamic) analyses. The definition of construction includes any change made to the parent material in which the excavation occurs (e.g., soil compaction, rock grouting); the driving of piles; the installation of foundations; the installation of permanent drainage systems and geofabric; the placement of backfill, concrete (e.g., mudmats) or other materials that will not be removed before placement of the foundation of a structure; the placement and compaction of a subbase; and the installation of reinforcing bars to be incorporated into the foundation of any SSC that fall within the definition of construction.

The definition of construction includes use of the "temporary" and "permanent" criteria that are discussed in the statement of considerations for the final LWA rule (72 FR 57429; October 9, 2007). The term "permanent," in this context, includes anything that will exist in its final, in-place plant location after fuel load. By contrast, the term "temporary" means anything that will be removed from the excavation before fuel load. Therefore, the installation of permanent retaining walls within an excavation and the erection of concrete forms for the foundations that will remain in place permanently (even if nonstructural) fall within the definition

of construction. However, if erosion control measures are conducted outside the excavated hole and do not cover up the exposed soil conditions, those activities would be considered preconstruction. Also, the placement of temporary SSCs in the excavation, such as retaining walls, drainage systems, and erosion control barriers, all of which will be removed before fuel load, would be considered preconstruction.

Discussion of Examples:

In addition to the background discussion provided above, the following examples clarify the delineation of preconstruction and construction activities. It is important to recognize that the NRC may have regulatory authority over some preconstruction activities, such as the requirement to verify such activities by ITAAC (e.g., procurement of components). It should also be noted that, while the preconstruction activities do not require prior NRC approval, various local, State, or other Federal permits may be required.

Circulating Water System

As a general matter, the NRC staff considers the circulating water system (CWS), on a system level, to be within the scope of construction because 10 CFR 50.10(a)(1)(iv) includes equipment that can cause a reactor trip. Although the system and active equipment such as pumps and valves can cause a plant trip, an applicant could exclude certain portions of the CWS from construction as discussed below.

Buried Circulating Water System Piping up to the Turbine Building

Depending on the plant design, it is possible for an applicant to demonstrate that plausible failures (leakage) associated with the CWS piping (intake and discharge) would not result in a reactor trip. It is reasonable to exclude the piping from the scope of construction for certain designs, given that the reactor trip or safety system actuation criterion is the only reason to consider it within scope. This finding remains consistent with the NRC's decision to use the maintenance rule and related guidance to define the scope of SSCs within the definition of construction. RG 1.160 provides the following guidance for systems to include under this criterion:

(1) SSCs whose failure has caused a reactor scram or actuation of a safety-related system at their site

(2) SSCs whose failure has caused a reactor scram or actuation of a safety-related system at a site with a similar configuration

(3) SSCs identified in the licensee's analysis (e.g., final safety analysis report (FSAR), individual plant evaluation) whose failure would cause a reactor scram or the actuation of a safety-related system

A review of the licensee event reports for currently operating reactors did not identify occurrences of piping failures in the CWS up to the turbine building that resulted in plant scrams or safety system actuations. The turbine building demarcation may be important, since the piping within the building could, depending on plant design, cause internal plant flooding or

safety system actuations, or prevent other SSCs from fulfilling their safety-related functions. Applicants need to perform design-specific reviews to ensure that piping failures in the CWS up to the turbine building are not identified in other analyses (e.g., FSAR, probabilistic risk assessment) as being a plausible initiating event for a reactor scram or safety system actuation. Therefore, CWS piping could be considered preconstruction in certain circumstances.

Circulating Water Intake Structure

Depending on the plant design, it is possible for an applicant to demonstrate; similar to CWS piping up to the turbine building, that the plant intake structure does not have a safety function (e.g., some plant intakes only provide makeup to the CWS). This conclusion would not apply to related SSCs, such as pumps, travelling screens, or other active components associated with the CWS, because there are many examples of plant transients and safety system actuations that have loss of circulating water flow as an initiating event. To expand the preconstruction activities beyond the intake structure, applicants will need to perform design-specific reviews to ensure that a loss of CWS flow caused by pump failures or screen blockage is not a plausible initiating event for a reactor scram or safety system actuation. Therefore, the facility design will determine whether intake structures and related components are within the scope of construction.

Cooling Towers

Depending on the plant design, it is possible for an applicant to demonstrate, similar to that for intake structures, that cooling tower structures do not have a safety function. This conclusion may not apply to related SSCs, such as pumps associated with the CWS, because there are examples of plant transients and safety system actuations that have loss of circulating water flow as an initiating event. To expand the preconstruction activities beyond the cooling tower structure, applicants will need to perform design-specific reviews to ensure that a loss of circulating water system flow caused by loss of pumps or other components is not a plausible initiating event for a reactor scram or safety system actuation. Therefore, the facility design will determine whether cooling towers and related components are within the scope of construction.

Turbine Building Structure or Foundation

The turbine/generator system is within the scope of construction because failure of the turbine/generator could cause a reactor scram. However, depending on the plant design, it is possible for an applicant to demonstrate that a plausible failure of the turbine building structure or foundation (settling) would not result in a reactor scram or safety system actuation. Depending on the facility design, the turbine building structure or foundation may not fall within the scope of construction, if the reactor scram or safety system actuation criterion is the only reason to consider it.

Temporary or Permanent Features

This section addresses the distinction between temporary and permanent construction features (e.g., retaining walls and dewatering systems). As discussed in the supplementary information for the final LWA rule, excavation and other site preparation activities, whether permanent or temporary, are outside the scope of construction and are considered preconstruction. For

example, piles driven to support the erection of a bridge for a temporary or permanent access road would not be considered as construction and may be performed without an LWA or combined license.

The installation of a temporary feature within the excavation or area associated with construction that will be removed during construction is considered to be a preconstruction activity. Such features include some retaining walls, some types of dewatering systems, ramps, and other structures that have no physical presence following construction.

Regarding installation of temporary features within the necessary excavation during preconstruction, if the applicant proposes to abandon the subject feature in place, the NRC must approve that action (i.e., abandonment) as part of an LWA or COL application. Examples may include certain retaining walls and some types of dewatering systems. The applicant must show that the abandoned feature would not adversely affect the SSCs, introduce undesirable flow paths, or otherwise conflict with nuclear plant safety or regulatory compliance, and the NRC would have to approve.

Construction Crane Foundations and Support Pads

Construction includes placing permanent features (e.g., retaining walls and foundations) within the necessary excavations for SSCs within the definition of construction. Site preparation activities that are performed outside the necessary excavations are considered preconstruction. Therefore, installing foundations and support pads outside the necessary excavations for SSCs that are within the definition of construction would be considered preconstruction. As stated previously, applicants should ensure that these preconstruction activities are separate from, and do not result in adverse interactions with, construction-related SSCs, including influence on the stability (static and dynamic) analyses.

The NRC will revise RG 1.206, Section C.II.2, “Environmental Report.”

The current paragraph under Section C.II.2 would become Section C.II.2.1, “General Guidance for Preparation of Environmental Reports.” The following new section would be added:

C.II.2.2 Additional Guidance Based on Revised Limited Work Authorization Rule

C.II.2.2.1 *Environmental Impacts of Construction and Preconstruction*

The revised LWA rule (72 FR 57415; October 9, 2007) included changes to 10 CFR 51.45(c) regarding environmental reports (ERs).1 Any ER prepared to support an application for new reactor licensing (ESP, LWA, or COL) must include, among other things:

1 On April 28, 2008, the NRC promulgated a rule (73 FR 22786; April 26, 2008) that made administrative corrections to the revised LWA rule; 10 CFR 51.45(c) was revised to indicate that the list of activities that are not part of “construction” are listed in paragraphs (2)(i) through (2)(x) and not in paragraphs (b)(1) through (b)(8), as was indicated in the original final rule.

(1) a description of impacts of the preconstruction2 activities performed by the applicant at the proposed site (i.e., those activities listed in paragraphs (2)(i) through (2)(x) in the definition of construction contained in 10 CFR 51.4, "Definitions,") necessary to support construction and operation of the facility

(2) an analysis of the cumulative impacts of the activities to be authorized by the LWA or COL, in light of the preconstruction impacts

Before implementing the revised LWA rule, the NRC evaluated the environmental impacts of construction activities, together with what are now referred to as the preconstruction activities in the construction impacts section of an ER and the associated environmental impact statement (EIS).

Under the revised LWA rule, the applicant should separate the impacts of preconstruction and construction activities to address the latter, as they are the activities being authorized. The applicant should also describe the impacts of the preconstruction activities, so they can be evaluated as part of the cumulative impacts related to the construction activities. The NRC and Council on Environmental Quality (CEQ) regulations and guidance indicate that the level of analysis of environmental impacts should be commensurate with the level of impact.3 If the level of impact of the construction activities in a given area, such as water quality, is small, a detailed analysis of the impact of preconstruction activities in that area is not warranted unless it will significantly alter the assessment of the cumulative effects in that area. The level of information regarding construction impacts that was presented by applicants prior to the 2007 revision to the definition of construction in 10 CFR 50.10 (72 FR 57415; October 9, 2007)*4* should be adequate to address the cumulative impacts of construction activities in light of the preconstruction impacts under the revised LWA rule.

For some impact areas, this separation to address the impacts of construction activities should be relatively simple and require little additional effort over the methods used under the previous guidance. For example, in the areas of terrestrial ecology and historical and cultural resources, nearly all the impact will be from preconstruction activities—site grading, excavation, and building roads, barge slips, rail lines, and

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2 The rule uses the term "preconstruction;" 10 CFR 51.4 does not define "preconstruction," but the parenthetical note indicates that the activities that are not part of construction are listed in 10 CFR 51.4(2)(i) through (2)(x). These are the preconstruction activities. The term "preconstruction," as used in the rule, is not limited to activities performed before construction; many preconstruction activities could and probably will be performed concurrently with construction.

3 The NRC regulations in 10 CFR 51.29(a)(3) indicate that issues that are not significant should be identified and eliminated from detailed study during scoping; the NRC regulation reflects the words of 40 CFR 1501.7(a)3, "Identify and eliminate from detailed study the issues which are not significant…." In addition, the CEQ publication, "Considering Cumulative Effects Under the National Environmental Policy Act," states, "Cumulative effects analysis should 'count what counts,' not produce superficial analyses of a long laundry list of issues that have little relevance to the effects of the proposed action or the eventual decisions."

4 See "Discussion," for an explanation of the revised definition of "construction."

transmission lines. Little, if any, of the impact in these areas is likely to be due to construction activities.

Other areas, such as the socioeconomic impacts of the construction work force, may require a somewhat more detailed analysis to separate the impacts of preconstruction and construction activities that will occur concurrently. The work force will be composed of workers involved in both preconstruction and construction. Almost all of the work completed before the installation of the foundations of the safety-related structures begins will be preconstruction. After the safety-related foundation work begins, the work will be both preconstruction and construction until the plant is complete. Therefore, the socioeconomic impacts of the work force conducting preconstruction activities include all of the impacts before the safety-related foundation work begins, plus some percentage of the impacts of the rest of the project. The socioeconomic impacts of the work force conducting construction activities include some percentage of the impacts after the safety-related foundation work begins and continue throughout the rest of the project. The same analyses that applicants use to estimate the total work force should be detailed enough to provide separate estimates of the percentage of the work force engaged in preconstruction and construction activities throughout the project, after the safety-related foundation work begins. Generally, the estimates of the impact breakdown between preconstruction and construction activities do not need to be detailed. For example, estimated breakdowns such as 70–30 percent or 60–40 percent or 50–50 percent should be sufficient to inform the decision-making process under the National Environmental Policy Act (NEPA). The socioeconomic impacts of the construction activities can be apportioned simply based on these estimates.

In a few areas, the level of impact may be so small that anything other than a ballpark estimate of the separation would not be warranted to appropriately inform the NEPA decision-making process. Based on experience from other construction projects of similar size, the air quality impact will probably be assessed as small during scoping, if the area is in attainment under U.S. Environment Protection Agency (EPA) regulations. Under these circumstances, no effort beyond a very simple estimate of the preconstruction-construction impact separation, such as 50–50 percent, would be necessary to assess the impact of the construction activities.

C.II.2.2.2 *Permitting by Other Federal and State Agencies*

It is important to note that applicants will need permits and approvals from other Federal and State agencies, each of which may have an independent duty to comply with NEPA or State environmental statutes. The exact needs will be dependent on several factors, such as water sources and State permitting requirements, which can vary. For example, any applicant who needs to dredge or build a water intake structure or barge slip on the "navigable waters of the United States"5 may need a permit from the U.S. Army Corps of Engineers (USACE). Also, any applicant that needs to build roads or transmission lines (or anything else) on wetlands or across the "navigable waters of the United States" may need a permit from the USACE. Furthermore, any applicant that needs to extract or

5 "Navigable waters of the United States" generally refers to navigable waters in and around the United States; it has been interpreted broadly in the U.S. courts.

discharge water from and to any water body or ground water source will probably need a permit from the State. These examples are meant to be illustrative, not all-inclusive. An applicant should understand the permitting requirements, processes, and schedules of such agencies when planning to license and construct a nuclear power plant.

C.IV.6 LWA and Site Redress Plan

C.IV.6.1 LWA

C.IV.6.1.1 *Request for an LWA*

In accordance with 10 CFR 50.10(c), for licensing under 10 CFR Part 52, no person may begin the construction of a nuclear power plant on a site on which the facility is to be operated until that person has been issued a COL, an ESP authorizing the activities under 10 CFR 50.10(d), or an LWA. A discussion of the definition of construction can be found in Section B, "Discussion," of this RG. An application for an LWA may be submitted by an applicant for a COL, or by an applicant for or holder of an ESP.

LWA Activities

An applicant for an LWA may request authorization to perform the following activities, for SSCs of a facility for which a COL is otherwise required:

(1) the driving of piles
(2) subsurface preparation
(3) placement of backfill, concrete, or permanent retaining walls within an excavation
(4) installation of the foundation, including placement of concrete

The above list of activities was taken from 10 CFR 50.10(d)(1) and is a subset of the activities that constitute construction as defined in 10 CFR 50.10(a)(1).

Contents of Applications

An applicant for a COL may submit a request for an LWA either as part of a complete application under 10 CFR Part 2, "Rules of Practice for Domestic Licensing Proceedings and Issuance of Orders," Section 2.101, "Filing of Application," paragraphs (a)(1) through (4), or as a partial application under 10 CFR 2.101(a)(9) (i.e., a "phased COL application"). An applicant for an ESP may include a request for an LWA as part of a complete ESP application in accordance with 10 CFR 2.101(a)(1) through (a)(4). A holder of an ESP may submit a request for an LWA as an application for an amendment to the ESP in accordance with 10 CFR 52.39(e).

If the LWA application is submitted as part of a complete COL application, or as part of an ESP or ESP amendment application, the application must include the following:

(1) a site safety analysis report (SSAR) required by 10 CFR 52.17, "Contents of Applications; Technical Information," or a final safety analysis report (FSAR),

required by 10 CFR 52.79, "Contents of Applications; Technical Information," as applicable (guidance contained in Section C.IV.6.1.1.1 of this RG)

(2) a description of the LWA activities that the applicant seeks to perform

(3) for the LWA activities that the applicant seeks to perform, the proposed inspections, tests, and analyses that the licensee will perform, and the acceptance criteria that are necessary and sufficient to provide reasonable assurance that, if the inspections, tests, and analyses are performed and the acceptance criteria met, the portion of the facility covered by the LWA has been constructed and will be operated in conformity with the LWA, the provisions of the Atomic Energy Act, and the Commission's rules and regulations

(4) an environmental report that meets the requirements of 10 CFR 51.49, "Environmental Report—Limited Work Authorization" (guidance contained in Section C.IV.6.1.1.2 of this RG)

(5) a plan for redress of activities performed under the LWA, should one of the following situations arise:

  (a) limited work activities are terminated by the holder of the LWA
  (b) the LWA is revoked by the NRC
  (c) the Commission denies the associated COL application

(6) the technical qualifications of the applicant to engage in the proposed activities

If the application is the LWA portion of a phased COL application, the first part must contain the information identified above for the LWA activities, as well as the general information required of all COL applicants under 10 CFR 50.33(a) through (f), namely:

(1) name of applicant (10 CFR 50.33(a))

(2) address of applicant (10 CFR 50.33(b))

(3) description of business or occupation of applicant (10 CFR 50.33(c))

(4) if applicant is an individual, citizenship (10 CFR 50.33(d)(1))

(5) if applicant is a partnership, the name, citizenship, and address of each partner and principal location where the partnership does business (10 CFR 50.33(d)(2))

(6) if applicant is a corporation or an unincorporated association (10 CFR 50.33(d)(3)):

  (a) the State where it is incorporated or organized and the principal location where it does business

(b) the names, addresses, and citizenship of its directors and principal officers

(c) whether it is owned, controlled, or dominated by an alien, a foreign corporation, or a foreign government, and, if so, give details

(7) if the applicant is acting as agent or representative of another person in filing the application, identify the principal and furnish information required by 10 CFR 50.33(d) with respect to such principal (10 CFR 50.33(d)(4))

(8) the class of license applied for, the use to which the facility will be put, the period of time for which the license is sought, and a list of other licenses, except operators' licenses, issued or applied for in connection with the proposed facility (10 CFR 50.33 (e))

(9) information that demonstrates that the applicant possesses or has reasonable assurance of obtaining the funds necessary to cover estimated construction costs, related fuel cycle costs, and estimated operation costs for the period of the license (10 CFR 50.33(f)(3))

(10) each application for an LWA or COL submitted by a newly formed entity organized for the primary purpose of constructing and/or operating a facility must also include information showing (10 CFR 50.33(f)(4)):

(a) the legal and financial relationships it has or proposes to have with its stockholders or owners

(b) the stockholders' or owners' financial ability to meet any contractual obligation to the entity which they have incurred or proposed to incur

(c) any other information considered necessary by the Commission to enable it to determine the applicant's financial qualification

(11) The Commission may request an established entity or newly formed entity to submit additional or more detailed information respecting its financial arrangements and status of funds if the Commission considers this information appropriate. This may include information regarding a licensee's ability to continue the conduct of the activities authorized by the license and to decommission the facility (10 CFR 50.33(f)(5)).

The second part of the application must contain the remaining information otherwise required in a complete application under 10 CFR 2.101(a)(1) through (a)(4). However, the applicant has the further option of submitting part two in additional subparts in accordance with 10 CFR 2.101(a)(5). The second part, or the first subpart of multiple subparts under 10 CFR 2.101(a)(5), must be filed no later than 18 months after the filing of part one. In addition, the second subpart of part two of the application under 10 CFR 2.101(a)(5) must be submitted no later than 18 months after submission of the first subpart.

An applicant for an ESP may not submit its LWA application in advance of the underlying ESP application and therefore is not permitted to use the phased application procedures outlined above for a COL applicant.

Finally, the LWA portion of a phased COL application must be accompanied by the applicable filing fees in 10 CFR 50.30(e) and 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."

Effect of an LWA

Issuance of the LWA has no bearing on the issuance of the underlying COL. Therefore, as set forth in 10 CFR 50.10(f), any activities that the applicant undertakes under an LWA are entirely at the risk of the applicant.

C.IV.6.1.1.1 *Safety Analysis Report*

If the LWA application is submitted as part of a phased COL application, or as part of an ESP or ESP amendment application, the SSAR or FSAR must include the following:

(1) the final design for any foundation or other work being requested under the LWA

(2) the final design for any structures that would be supported by the foundation or other work being requested under the LWA

(3) a safety analysis for any foundation or other work being requested under the LWA

(4) any relevant safety analysis for structures that would be supported by the foundation or other work being requested under the LWA (e.g., stability (static and dynamic) analyses)

If the LWA application is submitted as part of a complete COL application, the application must clearly identify which portions of the COL FSAR are applicable to the LWA request.

The SSAR or FSAR must demonstrate that the LWA activities will be conducted in accordance with applicable Commission requirements.

C.IV.6.1.1.2 *Environmental Report*

The requirements in 10 CFR 51.49 reflect the various ways to submit an application for an LWA:

(1) as part of a complete COL application
(2) as the first part of a phased COL application
(3) as part of an ESP application
(4) as an application for an amendment by an ESP holder

Section 51.49 also addresses submittal of an LWA application for a site where an EIS was prepared, but the facility construction was not completed.

As discussed in Section C.IV.6.1.1 of this RG, 10 CFR 50.10 requires an LWA application to include an ER for activities to be performed under the LWA. The regulations in 10 CFR 51.49 require an ER for an LWA to include the following:

(1) a description of the activities to be conducted under the LWA

(2) a statement of the need for the activities

(3) a description of the environmental impacts that may reasonably be expected to result from the activities

(4) a description of the mitigation measures the applicant proposes to implement

(5) a discussion of the reasons for rejecting additional mitigation measures that were considered

(6) a description of the process used to identify new and significant information for an ESP holder or for a site where an EIS has been prepared, but the facility construction was not completed

RG 4.2, "Preparation of Environmental Reports for Nuclear Power Stations," issued July 1976, and NUREG-1555, "Standard Review Plans for Environmental Reviews for Nuclear Power Plants," issued March 2000, provide guidance on the organization and level of detail that the NRC staff would find acceptable in an ER. The ER can incorporate information from related ERs and EISs by reference.

Implementation for Early Site Permits

The requirements in 10 CFR 51.50 indicate that issues that have already been evaluated and resolved in an ESP review should not be reexamined in the COL review unless new and significant information is found. In addition, an EIS prepared for an ESP prior to implementation of the revised LWA rule in 2007 adequately addresses cumulative impacts because it addresses preconstruction and construction impacts together. Therefore, the NRC staff will maintain the same analytical approach in preparing the EIS for a COL application submitted by an ESP holder with an EIS prepared prior to implementation of the revised LWA rule. In practice, this means that the impacts of preconstruction and construction activities will be addressed together in the construction impacts section of the COL EIS. This approach is being taken to maintain consistency within the EIS.

C.IV.6.1.3 Site Redress Plan

If the holder of the LWA terminates the limited work activities, the NRC revokes the LWA, or the Commission denies the associated COL application, the LWA holder must begin to implement the redress plan within a reasonable time and to complete the redress of the site no later than

18 months after termination of construction, revocation of the LWA, or the effective date of the Commission's final decision denying the COL application, as applicable.

The primary purpose of the redress plan is to address activities that were authorized under the LWA, such as the placement of piles and installation of foundations. Redress of site impacts resulting from preconstruction activities will not be required under the redress plan. In addition, while redress of LWA impacts may have the practical effect of mitigating some environmental impacts, the redress plan is not a substitute for a thorough evaluation of environmental impacts or the development of mitigation measures that may be necessary to provide relief from environmental impacts associated with the proposed LWA activities.

In general, the site redress plan should describe the scope of actions to be taken following the suspension of construction. The COL applicant should consider the requirements of 10 CFR 52.25, which allow the applicant to redress the site for alternative uses that were not considered at the time it prepared the original site redress plan.

Final Resolution:

The issue will be resolved in the next revision to RG 1.206 and related guidance documents.

Applicability:

This ISG is applicable to all ESP and COL applicants requesting authorization to perform limited work activities or considering preconstruction activities.

References:

(1) U.S. Nuclear Regulatory Commission, “Limited Work Authorizations for Nuclear Power Plants; Final Rule (10 CFR Parts 2, 50, 51, 52, and 100),” *Federal Register,* Vol. 72, No. 194, October 9, 2007.

(2) Regulatory Guide 1.206, “Combined License Applications for Nuclear Power Plants (LWR Edition),” June 2007.

(3) Regulatory Guide 1.160, “Monitoring the Effectiveness of Maintenance at Nuclear Power Plants,” March 1997.

(4) NUMARC 93-01, Revision 2, “Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants,” April 1996.

(5) Regulatory Guide 4.2, “Preparation of Environmental Reports for Nuclear Power Stations,” Revision 2, July 1976.

(6) NUREG-1555, “Standard Review Plans for Environmental Reviews for Nuclear Power Plants,” October 1999.

(7) Council on Environmental Quality, “Considering Cumulative Effects Under the National Environmental Policy Act,” January 1997.

(8) National Environmental Policy Act of 1969, Pub. L. 91-190, 83 Stat. 852 (1970).