**Pathways for Early Construction of Structures, Systems, and Components at a Production or Utilization Facility**

## Introduction

This enclosure describes pathways for expediting construction activities for new large light-water reactors (LWRs), that may be employed by applicants for and/or holders of a combined license application (COLA) under Title 10 of the *Code of Federal Regulations* (10 CFR) Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants." The U.S. Nuclear Regulatory Commission (NRC) staff developed the Advanced Reactor Construction Oversight Program (ARCOP), described in SECY-25-0103, "Update on Development of the U.S. Nuclear Regulatory Commission's Advanced Reactor Construction Oversight Program" (Agencywide Documents Access and Management System (ADAMS) Accession No. ML25024A243), to be risk-informed, performance-based, technology-inclusive, scalable, and informed by lessons learned from past construction oversight experience. The NRC staff intends to apply ARCOP to future large LWR construction oversight and expects to be ready to implement the program when large LWR construction activities commence.

The NRC has defined construction in 10 CFR 50.10, "License required; limited work Authorization." Consistent with the Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy Act of 2024 and recently issued Executive Orders, the NRC staff has identified opportunities for enabling current and potential applicants to build or install structures, systems, and components (SSCs) for which construction does not have a reasonable nexus to safety on optimized timeframes, prior to issuance of a combined license (COL) or construction permit (CP). The NRC staff's strategy is provided in SECY-25-0074, "Expedited Construction of Certain Structures, Systems, and Components" (ML25157A119).

## Activities Excluded from the Definition of Construction

Pursuant to 10 CFR 50.10(a)(2) there are ten activities that do not fall within the regulatory definition of "construction." These include activities unrelated to the facility and activities that are necessary for the preparation of a site for building an industrial facility, including erection of temporary and support facilities. As these activities fall outside NRC's definition of construction, no prior NRC approval, including environmental review, is required. Activities described in 10 CFR 50.10(a)(2) 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; or
ix. With respect to production or utilization facilities, other than testing facilities and nuclear power plants, required to be licensed under Section 104a. or Section 104c. of the Atomic Energy Act, the erection of buildings which will be used for activities other than operation of a facility and which may also be used to house a facility (e.g., the construction of a college laboratory building with space for installation of a training reactor).

In addition to the 10 CFR 50.10(a)(2) express exclusions from the regulatory definition of "construction," the NRC is open to, and strongly encourages, applicants to engage in robust and detailed discussions with the NRC staff on the project-specific activities that they want to perform prior to obtaining a COL, CP, or limited work authorization.

**Installation of SSCs Without a Reasonable Nexus to Radiological Safety**

As described in SECY-25-0074, only SSCs with a reasonable nexus to radiological safety are considered within the definition of construction under 10 CFR 50.10(a) (72 FR 57416). Excluded from the definition of construction are SSCs without a direct effect on safety and whose indirect effect would be so low as to be considered negligible. Depending on the project specific design parameters, examples of activities which may no longer be considered within the definition of construction could include site preparation; installation of some non-safety-related SSCs; and potentially installation of entire energy islands (e.g., balance-of-plant SSCs).

While applicants are not required to engage with the NRC staff before taking advantage of the approach outlined in SECY-25-0074 to building or installing SSCs that do not fall within the definition of construction in 10 CFR 50.10(a)(1), the particular activities that meet this description are highly design-dependent. Therefore, the NRC staff encourages pre-application engagement through meetings or the submission of white papers and topical reports. A person considering whether a particular activity falls within the definition of construction has the option of seeking an exemption from 10 CFR 50.10(a)(1), as described below.

The NRC staff would consider a number of different factors when assessing a justification for why subject activities and SSCs do not have a reasonable nexus to radiological safety. At a high level, this information could include:

i. Description of the facility, including basic nuclear physics, engineering, and operational characteristics;
ii. An explanation of how fundamental safety functions are achieved, specifically reactivity control (how the reactor operates in a stable state and how it can be shut down and maintained in a safe condition), heat removal (the methodology and capacity of the applicable systems to handle abnormal or accident conditions), radionuclide control and retention (pertinent information about the fuel form, fuel type, and fuel quantity, or the containment of fission products);
iii. A description of the process for SSC classification (i.e., how the reliability of SSCs addresses the relevant hazards or environmental impacts of concern (e.g. seismic, flooding, corrosion, heat, radiation);

iv. Detailed systems descriptions and system design documents, system interfaces for SSCs in question, including relevant operator actions, interdependency of SSCs, and/or reliance on external factors (e.g., whether there are passive or active functions); and
v. Basic plant transient description and analysis, including relevance of SSCs in question (abnormal operations and accident sequences and which SSCs are necessary to provide public and worker protection).

The type and amount of information necessary will be dependent on which activities an applicant wishes to conduct and the nature and function of the applicable SSCs.

**Exemptions for Non-Safety-Related SSCs**

Activities described in 10 CFR 50.10(a)(1) for non-safety-related SSCs that have a reasonable nexus to radiological safety could still be performed prior to issuance of a COL or CP through issuance of exemptions. Specifically, non-safety related SSCs with a direct effect on safety or whose indirect effect is more than negligible could be installed through the issuance of an exemption. Proposed classification of specific SSCs would be based on the functions of individual SSCs and their needed reliability to fulfill fundamental safety functions. This information could be discussed with the NRC staff as part of pre-application engagements. Issuance of an exemption would require meeting the requirements in 10 CFR 50.12, “Specific Exemptions,” and would be subject to the requirements of 10 CFR Part 51, “Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions” (i.e., NEPA requirements).

A categorial exclusion may apply to an exemption request, but if a categorical exclusion is not applicable, the exemption request may rely upon existing environmental evaluations that bound the impacts of the proposed actions. To use the approach, in addition to providing technical justification for the exemption request, the applicant must confirm that its submittal is bounded by the referenced environmental review and provide any new and significant information as part of the exemption request. In the absence of an applicable categorical exclusion, an applicant for an exemption must provide information justifying the finding of no significant impact or an evaluation of the impacts of the requested action in an environmental report.

**Limited Work Authorization for Safety-Related SSCs**

In accordance with 10 CFR 50.10(d), (e), and (f), a Limited Work Authorization permits construction of safety-related SSC foundations and installation activities prior to COL issuance, provided specified criteria are met.