



2026 NRC RIC W8 - Building Smarter: Accelerating Advanced Reactor Construction

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Transformative Nuclear Solutions in Action

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Regulatory Framework Ensuring Safe Separation of Nuclear and Power Generation Systems

10 CFR 50.10 — License Required / Limited Work Authorization

Defines activities considered “construction” and prohibits performing them without a Construction Permit (CP) or Limited Work Authorization (LWA).

10 CFR 50.65 — Maintenance Rule

Requires monitoring the effectiveness of maintenance for nuclear safety systems, including defined scope and performance monitoring.

10 CFR Part 50, Appendix B — Quality Assurance

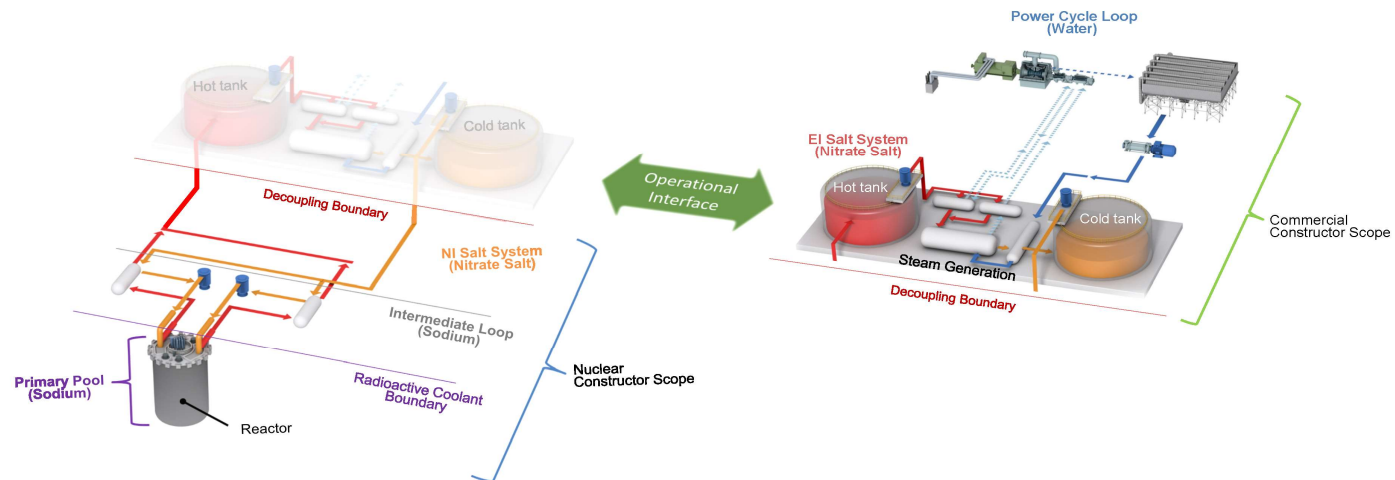
Establishes nuclear quality assurance requirements governing design, construction, and operation of safety-related systems.

10 CFR Part 55 and 50.54 — Operator Licensing and Conditions of Licenses

Establishes qualification and licensing requirements for nuclear reactor operators.

Nuclear / Energy Island Separation

- Nuclear Island (NI) contains safety-related systems and remains fully governed by nuclear regulatory and Quality Assurance requirements.
- Energy Island (EI) contains conventional power generation equipment and is managed separately from nuclear safety systems.
- Design and programmatic controls maintain strict boundaries to protect NI safety functions.
- EI activities are controlled to avoid performing regulatory-defined “construction” without required authorization.



TerraPower, LLC – Final Safety Evaluation for Topical Report NATD-LIC-RPRT-0001, “Regulatory Management of Sodium Nuclear Island and Energy Island Design Interfaces (ML23257A259)

Construction Definition



POLICY ISSUE (Information)

August 28, 2025

SECY-25-0074

**Per 10 CFR 50.10 - License required; limited work authorization;
10 CFR 51.4 Construction**

Construction Activities — Regulatory Distinction (10 CFR 50 / 51)

Does require Construction Permit

- Permanent nuclear plant structures (reactor, containment, safety-related buildings)
- Foundations, basemat, structural concrete for plant
- Installation of safety-related structures, systems, and components
- Permanent systems supporting reactor safety/operation
- Work that commits site to a specific design

Does NOT require Construction Permit

- Site clearing, grading, drainage, erosion control
- Excavation and site exploration/borings
- Temporary roads, fencing, access control
- Construction support buildings & temporary utilities
- Off-site fabrication/procurement of components

Per 10 CFR 50.10 and 10 CFR 51.4 regulatory definitions.

FOR:

The Commissioners

FROM:

Michael F. King
Acting Executive Director for Operations

SUBJECT:

EXPEDITED CONSTRUCTION OF CERTAIN STRUCTURES,
SYSTEMS, AND COMPONENTS

PURPOSE:

This paper is to inform the Commission of the U.S. Nuclear Regulatory Commission (NRC) staff's strategy for allowing current and potential applicants to build or install structures, systems, and components (SSCs) that do not have a reasonable nexus to safety on optimized timeframes. The staff's strategy is a step toward focusing the definition of construction in Title 10 of the *Code of Federal Regulations* (10 CFR) 50.10, "License required; limited work authorization," and therefore NRC and licensee resources, on the most safety-significant SSCs. This strategy will reduce the cost impact of the current definition on construction, and execution will depend on the specific technical circumstances presented by vendors and applicants. This effort is consistent with the Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy Act of 2024 and recently issued Executive orders (EOs).¹ The staff plans to consider if changes to the definition of construction or guidance associated with the scope of construction activities should be pursued as part of the regulatory reforms directed by EO 14300, "Ordering the Reform of the Nuclear Regulatory Commission," dated May 23, 2025.

Exemptions

Limited Work Authorization Exemption – Energy Island

- Exclude Energy Island SSCs from the scope of the requirements of 10 CFR 50.10(a)(1)(iv), “SSCs whose failure could cause a reactor scram or actuation of a safety-related system...”, to permit construction of Energy Island prior to receiving a construction permit.
- Supported by approved topical report for Nuclear / Energy Island separation.
- Energy Island SSCs do not have a reasonable nexus to radiological safety.
- Energy Island equipment is outside the Maintenance Rule scope because it performs no nuclear safety function (subject to approved exemption at OLA).

Nuclear Island Excavation Exemption

- Allow certain excavation support activities prior to receiving a construction permit, similar to what was approved for Clinch River.
- Use of rock dowels, rock anchors, and shotcrete wall for personnel safety during excavation, then abandoned in place (i.e., permanent per 10 CFR 50.10(c)).
- Exemption was on a path for submittal; however, TerraPower and NRC determined that there was no need to pursue exemption due to updated schedule for CPA review.

Preparations for Regulatory Construction Oversight

Multi-Layered Approach to Quality Oversight

- Quality Assurance (USO)
 - Performs audits of vendor performance to assure compliance with quality program requirements
- Regulatory Construction Oversight Group (TerraPower)
 - Performs independent oversight inspections of construction quality and interface with NRC inspection teams
- Vendor Quality Program
 - Consists of Quality Control inspections of completed work and Quality Assurance audits of field compliance to program procedures to assure the plant is being built in accordance with the design drawings and the quality program



Thank you

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