U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Fuel Cycle Facility Licensing Process and Oversight of Construction

January 14, 2025

Overview Message

- Expanding fuel supply is an administration and regulatory priority
- NRC's regulations currently allow flexibility regarding the definition of construction
- Communication and coordination with NRC is key

Regulatory Landscape for Construction for Various Fuel Cycle Facilities

- No Statutory Prohibition on Pre-Licensing Construction
  - Conversion of uranium hexafluoride (10 CFR 40.31(f))
  - Fuel Fabrication (10 CFR 70.21(f))
  - Plutonium Processing and Fuel Fabrication (if not also a production facility (10 CFR 70.23(a)(8))
- Statutory Prohibition on Pre-Licensing Construction
  - Enrichment (Atomic Energy Act (AEA) Section 193)
  - Reprocessing (if also a production facility) (AEA Section 185)

Licensing Process*

- Letter of Intent from a Potential Applicant
- Docket Number Assigned
- Pre-Application Engagements
- Submittal of Application (Safety/Safeguards and Environmental)
- NRC Review
- Hearing
- Licensing Decision

*https://www.nrc.gov/materials/fuel-cycle-fac/licensing

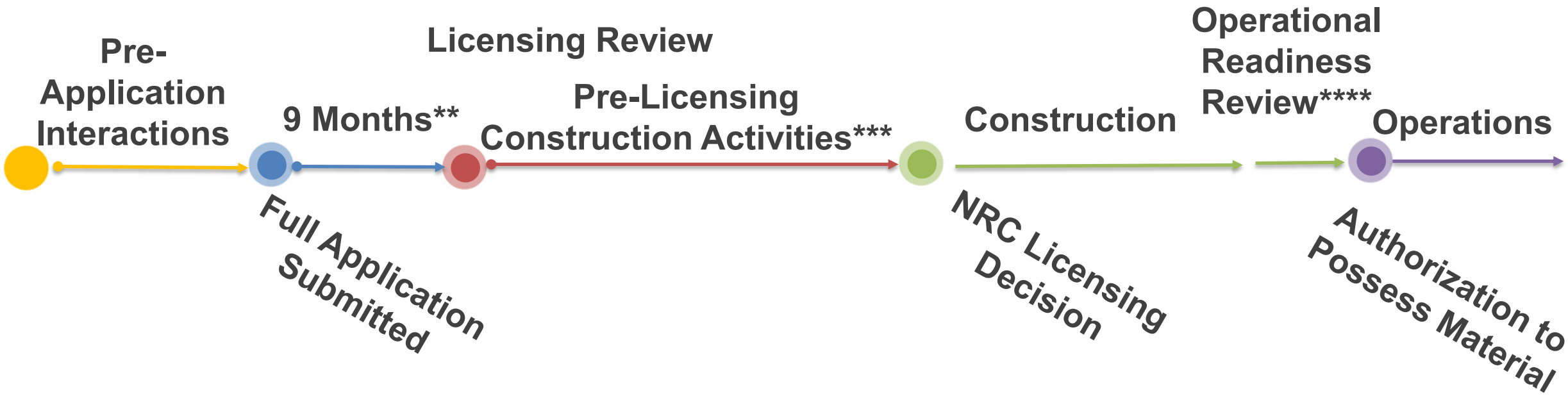
Definitions Applicable to Fuel Cycle Facilities

- Commencement of construction (10 CFR 70.4 and 40.4):
  - "Commencement of construction means taking any action defined as 'construction' or any other activity at the site of a facility subject to the regulations in this part that has a reasonable nexus to: (1) Radiological health and safety; or (2) Common defense and security."
- Construction (10 CFR 70.4 and 40.4):
  - "…installation of foundations, or in-place assembly, erection, fabrication, or testing for any structure, system, or component of a facility or activity subject to the regulations in [Part 70/Part 40] that are related to radiological safety or security."

Regulations Allow for Substantial Activities

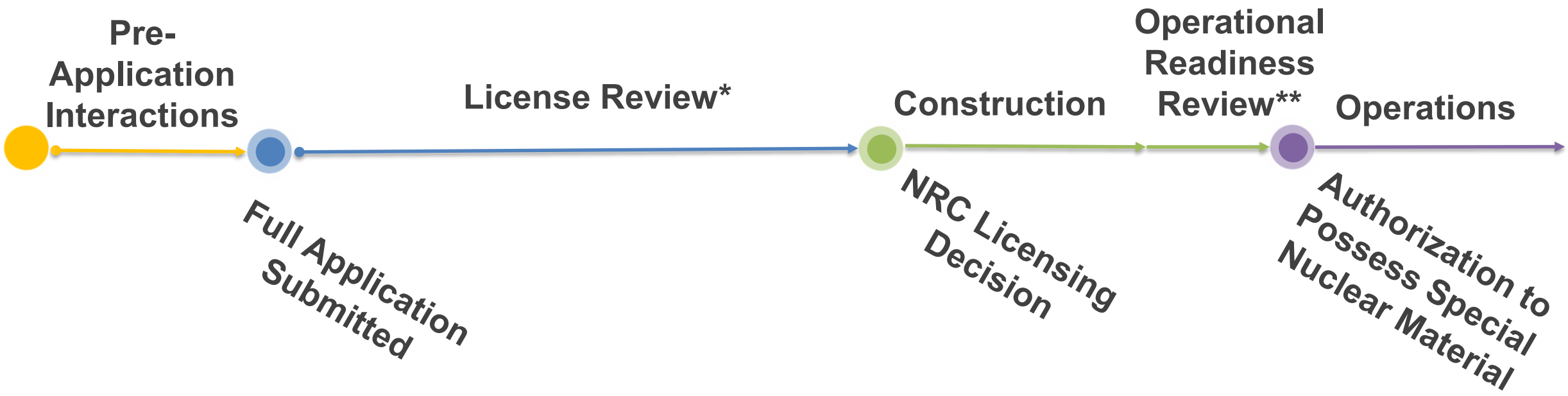
The term "construction" does not include (see 10 CFR 70.4 and 40.4):
(1) Changes for temporary use of the land for public recreational purposes
(2) Site exploration
(3) Preparation of the site for construction of the facility
(4) Erection of fences and other access control measures
(5) Excavation
(6) Erection of support buildings
(7) Building of service facilities
(8) Procurement or fabrication of components (other than final placement)
(9) Taking any other action that has no reasonable nexus to:
(i) Radiological health and safety, or (ii) Common defense and security.

Licensing Timeline for Fuel Cycle Facilities*



*Except for Uranium Enrichment and Reprocessing Facilities that are production facilities
**Required for a new or renewed license application under 10 CFR 70.21(f) and 10 CFR 40.31(f)
***Construction as defined in 10 CFR 70.4 and 40.4 is not prohibited prior to issuance of NRC license
****Not required for all licensing actions

Licensing Timeline for Uranium Enrichment Facilities



*Construction Prior to Hearing and Licensing *Not* Permitted Per Atomic Energy Act of 1954 as Amended Section 193, "Licensing of Uranium Enrichment Facilities" and Title 10 of *Code of Federal Regulations* 70.31(e)
** Not required for all licensing actions

Examples of Risks and Mitigations for Construction Prior to License

Potential Impacts

Design changes

Construction rework

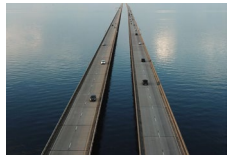
Project delays

Additional oversight activities

NOTE: Construction prior to approval of a license is potentially grounds for denial of the application for certain facilities (see 10 CFR 70.23(a)(7), 10 CFR 40.32(e))

Strategies for Mitigations

Ensure adequate progress on the review



Inform NRC staff of design changes

Identify issues early through inspections and consider additional analysis

Document and track issues to resolution

Understand potential environmental impacts and consider mitigation activities early

NRC Oversight of Construction

NRC has the authority to inspect construction performed prior to issuance of the license

- Inspections would be performed in accordance with Inspection Manuel Chapter 2694, “Fuel Cycle Facility Construction and Pre-operational Readiness Review Inspection Program” (ML25030A117)
- Inspections verify that the applicant or licensee is constructing in accordance with the proposed design and management measures program in the license or license application.
  - Note
    - Inspections do not constitute an approval of the design or the application
    - Enforcement actions can result from these inspections

Communication, Quality, and Safety Culture During Construction

- Share schedules with the NRC as early as possible: Construction Milestones, Routine Schedules, and Project Updates
  - Early and often communications support NRC resource and inspection scheduling
- Discuss proposed construction activities with NRC to determine if these activities could potentially impact safety or required programs (Criticality, Fire Protection, etc.), even if the activity is not a specific items relied on for safety (IROFS)
- NRC expects nuclear facilities to have a robust program to facilitate the timely identification and resolution of construction issues to ensure the quality of construction
- A strong nuclear safety culture should be implemented at the early stages of design and construction, encompassing all parties for the project
  - Employee's concern program, corrective action program, and a safety conscious work environment.

Questions?