



U.S.NRC

UNITED STATES NUCLEAR REGULATORY COMMISSION

Protecting People and the Environment

Mixed Oxide (MOX) Fuel Fabrication Facility (MFFF) Licensing

April 12, 2007



INTRODUCTIONS



What Are Our Goals?

Initiate a Dialog Involving...

- The Nuclear Regulatory Commission's (NRC's) Roles & Responsibilities and the Licensing Process
- Inspection and Enforcement
- Public Participation



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NRC's Roles & Responsibilities and the Licensing Process

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What Is The NRC?

- **INDEPENDENT** Federal agency
- Reports directly to Congress
- Regulatory Responsibilities:
 - Safety and security review
 - Environmental review
 - Licensing
 - Inspection
 - Enforcement

What is Proposed?

U. S. Department of Energy has decided to:

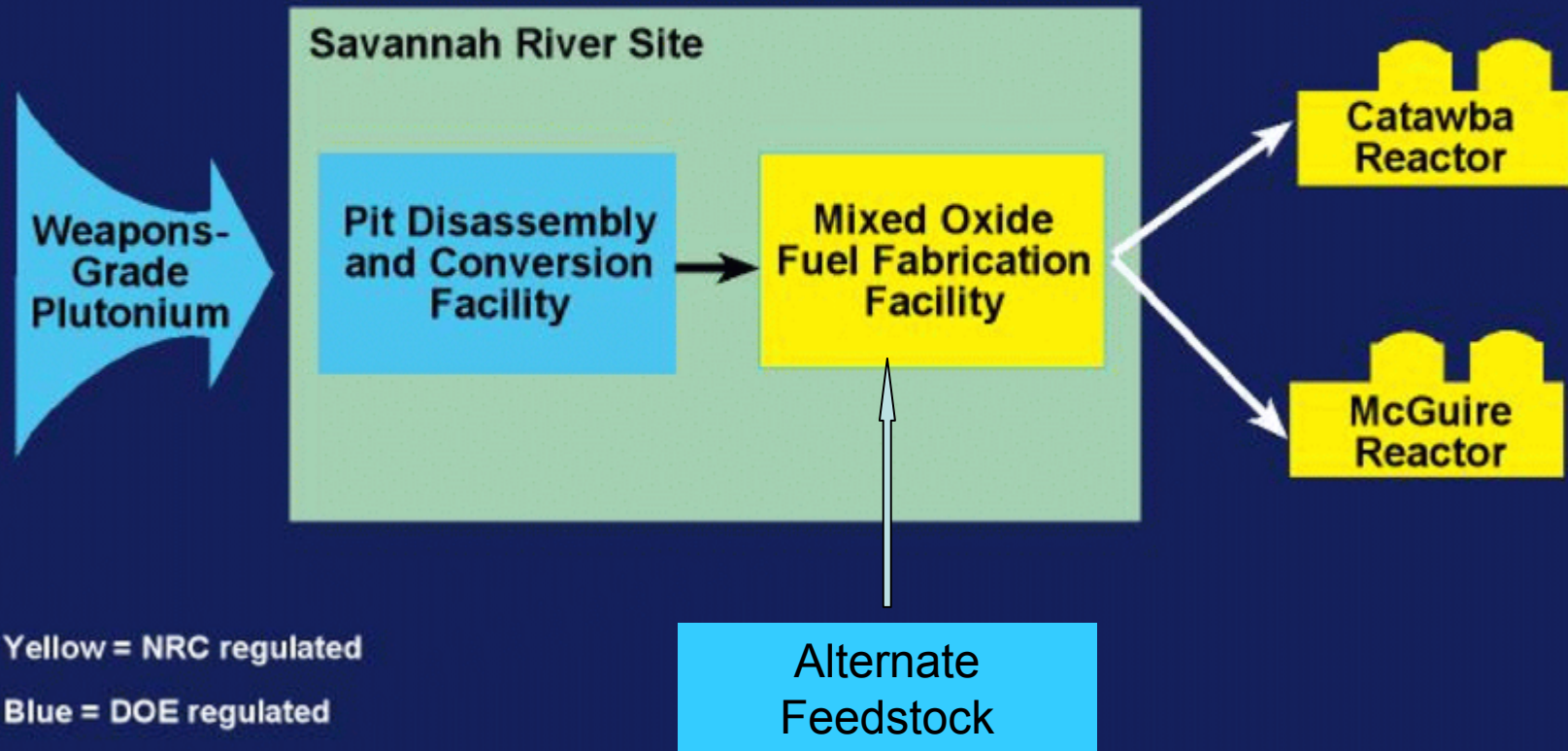
- Convert excess plutonium to MOX fuel
- Contract to build and operate the plant
- Fabricate the MOX fuel at a facility on the Savannah River Site (the Mixed Oxide Fuel Fabrication Facility (MFFF))



NRC's Role

- Ensures all nuclear projects meet strict safety, security, and environmental requirements
- Issues the operating license only after all requirements have been met

NRC Role in Regulating Mixed Oxide Fuel

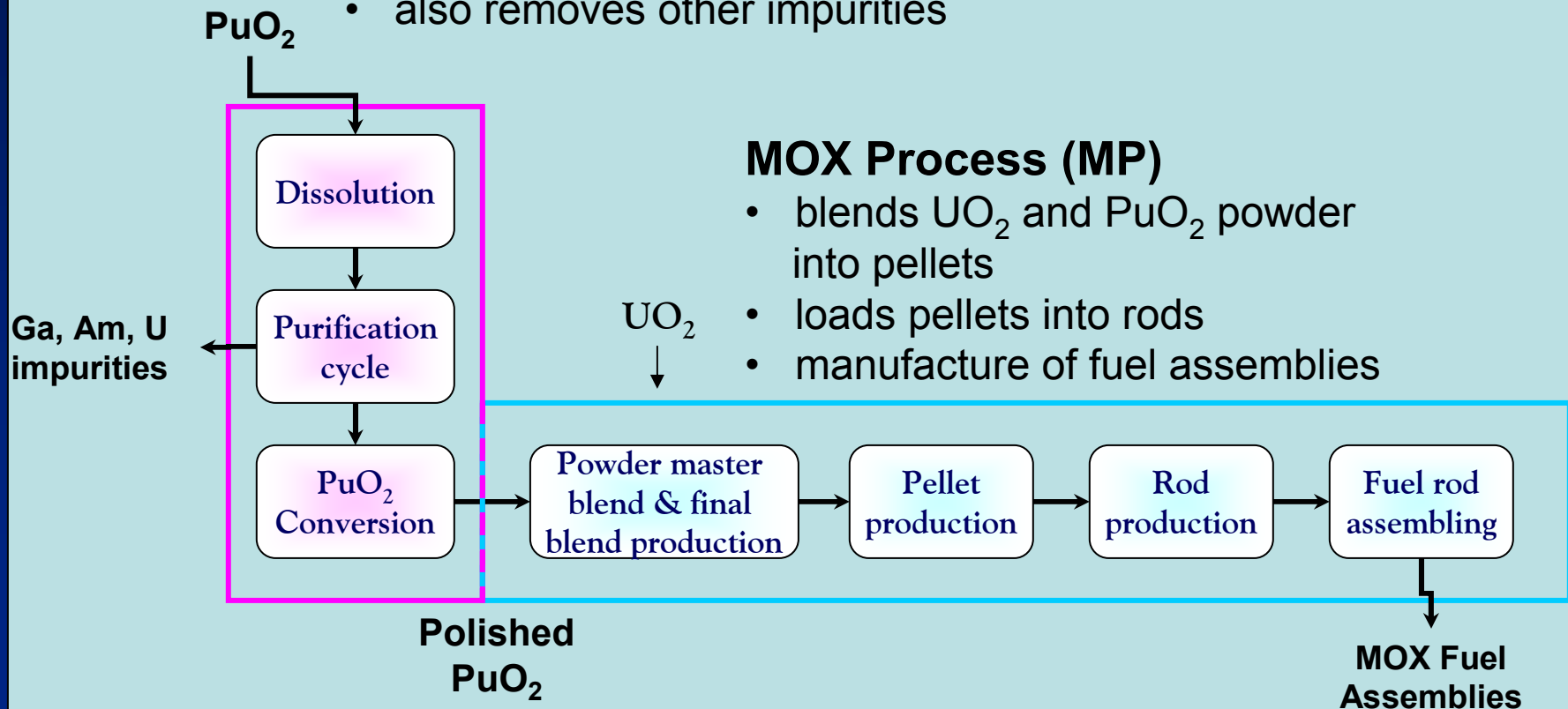




MOX Fuel Fabrication Facility Process Overview

Aqueous Polishing (AP)

- primarily used to remove Ga & Am contaminants
- also removes other impurities



MOX FUEL ASSEMBLY





NRC Role in Licensing the MFFF

- Two-Step licensing process under 10 CFR Part 70
 - Construction Authorization Review
 - Completed by NRC in March 2005
 - Shaw AREVA MOX Services (MOX Services) authorized to begin facility construction



NRC Role in Licensing the MFFF (cont.)

- License Application (LA) (including Integrated Safety Analyses Summary) to possess and use radioactive material
 - Submitted in September 2006 and revised in November 2006
 - NRC completed acceptance review in December 2006
 - Redacted version of LA is publicly available (cover letter dated January 4, 2007)



NRC Role in Licensing the MFFF (cont.)

- NRC license review to be performed in three years with an additional year scheduled for a potential hearing (if contentions are accepted)
- Environmental Review
 - Environmental Impact Statement for the MFFF to be located on the Savannah River site in Aiken, SC
 - Completed January 2005



NRC Actions on the License Application (LA)

- Acceptance/Acknowledge review of LA
 - Completeness and adequacy of submittal to allow a detailed review to start
 - Completed in December 2006
- Technical Review
 - Analyses of LA based on Standard Review Plan for MOX fuel facility (NUREG-1718)
 - Includes questions to applicant, staff analyses, public meetings, and in-office reviews of information at the site



NRC Actions on LA (cont.)

- Development of a Safety Evaluation Report
- Atomic Safety and Licensing Board Hearings (if contentions are accepted)
- Commission Decision regarding licensing
- Issuance of License to Possess and Use Radioactive Material



Additional Information

- NRC MOX Licensing website
 - Information on licensing, public involvement, regulations, and related documents

www.nrc.gov/materials/fuel-cycle-fac/mox/licensing.html



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Inspection and Enforcement

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NRC Office Locations



- Headquarters – Rockville, MD
- Regional Field Offices
- High Level Waste Management Office
- ▲ Technical Training Center

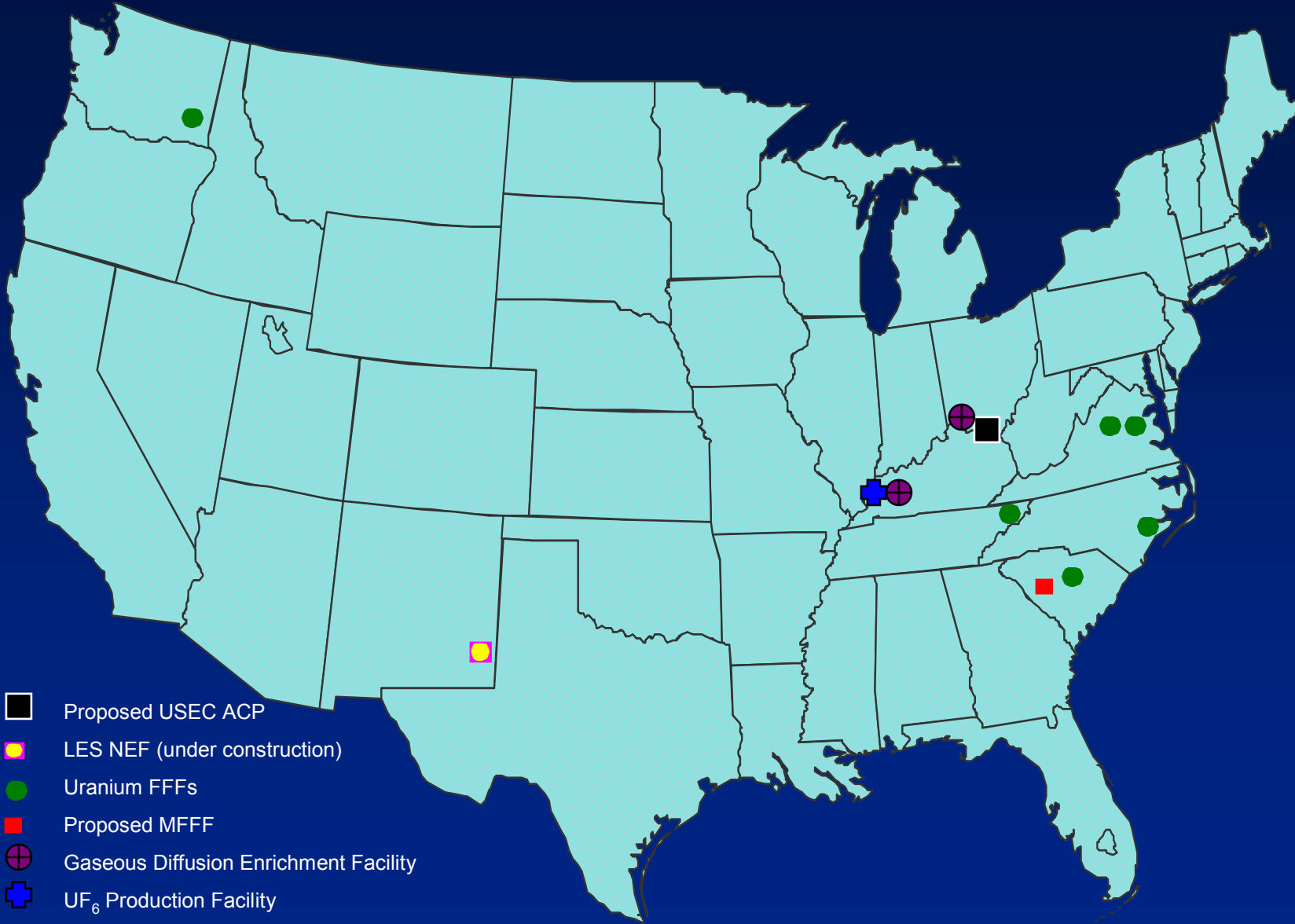
U.S. Fuel Cycle Facilities

- Ten facilities are currently licensed for operation (including LES National Enrichment Facility currently under construction)
- Two additional facilities are planning construction (MFFF, USEC American Centrifuge Project)
- Fuel facility construction and operations inspection programs are conducted out of the Region II office
- Facilities undergoing full decommissioning are not included



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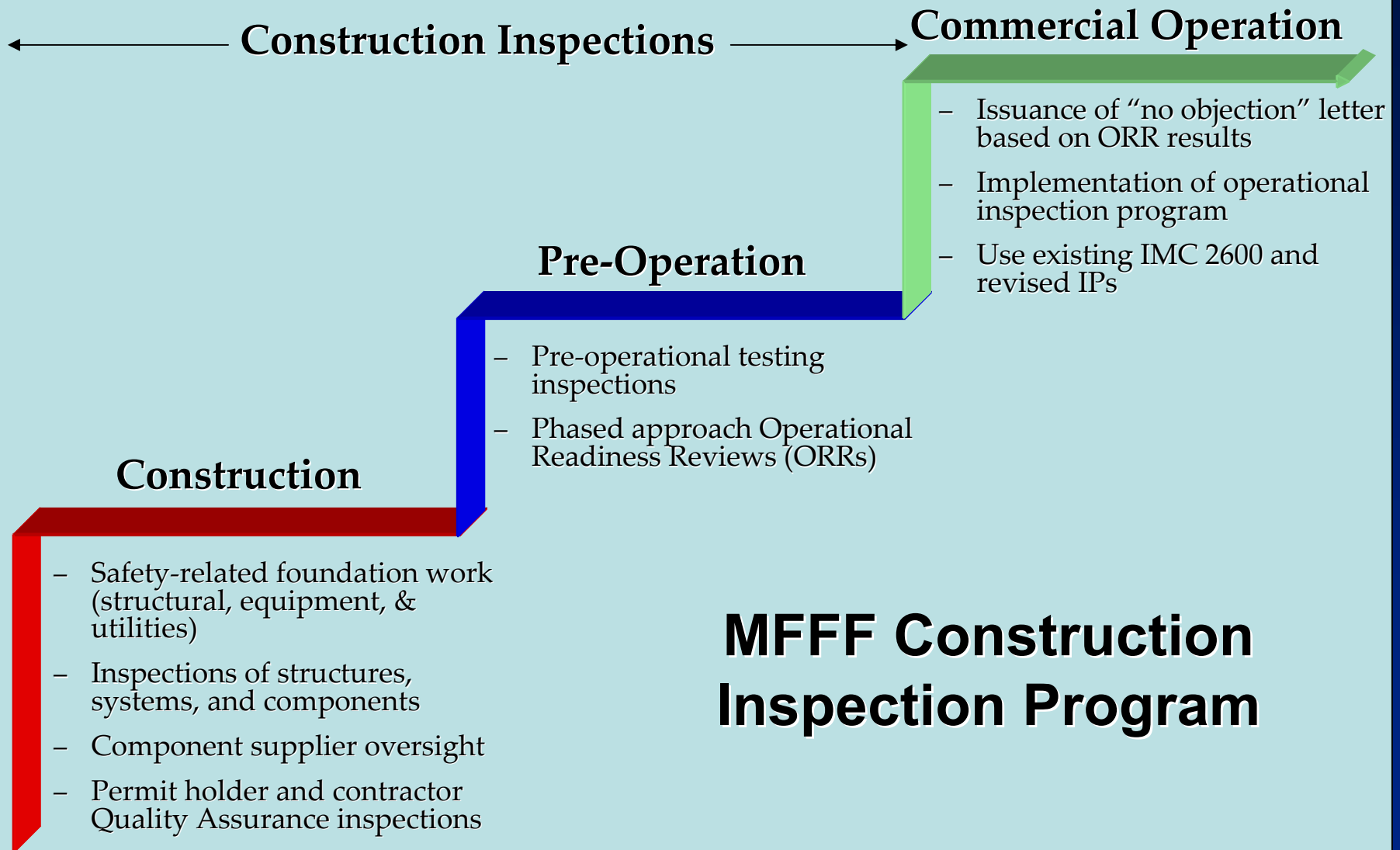
U.S. Fuel Cycle Facilities



- Proposed USEC ACP
- LES NEF (under construction)
- Uranium FFFs
- Proposed MFFF
- ⊕ Gaseous Diffusion Enrichment Facility
- ⊕ UF₆ Production Facility

Construction Inspection Program

- Two-Phased Approach
 - Construction Inspection Activities
 - Includes design control and verification
 - Pre-Operational Inspection Activities
 - Operational Readiness Reviews
- On-Site Resident Inspector at the MFFF site



MFFF Construction Inspection Program



Construction Inspection Activities

- Construction inspection activities will verify the following by sampling:
 - Implementation of the applicant's quality assurance program
 - Construction of principal systems, structures, components, and items relied upon for safety are in accordance with the Construction Authorization and Safety Evaluation Report



Construction Inspection Activities (cont.)

- Inspections of permit holder and contractor quality assurance programs
- Component supplier oversight
- Periodic assessments of applicant performance

Assessment of Applicant Performance

- The AAP process is described in NRC Inspection Manual Chapter 2630
- IMC 2630, “Mixed Oxide Fuel Fabrication Facility Construction Inspection Program” can be accessed electronically in the NRC’s document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>
- NRC reviews applicant performance periodically



Assessment of Applicant Performance (cont.)

- Review is based on inspection results and licensing actions
- Common or recurring problems are identified as “Areas Needing Improvement”
- Category 1 public meeting conducted at the facility to discuss the AAP results with the applicant

Construction Inspection Schedule

- Inspections scheduled early in the process of individual construction activities to observe work in progress
- Develop confidence that the specific construction activities have been adequately accomplished at different stages of construction
- Inspection scope and frequencies may be expanded to assure problem areas have been corrected

Other Inspection Activities

- Reactive Inspections
 - Performed in response to significant events
 - Inspection scope developed by NRC management
 - Usually involves an inspection team

Other Inspection Activities (cont.)

- Inspecting Allegations
 - Allegations are claims by workers or public of hidden safety problems
 - Inspectors determine if claims are true, whether safety is affected, and if corrective action is required
 - Results of inspection communicated to person making allegation claim



To Report A Safety Concern

- For an emergency:
 - Call NRC's 24-Hour Headquarters Operations Center at (301) 816-5100. Collect calls are accepted. Note: Calls to this number are recorded.
- For a non-emergency:
 - Send an e-mail to allegations@nrc.gov
 - Call NRC's Toll-Free Safety Hotline at (800) 695-7403. Calls to this number are not recorded between the hours of 7:00 a.m. to 5:00 p.m. Eastern Time.

Enforcement Actions

- NRC Enforcement Policy provides guidance on assessing significance and severity level of violations
 - Actual safety consequences
 - Potential safety consequences
 - Impact on NRC's ability to perform its regulatory function
 - Intentional violations
- The NRC Enforcement Policy is available on the NRC public web site at <http://www.nrc.gov>



Documenting Inspection Results

- Inspection Reports Include:
 - Letter to licensee senior management
 - Notices of Violations (if any)
 - Executive Summary of inspection findings
 - Inspection Details
- Publicly-available inspection reports can be accessed electronically in the NRC's document system (ADAMS), accessible from the NRC Website at <http://www.nrc.gov/reading-rm/adams.html>.



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Public Participation



Public Participation

- Notice of Opportunity for a Hearing published in the *Federal Register* on March 15, 2007
- Hearing requests meeting the requirements of 10 C.F.R. § 2.309 must be submitted by May 14, 2007
- More information on the NRC hearing process is available at www.nrc.gov/about-nrc/regulatory/adjudicatory/hearing.html



QUESTIONS AND ANSWERS