U.S. Nuclear Regulatory Commission Region II Atlanta, Georgia

Proposed MOX Facility Construction and Inspection Planning Meeting

November 12, 2002

Agenda

1:00 pm	Introduction: - Participants - Category 1 Public Meeting	NRC
1:15 pm	Discussion of Plans and Schedule for the Proposed Construction of a MOX FFF	Duke, Cogema, Stone & Webster (DCS)
3:15 pm	NRC Inspection Program Closing Remarks Questions from the Public	NRC NRC NRC

U.S. Nuclear Regulatory Commission

NRC Inspection Program for the Construction of the Proposed MOX FFF

NRC Inspection Program

- Purpose
  - To review the applicant's compliance and performance relative to the commitments in the Quality Assurance Plan, the Construction Authorization Request, and NRC Regulations through the following:
    - Inspection
    - Assessment
    - Enforcement

Enclosure 2

NRC Inspection Program

- Objectives
  - Provide NRC Senior Management reasonable assurance that the proposed MOX FFF was constructed i.a.w. the QAP, CAR, and regulatory requirements
  - Provide an integrated assessment across key functional areas
  - Provide input for determining the issuance of an operating license

NRC Inspection Program

- Methodology
  - Onsite announced and unannounced inspections by specialists from either Region II or Headquarters
  - Onsite inspections by a Resident Inspector
  - Performance assessment
    - Inspection input presented with supporting data
    - Consensus achieved
    - Changes in the inspection program based on possible trends considered

NRC Inspection Program

- Methodology (continued)
  - Emphasis placed on the applicant's readiness review and deviation resolution program
  - Inspection results are communicated to the applicant through inspection reports

NRC Inspection Program

- Process
  - Construction Inspection Activities
  - Pre-Operational Inspection Activities
  - Start-up Testing Inspections
  - Operational Readiness Review Inspections
  - Fuel Cycle Facility Operational Safety and Safeguards Inspection Program

NRC Construction Inspection Program

- Typical Areas of Construction Inspections
  - Quality Assurance Program
  - Contractor Quality Assurance Activities
  - Pre-Operational Environmental Protection
  - Geotechnical Foundation
  - Structural Concrete
  - Piping, Supports, and Restraints

NRC Construction Inspection Program

- Typical Areas of Inspection (continued)
  - Structural Steel
  - Mechanical Components and Installation
  - Electrical Components and Installation
  - Instrument Components and Installation
  - Ventilation Systems

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NRC Construction Inspection Program for the Proposed MOX FFF

Closing Remarks

U.S. Nuclear Regulatory Commission

NRC Construction Inspection Program for the Proposed MOX FFF

Questions from the Public

DUKE COGEMA
STONE & WEBSTER

Mixed Oxide Fuel Fabrication Facility

Briefing to NRC Region II

Atlanta, GA
12 November 2002

Enclosure 3

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Scope/Agenda

- MOX Project Overview (Hastings/Alley)
  - Introduction
  - Site/structures
  - MFFF Processes
  - Licensing
- Construction Plans (Touchstone)
- NRC Construction Inspection Planning (NRC)

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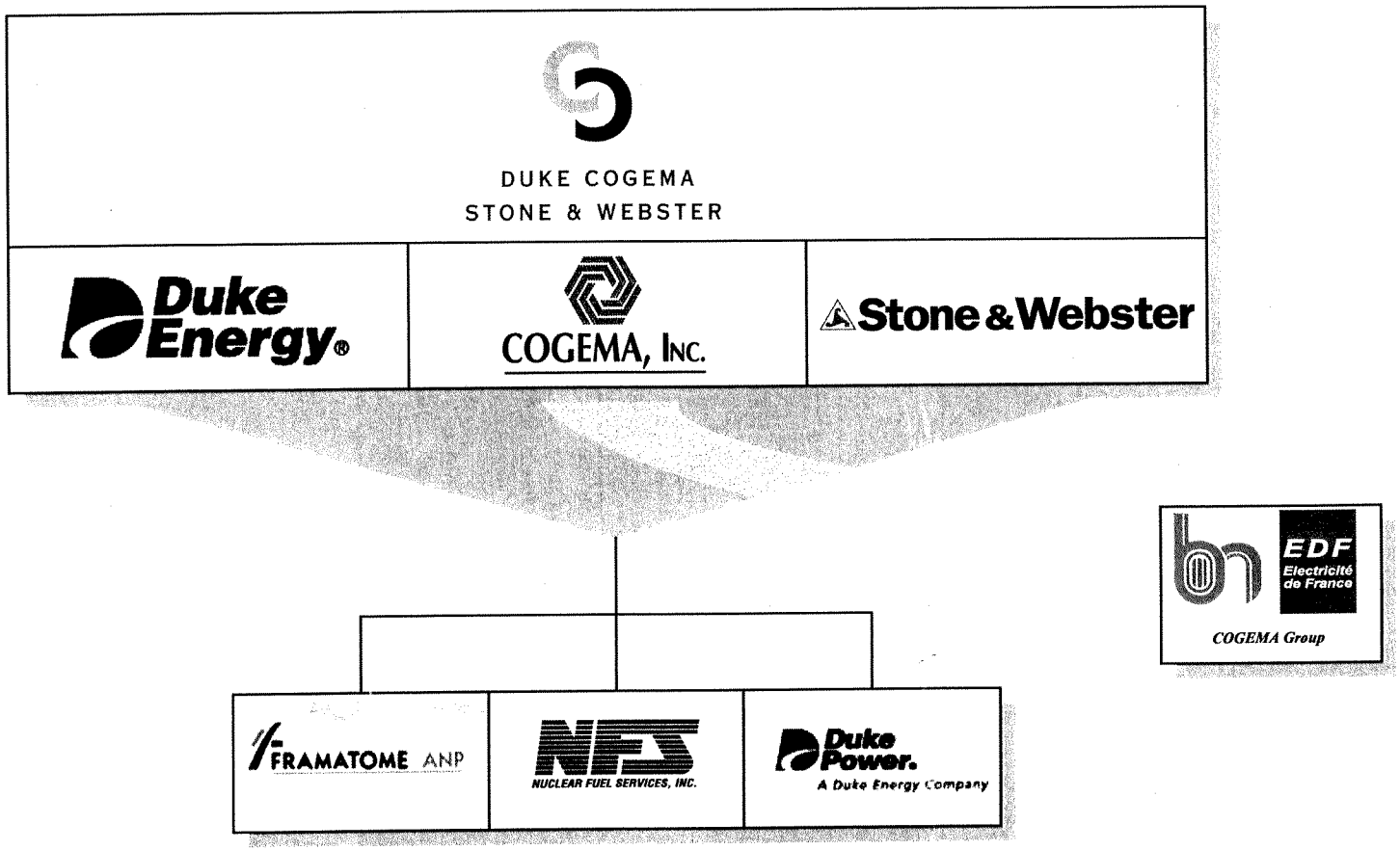
Duke Cogema Stone & Webster



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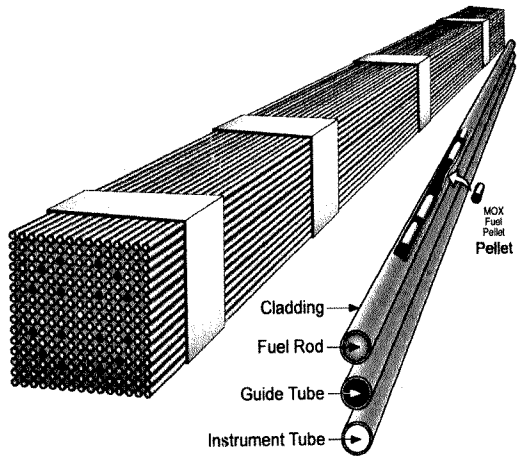
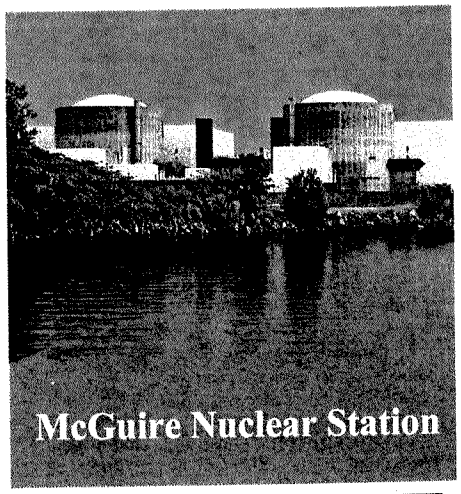
MFFF Mission

Convert surplus plutonium to spent nuclear fuel form for nonproliferation purposes

- Design, license, construct, and operate a MOX Fuel Fabrication Facility (MFFF)
- Perform qualification program for MOX fuel lead assemblies
- Design shipping containers for MOX fuel assemblies
- Irradiate MOX fuel at commercial reactors



MOX Fuel Assembly



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Overall MFFF Schedule

➢ Award of MOX Contract to DCS	3/1999
➢ Environmental Report	12/2000
➢ Construction Authorization Request (CAR)	2/2001
➢ Environmental Report Revision	7/2002
➢ CAR Revision	10/2002
➢ Start Construction	10/2003

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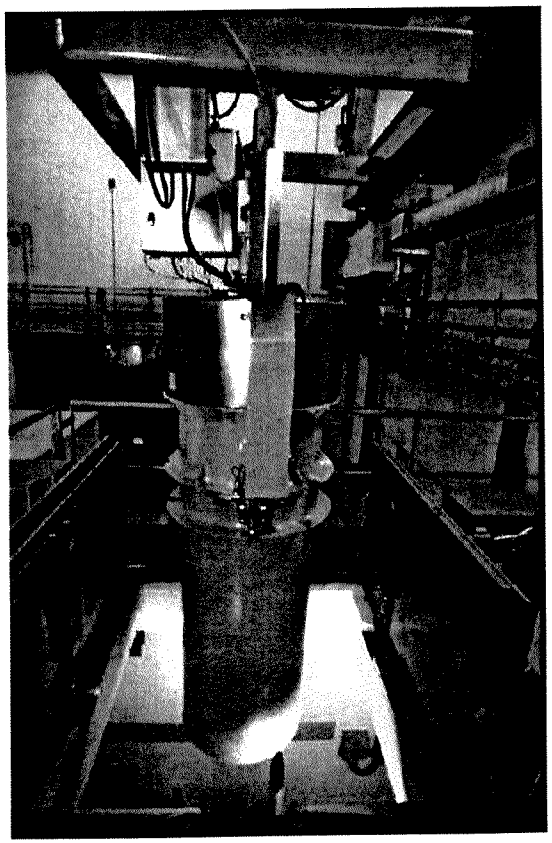
Current Activities in Support of MFFF



FS47 Pu Container Arrival Area

Completion of Licensing Activities

- CAR/ER Support
- Application for Possession and Use of SNM
- Integrated Safety Analysis

Equipment Design to Support Long Lead Procurement

Completion of Final Design

General Location and Site Description

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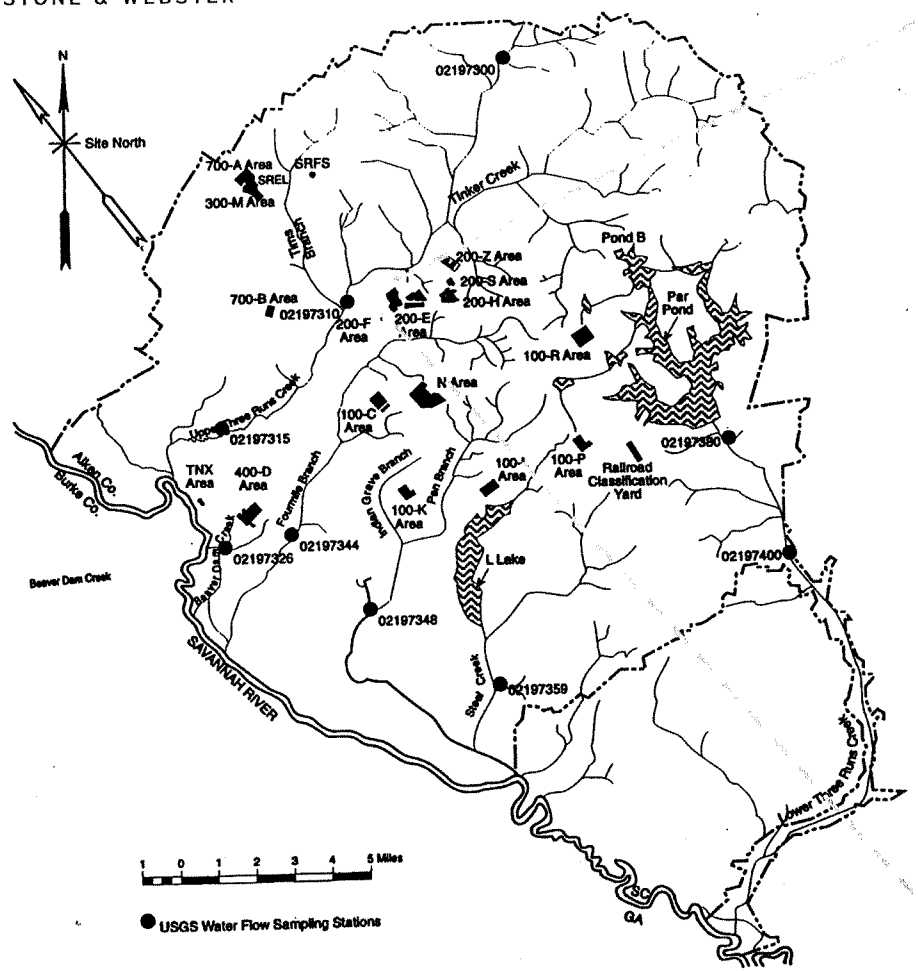

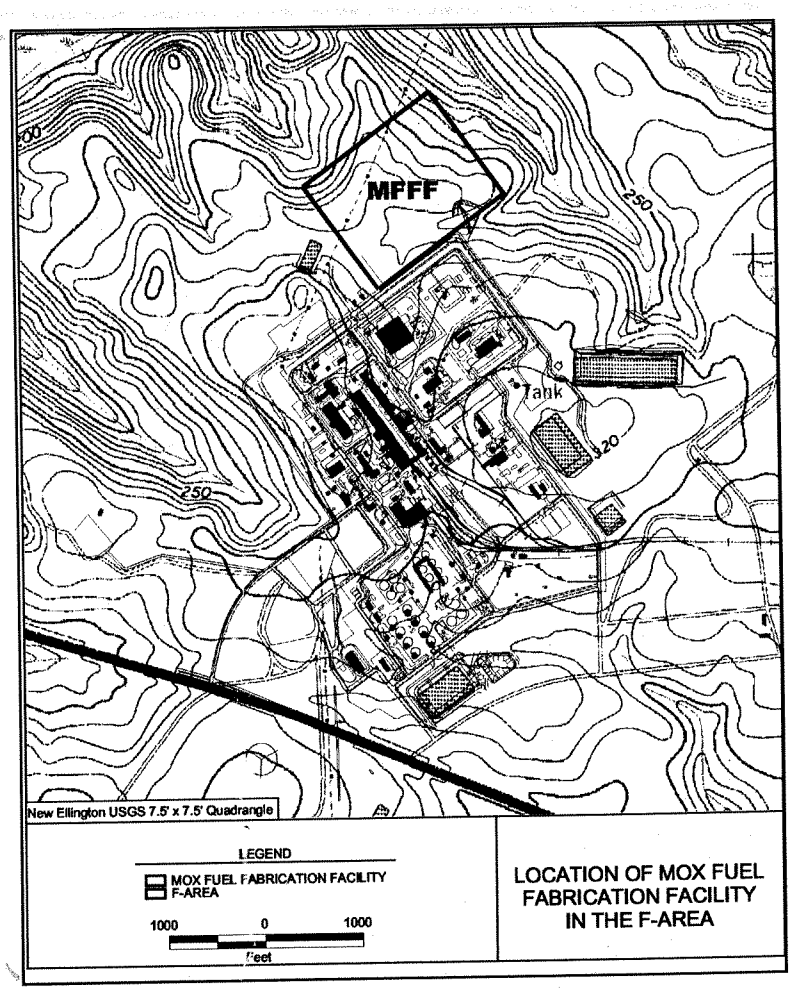

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MFFF Site/Structures

- MFFF Site
  - Approximately 41 acres
  - Approximately 17 acres developed for building, facilities or paving
- MFFF Structures
  - MOX Fuel Fabrication Building
    - Reinforced concrete shear walls, floors, and roof slab
    - Interior partitions are reinforced concrete
    - MOX Processing - 285 ft x 272 ft
    - Aqueous Polishing – 120 ft x 175 ft
    - Shipping and Receiving area – 120 ft x 167 ft
  - Emergency Generator Building
  - Emergency Fuel Storage Vault

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MFFF Site/Structures

- MFFF Structures (con't)
  - Secured Warehouse Building
  - Safe Haven Buildings
  - Reagent Process Building
  - Administration Building
  - Technical Support Building
  - Standby Generator Building
  - Receiving Warehouse Building
  - Miscellaneous Site structures

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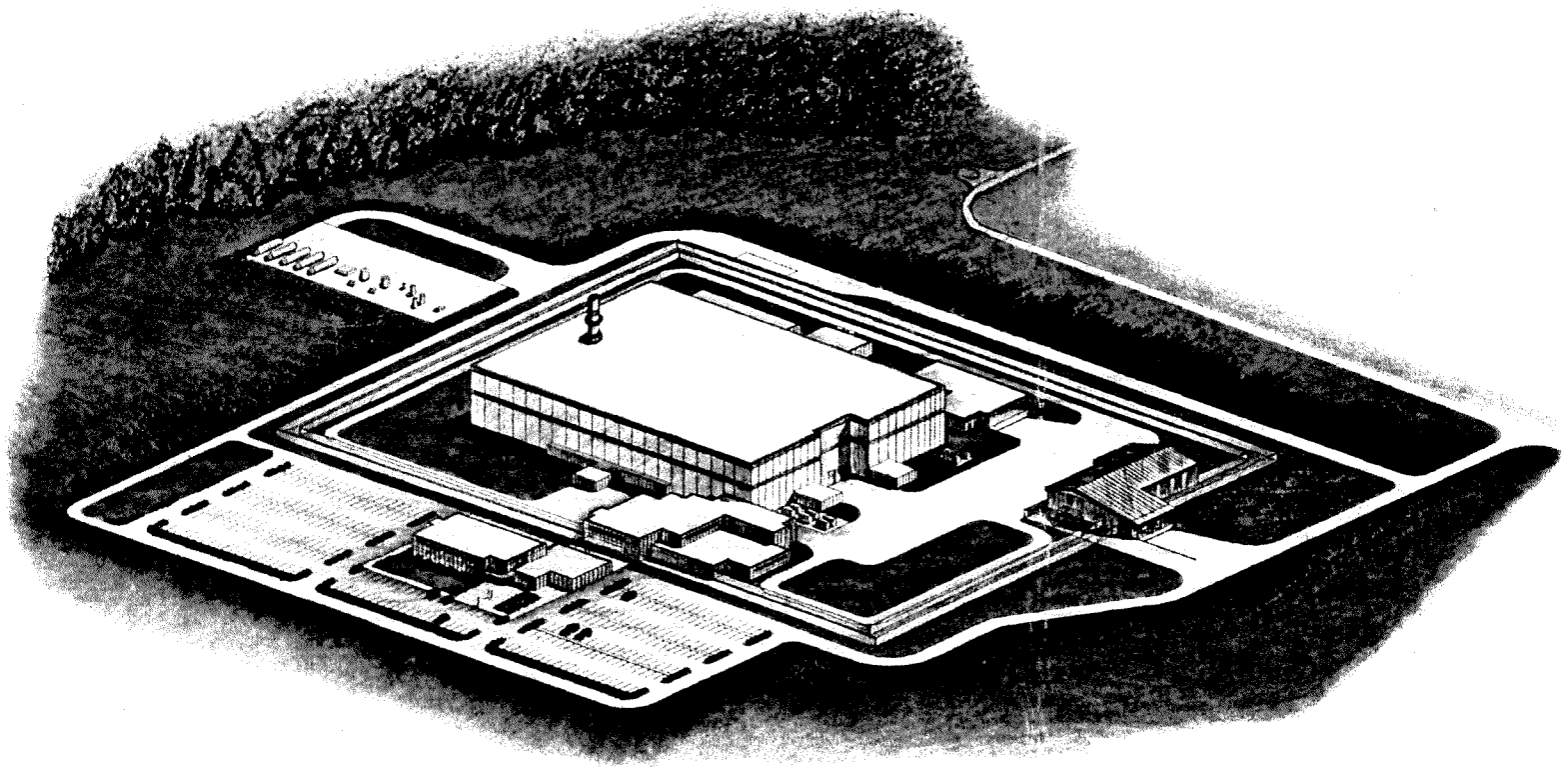
MOX Fuel Fabrication Facility (MFFF)
Process Overview



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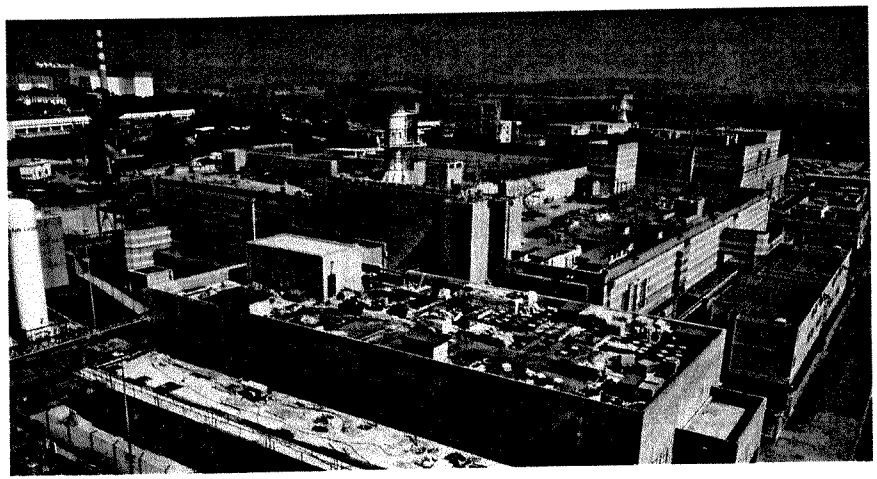
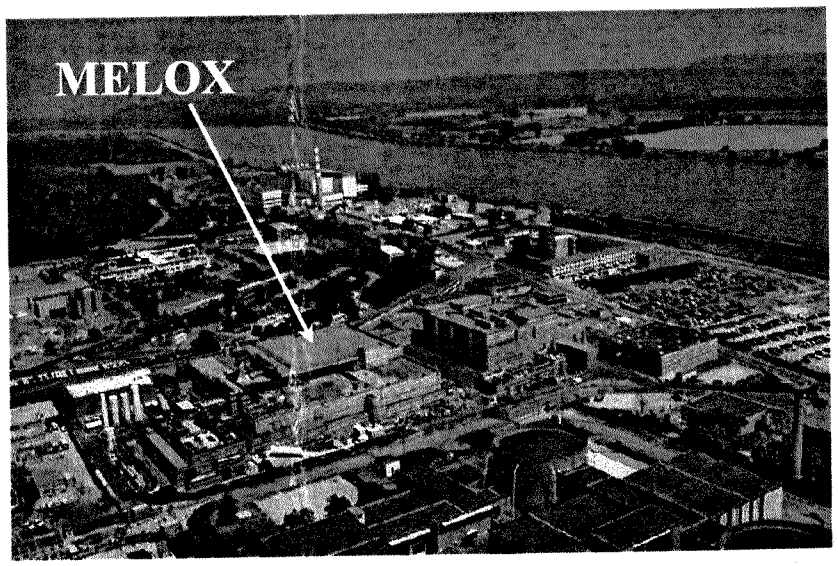
Fuel Fabrication Facility

- Based on European Design (MELOX and La Hague)
- 10 CFR 70 / Standard Review Plan Licensing Approach
- Transfer of Proven Technology

Marcoule Site, France





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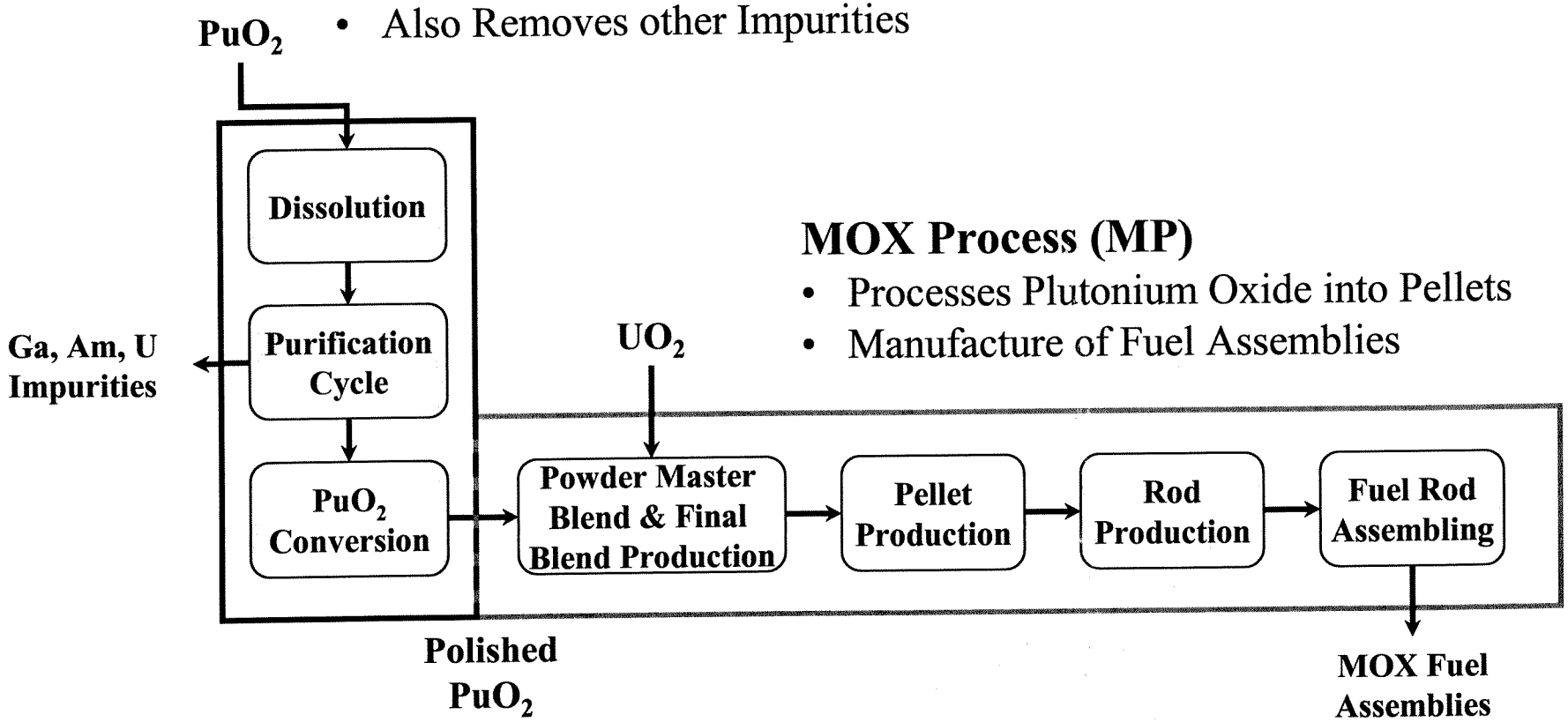
Overview of MFFF Processes

Aqueous Polishing (AP)

- Primarily Used to Remove Gallium
- Also Removes other Impurities



MOX Process (MP)

- Processes Plutonium Oxide into Pellets
- Manufacture of Fuel Assemblies

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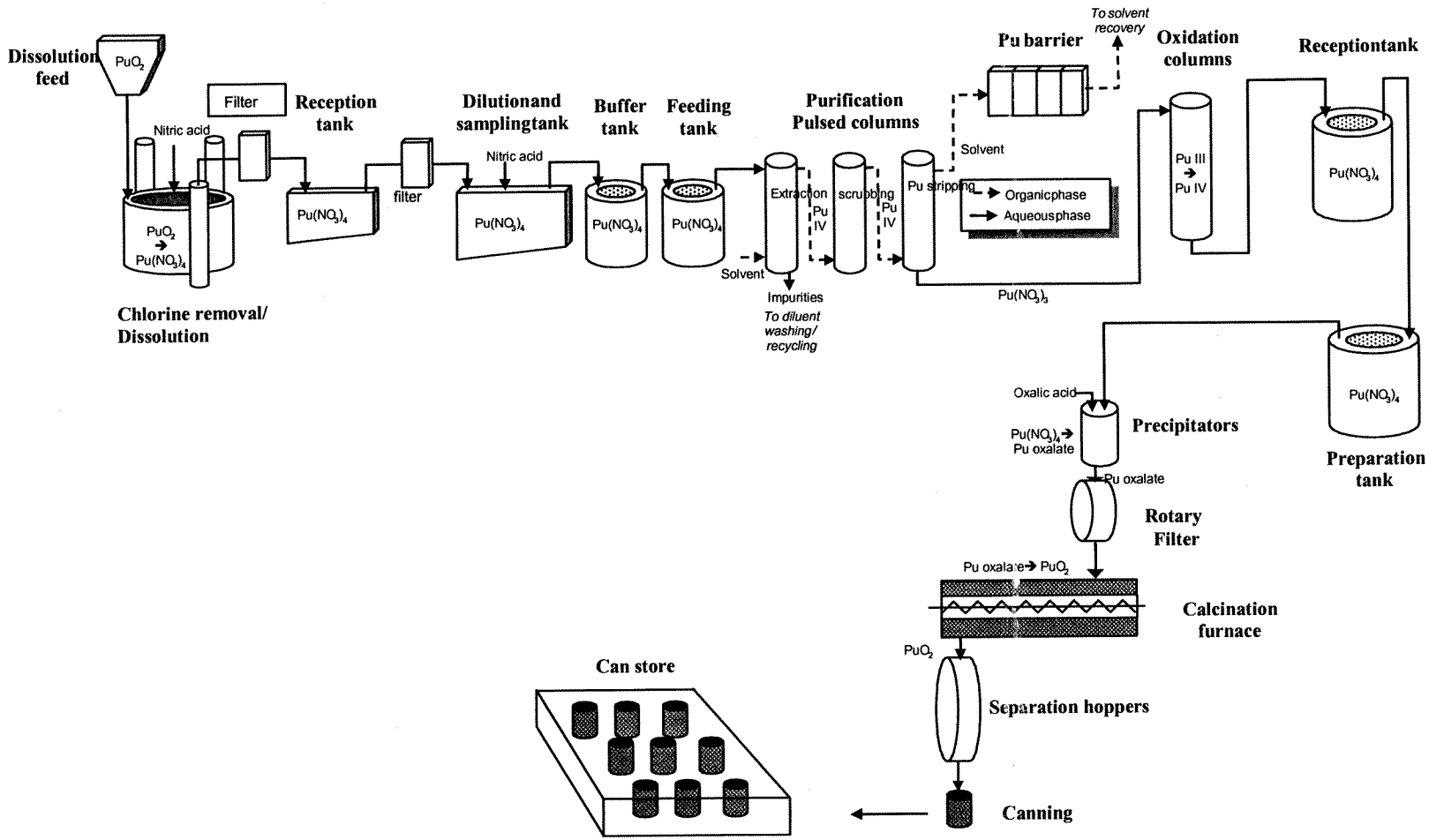
Simplified AP Process



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Aqueous Polishing Design Criteria

- Proven Dissolution, Purification, Conversion Processes
- All AP tanks Closed and Vented to Off-gas System
- All Equipment Closed and Contained within a Glovebox
- Minimal Maintenance Performed during Operations
- Aqueous Polishing Process Throughput: 3.5 MT/Year
- Significant Product Recovery (99.97% Product Utilization)
- All Gloveboxes Ventilated and Filtered (HEPA) to Minimize Releases
- Negative Pressure in Glovebox to Surrounding Area

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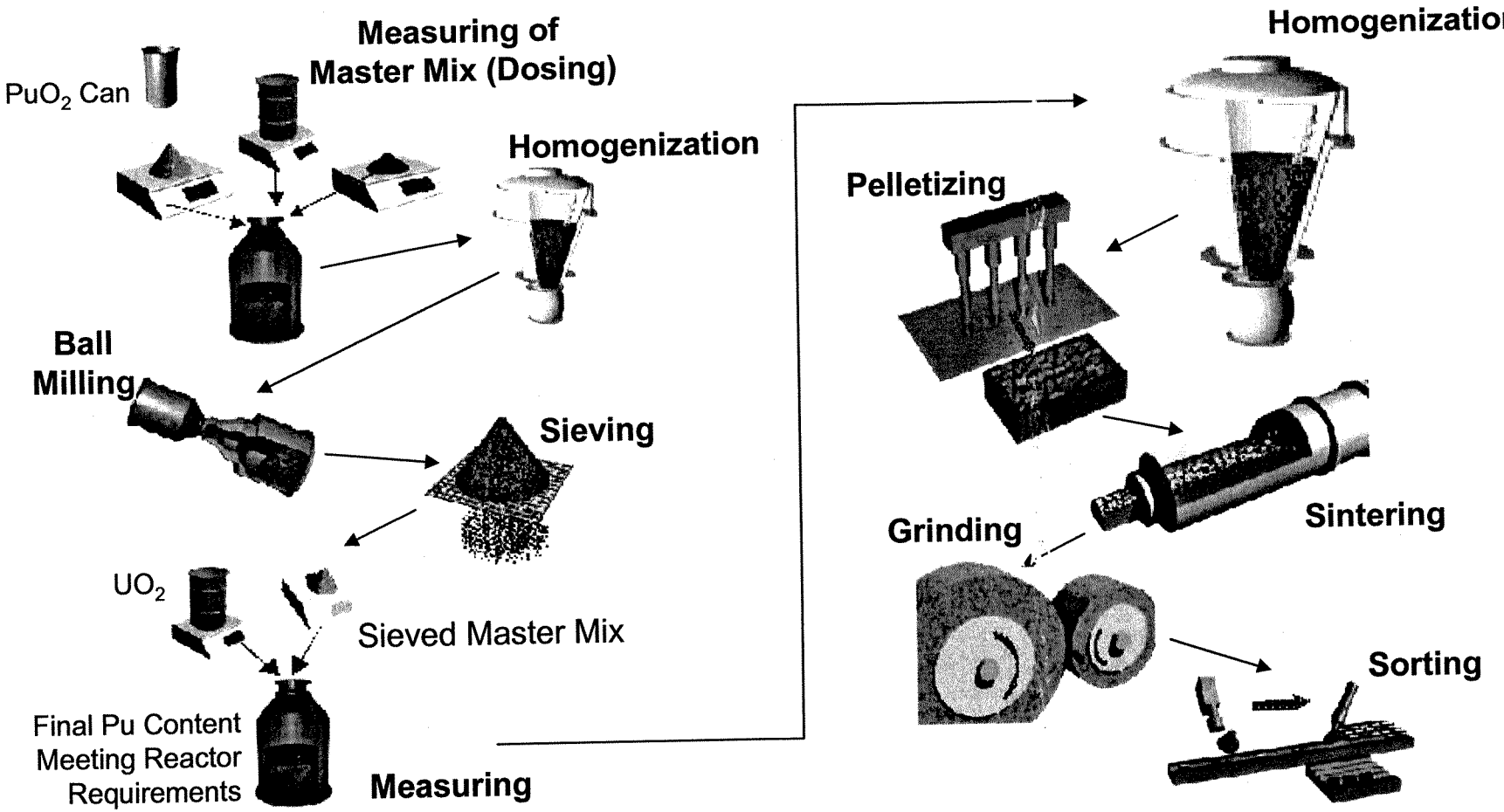
Brief Overview of MOX Process



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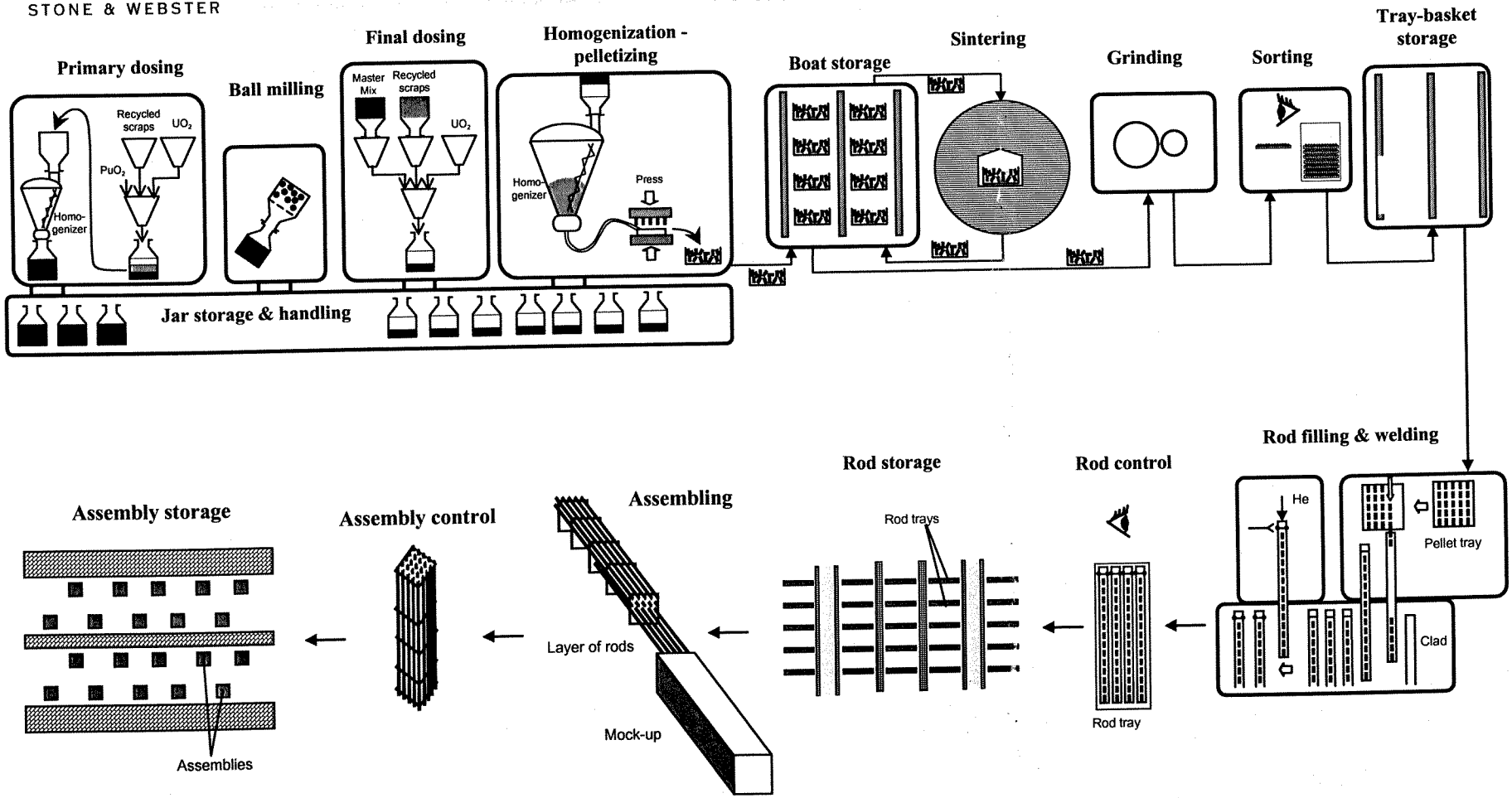
MP Process Units Flow Diagram



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MOX Process

Melox Videotape

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Construction Authorization Request Revision

- Capture changes to accept feed material other than PDCF (e.g., alternate feedstock)
- RAIs and clarification letters
- Draft SER open items
- Significant design changes

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Construction Authorization Request Open Items

- Committed to providing resolutions to NRC staff no later than January 2003
  - Expect to have all but one or two complete by December 2002

Open issues

HEPAs

HAN

Financial data

KWG - Offgas

Criticality

Worker chemical exposure

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Construction Plans

- Initial construction activities
  - Tree removal
  - Transmission line relocation
  - Construction access road
  - Site clearing and grading
  - Concrete batch plant
  - Underground utilities

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Construction Plans

- Site-specific considerations
  - Disposition of excess soil
  - Development of utility infrastructure from F-area
  - Subsurface contamination
  - Security/access

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Construction Plans

- Temporary construction facilities
  - Aiken office or onsite space leased from Site M&O (WSRC)
  - Construction management and Subcontractor Trailer area
  - Accountability and security offices
  - Craft change facility
  - Sanitary facilities
  - Subcontractor Lay-Down, Fabrication, and Storage area

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Construction Plans

- Temporary facilities
  - Temporary roads installation
  - Fire protection
  - Temporary construction power
  - Temporary communications
  - Site drainage and erosion control
  - Temporary ventilation

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Construction Management

- Fully Scoped RFPs
- One Set of Job Rules
- Integrated Project Schedule
- Detail Contractor Schedules
- Earned Value Process
- Integration & Planning Meetings
- Punchlist Completion Approach
- Turnover Process

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Construction Management

- Subcontract Management
  - Construction Superintendent
  - Contract Administrator
  - Construction Engineer
  - Safety Professional
  - Project Control Technician
  - Quality Assurance Technician

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Construction Packages

- Early construction
- Support buildings
- Site preparation
- Site services
- MFFF contracts
- Other contracts

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Construction Plans

- Major construction schedule & milestones
  - Receive construction authorization 9/2003
  - Initial construction activities 10/2003
  - Start major construction 3/2004

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NRC Construction Inspection Process

Plans and Procedures Overview