Multi-Purpose Canister Environmental Impact Statement

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MPC EIS Presentation Topics

- **MPC EIS Process and Schedule**
- **MPC EIS Overview**
- **Preliminary Technical Approach**
  - Key environmental analyses
  - Technical information needs

MPC EIS Process and Schedule

Scoping	**Oct 94-Jan 95**
Implementation Plan	**Summer 95**
Draft EIS	**Fall 95**
Comment period	**Winter 95**
Final EIS and Record of Decision	**Fall 96**

MPC EIS "Need for Agency Action"

- **DOE is responsible for managing spent nuclear fuel from civilian nuclear power plants**
- **Alternative technology systems are available**
- **DOE needs to select, fabricate, and deploy one or more such systems**

MPC EIS Purpose

- **Integrate environmental considerations into decision on cask/canister system**

- **Provide for public participation**

MPC EIS Proposed Action

- **To fabricate and deploy a Multi-Purpose Canister-based system for spent nuclear fuel**

MPC EIS Alternatives to the Proposed Action

- **No action: Current technology canister/cask system**
- **Current technology supplemented by a high-capacity rail transportation cask**
- **System using transportable storage casks**

Proposed Contents of MPC EIS

EIS will focus on comparison of environmental impacts of the MPC-based system and alternatives

- **Environmental impacts of fabrication**
- **Environmental impacts of use:**
  - At-reactor
  - Transportation
  - Monitored Retrievable Storage (MRS)
  - Repository Surface Operations

Overview of MPC EIS Preliminary Technical Approach

- **Non-site-specific impact analyses of cask/canister fabrication, storage at MRS, and repository surface operations**
- **Key analyses of at-reactor impacts based on reactor-specific data**
- **Transportation analysis:**
  - Existing models
  - Bounding impact analysis within Nevada

Comparison of Fabrication Impacts

- **Key Analyses:**
  - Health and safety: Radiological and non-radiological (industrial) impacts
  - Consumption of material: Use of materials such as stainless steel, depleted uranium, and borated metals
  - Emissions: Air, water, and waste emissions
  - Socioeconomic: Employment impacts on economy, housing, and public services

Comparison of Fabrication Impacts (cont.)

- **Technical Information Needs:**
  - Description of cask/canister manufacturing processes for each alternative
  - Projected cask/canister production rate
  - Representative accident/injury rates
  - Estimated employment levels for potential manufacturing facility

Comparison of At-Reactor Impacts

- **Key Analyses:**
  - Health and safety: Calculate routine operation and accident impacts
    - ♦ Radiological dose
    - ♦ Non-radiological/industrial injuries and fatalities
  - Waste generation:
    - ♦ Low-level radioactive
    - ♦ Hazardous and non-hazardous

Comparison of At-Reactor Impacts (cont.)

- **Technical Information Needs:**
  - Description of cask/canister handling operations for each alternative
  - Reactor-specific projected dry storage requirements and facility capabilities
  - Reactor-specific population and meteorological data
  - Description of fuel handling accidents and abnormal events

Comparison of Transportation Impacts

- **Key Analyses:**
  - Radiological dose to collective populations and maximally exposed individuals
    - ♦ RADTRAN 4 to determine collective population dose for routine exposure and accident scenarios
    - ♦ RISKIND used for "bounding" accident and maximally exposed individuals calculations
  - Non-radiological transportation accident injuries and fatalities

Comparison of Transportation Impacts (cont.)

- **Technical Information Needs:**
  - Determination of modal mix for each alternative
  - Locations of reactors, MRS facility, and repository
  - Projected number of spent nuclear fuel shipments as a function of time for each reactor site
  - Population data along each route

Comparison of MRS Impacts

- **Key Analyses:**
  - Health and safety: Calculate routine operation and accident impacts
    - ♦ Radiological dose
    - ♦ Non-radiological/industrial injuries and fatalities
  - Waste generation:
    - ♦ Low-level radioactive
    - ♦ Hazardous and non-hazardous

Comparison of MRS Impacts (cont.)

- **Technical Information Needs:**
  - Description of handling operations at an MRS facility for each cask/canister alternative
  - Generic/representative population and meteorological data
  - Description of spent nuclear fuel handling accidents and abnormal events
  - Projected cask/canister receipt rate

Comparison of Repository Surface Operations Impacts

- **Key Analyses:**
  - Health and safety: Calculate routine operation and accident impacts
    - ♦ Radiological dose
    - ♦ Non-radiological/industrial injuries and fatalities
  - Waste generation:
    - ♦ Low-level radioactive
    - ♦ Hazardous and non-hazardous

Comparison of Repository Surface Operations Impacts (cont.)

- **Technical Information Needs:**
  - Description of surface facility handling operations for each cask/canister alternative
  - Generic/representative population and meteorological data
  - Description of spent nuclear fuel handling accidents and abnormal events
  - Projected cask/canister receipt rate
  - Scenarios for MPC opening at repository

Summary

- **MPC EIS public scoping completed January 6, 1995**
- **Technical approach presented today represents preliminary thinking**
- **Final technical approach will be included in MPC EIS Implementation Plan**