

**U.S. DEPARTMENT OF ENERGY
OFFICE OF ENVIRONMENTAL MANAGEMENT**

**NUCLEAR WASTE TECHNICAL REVIEW BOARD
ENGINEERED BARRIER SYSTEM PANEL MEETING**

**SUBJECT: DOE-HQ Office of Environmental
Management Perspective on the
Hanford Waste Management Program**

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**PRESENTER'S TITLE
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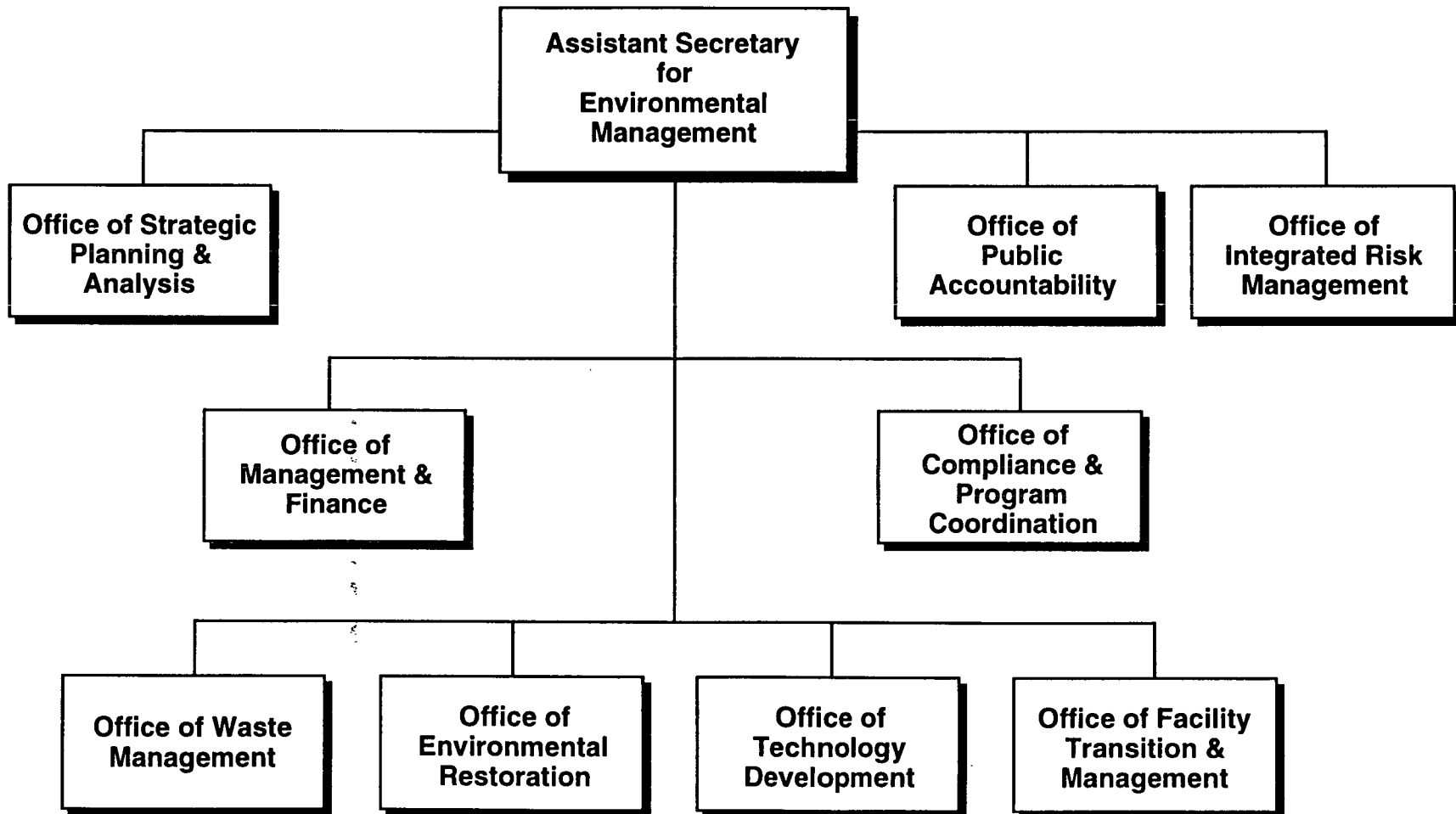
Objectives

To provide a perspective on the major drivers and other considerations affecting Headquarters Office of Environmental Management direction to Hanford Waste Programs.

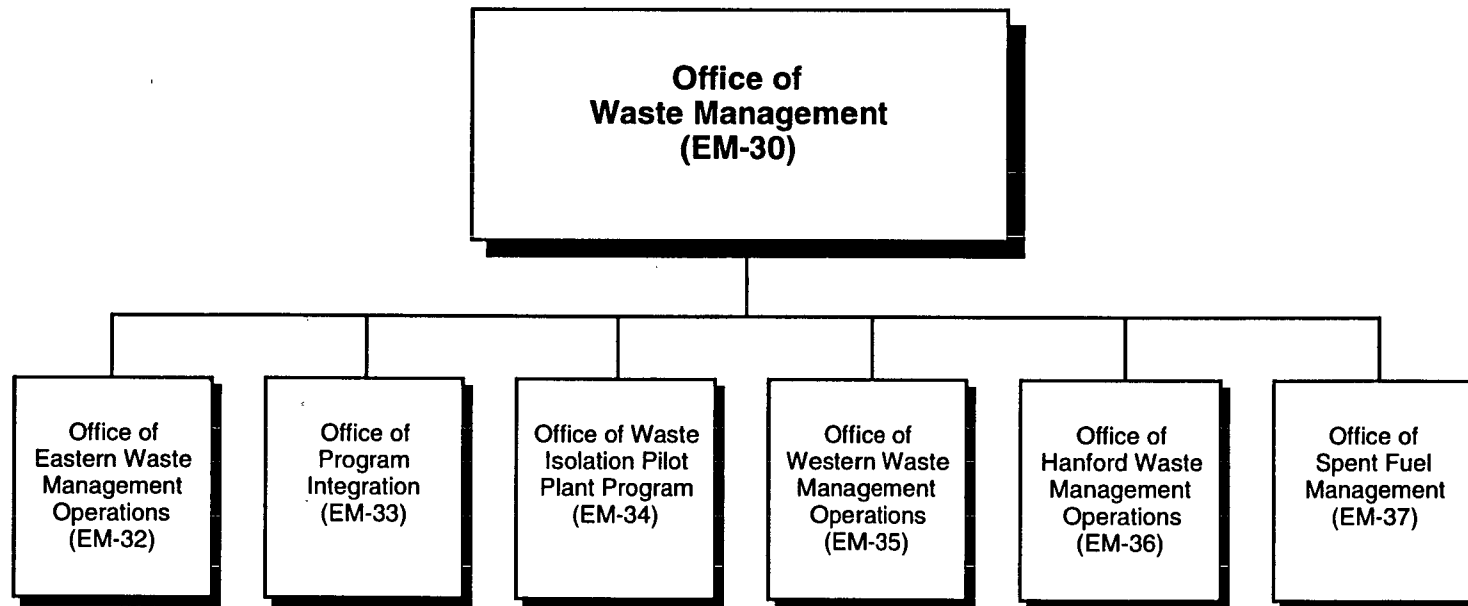
- **Organization**
- **Programmatic and Legal Drivers**
- **Budgetary Perspective**
- **Programmatic Implications of the Repository**



The Office of Environmental Management (EM) Organization



The Office of Waste Management (EM-30) Organization



Programmatic and Legal Drivers

- **Office of Environmental Management Programmatic Goals**
- **Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement)**
- **Defense Nuclear Facilities Safety Board Recommendations**
- **Secretary of Energy's Safety Initiatives**
- **Spent Nuclear Fuel Vulnerability Assessment**
- **Others**



Office of Environmental Management Goals

- Goal 1: Manage and eliminate the urgent risks and inherent threats that exist in our system**
- Goal 2: Provide a safe workplace that is free from accidents, injuries, and adverse health effects**
- Goal 3: Change the system so that it is under control managerially and financially**
- Goal 4: Be more outcome oriented**
- Goal 5: Focus the technology development program on major obstacles to progress and involve the best talent in the Department of Energy and national science and engineering communities**
- Goal 6: Develop a stronger partnership between the Department of Energy and its stakeholders**



Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement)

- **Initially signed on May 15, 1989**
 - **Achieve compliance with Resource Conservation and Recovery Act, Comprehensive Environmental Response, Compensation, and Liability Act, and other corrective actions**
 - **Excluded waste contained in 149 single shell high-level waste tanks and did not address K-Basins**
- **Renegotiated Tri-Party Agreement signed in January 1994**
 - **Requires that high level waste vitrification be complete in December 2028**
 - **Specifies that all fuel and sludge in the K-East and K-West Basins be removed by December 2002**



Defense Nuclear Facilities Safety Board (DNFSB) Recommendations

- **90-7 (and 90-3): Ferrocyanide in Hanford Waste Tanks**
 - Study, monitor, and remediate sources of heat generation that could result in explosive ferrocyanide reactions
- **92-4: Multi-Function Waste Tank Facility (MWTF)**
 - Have competent personnel to ensure effective project execution and ensure that design conservatively meets safety goals
- **93-5: Tank Waste Characterization**
 - Accelerate sampling schedules and integrate characterization into TWRS systems engineering
- **94-1: Improved Schedule for Remediation in the Defense Nuclear Facilities Complex**
 - Accelerate the encapsulation of K-Basin fuel and placement in interim storage



Secretary of Energy's Safety Initiatives

Six safety initiatives have been identified for accelerating resolution of high priority waste tank safety issues and closure of unreviewed safety questions (USQs)

- **Improving tank farm worker safety and conduct of operations**
- **Accelerated resolution of safety issues**
- **Waste characterization**
- **Infrastructure upgrades**
- **Reducing safety and environmental risk from tank leaks**
- **Accelerated retrieval of high-heat tank 106-C**



Spent Nuclear Fuel Vulnerability Assessment

- **Spent Nuclear Fuel and Other Reactor Irradiated Nuclear Materials Environmental, Safety, and Health Vulnerabilities Report released December 1993**
- **106 vulnerabilities were identified**
- **Eight facilities were identified as highest priority**
- **Three of these are at Hanford – K-Basins, PUREX, 200 West Burial Grounds**
- **Six other facilities with lower priority vulnerabilities are at Hanford**
- **Action plans are being developed and implemented to address vulnerabilities**



Other Drivers

- **Resource Conservation and Recovery Act of 1976 (RCRA)**
- **Federal Facility Compliance Act of 1992 (FFCA Act)**
- **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)**
- **National Environmental Policy Act Documentation**
- **Atomic Energy Act/Nuclear Waste Policy Act**
- **DOE Orders and Regulations**



Budgetary Perspective

| Fiscal Year | Total EM | Hanford EM | Hanford Tanks | Hanford Spent Fuel |
|-------------|----------|------------|---------------|--------------------|
| 1993 | 5,520 | 1,481 | 523 | 34.9 |
| 1994 | 6,174 | 1,490 | 606 | 38.1* |
| 1995 | 6,280 | 1,592 | 682 | 40.6** |

Dollars in Millions

* Increased program priority would result in a budget of \$56.3M for FY94

** Current target case. RL is evaluating an expedited program that would increase the funding requirements to ~ \$60 – 70M for FY95



Programmatic Implications of the Repository

- **The repository is the end state for high-level waste and spent nuclear fuel at Hanford**
- **Repository parameters dictate upstream Hanford programmatic assumptions and requirements in providing waste forms for disposal**
 - **Disposal fee estimates**
 - **Timing for waste transfer and repository acceptance**
 - **Technical specifications and quality assurance requirements**

