

Changing Waste Management Paradigms

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Presentation Summary

- Vision
- Waste Management Challenges
- Changing Paradigms
- Key Waste Management Strategies

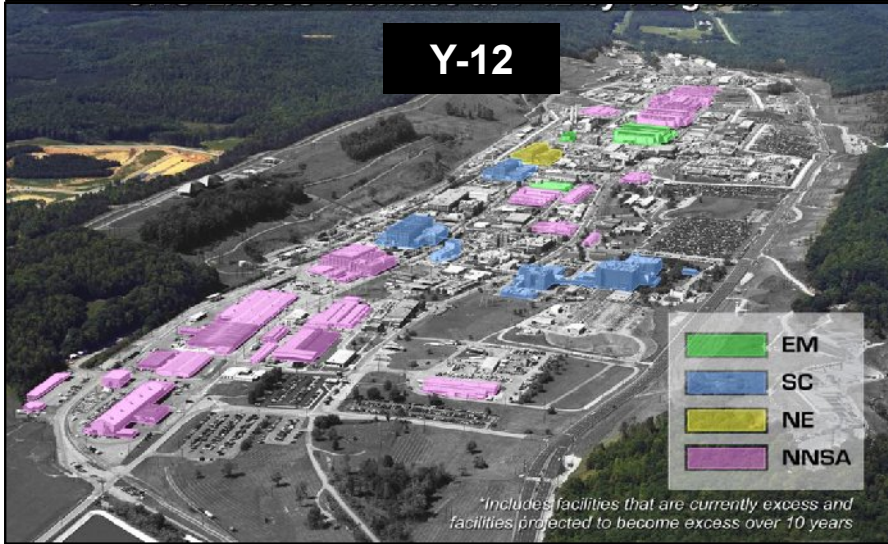


ORR Environmental Management - Vision

- Set the National Standard for Performance
- Safely Meet Commitments in the Most Cost Effective Manner
- Protect the Environment and the Public
- Promote the Mission of the Department of Energy



Waste Management Challenges Significant/Challenging Waste Volume



MOVING TO THE FUTURE BY CLEANING UP THE PAST

Changing Paradigms

- **Exemptions from DOE Order 435.1 program resulted in significant quantity of waste**
 - ~625,000 cubic feet of LLW/MLLW located at ETTP, ORNL, and Y12 remains to be dispositioned
 - UCOR contract requires full compliance with DOE Order 435.1
 - Waste generation will **not** be allowed without a disposition path identified and funding allocated
 - Proper pre-planning will be conducted to characterize and determine disposition path prior to generation
 - Waste will be dispositioned from the point of generation (no storage)
 - Developing centralized waste management program implementing requirements of DOE Order 435.1
 - Disposition LLW/MLLW stored > one year
 - Develop Radioactive Waste Management Basis and obtain approval from DOE/ORO



Changing Paradigms (cont)

- **Reliance on offsite disposal capabilities (e.g., NNSS, ES/Clive)**
 - **It is too difficult to prepare EMWMF documentation and obtain approval for waste streams meeting the EMWMF WAC**
 - Streamline and manage process to profile and obtain approval for waste destined for EMWMF
 - Plan well ahead of waste generation to meet project schedule needs
 - On-Site disposal as first priority
 - Support CERCLA waste generators with utilizing EMWMF
 - **Waste cannot meet ORR landfill WAC**
 - Utilize volumetric and surface contaminated object criteria consistent with ORR landfill WAC
 - On-Site disposal as first priority
 - Support ORR waste generators with utilizing ORR landfill



Changing Paradigms (cont)

- **Need available processing capacity to disposition difficult to treat and no path to disposal waste**
- **Examples: highly radioactive waste, beryllium reflectors, classified dioxin/furan waste, mercury contaminated waste, etc.**
 - Evaluate all DOE and commercial options to process waste
 - Continue to investigate new technologies to treat MLLW debris
 - Requested NNS prepare RCRA Permit modification to allow for disposal of dioxin/furan waste codes
 - Working with TSDF's to conduct treatability studies on several no path to disposal waste streams



Waste Management Paradigms (cont)

- **Optimize waste characterization methodology to meet disposal WAC**
 - Utilize K-25 data and apply to K-27 if relevant
 - Use process knowledge whenever possible
 - Approach characterization/waste generation in a strategic manner
 - Separate or combine waste streams while meeting disposal WAC
 - If process knowledge is sound, default to most conservative characterization without sampling to achieve cost savings



WM Strategy 1: Change in Business Philosophy

- **Challenge Existing Paradigms**
- **Centralized Waste Management Program**
- **Funding Allocated and Disposition Path Identified Prior to Waste Generation**
- **Direct Shipment of Waste Without Storage**



WM Strategy 2: Utilize and Increase On-Site Disposal Capacity



- EMWWMF
 - ~2.3M yd³ capacity
 - ~1.2M yd³ disposed
 - Current capacity should last until ~2016
 - Accepts LLW, TSCA, Haz. and mixed waste
 - Streamline profile and waste acceptance process
- ORR Landfills
 - >2M yd³ in capacity
 - RCRA Subtitle D permit
 - Utilize to full extent

WM Strategy 3: Support End-State Vision at ORR



- Y-12
 - D&D un-needed facilities and disposition waste
 - Address mercury contamination
- ORNL
 - D&D un-needed facilities and disposition waste allowing for lab modernization
- ETTP
 - Future Unrestricted Industrial End-State
 - Reindustrialization

WM Strategy 4: Innovative Project Approach Tank W1A

- Characterization/excavation strategy eliminating TRU waste generation
- Offsite processing of tank and contents
- Direct shipments for disposal
- Strategic packaging strategies to meet NNSW WAC requirements (obtained deviation from WAC)



WM Strategy 4: Innovative Project Approach K-25

- Streamlined profiles for EMWMF
- Direct disposal of generated waste
- Successful testing of reusable packages for volutes
- Qualify converters as own package (IP-1)
- Utilization of commercial TSDF to process waste
- Evaluation of waste acceptability at EMWMF

