

Content of Presentation

- How the U.S. satisfies provisions of the Joint Convention
- Liability consideration (responsibilities)
- Feedback from the last review meeting
- What's new since the last report
 - Spent Fuel
 - Achievements
 - Challenges
 - Best Practices
- Safety and operational trends
- Topics raised during your review
- Summary

What's New Since Last Report - Spent Fuel

- DOE standardized canister design
- Extended *Foreign Research Reactor Fuel Return Program* to 2016

Achievements – Spent Fuel

➤ Storage and Transportation

- > 120 licensing actions
- > 20 inspections
- > 25 years of safe transport

➤ Proposed Yucca Mountain Repository

- Over 290 agreements concerning key technical issues addressed
- Infrastructure to support first-of-a-kind public hearing

Challenges – Spent Fuel

➤ Storage

- High Burnup fuel
- Burnup credit
- New materials


➤ Yucca Mountain

- Revisions to Compliance period for EPA standards and NRC regulations
- Quality Assurance concerns

Best Practices – Spent Fuel

- Greater regulatory openness
 - Interaction with stakeholders
 - Electronic document availability
 - Public pre-licensing interactions
- Participation in international activities
 - Peer reviews
 - Technical committees and forums

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-  Radioactive Waste (Nuclear Fuel Cycle and Non-Power)
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What's New Since Last Report - Radioactive Waste

- WIPP recertification
- GTCC LLW environmental impact statement begun by DOE
- Waste Control Specialists application for LLW and 11e.(2) disposal facility
- Legal provisions for non-geologic repository disposal of “incidental” waste
- Studies on efficiency of very low activity waste and low-level waste management
- NORM/TENORM disposal facility licensed in 2005

Achievements - Radioactive Waste

- 2005 is peak year for LLW disposal due to DOE decommissioning waste
- 4,500+ TRU waste shipments to WIPP since 1999
- 6,300+ LLW shipments to Nevada Test Site in past 3 years



Challenges - Radioactive Waste

- Defense HLW treatment schedule
- GTCC LLW disposal
- Future needs for Class B/C LLW disposal

Best Practices - Radioactive Waste

- Routine disposal of TRU waste and LLW
- Extensive waste treatment and minimization
- Commercial mixed waste treatment
- Commitment to permanent disposal
- Stakeholder involvement

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What's New Since Last Report - Decommissioning & Remediation

- Integrated Decommissioning Improvement Plan
- Revised regulations for financial assurance
- Enhanced public outreach efforts
- Identifying, documenting, and incorporating lessons learned

Rocky Flats Complete



Before



Toppling
Bldg. 371



After



TRU Waste
Shipment to WIPP

West Jefferson Plant Complete



Fernald Closure Imminent



Remediation at Oak Ridge

K-33 Building

After



Before



**Onsite
disposal**



**Shipment for
Offsite Disposal**

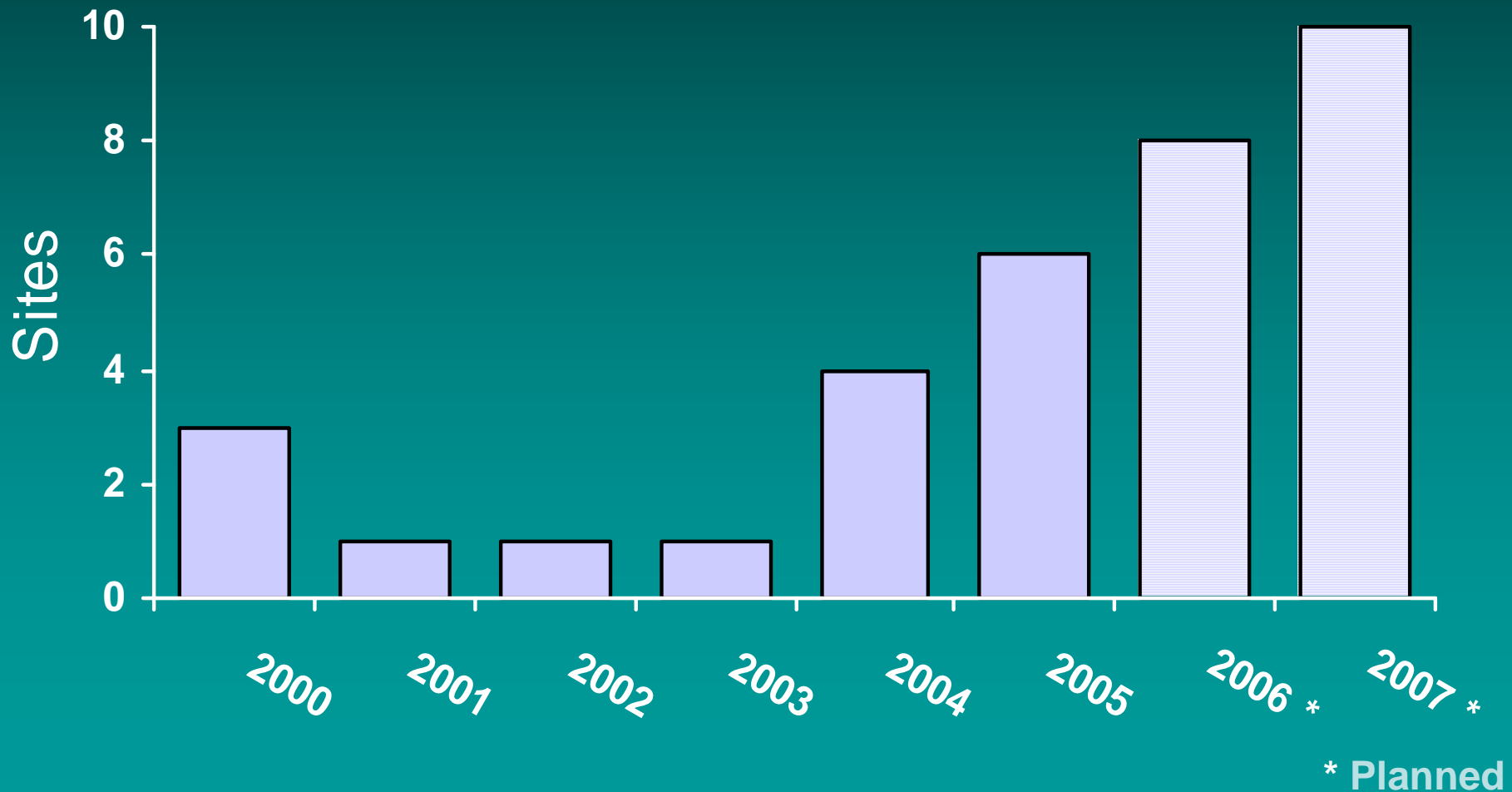
Achievements - Private Sector Decommissioning & Remediation

- 2 Power reactors
- 3 Research and test reactors
- 12 Materials sites
- 2 Uranium recovery licenses terminated

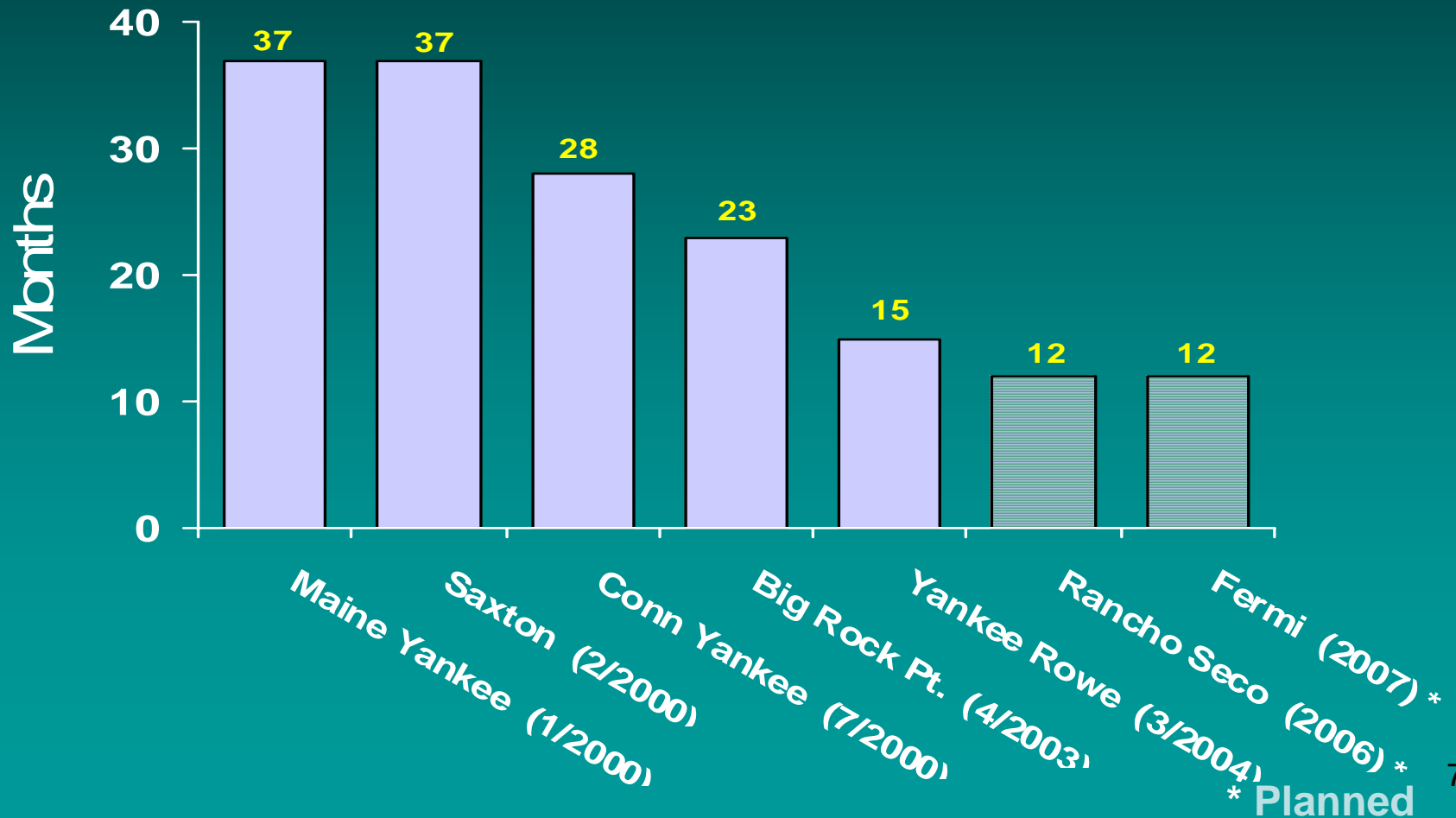
Maine Yankee



Completion of Decommissioning Materials Sites Improving Dramatically



License Termination Plan Approval Time Dramatically Reduced



Achievements - Government Decommissioning & Remediation

- 78 sites remediated
- 297 contaminated facilities decommissioned



Completed on September 17, 2004



Weldon Spring Disposal Site

Challenges - Decommissioning & Remediation

- Legacy & unlicensed sites
- Groundwater contamination & institutional controls
- Mineral rights at sites requiring perpetual custodial control

Challenges (cont.) - Decommissioning & Remediation

- Industrial worker safety
- Number and diversity of facilities remaining
- Regulatory and stakeholder agreement on end states
- Risk-informed optimization strategies
- Disposal capacity

Best Practices - Decommissioning & Remediation

- *Process improvement through application of lessons learned*
 - *Lessons Learned Related to Recently Submitted Decommissioning Plans and License Termination Plans (RIS-2002-02)*
 - *Results of the License Termination Rule Analysis (RIS-2004-08)*
 - *Appendix O in NUREG-1757*
 - *Lessons-Learned Webpage:*
www.nrc.gov/what-we-do/regulatory/decommissioning/lessons-learned.html
- *Decommissioning planning during design*

Rocky Flats

“Weapons to Wildlife”

Play Video



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What's New Since Last Report - Disused Sealed Sources

- Enhanced import/export licensing for Category 1 and 2 sources
- Expansion of recovery mission to include additional beta & gamma emitting sources
- Increased national attention

Achievements – Disused Sealed Sources

- CD-ROM training programs were developed with the help of industry
- Increased pickup of unwanted sources, over 12,000 total


Challenges – Disused Sealed Sources

- Disposal for GTCC LLW sources
- Cost of disposal for other sources
- Incentives to dispose of sources when no longer needed

Best Practices – Disused Sealed Sources

- Source tracking database
- Manufacturers accept returned sealed sources

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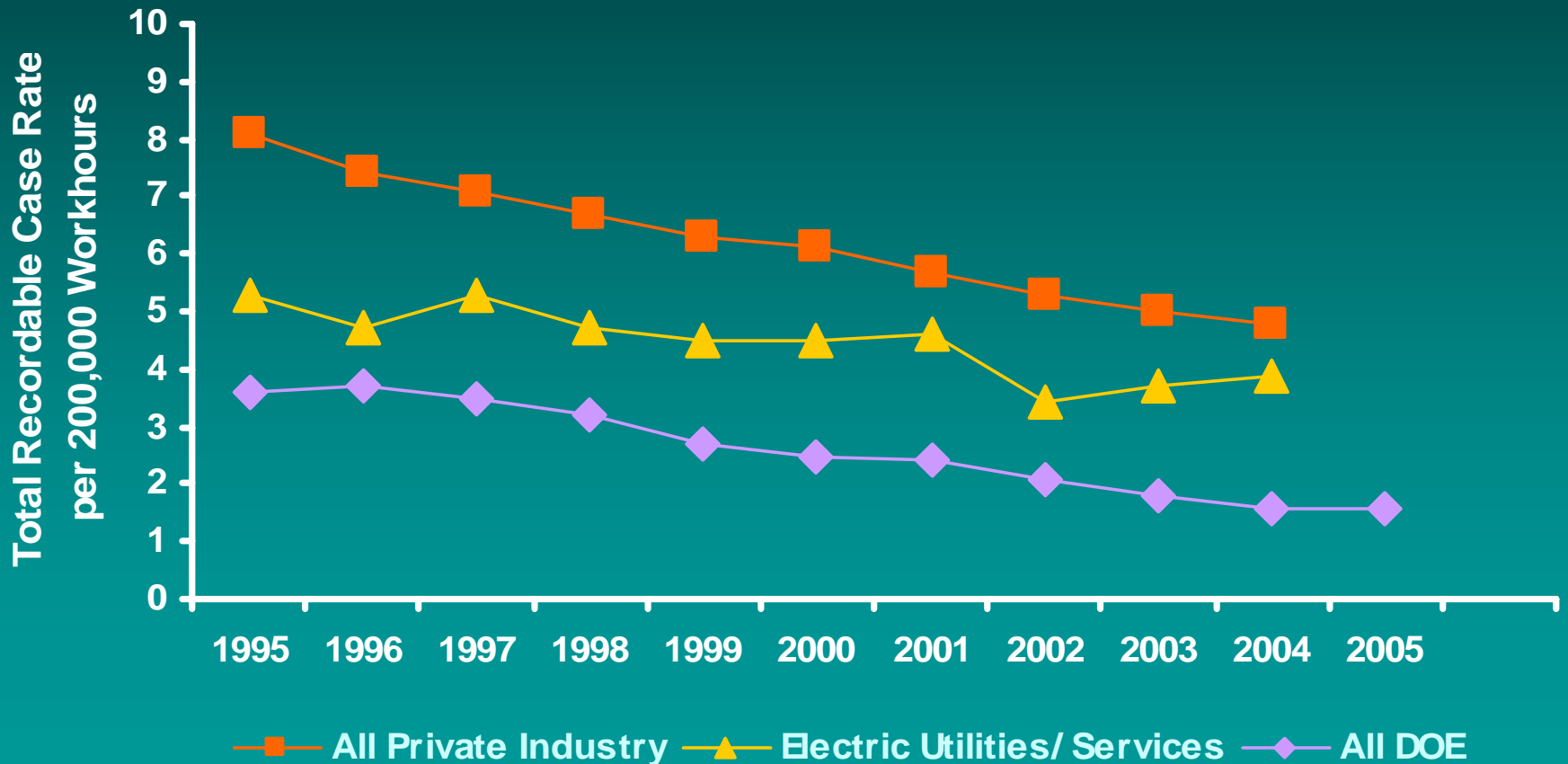
Safety & Operational Trends – Nuclear Materials Licensees Reportable Events Well Within NRC's Performance Goals

- Only 2.5 % of licenses report an event in any year
- Events include both workers and the public
- Radiation overexposures average less than 20 per year
- Release and contamination events trending down
 - Most events are surface contamination
- No 2005 releases to environment over regulatory limit

Safety & Operational Trends – Decades of Very Low Worker Exposure

- 17% of monitored DOE workers receive a measurable dose
- Average Total Effective Dose Equivalent is less than 0.8 mSv
- Only 8 individuals exceeded the 50 mSv regulatory control limit
- Only 16 additional individuals exceeded stricter administrative control limit of 20 mSv
- 1,317 total radiological occurrences reported
 - 81% involved skin contamination
 - 24% involved external exposure/intake


Safety & Operational Trends – Occupational Safety Incidents Less than Half of Industry's



Safety & Operational Trends – Planned Activities to Improve Safety

- Geologic disposal at Yucca Mountain for spent fuel and HLW
- Monitor LLW disposal capacity
- Disused sealed sources tracking, collection, and disposal
- Cleanup of contaminated sites and facilities
- Global Threat Reduction Initiative
- Global Nuclear Energy Partnership

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Topics Raised in the Review of the 2nd U.S. National Report

- Most questions related to diverse topics on Article 32 reporting
- Many questions related to legislative and regulatory framework
- High interest in GTCC LLW disposal
 - <http://www.gpoaccess.gov/nara/index.html>
- “Clearance”
- New developments on Yucca Mountain

Summary

- Mature and successful national program focusing on permanent disposal
- Well established legislative and regulatory infrastructure ensuring safety
- Decades of experience and international cooperation
- Second National Report again confirming U.S. compliance with the Joint Convention