



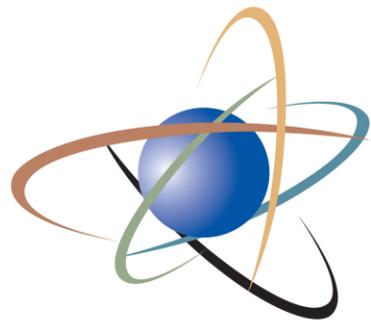
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UNITED STATES NUCLEAR REGULATORY COMMISSION

Protecting People and the Environment

Overview of the Decommissioning and Low Level Waste Business Line

October 1, 2015



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Protecting People and the Environment

Opening Remarks

**Victor M. McCree,
Executive Director for
Operations**



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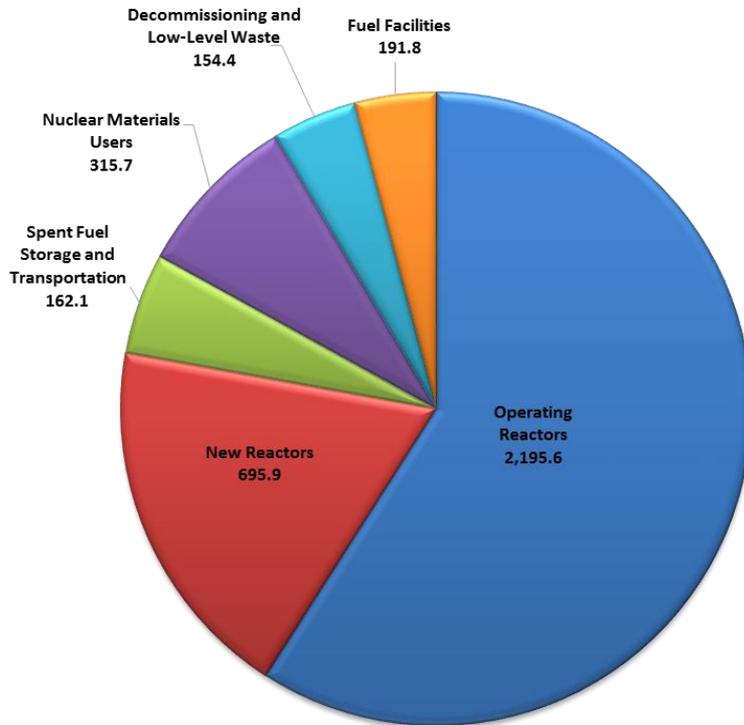
Protecting People and the Environment

**Office of Nuclear
Material Safety and
Safeguards**

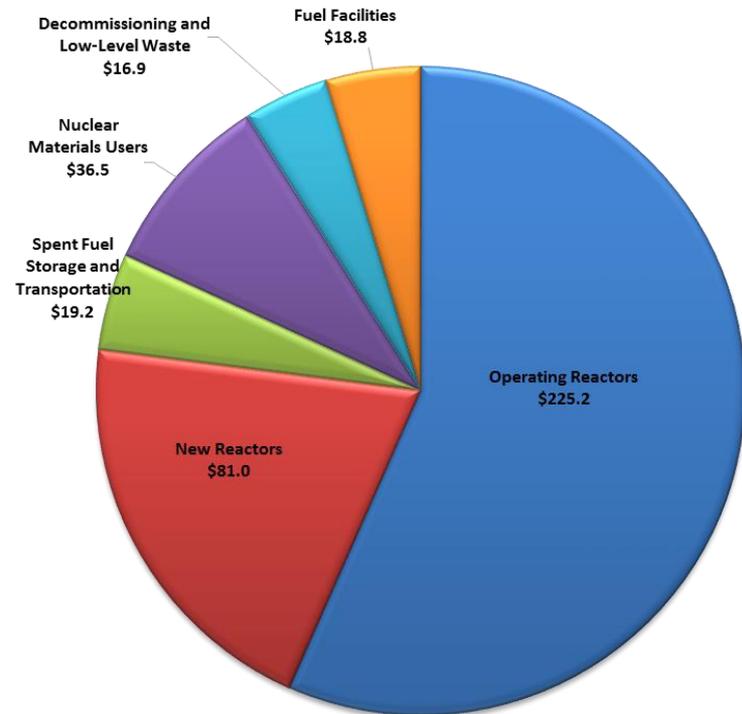
**Catherine Haney
Director**

NRC Resources

FY 2015 Enacted FTE*



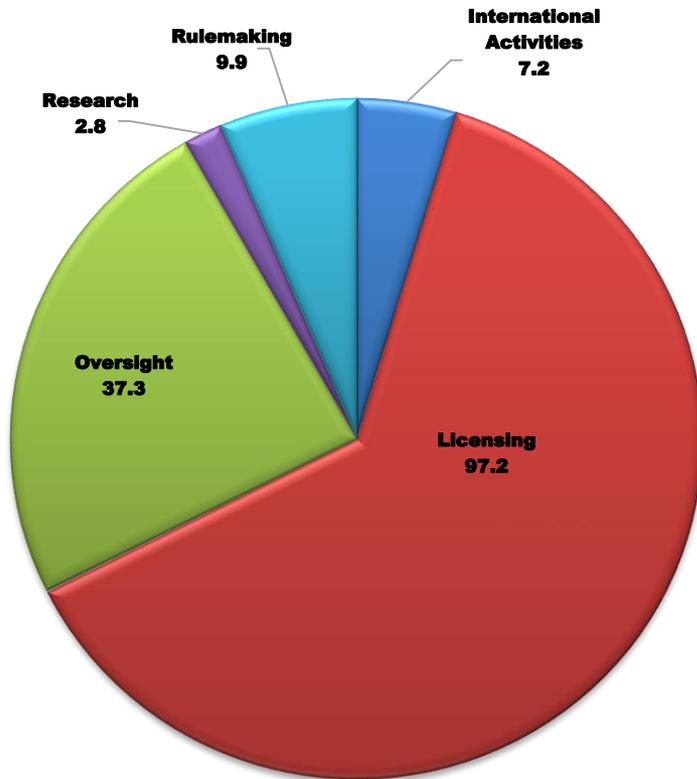
**FY 2015 Enacted CS&T by Business Line*
(Dollars in Millions)**



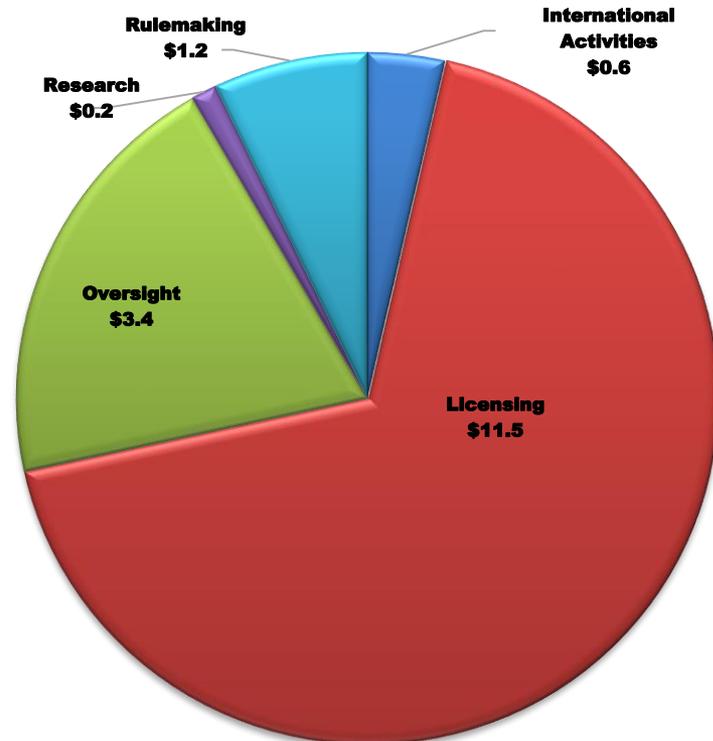
*Contract Support & Travel (CS&T) and Full-Time Equivalent (FTE) reported at Full Cost.

DLLW has significant breadth and scope

FY 2015 Enacted FTE*

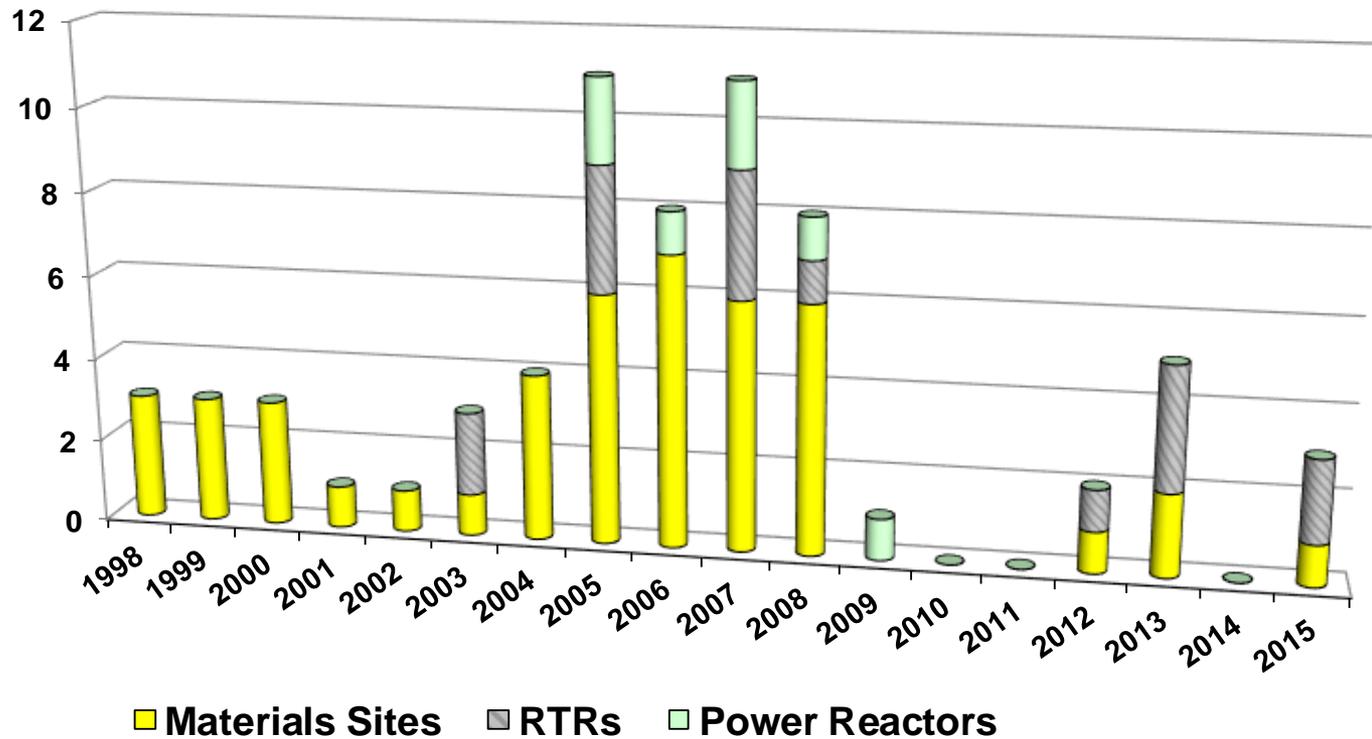


**FY 2015 Enacted CS&T by Business Line*
(Dollars in Millions)**

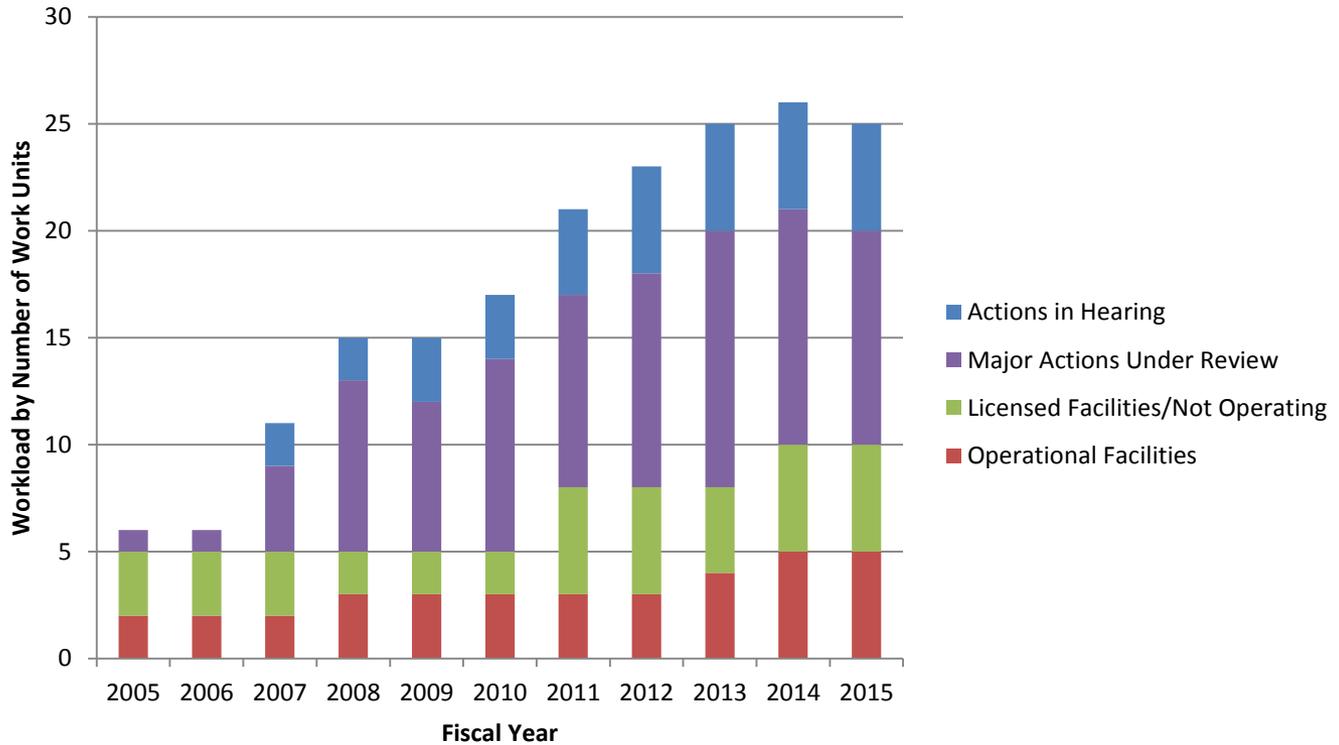


*Contract Support & Travel (CS&T) and Full-Time Equivalent (FTE) reported at Full Cost.

Decommissioning Completions



Uranium Recovery Program Growth



LLW Program



DLLW Initiatives closely align with Project Aim

- **Program Assessments**
- **Business Improvement**





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**Division of
Decommissioning,
Uranium Recovery, and
Waste Programs, NMSS**

Andrew Persinko

Deputy Director

DLLW Workload – Current and Future

- **Decommissioning**
 - **Reactors**
 - **Materials Sites**
 - **Uranium Sites**



DLLW Workload – Current and Future (cont'd)

- **Uranium Recovery Licensing and Oversight**
- **Waste Incidental to Reprocessing**



DLLW Workload – Current and Future (cont'd)

- **LLW Activities**
- **International Activities**



United States of America
Fifth National Report
for the
Joint Convention on the Safety of
Spent Fuel Management and on
the Safety of Radioactive Waste
Management

U.S. Department of Energy

In Cooperation with the
U.S. Nuclear Regulatory Commission
U.S. Environmental Protection Agency
U.S. Department of State

External and Internal influences

- **Commission Policy Decisions**
- **Premature and Planned Shutdown of Power Reactors**
- **Findings at Non-Military Radium Sites**

External and Internal influences (cont'd)

- **Uranium Recovery Growth**
 - **Uranium market**
 - **Environmental reviews and consultations**
 - **Number and extent of hearings**
 - **New Agreement State**

Optimization of Resources

- **Workload distribution**
- **Rotations from other Offices**
- **Identification of critical skills and experience**
- **Knowledge transfer**

Programmatic Evaluations

- **Reactor decommissioning**
- **LLW**
- **Uranium recovery**
 - **License duration**
 - **Licensing efficiency**



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Region IV
Division of Nuclear
Materials Safety

Mark Shaffer
Director

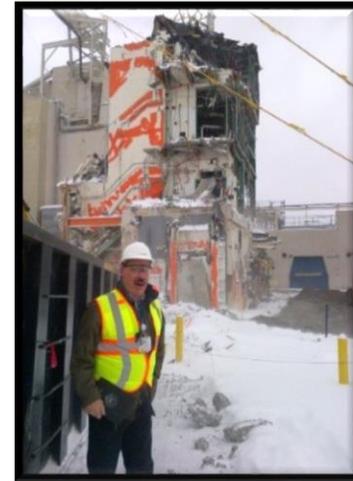
Inspection Oversight:

- **Power Reactors**
- **Complex Sites**
- **Research & Test Reactors**
- **DOE site visits**



Focus Areas:

- **Safety**
- **Security**
- **Emergency Planning**
- **Public Outreach**



Regional Activities - Decommissioning

Reactors & Complex Sites:

- **Transition Oversight**
- **Active Decommissioning Sites**
- **Terminations**

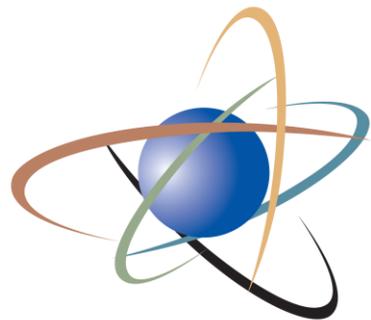
Regional Activities – Uranium Recovery

- **Pre-operational Inspections**
- **Reactive Inspections**



On the Horizon:

- **Increased Workload**
- **Support for Hearings**
- **Wyoming - Agreement State**



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Office of Nuclear Regulatory Research

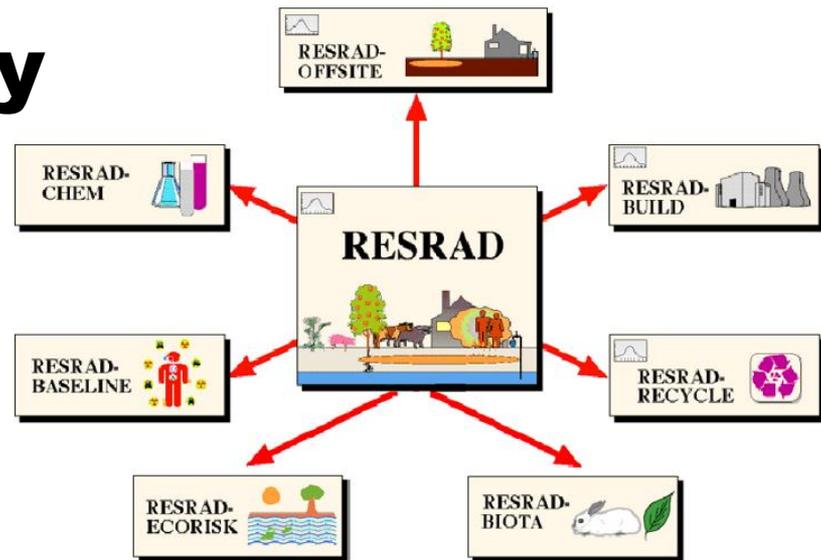
**Rebecca Tadesse, Chief
Radiation Protection Branch**

Research Support for DLLW Program

- **Computer Code Development**
 - **RESRAD Family Code**
 - **MILDOS-Area Code**
 - **Visual Sample Plan Code**
- **Other Areas of Technical Support**

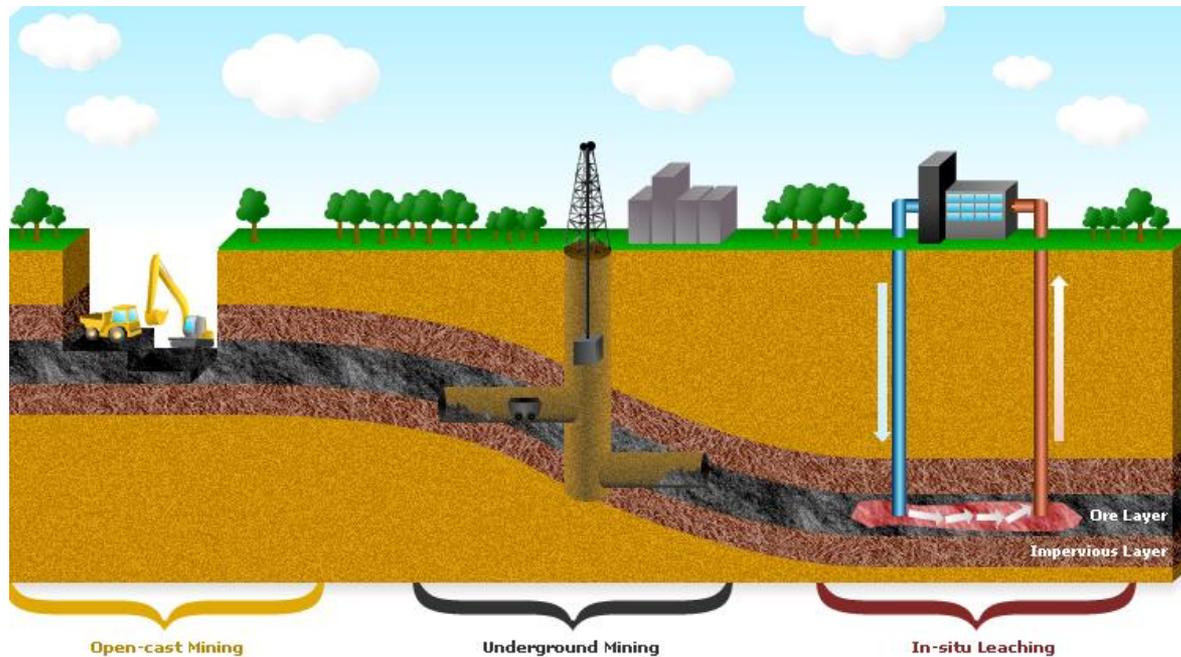
RESRAD Family of Computer Codes

- Residual Radioactivity (RESRAD)
- **Current Activities**



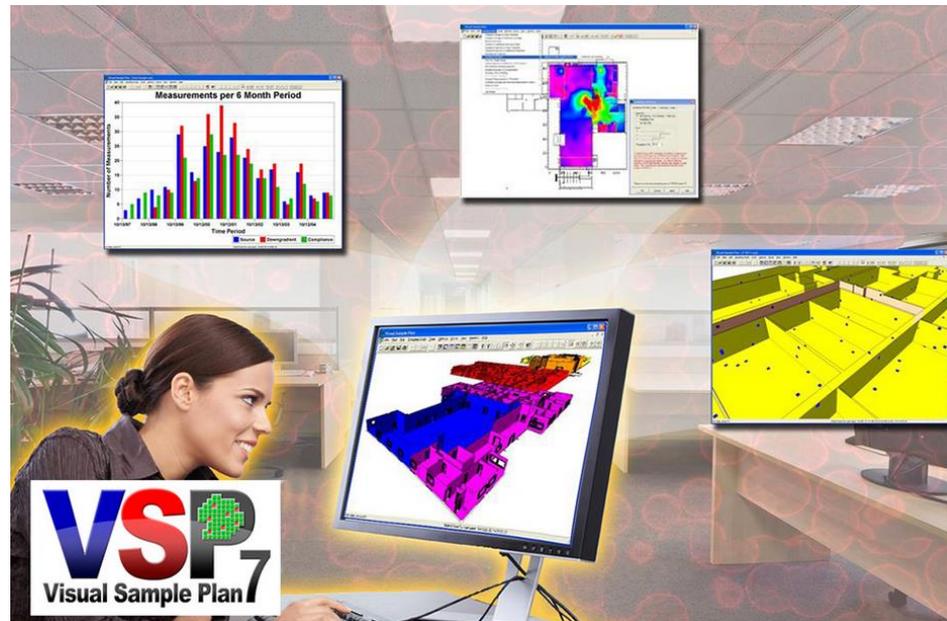
MILDOS-AREA Computer Code

- **MILDOS-AREA**
- **Current Activities**



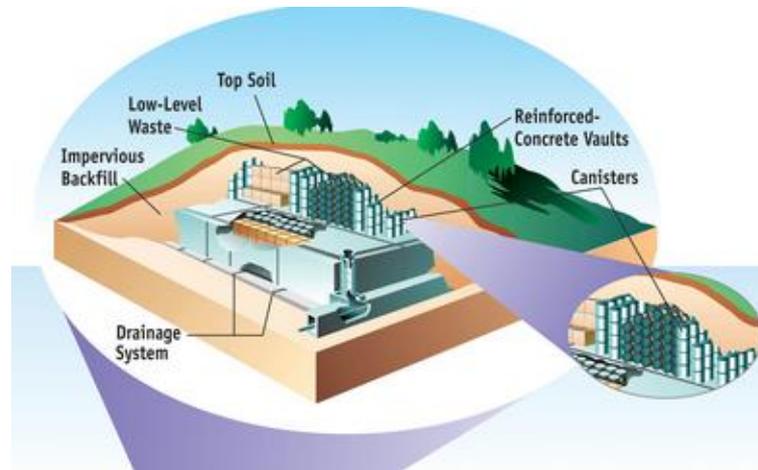
Visual Sample Plan

- **Visual Sample Plan (VSP)**
- **Current Activities**



Other Areas of Technical Support

- **Engineering Cover design**
- **Groundwater Modeling**
- **Geochemistry Review**
- **Hearings**



Challenges and Strategies To Move Forward

- **Resources for Code Maintenance and Updates**
- **Leveraging resources among other Federal Agencies**
- **Utilizing the Radiation Protection Computer Code Analysis and Maintenance Program (RAMP)**



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Protecting People and the Environment

Closing Remarks

**Victor M. McCree,
Executive Director for
Operations**

Acronyms and Initialisms

- **CA BTP – Concentration Averaging Branch Technical Position**
- **DLLW – Decommissioning and Low Level Waste**
- **DOE – Department of Energy**
- **FY – Fiscal Year**
- **GTCC – Greater-Than-Class C**

Acronyms and Initialisms (cont'd)

- **LLW – Low Level Waste**
- **NMSS – Office of Nuclear Material Safety and Safeguards**
- **RTRs – Research and Test Reactors**
- **WIR – Waste Incidental to Reprocessing**



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Protecting People and the Environment

Commission Briefing Spent Fuel Storage and Transportation Business Line

October 1, 2015



U.S. NRC

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Protecting People and the Environment

Opening Remarks

**Victor M. McCree,
Executive Director for
Operations**



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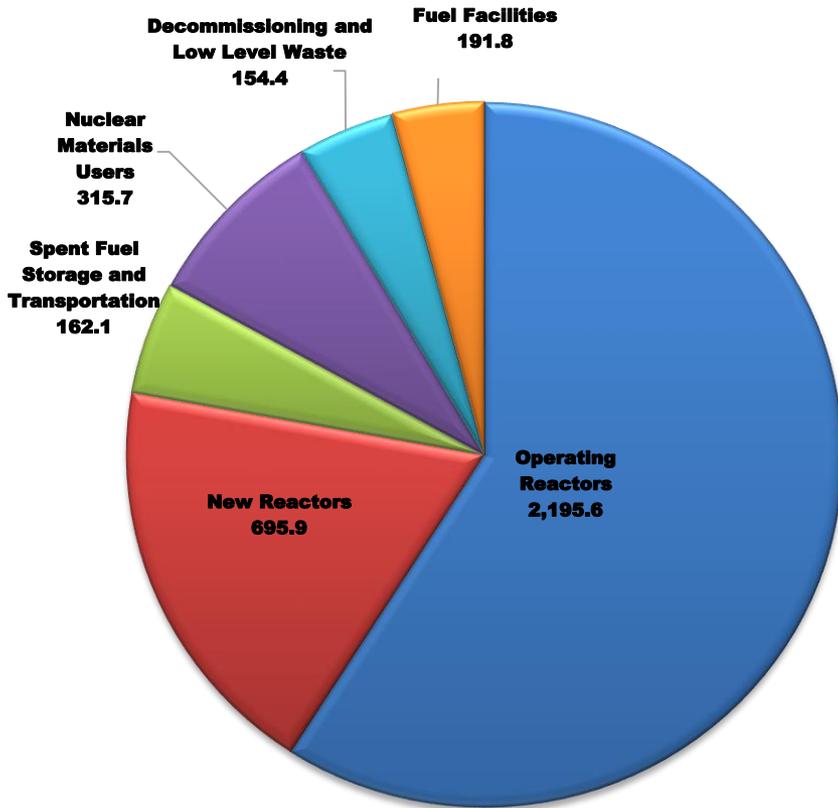
Protecting People and the Environment

**Office of Nuclear
Material Safety and
Safeguards**

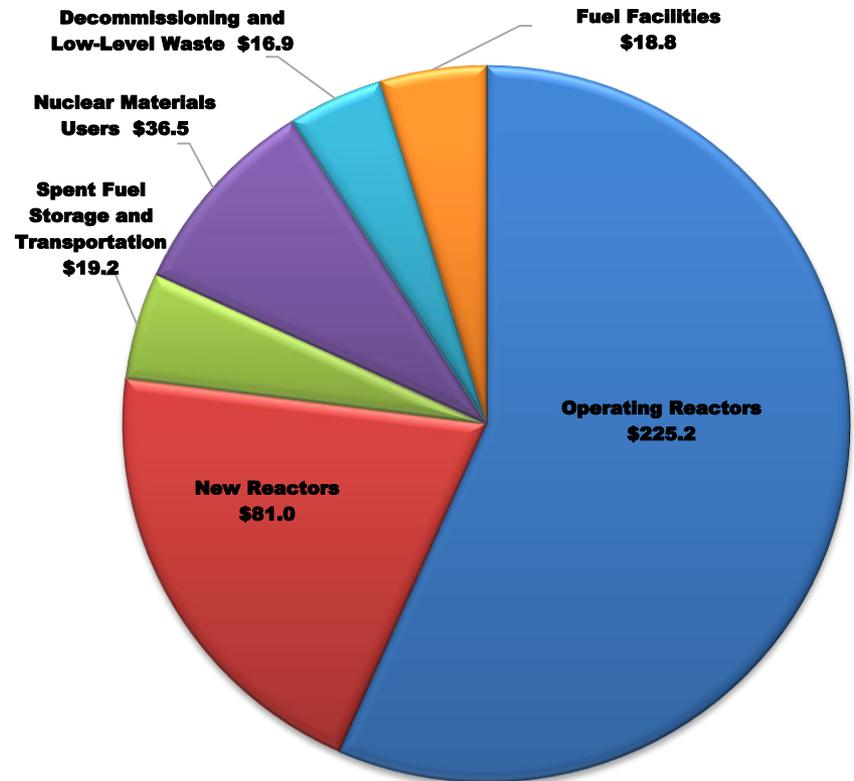
**Cathy Haney
Director**

NRC Resources

FY 2015 Enacted FTE*



**FY 2015 Enacted CS&T by Business Line*
(Dollars in Millions)**

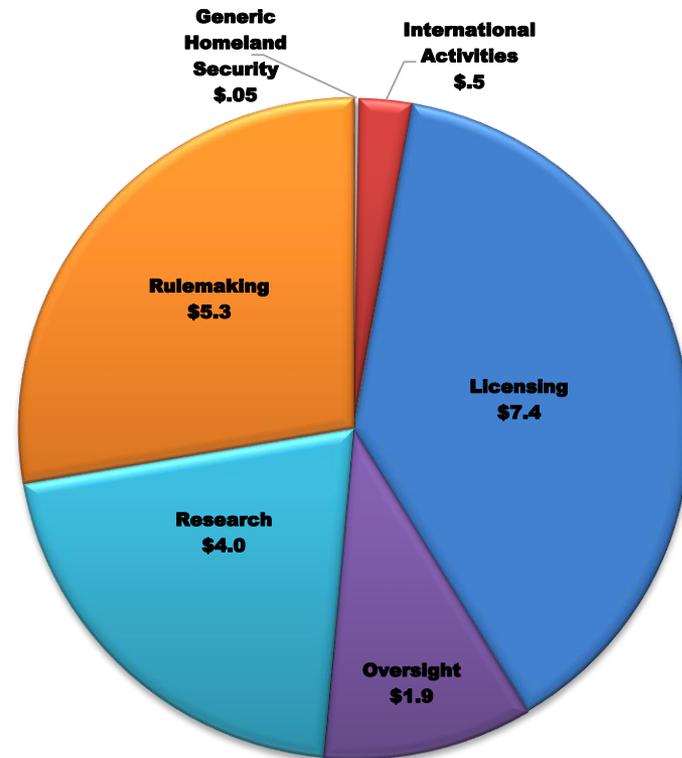
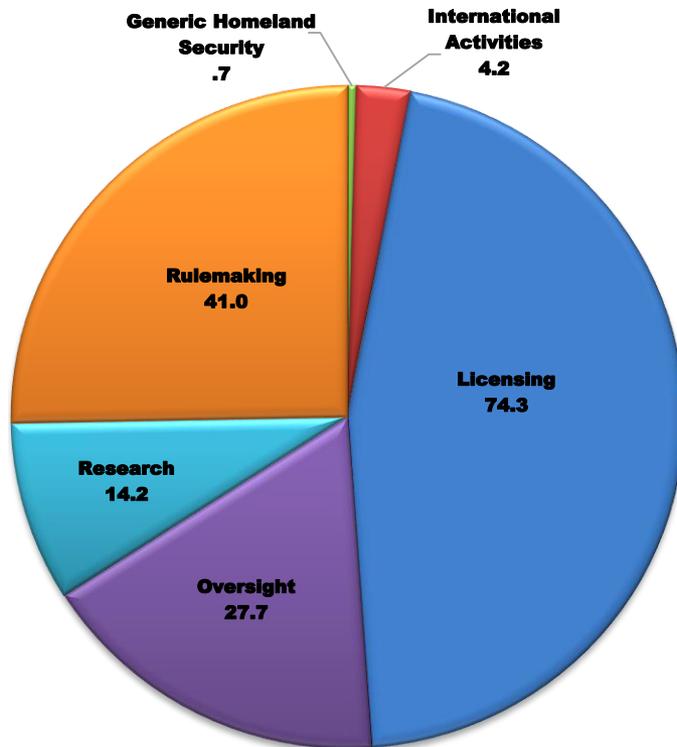


*Contract Support & Travel (CS&T) and Full-Time Equivalent (FTE) reported at Full Cost.

SFST has significant breadth and scope

**FY 2015 Enacted CS&T by Business Line*
(Dollars in Millions)**

FY 2015 Enacted FTE*



*Contract Support & Travel (CS&T) and Full-Time Equivalent (FTE) reported at Full Cost.

Continue to improve efficiency with Project Aim

- **Licensing Process Improvements**
- **Renewal Regulatory Framework**
- **Resolving technical issues**
- **Risk Informing Regulatory Framework**
- **Safety-security interface**



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Division of Spent Fuel Management, NMSS

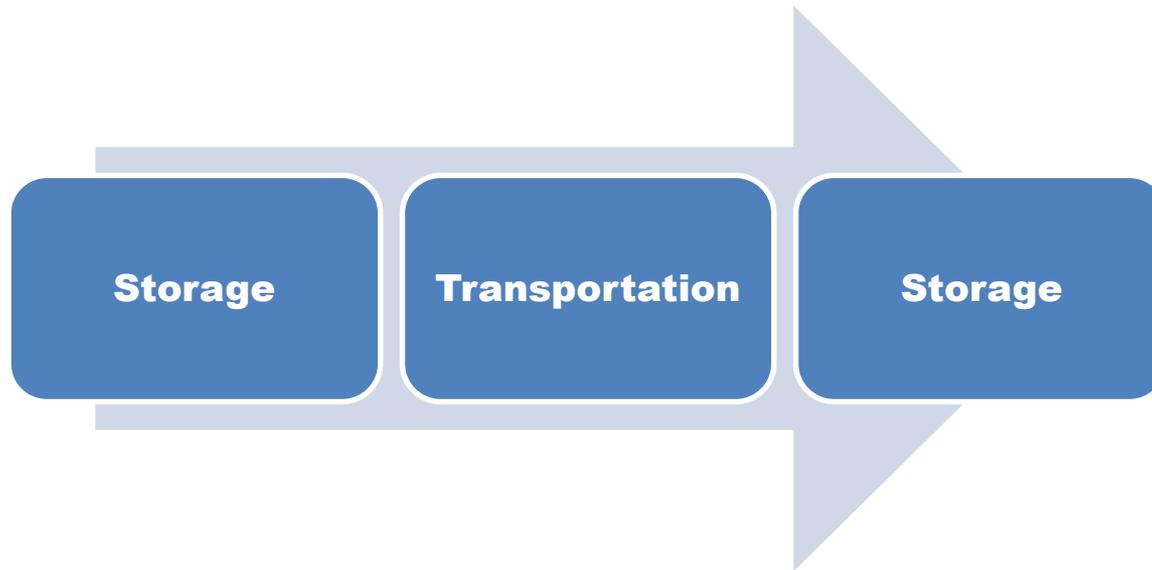
Mark Lombard
Director

Spent Fuel Storage and Transportation Business Line



Paradigm shifts

- **Longer storage periods**
- **Possible 72 – 71 – 72 scenario**



External and internal influences

- **Away-from-reactor ISFSIs**
- **DOE Topical Report**
- **Potential legislative actions**

External and internal influences

- **Evolving national strategy**
- **Increased public interaction**
- **Resources**





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**Division of Spent Fuel
Management
Renewals and
Materials Branch**

**Aladar Csontos
Chief**

Current Licensing and Research Activities

- **Renewal regulatory framework**
- **Impending renewal surge**
- **Updated renewal guidance**
- **Operational Experience**
- **Technical issue resolution**

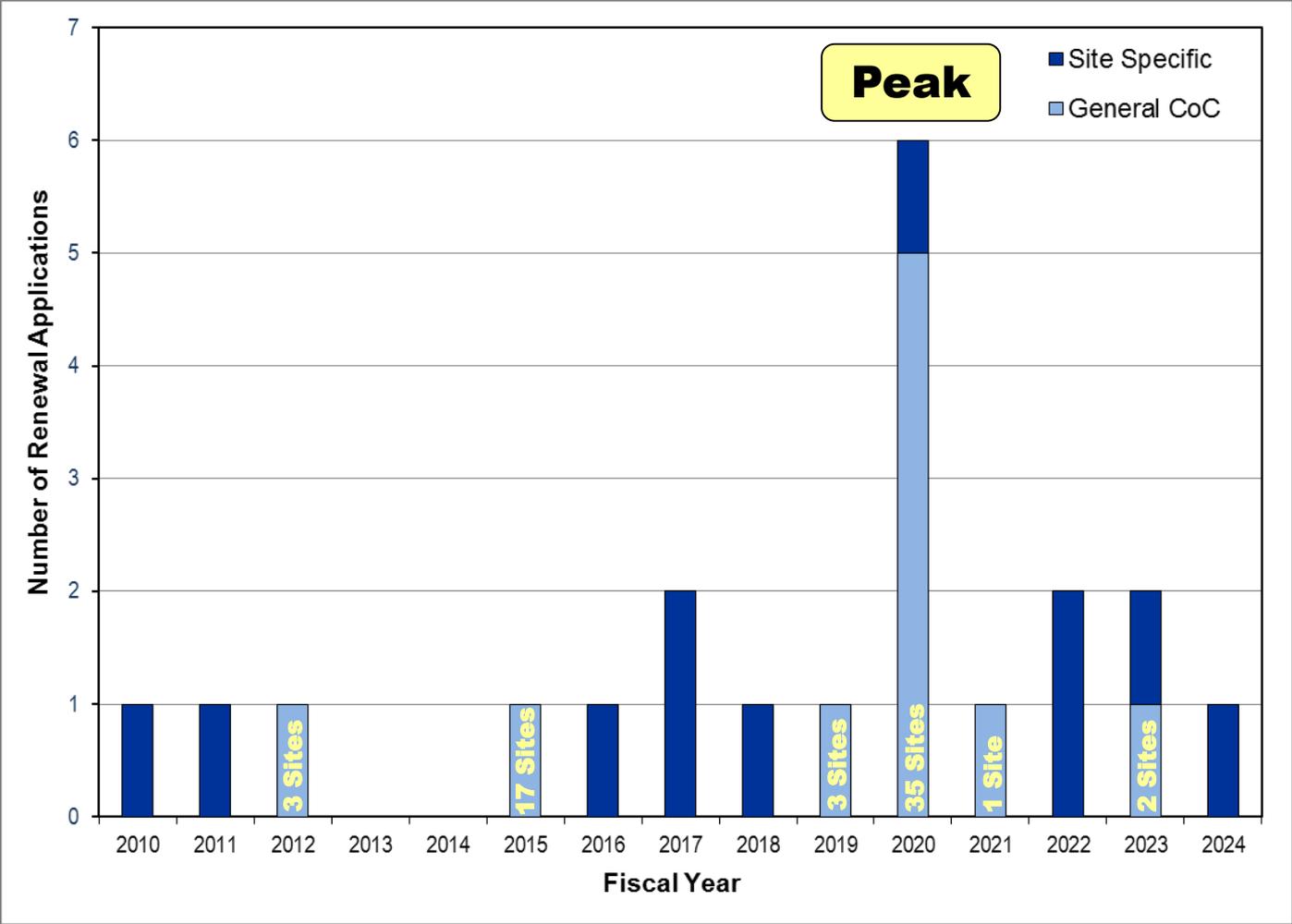
Ensure Safety through Storage Renewal Regulatory Framework

- Maintain intended functions during renewal period**
- Modeled after reactor renewal methodology**
- Renewal period up to 40 years**

Ensure Safety through Storage Renewal Regulatory Framework (cont'd)

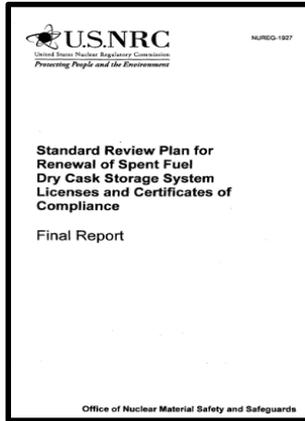
- **Aging Management Program**
- **Time-Limited Aging Analyses**
- **NUREG-1927 Rev. 0: SRP for
Renewal of Spent Fuel DCSS
Licenses and CoC**

Storage Renewal Surge

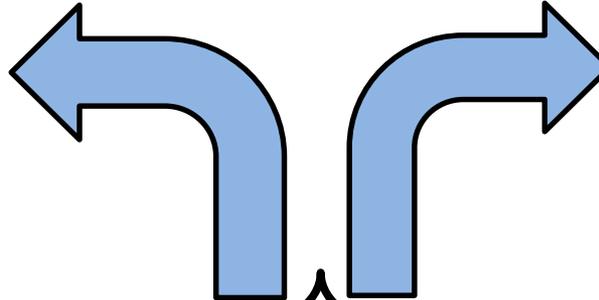


Updated Storage Renewal Guidance Framework

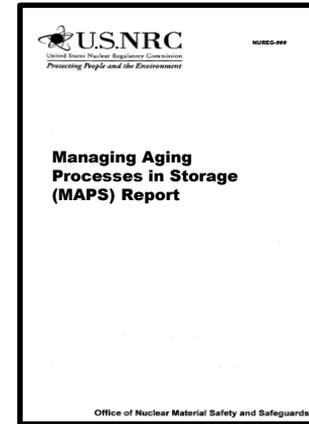
SRP 1927R1



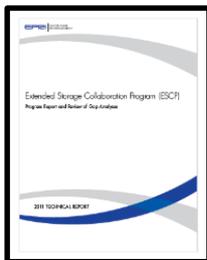
Staff consideration of Stakeholder inputs



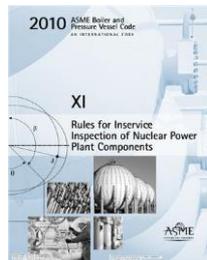
MAPS



Technical Issue Resolution



Consensus Codes



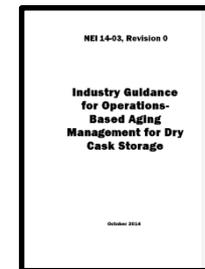
Storage/Reactor OpE



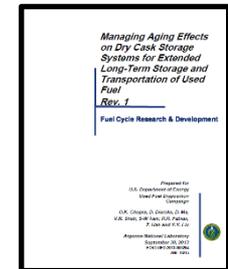
SRP 1927R0



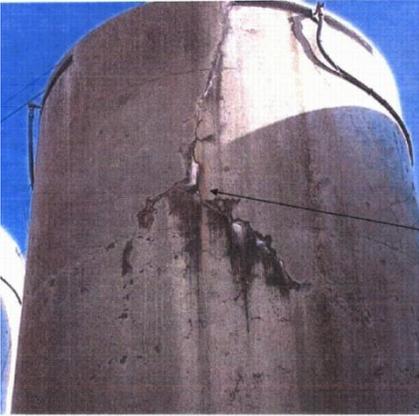
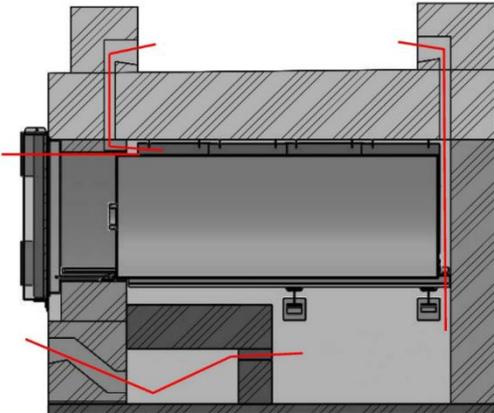
NEI 14-03



DOE/ANL Report



Operational Experience: Concrete Aging

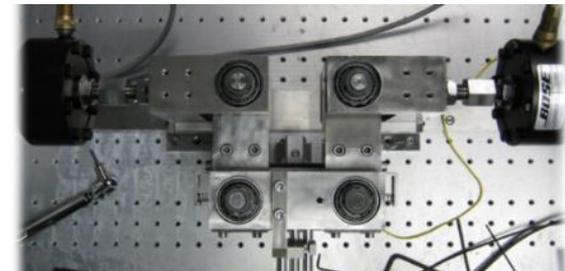
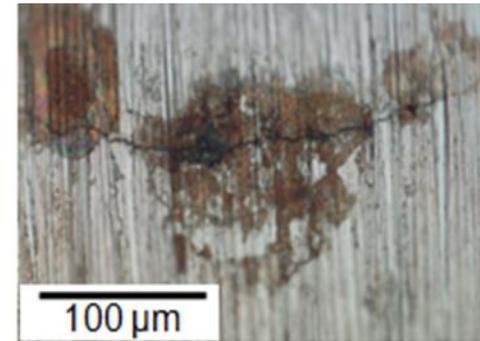
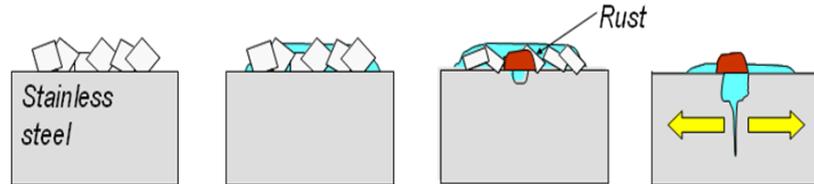


Operational Experience: Canister System Aging



Technical Issue Resolution

- **CI-SCC**
- **Inservice inspection**
- **Consensus Codes**
- **High burnup fuel**
- **Thermal modeling**
- **International coordination**





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Protecting People and the Environment

**Division of Nuclear
Materials Safety,
Region IV**

**Mark Shaffer
Director**

ISFSI Oversight Program:

- **Design**
- **Fabrication**
- **Preoperational Testing**
- **Operations**



Inspection Activities:

- **Construction**
- **Initial Testing**
- **Final Loading**
- **New Systems**



Continuous Improvement:

- **Operational Experience**
- **Program Enhancements**
- **Public Outreach**



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Closing Remarks

**Victor M. McCree,
Executive Director for
Operations**

Acronyms and Initialisms

- **ISFSI – Independent Spent Fuel Storage Installation**
- **FY – Fiscal Year**
- **ICSF – Interim Consolidated Storage Facility**
- **TSAR – Topical Safety Analysis Report**
- **DOE – Department of Energy**

Acronyms and Initialisms (cont'd)

- **SRP: Standard Review Plan**
- **AMP: Aging Management Program**
- **TLAA: Time Limited Aging Analyses**
- **CoC: Certificate of Compliance**

Acronyms and Initialisms (cont'd)

- **MAPS: Managing Aging Processes for Storage NUREG**
- **CI-SCC: Chloride Induced Stress Corrosion Cracking**