



U.S. NRC

UNITED STATES NUCLEAR REGULATORY COMMISSION

Protecting People and the Environment

**Overview of the
Decommissioning
and Low Level Waste
Business Line**

October 18, 2016



U.S. NRC

UNITED STATES NUCLEAR REGULATORY COMMISSION

Protecting People and the Environment

Opening Remarks

Victor McCree

**Executive Director for
Operations**

NRC Panel will Address the Following Topics

- **Licensing and Oversight
Successes and Challenges**
- **Current Decommissioning
Environment**
- **Current Low-Level Waste
Environment**
- **Decommissioning Inspection
Program**



U.S. NRC

UNITED STATES NUCLEAR REGULATORY COMMISSION

Protecting People and the Environment

Office of Nuclear Material Safety and Safeguards

Marc Dapas, Director

Ensuring Safety Over a Broad Range of Activities

- **Licensing and Oversight for Reactor and Materials Decommissioning Sites**
- **Oversight of the Low-Level Waste Management Program**
- **Oversight of the DOE's Waste Incidental to Reprocessing Activities**

Realizing Success

- **Completion of License Terminations**
- **Completion of the Memorandum of Understanding with the Department of Defense**
- **Submission of the Draft Final Low-level Waste Rulemaking to the Commission**

Addressing Challenging and Complex Issues

- **Timely implementation of Radium Oversight Activities**
- **Potential Agreement State Regulatory Oversight of Greater-Than-Class C LLW disposal**



U.S. NRC

UNITED STATES NUCLEAR REGULATORY COMMISSION

Protecting People and the Environment



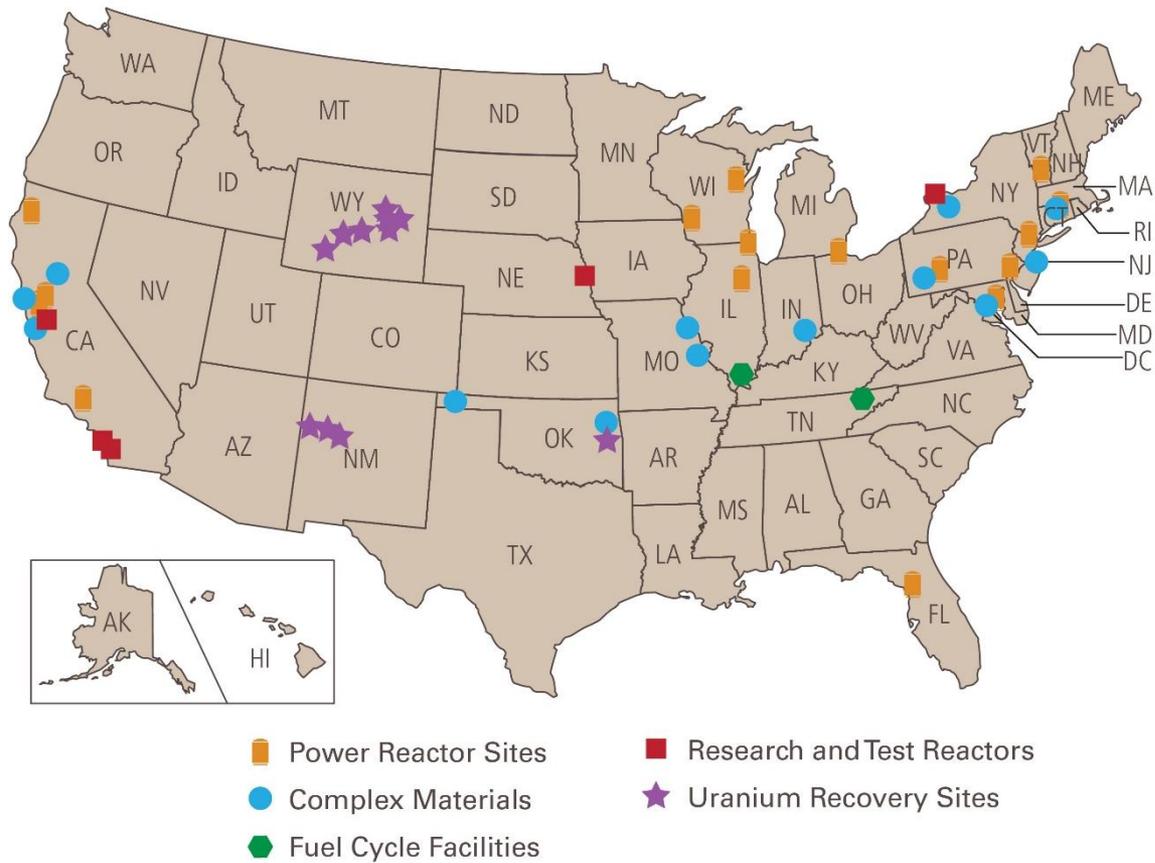
Division of Decommissioning, Uranium Recovery and Waste Programs

John Tappert, Director

Supporting Several Priorities

- **Licensing and Oversight of Complex Decommissioning Materials Sites**
- **Licensing and Oversight of Reactor Decommissioning Sites**
- **Oversight of Radium**

Locations of NRC-Regulated Sites Undergoing Decommissioning



Accomplishments in Materials Decommissioning

- **Issuance of Amendment for 16 US Army Installations**
- **Termination of Licenses at Legacy Sites**
- **Completion of Unlicensed AAR Corporation Site Activities**

Addressing Challenges in Materials Decommissioning

- **Providing Oversight of
Groundwater Issues**
- **Ensuring Clean Up at Sites
with Limited Financial
Resources**

Ongoing Activities in Reactor Decommissioning

- **19 power reactors in decommissioning**
- **6 power reactors in active DECON or active dismantling**
- **13 power reactors in SAFSTOR or deferred dismantlement**
- **6 power reactors announced permanent cessation of operations by 2019**

Accomplishments in Reactor Decommissioning

- **Completion of License Terminations and Partial Site Release Authorizations**
- **Completion of the Decommissioning Lessons Learned Report**
- **Completion of an Evaluation Regarding Prompt Remediation of Contamination During Licensed Operation**

Addressing Challenges in Reactor Decommissioning

- **Planning and Coordinating Reactor transitions into Decommissioning**
- **Addressing Complex Policy Matters**
- **Evaluating and Assessing First of a Kind Requests**

Regulating Radium

- **Energy Policy Act of 2005**
 - **Expanded Byproduct Material Definition to include Discrete Sources of Radium-226**
- **NARM Rule of 2007**
 - **Implemented Provisions of the 2005 Energy Policy Act**
- **Development of MOU with DoD**
- **Non-Military Radium Oversight**

Ongoing Activities in the Radium Program

- **Managing an Outreach and Information Gathering Campaign (non-Military)**
- **Addressing Policy Issues with the Regulation of Radium Sites (non-Military)**
- **Implementing a Memorandum of Understanding (Military)**



U.S. NRC

UNITED STATES NUCLEAR REGULATORY COMMISSION

Protecting People and the Environment

**Division of Decommissioning,
Uranium Recovery and Waste
Programs
Low-Level Waste Branch
Gregory Suber, Chief**

Low-Level Waste Overview

- **Current Program Activities**
- **Recent Program Accomplishments**
- **Emerging Issues and Challenges**

Ensuring Safe Disposal of Low-Level Waste

- **Focus includes:**
 - **Assessing the National Low-Level Waste Regulatory Framework**
 - **Supporting Agreement State Oversight of Disposal Facilities**
 - **Monitoring Certain DOE Disposal Activities**
 - **Conducting External Outreach**

Ongoing Activities in the LLW Program

- **GTCC and Transuranic Waste Regulatory Basis**
- **Byproduct Material Financial Assurance Rulemaking Plan**
- **Savannah River Site Waste Incidental to Reprocessing**

Accomplishments in the LLW Program

- **Published Proposed Part 61 Rulemaking for Public Comment**
- **Assessed and Responded to Numerous Comments**
- **Provided Draft Final Rule to the Commission**
- **Issued the Branch Technical Position on Concentration Averaging and Encapsulation**

Managing Challenges in the Low-Level Waste Program

- **LLW Programmatic Assessment**
 - **Prioritize Existing and Identify New Tasks**
 - **Implement Branch Technical Position on Concentration Averaging and Encapsulation**
 - **Perform Low Activity Waste Scoping Study**



U.S. NRC

UNITED STATES NUCLEAR REGULATORY COMMISSION

Protecting People and the Environment

Region I
Division of Nuclear
Materials Safety
Decommissioning & Technical
Support Branch
Raymond Powell, Chief

Assuring Safety of Decommissioning Units



Increasing Efficiency through Enhancements to Inspection Guidance



Millstone Unit 1



Vermont Yankee

Progress has been Made at Complex Materials Decommissioning Sites



Inspection Value – Added



HDP Unit 10-13
Confirmatory Surveys
April 2015

Legend Sensor CPM

- 11930 - 12930
- 12931 - 13430
- 13431 - 13930
- 13931 - 14330
- 14331 - 14730
- 14731 - 15230
- 15231 - 15730
- 15731 - 16330
- 16331 - 16930
- 16931 - 17830



Gamma Walk Over Survey Results

Training Decommissioning Health Physics Inspectors

- **Unique inspection skillset**
- **Additional training needs:**
 - Licensing Practices and Procedures**
 - MARSSIM**
 - MARSAME**
 - RESRAD**



Addressing Challenges to Develop the Future Workforce

- **Core Competency Modeling Project**
- **More Clearly Defined Individual Training Needs**
- **Improved Qualification Journal**



Supporting Upcoming Work on Non-Military Radium



**Former New
Haven Clock Co.**



**Former Gilbert
Clock Company**



U.S. NRC

UNITED STATES NUCLEAR REGULATORY COMMISSION

Protecting People and the Environment

**Overview of the
Spent Fuel Storage
and Transportation
Business Line**

October 18, 2016



U.S. NRC

UNITED STATES NUCLEAR REGULATORY COMMISSION

Protecting People and the Environment

Opening Remarks

Victor McCree

**Executive Director for
Operations**

NRC Panel will Address the Following Topics

- **Current spent fuel environment and licensing process changes**
- **Current licensing activities for CISF and Renewals**
- **Oversight of Independent Spent Fuel Storage Installations**



U.S. NRC

UNITED STATES NUCLEAR REGULATORY COMMISSION

Protecting People and the Environment

Office of Nuclear Material Safety and Safeguards

Marc Dapas, Director

Ensuring Safety Over a Broad Range of Activities

- **Spent Fuel Storage Licensing**
- **Transportation Certification**
- **Optimizing Available Resources and Collaboration**
- **ISFSI Oversight**



U.S. NRC

UNITED STATES NUCLEAR REGULATORY COMMISSION

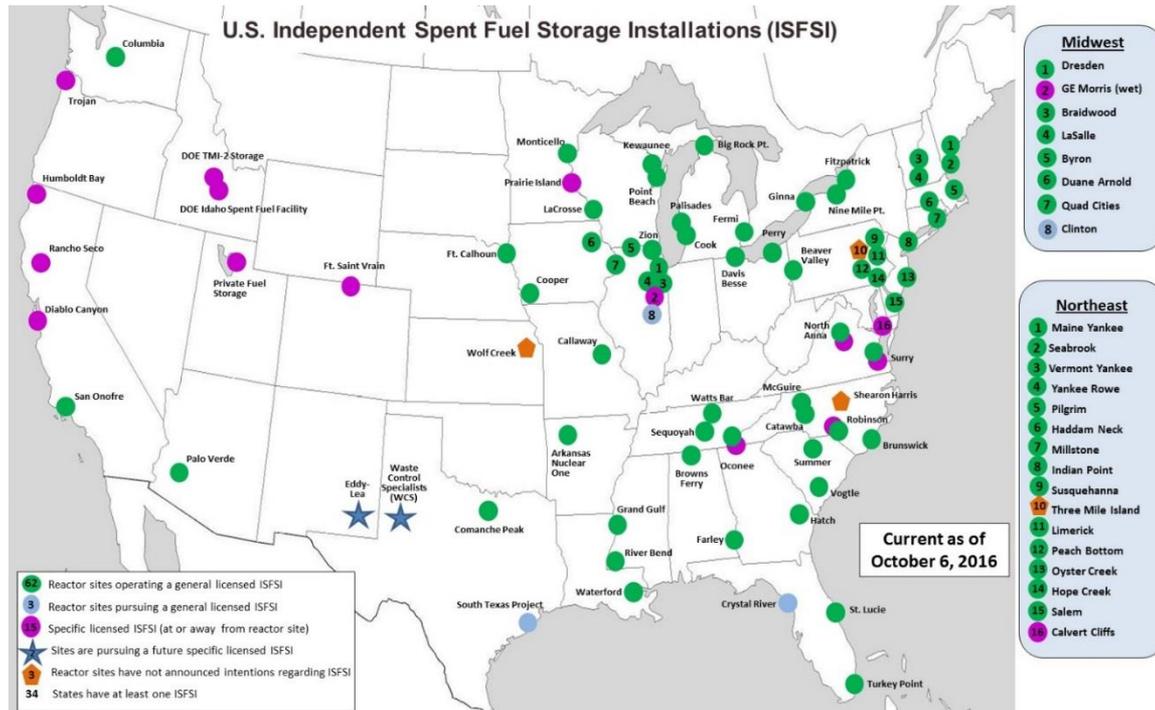
Protecting People and the Environment



Division of Spent Fuel Management

Mark Lombard, Director

Solid Baseline and Potential Increase in Workload



Proactively Addressing the Potential Workload Increase

- **Modifying internal processes**
- **Issuing Division Instructions**
 - **Prompt Issue Resolution**
- **Developing a graded approach to dry cask storage regulatory framework**

Monitoring External Factors

- **Potential workload increase as National High-Level Waste Management Strategy evolves**
- **High level of public interest and interactions**
- **Anticipating large number of ISFSI and storage CoC renewals**

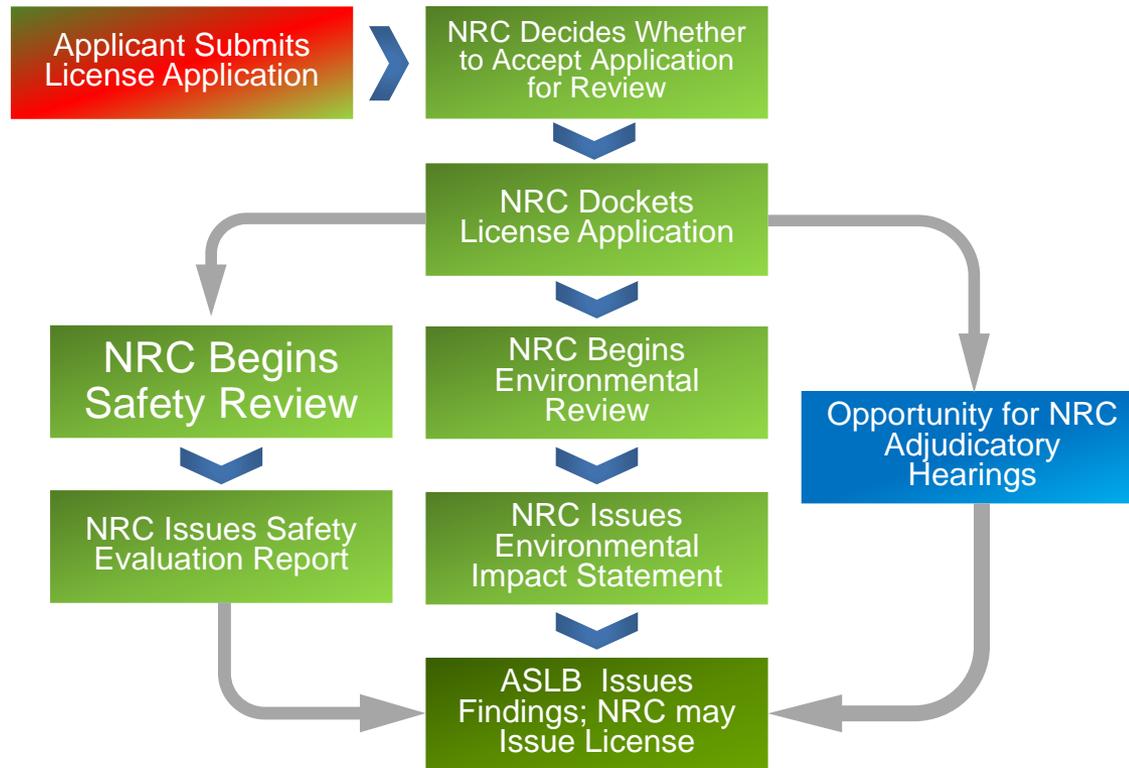
Addressing Challenging Licensing Activities

- **Consolidated Interim Storage Facility (CISF) Reviews**
 - **Preparations for Safety-Focused Efficient Review of CISFs**
- **Renewal Reviews**
 - **Streamlined Framework for Storage Renewal**

Ensuring a Rigorous, Consistent, and Predictable Process for Reviewing CISF Applications

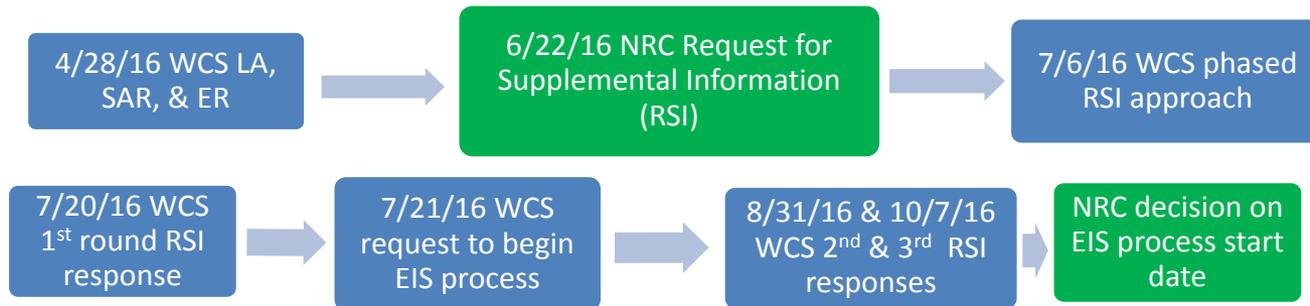
- **Issued division instructions to describe expectations and best practices**
 - **Pre-application meetings and audits**
 - **Prioritization framework to manage workload**
 - **Prompt issue resolution process**

Implementing and Communicating an Effective Licensing Process



Employing Revised Internal Processes for CISF Review

- **WCS Timeline**

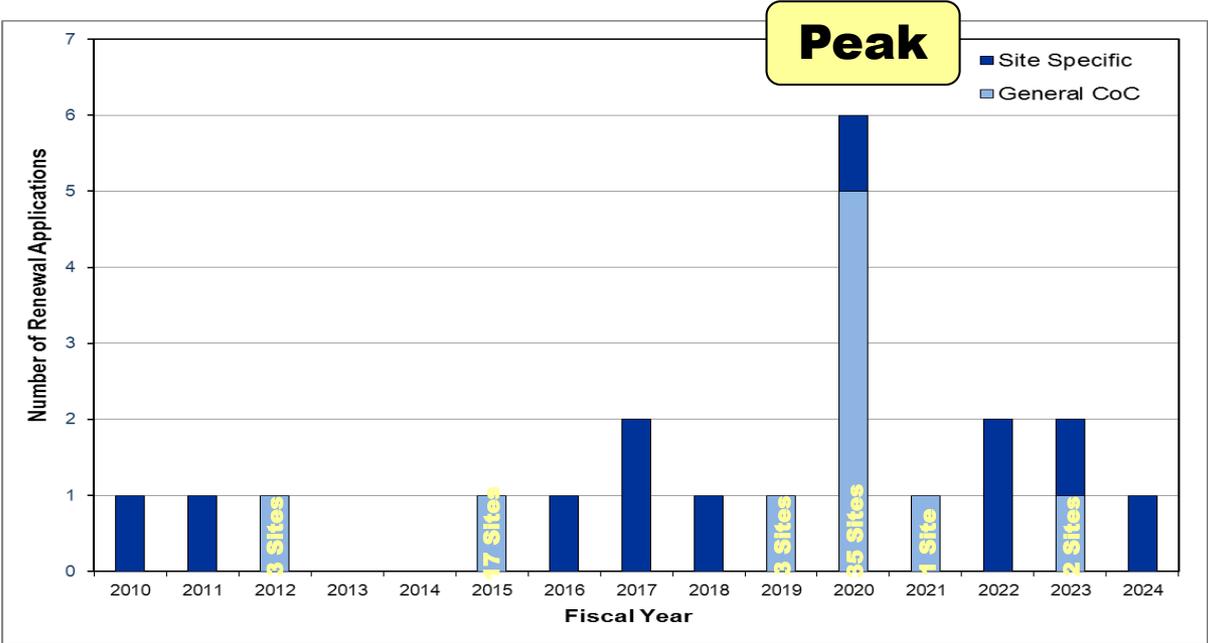


- **Second Application Anticipated in March 2017**

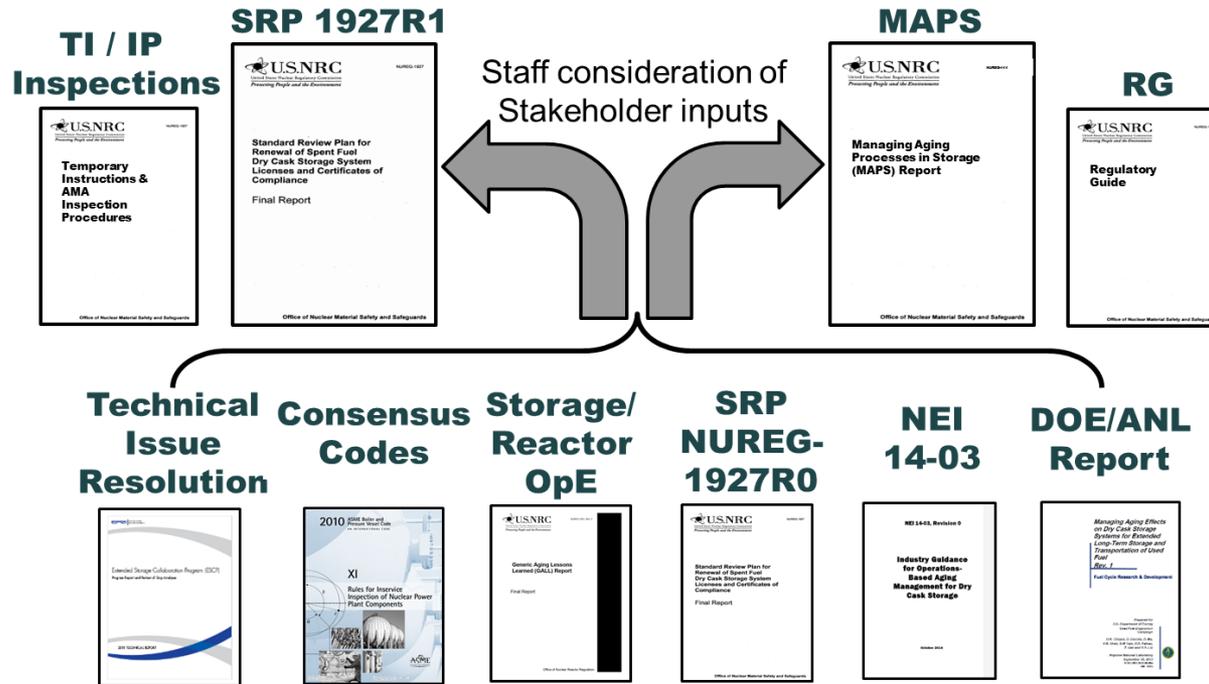
Implementing a Predictable, Stable, and Efficient Renewal Framework

- **Leveraged Agency Experience Regarding Operating Reactor Renewals**
- **Preparing for the anticipated surge in renewal activities**

Implementing a Predictable, Stable, and Efficient Renewal Framework (cont'd)



Implementing a Predictable, Stable, and Efficient Renewal Framework (cont'd)



Implementing a Predictable, Stable, and Efficient Renewal Framework (cont'd)

- **Issued NUREG-1927 Rev. 1:
Standard Review Plan for Renewal
of Specific Licenses and
Certificate of Compliance for Dry
Storage of Spent Fuel**
- **Publishing for Comment the
Managing Aging Processes in
Storage Report**

Implementing a Predictable, Stable, and Efficient Renewal Framework (cont'd)

- **NRC Inspection Guidance**
- **Regulatory Guide**
 - **Potential endorsement of industry guidance NEI 14-03**
- **Consensus Standards**
 - **ASME and ACI**



U.S.NRC

UNITED STATES NUCLEAR REGULATORY COMMISSION

Protecting People and the Environment

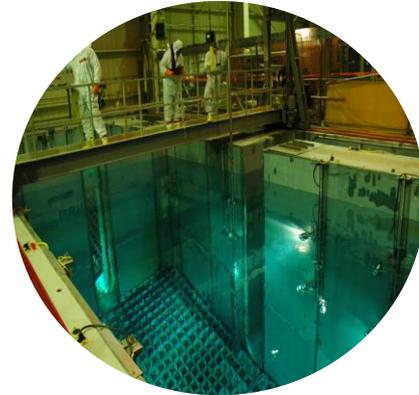
Region III

**Division of Nuclear
Materials Safety**

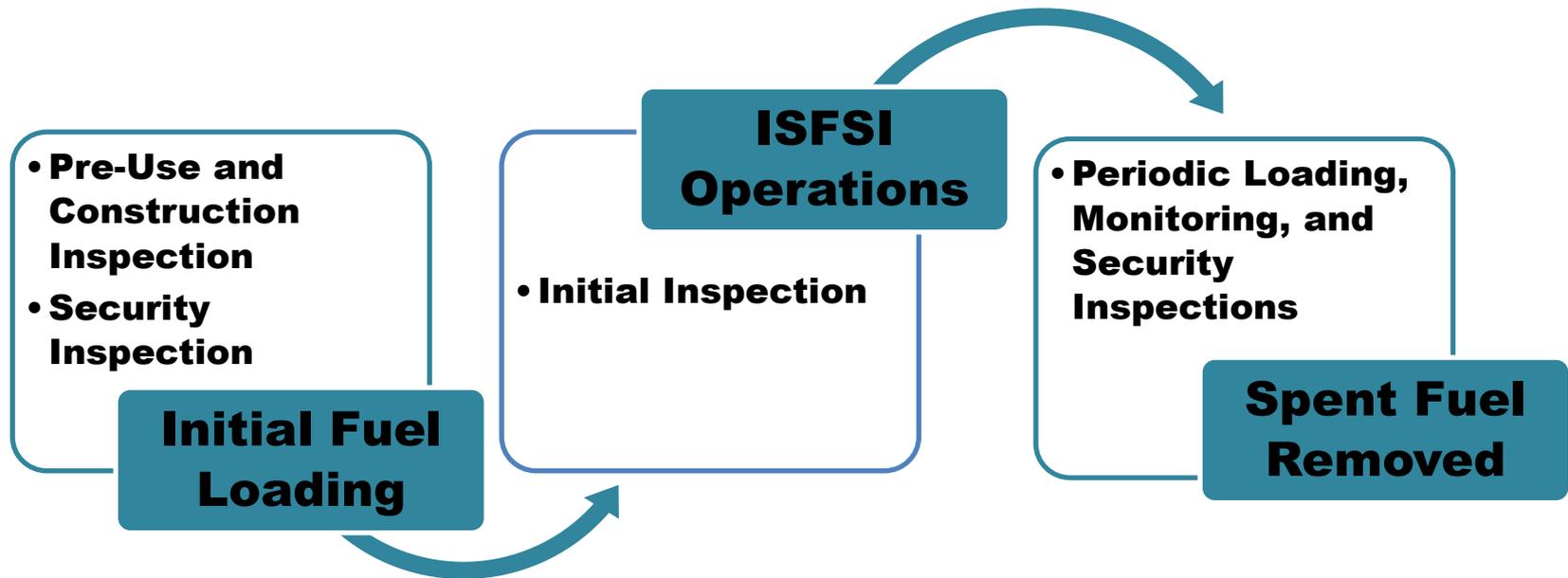
Christine Lipa, Deputy Director

Inspection Focus

**Safety
and
Security
of Spent
Fuel**



ISFSI Inspections Cover a Wide Range of Activities



Ensuring Safety through Effective Regional Oversight

- **Non-destructive Testing**
- **Control of Heavy Loads**

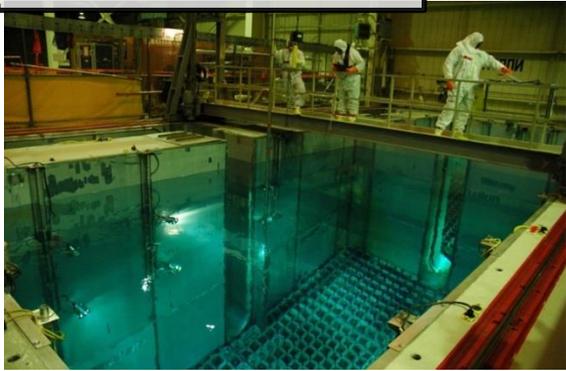


Addressing Dry Cask Storage Capacity

**Spent
Fuel
Pool**

**Limited
Capacity**

**Pool
re-racks
complete**

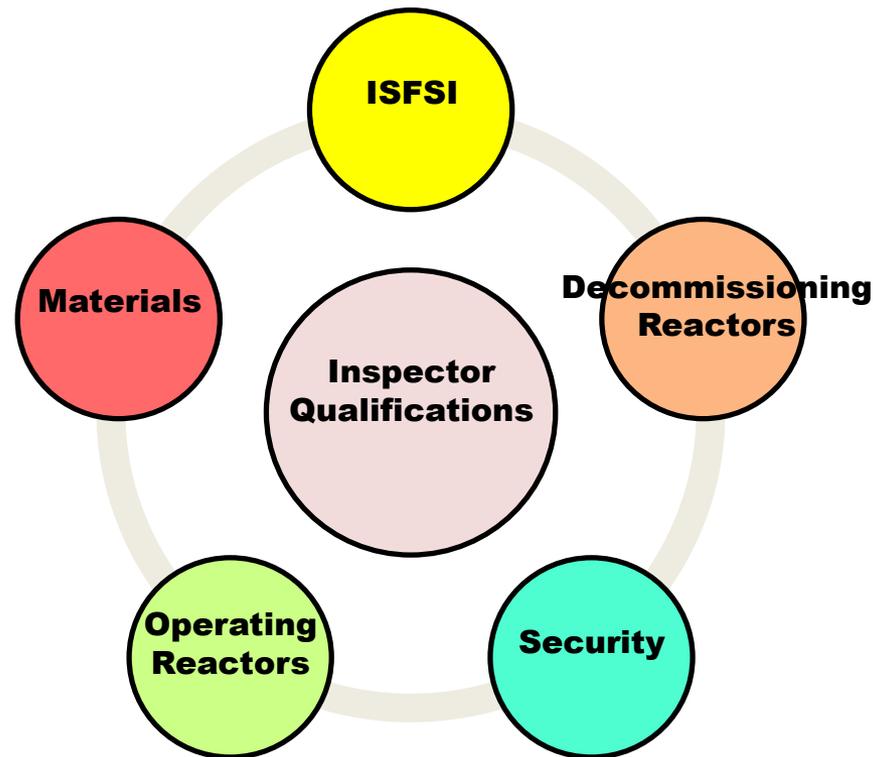


ISFSI

**Operating
ISFSIs
changing
cask
vendors**

**Shutdown
reactor
sites
expediting
transfer**

Inspector Flexibility and Cross-Training



Questions

Acronyms

- **American Concrete Institute (ACI)**
- **American Society of Mechanical Engineers (ASME)**
- **Atomic Safety and Licensing Board (ASLB)**
- **Certificate of Compliance (CoC)**
- **Consolidated Interim Storage Facility (CISF)**
- **Department of Defense (DoD)**
- **Department of Energy (DOE)**
- **Environmental Impact Statement (EIS)**
- **Greater-Than Class C (GTCC)**
- **Independent Spent Fuel Storage Installation (ISFSI)**

Acronyms

- **Low-Level Waste (LLW)**
- **Multi-Agency Radiation Survey and Assessment Equipment Manual (MARSAME)**
- **Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)**
- **Memorandum of Understanding (MOU)**
- **Naturally-occurring and accelerator produced radioactive material (NARM)**

Acronyms

- **Nuclear Energy Institute (NEI)**
- **Nuclear Regulatory Commission (NRC)**
- **Request for Supplemental Information (RSI)**
- **Residual Radioactivity (RESRAD)**
Waste Control Specialists (WCS)