

# SPENT FUEL PROJECT OFFICE RECENT ACTIVITIES AND STATUS

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JOINT ACRS/ACNW SUBCOMMITTEE MEETING  
MARCH 26, 1996

WILLIAM D. TRAVERS, DIRECTOR  
CHARLES J. HAUGHNEY, DEPUTY DIRECTOR  
SPENT FUEL PROJECT OFFICE

OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS

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MEMORANDUM  
JOINT ACRS/ACM SUBCOMMITTEE  
MARCH 26, 1956



HANDOUTS  
JOINT ACRS/ACNW SUBCOMMITTEE  
MARCH 26, 1996

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## Briefing Objectives

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- ▶ Introduce ACRS/ACNW Joint Subcommittee to Spent Fuel Project Office:
  - ▷ Responsibilities and Organization
  - ▷ Current and Anticipated Dry-Cask Storage Casework
  - ▷ Dry Cask Storage Action Plan and Guidance Development



# Creation of Spent Fuel Project Office

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- ▶ Increasing Workload -MPC AND MRS
- ▶ Increasing Casework for Commercial Sites
- ▶ Common Elements in Transportation and Storage Reviews
- ▶ Combination of Transportation and Storage Reviews (e.g., Dual and Multipurpose Casks)
- ▶ Increasing Congressional and Public Interest
- ▶ Spent Fuel Project Office Formed Within NMSS in May 1995, Fully-Staffed Complement of 53 FTE



*UNITED STATES NUCLEAR REGULATORY COMMISSION*

## Spent Fuel Project Office Office of Nuclear Material Safety and Safeguards

**William D. Travers, Director**

**Charles J. Haughney, Deputy  
Director**

**Earl Easton, Section Leader  
Transportation & Safety Section**

**Ross Chappell, Section Leader  
Package Certification Section**

**John P. Jankovich, Section Leader  
Inspection Section**

**Fritz C. Sturz, Section Leader  
Spent Fuel Technical Review Section**

**Eric J. Leeds, Section Leader  
Spent Fuel Licensing Section**



# Spent Fuel Project Office Responsibilities

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- ▶ ISFSI Licensing, Inspection Program Development and Project Management
- ▶ Storage and/or Transport Cask Certification for Spent Fuel; Transport Package Certification for Other Radioactive Materials Packages
- ▶ Review/licensing of Centralized Storage Facilities
- ▶ Multi-Purpose Canister Review, Burnup Credit Review
- ▶ Implement Regulatory Program for Safe Transportation of Licensed Radioactive Materials; DOT/IAEA Interface
- ▶ Quality Assurance Program Reviews and Inspections

# SNF Storage & Transport Systems

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## ► 1 Dual Purpose (Storage/Transport) Cask

NAC-STC (26 PWR)

## ► 8 Transport Casks for LWR SNF

IF-300 (7 PWR, 17-18 BWR)

TN-9 (7 BWR)

NLI-1/2 (1 PWR, 2 BWR)

NLI-10/24 (10 PWR, 24 BWR)

TN-8, TN-8L (3 PWR)

NAC-LWT (1 PWR, 2 BWR)

TN-BRP (44 BWR)

TN-REG (20 PWR)

## ► 12 Dry Storage Systems

NUHOMS-24P (24 PWR)

VSC-24 (24 PWR)

CASTOR V/21 (21 PWR)

CASTOR X-28 (28 PWR)

NAC-I28 S/T (28 PWR)

TN-24 (24 PWR)

NUHOMS-7P (7 PWR)

TN-40 (40 PWR)

STANDARDIZED NUHOMS

[NUHOMS-24P (24 PWR),  
NUHOMS-52B (52 BWR)]

MC-10 (24 PWR)

NAC-C28 S/T (56 PWR assemblies  
consolidated into 28 canisters)

Modular Vault Dry Storage (83 PWR/150 BWR)



## General License (10 CFR Part 72 Subpart K)

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- ▶ Issued to power reactor licensees for storage of spent fuel in NRC-approved casks (10 CFR 72.210)
- ▶ Section 133 of the NWPA required NRC to develop such a rule
- ▶ Final Rule - published July 18, 1990, (55 FR 29181) effective August 17, 1990
- ▶ New cask designs added by rulemaking

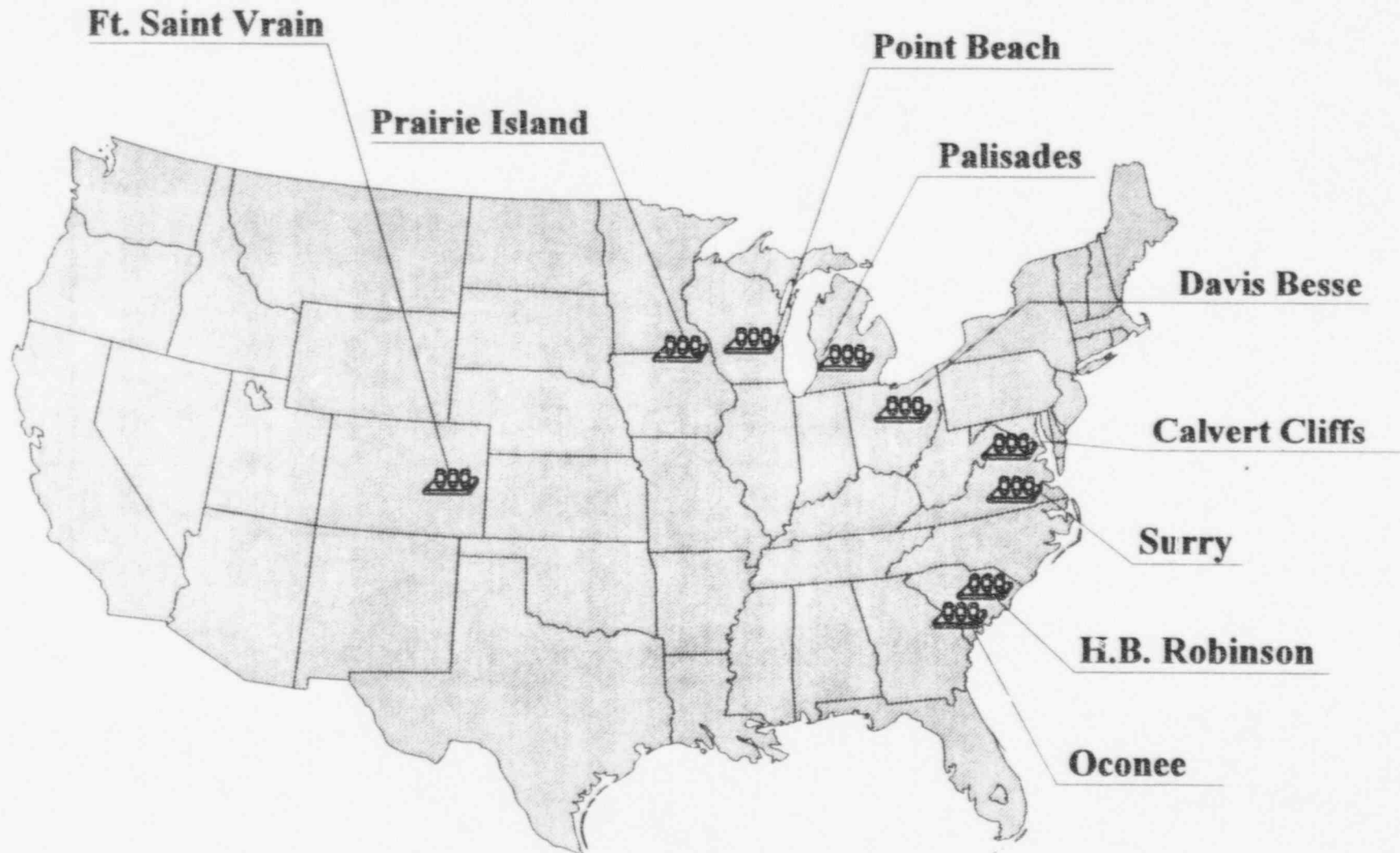
## Site Specific License, (10 CFR Part 72)

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- ▶ Pre Licensing Consultation
- ▶ Application
- ▶ Notice of Receipt
- ▶ Opportunity for Hearing
- ▶ Hearing if Requested
- ▶ Direct Review of an Application



# Existing Sites of Spent Fuel Dry Cask Storage Systems (ISFSI's)

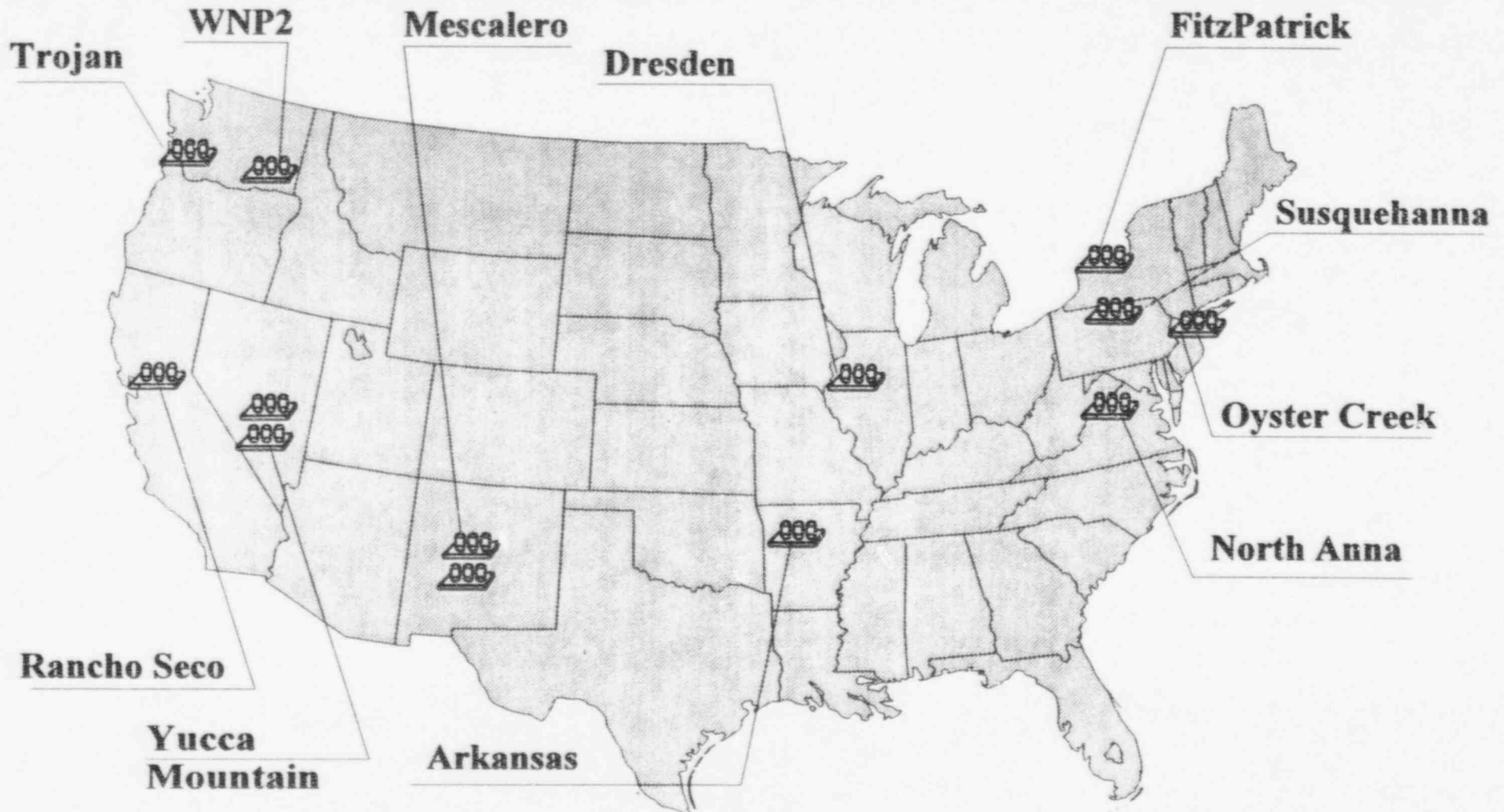


## Current SFPO Major Casework

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- ▶ Standardized NUHOMS: 1 Amendment  
Oyster Creek, Susquehanna, Fitzpatrick
- ▶ Vectra MP-187  
Rancho Seco
- ▶ Holtec HI-STAR100/HI-STAR100-STORM  
Dresden (HI-STAR100)
- ▶ Sierra Nuclear VSC-24: 2 Amendments  
Arkansas Nuclear One
- ▶ Sierra Nuclear TRANSTOR  
Trojan
- ▶ Transnuclear TN-32  
North Anna, Surry amendment
- ▶ GA-4/9 Cask Review
- ▶ Burnup Credit Topical Report Review

# Potential Near-Term, New Sites for Spent Fuel Dry Cask Storage Systems



# SFPO Anticipated Cask Casework

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- ▶ DOE TMI-2 Fuel Storage at INEL
- ▶ DOE Topical: Cask to Cask Transfer System
- ▶ NAC-International Universal Cask
- ▶ Multipurpose Canister (DOE/Westinghouse?)
- ▶ Prairie Island Off-Site ISFSI #2
- ▶ Advance Container Systems Inc. Dual Purpose Cask
- ▶ U.S. Fuel and Security



# Centralized Interim Storage Facility Initiatives

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## ► HR 1020/S 1271

- ▷ Centralized Storage Facility at Area 25 of Nevada Test Site
- ▷ Phased Licensing, Second Phase could be Licensed for 100 Years
- ▷ NRC Must Issue License Within 16 Months of Application
- ▷ January 1998 Acceptance of Fuel
- ▷ S 1271 Gives Budgetary Priority to Storage Over Disposal

## ► Mescalero Apache Tribe Initiative

- ▷ New Mexico
- ▷ Joint Initiative With Over 30 Utilities
- ▷ Pre-Application Meeting Held With Staff, 8/95
- ▷ Late 1996 Application Planned

# Dry Storage Issues

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- ▶ Overall Inconsistent Performance
- ▶ Utility Oversight Essential
- ▶ Fabricators/Vendors: QA Programs and Principles Not Observed
- ▶ § 72.48 Evaluations Poorly Documented
- ▶ NRC Expectations not Clearly Communicated
- ▶ Public Confidence Jeopardized

# NRC Initiatives for Improved Internal and Industry Communication

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- ▶ Develop Joint NRR/NMSS Dry Cask Storage Action Plan
- ▶ Review Parts 71 and 72 for Clarity, Revise and/or Issue Guidance as Needed
- ▶ Coordinate with Industry:
  - ▷ Regulatory Information Conference session
  - ▷ Dry Cask Storage Workshop - May 1995
  - ▷ Pre-fabrication Meeting With Utilities
- ▶ Detailed Reviews of Loading and Unloading Procedures

# Guidance Development

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- ▶ Issued 5 Inspection Procedures (2/96)
  - ▷ Design Control
  - ▷ Off Site Fabrication
  - ▷ On Site Construction
  - ▷ Pre-Operational Testing
  - ▷ Operations
- ▶ Inspection Manual Chapter 2690
- ▶ Draft Standard Review Plan for SNF Storage Systems (3/96)
- ▶ Plans for additional SRPs
  - ▷ ISFSI Site Licensing
  - ▷ Transportation Cask Review



# Dry Cask Storage Action Plan Subjects

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- ▶ Near-Term Technical Issues
- ▶ Long-Term Technical Issues
- ▶ Communications
  - ▷ Internal to NRC
  - ▷ External to NRC
- ▶ Processes

# Dry Cask Storage Action Plan

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## Near-Term Technical Issues

- ▶ Heavy Load and Crane Evaluations
- ▶ Trunnion Design and Preoperational Testing Values
- ▶ Hydrostatic Testing Requirements
- ▶ Seismic Evaluation Requirements

# Dry Cask Storage Action Plan

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## Long-Term Technical Issues

- ▶ Cask Weeping
- ▶ Cask Loading and Unloading Procedures
- ▶ Off-Loading Capability
- ▶ Failed Fuel Storage
- ▶ Safeguards

# Dry Cask Storage Action Plan

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## Communications - Internal to NRC

- ▶ Coordination Among NMSS, NRR And Regional Offices
- ▶ Training NMSS, NRR And Regional Staff on Cask Design Bases
- ▶ Training Regional Staff on Dry Cask Inspection Issues
- ▶ Periodic Meetings Among Affected NRC Staff



# Dry Cask Storage Action Plan

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## Communications -External

- ▶ Issue Generic Communications for ISFSI Related Issues
- ▶ Hold Periodic Workshops on Dry Cask Storage Issues With Industry
- ▶ Meet With NEI to Discuss Recent Issues And Industry Initiatives
- ▶ Support NRR Responses to Public Inquiries

# NRC Expectations

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## ► Utilities

- ▷ Early Involvement
- ▷ Frequent Communications with NRC and Public
- ▷ Aggressive QA Oversight

## ► Vendors

- ▷ Ensure that applications are high quality
- ▷ Establish & implement a strong QA program
- ▷ Actively review design changes
- ▷ Communicate often with utilities & fabricators

## ► Fabricators

- ▷ Adhere strictly to QA program
- ▷ Document all deviations thoroughly
- ▷ Justify all changes in detail
- ▷ Communicate often with vendor and utility



*United States*  
*Nuclear Regulatory Commission*

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**Overview of NRC's Decommissioning Program  
and Responsibilities**

**Michael Weber**  
**Division of Waste Management**  
**March 1996**

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## **PROGRAM RESPONSIBILITIES**

### **NRR**

- **Licensing power reactor decommissioning prior to permanent removal of fuel**
- **Licensing non-power reactor decommissioning**

### **NMSS**

- **Licensing power reactor decommissioning after fuel removal**
- **Licensing materials and fuel facility decommissioning**
- **Site Decommissioning Management Plan**



## **PROGRAM RESPONSIBILITIES**

*(Continued)*

### **Regions**

- **Inspection and enforcement of licensee decommissioning**
- **Licensing materials facility decommissioning**

### **RES**

- **Rulemaking to establish and update decommissioning requirements**

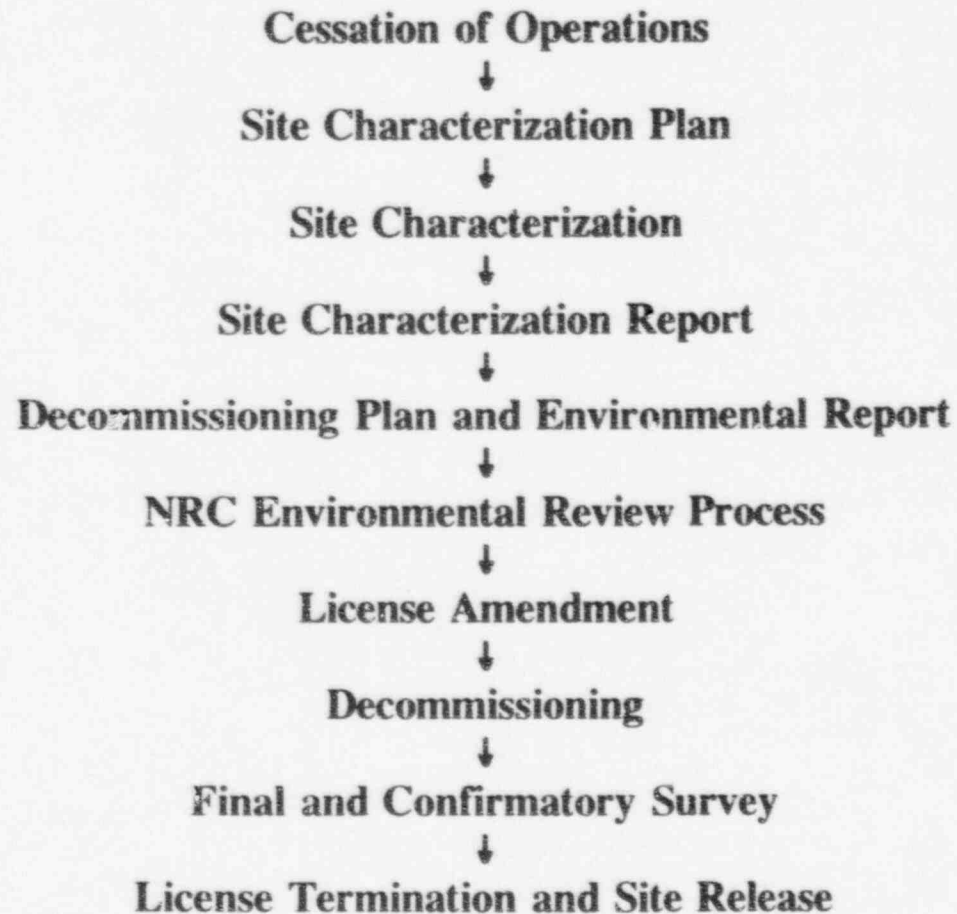
## DEFINITION

***Decommission*** means to remove (as a facility) safely from service and reduce residual radioactivity to a level that permits release of the property for *unrestricted use and termination* of license.

## **MATERIALS DECOMMISSIONING**

- **NRC terminates about 300 licenses each year**
- **Most license terminations are routine with limited potential for residual radioactivity**
- **Less than 10% are non-routine terminations**
  - ✓ **Fuel cycle facilities**
  - ✓ **SDMP sites**
- **NRC is also reviewing formerly terminated licenses**

# **DECOMMISSIONING PROCESS**



## **SITE DECOMMISSIONING MANAGEMENT PLAN**

- **Program Management Plan**

- ✓ **Objectives**
- ✓ **Responsibilities**
- ✓ **Resources**

- **Contaminated Sites**

- ✓ **Listing/Delisting Criteria**
- ✓ **Site Descriptions**
- ✓ **Status**

- **Policy Issues**



## POLICY ISSUES

Problem	Solution
Poor recordkeeping	Decommissioning recordkeeping rule - 1993 Formerly terminated licenses review - 1991 to present Manual Chapter on Decommissioning (draft under review)
No schedule constraints	SDMP Action Plan - 1992 License conditions and orders Decommissioning timeliness rule - 1994
No residual radioactivity standards	SDMP Action Plan - 1992 Enhanced Participatory Rulemaking - 1993 to present (Proposed rule in August 1994; final rule in 1996)
Inadequate financial assurance	General decommissioning requirements - 1988 License renewals and conditions Financial assurance clarification rule - 1994 Orders and enforcement
Inadequate procedures for termination and surveys	Survey procedures (NUREG/CR-5849) - 1992 Standard Review Plan - 1993 Inspection Procedures - 1995 Decommissioning Manual Chapter - in process Multi-Agency Radiological Site Investigation Manual - in process

## **REMAINING CHALLENGES**

- **Codifying radiological criteria for license termination -- "how clean is clean"**
- **Upgrading financial assurances for decommissioning**
- **Streamlining review process and confirmatory surveys**
- **Completing review of formerly terminated licenses (1950s to present)**
- **Maturing and implementing the program**
  - ✓ **Program guidance - licensing and inspection**
  - ✓ **Licensee guidance - modeling, surveys, restricted use**
  - ✓ **Program oversight - ongoing and periodic reviews**



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*Nuclear Regulatory Commission*

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**DECOMMISSIONING TODAY**

**PRESENTATION TO THE ACRS**

**MARCH 26, 1996**

**SEYMOUR H. WEISS**  
**PROJECT DIRECTOR**

**NON-POWER REACTORS AND DECOMMISSIONING**  
**PROJECT DIRECTORATE**  
**DIVISION OF REACTOR PROGRAM MANAGEMENT**  
**OFFICE OF NUCLEAR REACTOR REGULATION**

## **WHAT IS DECOMMISSIONING?**

**Decommissioning means to remove (as a facility) safely from service and reduce residual radioactivity to a level that permits release of the property for unrestricted or restricted use and termination of the license.**

- **Does not include care and disposal of spent fuel\***
- **Does not include non-radiological demolition  
(Example: restoration to "green field" conditions)**

**\* Covered separately by 10 CFR 50.54 (bb) which requires submittal of spent fuel management and funding program.**

## **DECOMMISSIONING ALTERNATIVES\***

- **Under DECON (immediate dismantlement), portions of the facility containing radioactive contaminants are removed or decontaminated to a level that permits release for unrestricted use. (See Reg. Guide 1.86 for current guidance)**
- **Under SAFSTOR, or "delayed DECON," radiation levels fall for up to 60 years; the facility is then dismantled.**
- **Under ENTOMB, radioactive contaminants are maintained and monitored until the radioactivity decays to a level permitting unrestricted release of the property. (Currently allowed only for a 60 year period).**

**\*Described in Generic Environmental Impact Statement on Decommissioning; NUREG-0586.**



## **COMPLETED & CURRENT DECOMMISSIONING PROJECTS**

- **64 research and test reactor licenses terminated**
- **11 research and test reactors now being dismantled or have license amended for Possession-Only**
- **17 power reactors in decommissioning process**
  - **2 power reactors completed  
Pathfinder & Shoreham**
  - **1 power reactor now being dismantled  
Fort St. Vrain**

**COMPLETED & CURRENT  
DECOMMISSIONING PROJECTS  
(Continued)**

- **9 power reactors with approved SAFSTOR decommissioning plans  
CVTR, Dresden, Fermi 1, GE VBWR, Humboldt Bay 3,  
La Crosse, Peach Bottom 1, Rancho Seco, & Indian  
Point 1;**
- **4 power reactor decommissioning plans have been  
received, Big Rock Point, San Onofre 1, Trojan,  
Yankee Rowe & Saxton**

## **TYPICAL CURRENT REGULATORY PROCESS FOR PREMATURE DECOMMISSIONING**

- **Continued compliance with license and regulations is required after shutdown**
- **Licensee submits license amendments/relief requests to NRC**
- **Possession-only license amendment**
- **Reliefs/exemptions granted may include:**
  - **Containment leak testing**
  - **Licensed operators**
  - **Offsite emergency preparedness reduction**
  - **Property damage liability insurance reduction**
- **Decommissioning plan approved by Order**

## **RULEMAKING ACTIVITIES**

- **Radiological Release Criteria for Decommissioning Facilities**
- **Decommissioning Rule**
- **Revise Spent Fuel Pool Fire Sequence Affected Regulations and Indemnity Levels for Permanently Shut Down Reactors**
- **Physical Protection for Storage of Spent Fuel**
- **Decommissioning Cost and Funding Evaluations**

## **TECHNICAL GUIDANCE**

- **Revise RG 1.86 - Will be a new guide**
- **Standard Format and Content for Decommissioning Submittals**
- **Staff guidance for review and inspection planning**



## **PLANT DECOMMISSIONING STATUS**

### **INDIAN POINT UNIT 1**

- **January 31, 1996, the order approving SAFSTOR decommissioning plan was issued. Spent fuel will remain onsite until federal repository available. License extended until 2006.**

### **HUMBOLDT BAY POWER PLANT UNIT 3**

- **Shut down in July 1976; July 1988-NRC approved SAFSTOR Decommissioning Plan & extended license until 2015.**
- **Activities continue in accordance with approved Plan. Spent fuel will remain onsite in spent fuel pool until federal repository is available. Considering early component removal program.**

## **DRESDEN UNIT 1**

- **Shut down in October 1978. SAFSTOR Decommissioning Plan & license extension approved in September 1993.**
- **Activities continue in accordance with approved Plan. ComEd plans to go to dry cask storage.**

## **RANCHO SECO**

- **Shut down in June 1989. SAFSTOR Decommissioning Plan approved in March 1995.**
- **Conducting activities in accordance with approved plan.**
- **SMUD internal review considering DECON decommissioning alternative.**
- **Part 72 (specific license) ISFSI pad is completed and horizontal storage modules are being delivered. Part 71 (transportation) license application undergoing NRC review for multipurpose (storage/transport) cask. Licensee could be ready to offload fuel to ISFSI by October 1996.**

## **YANKEE ROWE**

- **Shut down in October 1991. SAFSTOR Decommissioning Plan approved February 1995. Appeals Court decision (July 1995) granted hearing opportunity.**
- **On March 1, 1996, after a prehearing conference, Atomic Safety and Licensing Board issued an order stating its finding regarding the joint petition of Citizens Awareness Network and New England Coalition on Nuclear Pollution to intervene on the Yankee decommissioning plan. Although the ASLB determined the petitioners had standing, the ASLB did not find any of the five contentions to be admissible. Subsequent Commission order prevents staff re-approval of Plan until appeal process completed.**
- **Yankee Atomic applied for a (10 CFR 71) license to enable shipment of the reactor vessel. The vessel will not be shipped before summer 1996.**
- **Yankee intends to pursue dry cask storage of its spent fuel.**

## **THREE MILE ISLAND UNIT 2**

- **Accident occurred in March 1979; Defueling completed April 1990**
- **License plans for Post-Defueling Monitored Storage (PDMS) and Possession-Only License approved by NRC in 1993.**
- **Conducting activities in accordance with approved PDMS technical specifications.**

## **SAN ONOFRE, UNIT 1**

- **Shut down November 1992.**
- **Conducting activities in accordance with approved permanently defueled technical specifications. Proposed decommissioning plan awaiting NRC review.**
- **Licensee considering ISFSI, but has not submitted Part 72 license request.**

## TROJAN

- Shut down November 1991
- November 1, 1995, licensee completed the large component removal project.
- Commission issued order preventing further dismantlement until final decommissioning plan approved.
- No requests for hearing received after December 22, 1995, *Federal Register* notice on Environmental Assessment and Safety Evaluation for decommissioning plan.
- Combined NRC/State of Oregon public meeting held February 13, 1996, to discuss the results of NRC and State decommissioning plan review.
- No requests for hearing received by State of Oregon after its public notice. Hearing regarding State approval of decommissioning plan held on March 7, 1996. State approval granted.



## **TROJAN (Continued)**

- **Licensee is considering removing the pressure vessel with reactor vessel internals intact and shipping by barge to low-level waste repository at Hanford in early 1998.**
- **Licensee selected Sierra Nuclear as vendor for dry cask storage commencing in 1998.**

## **BIG ROCK POINT**

- **May 31, 2000, is expiration date of current license.**
- **Proposed SAFSTOR Decommissioning Plan undergoing NRC review. Licensee requested NRC deferral of review until after revised decommissioning regulations issued.**



## ***Decommissioning of Nuclear Power Reactors - Final Rule***

- ***Proposed rule issued July 20, 1995 (60 FR 37374)***
- ***Incorporated SRMS of January 14 and June 30, 1993***
- ***Incorporated draft policy statement on use of decommissioning trust funds before decommissioning plan approval (59 FR 5216; FEB. 3 1994)***



## ***Proposed Rule Requirements***

- ***Eliminated need for decommissioning plan approval***
- ***Before decommissioning activities could begin, licensees would submit:***
  - (1) Certifications of permanent cessation of operations and***
  - (2) Permanent removal of fuel from reactor vessel***
- ***Prohibited operation of reactor and extended certain Part 50 requirements to decommissioning activities***



***(Proposed rule continued)***

- ***Imposed 90 day waiting period before major decommissioning (defined in rule) could occur - included public information meeting in vicinity of site***
- ***Allowed use of § 50.59 to dismantle facility with addition of 4 criteria***
- ***Written notification required for any activities inconsistent with PSDAR or a significant schedule change from PSDAR***
- ***FSAR updating required***



***(Proposed rule continued)***

***License termination process -***

- ***Submittal of license termination plan and supplement to ER***
- ***Public information meeting held***
- ***License amendment process including opportunity for hearing under subpart L (or G if fuel onsite)***



***(Proposed rule continued)***

***Financial assurance -***

- ***Continued to require preliminary cost estimate at 5 years prior to license expiration***
- ***Allowed staged use of decommissioning funds (based on draft policy statement)***
- ***Permitted use of 3% of generic amount prior to cessation of operations, 20% - 90 days after PSDAR submittal, and remainder after site-specific cost estimate received***





***(Proposed rule continued)***

***Grandfathering-***

- ***Permitted licensee with approved plan option of continuing as in current rule or switching to new process***

***License extension -***

- ***Clarified that license does not terminate until Commission decision***



## ***Public comments***

- ***34 comment letters received***
- ***Comments addressed all aspects of proposed rule plus court's decision on Yankee Rowe. No comments on non-power reactor amendments***
- ***Commenters (24) generally in favor of the proposed rule consisted of power reactor licensees, reactor industry groups and consultants, government agencies, and an Agreement State***



***(Comments continued)***

- ***Commenters (10) generally opposed consisted of citizen' groups, individuals, and an Agreement State***
- ***Many commenters in favor of the rule wanted less restrictions than offered by the proposed rule***
- ***Many commenters opposed preferred the status quo - several favored greater restrictions than the current rule requires***



### ***Final Rule Schedule***

- ***Staff analysis of comments completed, draft final rule undergoing staff review***
- ***Final Rule due to Commission in early April, 1996***



## ***REACTOR DECOMMISSIONING RULE***

***Presentation to Joint ACRS/ACNW Subcommittee***

***March 26, 1996***

***Cheryl A. Trottier***

***Section Leader***

***Radiation Protection and Health Effects Branch***

***Division of Regulatory Applications***

***Office of Nuclear Regulatory Research***



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- *FSAR updating required*



*(Proposed rule continued)*

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- *Many commenters in favor of the rule wanted less restrictions than offered by the proposed rule*
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## *Specific comments*

- *Eliminate PSDAR requirements - more stringent than for operating reactor*
- *Eliminate PSDAR update because § 50.59 already requires annual reporting*
- *Require less frequent FSAR updates (e.g., every 36 months)*

### *Ninety day time period prior to allowance of major decommissioning activities*

- *Not a health and safety concern - activities covered under § 50.59 and licensing basis*
- *Costly to licensees because it would delay dismantling*





*(Specific comments continued)*

*Section 50.59 modifications*

*For-*

- *Existing § 50.59 criteria are adequate*
- *Requirements in § 50.59(e) are redundant and more stringent than for operating reactors*
- *Decommissioning activities are routine and similar to permitted operational activities*

*Against-*

- *After the fact reviews of activities provides insufficient regulatory protection*
- *The presence of an on-site NRC inspector during activities is essential*



*(Specific comments continued)*

*Environmental impact considerations - initial phase of decommissioning*

*For-*

- *Strongly supported elimination of ER and EA*
- *No further EI address necessary because already covered in previous EISs*
- *Requested a categorical exclusion*

*Against-*

- *Should require an EA or EIS*
- *A generic EIS is no substitute for specific EA*
- *Elimination of EA (and decommissioning plan approval) gives utilities too much responsibility and undermines citizens due process*



*(Specific comments continued)*

*Public participation*

*For-*

- *Questioned need for expanded public participation*
- *Additional guidance on purpose of the public meeting is necessary*
- *Adequate mechanisms should be developed for addressing public concerns*

*Against-*

- *Public participatory role is inadequate*
- *Retain POLA and decommissioning plan approval*
- *SSABs should be established early in the decommissioning process*



*(Specific comments continued)*

*Use of decommissioning trust fund*

*For-*

- *Want greater flexibility in costs that can be included (e.g., operational LLW disposal costs)*
- *Percentages of costs permitted (§ 50.75) are too low - raise percentages or permit higher estimates*



*(Specific comments continued)*

*Modifications to specific technical requirements*

*For -*

- *Requested additional elimination or modification of requirements*
- *Requested additional modifications especially for fuel in ISFSI or offsite*



*(Specific comments continued)*

*Termination of license requirements*

*For-*

- *Several commenters believed approval of license termination should not require an amendment or hearing opportunity - public comment and existing regulations are adequate, especially if fuel offsite*
- *If standards for radionuclide release are clear, terminating the license can be easily demonstrated without prior approval*

*Against -*

- *supported license termination requirements, but viewed them as too late in process*



*(Specific comments continued)*

### *Elimination of POLA*

*Against -*

- *Eliminates hearing opportunities (Subpart G) and State consultation (§ 50.91(b))*
- *Delays need for an amendment until termination stage, which is too late*
- *Logic is poor because non-power reactors, which are less hazardous to decommission than power reactors, still will permit POLAs and require an approved decommissioning plan*





*United States  
Nuclear Regulatory Commission*

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**RULEMAKING ISSUES  
RADIOLOGICAL CRITERIA FOR  
LICENSE TERMINATION**

*March 26, 1996*

*John E. Glenn  
Office of Nuclear Regulatory Research  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555*



# **Background**

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- ✓ **Published proposed rule for comment - 8/94**
- ✓ **Workshop on SSABs - 12/94**
  - **NUREG/CR-6307 - 6/95**
- ✓ **Public comment period closed - 1/95**
  - **NUREG/CR-6353 - 10/95**
- ✓ **Extended rule schedule - 8/95**
- ✓ **Workshop on implementation of rule - 9/95**



# Overview of Public Comments

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✓ **101 different commenters**

- **government agencies**
- **licensees**
- **public groups**
- **industry groups**
- **Native American organizations**
- **individuals**

✓ **General reactions varied**

- **agreement/disagreement on provisions, e.g., restricted use**
- **disagreement for differing reasons on provisions, e.g., 15 mrem**



## **§20.1402(b) 15 mrem/y**

- ✓ Agree with 15
- ✓ Disagree with 15 -
  - too high - return to background preferred
  - too low, - 25-100 mrem/y with ALARA preferred
- ✓ Issues on both sides
  - health impacts
  - costs vs impacts
  - ability to measure such low doses
  - relationship with background
  - effects on disposal capacity
  - consistency with other standards



## **§20.1402(c) ALARA**

- ✓ **Require ALARA analysis to assess doses < 15 mrem/y**
- ✓ **Don't require ALARA analysis < 15 mrem/y**
  - **large costs**
  - **small reduction in risk**
- ✓ **Allow ALARA analysis to move standard > 15 mrem/y**
- ✓ **Don't permit ALARA > 15 mrem/y**



# **§20.1402(a) Restricted Release**

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## **✓ Agree**

- **allows consideration of realistic land uses, protects public health and permits flexibility**
- **rely on institutional controls - don't assume eventual failure**
- **should be allowed if ALARA or if under continuous owner control as in further industrial use**

## **✓ Disagree**

- **institutional controls uncertain, can't be enforced indefinitely or can become ineffective**
- **no responsible regulatory oversight**

## **✓ Suggest possible Federal ownership or legislative solutions**



# **§20.1405(d)**

## **100 mrem/y Cap**

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### **✓ Too low**

- **should not assume all institutional controls will fail**
- **allow 500 mrem/y cap**

### **✓ Too high**

- **institutional controls are uncertain**
- **use 15-75 mrem/y**





# **§20.1403**

## **General Provisions**

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### **✓ EPA Drinking water standard**

#### **▸ oppose**

**– prefer single dose based, all pathway standard**

#### **▸ support**

**– consistent with EPA rule**

### **✓ Calculation to 1000 years post decommissioning**

**▸ use > 1000 years for long lived radionuclides**

**▸ use < 1000 years to be consistent with 10 CFR 40 and 61**

**– 200-500 years**



## **§20.1407 SSABs**

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### **✓ Differing views**

- **Support for provision**
- **SSAB not always the best solution, other options should be ok**
- **extend use of SSABs to unrestricted use sites**

### **✓ Provide more detail**

- **responsibilities**
- **membership, size, qualifications, government role**
- **independence from licensee**
- **administrative and financial support**
- **meetings**
- **licensee and NRC use of SSAB recommendations**