

The Interim Storage of Spent Nuclear Fuel

* * * * *

**Robert M. Bernero, Director
Office of Nuclear Material Safety
and Safeguards**

Questions of Interest

- Why do we need Interim Storage ?
- Can we safely store our nations spent fuel ?
- What is the NRC's role in the storage process ?
- What storage systems are available ?
- What storage systems are on the horizon ?

Why Do We Need Interim Storage ?

- The capacity of the fuel pools is finite.
 - Based on DOE projections 26 facilities will need some form of increased capacity prior to the year 2000
 - The DOE proposes to start receiving fuel by 1998

What are the options for Interim Storage ?

* * * * *

- Three options currently exist for licensees
 - Increase the capacity of the existing fuel pool
 - Transshipment of fuel to another facility
 - Acquire an Independent Spent Fuel Storage Installation

Can we safely store our nations spent fuel ?

- Waste Confidence Decision of 1984/1989
- Pessimistic Assumptions
 - Yucca Mtn. Dropped in 2000
 - Prolonged Wet / Dry Storage
- Storage Safe for at least 100 years
 - 40 yrs Operation
 - 30 yrs License Renewal
 - 30 yrs Post Shutdown

What is the NRC's Role in the Storage Process ?

- **Licensing of the Technologies of Spent Fuel Storage**
 - Issuing a Certificate of Compliance
 - Approval of Topical Report
- **Licensing the Actual Storage of Spent Fuel**
 - Site Specific License
 - General License

General objectives of the licensing Process

- Safe confinement of the spent fuel
- Prevent degradation of the fuel cladding
- Compatibility with transportation
 - Reload at the fuel pool
 - Reload Separately
 - Dual Purpose Certification

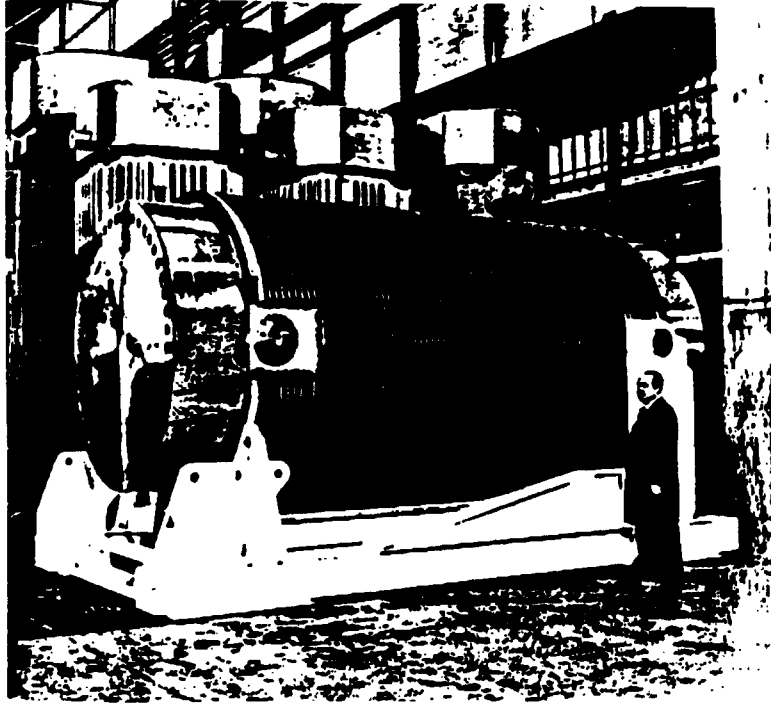
Licensing of Independent Spent Fuel Storage

- Site Specific License
 - Direct Review or
 - Topical Report Approval
- General License
 - Available to Part 50 Licensees
 - System must have a Certificate of Compliance
 - Conditions for use must be satisfied

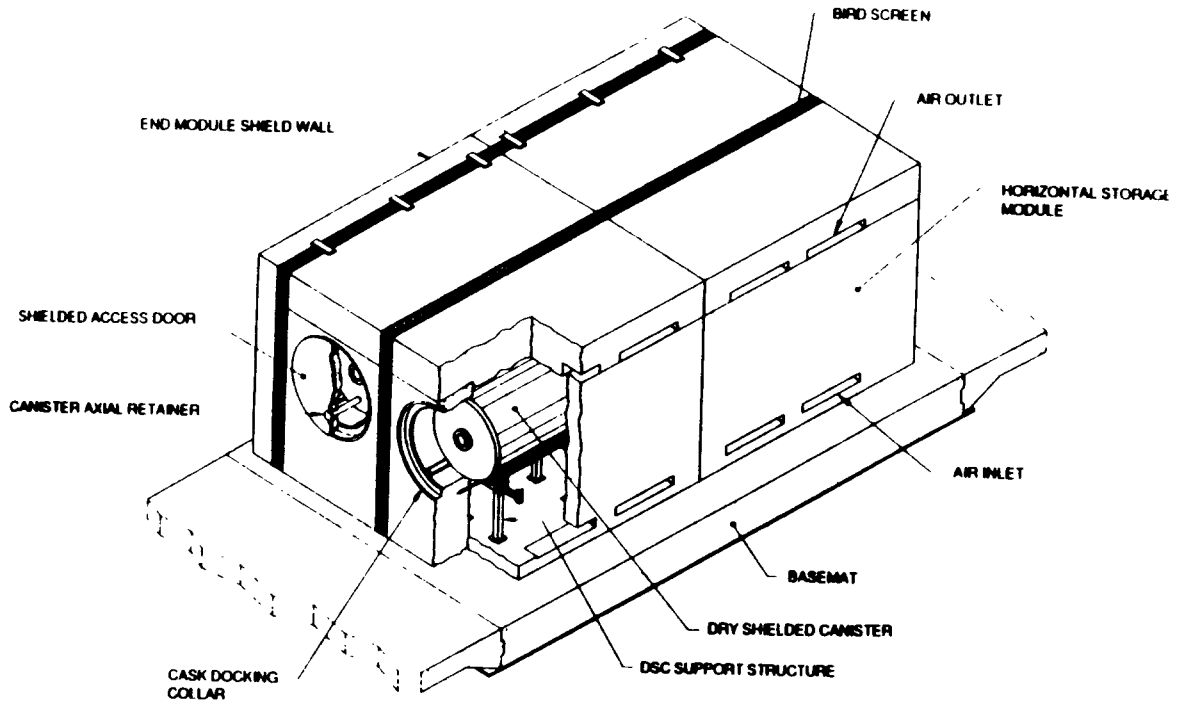
Certificate of Compliance

- 20 year renewable certificate
 - Casks manufactured under a Certificate of Compliance may be used for 20 years (longer if certificate renewed)
 - Description of cask and references to appropriate drawings

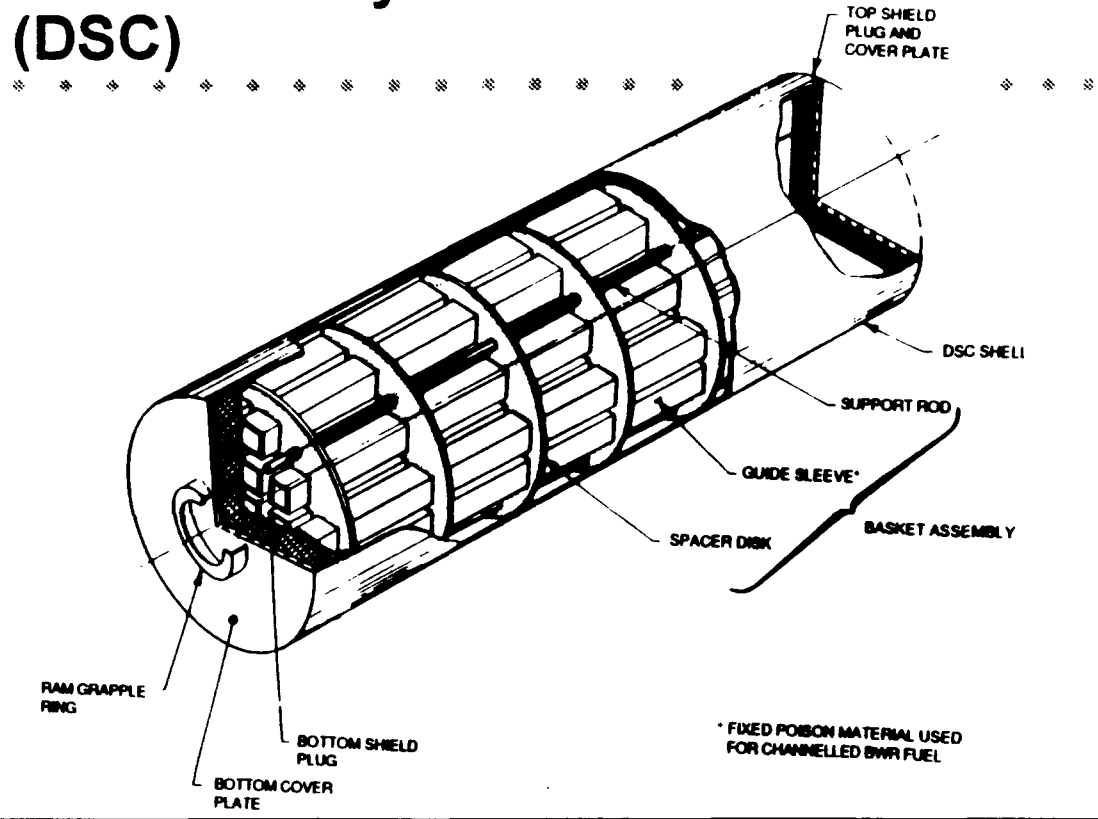
Castor V-21



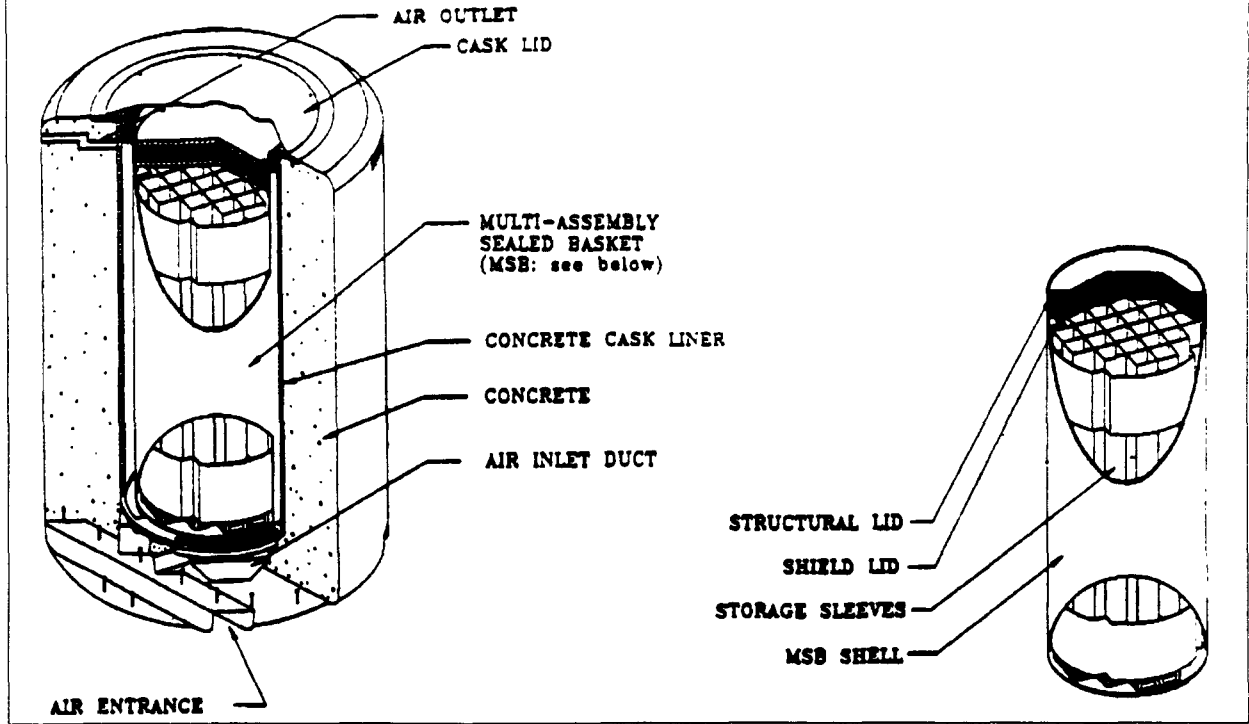
NUHOMS Horizontal Storage Module (HSM)



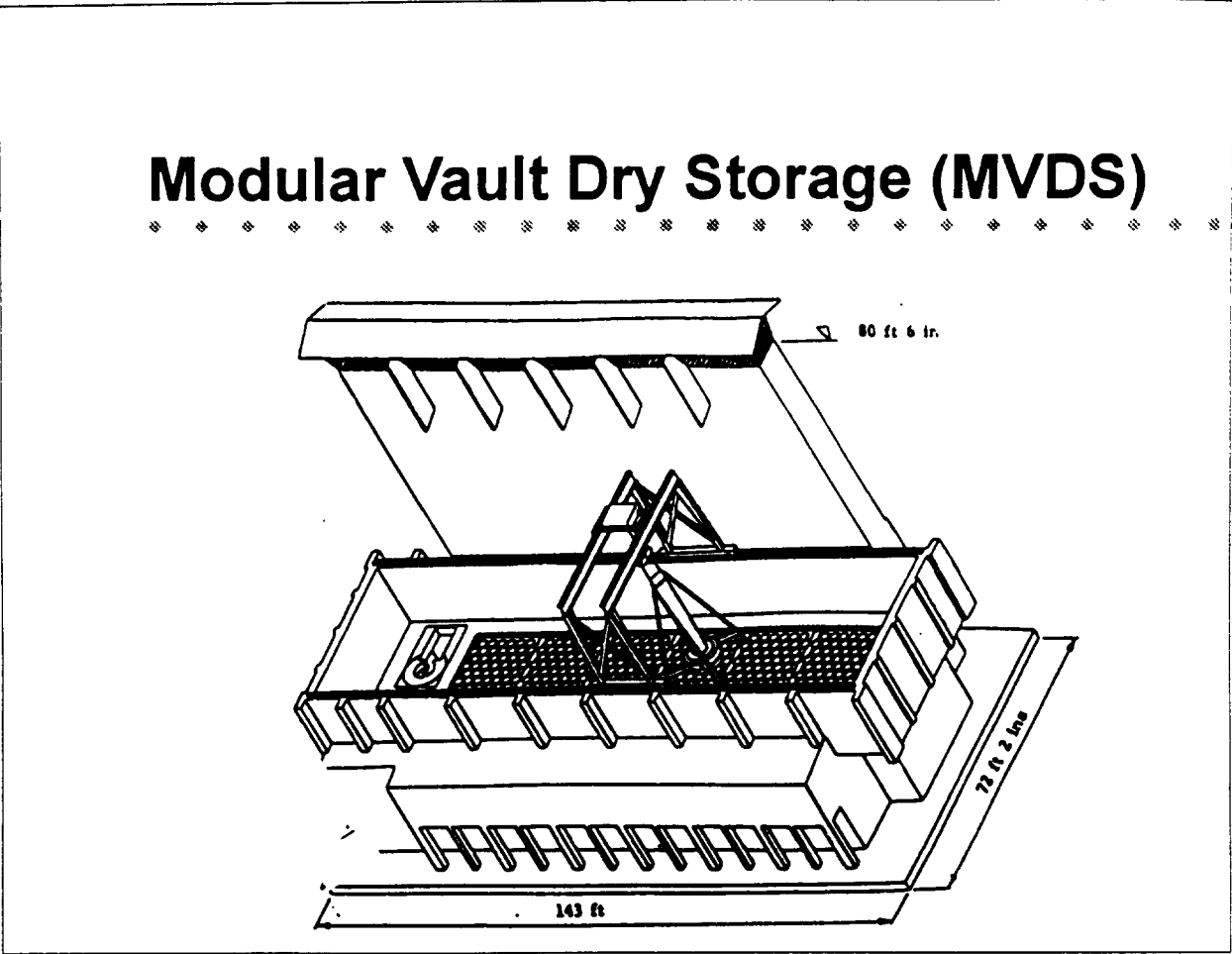
NUHOMS Dry Shielded Canister (DSC)



VSC Storage Cask



Modular Vault Dry Storage (MVDS)



Licenses Issued

<u>REACTOR SITE</u>	<u>DOCKET & LICENSE</u>	<u>MODEL</u>
SURRY POWER STATION	72-2; SNM-2501	CASTOR V/21 MC-10 NAC-I28 S/T
H. B. ROBINSON	72-3; SNM-2502	NUHOMS-7P
OCONEE NUCLEAR STATION	72-4; SNM-2503	NUHOMS 24P
FORT ST. VRAIN	72-9; SNM-2504	MVDS
CALVERT CLIFFS	72-8; SNM-2505	NUHOMS 24P

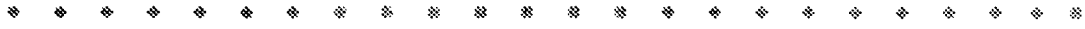
License Applications Received

<u>PLANT SITE</u>	<u>DOCKET NO.</u>	<u>SYSTEM</u>
BRUNSWICK	72-6	NUHOMS-7P
PALISADES	72-7	VSC-24
	[WITHDRAWN 8/90]	
PRAIRIE ISLAND	72-10	TN-40
RANCHO SECO	72-11	NUHOMS Dual Purpose

Applications for Certificate

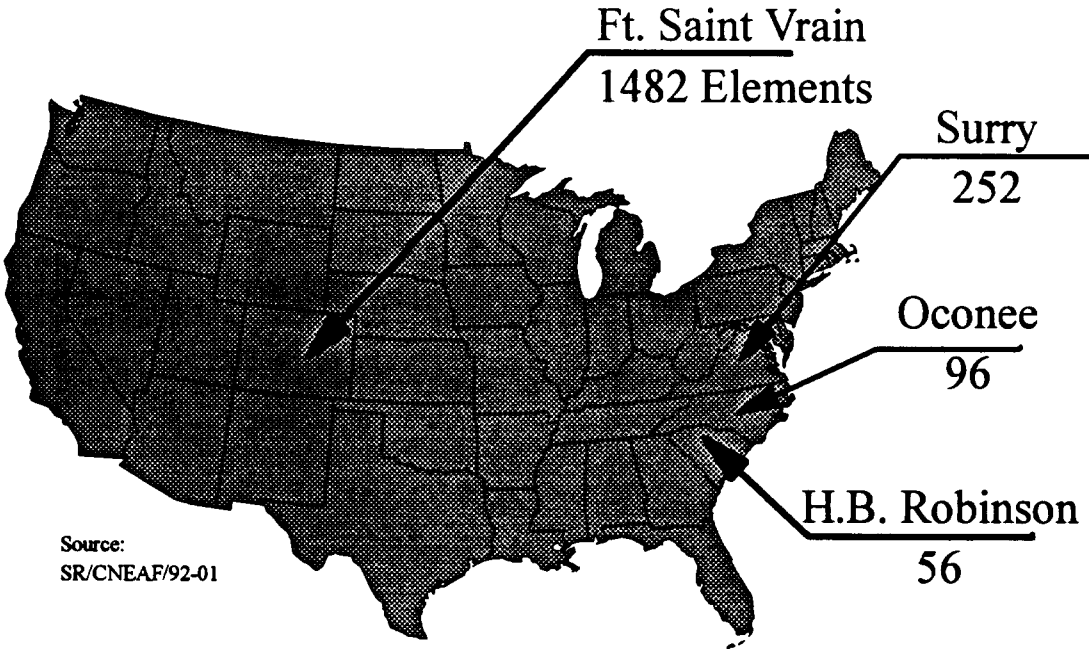
<u>VENDOR</u>	<u>MODEL</u>	<u>DOCKET NO.</u>
PACIFIC NUCLEAR FUEL SERVICES, INC.	NUHOMS-24P NUHOMS-52B	72-1004
TRANSNUCLEAR	TN-24	72-1005
B&W FUEL COMPANY	CONSTAR-32	72-1006
PACIFIC SIERRA NUCLEAR ASSOCIATES	VSC-24	72-1007

Topical Reports Under Review



<u>VENDOR</u>	<u>MODEL</u>	<u>CAPACITY</u>
GENERAL NUCLEAR SYSTEMS, INC.	CASTOR X	28 PWR or
	METAL CASK	33 BWR
NUCLEAR ASSURANCE CORPORATION	NAC-STC	26 PWR
	DUAL PURPOSE METAL CASK	

Spent Fuel in Dry Storage Total Number of Assemblies



Source:
SR/CNEAF/92-01
