



License Renewal for Oconee Site-Specific Independent Spent Fuel Storage Installation (ISFSI)

Presentation to the
United States Nuclear Regulatory Commission (NRC)
Rockville, MD
September 12, 2006

Duke Representatives

- **Oconee Nuclear Site**

- Reene Gambrell - Regulatory Compliance
- Bob Knight - Regulatory Compliance
- Steve Perrero - Reactor and Electrical Systems
(ISFSI System Engineer)

- **Nuclear General Office**

- Gary Walden - Spent Fuel Management
(Project Manager)
- Jack Jenkins - Spent Fuel Management

Purpose

- **Provide Information to the NRC Concerning:**
 - Duke's planned submittal of a License Renewal Application (LRA) for the Oconee Site-Specific ISFSI
 - Overview of approach
 - Schedule for submittal to the NRC
- **Obtain NRC Feedback**
 - Status of NRC preliminary renewal guidance
 - Other considerations?

Overview

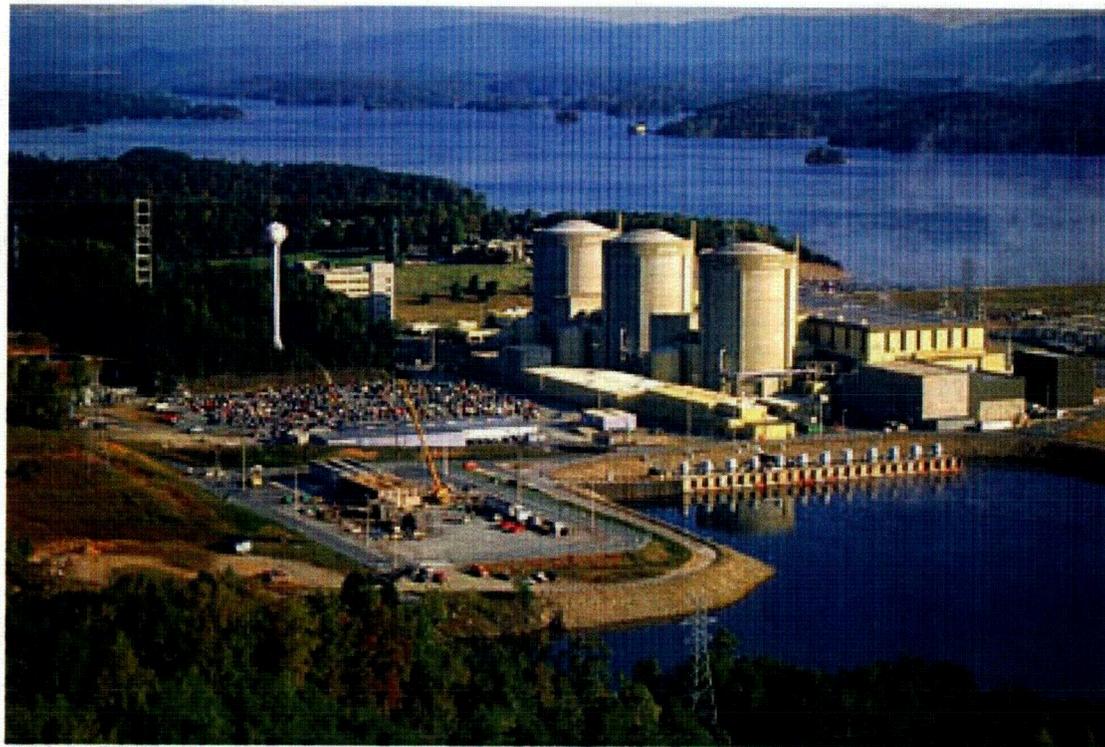
- **Background** (Duke)
- **Licensing Approach** (Duke)
- **Schedule** (Duke)
- **Discussion** (ALL)

Background

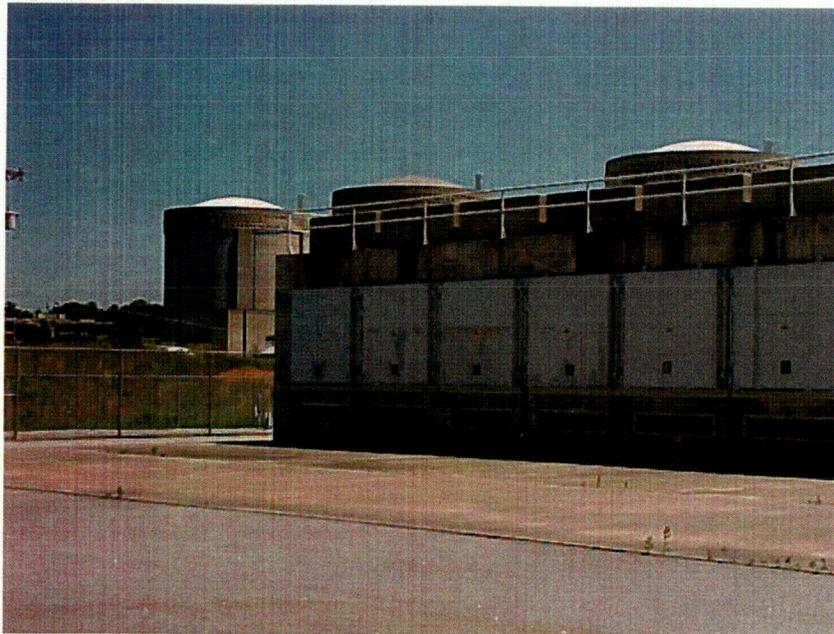
- **Oconee Reactor Operations**
 - 3 reactors; 18 month cycle; 60 feed
 - 2 refuelings and 120 spent fuel assemblies per year
- **Oconee Wet Storage**
 - Unit 1/2 pool (shared): 1310 storage spaces
 - Unit 3 pool: 817 storage spaces
 - 413 empty spaces established in each pool prior to refueling (Full Core Reserve plus diver clearance for upender repair)
 - Effective capacity is 10-11 years of reactor discharges
- **Oconee Dry Storage**
 - 2 ISFSIs: Site-Specific and General

Background

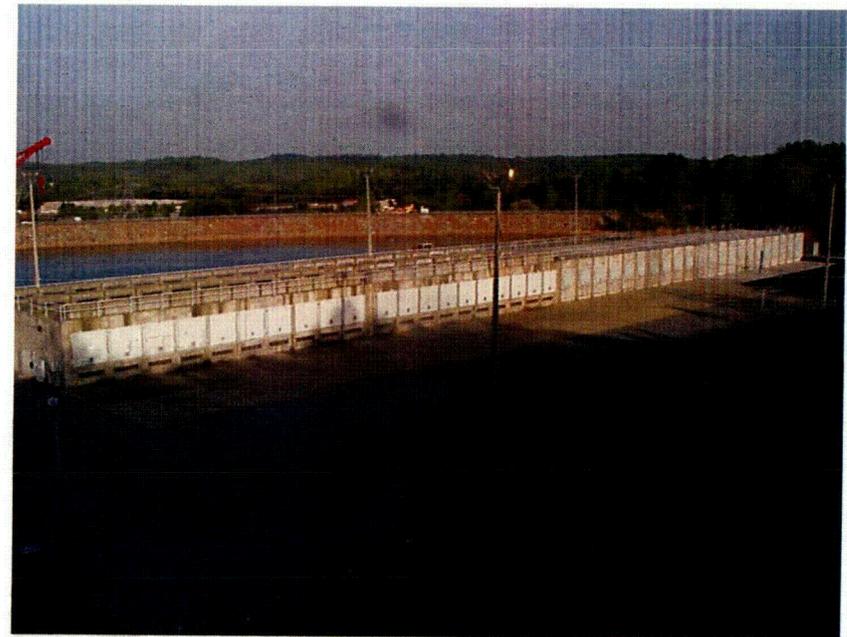
- ISFSI Location



Background



Phase 1
Horizontal Storage Modules (HSMs)
(Site-Specific)



Phases 1-4
HSMs
(Site-Specific and General)

Background

- Current Status of Oconee ISFSIs

ISFSI- Phase	Constructed	Storage System	HSMs Installed	HSMs Loaded
Site-Specific				
Phase 1	1990	NUHOMS®-24P	20	20
Phase 2	1992	NUHOMS®-24P	20	20
Total (Site-Specific)	--	--	40	40
General License				
Phase 3a	1996	NUHOMS®-24P	8	8
Phase 3b	1999	NUHOMS®-24P	12	12
Phase 4	2001	NUHOMS®-24P	24	24
Phase 5	2005	NUHOMS®-24PHB	28	3
Total (General)	--	--	72	47
Total (Both ISFSIs)	--	--	112	87

Background

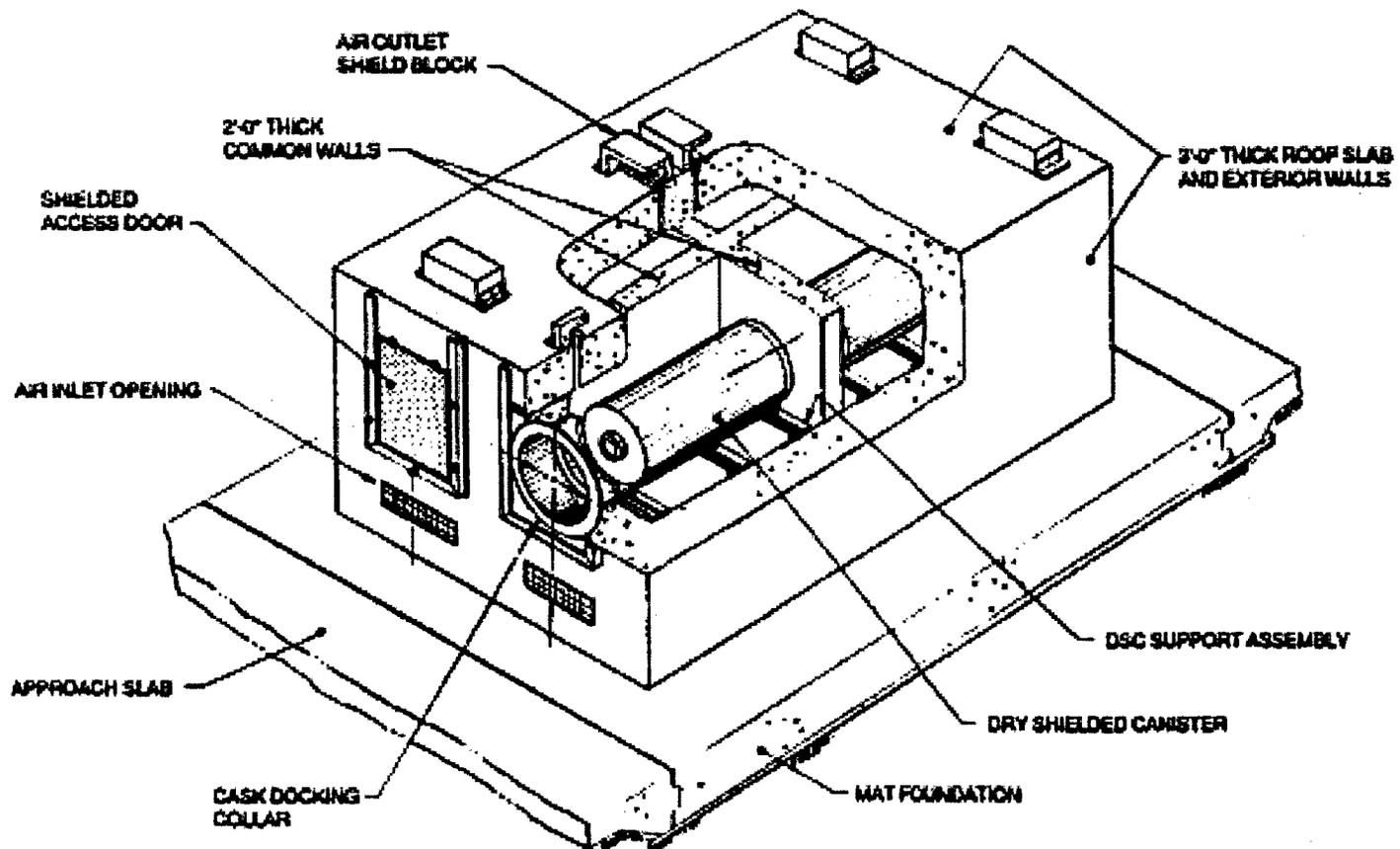
- **Site-Specific ISFSI Licensing**
 - **March 31, 1988- Oconee ISFSI license application submitted to NRC**
 - **References NUHOMS®-24P Topical Report**
 - **NUHOMS®-24P Topical Report submitted by NUTECH Engineers, Inc. (now Transnuclear, Inc.) on February 26, 1988; accepted by NRC on April 21, 1989**
 - **October 25, 1988- NRC issues Environmental Assessment and Finding of No Significant Impact**
 - **October 1989- NRC Issues Safety Evaluation Report**
 - **January 29, 1990- NRC issues license for Oconee Site-Specific ISFSI (SNM-2503)**

Background

- SNM-2503, effective January 31, 1990
 - 20 year license expires January 31, 2010
 - Licensed capacity: 996.86 TeU
(88 NUHOMS®-24P storage units)
 - Enrichment limit: 4 % U-235
 - Burnup limit: 40,000 MWD/MTU
 - Decay heat limit: 0.66 kW/assembly

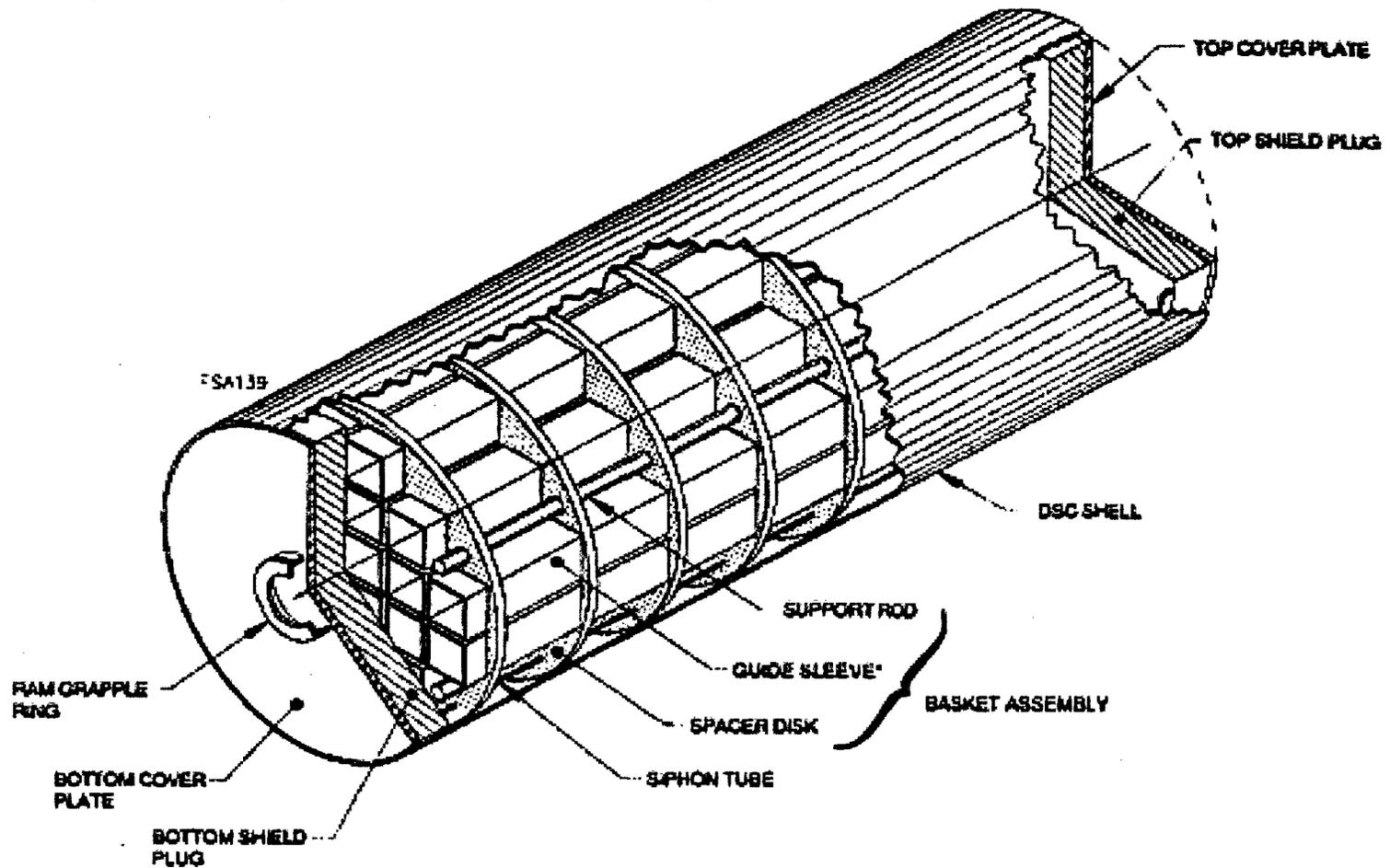
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- Horizontal Storage Modules (2 x 2 array)



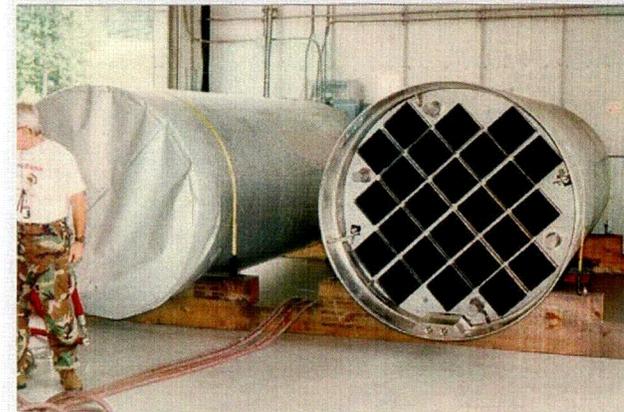
Background

- Dry Storage Canister (DSC)



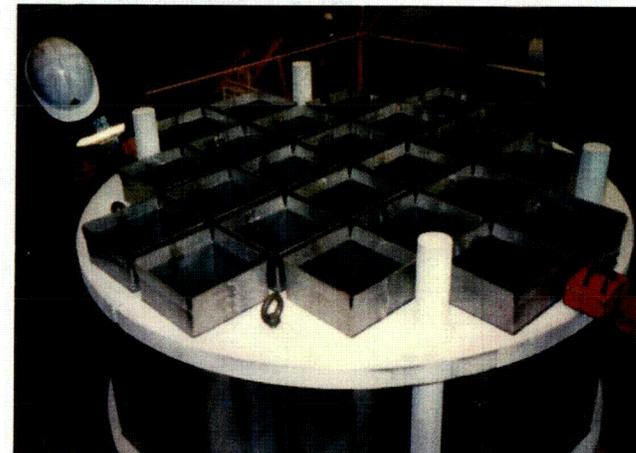
Background

- Dry Storage Canister (DSC)
 - 24 PWR fuel assemblies
 - Bottom shield plug (integral) with grapple ring
 - Top shield plug placed in DSC while in spent fuel pool
 - Welded cover plate(s) at top end of DSC



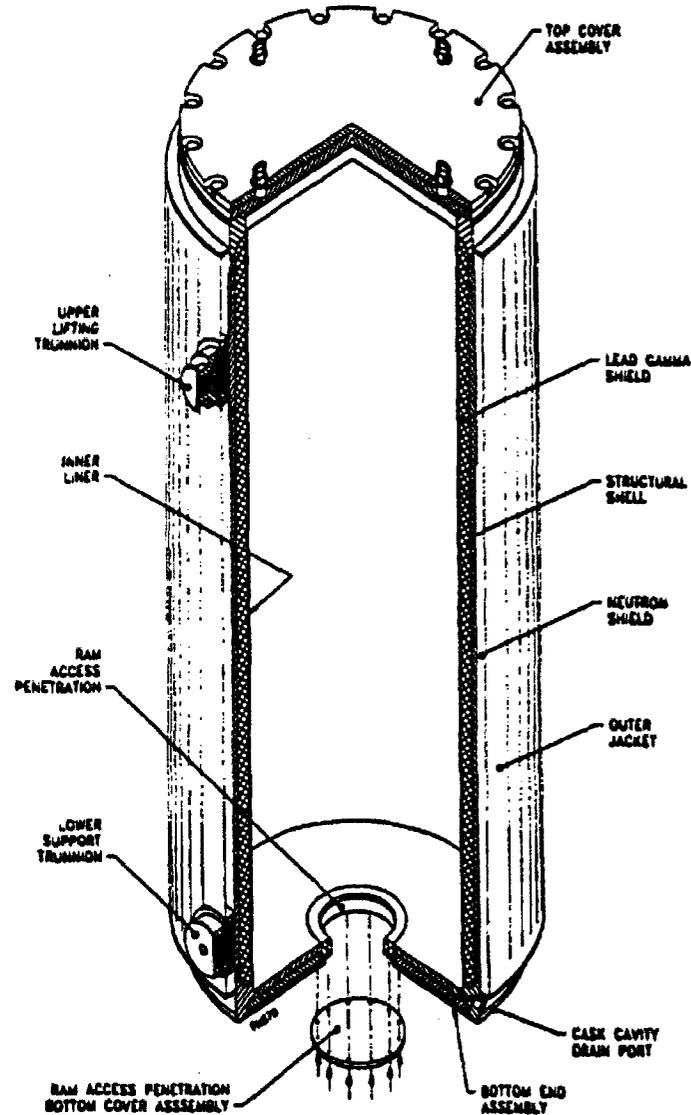
Background

- DSC During Fabrication



Background

- Transfer Cask



Background

- Transfer Cask and Trailer



Licensing Approach

- 10CFR72.42 provides for license renewal
 - “Applications... should be filed in accordance with applicable provisions of subpart B at least two years prior to the expiration of the existing license.”
(i.e. by January 31, 2008 for Oconee ISFSI)
 - “...the existing license shall not expire until a final decision ...has been made by the Commission.”
- Duke will request 40 year renewal term
 - Exemption from 10CFR72.42(a) needed?

Licensing Approach

- “Preliminary Guidance for License Renewal for Site-Specific Independent Spent Fuel Storage Installations (ISFSIs)”, March 2001
 - Specifies content determined to meet 10CFR72.42 requirements (nine specific topics)
 - Provides additional guidance for Aging Management Review process and Aging Management Programs
- Precedent
 - Previous ISFSI license renewals (Surry and Robinson)
 - Duke Part 54 renewals for reactors

Schedule

- Pre-Submittal Activities:

Funding approval; formation of project team	2 nd Qtr. 2007
Baseline Inspections	4 th Qtr. 2006
Aging Management Reviews; Environmental Report Supplement	1 st Qtr. 2007
Updated Time-Limited Aging Analyses; Aging Management Programs	2 nd Qtr. 2007
Draft application; Internal reviews (PORC, NSRB)	3 rd Qtr. 2007

- Submittal to NRC: 4th Quarter 2007
- Required submittal date: January 31, 2008

Discussion

- Summary
 - Duke needs to continue operation of the Oconee Site-Specific ISFSI
 - Duke will submit license renewal application during 4th Quarter 2007
 - Exemption request for 40 year renewal term (?)
 - Application will use the NRC Preliminary Guidance of March 2001 and earlier renewal submittals
- Discussion
- Closing Remarks