

MAY 06 1988

Project M-49

MEMORANDUM FOR: Leland C. Rouse, Chief
Fuel Cycle Safety Branch
Division of Industrial and
Medical Nuclear Safety, NMSS

FROM: John P. Roberts, Section Leader
Irradiated Fuel Section
Fuel Cycle Safety Branch

SUBJECT: MEETING WITH DUKE POWER COMPANY (DPC)

DATE/TIME: May 4, 1988; 9:00 a.m.

LOCATION: Room 6-B-11, White Flint Building, Rockville, MD

ATTENDEES: See enclosure 1

PURPOSE: To discuss DPC's license application under 10 CFR Part 72 for
dry spent fuel storage at its Oconee Nuclear Station site.

DISCUSSION:

After introductions Duke proceeded with its presentation (see enclosure 2) which followed its agenda (see enclosure 2). Technical discussion followed. DPC then spoke of its need to meet short term and long term schedules (see enclosure 2) to be able to reachieve a prudent operating reserve in its reactor pools. NRC staff expects to provide initial comments to NUTECH on its NUHOMS-24P modular design by the end of May 1988 (DPC references the NUTECH design in its application for Oconee). Initial comments on DPC's environmental report will follow by the end of June. A site visit to Oconee in late June or early July by NRC staff in conjunction with the environmental review was also discussed. The environmental review is the pacing segment of the licensing review, since DPC desires to commence site work in October 1988 and construction in April 1989.

Reactor technical specification changes associated with removal of fuel to dry storage will be separately handled through an amendment application filed with the Office of Nuclear Reactor Regulation.

Original Signed By:

BB05160179 BB0506
PDR ADDCK 05000269
PDR

John P. Roberts, Section Leader
Irradiated Fuel Section
Fuel Cycle Safety Branch

Enclosures:

- 1) Attendance List
- 2) DPC Presentation

DISTRIBUTION:

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NRC File Center Docket No. 72-4 Project M-49 PDR LPDR JMNS Central File
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FSturz JSchneider KLeu

OFC : IMIF

NAME: JPROberts:lg

DATE: 5/6/88

NRC/DPC MEETING ATTENDANCE LIST

MAY 4, 1988

John P. Roberts	NRC/NMSS
Renee M. Perfetti	NRC/NRR/DEST
Helen N. Pastis	NRC/NRR/DPR
Paul Guill	Duke Power
James Thornton	Duke Power
M. A. Haghi	Duke Power
Jim Schneider	NRC/NMSS
K. C. Leu	NRC/NMSS
Ralph Sievers	SAIC, McLean, VA
John R. Stokley	SAIC, McLean, VA
Ata Istar	SAIC, McLean, VA
Jim Hammelman	SAIC, McLean, VA
Ray Roland	SAIC, McLean, VA
Fritz Sturz	NRC/NMSS
Jack D. Rollins	NUTECH (Atlanta)
Bob Lehnert	NUTECH (San Jose)
Bill McConaghy	NUTECH (San Jose)
Deborah Ryan	SAIC (San Diego)
Richard Belanger	SAIC (San Diego)
Terry L. Bradley	Duke Power
Dave Rehn	Duke Power

OCONEE NUCLEAR STATION ISFSI
LICENSING "KICKOFF" MEETING
NRC HEADQUARTERS - ROCKVILLE, MD

MAY 4, 1988

Introduction	Duke
Oconee ISFSI Facility Overview	Duke
Summary of Principal Design Criteria	Duke
Summary of Principal Technical Specifications	Duke
Early NRC Technical Concerns/Questions	NRC
Schedule Requirements	Duke
- Short Term Items (1988)	
- Long Term Items (1989)	
Logistics/Schedule of NRC Review Process	NRC
- Part 72 Review Plan	
- Part 50 Review Plan	
- Part 50 and Part 72 Prenoticing Schedule/Strategy	
Discussion	All

OCONEE SPENT FUEL STORAGE

CURRENT OPERATING RESERVE STATUS

	<u>INVENTORY</u>	<u>SPACE AVAILABLE</u>	<u>POR STATUS</u>	<u>RPOR STATUS</u>
OCONEE 1/2 POOL	939	359	+14	+72
OCONEE 3 POOL	490	328	-17	+41

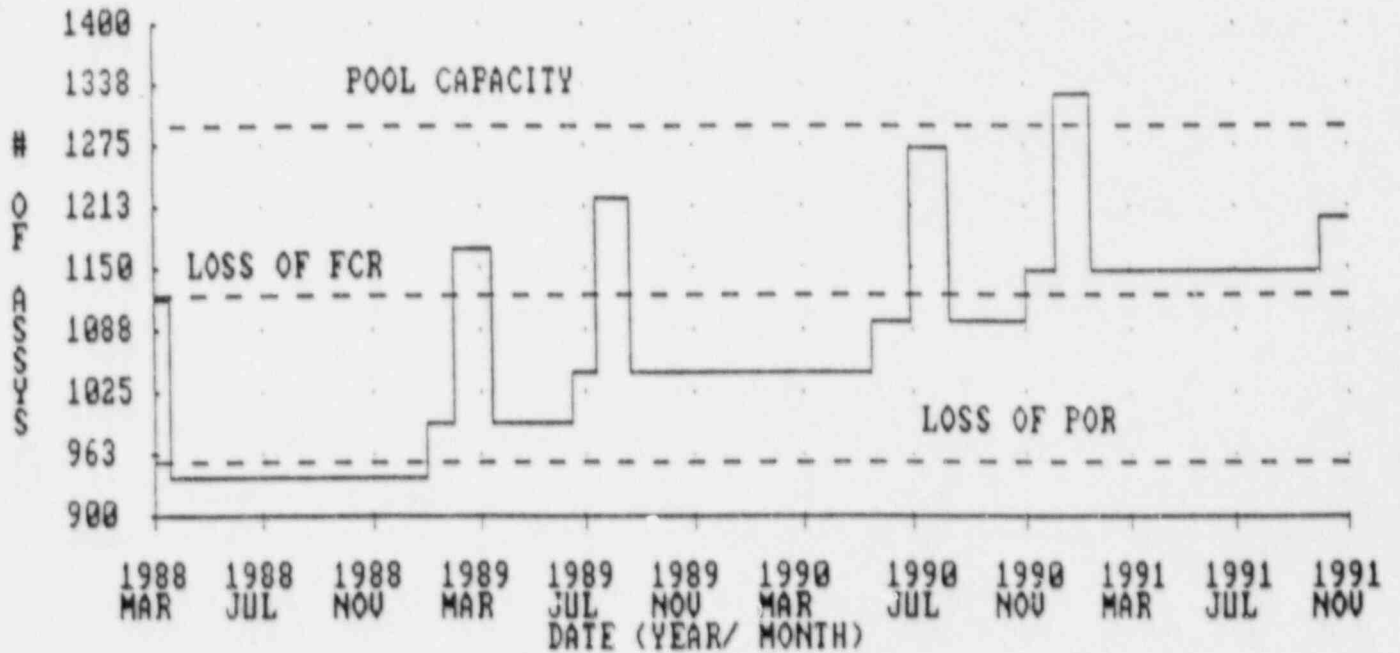
POR = 345 STORAGE SPACES

RPOR = 287 STORAGE SPACES

OCONEE UNIT 1/2
SPENT FUEL POOL

PROJECTED OPERATING RESERVE STATUS

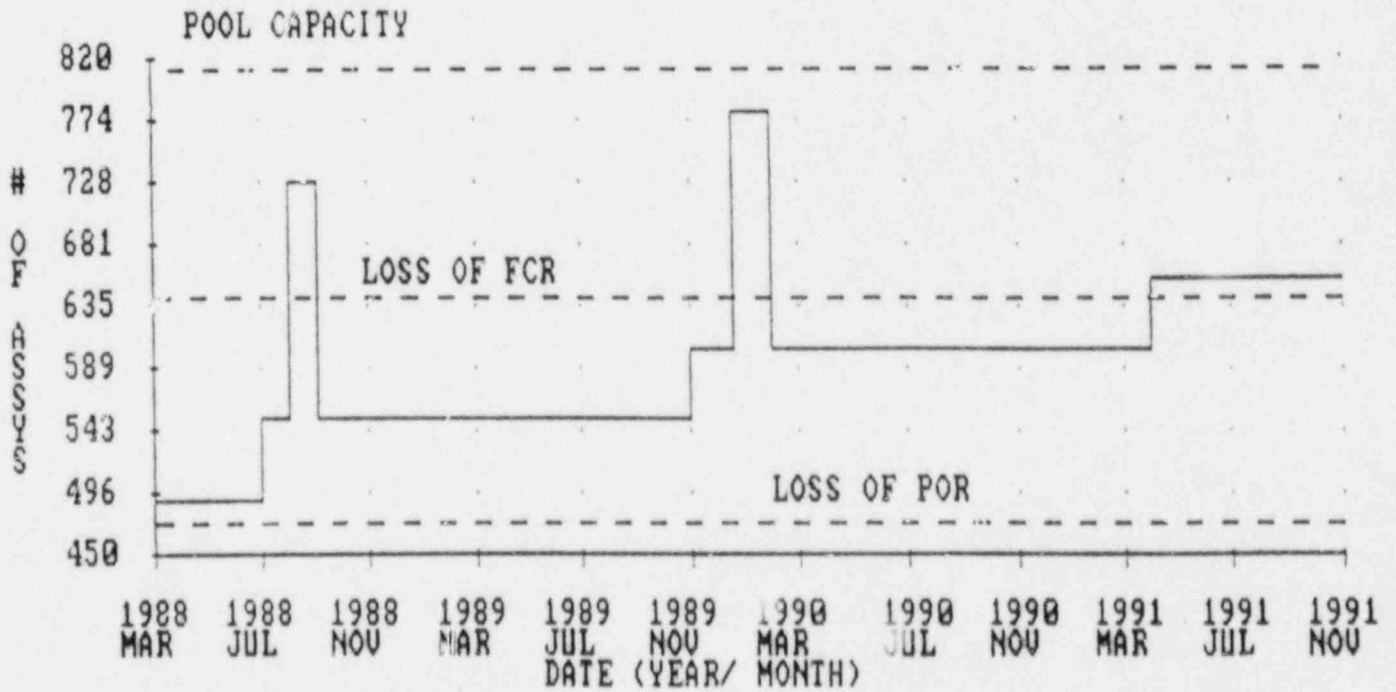
<u>DATE</u>	<u>POR STATUS</u>	<u>SPACE AVAILABLE</u>	<u>RPOR STATUS</u>
01/89	- 38	307	+ 20
07/89	- 90	255	- 32
06/90	-142	203	- 84
12/90	-194	151	-136
11/91	-233	99	-175



OCONEE UNIT 3
SPENT FUEL POOL

PROJECTED OPERATING RESERVE STATUS

<u>DATE</u>	<u>POR STATUS</u>	<u>SPACE AVAILABLE</u>	<u>RPOR STATUS</u>
08/88	- 77	268	- 19
12/89	-129	216	- 71
05/91	-181	164	-123

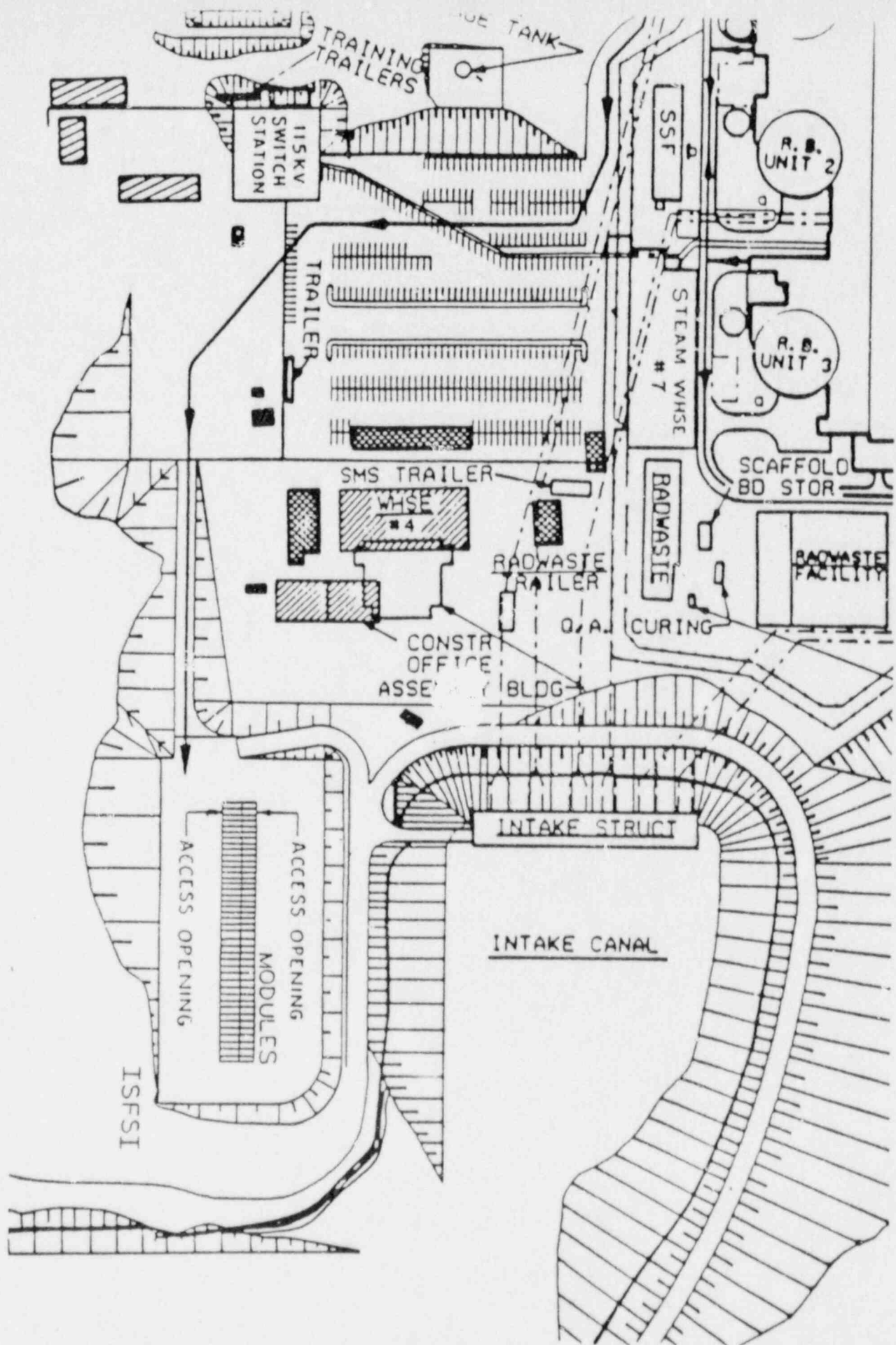


DUKE POWER COMPANY

OCONEE NUHOMS ISFSI

ISFSI FACILITY OVERVIEW

- o LOCATION OF FACILITY AT OCONEE
- o FACILITY DIMENSIONS AND CAPACITY
- o BASIC FACILITY FEATURES
- o FACILITY INTERFACE WITH ONS STATION



ISFSI LAYOUT

OCONEE NUCLEAR STATION

Figure 2.1-3



DUKE POWER COMPANY

OCONEE NUHOMS ISFSI

ISFSI STATION INTERFACE

- o PROPOSED SECURITY SYSTEM
- o EMERGENCY PLAN ARRANGEMENTS
- o ELECTRICAL REQUIREMENTS/SUPPLY
- o PROCEDURES AND TRAINING
- o FACILITY DECOMMISSIONING PLAN
- o ENVIROMENTAL IMPACT
- o PROPOSED TRANSPORT ROUTE

APPLICATIONS MADE TO 10CFR50
BRANCH COVERING CASK HANDLING
WITHIN THE OCONEE FACILITY

DUKE POWER COMPANY

OCONEE NUHOMS ISFSI

PRINCIPAL DESIGN CRITERIA

ISFSI SITE:

- SEISMIC LOADS
- TORNADO WIND LOADINGS
- TORNADO GENERATED MISSILE
- FLOOD EFFECTS
- SNOW AND ICE LOADINGS
- FIRE AND EXPLOSION EFFECTS

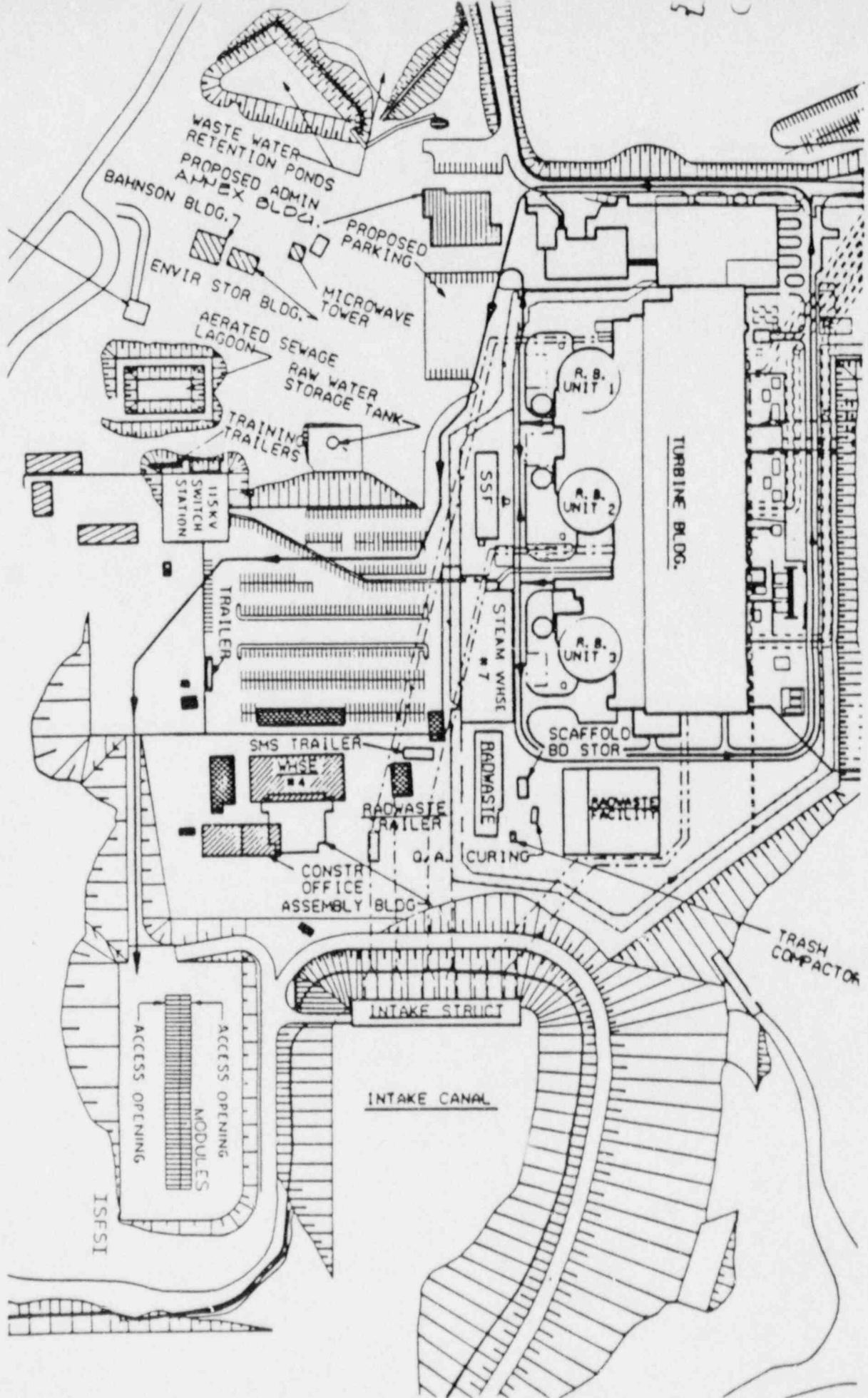
DUKE POWER COMPANY


OCONEE NUHOMS ISFSI

PRINCIPAL DESIGN CRITERIA

SITE TRANSFER ROUTE:

- STRUCTURAL ACCEPTANCE
- TARGET HARDNESS WITHIN REPORT
DROP ACCIDENT CONSTRAINTS




 SITE LAYOUT AND ROUTE
 OCONEE NUCLEAR STATION
 Figure 4.1-1

DUKE POWER COMPANY

OCONEE NUHOMS ISFSI

PRINCIPAL DESIGN CRITERIA

FUEL ASSEMBLY SELECTION :

- B&W 15X15 MARK B OR SIMILAR
PWR DESIGN
- ANY POSSIBLE CONTROL COMPONENT
PRESENT
- NO KNOWN GROSS CLAD DAMAGE

DUKE POWER COMPANY

OCONEE NUHOMS ISFSI

PRINCIPAL DESIGN CRITERIA

CRITICALITY:

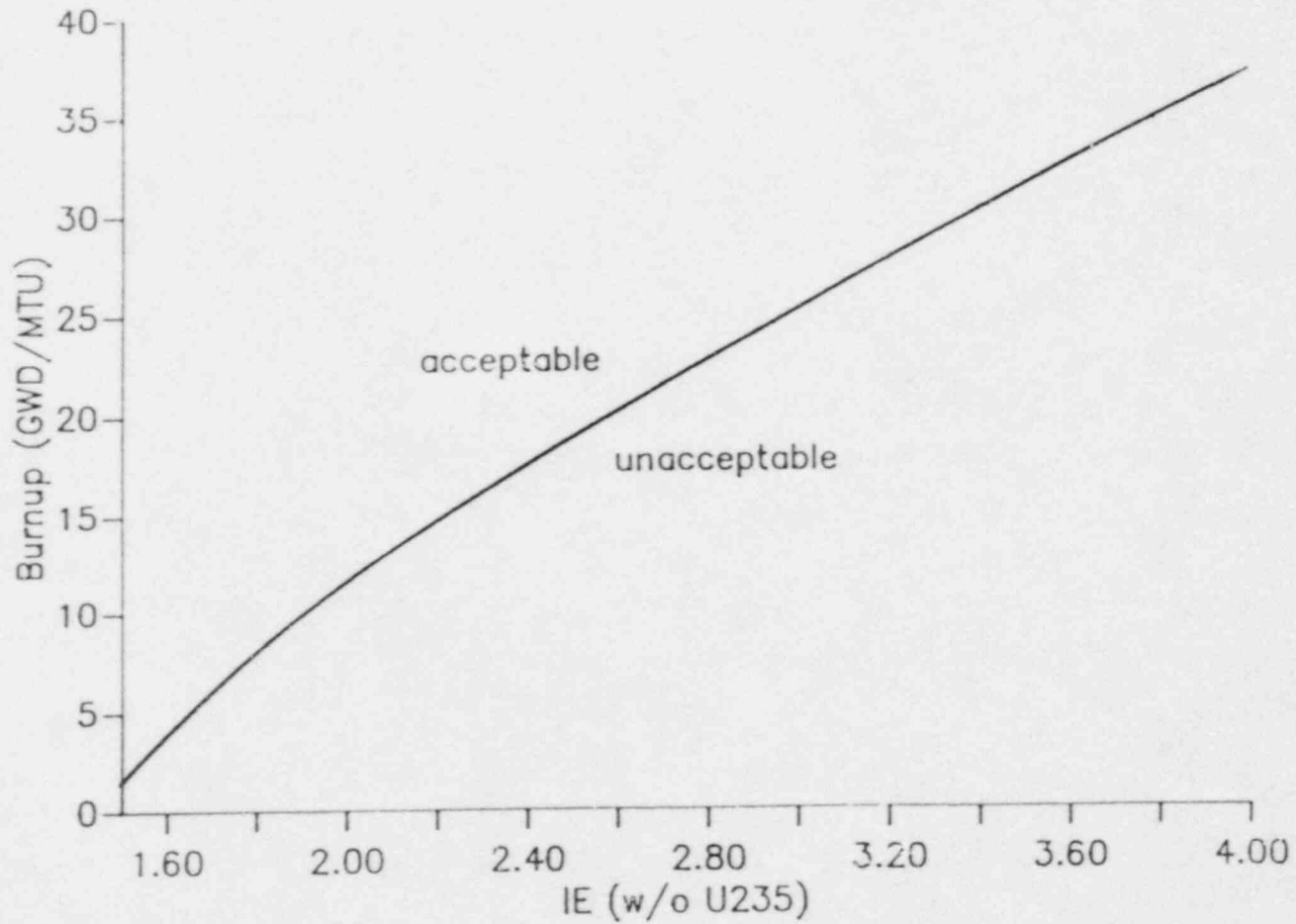
- o MAINTAIN K-EFF LESS THAN .95
- o BURNUP CREDIT
- o MODERATOR DENSITY OPTIMIZED
BETWEEN 0 & 1 GRAM/CC
- o AXIAL BURNUP PROFILE :
 - WORSE CASE CORRESPONDS ROUGHLY
TO 63% IN TOP 18 IN.
 - METHODDEPENDENT
 - NEGLIGIBLE EFFECTS POSSIBLE WITH OTHER MODELS
- o MISLOADED ASSEMBLY ACCIDENT
 - CREDIT TAKEN FOR SOLUBLE BORON
 - VARIOUS SCENARIOS POSSIBLE
- o STORAGE CELL SPACING - VARIABLE
STORAGE CELL MATERIAL

- o INITIAL ENRICHMENT/DISCHARGE BURNUP
LIMITS - FIGURE 1

FIGURE 1

FUEL ASSEMBLY ACCEPTANCE CRITERIA

CRITICALITY



DUKE POWER COMPANY
OCONEE NUHOMS ISFSI
PRINCIPAL DESIGN CRITERIA

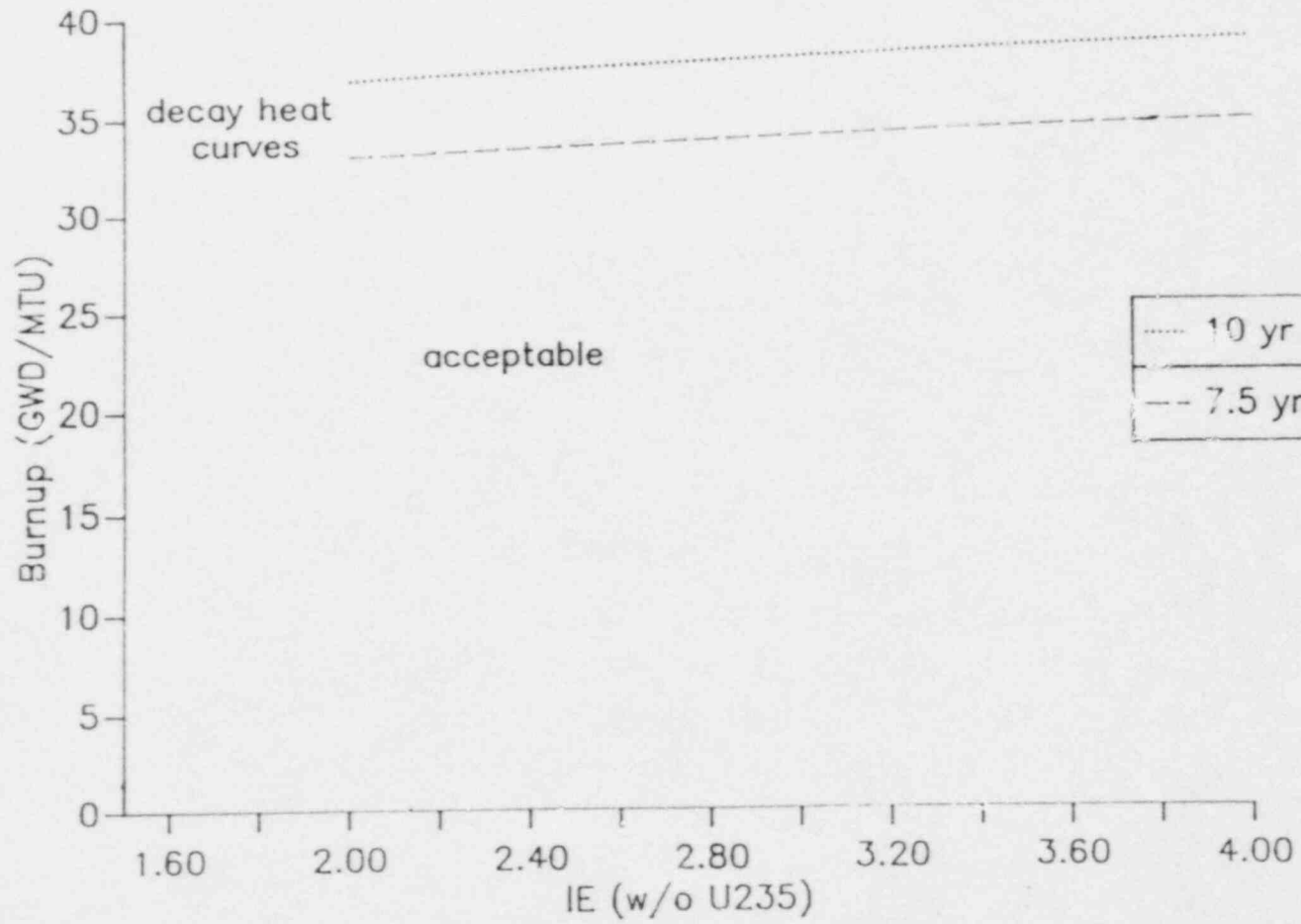
THERMAL :

- o FUEL ASSEMBLY DECAY HEAT LOAD -
.66 KW/ASSEMBLY
- o MAXIMUM FUEL CLAD TEMPERATURE
 - 570 DEG. C. TRANSFER MODE
 - 340 DEG. C. STORAGE MODE
- o ASSEMBLY HEAT LOAD METHODOLOGY
 - ORIGEN-S (SCALE 3)
 - 27 GROUP NDF4 CROSS SECTION
 - REGULATORY GUIDE 3.54
- o FUEL ASSEMBLY MINIMUM COOLING
TIME - 7.5 YEARS
- o FUEL ASSEMBLY ENRICHMENT/BURNUP
LIMITS - FIGURE 2

FIGURE 2

FUEL ASSEMBLY ACCEPTANCE CRITERIA

DECAY HEAT



DUKE POWER COMPANY

OCONEE NUHOMS ISFSI

PRINCIPAL DESIGN CRITERIA

RADIOLOGICAL :

- o SOURCE TERM METHODOLOGY-ORIGEN S
- o TRANSFER CASK SURFACE DOSE RATE
LESS THAN 200 MR/HR
- o HSM SURFACE DOSE RATE
20 MR/HR
- o SITE BOUNDARY DOSE - LESS THAN
0.01 MR/YR
- o DOSE TO WORKERS DURING
CONSTRUCTION - 2.5 MR/HR AVG.

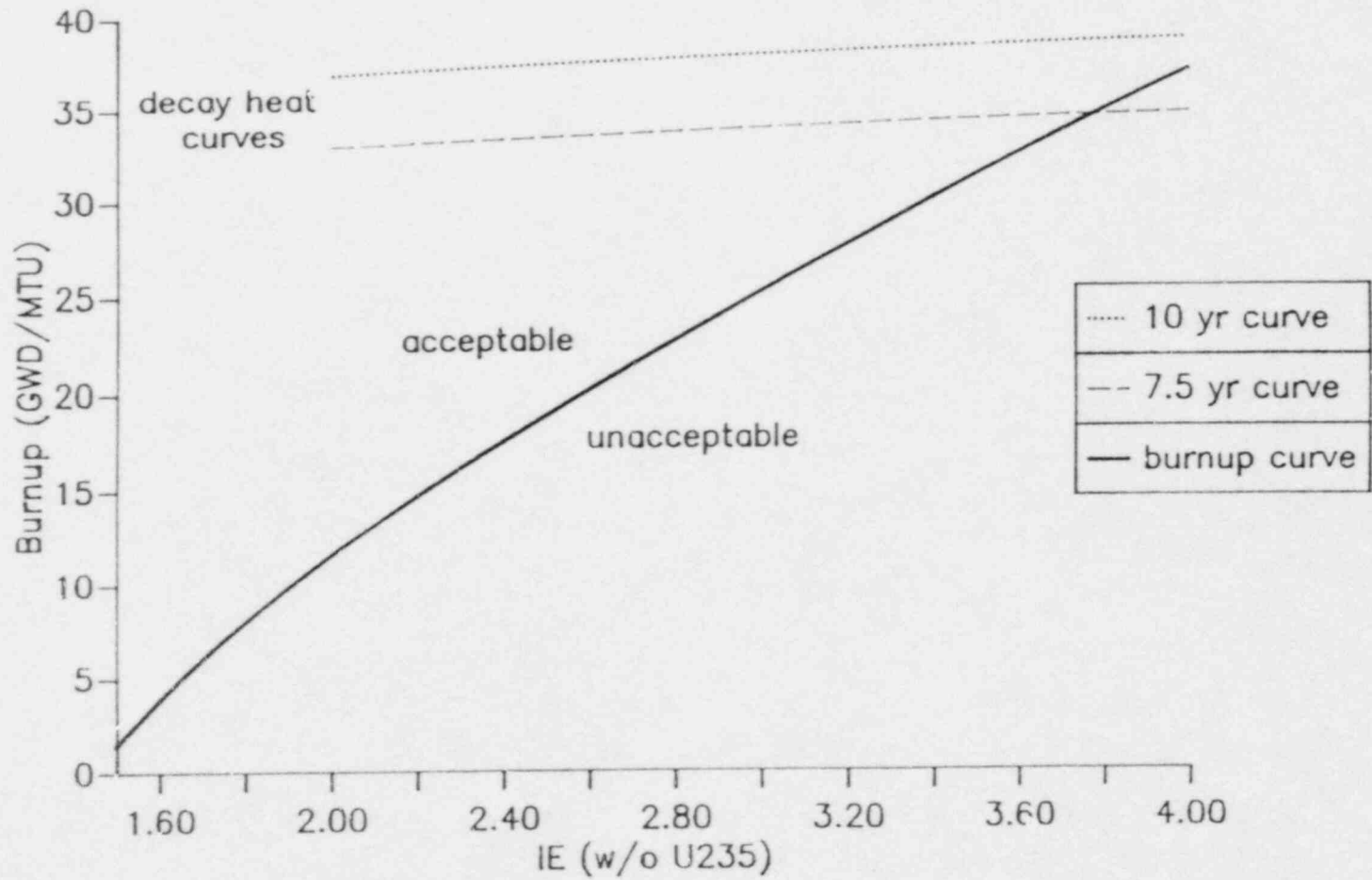
*DUKE POWER COMPANY
OCONEE NUHOMS ISFSI*

**TECHNICAL SPECIFICATION
SUMMARY**

DSC VACUUM DRYING PRESSURE	——	5-10 TORR
HELIUM BACKFILL PRESSURE	——	2.5 PSI - +2.5 PSI
DSC WELD TEST/ INSPECTION	——	LIQUID PENETRANT PER ASME STANDARD
FUEL ASSEMBLY RETRIVAL/ INSPECTION	——	FOLLOWING DROP OF 60 INCHES OR MORE
DSC SURFACE CONTAMINATION	——	2200 DPM BETA/GAMMA PER 100 CM ² 220 DPM ALPHA PER 100 CM ²
HSM INLET/OUTLET SURVIELLANCE	——	INSPECTION INLETS EVERY 24 HOURS INSPECT INLETS/OUTLETS AFTER HIGH WIND
TRANSFER ROUTE SELECTION	——	CONSTANT ELEVATION TO 5 FT. BOTH SIDES
FUEL SELÉCTION CRITERIA	——	PWR FUEL PER FIGURE 3 RESTRICTIONS

FIGURE 3

FUEL ASSEMBLY ACCEPTANCE CRITERIA



*DUKE POWER COMPANY
OCONEE NUHOMS ISFSI*

NEAR - TERM SCHEDULE

- o FILE VENDOR TOPICAL 2-26-88
- o FILE SITE APPLICATION 3-31-88
- o BEGIN FACILITY EARTHWORK 10-1-88

- o RELEASE EQUIPMENT 10-1-88
FABRICATION CONTRACTS

- o **NRC APPROVAL NEEDED** 4-1-89
- o BEGIN DESIGN CONCRETE 4-1-89
POURS

*DUKE POWER COMPANY
OCONEE NUHOMS ISFSI*

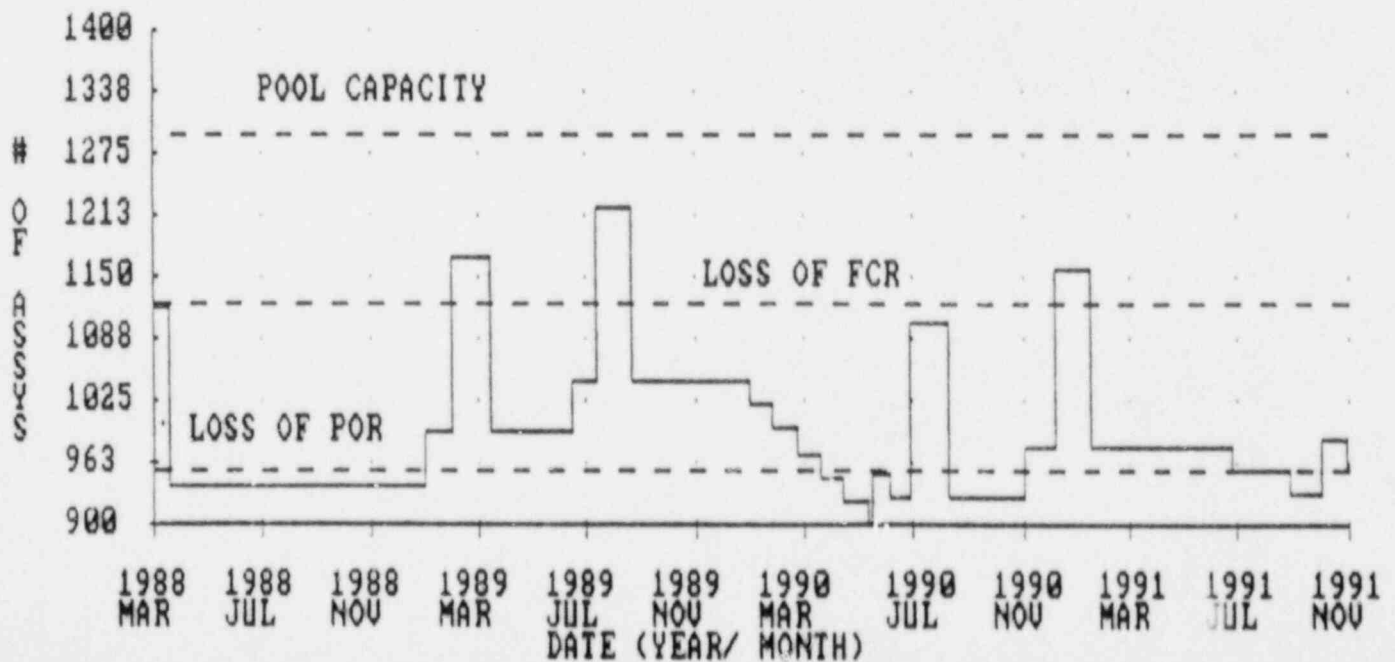
LONG TERM SCHEDULE

- o PRE-OPERATIONAL TESTING BEGINS 10-1-89
- o FACILITY COMPLETE, FIRST DSC's DELIVERED 1-1-90
- o LOAD FIRST 11 DSC's 1990
- o LOAD 5 DSC's 1991
- o LOAD 5 DSC's 1992
- o LOAD 4 DSC's 1993
- o LOAD 4 DSC's 1994
- o LOAD 5 DSC's 1995

OCONEE UNIT 1/2
SPENT FUEL POOL

PROJECTED OPERATING RESERVE STATUS
WITH DRY STORAGE

<u>DATE</u>	<u>SPACE AVAILABLE</u>	<u>POR STATUS</u>	<u>DSCs LOADED</u>
01/89	307	-38	-
07/89	255	-90	-
01/90-06/90	423	+78	7
06/90	371	+26	-
12/90	319	-26	-
06/91-10/91	390	+46	3
11/91	339	- 6	-
01/91-04/92	387	+42	2



OCONEE UNIT 3
SPENT FUEL POOL

PROJECTED OPERATING RESERVE STATUS
WITH DRY STORAGE

<u>DATE</u>	<u>SPACE AVAILABLE</u>	<u>POR STATUS</u>	<u>DSCs LOADED</u>
03/88	268	-77	-
12/89	216	-129	-
08/90-11/90	312	-33	4
01/91-04/91	360	+15	2
05/91	308	-37	-

