INTRODUCTION

- BACKGROUND OF MRS DEVELOPMENT
- STORAGE TECHNOLOGIES
- STORAGE TECHNOLOGY BIDS
- MRS DESIGN
BACKGROUND OF MRS DEVELOPMENT
BACKGROUND OF MRS DEVELOPMENT

- PRE-NWPA
- NWPA - 1982
- PNL ALTERNATIVE CONCEPTS - 1983
- PARSONS CONCEPTUAL DESIGN REPORT - 1985
- NWPAA - 1987
- SYSTEM STUDIES 1989
  - TASK B - MRS DESIGN
  - TASK C - RE-EVALUATION OF CONCEPTS
- PARSON PRECONCEPTUAL DESIGN OF TRANSFER FACILITY - 1990
- M&O/DUKE ENGINEERING CONCEPTUAL DESIGN REPORT
1985 CONCEPTUAL DESIGN

- ALL FUEL WAS TO BE HANDLED AT MRS
- CONSOLIDATION OF FUEL
- WASTE PACKAGING
- STORAGE CAPACITY 15,000 TONS
- STORE CONSOLIDATED FUEL IN LARGE CONCRETE CASKS
- SHIP TO REPOSITORY IN LARGE TRANSPORTATION CASKS
MRS SYSTEM STUDIES

- EVALUATED ALTERNATIVE SCENARIOS
- NO MRS
- "STORE-ONLY" MRS
- CONSOLIDATION
- WASTE PACKAGING
- CONCEPTUAL DESIGN UPDATED
- EVALUATED LINKED/UNLINKED
- CAPACITY
1990 PRECONCEPTUAL DESIGN

- OBJECTIVE TO IMPROVE SCHEDULE
- TRANSFER FACILITY SIMPLIFIED
- SIZE REDUCED
- THROUGHPUT REDUCED
- CONCRETE CASK MAINTAINED
STORAGE TECHNOLOGIES
WET (IN-POOL) STORAGE

- **EXISTING INSTALLATIONS**
  - 35 YEARS EXPERIENCE AT NUCLEAR REACTOR SITES AND RESEARCH FACILITIES

- **DESIGN FEATURES**
  - CONCRETE POOL WITH STAINLESS STEEL LINER
  - CHEMICALLY TREATED WATER PROVIDES HEAT REMOVAL AND RADIATION SHIELDING
  - ASSEMBLIES STORED IN HIGH DENSITY FUEL RACKS
HORIZONTAL CONCRETE MODULAR STORAGE

- EXISTING OR PLANNED INSTALLATIONS
  - ROBINSON DEMONSTRATION
  - OCONEE ISFSI
  - CALVERT CLIFFS ISFSI UNDER CONSTRUCTION
  - BRUNSWICK ISFSI (LA UNDER REVIEW)

- DESIGN FEATURES
  - POOL TO CANISTER TRANSFER
  - CANISTER LOADED IN CONCRETE MODULE
  - AIR-CHANNEL IN MODULE FOR HEAT REMOVAL
METAL CASKS

- SURRY ISFSI (CASTOR, TRANSNUCLEAR, WESTINGHOUSE, NUCLEAR ASSURANCE)
- PRAIRIE ISLAND - UNDER REVIEW (TRANS NUCLEAR)
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  - CASK PLACED ON CONCRETE PAD
  - HEAT REMOVAL BY CONVECTION
PHOTOGRAPH
PHOTOGRAPH
VERTICAL CONCRETE STORAGE CASKS

- PROTOTYPE TESTED AT IDAHO
- SIERRA NUCLEAR PALISADES ISFSI
- B&W DESIGN - TOPICAL SUBMITTAL
- DESIGN FEATURES
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  - CASK PLACED ON CONCRETE PAD
  - VENTILATED STORAGE CASK/HEAT TUBES
VAULT

- FT. ST. VRAIN (FOSTER-WHEELER)

- DESIGN FEATURES
  - CANISTERED FUEL
  - TRANSFER VIA FUEL HANDLING MACHINE
  - CANISTER PLACED IN STORAGE TUBE
  - MODULAR VAULT DRY STORAGE (MVDS)
  - HEAT TRANSFER BY CONVECTION
MODULAR VAULT DRY STORAGE (MVDS)
PHOTOGRAPH
STORAGE TECHNOLOGY BIDS
PROCESS

- REQUEST FOR PROPOSAL (RFP)
- FIXED PRICED PROPOSALS FOR MRS STORAGE CONCEPT (FPPMS)
- AWARDS - MULTIPLE BIDDERS
RFP

- MULTIPLE BIDS RECEIVED
- EVALUATION COMPLETE
- MULTIPLE AWARDS WILL BE MADE
SCOPE OF TECHNOLOGIES
FPPMS AWARDS

• VAULT
• CONCRETE CASK
• METAL CASK
• DUAL PURPOSE CASK
• HORIZONTAL STORAGE MODULE
## PROJECTED SCHEDULE

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TECHNOLOGY PROPOSALS
SCHEDULE

PERFORMANCE COMPLETED (INCLUDES FIXED PRICE PROPOSALS) 6/30/92

ORAL PRESENTATIONS BY VENDORS 7/22/92
MRS DESIGN
MRS CDR TECHNOLOGIES

- **REFERENCE**
  - DRY TRANSFER - VERTICAL CONCRETE CASK TECHNOLOGY

- **ALTERNATES**
  - POOL STORAGE TECHNOLOGY
  - DRY VAULT STORAGE TECHNOLOGY

- **DELTA'S**
  - METAL CASK STORAGE TECHNOLOGY
  - HORIZONTAL STORAGE TECHNOLOGY
  - DUAL PURPOSE STORAGE TECHNOLOGY
DRY TRANSFER - VERTICAL CONCRETE CASK TECHNOLOGY

- DRY TRANSFER CELL FOR LOADING STORAGE CASKS
- FLEXIBLE DESIGN FOR MULTIPLE VENDORS
- 1,300 STORAGE CASKS FOR 15,000 MTU
- SITE ACREAGE - 460 ACRES
POOL STORAGE TECHNOLOGY

- POOL TRANSFER FROM SHIPPING CASKS
- MODULE POOL STORAGE (2,500 MTU PER POOL)
- PROVEN UTILITY POOL STORAGE DESIGN
- SITE ACREAGE - 286 ACRES
DRY VAULT STORAGE

- DRY TRANSFER CELL TO CANISTER
- CANISTERS PLACED IN STORAGE TUBES
- MODULAR VAULT DESIGN
- SITE ACREAGE - 363 ACRES
DELTA'S

- SIMILAR DESIGN TO DRY TRANSFER - VERTICAL
- NO MAJOR CHANGES TO TRANSFER METHOD
- SITE ACREAGE - SAME AS DRY STORAGE
PHOTOGRAPH
PHOTOGRAPH
PHOTOGRAPH
PHOTOGRAPH
PHOTOGRAPH
PHOTOGRAPH
MRS DESIGN REVIEWS

- READINESS REVIEW
- CDR REVIEW
- SAR DESIGN READINESS REVIEW
- SAR DESIGN REVIEW