SELECTED CHARTS:
NATIONAL WASTE TERMINAL STORAGE PROGRAM

February 16, 1977

C. D. Zerby, Director
Office of Waste Isolation

Presented to
Charles C. Finch
Governor of Mississippi
Jackson, Mississippi

**UNION
CARBIDE**

OFFICE OF WASTE ISOLATION
OAK RIDGE, TENNESSEE

*prepared for the U.S. ENERGY RESEARCH AND DEVELOPMENT ADMINISTRATION
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NUCLEAR POWER REACTORS IN THE UNITED STATES

NUCLEAR GENERATING UNIT CAPACITY

PUE RTO RICO

■ OPERABLE

58 LICENSED BY NRC TO OPERATE
2 OTHERS AUTHORIZED TO OPERATE (ERDA-OWNED)

KILOWATTS

40,317,400
940,000

▲ BEING BUILT

74 CONSTRUCTION PERMITS
19 SITE WORK AUTHORIZED

76,931,200
20,490,000

● PLANNED

61 REACTORS ORDERED
24 REACTORS NOT ORDERED*
238

69,394,000
28,900,000
236,972,600

*These units have not been ordered, and site information is incomplete.

There are no symbols for units planned but not sited.

Symbols do not reflect precise locations.

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Ref.: TID 8200-R33, "Nuclear Reactors Being Built or Planned in the U.S. as of December 1, 1975". Updated June 30, 1976

OWI-76-99 R1

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**PROJECTED DOMESTIC POWER GROWTH
(OPA-MID CASE 1976)**

YEAR	GWe (TOTAL)	GWe (NUCLEAR)	NUCLEAR (% OF TOTAL)
1975	500	39	8
1985	725	145	20
2000	1,400	510	36

REF: E. J. HANRAHAN, ET AL, ERDA, OPA, "UNITED STATES URANIUM REQUIREMENTS," OCTOBER 19, 1976, GRAND JUNCTION, COLORADO.

OWI-76-103 R1

THE LIGHT WATER REACTOR NUCLEAR FUEL CYCLE

OWI-76-100-R1

NWTS PROGRAM OBJECTIVE

TO PROVIDE FACILITIES IN VARIOUS DEEP GEOLOGIC FORMATIONS AT MULTIPLE LOCATIONS IN THE USA WHICH WILL SAFELY DISPOSE OF THE COMMERCIAL RADIOACTIVE WASTE WHICH MUST BE DELIVERED TO A FEDERAL REPOSITORY FOR TERMINAL STORAGE.

OWI-76-96

WASTE STORAGE HISTORY

- CONTINUING GEOLOGIC STUDIES FOR OVER 15 YEARS
- 1957 AND 1970 NAS-NRC COMMITTEE RECOMMENDED BURIAL OF SOLID RADIOACTIVE WASTE IN BEDDED SALT DEPOSITS.
- UNDERGROUND VAULT TEST AT LYONS, KANSAS, LATE IN 1960s.
- RETRIEVABLE SURFACE STORAGE FACILITY DESIGNED IN EARLY 1970s.
- WASTE ISOLATION PILOT PLANT IN BEDDED SALT FOR ERDA WASTE NOW UNDER DEVELOPMENT IN SOUTH-EAST NEW MEXICO.
- OFFICE OF WASTE ISOLATION ANNOUNCED - FEBRUARY 1976.

OWI-76-10 R2

NWTS PROGRAM LINE OF RESPONSIBILITY (ERDA-HQ)

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NWTS PROGRAM LINE OF RESPONSIBILITY (ERDA-ORO)

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NWTS PROGRAM LINE OF RESPONSIBILITY (UCC-ND)

ESTIMATED FEDERAL REPOSITORY LAND AREAS

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**WASTE TO BE DELIVERED TO A
FEDERAL REPOSITORY**

TOTAL DELIVERED VOLUME THROUGH THE YEAR 2006	
WASTE TYPE	(1,000 CU. FT.)
HIGH LEVEL	220
CLADDING	330
INTERMEDIATE LEVEL	1,475
LOW LEVEL	4,345

REF: BLOMEKE, CROFF, AND KEE, ORNL/TM-5427, DECEMBER 1976.

OWI-77-30

GEOLOGIC TERMINAL STORAGE

GENERAL PLAN

OWI-76-31 R5

GEOLOGIC TERMINAL STORAGE

REPOSITORY NO. 1 DESIGN AND CONSTRUCTION SCHEDULE

OWI-76-92 R4

GENERAL NWTS DEVELOPMENT SEQUENCE

- 1. IDENTIFICATION OF FORMATIONS OF INTEREST**
- 2. RECONNAISSANCE TO PROVIDE GEOLOGIC DATA**
- 3. AREA STUDIES**
- 4. DETAILED CONFIRMATION STUDIES**
- 5. IN SITU TESTS**
- 6. REPOSITORY OPERATIONS**

OWI-76-98 R2

SITE SELECTION PROCESS

SCREENING PROCESS

• BETWEEN STATES

• WITHIN STATES

MULTIPLE
GEOLOGIC
FORMATIONS

GEOLOGIC
STUDY
AREAS

DETAILED
CONFIRMATION
STUDY
LOCATIONS

SITES

OWI-76-119

ROCK SALT DEPOSITS IN THE UNITED STATES
(AFTER PIERCE AND RICH, U.S.G.S. BULL. 1148)

OWI-76-25

ARGILLACEOUS FORMATIONS IN THE UNITED STATES

OWI-76-26 R1

CRYSTALLINE FORMATIONS IN UNITED STATES

OWI-76-27

CATEGORIES OF STATES BY PLANNED NWTs ACTIVITIES DURING FY 77

PLANNED ACTIVITIES IN FY 1977	NUMBER OF STATES	STATES		
I. PLANNED LITERATURE STUDIES AND FIELD WORK	13	*COLORADO *INDIANA *LOUISIANA *MICHIGAN *MISSISSIPPI	*NEVADA *NEW YORK *OHIO *SOUTH DAKOTA *TENNESSEE	*TEXAS *UTAH *WASHINGTON
II. PLANNED LITERATURE STUDIES AND POSSIBLE FIELD WORK	6	*ILLINOIS *MINNESOTA *NORTH DAKOTA	*OKLAHOMA SOUTH CAROLINA *WISCONSIN	
III. LITERATURE STUDIES ONLY	17	*ALABAMA ARIZONA CONNECTICUT FLORIDA GEORGIA MAINE	MARYLAND MASSACHUSETTS *MISSOURI *MONTANA *NEBRASKA NEW HAMPSHIRE	*NORTH CAROLINA *PENNSYLVANIA VERMONT VIRGINIA *WYOMING

* STATES IN WHICH STUDIES HAVE BEEN PERFORMED IN THE PAST

OWI-76-311

LOCATION OF DOMES IN MISSISSIPPI SALT-DOME BASIN

MISSISSIPPI

REFERENCES

PAST GEOLOGIC STUDIES IN MISSISSIPPI

1. R. ERNEST ANDERSON, D. HOYE EARGLE, AND BETH O. DAVIS, GEOLOGIC AND HYDROLOGIC SUMMARY OF SALT DOMES IN GULF COAST REGION OF TEXAS, LOUISIANA, MISSISSIPPI, AND ALABAMA, USGS OPEN-FILE REPORT 4339-2 (1973).
2. SERGE GONZALES, GEOHYDROLOGIC-ENGINEERING GEOLOGY EVALUATION OF THE SELMA GROUP IN WESTERN ALABAMA AND NORTHEAST MISSISSIPPI FOR POSSIBLE RADIOACTIVE WASTE DISPOSAL, PREPARED FOR UCC-ND, OAK RIDGE NATIONAL LABORATORY, Y/OWI/SUB-4310/1 (JUNE 1975).
3. SERGE GONZALES, GEOLOGIC FEASIBILITY OF SELECTED CHALK-BEARING SEQUENCES WITHIN THE CONTERMINOUS UNITED STATES WITH REGARD TO SITING OF RADIOACTIVE-WASTE REPOSITORIES, PREPARED FOR UCC-ND, OAK RIDGE NATIONAL LABORATORY, Y/OWI/SUB-4310/2 (NOVEMBER 1975).
4. NETHERLAND, SEWELL & ASSOCIATES, INC., PRELIMINARY STUDY OF THE PRESENT AND POSSIBLE FUTURE OIL AND GAS DEVELOPMENT OF AREAS IMMEDIATELY SURROUNDING THE INTERIOR SALT DOMES UPPER GULF COAST SALT DOME BASINS OF EAST TEXAS, NORTH LOUISIANA, AND MISSISSIPPI, PREPARED FOR UCC-ND, OAK RIDGE NATIONAL LABORATORY, ORNL/SUB-75/87988 (DECEMBER 1975).
5. FREDERIC F. MELLEN, BASAL OTTAWA LIMESTONE, CHATTANOOGA SHALE, FLOYD SHALE, PORTERS CREEK CLAY, AND YAZOO CLAY IN PARTS OF ALABAMA, MISSISSIPPI AND TENNESSEE AS POTENTIAL HOST ROCKS FOR UNDERGROUND EMPLACEMENT OF WASTE, PREPARED FOR UCC-ND, OAK RIDGE NATIONAL LABORATORY, Y/OWI/SUB-76/87950 (FEBRUARY 28, 1976).

HISTORY OF LITERATURE SURVEYS OF
MISSISSIPPI GEOLOGIC FORMATIONS

- 1972 - USGS CONDUCTS SURVEY OF SALT DOMES
- 1975 - NETHERLAND, SEWELL & ASSOCIATES (NSA) CONDUCTS
PRELIMINARY STUDY OF PRESENT AND FUTURE
HYDROCARBON RESOURCES IN SALT DOME BASIN
- 1975 - GONZALES CONDUCTS SURVEY OF SELMA CHALK GROUP
- 1975 - GONZALES CONDUCTS SURVEY OF CHALK-BEARING
SEQUENCES IN USA
- 1976 - MELLEN CONDUCTS SURVEY OF LIMESTONE, SHALE, AND
CLAY
- 1976 - MELLEN AND NSA GATHER RAW DATA ON SALT DOMES

NEAR FUTURE GEOLOGIC STUDY ACTIVITIES
PLANNED FOR MISSISSIPPI

- MELLEN AND NETHERLAND, SEWELL & ASSOCIATES TO COMPLETE ANALYSIS BY JULY 1977 OF RAW DATA GATHERED IN 1976 ON SALT DOMES
- GEOLOGIC PROJECT MANAGER (GPM) TO BE SELECTED TO DIRECT ALL STUDIES IN GULF COAST SALT DOME AREA
- FIELD WORK TO START IN SPRING UNDER GPM TO STUDY SELECTED SALT DOMES. THIS WORK TO INCLUDE LOCAL HYDROLOGIC STUDIES, GEOPHYSICAL STUDIES, COREHOLES, ETC.
- USGS TO MAP REGIONAL HYDROLOGY
- SAVANNAH RIVER LABORATORY MAY GATHER MORE INFORMATION ON NON-SALT FORMATIONS

2/14/77

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