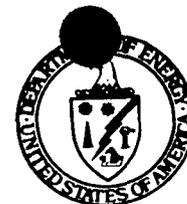


# **STATUS OF INFRASTRUCTURE STUDIES AND RESULTS**

**MICHAEL CONROY  
TRANSPORTATION BRANCH  
OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT**

**NUCLEAR WASTE TECHNICAL REVIEW BOARD  
TRANSPORTATION & SYSTEMS PANEL MEETING  
SEPTEMBER 25, 1991  
ARLINGTON, VA**



## **INFRASTRUCTURE STUDIES**

- **FACILITY INTERFACE CAPABILITY ASSESSMENT (FICA)**
- **NEAR SITE TRANSPORTATION INFRASTRUCTURE (NSTI) STUDY**
- **PRELIMINARY RESULTS FROM ANALYSIS OF FICA AND NSTI DATA**

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**FACILITY INTERFACE CAPABILITY  
ASSESSMENT (FICA)**

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## **FACILITY INTERFACE CAPABILITY ASSESSMENT (FICA)**

- **ASSESS THE CASK HANDLING AND SHIPPING CAPABILITIES WHERE DOE WILL ACCEPT SNF**
  
- **ENHANCE THE COMPATIBILITY AT THE INTERFACE WHERE DOE WILL ACCEPT SNF FROM COMMERCIAL FACILITIES**

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**FICA APPROACH**

- **REVIEWED EXISTING DATABASES TO DETERMINE WHAT DATA WAS AVAILABLE AND WHAT DATA WAS NEEDED**
  
  
  
  
  
  
  
  
  
  
- **VISITED 122 FACILITIES WHERE DOE WILL ACCEPT FUEL**

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**DEFINED CASKS AND CASK PARAMETERS FOR FICA**

- **LEGAL WEIGHT TRUCK**
- **OVERWEIGHT TRUCK**
- **100 TON RAIL/BARGE**
- **125 TON RAIL/BARGE**

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**PERFORMED ASSESSMENTS**

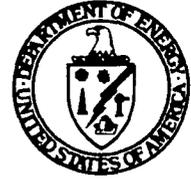
- (1) CURRENT CAPABILITY OR PLANNING BASE**
  
- (2) IF ADMINISTRATIVE CHANGES ARE IMPLEMENTED**
  
- (3) IF PHYSICAL MODIFICATIONS AND ADMINISTRATIVE CHANGES ARE IMPLEMENTED**

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## FICA SUMMARY RESULTS

	<b>Planning Base</b>	<b>If Administrative Changes are Implemented</b>	<b>If Administrative Changes and Physical Modifications Implemented</b>
<b>L W T</b>	<b>72</b>	<b>104</b>	<b>121</b>
<b>O W T</b>	<b>68</b>	<b>98</b>	<b>119</b>
<b>100 TON RAIL/BARGE</b>	<b>50</b>	<b>76</b>	<b>98</b>
<b>125 TON RAIL/BARGE</b>	<b>24</b>	<b>52</b>	<b>78</b>



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## **USE OF FICA DATA**

- **WASTE ACCEPTANCE PROCESS**
- **SERVICE PLANNING DOCUMENT**
- **CASK DESIGN PROCESS**
- **CASK HANDLING PROCEDURES AND ANCILLARY EQUIPMENT**
- **CASK MODAL MIX**
- **FUTURE CASK NEEDS**



**NEAR SITE TRANSPORTATION  
INFRASTRUCTURE (NSTI)  
STUDY**



## PURPOSE OF NSTI

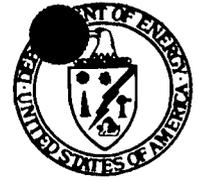
- EVALUATE POTENTIAL RAIL, ROAD, AND BARGE ACCESS CORRIDORS FOR 75 REACTOR SITES AND 1 STORAGE SITE
  
- PROVIDE DATA PERTINENT TO SPENT FUEL TRANSPORTATION
  - - TRAVEL RESTRICTIONS (LOCAL ORDINANCES)
  
  - - INFRASTRUCTURE LIMITATIONS (e.g., BRIDGE LIMITS)
  
- PROVIDE ASSESSMENT OF CURRENT CAPABILITIES OF EACH MODE AND ROUTE AND POTENTIAL FOR UPGRADE



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## SOURCES OF INFORMATION

- U.S. CORPS OF ENGINEERS
- RW - 859 FORMS
- AASHTO DATA SOURCES
- DETAILED STATE AND COUNTY MAPS
- STATE AND COUNTY ENGINEERS
- UTILITY TRAFFIC MANAGERS



## **ROUTES AND FACILITIES ASSESSED**

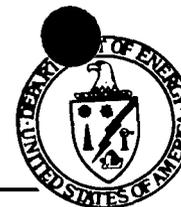
- **PRIMARY ROUTE SUITABLE FOR LWT CASK TRANSPORT (FROM GATE TO NEAREST INTERSTATE)**
- **ALTERNATE ROUTE SUITABLE FOR LWT CASK (FROM GATE TO NEAREST INTERSTATE)**
- **HEAVY-HAUL ROAD ROUTE (FROM GATE TO NEAREST RAIL SPUR OR NEAREST LINE-HAUL RAIL HEAD)**
- **HEAVY-HAUL ROAD ROUTE (FROM GATE TO BARGE)**
- **RAIL FROM SITE TO MAINLINE SPUR**
- **EXISTING OR POTENTIAL INTERMODAL TRANSFER POINTS**



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## **ITEMS RECORDED ON SURVEY OF ROADS**

- MILEAGE**
- LANE WIDTH**
- ROAD CONDITION (GOOD, MARGINAL, UNSUITABLE)**
- SURFACE COMPOSITION (CONCRETE, ASPHALT, GRAVEL)**
- SUBSURFACE COMPOSITION**
- EXISTENCE OF BRIDGES AND THEIR WEIGHT AND SIZE LIMITS**
- POSTED WEIGHT LIMITS ON ROADS**
- VERTICAL CLEARANCES**



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## **ITEMS RECORDED ON SURVEY OF RAIL SPURS**

- OWNER OF RAIL SPUR**
- SPUR USAGE (PRESENT AND FUTURE)**
- SPUR MAINTENANCE**
- RAIL WEIGHT RESTRICTIONS**
- CLEARANCE RESTRICTIONS**



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## ITEMS RECORDED ON SURVEY OF ROAD/RAIL TRANSFER POINTS

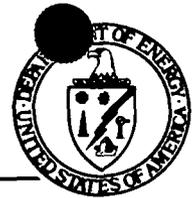
- CLEARANCE LIMITATIONS (HORIZONTAL OR VERTICAL)
- SITE CONDITIONS
- CRANE CAPABILITY
- UPGRADE POTENTIAL



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## ITEMS RECORDED ON SURVEY OF ACCESS TO BARGE SITES

- CLEARANCE LIMITATIONS (HORIZONTAL OR VERTICAL)
- DOCK CONDITIONS
- UPGRADE POTENTIAL
- ROLL-ON/ROLL-OFF BARGE ACCESS



## **SOME PRELIMINARY NSTI FINDINGS**

### **ROAD**

- **LEGAL WEIGHT SHIPMENTS**
  - **PRIMARY ROUTE A (I.E. FIRST PREFERENCE ROUTE) CAN ACCOMMODATE LEGAL WEIGHT SHIPMENTS AT ALL SITES**
  - **AVERAGE LENGTH OF ROUTE A IS 25 MILES**
  - **ALTERNATIVE ROUTE B (I.E. SECOND PREFERENCE) CAN ACCOMMODATE LEGAL WEIGHT SHIPMENTS AT 70 SITES**
    - - **3 ADDITIONAL SITES CAN BE ACCOMMODATED IF UPGRADED**
  - **AVERAGE LENGTH OF ROUTE B IS 30 MILES**



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## **SOME PRELIMINARY NSTI FINDINGS (CONT)**

### **ROAD (cont)**

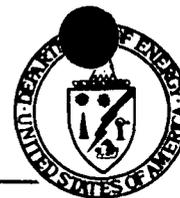
- **OVERWEIGHT SHIPMENTS**
  - **ROUTE A CAN ACCOMMODATE OVERWEIGHT SHIPMENTS AT 69 SITES**
    - - **5 ADDITIONAL AFTER UPGRADES**
  - **ROUTE B CAN ACCOMMODATE OVERWEIGHT SHIPMENTS AT 62 SITES**
    - - **8 ADDITIONAL AFTER UPGRADES**



## **SOME PRELIMINARY NSTI FINDINGS (CONT)**

### **RAIL**

- **OF 76 SITES SURVEYED, 53 HAVE ON-SITE RAIL CAPABILITY - 49 OF WHICH EXTEND TO THE CASK RECEIVING AREA**
  
- **OF THE 53 SITES, THE RAIL SYSTEMS AT 36 OF THESE SITES ARE CURRENTLY USABLE**
  
- - **THE REMAINING 17 SITES REQUIRE UPGRADING BEFORE USE**
  
- - - **AVERAGE COST OF UPGRADE IS \$65,000**
  
  
- **21 OF THE 23 SITES THAT DO NOT HAVE RAIL SERVICE HAVE HHT TO AN OFF-SITE RAIL FACILITY**



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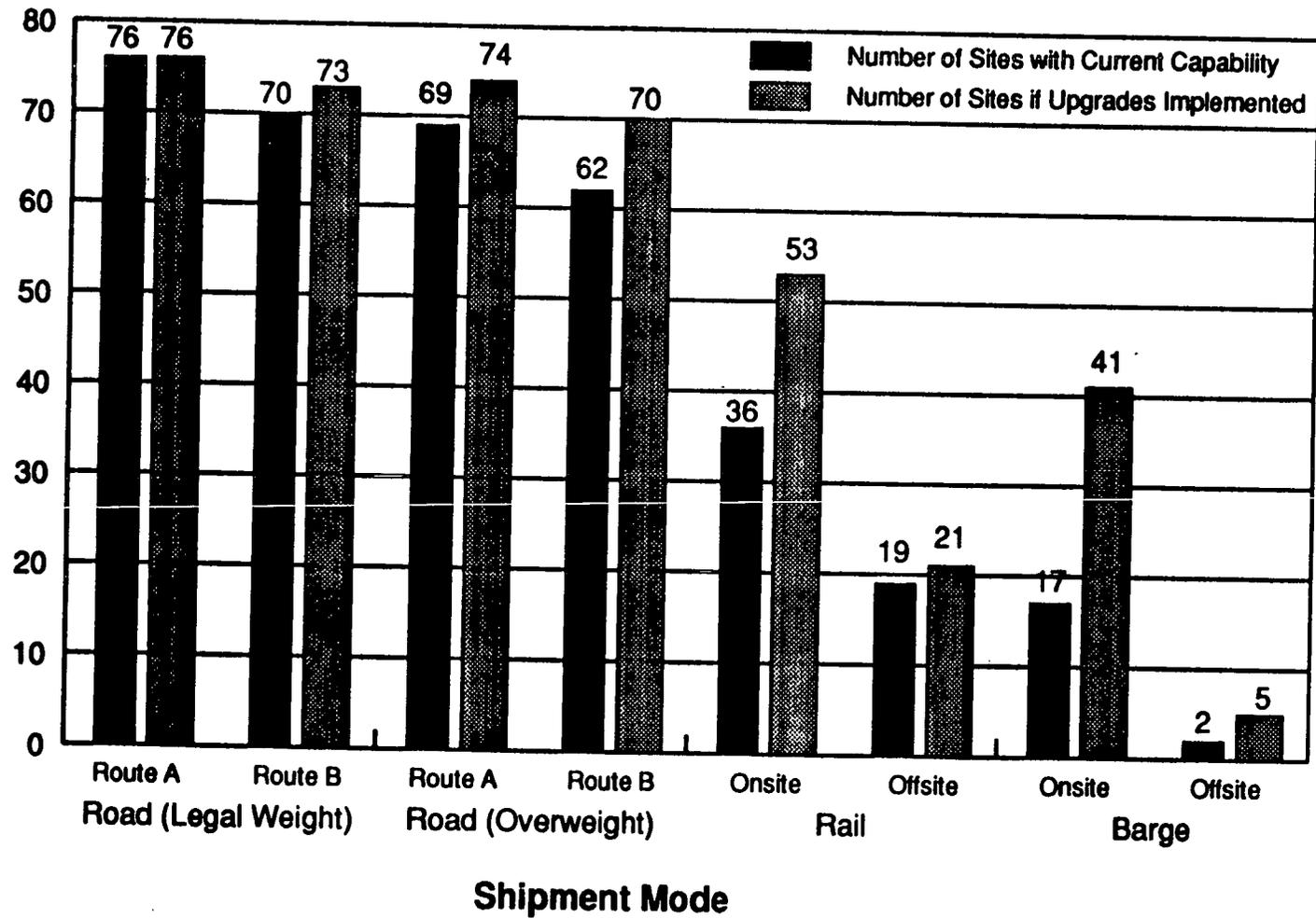
## **SOME PRELIMINARY NSTI FINDINGS (CONT)**

### **BARGE**

- 17 OF 76 SITES HAVE BARGE CAPABILITY ON-SITE
- - AN ADDITIONAL 24 SITES HAVE THE POTENTIAL FOR UPGRADE

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**Number of Sites**



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# **PRELIMINARY ASSESSMENT OF SHIPPING CAPABILITIES**

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- **PRELIMINARY ASSESSMENT OF SHIPPING CAPABILITIES**
  - **ASSESSMENT UTILIZES DATA FROM BOTH FICA AND NSTI**
  - **ASSESSES THE CURRENT CAPABILITIES OF UTILITIES TO USE THE INITIATIVE I SHIPPING CASKS**
  - **CONSIDERS ALL MODES**
- **UTILITIES WILL CHOOSE SHIPPING MODE**



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## THREE LEVELS OF MODIFICATIONS

- **CURRENT CAPABILITY**
  - **CURRENT CASK HANDLING AND SHIPPING CAPABILITY FOR INITIATIVE I CASKS**
  - **LIMITED TECHNICAL SPECIFICATION CHANGES (WATER COVER)**
- **SMALL MODIFICATIONS**
  - **MINOR ON-SITE MODIFICATIONS OR REANALYSIS**
  - **MINOR OPERATING LICENSE REVISION**
  - **COST LIMIT OF \$50,000**



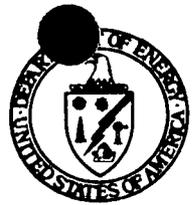
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## THREE LEVELS OF MODIFICATIONS (CONT)

- **MODERATE MODIFICATIONS**
  - **MEDIUM LEVEL MODIFICATION OR REVISION TO OPERATING LICENSE/TECHNICAL SPECIFICATIONS**
  - **NO PUBLIC HEARING PROCESS**
  - **COST LIMIT OF \$500,000**

## **OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT**

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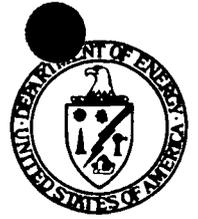
- **PRELIMINARY ASSESSMENT OF POTENTIAL SHIPPING MODES**
  - **ASSUMES RAIL IS THE PREFERRED MODE OF SHIPMENT FOLLOWED BY HEAVY HAUL TO RAIL, HEAVY HAUL TO BARGE, AND LWT**
- **BOTH ON-SITE AND OFF-SITE HEAVY HAUL CAPABILITY CONSIDERED**
- **UTILITIES WILL CHOOSE SHIPPING MODE**

## Preliminary Assessment of Potential Shipping Modes\*

	Currently	If Small Modifications Made	If Small & Licensing/Moderate Mod.
Direct Rail	29	53	73
Heavy Haul Rail (on & off site)	34	40	23
Heavy Haul Barge (on & off site)	6	6	10
Total R/B Cask Served	<u>69</u>	<u>99</u>	<u>106</u>
Legal-Weight Truck	37	21	15
No Capability	15	1	0
Total Facilities	<u>121</u>	<u>121</u>	<u>121</u>
* Preference Given to: 1. Rail 2. Barge 3. LWT			

## **OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT**

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- **PRELIMINARY ASSESSMENT OF POTENTIAL SHIPPING MODES**
  - **SAME ASSUMPTIONS AS BEFORE, EXCEPT ONLY ON-SITE HEAVY HAUL CAPABILITY CONSIDERED**
  
- **UTILITIES WILL CHOOSE SHIPPING MODE**

## Preliminary Assessment of Potential Shipping Modes\*

	Currently	If Small Modifications Made	If Small Licensing/Moderate Mod.
Direct Rail	29	53	73
Heavy Haul Rail (on site only)	19	17	5
Heavy Haul Barge (on site only)	11	18	22
Total R/B Cask Served	<hr/> 59	<hr/> 88	<hr/> 100
Legal-Weight Truck	47	32	21
No Capability	15	1	0
Total Facilities	<hr/> 121	<hr/> 121	<hr/> 121
* Preference Given to: 1. Rail 2. Barge 3. LWT			



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## **FURTHER EFFORTS**

- **COMPLETION OF FICA AND NSTI SUMMARY REPORTS**
- **FURTHER ANALYSIS OF NSTI DATA ALONG WITH FICA DATA**
- **DEVELOPMENT OF SITE SPECIFIC TRANSPORTATION SERVICES PLANNING DOCUMENTS**
- **RECEIPT OF DELIVERY COMMITMENT SCHEDULES**
- **CONTINUED INTERACTIONS WITH UTILITIES**