NAVAL NUCLEAR PROPULSION PROGRAM

- Joint Navy/Department of Energy organization
- Responsible for all Naval nuclear propulsion matters:
  - Over 100 nuclear-powered warships
  - Over 120 shipboard and land-based naval reactors
  - Two moored training ships
  - Three land-based prototype naval reactors
  - Nuclear safety and radiological matters at naval shipyards and operating bases
  - Two research and development laboratories
  - Expended Core Facility at INEL
- Over 4400 reactor years of operation, 100 million miles steamed, and 300 refuelings and defuelings
  - No reactor accident or any significant effect on the environment

AMOUNT OF SPENT NUCLEAR FUEL

	Approximate Amount (Metric Tons Heavy Metal)	
	1995	2035
Naval	10	65
DOE + Naval	2,700	2,800
Civilian	30,000	85,000

CHARACTERISTICS OF NAVAL FUEL

- Metallic, solid, non-flammable, non-explosive, non-soluble, corrosion resistant

- Withstands combat shock loads well in excess of 50 times the force of gravity

- Capable of rapidly changing power levels

- Totally contains fission products
  - Strong incentive - sailors live and work close to shipboard reactor

- Possesses long operating lifetime (over 20 years) - reduces amount of spent fuel created
  - In storage, metal integrity maintained virtually indefinitely

- Two U.S. submarines sank with fuel in 1960's - subsequent surveys show no environmental impact

NAVAL FUEL CYCLE

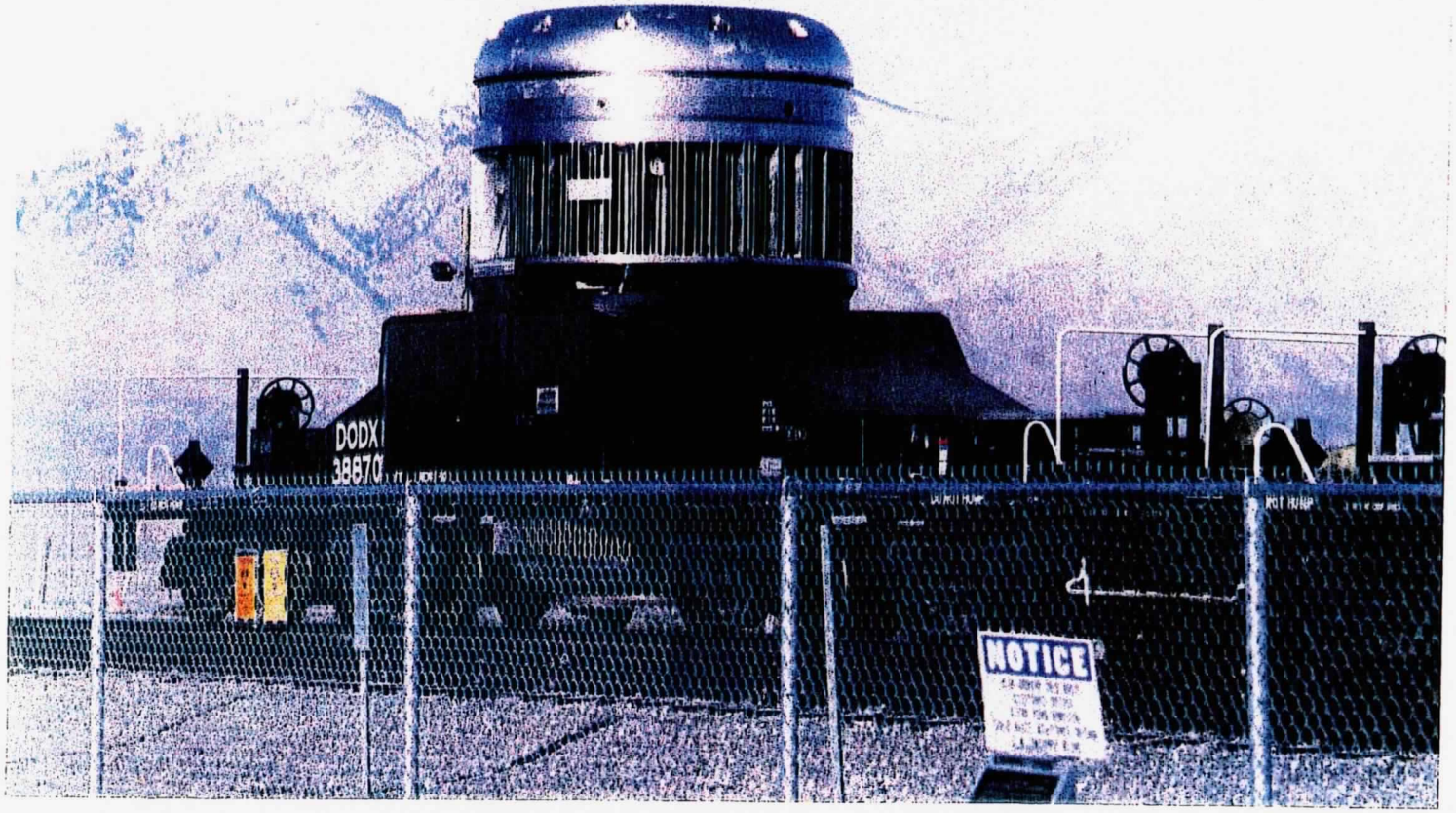
- Spent naval fuel removed from ships and sent to Idaho National Engineering Laboratory (INEL)

- Spent naval fuel examined at the Expended Core Facility (under Naval Nuclear Propulsion Program cognizance)

  - Examinations support new fuel development and longer core lifetimes - fewer refuelings, less waste

- After examination, transferred to INEL Idaho Chemical Processing Plant (under other DOE office cognizance) for storage pending ultimate disposal

  - In the past, fuel was reprocessed, but DOE ceased reprocessing in April 1992


NOTICE

NAVAL SPENT FUEL SHIPPING CONTAINER (M-140)

- Complete containment of contents during normal conditions of transport
- Certified by DOE to meet 10 CFR 71 requirements for Type B packaging
- Design submitted to NRC for independent review
- Certificate of Compliance issued by NRC
- No active cooling system necessary

HISTORICAL INFORMATION ON

NAVAL SPENT FUEL SHIPMENTS

(1957 TO 1995)

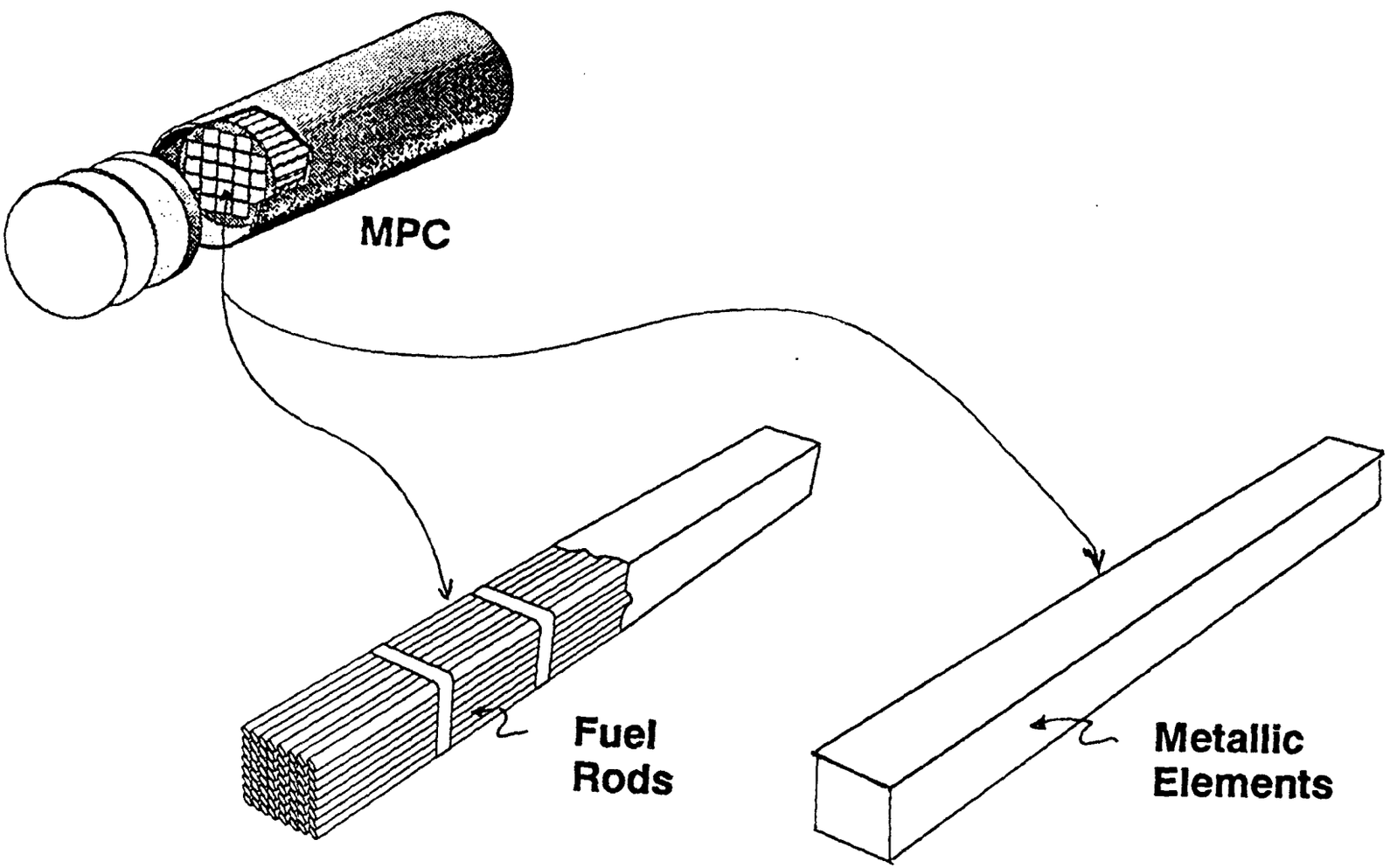
- All by rail
- About 600 container shipments since 1957
- Containers shipped dry - no concern for fluid leaks
- All naval fuel shipments have been to INEL
- No accident resulting in release of radioactivity
- Total radiation exposure to entire population along transportation routes less than 0.1 rem annually

PATH FORWARD FOR NAVY FUEL

- Military characteristics of naval fuel mean it will likely prove suitable for direct disposal in repository

- Naval fuel likely to meet waste acceptance criteria developed for commercial spent fuel

- Navy participating with DOE in efforts to move forward on ultimate disposition
  - Naval fuel included in EIS for Multi-purpose Canister
  - Naval fuel to be included in NRC license application for MPC
  - Naval fuel to be included in repository EIS
  - Naval fuel tested, confirmed not to be RCRA hazardous waste


MPC
Fuel
Rods
Metallic
Elements
Typical PWR
Fuel Assembly
Typical Naval
Fuel Modules

MULTI-PURPOSE CANISTER EIS

- Will include Navy spent fuel

- Alternatives
  - 125 t MPC
  - 75 t MPC
  - No Action - (M-140)
  - High capacity transport - (Modified M-140)
  - Transportable storage cask system - (NAC-STC)
  - Dual-purpose canister system - (NUHOMS MP-187)

MPC COMPARISONS (125 TON)

Modules	Loaded with 21 PWR Assemblies[a]	Loaded with Typical Navy
Metric tons total metal (MTTM) of fuel assemblies	14	12
Metric tons heavy metal (MTHM) of fuel assemblies	10	0.4
U-235 BOL Enrichment	3.75	97
U-235 Content (kgm)	364	360

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[a] Basis: Table 1.8, ORNL, Integrated Data Base for 1993 (March 1994) (17 x 17 Westinghouse Design)