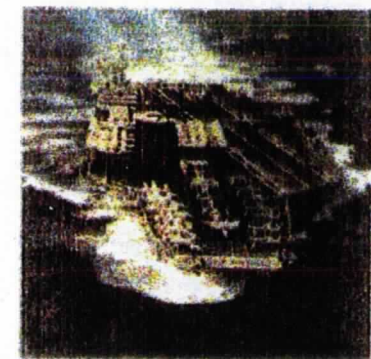
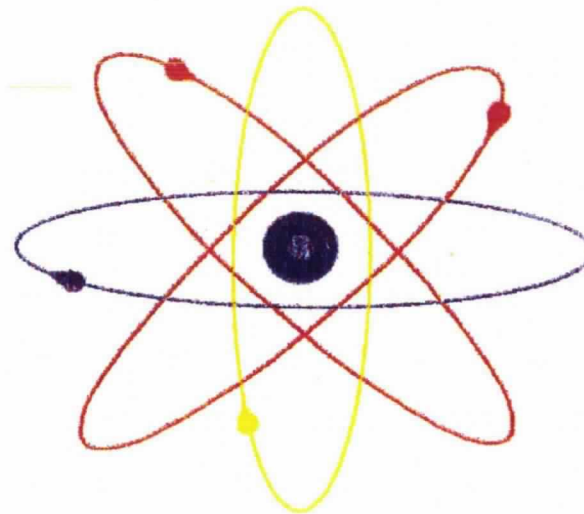




The United States Naval Nuclear Propulsion Program

*Over 112 Million Miles
Safely Steamed on Nuclear Power*



CVN 69
USS Dwight D. Eisenhower

NAVAL NUCLEAR PROPULSION

- **Key to Navy's national defense mission**
- **Over 40 percent of Navy's principal combatants nuclear powered**
 - **8 of 12 aircraft carriers (2 more under construction)**
 - **over 85 submarines**
 - **2 guided missile cruisers**
- **Commitment to safety and environmental protection**
 - **over 112 million miles steamed**
 - **over 4,800 reactor-years without a reactor accident**
 - **Nuclear powered warships visit over 150 ports in over 50 countries**

NAVAL SPENT FUEL CYCLE

- **Upon refueling/defueling, all naval spent fuel transported to INEEL for examination to:**
 - **ensure maximum performance of current fuel**
 - **enable design of new fuel with longer lifetimes**
- **For comparison:**
 - **NAUTILUS fuel operated 2 years**
 - **current fuel operates over 20 years**
 - **next generation submarine fuel to operate life of ship (30 years)**

NAVAL SPENT FUEL CYCLE (CONTINUED)

- **Before 1992, INEEL reprocessed naval spent fuel after examination**
- **In 1992, DOE decision to cease reprocessing**
 - **naval spent fuel now temporarily stored at INEEL after examination**
 - **dry storage at INEEL planned for future**
- **Ultimate plan: Interim storage, or permanent disposal in a geologic repository, outside Idaho**

AMOUNT OF NAVAL SPENT FUEL

- **Small reactors, infrequent refuelings**
 - **very small amount of naval spent fuel**
- **Current inventories:**
 - **approximately 14 MTHM naval spent fuel at INEEL**
 - **2,600 MTHM non-naval DOE spent fuel throughout U.S.**
 - **30,000 MTHM commercial spent fuel throughout U.S.**
- **2035 projected inventories:**
 - **65 MTHM naval spent fuel**
 - **over 2,700 MTHM non-naval DOE spent fuel throughout U.S.**
 - **over 80,000 MTHM commercial spent fuel throughout U.S.**

NAVAL SPENT FUEL CHARACTERISTICS

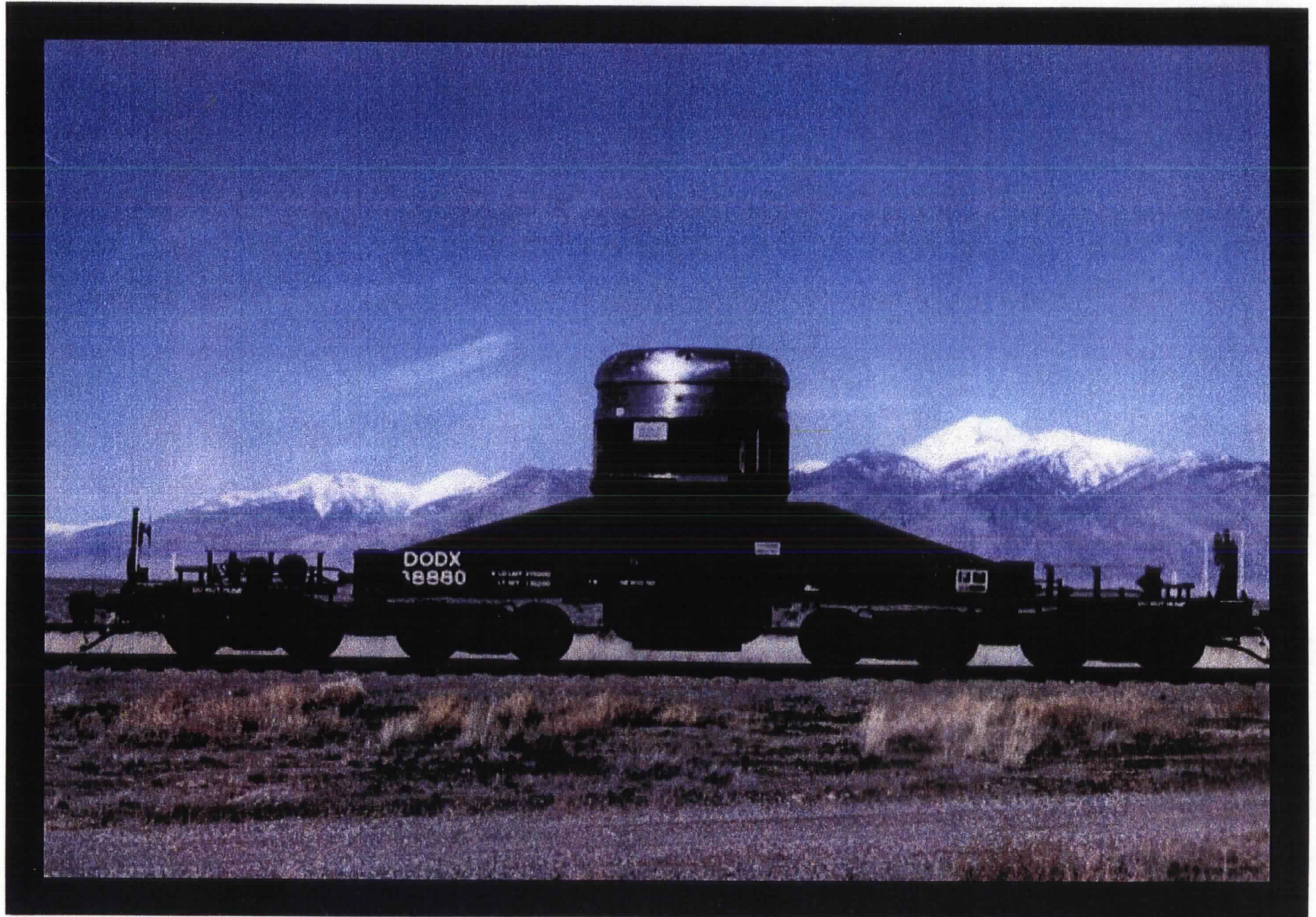
- **Solid metallic form - not flammable, not explosive**
- **Built for combat - battle shock**
 - **well over 50 g's**
- **Contains fully all long-lived radioactivity (fission products)**
- **Operates over 20 years**
 - **Thus safe to store shut-down for far longer periods**
- **Safe to operate in close proximity to sailors on warships during combat**
 - **Thus exceptionally well-suited for safe transport, storage, disposal**



NAVAL SPENT FUEL SHIPMENTS

- **Total of 684 container shipments made since 1957, all safely**
- **Shipments made by rail in rugged Type B containers certified to Naval Reactors and NRC standards**
- **Containers designed and tested to withstand severe accidents:**
 - **equivalent of at least 60 foot drop onto reinforced concrete surface**
 - **1475 degree fire**
 - **other accidents including immersion in water, drop onto protruding surface (puncture)**

M-140 Transportation Cask



NAVAL SPENT FUEL SHIPPING PRACTICES

- **Escorted by specially trained Navy couriers - on-board first responders**
- **Limited to 35 mph**
- **Location and status monitored constantly**
- **Use government-owned railcars - inspected before/after each use**
- **Do not require special trains**
- **Go via routes selected by railroads**
- **State law enforcement and emergency response officials briefed periodically**

TRANSPORTATION SAFETY ANALYSIS

- **Full analysis in DOE/Navy EISs**
- **Analysis covers incident-free shipment and potential serious accidents including terrorist attack**
- **Analysis uses state of the art computer models adapted to naval spent fuel**
- **Analysis covered past and projected future naval spent fuel shipments:**
 - **approximately 500 between present time and 2035 to INEEL**
 - **about 300 from INEEL to repository or interim storage site outside of Idaho**

SUMMARY OF TRANSPORTATION ANALYSIS RESULTS (Shipments to INEEL)

- **Incident Free:**

- **over forty year period, among about 8,000,000 people along transportation corridor, analysis says one chance in 1,000 of a single latent cancer fatality**
- **average annual risk per person: one chance in 320,000,000,000**

- **Severe Accident:**

- **over forty year period, among about 8,000,000 people along transportation corridor, analysis says one chance in 25,000 of a single latent cancer fatality**
- **average annual risk per person: one chance in 8,000,000,000,000**

SUMMARY OF TRANSPORTATION ANALYSIS RESULTS (Shipments from INEEL)

- **Incident Free:**

- **over 25 year shipping period, among over 100,000 people along transportation corridor, analysis says less than one chance in 100 of a single latent cancer fatality**
- **average annual risk per person: less than one chance in 250,000,000**

- **Severe Accident:**

- **over 25 year shipping period, among over 100,000 people along transportation corridor, analysis says about one chance in 300,000 of a single latent cancer fatality**
- **average annual risk per person: less than one chance in 750,000,000,000**