The NRC's Role at Yucca Mountain:

Judging the Safety of a Proposed Repository

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NRC's Role

- Independent regulator
- Primary mission is to protect public health and safety and the environment

NRC's Role At Yucca Mountain

- Establish Safety Regulations, consistent with Environmental Standards set by the Environmental Protection Agency (EPA)
- Decide whether or not to authorize DOE to construct the proposed repository
- If authorization is granted, assure DOE complies with the rules

NRC Will Do So By...

- Reviewing all information objectively
- Making open decisions based on the facts
- Maintaining an open, public process

Who Makes The Decisions At NRC?

- Five NRC Commissioners
  - Appointed by the President
  - At most 3 of any one political party
  - 5-year term of service
  - Chairman designated by the President
  - Accomplished scientists, engineers, attorneys

What Is The Role Of NRC's Professional Staff?

- Carry out Commission policies
- Recommend health & safety regulations
- Evaluate license applications
- Advise Commission on safety and environmental matters
- Communicate with the public

What special expertise does NRC have to evaluate repository safety?

- Experienced NRC technical staff
- Independent contractor, Center for Nuclear Waste Regulatory Analyses (CNWRA)
  - **Technical assistance/Research support**
- Facilities
  - **Laboratories for independent investigations**
  - **Modeling and computing facilities**
- Field studies and inspections
- On-site Representatives

Status of Standards and Regulations

- EPA standards for Yucca Mountain issued (2001)
- Conforming NRC regulations issued (2001)
- Court rejects 10,000-year compliance period (2004)
- EPA proposes additional standards that would apply a million years (August 2005)
- NRC proposes to conform its regulations to final EPA standards (September 2005)

NRC Must Decide Whether To Allow DOE To Construct A Repository At Yucca Mountain

- If DOE submits a license application, Congress directs NRC to decide within three years

What Has To Happen Before NRC Would Hold A Hearing On Yucca Mountain?

DOE Submits a License Application?

NRC Decides Whether to Adopt EIS?

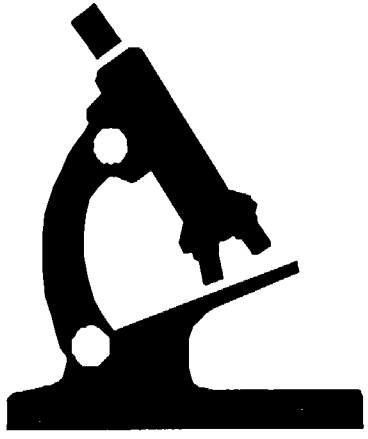
NRC Decides Whether to Accept License Application for Review ?

NRC Dockets the License Application and Commences its Safety Review?

NRC Staff Completes Safety Review?

NRC Staff Safety Review

- Review License Application
- Request more information, if needed
- Conduct independent confirmatory analyses
- Document results in a Safety Evaluation Report



How would NRC decide whether to accept DOE's application for review ?

- Does it
  - **Contain all required information?**
  - **Enough documentation to support DOE's safety claims?**
  - **Comply with document access requirements?**
- If yes, detailed technical review begins

NRC Staff Environmental Review

- License Application must include DOE's Environmental Impact Statement
- NRC's environmental review is limited by law
- NRC must adopt DOE's EIS unless certain, established criteria are met

On what basis would NRC adopt DOE'S Final EIS?

- NRC will adopt DOE's final EIS unless:
  - Action to be taken by NRC differs from action described in the license application, or
  - Significant and substantial new information or considerations make EIS inadequate.

How Does NRC Address Safety Issues?

- Conduct detailed technical review
- Bring in our independent experts
- Require more information from DOE, as needed
- Document conclusions in a Safety Evaluation Report

What Type of Hearing?

- Formal
- Well-established rules
- Open
- Objective decision based on record

Formal, Trial-type Hearing Process

- Board of administrative judges
- Participants
  - NRC staff
  - DOE
  - Intervenors
  - "Interested" tribal, state, and local governments

Evidentiary Hearing

- DOE has burden of proof
- Others must present evidence to support their issues
- NRC staff testifies on its independent evaluation of safety

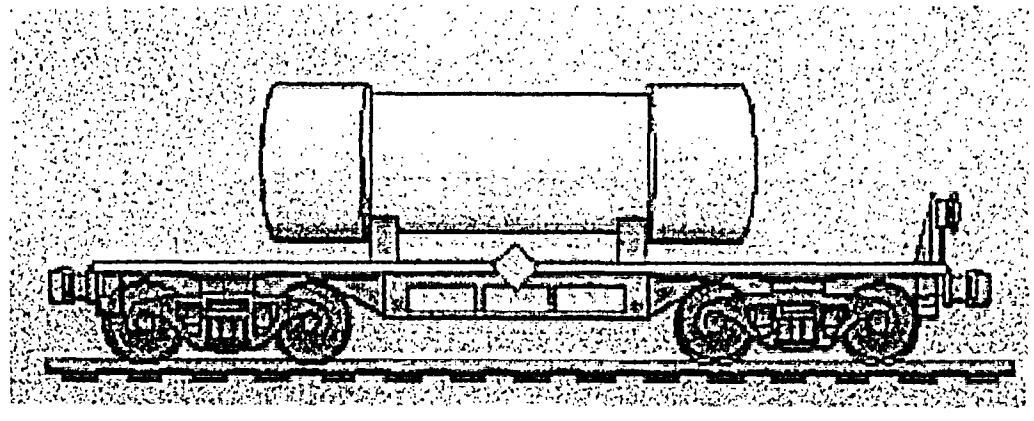
Possible Outcomes Of NRC's Licensing Process:

- Deny the Application
- Grant a License with Conditions
- Grant a License

Summary

- Any NRC decision on a potential license application for a repository will:
  - be based on NRC staff's comprehensive, independent safety review
  - Include a full and fair public hearing that follows formal, well-established rules to ensure an open, objective decision

NRC's Role in the Transportation of Spent Nuclear Fuel to Yucca Mountain



Information Meeting
Tecopa, California
October 26, 2005

Earl P. Easton/ Bill Ruland
Spent Fuel Project Office
U.S. Nuclear Regulatory Commission

NRC's Role in the Transportation of Spent Fuel to Yucca Mountain

- Approval of Shipping Casks.
- Evaluation of transportation impacts in the Department of Energy's (DOE's) Environmental Impact Statement (EIS).

How will NRC evaluate transportation impacts in deciding whether to adopt DOE's Final Environmental Impact Statement?

❶ NRC review has concluded that the FEIS appears to bound the range of expected impacts from transportation.

❷ Further refinement of the analyses in the FEIS could allow for more precise estimates of transportation impacts.

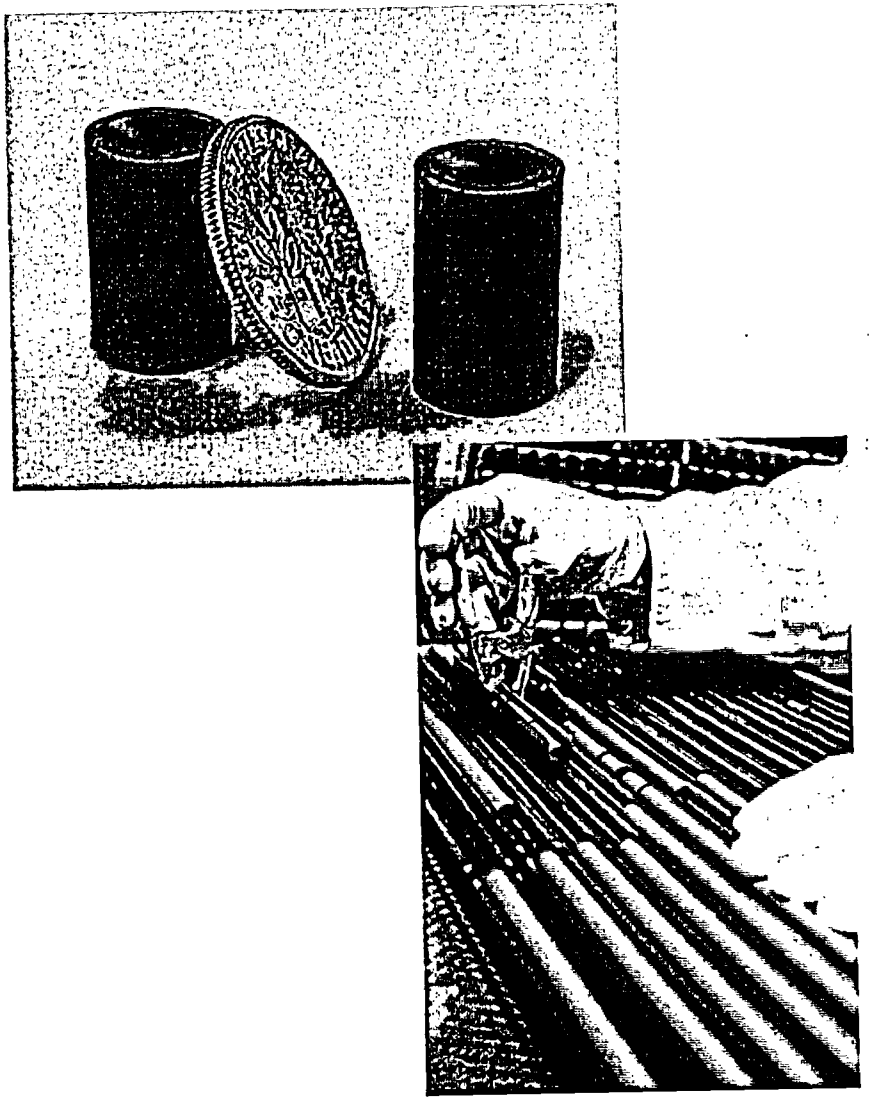
❸ However, it is not anticipated that more precise estimates will result in a significant increase in overall transportation impacts. (Subject to further review by NRC)

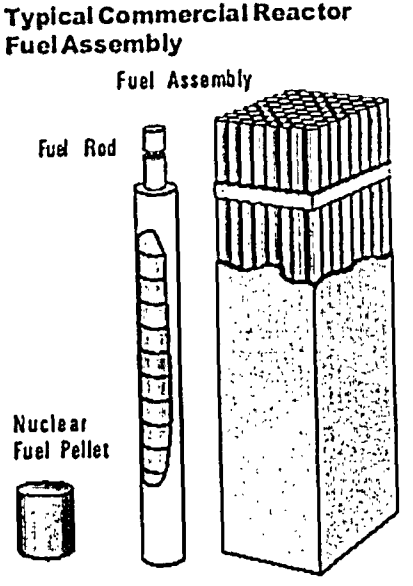
Approval of Shipping Casks

No spent fuel or high-level waste may be transported by or for the Secretary (of Energy) under subtitle A [repository] or under subtitle B [interim storage] except in packages that have been certified for such purposes by the [Nuclear Regulatory] Commission.

Section 180 (a) of Nuclear Waste Policy Act

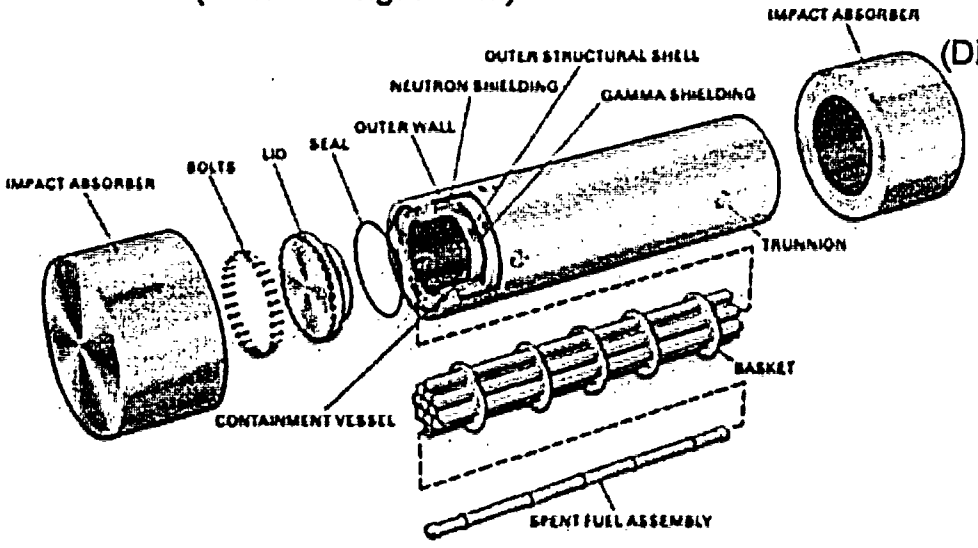
What is Spent Fuel ?





SPENT FUEL CASK-TRUCK

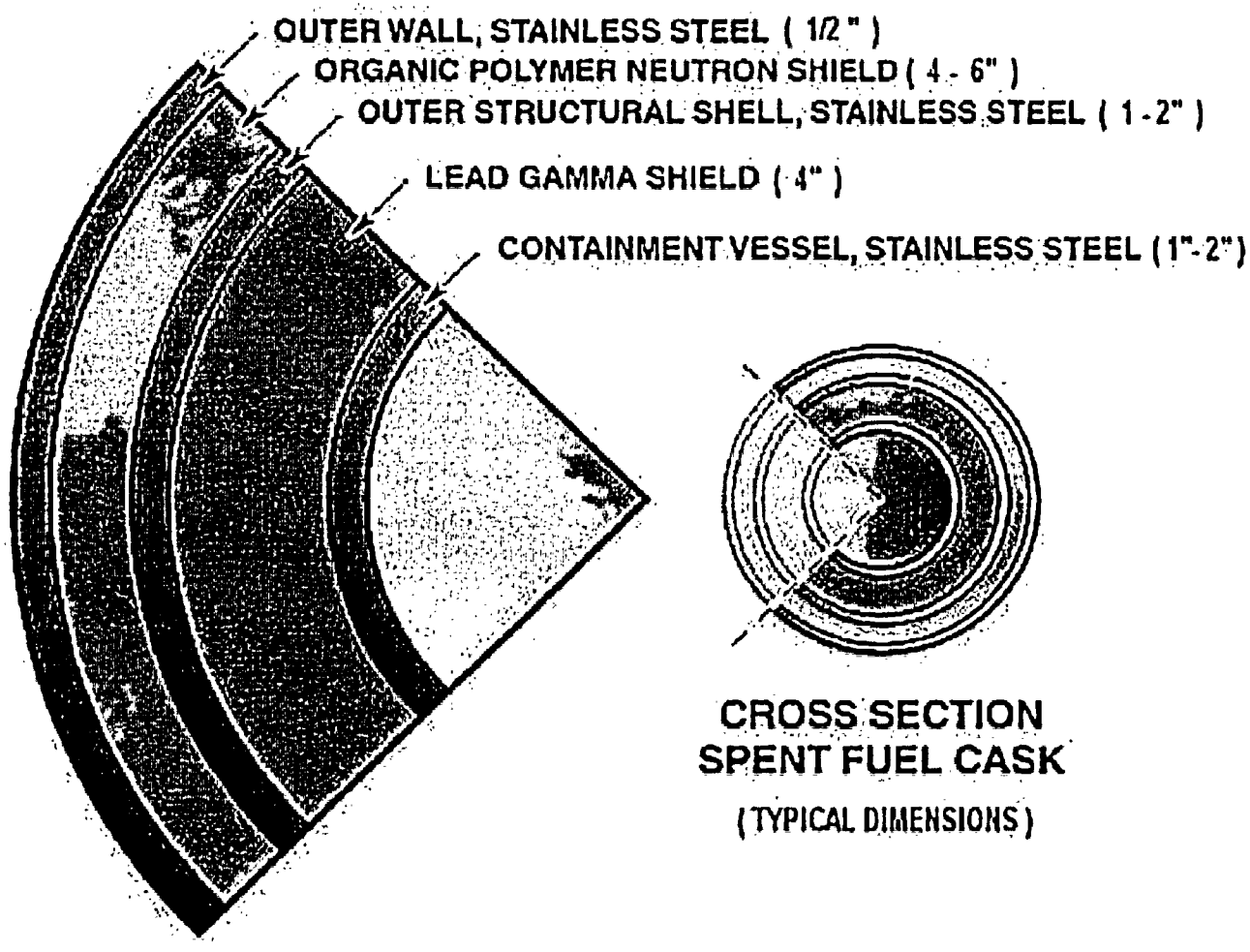
(Overall Length 20 ft.)



Typical Loaded Weight 50,000 #, Fuel 4,000 #

Payload 4-9 Fuel Assemblies

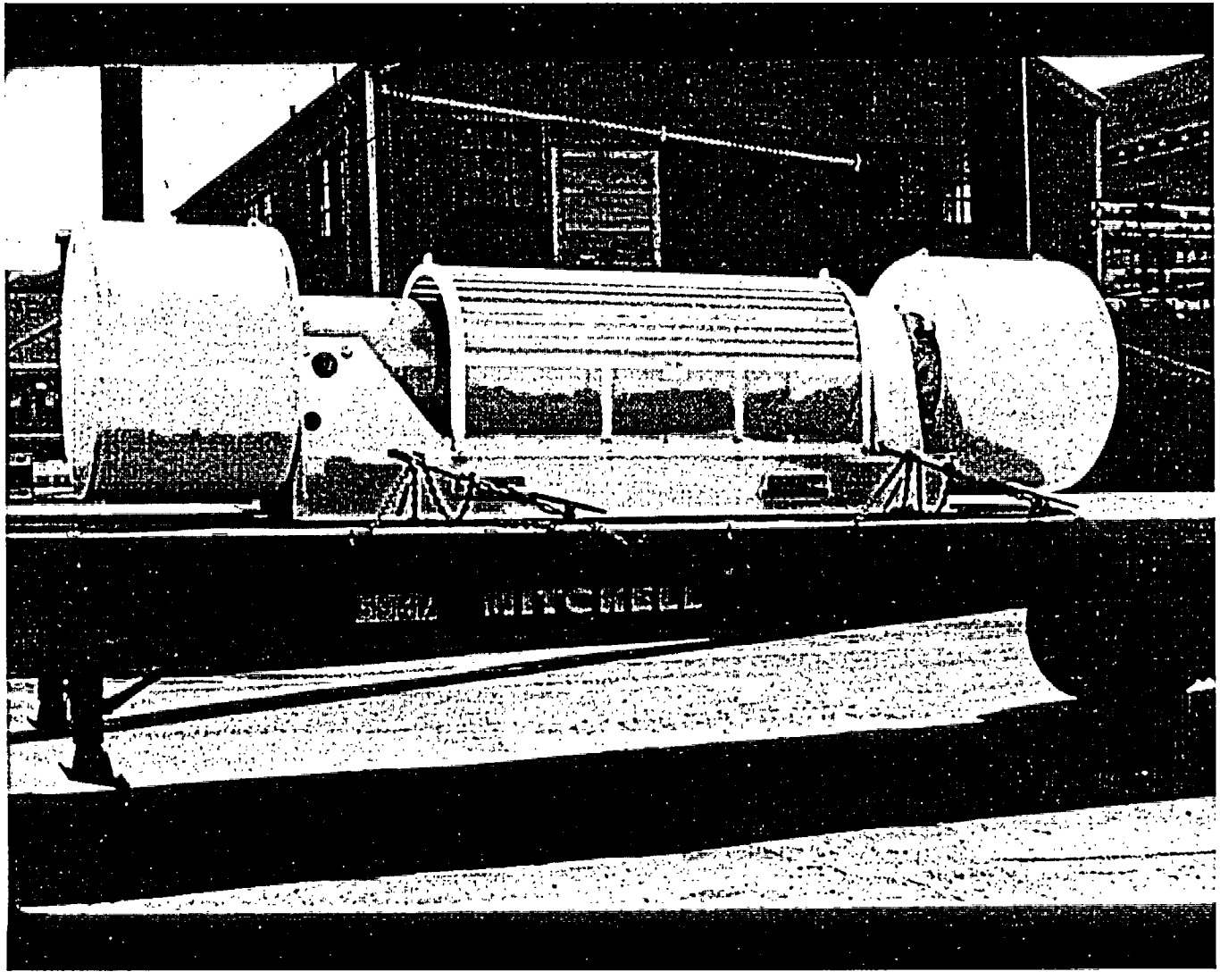
LAYERS OF PROTECTION



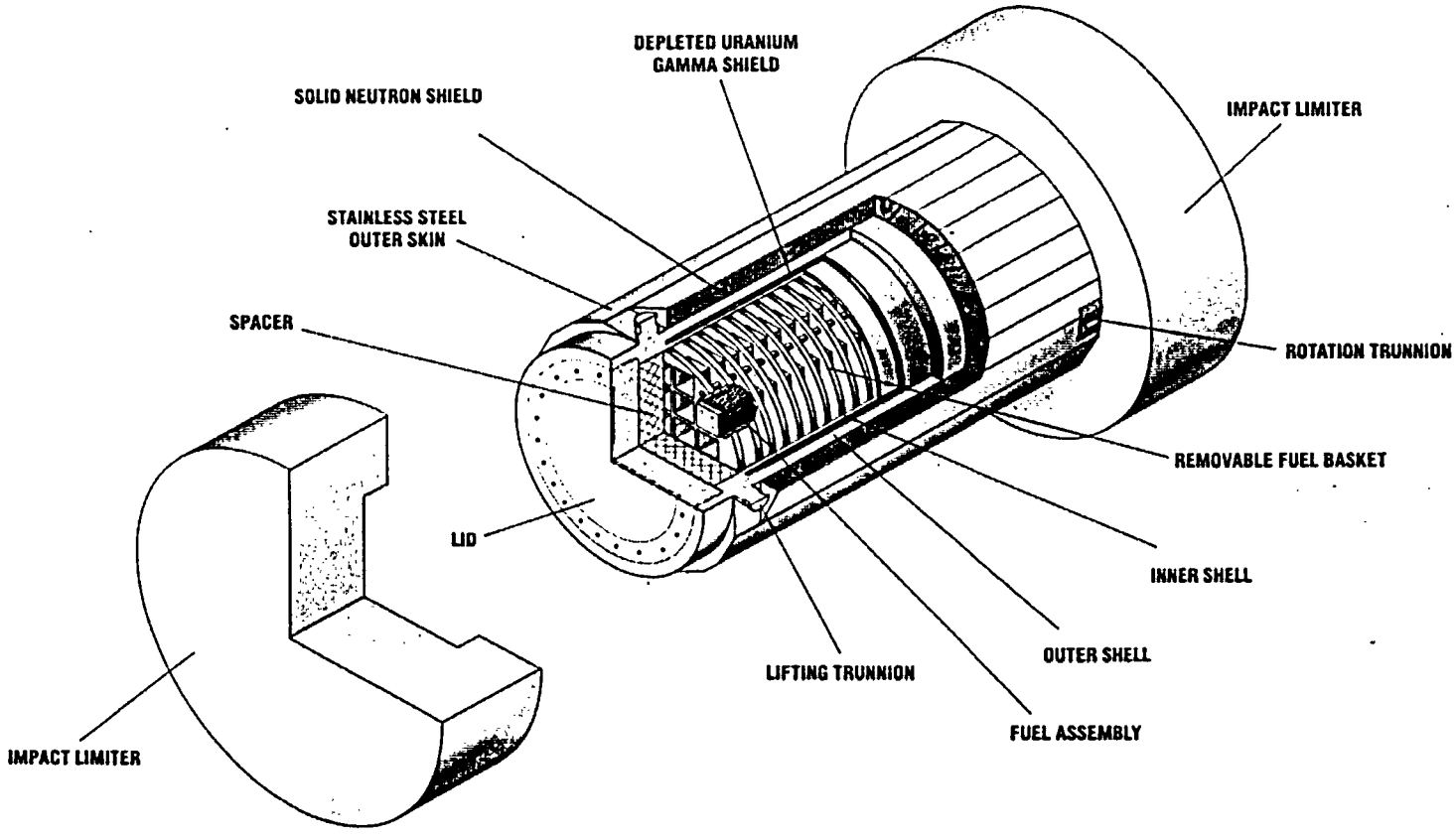
CROSS SECTION
SPENT FUEL CASK

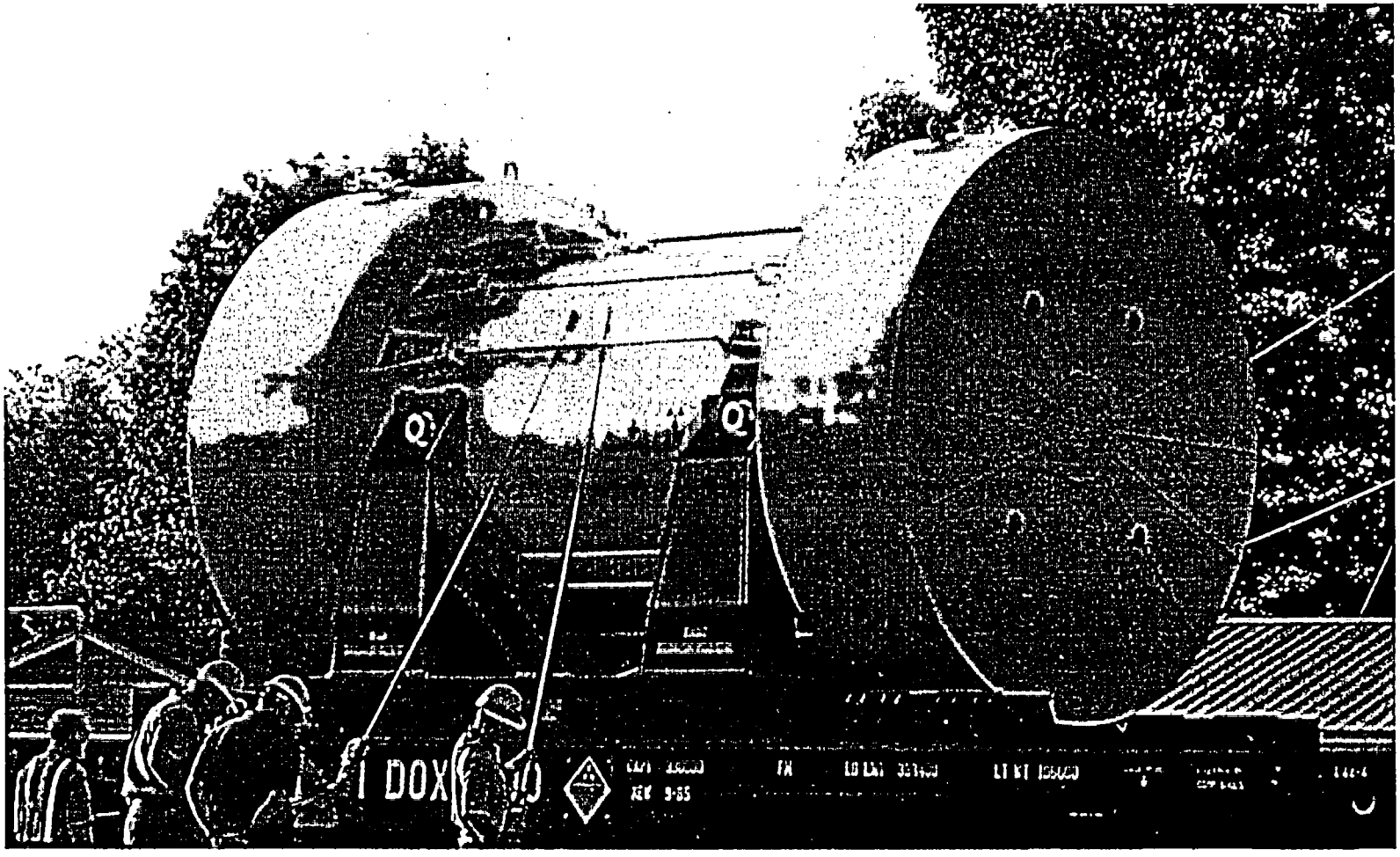
(TYPICAL DIMENSIONS)

Model TN-3 Truck Cask



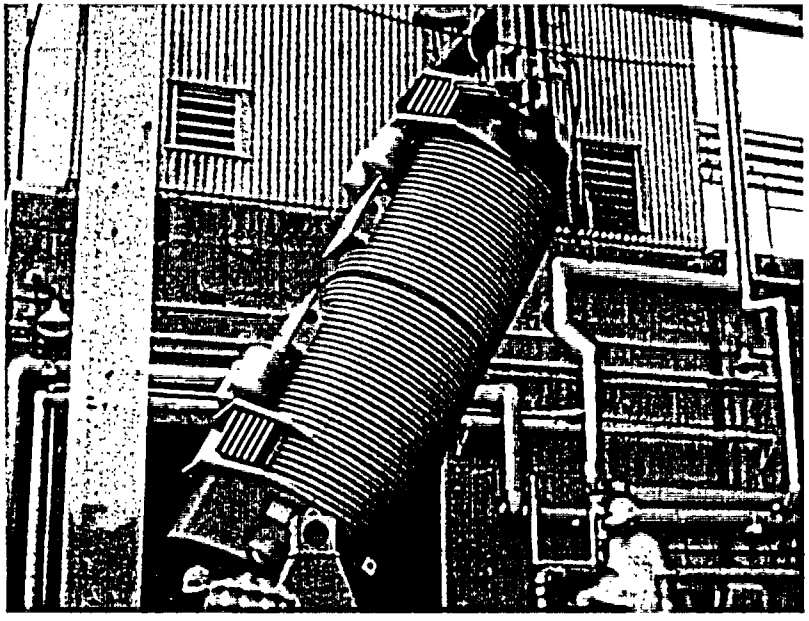
Typical Rail Cask





Spent Fuel Cask used for West Valley Shipment

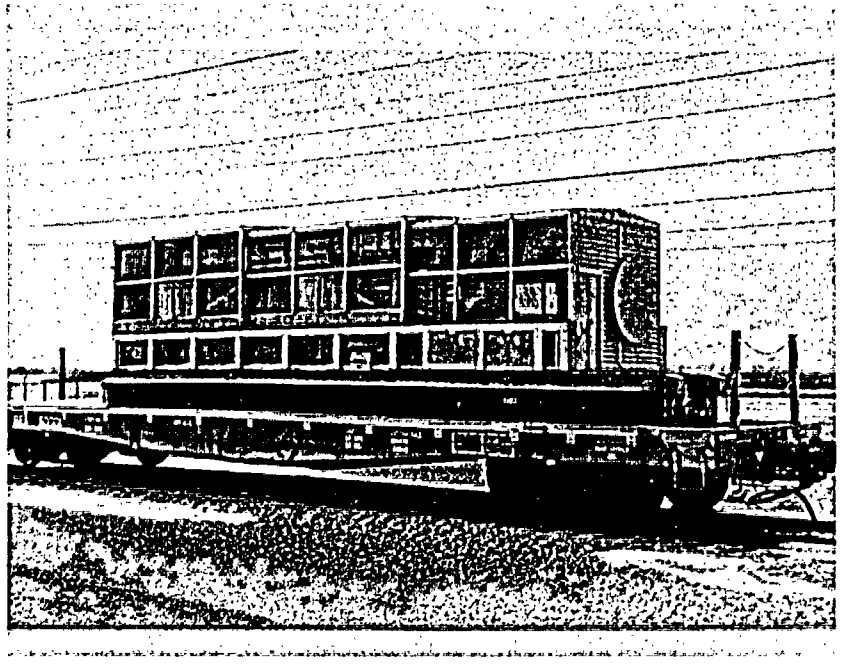
Model IF-300 Spent Fuel Shipping Cask



Left: The Model IF-300 Cask being lowered into a vertical position. Spent fuel is loaded under water while the cask is vertical.

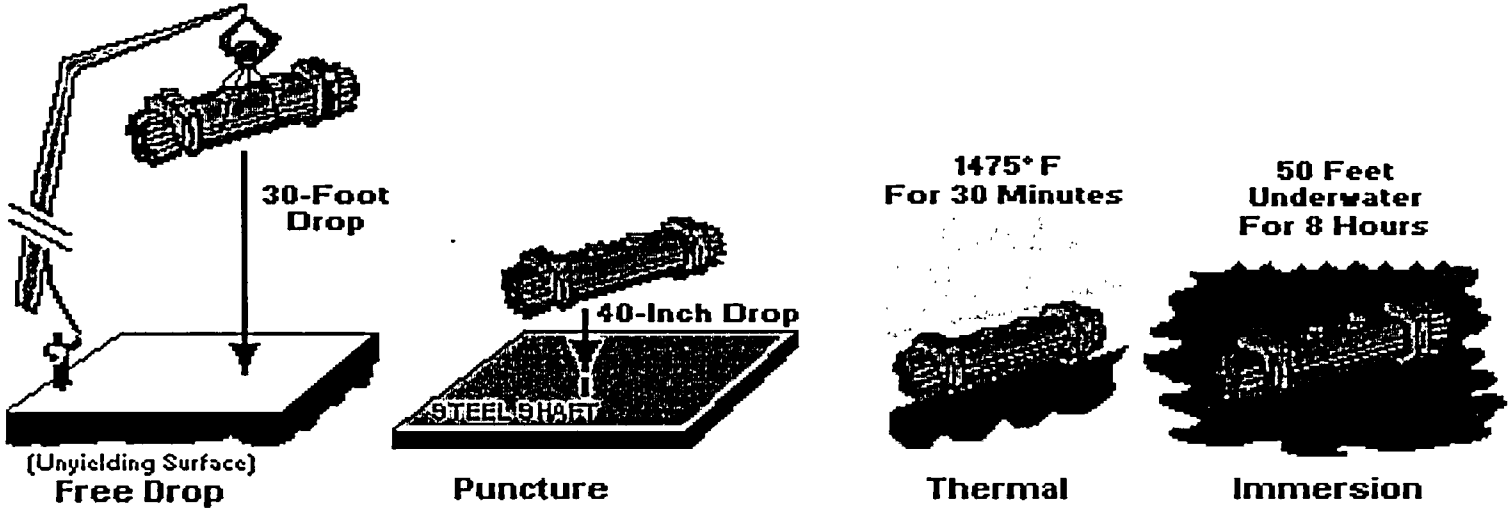
The Model IF-300 Cask has been used to ship spent fuel since the mid-1970's.

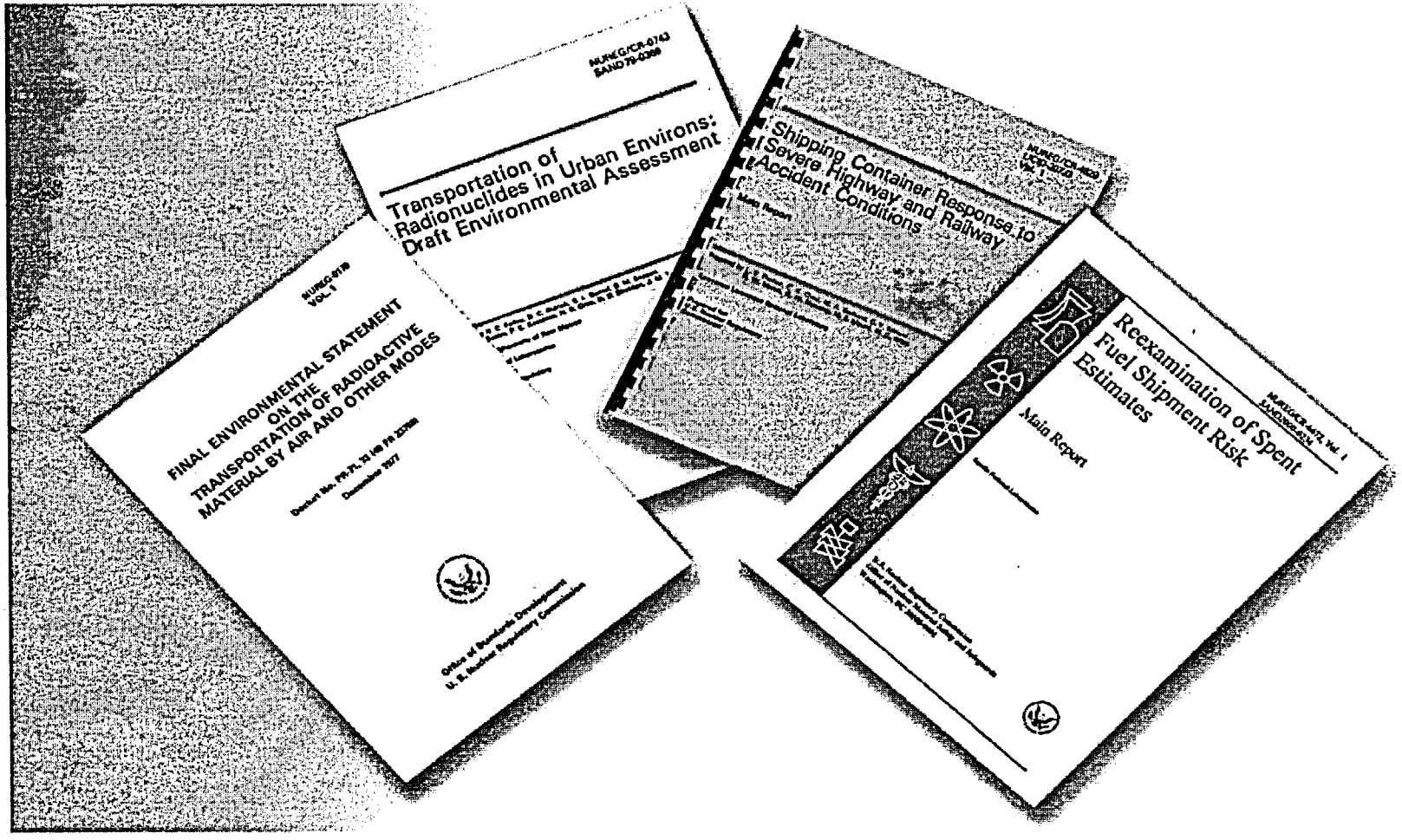
Below: The Model IF-300 Cask on a flat bed rail car. Note the personnel barrier.



Approval of Spent Fuel Shipping Casks

- Spent Fuel Casks are certified to be <u>accident resistant</u>. They must withstand:
  - Thirty foot drop onto unyielding surface.
  - Forty inch drop onto a steel puncture pin.
  - Thirty minute fully engulfing 1475 ° F fire.
  - Immersion Test (50 feet).





The NRC periodically assesses the effectiveness of Type B standards in addressing real world accidents.

Approval of shipping casks by the NRC is one component of a national system to assure the safety of spent fuel shipments.

Summary

- The US has enacted a comprehensive system of laws to assure the safe transport of spent fuel. This system is not unique to Yucca Mountain.
- NRC's main role in the transportation of spent fuel to Yucca Mountain is cask approval.