AAR Perspective on the NWTRB Questions

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What are your key Yucca Mountain transportation safety and security concerns?

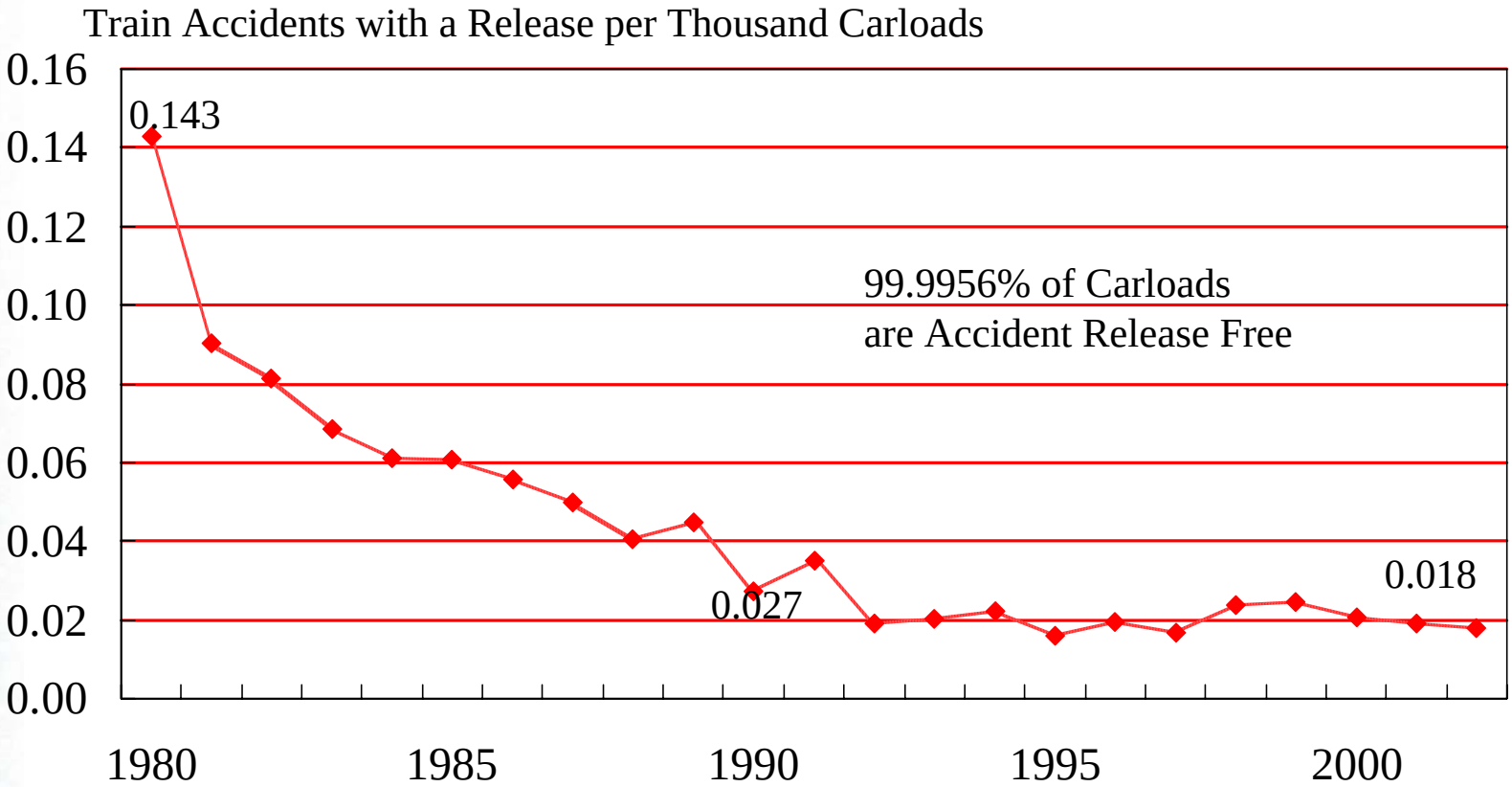
Background

- Most Shipments will be by Rail Due to Weight Of Cask
- Rail Has Lower Risk of Accident
- 250-400 Shipments Per Year
- 24 Year Shipping Campaign
- High Visibility Shipments
- Minimize Impact on Operations
- Ensure Continuous Improvement
- Goal: incident free transportation

Safety

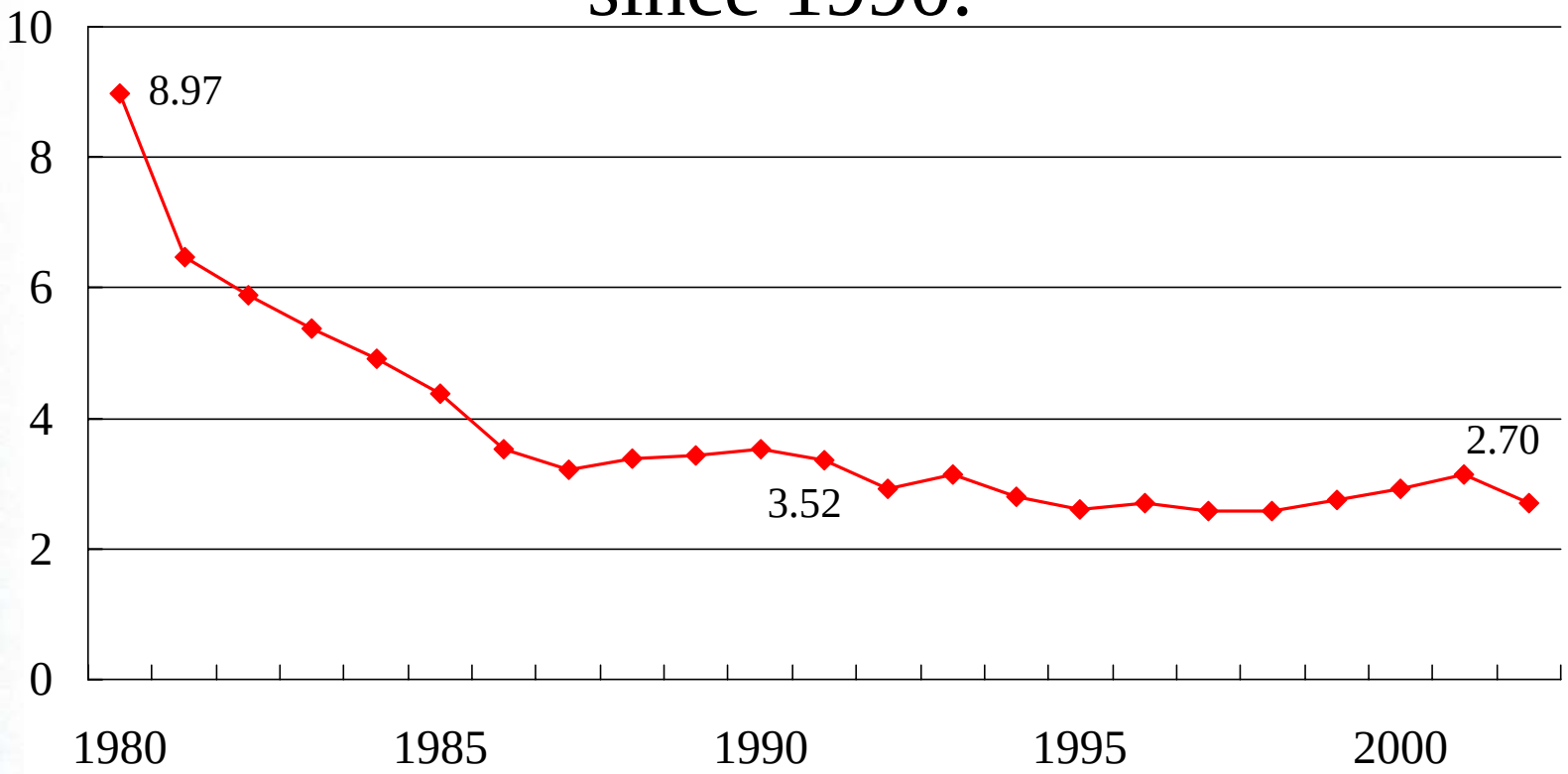
- Rail is the preferred mode of transport
- Rail is a very safe way to transport SNF
  - There has never been a release as a result of a rail shipment of SNF
  - 99.9956% of hazmat carloads arrive without a release

Hazmat accident rates have declined 87% since 1980 and 34% since 1990.



Sources: FRA, Accident/Incident Bulletin, Table 26. FRA, RR Safety Statistics Annual Report 2000, Table 6-1. ICC/STB Waybill Sample. 1997-1999 carloadings adjusted to counter known errors in reporting.
Notes: An accident may involve releases from more than one car. 2000 carloadings assumed equal to 1999. 1997-99 accidents are trains in accidents, hence the accident rate may be slightly higher for those years.

Derailments per million train-miles have dropped 70% since 1980 and 23% since 1990.



Sources: FRA, Railroad Safety Statistics Annual Report 2000, Tables 1-1, 5-6.
FRA, Accident/Incident Bulletin, 1980-1996, Tables 19, 36.
http://safetydata.fra.dot.gov/officeofsafety/ Note: Excludes grade crossing accidents.

Why Dedicated Trains

- Equivalent weight distribution / train handling
  - Standard freight car 100 ton = 263,000#
  - SNF Car 125 ton >400,000#
- Less handling
  - Fewer switches
  - No classification
- Best available technology can be utilized

Security

- Guards should be transported in a separate personnel car
  - No space in the locomotive
  - Guards will be on train for long periods of time
- AAR Terrorism Risk Analysis and Security Management Plan Security
  - Threat driven
  - Includes 113 Actions at Alert Level 4

How have you been able to address these concerns based on the information and resources that the DOE has provided to date?

Performance Specification for Trains Used to Haul High-Level Radioactive Waste

- Includes all cars in the trains including buffer cars, security cars
- Requires static and dynamic modeling before construction
- Requires full scale characterization, static, and dynamic testing of each car and the train
- 100,000 mile evaluation period

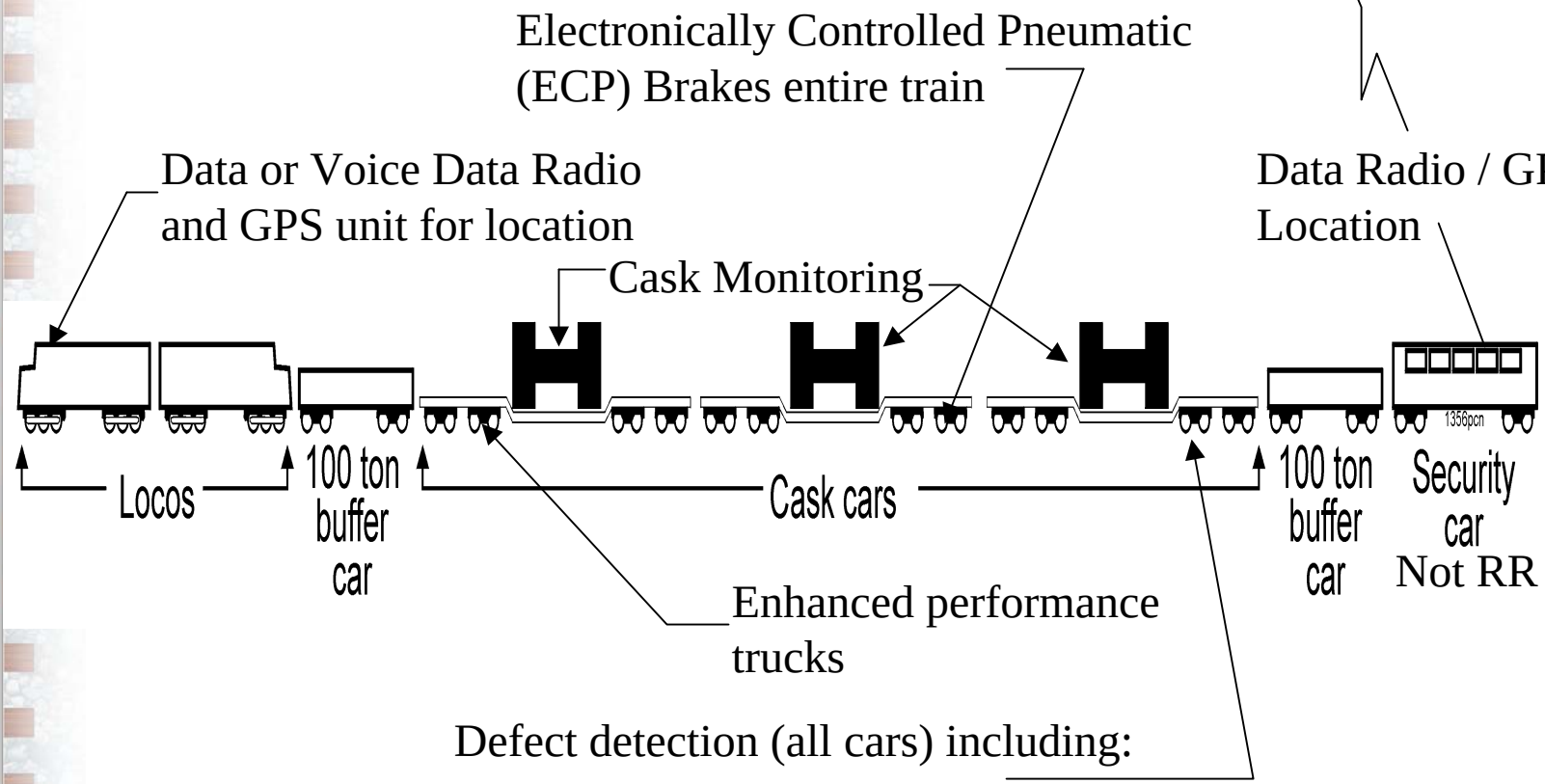
Performance Standard for SNF Trains (cont.)

- Roadworthiness exceeds standard freight car requirements
  - Enhanced performance trucks
- Requires Electronically Controlled Pneumatic (ECP) Brakes
  - Reduced stopping distance
  - Provides conduit for on-board defect detection

System Safety Monitoring

- **On-Board Monitoring Systems**
  - Location Determination
  - Truck Hunting
  - Wheel Flats
  - Braking Performance
  - Vertical, Lateral, Longitudinal acceleration
  - Bearing Condition
  - Speed, Ride Quality

Diagram of SNF Train



Other Enhanced Safety Actions Affecting SNF Transportation

- AAR OT-55-D
  - Track and Equipment Inspection
  - Defect Monitoring
  - Increased Maintenance Frequency
  - Increased Employee Training
  - Maximum Speed Limit (50 MPH)
- FRA Safety Compliance Oversight Plan Policy for HLRW and SNF Shipments

Private Fuel Storage LLC

- First Shipper to Build SNF Equipment to AAR's New Performance Standard
- Cask Car Manufactured by Trinity Industries
- Overall Weight of Car, Cask, Cradle, and Impact Limiters is Approx. 476,200 lb.
- Modeling and Characterization Testing Complete
- Static and Dynamic Tests on hold awaiting resolution of State of Utah issues

PFS Railcar at TTCI for Testing

What concerns have you been unable to address? What does the DOE need to provide to allow this to happen?

How long will it take you to address these outstanding concerns once the DOE has provided what you need?

Concerns

- Most shipments to date have gone by dedicated train
- Yucca Mountain EIS indicates that evidence does not show that dedicated trains are advantageous
- It therefore concludes that it has not determined the arrangements it would request for shipments of SNF & HLRW

Concerns (cont.)

- What happens if a cask is breached during a rail accident?
  - To date, this has been discussed as a remote possibility
  - We would like a better idea of how this would be handled before shipments are started to the geologic repository

What needs to occur? How long will it take?

- Procurement and testing of cars that meet the Performance Specification for Trains Used to Haul HLRW takes time
- Alternatively, DOE could purchase cars that meet the performance specification that are being procured by Private Fuel Storage

Summary…

- Rail is a safe option for the transportation of SNF
- Dedicated trains make sense
- Technological Improvements in Rail Transportation will Continue to Enhance the Safety of SNF Shipments.
- DOE needs to start making some decisions regarding their transportation program to Yucca Mountain soon

Questions?