Spent Nuclear Fuel Transportation Experience

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Discussion Topics

- Progress Energy Transportation History
- Shipment Security
- Organization and People
- Procedures
- Coordination and Notification
- Emergency Response
- Summary
Progress Energy Nuclear Plants

- Brunswick
- Crystal River
- Robinson

Map showing the locations of Progress Energy's nuclear plants across the United States.
Spent Fuel Management Strategy

- Maintain operating reserve at all nuclear units
- Spent fuel shipping program to reduce inventories at Brunswick and Robinson
- Maximize use of Harris spent fuel pools
Transportation Experience

- 173 shipments
- Over 30,000 miles
- 4,000 spent fuel assemblies transported
Excellent Operational Record

- No radioactive spills or releases
- No radiation exposure to train personnel or general public
- Increased security since 9/11/01
Success Factors

- Nuclear safety focus
- Clearly identified accountabilities
- Continuous improvement culture
- Pre-shipment briefings
- Post-shipment critique and lessons learned
Shipment Security

- Dedicated rail shipments
- Time of shipments and specific security provisions are ‘safeguards information’
- Continuous, remote monitoring of shipment location
Dedicated Train

- Locomotive
- Empty Flatcar
- Cask Car
- Cask Car
- Empty Flatcar
- Caboose
Shipment Personnel

- Trained and Qualified Personnel
- Proficient core team
  - At each site
  - Accompany shipment
Shipment Organization

- Shipment Manager
- Radiological Escort
- Mechanic Escorts
Shipment Organization

- Communicators
- Plant Response Coordinator & Team
- Response Manager
Detailed Procedures

- Site procedures
  - Loading
  - Unloading
  - Shipment Preparations
- Transportation
  - Routine
  - Emergency
State and Local Coordination

- Initial meetings with towns and counties
- Periodic exercises with State and County Emergency Personnel
- Ongoing Communication
Notification of Shipment Status

- **Advance Notification**
  - State – Governor's designee (7 day)
  - Federal – NRC (10 day)

- State and County updates during shipment
Emergency Response

- Pre-identified scenarios
- Radiological and hazard information readily available
- Dedicated and trained response personnel
Summary

- Successful transportation experience exists
- Coordinated effort between Utilities, Federal, State and Local organizations