

NRC Preparations for Potential Large-Scale Commercial Shipments of Spent Nuclear Fuel

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U.S. Nuclear Regulatory Commission's Regulatory Readiness for Oversight of Large-Scale Commercial Transportation of Spent Nuclear Fuel (SNF)



Topics

- NRC Regulatory Readiness Review: Scope and Results
- Oversight Roadmap: Agency Roles and Responsibilities
- NRC's Roles and Responsibilities

U.S. Nuclear Regulatory Commission's Regulatory Readiness for Oversight of Large-Scale Commercial Transportation of Spent Nuclear Fuel (SNF)



Review Scope

- Regulatory framework for safety and security
- Nineteen assessment areas, including:
 - Applicable regulations, guidance, and procedures
 - Respective roles of Federal, State, and Tribal agencies,
 - Interagency agreements and cooperation
 - Prior experience with SNF transportation
 - Prior evaluations and risk assessments
 - Information needs
 - Inspection and other oversight

U.S. Nuclear Regulatory Commission's Regulatory Readiness for Oversight of Large-Scale Commercial Transportation of Spent Nuclear Fuel (SNF)



Key Results

- The NRC has a well-established and strong regulatory framework for the safe and secure transportation of spent nuclear fuel
- The NRC's regulatory framework for transportation is well integrated with the overall Federal structure
- No major changes needed to NRC regulations or guidance
- Enhance inspection procedures for greater efficiency
- Expand public engagement and communications

Recommended Enhancements

- Pre-shipment and receipt inspections
 - Update and consolidate applicable procedures for greater efficiency
 - Ensure that inspectors are trained and qualified on the new procedures
- Public outreach
 - Provide more outreach and public interaction on spent fuel transportation safety and security

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Other Review Outcomes

- *Identified* information needs to support NRC's oversight of the transportation campaign
- *Identified* areas that could potentially require a future policy action by the Commission
- *Developed* a **high-level** roadmap for regulatory oversight during the different stages of a transportation campaign

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Transportation of Spent Nuclear Fuel (SNF)**



Oversight Roadmap: Agency Roles and Responsibilities

NRC's Regulatory Responsibilities

- Establishing and maintaining the regulations for transportation and storage packages and transportation security regulations
- Certification of transportation packages
- Oversight of shipments being prepared and received
- Review and approval of security plans and routes for shipments
- Coordination with other Federal agencies, other partners, stakeholders, and the public

Oversight Roadmap

Shipping Site

In Transit

Receiving Site



Event Response

Oversight Roadmap

Shipping Site



NRC Roles



Package Certification
Site Operations
Pre-shipping Inspections

In Transit



Receiving Site

Receipt Inspections
Site Operations

Event Response

Oversight Roadmap

Shipping Site

DOT Roles

In Transit

Receiving Site

PHMSA
FRA
FMCSA

PHMSA = Pipeline and Hazardous Materials Safety Administration
FRA = Federal Railroad Administration
FMCSA = Federal Motor Carrier Safety Administration

Event Response

Oversight Roadmap

Shipping Site

DHS Roles

In Transit

Security
Planning

Receiving Site

FEMA

FEMA = Federal Emergency
Management Agency

Event Response

Oversight Roadmap

Shipping Site

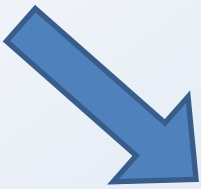
Local Roles

In Transit

Receiving Site

States
Tribes

Event Response



Oversight Roadmap

Shipping Site

DOE Roles

In Transit

Outreach
R&D

Receiving Site

Event Response



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Key Messages

- The NRC has a well-established and strong regulatory framework for the safe and secure transportation of spent nuclear fuel
- The NRC's regulatory framework for transportation is well integrated with the overall Federal structure
- Transportation of spent nuclear fuel has already occurred in the U.S. with no safety or security issues
- The NRC has confidence that spent nuclear fuel can continue to be transported safely and securely

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For Further Reading

- *Regulatory Readiness Review Report* is available in the NRC Agencywide Documents Access and Management System (ADAMS), No. ML21298A164
- *Summary of the review results* as reported to the NRC Commission (SECY-21-0101) in ADAMS, No. ML21300A344
- *Recent NRC transportation risk analysis: NUREG-2125, "Spent Fuel Transportation Risk Assessment,"* issued January 2014, in ADAMS No. ML13249A329

(More reading in the Review Report)