



U.S. DEPARTMENT OF
ENERGY

Nuclear Fuels Storage & Transportation Planning Project
Office of Fuel Cycle Technologies

Nuclear Energy

Nuclear Fuels Storage and Transportation Planning Project Program Status

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**Council of State Governments
Midwestern Radioactive Materials
Transportation Committee
Traverse City, Michigan
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NFST Established in 2012 to Plan for Interim Storage and Transportation



■ Mission

- Lay the groundwork for implementing an interim storage facility (ISF), including associated transportation, per the Administration's *Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste*, and develop a foundation for a new nuclear waste management organization

■ Purpose

- Make progress on this important national issue
- Build foundation that could be transferred to a new waste management and disposal organization (MDO)

■ Activities

- Build upon Blue Ribbon Commission (BRC) recommendations
- Lay groundwork for implementing the *Strategy*
- Consistent with existing Nuclear Waste Policy Act (NWPA) authorities





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Program Milestones

- **January 2012 - Blue Ribbon Commission final report issued**
- **October 2012 - Nuclear Fuel Storage and Transportation Planning Project formed**
- **January 2013 – Administration Strategy released**



Transportation Collaboration between DOE and States and Tribes

- **The BRC Report (2012) endorsed the National Academy of Sciences (NAS) 2006 “Going the Distance” report and made the following recommendations**
 - Future programs should build upon the proven approaches of working with regional groups, states and tribes and other organizations to plan for transportation because bringing corridor jurisdictions together under the auspices of these groups allows issues to be identified and resolved by all parties.
 - Early implementation of the 180(c) program as currently defined in the NWPA should be initiated by DOE *even before* any potential storage or disposal site is identified.
 - DOE should finalize procedures for providing technical assistance and funds for training under Section 180(c) of the NWPA and provide such funding independent from progress on facility siting
 - Initial routes from shutdown sites can be identified and pilot training along those routes can begin
 - Substantial lead time is needed to ensure that planning and institutional arrangements are in place and tested by the time major shipments commence, including efforts to initiate interactions with state, local and tribal officials

- **Administration’s Strategy (2013) endorsed the key principles that underpin the BRC’s recommendations**
 - Initiate prompt efforts to prepare for the eventual large-scale transport of used nuclear fuel and high-level waste to consolidated storage and disposal facilities when such facilities become available
 - Engage in outreach and communication, route analysis, and emergency response planning activities consistent with existing NWPA requirements



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Congressional Activity

- **Senators Wyden, Murkowski, Feinstein, and Alexander introduced comprehensive, bipartisan nuclear waste legislation**

- **The bill, S. 1240 (Nuclear Waste Administration Act of 2013) would:**
 - Establish a siting process for storage and repository facilities that relies on consent agreements and Congressional ratification
 - Establish a new organization – Nuclear Waste Administration – run by a single Administrator and overseen by an Oversight Board
 - Address funding reform by creating a new Working Capital Fund in which fees are deposited and are available as needed

- **Path to passage is difficult to predict**



FY 2014 Funded Activities

- **Complete an analysis for initial spent nuclear fuel (SNF) shipments from shutdown reactor sites**
- **Continue the evaluation of standardized containers for storage, transportation, and potentially disposal**
- **Continue to work cooperatively with the state regional groups and tribes on transportation issues**
- **Update the National Transportation Plan to address initial shipments from shutdown reactors**
- **Continue to resolve issues related to Section 180(c)**
- **Continue the conceptual design for a generic storage facility and supporting transportation system**



FY 2015 Budget Proposal

■ **Administration - DOE is requesting \$30 million (including \$24 million from the Nuclear Waste Fund) for an integrated waste management system; activities to include:**

- Support preliminary generic process development and other non-R&D activities related to storage, transportation, disposal, and consent-based siting
- Prepare for large-scale transportation of SNF and high-level radioactive waste to a pilot interim storage facility with focus on SNF at shutdown reactor sites
- Engage with State Regional Groups, Tribes and other stakeholders
 - Revise National Transportation Plan
 - Revise the proposed policy to implement Section 180(c) of the Nuclear Waste Policy Act
 - Refine routing studies
- Initiate efforts according to hardware acquisition strategy (develop railcars per Association of American Railroads Standard S-2043)



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FY 2015 Appropriations Bill

■ House Bill

- No funding provided for integrated waste management system activities
- Provides \$205 million for DOE and NRC activities associated with NRC's review of the DOE license application for a proposed repository at Yucca Mountain, Nevada
- \$6 million to support activities to design and certify a rail car(s) for use with licensed and anticipated transportation casks



FY 2015 Appropriations Bill

■ Senate Bill - \$89 million for UNF disposition; funds provided for:

- Siting, design, licensing, and construction of one or more consolidated storage facilities
- Financial and technical assistance associated with a consent-based siting process, including education, technical analyses and other support to entities considering hosting an interim storage facility (ISF)
- Incentive payments to entities with signed agreements with jurisdictions eligible under the general provision
- \$3M to design, procure and test industry standard compliant rail rolling stock in a timeframe that supports the transportation of spent fuel to the ISF

■ Senate bill includes provision on a pilot program

- “The Secretary is authorized, in the current fiscal year and subsequent fiscal years, to conduct a pilot program, through 1 or more private sector partners, to license, construct, and operate 1 or more government or privately owned consolidated storage facilities to provide interim storage as needed for spent nuclear fuel and high level radioactive waste, with priority for storage given to spent nuclear fuel located on sites without an operating nuclear reactor”



Topics Discussed at August NFST Core Group Meeting

■ Draft National Transportation Plan (NTP)

- Recent review by SRGs and Tribal members
- Working Group and Tribal webinars held in June and July

■ NWPA section 180(c)

- Discussed development of a 180(c) policy implementation exercise (formerly called “table top”)

■ Discussion of route planning

- New modelling tool and its role in routing
- Preliminary routing activities

■ Current shutdown sites activities

- Update on additional information for first 9 sites
- Additional sites information gathering activities



Purpose of NTP

- **Establish the basis to develop a safe, secure and uneventful transportation system to ship SNF from shutdown reactors and describe how collaboration with states, tribes, local governments and other stakeholders will contribute to the development of that system**
 - Identify requirements and agreements regarding operational practices
 - Identify technical and institutional issues that need to be addressed prior to shipment
 - Provide details about the infrastructure and fuel to be moved
 - Provide a template for site-specific transportation or campaign plans following the Waste Isolation Pilot Plant (WIPP) and Foreign Research Reactor Spent Fuel (FRR) transportation plan models



Recent History

- Discussed NTP with Transportation Plan Working Group at National Transportation Stakeholder Forum (NTSF) in May, 2014
- Comments received from the Tribal Caucus and Nuclear Energy Tribal Leaders Working Group, Brotherhood of Locomotive Engineers and Trainmen, private sector (AREVA and Energy Solutions), Council of State Governments (Midwestern Office), Southern States Energy Board, Northeast High-level Radioactive Waste Transportation Task Force, Ken Niles, and Western Interstate Energy Board (draft)
- Webinars on NTP to review progress, report on comments, and provide update
 - June - Transportation Plan Working Group
 - July - Tribal Caucus and Nuclear Energy Tribal Leaders Working Group



Comments received to date

■ General areas of comments

- Editorial, nomenclature and roles (e.g. DOE vs. MDO, rail transfer points, Transportation Operations Center vs. Railroad Movement Control Center)
- Comments on Policy, Legislation, Administration's Strategy, Status of MDO, Standard Contract, Siting, and Cost Studies
- Provide details of shipments as they become known (what sites, which fuel, routing, considerations on barge vs. heavy haul)
- Include more discussion about transport modes (heavy haul truck, barge)
- Expand discussion of participant roles (local governments, railroads/carriers, cask vendors)



Comments received to date (cont.)

- Clarify that GTCC will be removed with SNF
- Additional information on railcar design, cask certification, schedules
- Explanation of resolved issues or assumptions (e.g. policy decisions such as dedicated train)
- Comment on revisions of Section 5 (Systems Operations), reorder list to be consistent with text in subsequent sub-sections
- Allow time for two rounds of reviews
- Develop a Work Plan for the development of the NTP



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Proposal for NTP Issue Resolution Papers

- Facilitate process for preparation of NTP
- Modeled after 180(c) issue papers
- Developed by DOE and the Working Group
- May need sub-group(s) to work on specific issues
- Identify priority issues that inform the plan/resolve questions about shipment practices
- Post papers on Wiki site
- Possible development of pertinent issue papers as an NTP appendix



Draft NTP Work Plan Schedule

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|---|--------------|
| ■ Distributed Draft NTP | April, 2014 |
| ■ NTSF Working Group Session (initial feedback) | May |
| ■ Working Group/Tribal transportation webinars | June/July |
| ■ SRG/Tribal Core Group meeting | August |
| ■ Discuss issues at SRG, Tribal Caucus mtgs. | Fall |
| ■ Issue papers developed | As needed |
| ■ Summary of comments with proposed revisions/resolutions | Winter |
| ■ Webinar/meeting(s) to address NTP | As needed |
| ■ Issue revised NTP | Spring, 2015 |
| ■ NTP Working Group discussion at NTSF | May |
| ■ Second round of review/comments | Summer |
| ■ Updated Draft Plan | Fall |



Section 180(c): 2012-14 Activities

■ **NTSF Working Group formed December, 2012**

- Worked during 2013 to revisit issues in 2008 Federal Register Notice
- Worked through 9 issues with 7 remaining
- Tribal participants joined WG but additional consultations needed

■ **States formed Inter-regional Team, October 2013**

- Interim recommendations presented at NTSF May, 2014
- Final recommendations expected October, 2014



Section 180(c): 2012-14 Activities (cont.)

- **NTSF Tribal Caucus is now formed, NE has provided funding**

- **DOE looks forward to working with individual Tribal nations to further discuss proposed Section 180(c) policy**
 - Tribal Webinar on July 22, 2014 to discuss NTP, routing, Section 180(c), modeling tool, and other transportation issues

- **NTSF Working Group met at May, 2014 meeting**
 - All agreed to hold an exercise leading up to NTSF 2015 meeting
 - DOE is designing the exercise in consultation with the Working Group members



180(c) Policy Implementation Exercise: Suggested Steps and Schedule

■ **DECEMBER 2014:**

1. Interested States and Tribes volunteer for exercise (previously called the tabletop exercise) to test implementation of draft policy;
looking for state volunteers from the midwest
2. DOE writes a mock letter of eligibility to the volunteer states and tribes participating in the exercise. DOE would provide:
 - Information about a hypothetical number of shipments through their jurisdiction over a defined period of time
 - A hypothetical amount of funding available for which each volunteer state and tribe can apply

- ## ■ **JANUARY 2015:** Volunteer states and tribes identify hypothetical routes, some choosing more than one mode of transport



180(c) Policy Implementation Exercise: Suggested Steps and Schedule (cont.)

■ MAY 2015:

1. Full day workshop in conjunction with NTSF to present exercise results and experience

■ SUMMER 2015:

1. Complete a review of the implementation exercise and write a report
2. Possibly have SRGs and tribes write lessons learned for their region

■ FALL 2015:

1. Work with States and Tribes to update proposed Section 180(c) policy based on results of exercise
2. Begin scoping full-scale pilot of Section 180(c)



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Stakeholder Tool to Assess Radioactive Transportation (START)

- **NE's transportation decision-support tool will assist with:**
 - Development of transportation plan
 - Route selection process & preliminary routing analysis
 - 180(c) policy development
 - Data collection at shutdown sites
 - Waste management systems integration
- **Web-based application using state-of-the-art geographic information system (GIS) data & analysis capability**
- **Includes consideration of:**
 - Rail, truck and barge transportation infrastructure & operations
 - Economic, safety, security & environmental routing criteria
 - Sensitive populations & land uses in proximity to route
 - Emergency response assets in proximity to route
- **Will produce performance measures & high quality maps to support analysis and communication**



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START Rollout



- **Late July, finalized agreement with Idaho National Lab to host the START tool**
 - Currently available to stakeholders
 - Web link: <http://gis.inl.gov/start>
- **Version 1.1 user manual expected to be released soon**
- **Training sessions being planned**
 - Atlanta, October 1, 2014 – Half day training held in conjunction with a meeting of the 180(c) Ad Hoc Working Group
 - December 2014? – In conjunction with the SSEB regional meeting
 - January 2015? - Possibly in conjunction with the Tribal Caucus meeting
 - NTSF 2015?
- **Supplemental webinar training also being considered**



Why Do Route Planning Now?

We do not have:

- A destination site
- Rail cars
- Spent nuclear fuel transportation casks

We do have:

- Information on the locations of the shutdown sites
- Information relative to onsite and near-site infrastructure near shutdown sites
- Knowledge and experience gained from previous DOE shipments
- Transportation certifications for many casks
- Recommendations from Blue Ribbon Commission and National Academies of Science



Define a Standardized Routing Process

- **Identify the methodology for route selection**
- **Identify the participants – States, Tribes, carriers, logistics contractors, etc.**
- **Identify regulatory authorities and standards (*DOT, FRA, NRC*)**
- **Discuss roles and responsibilities**
- **Propose methods for engagement (*NTSF, Core Group, SRG meetings, Tribal Caucus*)**



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Define a Standardized Routing Process (cont.)

- **Highlight decision points and opportunities for input from States, Tribes and carriers**
- **Ensure regulatory compliance for routing and safeguards**
- **Propose method for documenting agreements on issues**