



U.S. Department of Energy – Historical  
Engagement with Tribes and States on

# SECTION 180(c) OF THE NUCLEAR WASTE POLICY ACT

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Figure 1. Phases of DOE Engagement with Tribes and States Related to Transportation Safety Aspects of the NWPA .....Error! Bookmark not defined.



## Summary

This report was developed as part of a knowledge management effort to document past U.S. Department of Energy (DOE) activities related to spent nuclear fuel (SNF) and high-level radioactive waste (HLW) transportation, storage, and disposal, including policy considerations, and to serve as an information resource in the ongoing planning for an integrated waste management program. This report provides a historical overview of DOE activities conducted between 1983 and 2017 with various DOE-supported working groups to examine options for and issues related to future implementation of Section 180(c) of the Nuclear Waste Policy Act of 1982, as amended (NWPA). The purpose of this document is to serve as a resource for DOE personnel, support staff, Tribal and State government representatives who engage with DOE on issues related to transportation of SNF and HLW, such as through DOE's National Transportation Stakeholders Forum (NTSF), and others who may be interested in this topic.

After a brief introduction to Section 180(c) of the NWPA, the report provides a chronological summary of major issues that have been considered and products that have been produced by DOE related to Section 180(c) in cooperation with various working groups over time. The report concludes with a brief discussion of potential next steps for Section 180(c) planning activities.

## Acronyms

AHWG	ad hoc working group
BRC	Blue Ribbon Commission on America’s Nuclear Future
CSG-ERC	Council of State Governments – Eastern Regional Conference
CSG Midwest	Council of State Governments Midwest
DHS	U.S. Department of Homeland Security
DOE	U.S. Department of Energy
DOE-EM	U.S. Department of Energy Office of Environmental Management
DOE-NE	U.S. Department of Energy Office of Nuclear Energy
DOE-OCRWM	U.S. Department of Energy Office of Civilian Radioactive Waste Management
DOT	U.S. Department of Transportation
FEMA	Federal Emergency Management Agency
FRN	Federal Register Notice
FY	fiscal year
HLW	high-level radioactive waste
HMEP	Hazardous Materials Emergency Preparedness grant program
IRT	Interregional Team on Section 180(c)
IWM	Office of Integrated Waste Management
MERRTT	Modular Emergency Response Radiological Transportation Training
NCAI	National Congress of American Indians
NCSL	National Conference of State Legislatures
NFST	Nuclear Fuels Storage and Transportation Planning Project
NTSF	National Transportation Stakeholders Forum
NWPA	Nuclear Waste Policy Act
OMB	Office of Management and Budget
SERTC	Security and Emergency Response Training Center
SNF	spent nuclear fuel
SRG	State Regional Group
SSEB	Southern States Energy Board
TCG	Transportation Coordination Group
TEC/WG	Transportation External Coordination Working Group
TEPP	Transportation Emergency Preparedness Program
TRMTC	Tribal Radioactive Materials Transportation Committee
WIEB	Western Interstate Energy Board
WIPP	Waste Isolation Pilot Plant

# Introduction

This report was developed as part of a knowledge management effort to document past U.S. Department of Energy (DOE) activities related to spent nuclear fuel (SNF) and high-level radioactive waste (HLW) transportation, storage, and disposal, including policy considerations, and to serve as an information resource in the ongoing planning for an integrated waste management program. This report provides a historical overview of activities conducted by DOE and DOE-supported working groups between 1983 and 2017 related to planning for the safe transport of SNF and HLW by DOE, and considering options for and issues related to future implementation of Section 180(c) of the Nuclear Waste Policy Act of 1982, as amended (NWPAA). The purpose of this document is to provide a chronological summary of work conducted by DOE in coordination with Tribes and States on Section 180(c) policy and related topics, including major issues that have been considered and key work products produced over the years, as well as potential future planning activities.

## What is Section 180(c) of the Nuclear Waste Policy Act?

The NWPAA confers on DOE the responsibility for transporting SNF and HLW to a NWPAA-authorized facility (42 U.S.C. 10101 *et seq.*). After the NWPAA was initially enacted in 1983, States and Tribes grew concerned about the costs of preparing for future shipments of SNF and HLW, as well as the level of public concern likely to be raised by the shipments, which fueled an effort to insert specific language to address these concerns in the NWPAA amendments of 1987.<sup>1</sup> Through the Nuclear Waste Policy Amendments Act of 1987, Congress added the following language to the NWPAA, which became Section 180(c) of the NWPAA:

*The Secretary [of Energy] shall provide technical assistance and funds to States for training for public safety officials of appropriate units of local government and Indian [T]ribes through whose jurisdiction the Secretary plans to transport spent nuclear fuel or high-level radioactive waste [to a NWPAA-authorized facility]. Training shall cover procedures required for safe routine transportation of these materials, as well as procedures for dealing with emergency response situations. (42 U.S.C. 10175).*

Section 180(c) applies specifically to DOE shipments of SNF or HLW conducted under the NWPAA and does not apply to other DOE shipments of these materials (such as research quantities of SNF) or to SNF shipments made by private entities to private storage facilities. Some of the key language in Section 180(c) specifies that training is to cover procedures for “safe routine transportation” and “emergency response situations.” “Safe routine transportation” has been interpreted to include training for routine safety-related activities such as vehicle safety inspections, accident prevention, and radiological inspections. “Emergency response situations” has been interpreted to include training consistent with applicable Federal, State, Tribal, and local emergency response procedures, including training for responding to a hazardous materials incident, as well as activities such as training of emergency medical personnel and designing and conducting drills and exercises. In a **revised proposed policy** issued in 2008, DOE identified examples of allowable activities that would qualify as pertaining to “safe routine

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<sup>1</sup> The 1987 amendments also limited DOE’s consideration of potential repository sites to a single location, Yucca Mountain, in Nevada.

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transportation” or “emergency response situations” in the **Federal Register Notice (FRN)** for the revised proposed policy (DOE 2008).

### Who is Responsible for Section 180(c) Implementation?

Between 1988 and 2017, DOE worked toward design of a policy and grant program that would meet the requirements of Section 180(c) of the NWP. <sup>2</sup> DOE’s Office of Civilian Radioactive Waste Management (DOE-OCRWM) was the original office responsible for planning for Section 180(c) implementation. In 2010, DOE discontinued OCRWM operations, and its functions were transferred to other offices. The Office of Nuclear Energy (DOE-NE) was assigned responsibility for continuing planning and analysis in support of a future waste management program, including SNF transportation and consideration of issues related to Section 180(c).

Notice of Revised Proposed Policy and Request for Comments: Safe Routine Transportation and Emergency Response Training; Technical Assistance and Funding (Vol. 73, No. 212, 64933–64939, October 31, 2008) (DOE 2008)

### Why is Involvement in Section 180(c) Planning Important for Tribes and States?

State and Tribal governments have primary responsibility for public health and safety within their jurisdictions. Future DOE shipments of SNF and HLW will likely travel through many States and several Tribal jurisdictions en route from their origin sites, such as nuclear power plants, research reactors, and DOE sites, to storage and disposal facilities. While transport of radioactive materials has a strong safety record in both the United States and abroad (Connolly and Pope 2016), part of that success is due to close coordination between Federal, Tribal, and State governments on preparedness. The involvement of States and Tribes in DOE’s past work on issues related to Section 180(c) policy has been extremely valuable. An example is the consideration of funding allocation options to determine how future appropriated funds for a Section 180(c) grant program could be allocated among eligible Tribes and States to help build Tribal and State preparedness for shipments in accordance with their needs and promote safe and secure shipping campaigns.

### Resources for Training

Section 180(c) of the NWP applies specifically to DOE shipments of SNF or HLW conducted under the NWP. It can be expected that technical assistance and funding through Section 180(c) of the NWP would be provided to Tribes and States if DOE shipments of SNF and HLW are planned to occur in their jurisdictions. Additional funding or training opportunities also may be available to States and Tribes through other DOE and Federal programs, some examples of which are provided in this section.

#### *U.S. Department of Energy Transportation Emergency Preparedness Program Training Program*

DOE’s Transportation Emergency Preparedness Program (TEPP) is currently available to Tribes and States through whose jurisdictions DOE transports radioactive materials, for example, to the Waste Isolation Pilot Plant (WIPP) or as part of DOE’s Foreign Research Reactor Spent Nuclear Fuel Acceptance Program. This program includes the Modular Emergency Response Radiological Transportation Training (MERRTT). The TEPP has existed for many years and has been well received by States and Tribes, some of whom also take an active role in regular updates of the training content. DOE intends to build on the successful operation of this training program. As indicated in DOE’s revised proposed policy issued in

<sup>2</sup> For a discussion of the history of implementing Section 180(c) policy from 1988–2008, see *Overview of the Section 180(c) Program: History, Lessons Learned, and Potential Next Steps* (Helvey 2011).

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2008, for example, DOE proposed including participation in TEPP training as an allowable activity for Tribes and States under a Section 180(c) grant program (see <https://teppinfo.com/> for more information on the TEPP training program).

### Other Federal Government Programs

In addition to technical assistance and funds for training that would be provided by DOE as part of a Section 180(c) program, other resources and trainings may be available to States and Tribes through other Federal agency programs. While not affiliated with DOE or Section 180(c), Tribes and States could choose to pursue these other resources or funding in parallel with Section 180(c) resources. **Additional programs and training** that could be useful to stakeholders are shown in the text box.

Relevant programs include (but are not limited to):

- U.S. Department of Transportation (DOT) Hazardous Materials Emergency Preparedness (HMEP) Grant Program: The HMEP Grant Program allows grantees (States and Tribes) to implement training and planning programs based on the needs of each location (demographics, emergency response capabilities, etc.). State or Tribal agencies can apply for grants through DOT's Pipeline and Hazardous Materials Safety Administration to carry out proposed activities, provided they support the program mission of assuring safe transportation of hazardous materials (DOT 2021). Fees collected from hazardous materials shippers or carriers are distributed to emergency responders or local emergency planning committees for hazardous materials training and planning.
- **Security and Emergency Response Training Center (SERTC) Trainings:** Operated at the Transportation Technology Center in Colorado, the SERTC trains railroad officials, industry, emergency responders, and government agencies in hazardous materials incidents involving rail shipments (SERTC 2021). State, Tribal, or local agency emergency responders may apply for a U.S. Department of Homeland Security (DHS)/Federal Emergency Management Agency (FEMA) grant to attend courses.

#### Additional Programs and Trainings

FEMA, DHS, the National Nuclear Security Administration within DOE, and the U.S. Department of Health and Human Services also offer nuclear and radiological related trainings that may not be specifically focused on transportation safety but could be available to States and Tribes to assist them in preparedness for radiological shipments. See the following links for additional information:

##### DHS and FEMA – Radiological Emergency Preparedness Programs

<https://www.fema.gov/emergency-managers/practitioners/hazardous-response-capabilities/radiological>

<https://cdp.dhs.gov/repp>

##### U.S. Department of Health and Human Services – Radiation Emergency Medical Management

[https://remm.hhs.gov/remm\\_Drill.htm](https://remm.hhs.gov/remm_Drill.htm)

##### Center for Radiological Nuclear Training – Counterterrorism Operations Support

[https://www.nnss.gov/pages/facilities/C\\_TOS.html](https://www.nnss.gov/pages/facilities/C_TOS.html)

# History of Activities and Issues Considered in Coordination with Tribes and States relevant to Planning for Implementation of Section 180(c)

Below is a chronological summary of work conducted by DOE in coordination with Tribes and States on issues related to Section 180(c) policy and related topics from the 1980s to the present. DOE's efforts to consider issues related to planning for implementation of Section 180(c) can be divided into roughly six phases of activities (see **Figure 1** Error! Reference source not found.). For each period discussed, the key issues, work products, and outstanding issues addressed by each working group are summarized in the sections that follow.

## 1983–1986: Pre-1987 Nuclear Waste Policy Act Amendments

Prior to the 1987 NWPA amendments, DOE engaged with States and Tribes in its initial transportation planning efforts. During this time, DOE-OCRWM produced two key documents in collaboration with Tribes and States: a *Transportation Business Plan* and a *Transportation Institutional Plan* (DOE 1986a, 1986b). The two documents together aimed to lay the foundation for interactions with States and Tribes and emphasized full, open, and timely communication.

## 1988–1992: Transportation Coordination Group

Section 180(c) was added to the NWPA through the 1987 amendments. States and Tribes were concerned about the costs of preparing for shipments of SNF and HLW as well as the level of public concern likely to be raised by such shipments, which led to an effort to insert specific language to address these concerns in the 1987 NWPA amendments. Following passage of the 1987 NWPA amendments, efforts to engage with States and Tribes on Section 180(c) activities included DOE-OCRWM's Transportation Coordination Group (TCG) which focused on designing a strategy for DOE-OCRWM to follow for implementing Section 180(c) policy. The TCG was a relatively short-lived entity with limited collaboration. Interactions with Tribes and States consisted mainly of meetings, with DOE-OCRWM staff presenting updates to the working group twice a year, and each meeting providing a public comment period (Helvey 2011). Additional engagement occurred through four State Regional Groups (SRGs):<sup>3</sup> the Council of State Governments – Eastern Regional Conference (CSG-ERC); the Council of State Governments – Midwest (CSG Midwest); the Southern States Energy Board (SSEB); and the Western Interstate Energy Board (WIEB). Tribal engagement occurred primarily through the National Congress of American Indians (NCAI). SRGs and NCAI held cooperative agreements with DOE-OCRWM to support their engagement with DOE on transportation planning for future SNF and HLW transport.

Between 1988 and 1992, DOE-OCRWM developed a preliminary draft strategy for implementing Section 180(c), publishing the draft for comment in January 1992 (DOE 1992a). The SRGs were involved in development of an original outline of the strategy (Janairo et al. 2020). DOE-OCRWM

<sup>3</sup> At the time of the publication of this report, DOE-NE's Office of Integrated Waste Management (DOE-NE-IWM) maintains cooperative agreements with these four SRGs, as well as a cooperative agreement to facilitate Tribal engagement with the Tribal Radioactive Materials Transportation Committee (TRMTC) for the purposes of coordination and planning for future SNF and HLW transport.



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published an additional document related to Section 180(c) policy in 1992, titled “Strategy for OCRWM to Provide Training Assistance to State, Tribal, and Local Governments” (DOE 1992b).

These documents provided options for implementing Section 180(c), outlined the planning principles that DOE-OCRWM intended to follow when the time came for Section 180(c) to be implemented, and described the consultative approach to planning. More specifically, the *Strategy for OCRWM to Provide Training Assistance to State, Tribal, and Local Governments* discussed how issues would be identified by both DOE-OCRWM and Tribal, State, and local governments and provided resolution mechanisms. It also committed DOE-OCRWM to an interactive process for resolving planning issues, working with States and Tribes, as well as committed to participating in TCG meetings and workshops to gather input (DOE 1992b). Additionally, the document outlined steps for how a Section 180(c) assistance program would be designed, including plans for the development of a policy options paper, a policy statement, and an implementation plan. The response to these documents from States and Tribes was favorable, partially because the proposed approach included avenues for consultation (Helvey 2011).

Shortly after development of these documents, DOE-OCRWM was reorganized—in 1993, TCG was discontinued due in part to the emergence of the Transportation External Coordination Working Group (TEC/WG).<sup>4</sup> Because of its brief tenure and DOE’s limited engagement, the TCG had limited impact on Section 180(c) policy development and activities, but the two DOE-OCRWM documents published during that period remained important touchstones for future engagement (Helvey 2011).

### 1993–1998: Transportation External Coordination Working Group – FRNs

In conjunction with DOE’s Office of Environmental Management (DOE-EM)<sup>5</sup> (which also works with Tribes and States on radioactive materials transportation associated with DOE-EM site remediation activities), DOE-OCRWM formed the TEC/WG for stakeholder engagement on transportation issues. For purposes of this report, TEC/WG activities can be split into two separate phases (1993–1998 and 2003–2008). The gap from 1999 – 2002 was due to a decrease in Congressional appropriations for DOE-OCRWM during that time. The TEC/WG provided an opportunity to communicate with stakeholders interested in DOE’s transportation of radioactive materials including DOE-supported working group members (such as SRGs and NCAI). During the first phase of TEC/WG, DOE-OCRWM moved away from the approach described in the 1992 *Strategy for OCRWM to Provide Training Assistance to State, Tribal, and Local Governments* (Helvey 2011), and engagement became more limited, with the focus moving to DOE’s efforts to develop a proposed policy for implementing Section 180(c), which resulted in publishing a series of five FRNs that were open to the public for review and comment (Helvey 2011).

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<sup>4</sup> It should be noted that TCG ended partially due to the emergence of TEC/WG, so there was a brief period of overlap (approximately 9 months) when TCG ended and TEC/WG was stood up.

<sup>5</sup> DOE-EM’s mission is to address the nation’s Cold War environmental legacy resulting from decades of nuclear weapons production and government-sponsored nuclear energy research.

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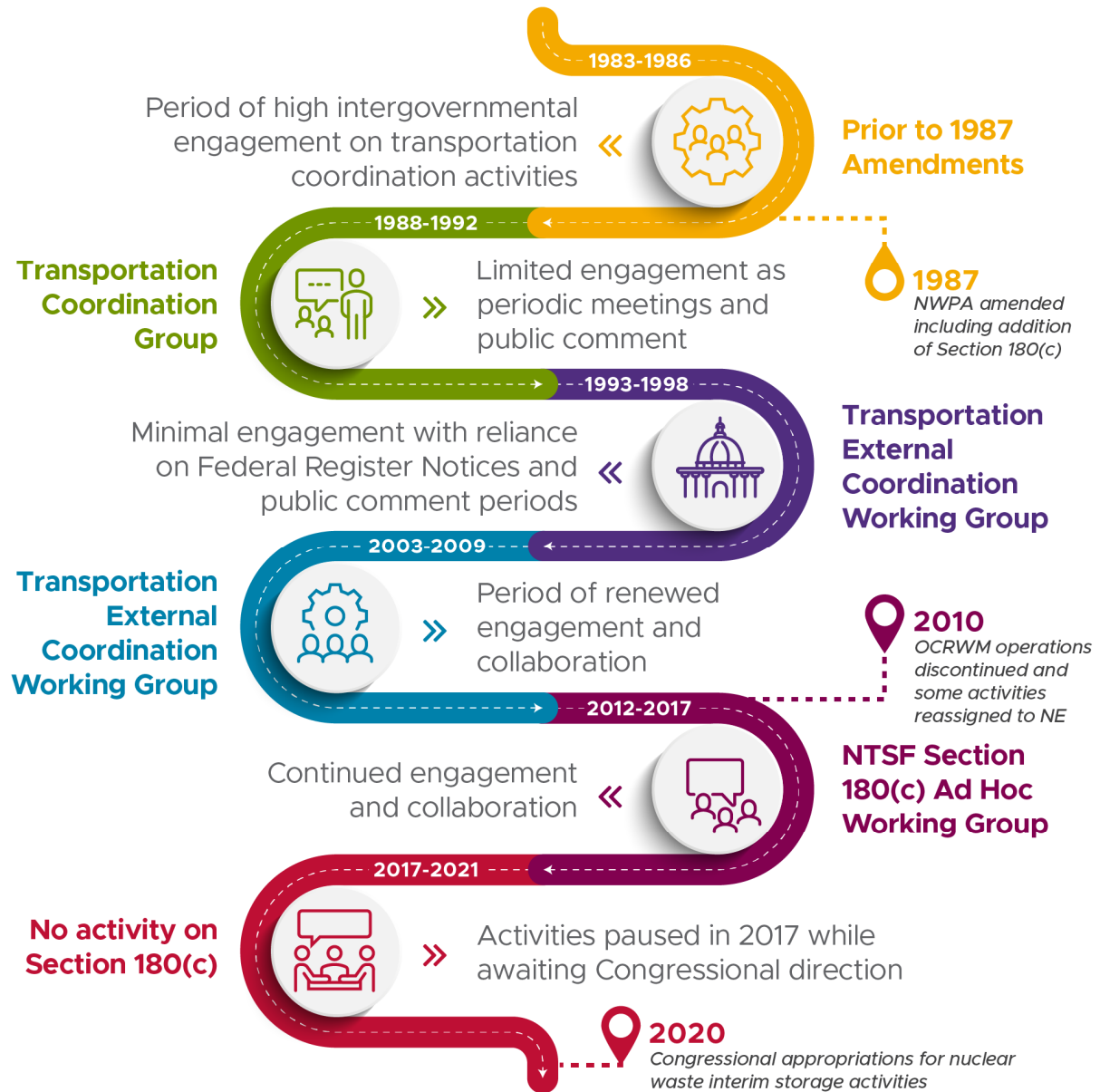


Figure 1. Phases of DOE Engagement with Tribes and States Related to Transportation Safety Aspects of the NWPA

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From 1995–1998, **DOE-OCRWM published five FRNs** for public comment, each further refining Section 180(c) proposed policy and procedures. Each successive FRN modified the previously published Section 180(c) proposed policy and procedures based on the comments received on earlier drafts.

The Department issued a notice of revised proposed policy and procedures in April 1998 that was the culmination of revisions to the previous four notices of proposed policy and procedures.<sup>6</sup> It outlined key elements that had not been defined in the NWPA but were essential to policy implementation, including:

- **Allowable Activities:** The revised proposed policy described types of activities that would be allowed, noting that the information was “not meant to be a comprehensive list, but merely a guide to the types of activities” that could be eligible for 180(c) funding. It stated “[f]or the most part, it would be the grantee’s decision in consultation with local governments and first responders along the routes to select who gets trained and the organization that administers the training” (DOE 1998).
- **Proposed Definitions of Key Terms:**
  - **Safe Routine Transportation:** This term was proposed to be defined, in part, as “the shipment of spent nuclear fuel and high-level radioactive waste to a repository or a Monitored Retrievable Storage facility pursuant to the NWPA through [S]tate, [T]ribal, and local jurisdictions in a manner compliant with applicable Federal, [S]tate, [T]ribal, and local laws and regulations” (DOE 1998).
  - **Technical Assistance:** This term was proposed to be defined, in part, as “assistance, other than financial assistance, that the Secretary of Energy can provide that is unique to the Department to aid training that will cover procedures for the safe routine transportation and emergency response situations during the transport of spent nuclear fuel and high-level radioactive waste to a repository or Monitored Retrievable Storage facility pursuant to the NWPA, including, but not limited to, the provision of training materials, the provision of

### Federal Register Notices on Section 180(c) Proposed Policy and Procedures: 1995–1998

Notice of Inquiry: Safe Transportation and Emergency Response Training; Technical Assistance and Funding (Vol. 60, No. 1, 99–100, January 3, 1995) (DOE 1995a)

Notice of Inquiry; supplemental information: Safe Transportation and Emergency Response Training; Technical Assistance and Funding (Vol. 60, No. 137, 36793–36804, July 18, 1995) (DOE 1995b)

Notice of Proposed Policy and Procedures: Safe Transportation and Emergency Response Training; Technical Assistance and Funding (Vol. 61, No. 96, 24771–24783, May 16, 1996) (DOE 1996)

Notice of Revised Proposed Policy and Procedures: Safe Transportation and Emergency Response Training; Technical Assistance and Funding (Vol. 62, No. 137, 38272–38285, July 17, 1997) (DOE 1997)

Notice of Revised Proposed Policy and Procedures: Safe Routine Transportation and Emergency Response Training; Technical Assistance and Funding (Vol. 63, No. 83, 23753–23766, April 30, 1998) (DOE 1998)

<sup>6</sup> The Department issued another FRN in May 1998 providing a small number of editorial corrections to the April 1998 notice (63 FR 25025, May 6, 1998).

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public information materials, and access to individuals involved in the shipments” (DOE 1998).<sup>7</sup>

- **Equipment Purchases:** Under the revised proposed policy, funds could be used for training-related equipment and supplies. Such equipment could also be used for inspections and for responding to emergencies.
- **Timing:** The revised proposed policy stated that funding would be provided every year (subject to Congressional appropriations) beginning approximately four years prior to the first shipment through a State’s or Tribe’s jurisdiction. The revised proposed policy contemplated that the application process for grants would begin approximately four years prior to shipments (one year for the application process and three years to implement the program).
- **Funding for Eligible States and Tribes:** The Department proposed that eligible States and Tribes would receive a one-time planning grant of \$150,000 to cover costs associated with conducting a determination of incremental needs for safe routine transportation and emergency preparedness. Eligible States and Tribes also were proposed to receive an annual base training grant for every year of eligibility and would receive a variable grant amount, the first part of which would fund training for inspectors and for emergency responders to receive awareness level training.<sup>8</sup> If funding remained, the second part of the variable funding was proposed to support an enhanced level of training which could include operations and/or technician level training and refresher training. The variable amount of the training grant would be determined through a combination of the needs assessment prepared with the planning grant and DOE’s funding from Congress (DOE, 1998; Helvey 2011).

Interactions between DOE and States and Tribes were limited during this period due to shifting program priorities in DOE-OCRWM (Janairo et al. 2020). The series of FRNs were not well received by Tribes and States, but inclusion in the April 1998 FRN of a planning grant to conduct a needs assessment was viewed more favorably than earlier notices (Helvey 2011). At the time of the April 1998 FRN, DOE-OCRWM had not yet studied the implications of implementing a needs assessment, nor had it developed a plan for how to approach route identification and notification of Section 180(c) eligibility to States and Tribes four years before shipments through their jurisdictions. These topics, as well as funding and training, would become key future topics to be considered in later Section 180(c) working groups. Shortly after publication of the April 1998 FRN, Section 180(c) planning activities halted because DOE-OCRWM efforts were redirected to completing Yucca Mountain site characterization. DOE-OCRWM involvement with planning for Section 180(c) and engaging with States and Tribes on such issues through TEC/WG did not resume until 2003.

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<sup>7</sup> The April 1998 FRN further elaborates on technical assistance, noting, “technical assistance, as defined, will include access to the Department’s regional and headquarters representatives involved in the planning and operation of NWPAs transportation or emergency preparedness, provision of information packets that include material about the OCRWM program and shipments, and provision of information to insert into curricula. Recognizing the Federal Government’s government-to-government relationship with and Trust responsibility toward [T]ribal nations, and in response to comments about the lack of hazardous materials response capability on some [T]ribal lands, the Department will consider making additional technical assistance available to [T]ribes upon request.”

<sup>8</sup> U.S. Department of Labor, Occupational Safety and Health Administration. Title 29 Code of Federal Regulations 1910.120, Hazardous Waste Operations and Emergency Response (29 CFR 1910.120).



## 2003–2008: Transportation External Coordination Working Group – Section 180(c) Topic Group

After Congressional approval in 2002 of the site recommendation to pursue licensing of Yucca Mountain, Nevada, for the development of a repository for SNF and HLW (Public Law 107-200), DOE-OCRWM once again undertook efforts on Section 180(c) activities through TEC/WG. The second phase of TEC/WG marked a renewed level of engagement and emphasized a collaborative planning process to design a revised proposed policy for implementing Section 180(c), and in 2004, DOE-OCRWM commenced a process to work in conjunction with a newly formed Section 180(c) Topic Group within TEC/WG.<sup>9</sup> The Section 180(c) Topic Group’s purpose was “to identify critical issues related to Section 180(c), discuss options for addressing each issue, and help DOE understand the implications of each option.” While the Section 180(c) Topic Group worked to reach consensus, this was not a requirement. The process of working with the Section 180(c) Topic Group proved highly successful, resulting in a variety of documents produced in collaboration between DOE-OCRWM staff and Tribes and States. These documents—and the collaborative process undertaken by DOE-OCRWM—helped inform DOE in its efforts to develop an updated revised proposed policy for Section 180(c) (Macaluso et al. 2006).

### *TEC/WG Issue Papers*

Over the course of five years (2003–2008), DOE-OCRWM staff and the TEC/WG Section 180(c) Topic Group considered a series of issues, cooperatively authored a series of discussion papers that explained the history of each issue, identified requirements, and discussed and analyzed options. The issue papers identify and analyze potential conflicts and options, record various positions on the issues, serve as a historical record of the discussions, and function as an information resource for DOE (Helvey 2011). Topic group members worked cooperatively to try to reach agreement on these issues. The papers were produced over a 17-month effort and completed in 2005.<sup>10</sup>

After 17 months of discussions covering eleven different issues, State and Tribal topic group members agreed with DOE-OCRWM staff on 8 of the 11 issues, with WIEB withholding support<sup>11</sup> on the proposed method of allocating funding to eligible States, and DOE-OCRWM staff not reaching agreement with topic group members on two other items. By 2005, the topic group and DOE-OCRWM staff had considered and agreed on the following eight issues:

- funding distribution method
- timing and eligibility
- allowable activities and training, including discussion of hospital personnel and equipment
- definitions
- pass-through requirements

<sup>9</sup> The working group included two Tribes, and it was not until 2007 that Tribal involvement increased and occurred through the Tribal Topic Group, which was formed specifically to address Tribal issues specific to Section 180(c) policy. This group focused mainly on allocation of funding for eligible Tribes, as well as issues associated with provisions for technical assistance.

<sup>10</sup> For a further discussion of the Section 180(c) issues considered by the TEC/WG and the process undertaken, see Helvey 2011, Janairo et al. 2020, and Macaluso et al. 2006.

<sup>11</sup> State representatives of the WIEB high-level radioactive waste committee withheld support, and not the members of the WIEB Board.

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- contingency plans
- promulgating rules on 180(c) implementation
- matching funds.

The State and Tribal topic group members and DOE-OCRWM staff also considered but could not agree on the following three issues:

- funding allocation
- State fees
- how to fund operational activities (non-training related).

On the issue of a proposed funding allocation approach, three of the four participating SRGs agreed on a formula for a variable component of the annual training grant that would be based on multiple factors, including route miles, population along route miles, and the number of shipping sites in a jurisdiction (DOE 2007). However, WIEB objected to the formula approach and instead expressed a preference that DOE-OCRWM base the training grants on the States' needs assessments (Janairo et al. 2020). The topic group members were able to agree on a recommendation for State fees and funding of operational activities. They recommended that State fees charged for DOE shipments of SNF and HLW not be automatically deducted from a State's application for Section 180(c) funding and instead be determined on a case-by-case basis. However, DOE-OCRWM could not commit to both pay State fees and provide Section 180(c) funds that may cover the same activities. DOE-OCRWM also could not agree to the topic group's recommendation of funding operational activities (versus training) because Section 180(c) of the NWPAA directs DOE to provide technical and financial assistance for training, to be paid for with funds from the Nuclear Waste Fund, a fund created by the NWPAA. The statutory language in Section 180(c) specifies that "[t]raining shall cover procedures required for safe routine transportation of these materials [i.e., SNF or HLW to a NWPAA-authorized facility], as well as procedures for dealing with emergency response situations." Section 180(c) further specifies that "[t]he [Nuclear] Waste Fund shall be the source of funds for work carried out under this subsection." Thus, as currently written, Section 180(c) only authorizes DOE to expend Nuclear Waste Fund money on assistance to States and Tribes for training on safe routine transportation and emergency response procedures. It does not authorize DOE to expend Nuclear Waste Fund money on operational costs.

While the topic group was working on Section 180(c) issues, the four SRGs involved in the Section 180(c) Topic Group also developed a document entitled "Principles of Agreement Among States on Expectations Regarding Preparations for OCRWM Shipments" (Niles et al. 2005). Although not a working-group-produced document, it expressed a set of agreed-upon principles of the four SRGs regarding assistance to States to prepare for shipments to a NWPAA-authorized facility (Janairo et al. 2020).<sup>12</sup>

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<sup>12</sup> These principles included: the Section 180(c) program objective should be to assist States to develop the capability to help prevent accidents and respond in a timely manner, maximum flexibility, certainty regarding shipping routes/schedules, predictable funding amounts awarded at least three years before commencement of shipments, and funding and assistance should be required not only for training but for operational activities for as long as shipments continued (Janairo et al. 2020).

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*2007 and 2008 Federal Register Notices*

Informed by the consultative process with the Section 180(c) Topic Group, **DOE-OCRWM published two FRNs in 2007 and 2008** (DOE 2007, DOE 2008). The first FRN, published in July 2007, provided DOE's revised proposed policy for Section 180(c) including information on how Section 180(c) grant funding would be allocated to States. While other aspects of the revised proposed policy in the 2007 FRN were applicable to both States and Tribes, DOE noted in the 2007 FRN that it had recently begun meeting with Tribes to discuss funding allocation options for grants to Tribes, and thus, the proposed funding allocation approach described in the 2007 FRN only would apply to States. The second FRN, published in October 2008, updated DOE's revised proposed policy with some minor clarifications to the policy as it would apply to both States and Tribes and, more significantly, by providing information on the funding allocation approach for Section 180(c) grants to federally recognized Tribes.

The 2008 FRN proposed that DOE would send a letter to the Governor or Tribal leader's office notifying them of their State's or Tribe's eligibility to apply for Section 180(c) grants approximately five years before shipments are scheduled through that State's or Tribe's jurisdiction. The FRN also proposed that, subject to the availability of appropriated funds, DOE would begin making assessment and planning grants available to a State or Tribe approximately four years before the first shipment to an NWPA-authorized facility through that State's or Tribe's jurisdiction to support assessing the need for, and planning for, training. The 2008 FRN also proposed that, after completion of these assessments, DOE would issue training grants in each of the subsequent three years before a scheduled shipment through a State's or Tribe's jurisdiction and every year that shipments are scheduled.

The 2008 FRN explained DOE's expectation of making two grants available to eligible Tribes and States: an assessment and planning grant and an annual training grant. The FRN further explained that the assessment and planning grant was not expected to exceed \$200,000, adjusted annually for inflation, for each eligible State and Tribe based on appropriated funds available for that purpose in a particular fiscal year (FY). In addition, the FRN proposed that the annual training grant to each eligible Tribe and State would consist of a base amount not expected to exceed \$100,000, adjusted annually for inflation, as well as a variable amount. As proposed in the FRN, the base amount for each grant would depend on Congressional appropriations. The base amounts were chosen based on experience with similar training programs and discussions with State, Tribal, and emergency response officials about the scope of work likely for each grant. The amount of the annual training grants would be based on the appropriated funds available for that purpose in a particular fiscal year.

It was proposed that available funds would first be used to fund the base portion of the grant, with each eligible State receiving the same base amount as every other eligible State, and each eligible Tribe receiving the same base amount as every other eligible Tribe. Remaining available funds would then be used to fund the variable portion of the grant for each eligible State and each eligible Tribe on the basis

**Federal Register Notices on  
Section 180(c) Revised  
Proposed Policy: 2007–2008**

Notice of Revised Proposed  
Policy and Request for  
Comments: Safe Routine  
Transportation and Emergency  
Response Training; Technical  
Assistance and Funding (Vol.  
72, No. 140, 40139–40145, July  
23, 2007) (DOE 2007)

Notice of Revised Proposed  
Policy and Request for  
Comments: Safe Routine  
Transportation and Emergency  
Response Training; Technical  
Assistance and Funding (Vol.  
73, No. 212, 64933–64939,  
October 31, 2008) (DOE 2008)

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of the allocation methods described in the FRN. As proposed in the FRN, the variable portion of the annual training grant for States would be determined through a risk-based formula using the factors of population along routes, route miles, number of shipments, and shipping sites including commercial nuclear power plants, DOE sites, and any other entity shipping SNF or HLW to a NWPA-authorized facility. The FRN described how the variable portion of the annual training grant for Tribes would be determined on the basis of the results from each Tribe's needs assessment conducted under the assessment and planning grant.

Shortly after publication of the 2008 FRN, Section 180(c) planning work ceased. The TEC/WG was discontinued in 2009, and DOE-OCRWM operations were discontinued in 2010. At the time of the publication of this report, DOE's 2008 revised proposed policy has not been finalized. Prior to issuing any final policy for implementing a Section 180(c) grant program in the future, DOE would need to consider current circumstances and receive additional public input.<sup>13</sup>

### 2012–2017: National Transportation Stakeholders Forum Section 180(c) Ad Hoc Working Group

Section 180(c) planning activities led by DOE officially resumed between 2012 and 2017 following the issuance of the final report from the Blue Ribbon Commission on America's Nuclear Future (BRC) in January 2012. Formed in 2010 by the Secretary of Energy at the request of the President, the BRC was to conduct a comprehensive review of policies for managing the back-end of the nuclear fuel cycle and recommended a new strategy. One of the eight BRC recommendations advised the Federal government to undertake "[p]rompt efforts to prepare for the eventual large-scale transport of spent nuclear fuel and high-level waste to consolidated storage and disposal facilities," including to "finalize procedures and regulations for providing technical assistance and funds for training to local governments and [T]ribes pursuant to Section 180(c) of the NWPA" (BRC 2012). After the BRC issued its recommendations, DOE-NE created a program to lay the groundwork for a future integrated waste management program that included collaborative transportation planning.

Prior to the resumption of Section 180(c) planning activities led by DOE-NE, DOE-EM established DOE's National Transportation Stakeholders Forum (NTSF) in 2009. Since the TEC/WG had ceased operating, NTSF became the mechanism through which the Department communicates at a national level with Tribes and States about its shipments of radioactive waste and materials, and it is still in operation as of the time of publication of this document. Its purpose "is to help ensure transparency, openness, and accountability to DOE's offsite transportation activities and facilitate collaboration between DOE and State and Tribal governments and other Federal agencies" (DOE 2018). The NTSF, chaired by DOE-EM and operated with significant involvement from DOE-NE, provides a key mechanism for DOE to interact with Tribes and States on Section 180(c) planning and other transportation topics. While NTSF was formed in 2009, the first meeting did not occur until 2010. In December 2012 the NTSF Section 180(c) ad hoc working group (AHWG) (referred to as the "Section 180(c) AHWG") was established, with meetings

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<sup>13</sup> In 2008, DOE-OCRWM planned to conduct a pilot program for Section 180(c) funding and technical assistance before finalizing the Section 180(c) policy and procedures. At the time, the option considered was implementing the pilot program, then assessing it and identifying improvements to be incorporated into a final policy within 2–4 years after the shipments were scheduled.



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beginning in 2013.<sup>14</sup> The Section 180(c) AHWG was formed to consider issues related to Section 180(c) implementation, with Section 180(c) AHWG members including DOE staff and State and Tribal government representatives interested in preparing for future shipments of SNF and HLW (Bickford et al. 2017).<sup>15</sup>

Also in 2012, cooperative agreements established by DOE-OCRWM were re-established with the SRGs and Tribes by DOE-NE's Nuclear Fuels Storage and Transportation Planning Project (NFST), which was later reorganized in 2016 into the DOE-NE Office of Integrated Waste Management (IWM).<sup>16, 17</sup>

### *National Transportation Stakeholders Forum Issue Papers & Certain States' Activities*

One of the Section 180(c) AHWG priorities was to revisit the 11 issue papers produced in 2005. Starting in 2012, the Section 180(c) AHWG conducted a series of conference calls, where they addressed 10 of the 11 issue papers (Janairo et al. 2020). Issue papers were retained or updated as follows:

- Retained with no updates: State fees, pass-through of funds, contingency re-routing, matching funds, and funding for operations-related activities
- Revised by Section 180(c) AHWG: timing and eligibility, allowable activities, definitions, and rulemaking
- Revised by DOE staff: funding distribution methods.

Separate from NTSF, an attempt to address the remaining issue of funding allocation was made by a State-led working group—the Interregional Team on Section 180(c) (IRT)—that explored funding allocation considerations for Section 180(c) policy during a period of time when DOE-NE paused its engagement with Tribes and States, including the Section 180(c) AHWG, for about eight months. The IRT was organized by the SRGs to continue work begun by DOE-NE on consideration of Section 180(c) policy issues, with DOE-NE staff's agreement (Janairo et al. 2020). Operating for eleven months from November 2013 to October 2014, the IRT was composed of State representatives. The IRT produced a

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<sup>14</sup> Due to budget limitations and while awaiting evolving programmatic direction in response to the BRC's recommendations, DOE-NE did not attend NTSF until 2013.

<sup>15</sup> See the NTSF Charter at <https://www.ntsfi.info/about> for more information about the operation of NTSF ad hoc working groups.

<sup>16</sup> After DOE-OCRWM operations were discontinued in 2010, DOE-NE's Used Fuel Disposition campaign picked up research and development work related to SNF and HLW disposal. In 2012, following the BRC recommendations, DOE-NE established the Nuclear Fuel Storage and Transportation Planning Project (NFST) to focus on laying the groundwork for a future integrated waste management program. In late 2016, DOE-NE reorganized, with the Used Fuel Disposition campaign becoming the Office of Spent Fuel Waste Science and Technology, and DOE-NE-NFST becoming the IWM.

<sup>17</sup> DOE cooperative agreements to support Tribal engagement have used third-party staff-support entities. From 2012-2021, the National Conference of State Legislatures (NCSL) provided staff support to TMRTC, formerly known as the Tribal Caucus, through cooperative agreements with DOE-NE and DOE-EM. Beginning in 2021, North Wind Site Services transitioned into the staff support role for TMRTC through a cooperative agreement with DOE-NE and with support from DOE-EM. At the time of publication of this report, TMRTC consists of members of 20 Tribes that are near nuclear power plants or DOE facilities and have been or are expected to be impacted by future DOE radioactive materials shipments. See [www.TMRTC.org](http://www.TMRTC.org) for more information.

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series of documents between 2013 and 2014, but it was not an official DOE or NTSF working group.<sup>18, 19</sup> Around the same time the IRT was performing work on Section 180(c) issues, the SRGs released an updated 2014 version of the *Updated Principles of Agreement Among States on Expectations Regarding Preparations for NWPA Shipments* (CSG Midwest 2014).<sup>20,21</sup>

### *Section 180(c) Proposed Policy Implementation Exercise*

The Section 180(c) AHWG's Proposed Policy Implementation Exercise is a major accomplishment of the Section 180(c) AHWG to date. While DOE-NE-NFST had hoped to conduct a Section 180(c) pilot program, as proposed in the 2008 FRN, that would have included funding to States and Tribes for training in anticipation of a real or mock shipment of SNF, there was insufficient funding for this scale of an exercise. Instead, DOE-NE-NFST worked with the Section 180(c) AHWG to design and implement a "paperwork" exercise where several volunteer Tribes and States would complete a mock Section 180(c) grant application, and DOE would review it and provide feedback.

In 2013, staff from DOE-NE-NFST discussed with States and Tribes the possibility of conducting an exercise to evaluate the Section 180(c) revised proposed policy as published in the 2008 FRN and to inform the discussions regarding potential changes to the 2008 revised proposed policy (Helvey 2017). Discussions continued throughout 2014, and the Section 180(c) Proposed Policy Implementation Exercise (the Exercise) formally began in December 2014 with eight State volunteers and one Tribal volunteer to simulate the grant process proposed in the 2008 FRN for training activities and funding along SNF transportation routes.<sup>22</sup> A lessons learned report, *Section 180(c) Proposed Policy Implementation Exercise: Lessons Learned* (Helvey 2017), was issued in 2017 and included input from the participants.

The main goal of the Exercise for DOE was to test the operability of the policy framework described in the 2008 FRN, with additional goals including comparing policy options and implementation procedures and logistics, enhancing DOE staff's and State and Tribal stakeholders' understanding of issues related to future Section 180(c) program implementation, and generating a foundation to inform future DOE policy

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<sup>18</sup> The IRT initially focused on discussing the funding allocation method for Section 180(c) policy. Its activities expanded to review the 10 additional Section 180(c) issue papers that helped to inform the 2008 version of the Section 180(c) revised proposed policy published in the 2008 FRN (Janairo et al. 2020). The participating States' resolution of 10 of these issue papers was summarized in the State Recommendations on Section 180(c) (IRT 2014). The funding formula approach was unresolved among the IRT members. The IRT held four meetings and five conference calls during its existence.

<sup>19</sup> To access documents from the IRT wiki site, contact staff for CSG Midwest's Midwestern Radioactive Materials Transportation Committee.

<sup>20</sup> The updated 2014 version expanded the 2005 version to include scope beyond Section 180(c) policy and outlined a series of nine expectations, including that they expected States' "shipment-related costs" (e.g., for training, inspections, tracking, escorting, and public information activities) to be covered by the Nuclear Waste Fund (CSG Midwest 2014).

<sup>21</sup> Independent of DOE and Section 180(c) AHWG activities, WIEB also produced a series of issue papers starting in 2018. In April 2020, WIEB formally adopted its issue paper, "Funding for State and Local Development and Implementation of a Transportation System," in November 2018, which represented Western States' expectations on costs associated with preparation for and responding to the transportation of commercial SNF and HLW in the United States (WIEB 2020).

<sup>22</sup> The Tribal volunteer was a representative from the Prairie Island Indian Community located adjacent to the Prairie Island Nuclear Generating Plant in Minnesota, while the State volunteers included two States from each SRG region: Oregon, Nebraska, Indiana, Wisconsin, Texas, North Carolina, Pennsylvania, and Connecticut (Bickford et al. 2016). The mock merit review panel included one Tribal and one State official, as well as three Federal officials.

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decisions regarding Section 180(c) (Helvey 2017). Both Tribes and States identified their own goals for participating in the Exercise.

Goals of the Tribal participants were communicated to DOE<sup>23</sup> and are summarized below:

- look at similarities and differences between States and Tribes and among individual Tribes
- explore flexible funding options for Tribes
- gain a better understanding of the needs assessment process
- better understanding training needs and requirements
- determine how or whether DOE will consider its Trust responsibility to Indian Tribes (see text box)
- evaluate the effectiveness of the overall proposed process, including looking at the communications process between DOE and the volunteer States and Tribes
- identify and understand potential jurisdictional issues between the Tribes, States, and Federal government
- ensure that Tribal lessons learned will be incorporated into future DOE 180(c) programs, policy, revisions, and decision-making
- be sure Tribes will receive feedback from DOE on how the 180(c) application and assistance process is working
- determine an approach to encourage Tribes to actively engage in the 180(c) exercise and to act as a catalyst for expanded Tribal involvement in DOE programs

### Federal Trust Responsibility

According to the Bureau of Indian Affairs, “The Federal Indian trust responsibility is a legal obligation under which the United States ‘has charged itself with moral obligations of the highest responsibility and trust’ toward Indian [T]ribes (Seminole Nation v. United States, 1942). This obligation was first discussed by Chief Justice John Marshall in Cherokee Nation v. Georgia (1831). Over the years, the trust doctrine has been at the center of numerous other Supreme Court cases, thus making it one of the most important principles in Federal Indian law. The Federal Indian trust responsibility is also a legally enforceable fiduciary obligation on the part of the United States to protect [T]ribal treaty rights, lands, assets, and resources, as well as a duty to carry out the mandates of Federal law with respect to American Indian and Alaska Native [T]ribes and villages. In several cases discussing the trust responsibility, the Supreme Court has used language suggesting that it entails legal duties, moral obligations, and the fulfillment of understandings and expectations that have arisen over the entire course of the relationship between the United States and the Federally recognized [T]ribes” (BIA 2021).

<sup>23</sup> Helvey E. 2017. *Section 180(c) Proposed Policy Implementation Exercise: Lessons Learned*. U.S. Department of Energy. Report No. ORNL/SR-2016/380/R2. March. The list of goals provided here has been summarized for brevity.

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- identify information gaps in the Stakeholder Tool for Assessing Radioactive Transportation<sup>24</sup> and determine whether there is sufficient information for routing decisions
- determine how best to fill information gaps
- understand Tribes' ability and authority to influence routing decisions
- have DOE formally request participation of Tribes in the 180(c) exercise and to solicit information to be included in the Stakeholder Tool for Assessing Radioactive Transportation.

Goals of the State participants developed from *State Recommendations on Section 180(c)* (IRT 2014) were to:

- better understand how the recommendations of the 180(c) IRT will apply to the grant program
- gain experience and obtain feedback from the Mock Merit Review Panel on the budget justification process (e.g., the level of detail required in application justifications)
- evaluate the efficiency and effectiveness of the communication process between DOE and the applicants and to provide feedback to DOE
- evaluate the proposed funding allocation method put forward by the IRT.<sup>25</sup>

The scope of the Exercise evolved significantly from its original inception, but State and Tribal volunteers were collaboratively involved in the design and implementation of the Exercise from initial planning conversations to subsequent lessons learned. As noted in the *Section 180(c) Proposed Policy Implementation Exercise: Lessons Learned*: “The Exercise was originally planned as a six-month paperwork exercise designed to walk the participants through the steps of completing a mock needs assessment and writing a mock grant application for training grant. But it grew into an 18-month effort with a more in-depth mock needs assessment and multiple mock grant applications – one Assessment and Planning grant and up to four Training grant applications” (Helvey 2017). The original design, which planned for State and Tribal volunteers to complete paperwork for a mock needs assessment and training grant application based on the findings of the needs assessment, evolved when numerous volunteers concluded that it would be more valuable to conduct a complete needs assessment involving members of the applicable State, Tribal, or local agencies. This expanded scope, revised in collaboration with State and Tribal volunteers based on their goals, increased the effort by an additional year (Helvey 2017). It was also found that the original estimated level of staff effort for State and Tribal volunteers (40 to 60 hours), while accurate for some experienced volunteers, was inaccurate for jurisdictions that had not recently experienced DOE radioactive materials shipping campaigns (and therefore required a higher level of effort to obtain the necessary information). Additionally, the Tribal volunteer also cautioned that Tribes often face extremely limited resources and time and that participating in voluntary projects is difficult without compensation.

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<sup>24</sup> This is a web-based geographic information system tool that enables users to visualize more than 50 data layers relevant to radioactive materials transportation planning including modal options, transportation infrastructure conditions, and emergency response assets. The tool also allows evaluation of possible transportation routes by highway, rail, waterway, or multiple modes, and incorporation of geo-tagged imagery from facility site visits (for additional information, see <https://www.energy.gov/ne/spent-fuel-and-waste-disposition>).

<sup>25</sup> The IRT was in operation when the Section 180(c) Proposed Policy Implementation Exercise was conceived of in fall 2014 but had concluded by the time the Exercise began in January 2015. The State recommendations were compiled into the listed goals.



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The Exercise provided DOE program staff, Tribes, and States with a step-by-step mock walk-through of the funding opportunity announcement, a notice of eligibility, development of a grant application and budget justification, and a merit review and negotiations process (Helvey 2017). However, neither the DOE staff leading the Exercise nor the volunteers were experts in grant procurement or grant writing, and it was determined that further discussions of Exercise assumptions would have been helpful prior to commencing the Exercise (Helvey 2017). Furthermore, the knowledge gap between States and Tribes that had experience with recent WIPP or DOE highway route-controlled quantity shipments caused varying levels of efforts to be expended by State or Tribal volunteers. States or Tribes without recent shipments took longer to complete the mock grant applications because they “had to start from scratch to identify the appropriate state agencies and personnel involved, determine which regulatory authorities in their state apply to these shipments, identify what level of training was appropriate to carry out those authorities, identify the gap between the training needed for SNF shipments and the current training levels, identify what training was available, and then analyze the cost and schedule of delivering the training to write their grant proposal” (Helvey 2017). See Helvey (2017) for further discussion of the evolution of the Exercise design.

The Exercise provided highly valuable information, both for DOE and for State and Tribal participants (Helvey 2017). Key lessons learned include:

- When joint efforts are undertaken with DOE, States, and Tribes, significant up-front effort is required to clearly define the steps required in the training and planning effort and to better understand expectations and outcomes from all stakeholders’ perspectives.
- Detailed descriptions of the steps and tasks required to complete joint efforts would likely result in more accurate time estimates by staff.
- Tribes often face limited resources, so participation in voluntary efforts without compensation is difficult.

The Exercise revealed a number of issues that would benefit from further discussion (Helvey 2017), as well as a few findings, including:

- Funding Allocation: The funding allocation approach described in the 2008 FRN still needs to be further evaluated. An example of one of the issues for further consideration will be balancing the needs and risks of applicants from rural and urban settings who may have differing priorities and needs.
- Training Needs: More discussion is needed between DOE and States and Tribes to identify the required training levels for various types of public safety officials. For example, DOT’s Emergency Response Guidebook instructs emergency responders responding to radiological accidents to conduct life-saving duties first, manage traffic and crowd control, and report the incident to appropriate officials within their jurisdiction (DOT 2020). This is based on the robustness of the SNF and HLW transportation casks and the safety protocols required. However, not all first responders are aware of this instruction.
- Grant Guidance Document: Development of a standardized grant guidance document by DOE for implementation of Section 180(c) funding would be useful to assist Tribes and States unfamiliar with Section 180(c) policy and to explain the grant application process.
- One vs. Two Grant Applications: One grant application enacted in two phases could be sufficient, rather than two separate grants as described in the 2008 FRN (assessment and planning vs.

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training grants). Exercise participants requested one grant rather than two and noted that this would reduce the administrative burden for both DOE and applicants.

- **Grant Eligibility and Type:** DOE Idaho Operations Office procurement staff (the staff who facilitate most DOE-NE procurements) indicated that grants would be noncompetitive, and eligibility would be assured if DOE NWPAs shipments crossed State or Tribal jurisdictions. Furthermore, in terms of the mechanism for providing financial assistance to States and Tribes, it was found that while differences between cooperative agreements and grants may not be significant for DOE, this may not be the case for State or Tribal applicants. State volunteers expressed their preference for grants because some States require additional legislative approval before a State agency can receive cooperative agreement funds.
- **Merit Review Panels:** DOE procurement procedures require that merit review panels be composed only of Federal employees (the Exercise included Federal, State, and Tribal officials). However, non-Federal employee subject matter experts may review applications and provide feedback to the merit review panel.
- **Travel/Budget Limitations and Technical Assistance:** DOE should clearly explain its travel and budget limitations, as well as the type of technical assistance that it can offer, during the financial award process. Doing so will support DOE and applicants in better-coordinated requests for DOE staff to provide technical assistance.
- **Allowable Activities:** The Exercise helped clarify what could be considered allowable activities for Section 180(c) implementation.<sup>26</sup> Future discussions of allowable activities will need to consider Federal requirements and guidance from the Office of Management and Budget Circular A-87, *Cost Principles for State, Local, and Indian Tribal Governments* (OMB 2004), DOE procurement rules and grant guidance, and DOE precedent from similar training programs for radioactive materials shipments.
- **Training Modules:** There is a need to develop training modules specific to a SNF and HLW rail shipping program, which would result in a clearer understanding of training needs and of who should be trained and to what level. As discussed earlier in this report, DOE's TEPP program provides training in hazardous materials for public safety officials, including through Modular Emergency Response Radiological Transportation Training; a training module specific to SNF and HLW shipping by rail could be developed and incorporated into that training program. [Note: TEPP completed development of training modules for rail-based transport of radioactive materials, intended to address gaps for expected SNF and HLW shipments by rail, in May 2020].
- **Operational Costs:** Volunteer States and Tribes requested that expected operational costs associated with shipments be included as allowable activities in DOE's Section 180(c) policy and in the Exercise. DOE staff explained that the statutory language of Section 180(c) limits DOE to

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<sup>26</sup> Allowable activities are set forth in Office of Management and Budget (OMB) Circular A-87 (OMB 2004). Additionally, DOE developed a list of Section 180(c) allowable activities in collaboration with DOE-supported working groups, which was included in the revised proposed policy published in the 2008 FRN. The NTSF Section 180(c) AHWG developed a draft updated list between 2012 and 2013, which updated a 2005 issue paper on allowable activities produced by another working group. The IRT also developed an updated list between 2013 and 2014, found in their *State Recommendations on Section 180(c)* (IRT 2014), as well as a comparison table of allowable activities. Currently, the 2008 FRN is the official proposed list of allowable activities to the degree they are also consistent with OMB Circular A-87 (OMB 2004).

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providing funds to States and Tribes for training purposes under a Section 180(c) grant program.<sup>27</sup> However, for the purposes of the Exercise, DOE agreed to allow volunteers to include operations costs in their grant applications to provide data for informational purposes.

- The Exercise provided valuable information regarding the Section 180(c) policy framework described in the 2008 FRN, information that can be used to support further discussions of Section 180(c) policy. As noted in the *Section 180(c) Proposed Policy Implementation Exercise: Lessons Learned* report, an “outcome of this Exercise is that DOE, [S]tates, and Tribes have a better understanding of what the scope of a future Section 180(c) program could involve as well as application and program logistics and timing.” The report also highlighted areas that may need additional examination in the future.<sup>28</sup> Although the Exercise and its scope evolved significantly from the original design, most participants noted that the Exercise was useful. Positive outcomes from the Exercise included improving communication among DOE, States, and Tribes and DOE staff developing a better understanding of the variety of State and Tribal public safety organizations and roles. DOE staff also gained a better understanding of specific Tribal concerns. Volunteers also identified avenues to better coordinate within their respective State or Tribal governments (Helvey 2017).

After the Exercise, the Section 180(c) AHWG began developing a draft grant guidance document and Section 180(c) fact sheet. At a March 2016 meeting of the Exercise volunteers, it was decided that DOE’s Oak Ridge National Laboratory would analyze the proposed Section 180(c) funding allocation formula, developing and modeling potential shipping and schedule scenarios using the funding allocation formula in the 2008 FRN. This would help inform future discussions of the NTSF Section 180(c) AHWG (Connolly et al. 2017 and Helvey 2017). The funding allocation formula analysis is discussed in a [section below](#). The Section 180(c) AHWG completed review of the funding allocation formula analysis, opting not to recommend changes to the formula, with the option to revisit the analysis in the future (potentially when conducting a Section 180(c) pilot program). Development of a draft grant guidance document and fact sheet was not completed before the Section 180(c) AHWG was paused again in late 2017.

There were also discussions during and following the Exercise about a possible Section 180(c) pilot program as a useful next step to help prepare for shipments. The concept was first identified by DOE and TEC/WG in their 2003–2008 activities to test and evaluate implementation of Section 180(c) proposed policy. A pilot program would allow DOE, States, Tribes, and local jurisdictions to gain additional information for smooth implementation of Section 180(c) policy along potential routes and could serve as an effective public communications tool. As DOE planning for SNF shipments builds toward an operational transport system, a pilot program could address the goals, scope, funding, timing, training and other questions about such an effort. During 2017, as a follow-up to the Exercise, the Section 180(c) AHWG discussed the possibility of a pilot program to further evaluate the funding allocation formula (see [section below](#), *Funding Allocation Formula Analysis*).

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<sup>27</sup> As explained earlier in this report, Section 180(c) of the NWPA directs DOE to provide technical and financial assistance for training, to be paid for with funds from the Nuclear Waste Fund, a fund created by the NWPA. The statutory language in Section 180(c) specifies that “[t]raining shall cover procedures required for safe routine transportation of these materials [i.e., SNF or HLW to a NWPA-authorized facility], as well as procedures for dealing with emergency response situations.” Section 180(c) further specifies that “[t]he [Nuclear] Waste Fund shall be the source of funds for work carried out under this subsection.” Thus, as currently written, Section 180(c) does not authorize DOE to expend Nuclear Waste Fund money on assistance to States and Tribes other than for training on safe routine transportation and emergency response procedures.

<sup>28</sup> For additional discussion of lessons learned, see Helvey 2017, Bickford et al. 2016, and Bickford et al. 2017.

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*National Transportation Stakeholders Forum Annual Meeting Panel Session, “What to Expect When You’re Expecting a SNF Shipment”*

One of the key lessons learned from the Exercise was that State and Tribal jurisdictions that had not recently experienced DOE radioactive materials shipping campaigns required a higher level of effort to obtain the necessary information for their mock needs assessments and mock grant proposals as compared to jurisdictions currently or recently experiencing DOE radioactive materials shipping campaigns. An opportunity was identified, as a follow-on to the Exercise, to recognize the valuable resource that States and Tribes with mature radioactive materials transport readiness programs could be to States and Tribes which may be less familiar with radioactive material shipments and training programs. As a means of facilitating this sort of information sharing, a panel session was planned for the NTSF Annual Meeting, entitled “What to Expect When You’re Expecting a SNF Shipment.” The goal of the panel session was to provide greater understanding of real-world practices into the development of Section 180(c) policy planning and the training needs of public safety officials along routes, and to raise awareness of the informational resource that other States or Tribes could be to jurisdictions which may not have comparable levels of experience with radioactive materials shipping campaigns. This resulted in two facilitated panel sessions being held at the NTSF Annual Meeting, one in 2016 and one in 2017, held to foster the exchange of information and answer questions about what constituted safe and reasonable State and Tribal management of SNF shipments within their respective jurisdictions.

The panel sessions examined the actions a State or Tribe would take from the time they receive the 7-day advance notification<sup>29</sup> of an SNF shipment coming through their jurisdiction until 10 days after a shipment is completed. Key programmatic elements discussed were:

- Receipt and handling of the 7-day advance notification
- Pre-shipment coordination and communication
- Training to support operational activities
- Day of shipment activities and procedures
- Planning for and response to hypothetical events
- Wrap-up and closeout after shipment is complete

After each panel session, a meeting summary was prepared that described the discussion and identified key programmatic elements recommended by each participating State and Tribe. The panel discussions were well attended, with robust discussion between the audience members and the panelists. The summaries produced from the panel sessions are posted publicly on the NTSF Annual Meeting webpages and remain a resource for States and Tribes to refer to in considering how they could conduct training and other preparations for radioactive materials shipments, including future SNF shipments covered by Section 180(c).

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<sup>29</sup> Section 180(b) of the NWPA requires DOE to “abide by regulations of the [NRC] regarding advance notification of State and local governments prior to transportation of spent nuclear fuel or high-level radioactive waste.” See, e.g., 10 CFR 73.37(b)(2), providing NRC’s advance notification requirements for shipments of SNF in excess of 100 grams.



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### *Revised Section 180(c) AHWG Priorities and Tasks*

After the completion of the Section 180(c) Proposed Policy Implementation Exercise, the Section 180(c) AHWG members were asked for feedback on future direction of the group. The group identified five near-term tasks to work on, and several longer-term items (NTSF 2017).<sup>30</sup>

#### Near-Term Tasks:

- Develop a grant application template/guidance document
- Develop a fact sheet about Section 180(c) for State/Tribal government management to communicate purpose and value of State participation in the AHWG
- Further analyze the proposed Section 180(c) grant funding allocation formula
- Develop recommendations for revisions to the Section 180(c) proposed policy
- Develop TEPP training modules for SNF shipments by rail [Note: The TEPP program completed this item in 2020]

#### Longer-Term Tasks:

- Develop a media plan that could be used for SNF shipments
- Develop a timeline of milestones for implementing the SNF transportation system
- Develop a schedule for preparing routes for shipments with training and public outreach
- Provide updates on integrated waste management program progress and current actions
- Conduct a Section 180(c) pilot program (with funding)
- Develop estimated staff time commitment for applying for/overseeing 180(c) grants/activities
- Conduct informational webinars.

From 2016 to 2017 the group began work on the first three tasks. Preliminary discussions were held with DOE Idaho Operations Office procurement staff to understand what type of templates or grant guidance documents could be created to support future Tribal and State Section 180(c) grant applicants. A draft fact sheet was developed to aid Tribal and State Section 180(c) AHWG members in communicating with their management about the work of the Section 180(c) AHWG, and why their continued participation was needed and valuable. The most progress was made on evaluating the funding formula. The next section describes this work in detail.

### *Funding Allocation Formula Analysis*

Following a recommendation that resulted from the Section 180(c) Proposed Policy Implementation Exercise, in 2017 Oak Ridge National Laboratory analyzed the 2008 FRN funding allocation formula (Connolly et al. 2017). The analysis used the funding allocation formula and evaluated eight hypothetical shipping scenarios for removing SNF from 75 commercial nuclear power plant sites and transporting the SNF by rail to two hypothetical destinations. Calculations were made to determine annual route miles traveled, consider the population living along the routes, project the total number of shipments, and identify the number of origin sites for each affected State and Tribal jurisdiction (Connolly et al. 2017). Using the 2008 FRN funding allocation formula, the report assumed hypothetical routes and destinations and included hypothetical funding figures for the first 20 years of shipments. All eight

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<sup>30</sup> Section 180(c) AHWG “Current Priority Issues” from the 2017 AHWG Workplan are summarized here with some additional detail provided for clarity.

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scenarios were included in the report, and four of the scenarios included funding figures for eligible Tribes. For specific analysis, see *Evaluation of 2008 Proposed Section 180(c) Funding Formula Using IWM Modeling Tools* (Connolly et al. 2017).

The funding allocation formula analysis was discussed by the Section 180(c) AHWG during the 2017 NTSF Annual Meeting in Pittsburgh, PA. The Section 180(c) AHWG discussed a range of topics related to the funding formula, including history of the development of the funding allocation formula approach and how population and the number of shipments were calculated in the funding formula. The group also discussed specific issues related to base and annual grants, budgets, and potential funding amounts. Additional discussion occurred during a follow-up web meeting of the Section 180(c) AHWG in August 2017. The Section 180(c) AHWG discussed how including operational costs, although not allowed under Section 180(c), could affect the funding allocation formula. Some members commented that conducting a Section 180(c) pilot program could serve as a better method to further evaluate the funding allocation formula. During this web meeting, the Section 180(c) AHWG considered whether to pause further analysis of the funding allocation formula while awaiting the outcome of potential legislative changes that had been recently introduced in Congress which could have affected Section 180(c). Ultimately the Section 180(c) AHWG agreed not to recommend any changes to the funding allocation formula at that time. Members agreed that a logical next step in evaluating the funding allocation formula would be to conduct a Section 180(c) pilot program. At the time of publication of this report, no further examination of the funding allocation formula has been conducted.

Operation of the NTSF Section 180(c) AHWG was paused in late 2017. The NTSF Section 180(c) AHWG remains the primary mechanism for DOE, State, and Tribal representatives to engage on issues related to Section 180(c). See section below, *Potential Future Section 180(c) Planning Activities for Safe Transportation of SNF and HLW*, for further discussion of possible next steps.

# Potential Future Section 180(c) Planning Activities for Safe Transportation of SNF and HLW

This report was developed as part of a knowledge management effort to document past DOE activities related to SNF and HLW transportation, storage, and disposal, including policy considerations, and to serve as an information resource in the ongoing planning for an integrated waste management program. This section provides information on the status of DOE-NE's SNF and HLW policy and planning at the time of the publication of this report, and options for potential next steps for Section 180(c) planning activities.

In the Consolidated Appropriations Act, 2021 (Public Law 116-260), Congress approved funding for DOE under existing authority [the NWPA] for interim storage activities. With this funding DOE began moving forward to identify a site for one or more Federal interim storage facilities using a consent-based approach (DOE 2021a). DOE's Congressional FY22 Budget Request requested funding for "[c]ontinuing efforts to establish system capabilities and infrastructure needs for large scale transportation" (DOE 2021b). As DOE continues efforts on consent-based siting, transportation of SNF to future Federal interim storage facilities is expected to be a topic of interest.

DOE is considering possible next steps for Section 180(c) planning depending on the availability of resources and consistent with programmatic direction. Those options could include:

- Assemble a team of DOE Federal staff and National Laboratory support staff to lead and manage Section 180(c) related analysis and planning activities for the Department.
- Recruit Tribal and State representatives to join (or rejoin) the NTSF Section 180(c) AHWG and bring those members up to speed on the past work that has been done on Section 180(c) planning, what topics have been previously discussed, and what the outstanding issues were when the Section 180(c) AHWG was put on hiatus. This could also include determining if any issues that were considered in the past should be revisited or whether new issues have been identified.
- Develop communications products and/or fact sheets to outline the value of participating in the Section 180(c) AHWG.
- Consider proposing revisions to the Section 180(c) revised proposed policy that was published in the 2008 FRN and solicit comments on such revisions prior to finalizing a policy.
- Collaborate with the NTSF TEPP AHWG to review the current TEPP emergency responder training modules to consider their applicability to shipments of SNF by rail, road, and waterway.
- Develop and implement a Section 180(c) pilot program to evaluate and assess the effectiveness of the proposed grant application process, the provision of technical assistance, training dissemination, and the grant closeout process. DOE could revisit past planning documents for designing a pilot program.
- Incorporate feedback and lessons learned from a Section 180(c) pilot program, if such a pilot program is conducted, in a revised Section 180(c) policy.

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- Additional topics as identified by the Section 180(c) AHWG.

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