

***Section 180(c) Proposed
Policy Implementation
Exercise: Lessons
Learned***

Fuel Cycle Research & Development

***Prepared for
US Department of Energy
Nuclear Fuels Storage and
Transportation Planning Project***

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REVISION LOG

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1	February 9, 2017	Incorporate GC comments from 2017 WM Paper prior to submission to GC for review and change Document title per DOE request
2	March 21, 2017	Incorporate changes based on DOE-GC review

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EXECUTIVE SUMMARY

Under Section 180(c) of the Nuclear Waste Policy Act of 1982, as amended (NWPA), the U.S. Department of Energy (DOE) is responsible for providing technical assistance and funds for training local public safety officials of states and Tribes through whose jurisdictions the Secretary of Energy plans to transport spent nuclear fuel (SNF) or high-level radioactive waste (HLW) to an NWPA-authorized facility (NWPA shipments). In the 2000s, DOE staff worked closely with state and tribal representatives to develop a proposed policy to implement Section 180(c). This proposed policy was published in a Federal Register Notice in 2008 (2008 FRN) (73 Fed. Reg. 64933, Oct. 31, 2008). In 2014, in response to discussions with interested states and Tribes, DOE decided to proceed with a Section 180(c) Proposed Policy Implementation Exercise (the Exercise) to evaluate components of the proposed policy, and designed the Exercise in coordination with several state and tribal representatives. The Exercise formally began in December 2014.

This paper reviews the Section 180(c) Exercise and captures what the participants learned from the Exercise that began in late 2014. This document is intended to serve as a point of discussion among all the Exercise participants [also referred to as “volunteers” in this document] about their experience with the Exercise, how that experience might shape potential changes to the Section 180(c) policy, and to foster additional discussion about each issue addressed in this paper. Exercise participants included the state and Tribal officials who volunteered to conduct a mock needs assessment and write mock grant applications and the state and federal officials who participated on the Mock Merit Review Panel.

This paper includes input received from:

- The October 20, 2015 letter to DOE from the Section 180(c) Interregional Team (IRT);
- *State Recommendations on Section 180(c)* – rev. October 1, 2014;
- The *180(c) Interregional Team Path Forward Proposal* – November 10, 2014;
- The *Section 180(c) Proposed Policy Implementation Exercise DRAFT Interim Lessons Learned* document delivered to DOE on September 30, 2015;
- State of Oregon staff comments on their experience with the Exercise, September 2015;
- Comments received from volunteers on the *Draft Section 180(c) Exercise Review and Assessment* document, June 2016, and;
- Discussions during webinars, face-to-face meetings, conference calls, and other interactions among the Exercise volunteers and DOE staff.

This report provides information that may serve as a basis for recommendations on future Section 180(c) policy development and program implementation decisions and as the historical record for what occurred during the Exercise. Several key findings discussed in more detail in the document are:

- When DOE and the states and Tribes embark on a joint planning or training effort, significant effort is needed up front to discuss expectations and outcomes and to define more clearly the steps required.
- Explicit direction about the purpose of data, its source, and its limitations reduces confusion.
- The formula funding allocation approach described in the 2008 FRN stills needs to be further evaluated. The challenge will be balancing the needs and risks of applicants from rural to urban settings, who often have differing priorities and needs.

- A detailed description of the steps and tasks that were required to complete the exercise would likely have resulted in a more accurate estimate of the staff time required to participate.
- More discussion is needed between DOE and the state and Tribal volunteers to identify appropriate training levels for the different types of public safety officials who would receive training pursuant to Section 180(c). The Section 180(c) Ad Hoc Working Group^a decided at the 2016 annual National Transportation Stakeholders Forum (NTSF) meeting that the NTSF Training Ad Hoc Working Group would discuss training needs and identify gaps in the courses offered for spent fuel shipments.
- More instruction is needed to explain the grant application process to future state and Tribal applicants.
- The DOE-Idaho Operations Office procurement staff who participated in the Exercise said DOE guidance on grants indicates these will be noncompetitive grants because eligibility is assured if shipments traverse a state or tribal jurisdiction.
- DOE procurement procedures require that merit review panels be composed only of federal employees. State and tribal officials cannot be on the review panel; however, non-federal employee subject matter experts can review the applications and give feedback on the content to the merit review panel members.
- The difference between an application for a cooperative agreement and a grant, from DOE's perspective, is not significant. This may not be true for state and tribal applicants where a cooperative agreement may require additional legislative action to approve it. The states have expressed their preference for grants.
- One grant application, enacted in two phases, is expected to be sufficient rather than the two grants described in the 2008 FRN. The volunteers requested this, and it reduces the administrative burden for both DOE and the applicants.
- DOE will need to clearly express its travel and budget limitations, and the type and amount of technical assistance the agency can offer at the beginning of the financial award process. This will help DOE and the applicants coordinate potentially overlapping requests for DOE staff to provide technical assistance, including attending meetings with public safety officials along routes.

^a The Section 180(c) Ad Hoc Working Group is a sub-group of the National Transportation Stakeholders Forum (NTSF). State and Tribal officials who participate in NTSF may elect to focus on particular transportation issues by joining an ad hoc working group. The Section 180(c) Ad Hoc Working Group was formed in 2012 and provides input to DOE with regard to how Section 180(c) is developed and implemented.

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ACRONYMS

DOE	U.S. Department of Energy
DOE-ID	U.S. Department of Energy-Idaho Operations Office
FOA	Funding Opportunity Announcement
FRN	Federal Register Notice
GIS	Geographic Information System
HLW	High-Level Radioactive Waste
HRCQ	highway route controlled quantity
IRT	Interregional Team
NE	DOE Office of Nuclear Energy
NFST	Nuclear Fuels Storage and Transportation Planning Project
NTSF	National Transportation Stakeholders Forum
NWPA	Nuclear Waste Policy Act
OMB	Office of Management and Budget
PIIC	Prairie Island Indian Community
SNF	Spent Nuclear Fuel
SRG	State Regional Group
START	Stakeholder Tool for Assessing Radioactive Transportation
TEPP	Transportation Emergency Preparedness Program
TRANSCOM	Transportation Tracking and Communication
WIPP	Waste Isolation Pilot Plant

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NUCLEAR FUELS STORAGE AND TRANSPORTATION PLANNING PROJECT SECTION 180(C) EXERCISE FINAL REPORT

1. INTRODUCTION

Under Section 180(c) of the Nuclear Waste Policy Act of 1982, as amended (NWPA), the U.S. Department of Energy (DOE) is responsible for providing technical assistance and funds for training local public safety officials of states and Tribes through whose jurisdictions the Secretary of Energy plans to transport spent nuclear fuel (SNF) or high-level radioactive waste (HLW) to an NWPA-authorized facility (NWPA shipments). In the 2000s, DOE staff worked closely with state and tribal representatives to develop a proposed policy to implement Section 180(c). This proposed policy was published in a Federal Register Notice in 2008 (2008 FRN) (73 Fed. Reg. 64933, Oct. 31, 2008). In 2013, staff from the Department of Energy's (DOE) Office of Nuclear Energy (NE) Nuclear Fuels Storage and Transportation Planning Project (NFST) discussed with interested states and Tribes the possibility of conducting an exercise to evaluate the Section 180(c) Proposed Policy and to inform the discussion regarding possible changes to the proposed policy FRN. After additional discussions in 2014, DOE decided to proceed with an exercise and began to design it in coordination with several state and tribal representatives. The Section 180(c) Policy Implementation Exercise (the Exercise) formally began in December 2014.

The primary goal of the Exercise was to test the operability of the policy framework described in the 2008 FRN. Additional goals of the Exercise included comparing policy options and implementation procedures and logistics, where appropriate; enhancing DOE staff's and state and tribal stakeholders' understanding of issues related to future Section 180(c) implementation; and generating an experiential basis to inform future 180(c) policy decisions. The states and Tribes also had additional goals from the Exercise.

The states' goals were developed by the Interregional Team (IRT), a committee formed in 2013-2014 by four state regional groups that work with DOE to work on Section 180(c) issues. Their goals were:

1. "To better understand how the recommendations of the 180(c) IRT will apply to the Grant Program.
2. To 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).
3. To evaluate the efficiency and effectiveness of the communication process between DOE and the applicants and to provide feedback to DOE.
4. To evaluate the proposed funding allocation method put forward by the IRT."^b

The members of the Tribal Caucus, a committee of the National Transportation Stakeholders Forum (NTSF), also submitted a list of goals^c for the Exercise. In sum, their goals were:

1. To look at similarities and differences between states and Tribes and among individual Tribes.

^b Interregional Team (IRT). 2015. Evaluation of the Section 180(c) Exercise and Lessons Learned to Date, October 20, 2015. Email from CSG-Eastern Regional Conference to Erica Bickford, DOE.

^c Updated 180(c) Tribal Policy Implementation Goals for the Section 180(c) Exercise, Email from Lauren Rodman to Erica Bickford, 10/14/2014.

- a. Tribes are of the opinion that DOE assumes that states and Tribes have equal emergency management capabilities, therefore only that increment of readiness related to shipments of SNF and high-level radioactive waste HLW will be allowed/funded.
- b. The needs assessment will be very important in determining whether the allowable activities are adequate for Tribes.
2. To explore flexible funding options for Tribes:
 - a. The possibility of establishing grantee/sub-grantee relationships with states.
 - b. Identifying whether a needs assessment approach would be better or a formula/set-aside approach would be better.
3. To gain a better understanding of the needs assessment process:
 - a. How will states calculate routing miles on tribal lands in their respective needs assessments?
 - b. How will DOE evaluate needs assessments for Tribes with limited routing miles or in rural areas?
 - c. Will there be assurances that the states will assist Tribes that don't apply for 180(c) funding?
4. To better understand the training needs and requirements.
 - a. This is especially important to Tribes with little or no emergency management capability or personnel. Who will be trained if there are limited or no tribal responders?
5. To determine how or whether the DOE will consider its trust^d responsibility to Indian Tribes.
6. To evaluate the effectiveness of the overall process, including looking at the communications process between DOE and the volunteer states and Tribes.
7. To identify and understand potential jurisdictional issues between Tribes, states and federal governments.
8. To ensure that tribal lessons learned will be incorporated into a future DOE 180(c) programs, including policy revisions and decision-making.
9. To be sure Tribes will receive feedback from DOE on how the 180(c) application and assistance process is working.
10. To determine an approach(s) to encourage Tribes to actively engage in the 180(c) Exercise and to act as a catalyst for expanded tribal involvement in DOE programs.

^d According to the U.S. Bureau of Indian Affairs, “[t]he 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 tribes. (*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 tribal 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 tribes 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 tribes.” <http://www.bia.gov/FAQs>

11. To identify information gaps in Stakeholder Tool for Assessing Radioactive Transportation (START) and determine whether there is sufficient information for routing decisions.
12. To determine how best to fill information gaps.
13. To understand Tribes' ability and authority to influence routing decisions.
14. For DOE to formally request the participation of Tribes in the 180(c) exercise and to solicit information to include in the START tool.

Additional background information on the Exercise can be found in Appendix A.

The Exercise provided DOE program staff, states, and Tribes with a step-by-step mock walk-through of the funding opportunity announcement (FOA), notice of eligibility, development of a grant application and budget justification, and merit review and negotiations process. The outcome of this Exercise is that DOE, states, 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. There is also a better collective understanding of additional activities that should be completed, such as developing training modules, a standardized grant application template, possibly designing a full-scale exercise, and developing a guidance document to assist states and Tribes unfamiliar with Section 180(c). Additionally, states and Tribes gained more knowledge about the type and cost of operational activities associated with NWPA shipments.

Eight states, geographically distributed across the continental U.S., and one Tribal Nation volunteered to participate in the Exercise as mock 180(c) training grant applicants. In addition, one state official, one Tribal official, and three federal officials also participated in the Mock Merit Review Panel that reviewed the grant applications and provided feedback to the state and tribal officials who wrote the grant applications. The participants are collectively referred to as "the volunteers" throughout this document.

This document has five sections. Section 1 is the Introduction. Section 2 focuses on lessons learned from the design of the Exercise. Section 3 addresses policy and implementation-related lessons learned from conducting the Exercise. Section 4 is the Conclusion. Section 5 contains the document's references. The document is intended to serve as a discussion document, both for the state, tribal, and federal government representatives that participated in the Exercise, as well as others interested in building a better understanding of the Section 180(c) Proposed Policy, and how the Exercise experience and results may shape potential future changes to the proposed policy.

2. DESIGN OF THE EXERCISE

2.1 Scope of the Exercise and Time Commitment

What Happened:

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. The original design of the Exercise called for the state and tribal volunteers to complete the paperwork for a mock needs assessment and training grant application(s) based on the findings of the needs assessment. DOE anticipated that the volunteers would use their existing expertise and knowledge to complete the documentation and not need to involve, at least not extensively, officials from other agencies or local governments within their jurisdiction. But once the Exercise was underway, many volunteers concluded that they needed to involve other officials and offices because they did not individually have the depth or range of knowledge necessary to complete the mock needs assessment. They also indicated that they would derive more value from conducting a complete, or nearly complete, needs assessment involving members of applicable state and local agencies who would likely participate

in actual shipment planning. This more in-depth approach to the Exercise required that the timetable be extended by a year and that the components of the application be broken down into smaller pieces. The volunteers requesting this expanded scope wanted to build their knowledge base and leave their state or Tribe with an action plan that could be used to implement a Section 180(c) program in the future.

Even before the adjusted schedule and scope, states and Tribes were unclear about the required time commitment if they chose to participate in the exercise. DOE staff estimated 40 to 60 hours based on the experience described by a state representative who was in the process of preparing for a DOE highway route controlled quantity (HRCQ) shipping campaign through their state. The Exercise volunteer from Oregon stated that for him “the 40-60 hour estimate was fairly accurate.” However, the volunteers whose jurisdictions were not on a DOE Waste Isolation Pilot Plant (WIPP) shipping route, or who did not have recent experience with HRCQ shipments, spent significantly more time on the Exercise, which took time away from already demanding work schedules. The expanded scope of the Exercise also meant more hours than originally estimated and, in some cases, upper-level management within the state was unclear why their staff were supporting a volunteer effort if shipments were not imminent.

The Prairie Island Indian Community (PIIC) volunteer noted that for Tribes, resources are often more limited than for states and the time commitment becomes difficult without compensation. The volunteer recommended that, for the final Section 180(c) policy, DOE fund the time spent writing the initial grant application.

One volunteer noted that most states made assumptions when answering the questions in the model needs assessment that DOE provided as a template for volunteers; a full needs assessment based on actual analysis of state needs would have been a much more significant undertaking, requiring information solicitations from several state/Tribal government agencies and take much longer to complete. In response to being asked whether any states kept track of their hours for the Exercise, one volunteer responded that they spent hundreds of hours on the Exercise. Another volunteer stated that it could take some states two years to conduct the needs assessment once shipments are scheduled to occur.

Two state volunteers had staffing and funding problems, which made their ability to participate more limited than initially expected. In the design phase of the Exercise, alternate volunteers from some regions had been identified to be available to step in if another volunteer was no longer able to participate. However, in practice, problems were not identified until the Exercise was well underway, at which point it might have been difficult for another volunteer to step in and get fully caught up. In another case, a volunteer was promoted and could no longer participate, but another state from the same region replaced the state that had to drop out. Several volunteers asked if funding for staff time was available from the regional and Tribal Caucus cooperative agreements. Funding of staff time would have reduced the financial impact of the exercise on the states and Tribes whose personnel volunteered.

What We Learned:

The 40 to 60 hours estimate was reasonable if the Exercise had remained largely a paperwork exercise relying on existing knowledge of the state and tribal participants, but the estimate was very low when the volunteers decided to complete a more data driven exercise intended to create a template and data for future officials responsible for this work. If the scope of the Exercise as a paperwork exercise had been more fully explained, and had DOE understood the volunteers’ desire for a more in-depth study of their planning and training needs, the design of the Exercise would have been more in line with the actual hours spent completing the exercise. The volunteers recommended that “[t]he actual time required to participate in the 180(c) exercise needs to be considered” when developing a schedule for implementation of Section 180(c) because the original estimate of 40-60 hours was insufficient once the scope and schedule of the Exercise was expanded.

In addition, many state and Tribal officials have multiple demands on their time and often lack the time or the funding to volunteer for an exercise such as this. While DOE did allow for funds from its existing

cooperative agreements with State Regional Groups (SRG) and the National Conference of State Legislatures (supporting Tribal representatives) to be used to support volunteers' staff time for the Exercise, it was not easy to implement. One volunteer did use this option with their SRG. Another considered it, but ultimately determined that the paperwork required was too onerous relative to the level of funds defrayed. Also, because DOE was not able to provide additional funds to support the Exercise, in some cases, cooperative agreement funds were already allocated for other activities.

2.2 Adequacy of Information Provided to Volunteers

What Happened:

The DOE staff provided guidance to the volunteers on conducting their mock needs assessments and training grant activities and how to write their mock grant applications. Some of the information that DOE provided was confusing to the volunteers, and the volunteers had questions that DOE was not able to answer because policy and planning decisions had not yet been made. It took a while for everyone to recognize that the confusion was caused by a difference between what information DOE expected was necessary to complete the applications and what information the volunteers actually needed.

Also, because the group (DOE, states, Tribe) did not sufficiently discuss planning assumptions beforehand, there was confusion about what information was relevant. A few areas where more discussion about planning assumptions would have been useful are:

- What role casks play in shipment safety,
- What role safeguards and security information has in safety,
- What training levels and response capabilities are needed to respond appropriately to an incident or accident involving SNF and HLW, and
- What is the interface (roles and responsibilities, lines of communication) between local responders, state officials, and railroad officials during training and during an accident or incident?

In addition, there was confusion around which state agencies and personnel should participate in the mock needs assessment and what types of questions should be asked. Regarding the training, there was uncertainty about what type of training would be needed for local and other responders, who would conduct the training, and what options would be available for delivery of the training.

Other volunteers had questions regarding the information in the routing tool, Stakeholder Tool of Assessing Radioactive Transportation (START). Volunteers used START to identify mock routes through their jurisdictions for the Exercise. The tool includes a route buffer zone of 800 m (1/2 mile) to capture critical infrastructure, sensitive populations, and environmental resources in proximity to the generated routes. This buffer distance is typical for environmental assessments, and is included in START to potentially support future transportation-related environmental analyses. The volunteers, however, were unsure if their needs assessments were limited to that 800 m buffer distance and DOE was not clear in its communication about that. Similarly, a buffer distance of 2500 m was used to calculate total population for the funding allocation formula described in the 2008 FRN. The buffer distances in START were never intended to limit a state or Tribe's assessment of its emergency response assets or training levels. The state and tribal needs assessments did not need to stay within the 800 or 2500 m buffers, and all volunteers did assess all or most of the potential response capabilities along their selected mock routes.

There was also confusion about how to complete the mock grant application. Most of the volunteers had little or no previous experience writing grant applications and were not sure what information was needed. A state participant on the Mock Merit Review Panel noted the DOE grant applications require significantly more justification for the scope and cost than those of other federal agencies. He speculated

that some states may decide to not apply for Section 180(c) funds given the amount of work required compared to the amount of funding likely available.

What We Learned:

The volunteers' feedback was that the information provided for the Exercise was not fully adequate. They noted that the state and tribal officials, who would be the program managers, would not typically be the grant writers. The program managers would likely be assigned an experienced grant writer and would provide the writer with the technical information needed to write the grant. For the Exercise, it was difficult to write the mock grants because most of the volunteers had never completed a federal grant application before. Several volunteers asked if DOE could develop a grant template for the actual implementation of Section 180(c).

DOE personnel were unclear on the precise information needs of the volunteers. DOE staff shared estimated numbers of shipments, the elements of a likely rail consist for the shipments, and they gave direction on the level and type of detail needed for a DOE grant application. It was clear that the information was not making the process easier for the volunteers. One reason for the confusion was that there were states that were unsure of the planning basis they should use. Some questions posed were "do we plan for a [radioactive] release?", "does the number of shipments make a difference in the level of preparedness?", and "if responders along a route have never seen HRCQ shipments shouldn't they receive hazardous materials training?" The debate on what training should be offered, to whom, and by what means was an ongoing topic for the Exercise participants.

Because the training modules specific to the SNF rail shipping program have not been developed yet, there was confusion about the training that might be offered. The following are key takeaways:

- Instruction will be needed on how to complete the needs assessment and the grant forms.
- Discussion will be needed between the states, Tribes, and DOE regarding the appropriate training levels for the different types of public safety officials. The level of training offered depends on what the responders are expected to do and how their responsibilities differ, if at all, because of the contents of these shipments.
- Explicit direction will be needed about the purpose of provided tools and data, their source, and limitations.

2.3 Mock Merit Review Panel

What Happened:

At the beginning of the Exercise, DOE staff organized a Mock Merit Review Panel to simulate the review process that occurs within DOE when a funding request is received. The volunteers requested that at least one state official and one tribal official participate on the mock panel. The mock merit review panel members were:

- Tim Runyon, former State of Illinois official with the Illinois Emergency Management Agency (Division of Nuclear Safety) and currently public affairs for the DOE Carlsbad Field Office;
- Kevin Leuer, State of Minnesota Homeland Security and Emergency Management Agency;
- Rob Burnside, Confederated Tribes of the Umatilla, Fire Chief;
- Andy Walker, WIPP Transportation Logistics Manager;
- Erica Bickford, DOE NFST; and
- Melissa Bates, team lead for DOE NFST. (Three different individuals held the role of DOE-ID Procurement Specialist during the Exercise).

The Mock Merit Review Panel reviewed the grant applications and gave feedback based on members' own experience and knowledge of the subject using DOE's merit review template. The Mock Merit Review Panel members attended the NTSF 2015 Annual Meeting in Albuquerque and gave feedback directly to the grant applicants on the materials they had submitted at that point. They also attended the NTSF 2016 Annual Meeting and gave additional feedback on the mock training grant applications that had been submitted following the 2015 NTSF meeting. DOE staff created a table summarizing the Mock Merit Review Panel comments on each volunteer's applications, which was shared with each respective volunteer.

There were a few challenges to the work of the Mock Merit Review Panel. First, the members were busy with their regular work duties, and it was difficult to find sufficient time to review the mock grant applications and to discuss them on webinars. Second, Mock Merit Review Panel members were recruited when the Exercise scope was planned as a six month paper exercise, with the expectation of one or two sessions to review and discuss the mock applications. When the scope and timeframe for the Exercise were expanded and broken into smaller pieces delivered on a staggered schedule, it was more difficult to coordinate comprehensive reviews. Third, the individual that DOE intended to provide procurement expertise for the panel changed jobs and was unable to devote much time to the Exercise.

The representative from Oregon wrote, "From Oregon's perspective, the feedback on its mock grant application was neither timely nor sufficiently detailed. Oregon submitted its grant application prior to the initial deadline, believing that it could potentially provide somewhat of a template to other states that were less experienced in dealing with shipments. However, because the review was delayed, other states were unsure as to whether to use Oregon's application as a template, because they were not able to see the review panel's comments in a timely manner."

What We Learned:

The feedback from the volunteers was that the Mock Merit Review Panel needed more diversity. The volunteers asked for more disciplines, such as law enforcement and DOE's Office of Environmental Management, to be represented on the mock panel. Another comment was that the volunteers wanted a one-on-one discussion, or a debriefing call, with the panel in advance of the next exercise meeting to get feedback on their grant applications and to advance the conversation prior to the workshop. (This request was accommodated during the Exercise at a March 2016 meeting in Washington, D.C. and the June 2016 meeting in Orlando, Florida where DOE and members of the Mock Merit Review Panel met individually with the volunteers and gave them feedback on their mock grant applications.)

DOE staff explained that during an actual grant application process, the merit review panel would consist of three to five DOE officials with varying levels of knowledge of the subject matter. Merit review panels may ask subject matter experts for input on the applications, but the subject matter experts do not make decisions on the grant awards.

The time delay from when an application was submitted to when the Mock Merit Review Panel provided feedback was never sufficiently solved because everyone was a volunteer with other, conflicting responsibilities. This was true of the NFST and contractor staff who supported the Exercise as well. The process was more streamlined later in the Exercise because the panel changed from each member providing written feedback on each application, to a phone call or webinar discussion where DOE staff recorded the discussion and feedback for each application.

2.4 Different Levels of State/Tribal Preparedness to Undertake Planning Activities

What Happened:

There was a knowledge gap between states that had experienced recent WIPP or other DOE HRCQ shipping campaigns in their jurisdictions and those that have not experienced DOE shipping campaigns.

States that had recent DOE HRCQ shipments mostly completed the grant applications in line with the original time estimates, while states without recent shipments took significantly longer to complete the mock grant applications. States without routine WIPP or HRCQ shipping routes 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 mock grant proposal. While more experienced states had to complete the same steps, they tended to have that knowledge more readily available. The one tribal volunteer, who also did not have past experience with WIPP or HRCQ shipments, had to spend time to identify current resources and capabilities and regulatory authorities, analyze what level of readiness was appropriate for the Tribe, and then develop the grant application. This was complicated by the fact that the tribal officials who had this information were not paid to participate and had little time available to support a volunteer effort.

What We Learned:

There is a notable learning curve regarding the development of a work plan, conducting a needs assessment, and completing a grant application if an applicant has had no prior or recent experience with HRCQ shipments. The volunteers suggested several remedies that could help other states and Tribes, including developing a template for the grant application, providing a guidance document to explain each step, and providing technical assistance to support the process in conducting a needs assessment.

2.5 DOE's Internal Preparedness to Support a State/Tribal Financial Assistance Program

What Happened:

The DOE-ID office is the office that supports NFST's procurement and financial assistance activities. It is anticipated that the DOE-ID office would administer any Section 180(c) grants or cooperative agreements for NFST, or the applicable future DOE program office. Some DOE-ID staff participated in the Exercise, but like the Mock Merit Review Panel, they had limited time available because of other responsibilities and workload. As a result, feedback to Exercise volunteers was delayed and was not initially as detailed as the volunteers would have liked.

The DOE-ID staff, to provide guidance to the design of the Exercise and evaluate the mock grant applications, needed feedback from NFST program staff about several questions. The NFST program staff also had questions about how the financial award system works at DOE-ID that were answered in the course of the Exercise.

DOE-ID's questions for NFST were:

- Is it a competitive or noncompetitive award?
- Is a grant or cooperative agreement more appropriate?
- How should the list of allowable activities published in the 2008 FRN be handled in the internal review process? This question was prompted because grants usually do not have a separate allowable activities list. The common practice is to follow the Office of Management and Budget (OMB) Circular A-87 (OMB 2004) on allowable costs for federal government grants.

NFST's questions for DOE-ID were:

- Can state and tribal officials be on the official merit review panel?
- What is the time frame for announcing, receiving, reviewing, negotiating, and awarding financial assistance?

- What is the difference between cooperative agreements and grants, from the granting agency's perspective? Is one more work than the other?
- How much detail is required to justify the budget request? What type of information is needed to justify the budget requests?

What We Learned:

- The grants would be noncompetitive. If applicants meet the eligibility requirements (i.e., DOE plans to ship SNF or HLW through their state or tribal jurisdictions to a NWPA-authorized facility and notifies them of their eligibility), they may apply for Section 180(c) financial and technical assistance.
- "Cost Principles for State, Local, and Indian Tribal Governments" are defined in OMB Circular A-87. The allowable activities list published in the 2008 FRN is not required by DOE procurement guidelines. The 2008 list was developed as a guide for applicants when writing their grant applications.
- During the actual procurement process, state and tribal officials cannot be on the merit review panel. Subject matter experts can review the applications and give feedback on the content to the merit review panel members, but they cannot participate in the merit review evaluations.

3. DESIGN OF THE SECTION 180(c) PROPOSED POLICY

3.1 One Phase versus Two Phases of Grants

What Happened:

The proposed Section 180(c) policy in the 2008 FRN states that there will be two grants—one for Assessment and Planning activities and another for Training. As stated in the 2008 FRN: “Subject to the availability of appropriated funds, DOE expects to begin making Assessment and Planning grants available to a State or Tribe approximately four years prior to the first shipment to a NWPA-authorized facility through that State or Tribe’s jurisdiction. DOE intends to issue training grants in each of the three years prior to a scheduled shipment through a State or Tribe’s jurisdiction and every year that shipments are scheduled.” Both the NTSF Section 180(c) Ad Hoc Working Group and the IRT recommended that DOE have one grant. The IRT specifically recommended in the “Path Forward Proposal” that “[e]ach year, the grants would be available for planning, assessment, training, and operations. There would not be separate grants or phases.” For purposes of the Exercise, DOE agreed to design the Exercise for one grant with two phases. The first phase would be the Assessment and Planning and the second phase would be Training. In practice, some volunteers included training in the first phase. Discussions during the Exercise made it clear that the two phases seemed clumsy because each state and Tribe is unique in its level of preparedness, and work plans do not fit neatly into these phases.

For the purposes of the Exercise, the nine volunteers were instructed to assume the first year of funding availability would be used for planning and assessment activities and subsequent years (years two through five for the Exercise) would be for training activities. There were questions from the volunteers about how much detail would be required in training grant applications for years two through five of the first and any subsequent grant applications (funding would continue as long as shipments were traveling through a jurisdiction, not only in the years leading up to the commencement of shipments). They noted it may be difficult to identify some equipment and/or training needs until further into the process.

What We Learned:

Having two grants as in the proposed Section 180(c) policy would result in unnecessary duplication of effort. Both DOE staff participants and the volunteers agree that a single initial grant covering a five-year funding period would be preferable. Awardees could then submit annual or biannual funding requests to DOE under the umbrella of the original five-year grant.

With one grant, awardees could make annual or bi-annual adjustments to their statement of work. The volunteers asked for more guidance on the level of detail required for the statements of work because it can be difficult to know what training and equipment may be needed three or more years in advance.

3.2 Grants versus Cooperative Agreements

What Happened:

For purposes of the Exercise, all volunteers applied for mock grants. The difference between establishing a cooperative agreement and a grant, from DOE’s perspective, is not significant. There is no difference in the application process, and there is no difference in the amount of work required by the granting agency. The difference is the level of interaction that can occur between DOE and a grantee with a cooperative agreement versus a grant. Under a grant, internal DOE guidance restricts these interactions because the guidance requires that there not be “substantial involvement.” If “substantial involvement” is needed, then a cooperative agreement would be the most appropriate funding vehicle. Specifically, with a cooperative agreement, DOE and the awardee may work together on activities and deliverables. This is relevant for two reasons. First, part of Section 180(c) is the offer of technical assistance which, it appears from the mock grant applications, would consist largely of DOE staff sharing subject matter expertise with state, tribal, and local officials. Second, all the parties involved have indicated their preference for DOE to work

cooperatively and consultatively with the state, tribal, and local officials to plan for and carry out these shipments. The input from the DOE-ID procurement staff, at least within the limited experience of the Exercise, indicates this stance may vary by procurement official and the specific circumstances of a funding program. The states have expressed a clear preference for grants. It remains to be determined whether the level of interaction between DOE and an awardee would trigger DOE guidance language on “substantial involvement,” thereby requiring the funding vehicle to be a cooperative agreement.

What We Learned:

DOE has federal regulations and guidance on financial assistance awards that the agency must follow. The responsible procurement official is the person who determines whether a cooperative agreement or grant is the most appropriate funding vehicle given the regulations and guidance. DOE has preliminarily determined that either a grant or a cooperative agreement could be used to provide the Section 180(c) financial assistance. The states have expressed their preference for grants^e and that will be considered in the decision-making.

A state representative expressed concern about cooperative agreements. They said in their states, cooperative agreements require additional legislative approvals before a state agency can receive the funds. The additional approvals delay receipt of the funds and make the planning process more onerous for state officials. All of the volunteers who submitted mock grant applications requested significant DOE engagement in their planning activities. While for DOE there may be little difference between the two types of financial assistance, this may not be true for the state recipients. At the March 2016 in-person meeting of the volunteers, one DOE-ID procurement contracting officer noted that the awards could be grants and still have the level of involvement as described in the mock grant applications. The volunteers requested additional information from DOE about what constitutes “substantial involvement.”

The feedback received from the volunteers was that the exercise increased the states' and Tribe's understanding of their potential needs and 180(c) grant implementation issues. They also recommended that DOE and the states should work together to identify ways to make the grant writing process more efficient and predictable. DOE staff noted they also have a much stronger understanding of the grant process as a result of the Exercise and working with their state, tribal, and federal counterparts responsible for grant applications.

3.3 Covering the Cost of Operational Activities

What Happened:

The participating states and Tribe requested that operational costs associated with these shipments be included as allowable activities/costs in a final Section 180(c) policy and in the Exercise. The state of Oregon stated that “States will have operational costs associated with these shipments and do have a full expectation that those costs somehow will be covered by DOE.”^f

DOE staff explained that, while they understood the importance of this issue for states and Tribes and the practice of WIPP and some foreign research reactor shipping campaigns to cover those costs, the statutory language in the NWPA does not include operational activities and is specific about providing funding for training of public safety officials. For purposes of the Exercise, DOE staff agreed to have the volunteers

^e State Recommendations on Section 180(c), Prepared by the Interregional Team, October 2, 2014, p. 1.

^f Comments provided by the State of Oregon on Section 180(c) Lessons Learned, email sent from Ken Niles to Erica Bickford on September 11, 2015.

include operational costs in their grant applications, to provide data for future DOE policy discussions, but asked that the operational costs be accounted for in a separate budget category in order to clearly identify operational activities and costs. DOE staff also noted that pending Senate legislation at the time (S. 854, introduced in 2015) addressed this issue. DOE procurement officials have said that funds to reimburse operational costs and Section 180(c) funds could flow through the same financial assistance award.

The volunteers' operational cost estimates are useful for DOE to understand the scope and scale of activities that Tribes and states might expect to occur. Examples of operational costs that WIPP or other transportation programs have reimbursed in the past include the staff time and travel expenses associated with state inspection of a shipment and staff costs associated with handling safeguards information. During the Exercise there was some discussion of reimbursing costs associated with responding to an incident with the shipments, but more information is needed.

What We Learned:

Four states included operational activities and associated costs in their mock grant applications: North Carolina, Oregon, Indiana, and Texas. The activities and costs they proposed were mostly related to conducting inspections and monitoring the shipments. Two states included off-setting the salary of the inspector(s). Others asked for reimbursement for the cost of conducting an inspection. The activities and costs they proposed are as follows:

North Carolina:

- Rail Inspector Salary at \$57,195 a year
- Inspections of each shipment for a total of \$3,279 for ten shipments over the course of a year

Oregon:

- Point-of-origin inspections of each shipment costing from \$54 to \$135 per inspection[§]
- Tracking each shipment
- Route assessment for security/safety via unmanned aerial vehicle (under contract) prior to and during each shipment [Note: requires Federal Aviation Administration approval]
- Weather assessment of route prior to and during shipment

Texas:

- Salary of rail inspector + travel = \$226,983 (\$112,367 for FY18 and \$114,616 for FY19)

Indiana:

- Assign three individuals to monitor TRANSCOM (Transportation Tracking and Communication) during each shipment, one each at the Emergency Operations Center, the Radiation Transportation Program, and the Commercial Vehicle Enforcement Division [No cost estimate provided]

3.4 Base Grant Awards

What Happened:

The 2008 Proposed Policy provides for an Assessment and Planning grant of up to \$200,000 per state and Tribe, adjusted annually for inflation, and an annual Training grant with a base amount of up to \$100,000

[§] This estimate was for travel costs only and did not include the salary of the inspector. Oregon personnel assumed the U.S. DOT's Federal Railroad Administration would cover the cost of the salary in keeping with current practice of the State Rail Safety Program.

per state and Tribe, adjusted annually for inflation. Each applicant would have to justify the need for the funds in order to receive the full amount. (The 2008 FRN also describes methods for allocating variable portions of states' and Tribes' annual training grants in addition to the base amounts. See Section 3.4.)

Before the Exercise began, the IRT recommended that, for the purposes of the Exercise, DOE increase the maximum funding levels as follows (IRT 2015): "the states would be eligible for base grants of up to \$250,000 annually, plus a variable grant based on the 2008 FRN formula with the total DOE budget for grant awards to states to be determined by multiplying the number of eligible jurisdictions by \$500,000."

DOE did not accept this recommendation but instead suggested the volunteers apply for the funds in their mock grant applications based on their assessment of the cost of their Assessment and Planning activities and Training activities, not relying on a pre-determined amount.

What We Learned:

The state volunteer Mock Assessment and Planning Grants funding requests differed significantly among the applicants. Table 1 below, Sample Range of Financial Requests, provides an example of the high and low dollar amounts requested compared to the population and route mileage for the requesting jurisdiction. There were many reasons for this range, and more information is available in the specific mock grant applications posted at <http://ntsf.wikidot.com/section180c> (must be a member of the wiki site to access).

Table 1. Sample Range of Financial Request

Assessment and Planning Grants		
Population within 2500 m (either side of route)	Route Mileage	Year 1
3,716,920	599.9	\$120,943.00
1,376,900	434.2	\$331,559.00
987	4.6	\$67,068.00
Training Grants		
Population within 2500 m (either side of route)	Route Mileage	Years 2-5
4,219,830	312.6	Y2: \$122,206 - Y4: \$294,588
3,716,920	599.9	Y2: \$120,943 - Y4: \$490,671
1,936,314	430.2	Y1: \$245,955 - Y3: \$122,320**

**This state combined planning and training activities in year 1. Year 3 included only training activities.

The Training Grant funding requests ranged from \$122,206 to \$478,879 per year. The large difference depended primarily on how much was requested for radiation detection equipment and the inclusion of salaries. There was some correlation between lower funding requests and states that were familiar with HRCQ or WIPP shipments versus those states that were not familiar with WIPP or other HRCQ shipments. Also, states without recent shipping campaigns were more likely to request pay for salaries, which resulted in larger funding requests.

The significant variability in the funding requests stems from different views about how best to conduct the needs assessment, the type of training needed, how they would be delivered, and who needed equipment and what equipment would be appropriate. It is possible that continued discussions about these

items could result in a more streamlined and standardized approach to planning for these shipments. More streamlined and standardized planning could result in more consistent estimates of activities and their costs. In turn, the justification for funding requests may be stronger and easier to replicate as states and Tribes become eligible for Section 180(c) funds. It is also possible, as seen in WIPP shipment planning activities, that funding levels will continue to vary by state – in some cases significantly.

3.5 Variable Award Amounts (Allocation of Funds by Formula)

What Happened:

One of the original goals of the Exercise was to evaluate the proposed formula described in the 2008 FRN for allocating funds to eligible states for the variable portion of the annual training grants. The formula was based on planning assumptions from the mid-2000s, primarily that the Section 180(c) program would be funded at \$10 million^h annually. The Annual Priority Ranking and Annual Capacity Reportⁱ plus the need to prepare primary and alternate routes, meant that many of the routes across the nation would need to be ready in the first three years of the funding program. However, the formula does not account for Tribes; as proposed in the 2008 FRN, the variable portion of the 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. For the purposes of the Exercise, the formula was evaluated by gathering the applicable data inputs to the formula for each jurisdiction (route miles, population within 2500m of the route), and assuming a total funding amount of \$1,153,845.00^j. This amount was calculated based on the \$10 million assumption from the early 2000s for a full-scale program, adjusted for inflation and the number of eligible jurisdictions in the Exercise. The sum of all the base grant amounts^k were deducted from the total \$1,153,845.00 amount, and the formula was applied to the remaining funds. The results of the formula assessments are shown in table 2. The variable funds calculated here were relatively small. There is uncertainty at this stage as to whether the calculated amounts are an accurate reflection of likely variable funding levels during a future SNF shipping campaign, or if the limited scope of the Exercise significantly skewed the results. There is also still significant uncertainty as to what total funding levels might be appropriated by Congress for a future 180(c) program, which adds further difficulty to estimating individual grant award amounts. Regardless, once the volunteers began the Exercise, their questions focused more on how to conduct the needs assessment and how to evaluate training needs within their jurisdictions and less on the funds available. The volunteers and DOE staff decided during the regular check-in discussions to delay assessing the formula further until a later date. It is currently planned to evaluate the formula after the completion of the Exercise and in conjunction with the Section 180(c) Ad Hoc Working Group members.

Table 2. Calculation of Funding Formula

State	Route Miles	Population	# Shipments	# Shipping Sites	Allocation	Funding Amount
OR	430.2	1,936,314	5	1	15%	\$24,554.32
NE	443	1,365,037	5	0	12%	\$18,876.57,

^h The \$10 million cost estimate came from the May 2001 *Analysis of the Total System Life Cycle Cost of the Civilian Radioactive Waste Management Program*, DOE/RW-0533. Since the OCRWM program no longer exists, NFST will eventually evaluate previous data and decisions from OCRWM to see which ones apply to current planning efforts. So far, no work has been done to update the life cycle cost of the current program.

ⁱ U.S. Department of Energy, Office of Civilian Radioactive Waste Management, *Annual Priority Ranking and Annual Capacity Report*, DOE/RW-0567, 2004.

^j This amount was calculated using 8 states and 1 Tribal volunteer.

^k Assumes all mock awardees were awarded the full \$110,000 amount for the base training grant.

WI	315.1	1,856,708	5	2	16%	\$14,821.84
IN	165.8	867,592	5	0	7%	\$29,652.50
TX	599.9	3,716,920	5	0	19%	\$8,679.450
NC	114.2	277,367	5	0	5%	\$25,428.51
PA	312.6	4,219,830	5	1	16%	\$26,051.85
CT*	30.4	14,127	5	1	6%	\$10,221.72
Prairie Island	4.6	978	5	0 ¹	3%	\$5,558.25
<i>Totals</i>					<i>100%</i>	<i>\$163,845.00</i>

*Note: this route was approximated since START 2.0 has an error that won't allow a barge route from the CT Yankee site.

The volunteers were not satisfied with the estimations of the funding formula conducted in the Exercise, and wrote in the lessons learned document transmitted to DOE on October 20, 2015, that "... the 2008 funding formula was not tested; and questions remain on how operational activities will be funded. Testing the proposed funding formula was one of the states' specific goals, largely because the IRT had found it difficult to reach consensus on the approach to funding allocation. Going into the exercise, it was hoped that testing the allocation formula would help the IRT and, ultimately, the SRGs, reach agreement on a single approach to allocating 180(c) funding." The feedback from the volunteers noted, "... it is also clear that some feel definitions and interpretations of funding mechanisms and terms are not universally understood among all participants in the 180(c) exercise." Oregon noted separately that "[t]he exercise provided no clarity on whether the funding formula previously endorsed by three of the regional groups would meet the states' needs. The exercise did provide useful information to DOE to help better understand the level of need that exists to prepare for a large spent nuclear fuel transport campaign."

Several volunteers also commented that the \$10 million annual cost estimate for Section 180(c) likely will not be adequate and they would like a more accurate cost estimate developed. DOE staff clarified that the annual cost will be impacted by how many states and Tribes are eligible each year. DOE staff also noted that Congressional appropriators will ultimately determine the funding available for a future Section 180(c) program.

What We Learned:

The funding allocation approach will need additional analysis. At the March 2016 meeting of the Exercise volunteers, it was recommended that DOE develop and model potential shipping and schedule scenarios using the formula to help inform the discussions of the NTSF Section 180(c) Ad Hoc Working Group. This issue is planned to be studied further during fiscal year 2017.

3.6 Evaluating Incremental Needs in Rural Versus Urban Areas (Appropriate Levels of Training)

What Happened:

¹ While there is no SNF currently stored on the lands of the PIIC, the Prairie Island Nuclear Generating Plant ISFSI is approximately 600 feet from tribal residences.

The volunteers, and the Mock Merit Review Panel, debated the relative training and resource needs of urban versus rural areas. While urban areas may require additional evacuation support if an accident occurs, more rural routes often have less sophisticated resources available with fewer trained personnel, communications equipment, and other resources to respond to an incident. There was no consensus on how to resolve this issue, but the conversation was informative and the data gathered from the mock grant applications gave all involved a better sense of the range of training that could be requested depending on the type of jurisdiction.

A Mock Merit Review Panel member suggested one possible solution could be to train the smaller number of rural responders more intensely. Their increment of need may be great, but there are fewer people to train. In contrast, in a more urban area, the panel member speculated that DOE might offer more classes because there are more responders, but the classes might be more focused on raising awareness levels with less intensive instruction because urban areas are likely to have existing teams with high levels of hazardous materials training.

Another Mock Merit Review Panel member noted there are no instructions for first responders on how to handle a spent nuclear fuel shipment. The Firefighter Handbook provides instruction for hazardous materials responders but not for the first responders who would arrive on scene. The panel member suggested either getting the information added or offering instructions through DOE-provided training.

In addition, some volunteers were uncertain what type and level of training they should be requesting. DOE had not provided this information beforehand based on the understanding that states would decide the level of training appropriate for their jurisdiction.

What We Learned:

The volunteers identified that rural areas face less cumulative risk because fewer people would be living in the vicinity of an incident. However, inhabitants of rural areas are, in most cases, less prepared for an accident or incident involving an SNF shipment because they frequently have less extensive response capabilities and resources. Additional conversation is needed to define the “increment of need” caused by these shipments and how that applies to various training levels.

The U.S. Department of Transportation’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. This is based on the robustness of the casks and the safety protocols required. However, not all first responders are aware of this instruction.

The development of training modules specific to SNF may result in a clearer understanding of who should get trained, to what level, and what the increment of need may entail for a specific jurisdiction.

3.7 Technical Assistance

What Happened:

The requests for technical assistance in the mock grant applications revealed two things: (1) The state and tribal officials were not sure what type of assistance would be available. They had questions about the type of expertise and support they could expect from DOE. (2) Every mock grant application requested that DOE officials participate in planning meetings and other activities in their jurisdiction.

What We Learned:

The volunteers have asked for more specific information about the type of technical assistance that DOE can offer. In addition, DOE and the awardees will have to consult closely over the amount of technical assistance that DOE can offer and will have to discuss efficient methods to provide the assistance. As a practical matter, DOE would struggle to meet all the requests for assistance if shipments began on many routes at once in geographically dispersed areas of the country.

Examples of technical assistance that were requested of DOE:

- Support and participation in exercises,
- Develop training on safeguards procedures,
- Provide an interface between the states and Tribes and DOE, the railroads, the Federal Railroad Administration, and the State Rail Safety Participation Program,
- Participation in state and tribal planning meetings,
- Provision of training materials and the delivery of training classes,
- Assistance developing plans and procedures,
- Access to TRANSCOM,
- Coordination of a cask “road show” to travel along the routes and demonstrate for first responders the robustness of the casks.

3.8 Tribal-Specific Issues

What Happened:

One tribal volunteer representing the PIIC participated in the Exercise. While that Tribe’s experience would not necessarily apply to other Tribes, which may have considerably different circumstances, the participation and experience of PIIC in the Exercise did reinforce some key points about tribal preparedness for shipments of SNF. The PIIC has no fire department and a small police department (12 staff) with limited hazardous materials training. Several of the staff members fill multiple roles in their tribal government. For example, the tribal president at the time of the Exercise is a trained emergency medical technician. Because of this, that tribal president would participate in the planning and training activities both as president and as an emergency responder.

A question arose as to how to compensate for the tribal president’s time and whether an honorarium^m would be allowed under OMB Circular A-87 (OMB 2004) guidelines or by DOE procurement. The DOE-ID procurement staff confirmed that honoraria are allowed as long as they are justified in the grant application.

What We Learned:

The experience of having one Tribe in the Exercise does not inform DOE about the needs or situation of other Tribes. Tribal resources are often stretched thin making it difficult to complete the grant application paperwork and carry out the activities proposed in the grant. To address this, the tribal volunteer suggested that DOE pay for the staff time spent writing grant applications for Section 180(c). In addition, honoraria can be an allowable expense under a Section 180(c) grant if justified in the grant application. Also, Tribes may request funding to address issues unique to their culture such as the protection of sacred sites and the need to hire consultants if there is not sufficient tribal staff to apply for the grant and to conduct the activities.

3.9 Time Allotted for Application Submission and Award

What Happened:

^m The mock grant application gave the following justification: “..... the tribal Council will be actively engaged in spent nuclear fuel transportation planning. Toward that end, a small honorarium (\$250) will be made available for Council members participating in meetings and related activities. This will also facilitate an effective government-to-government relationship with the DOE and assist with community outreach. A total of \$2,000 will be available for honoraria.”

This topic refers to the time allotted to applicants to write, and for DOE to review and award, the mock grants. The experience of the volunteers in the Exercise indicated that the mock grant applications turned out to be more detailed and labor-intensive than expected. The time required to conduct a mock needs assessment and related planning work varied greatly depending on a state's level of experience with HRCQ shipments. One volunteer on the Mock Merit Review Panel said the grants are "administratively burdensome" compared to other federal funding opportunities and that, for the amount of funding being considered, states might decide it is not worth the work required. The volunteer said that other federal agencies offer much more funding and require significantly less justification in the grant application. Several volunteers asked for more guidance on how to complete the grant application. A DOE procurement official suggested developing a template that would assist officials in writing the grant application, essentially making it closer to a "fill-in-the-box" approach.

What We Learned:

It took much longer for volunteers to complete the grant applications than expected, especially if the state or tribal official had little or no experience writing DOE grant applications. The time required could be reduced by having a template for the grant application and a guidance document that accompanied the application.

3.10 Allowable Activities

What Happened:

Activities allowable under a federal grant or cooperative agreement for state and tribal awardees are set forth in OMB Circular A-87 (OMB 2004). In addition to the information in the OMB circular, the DOE staff and state and tribal officials interested in Section 180(c) policy development have developed at least three lists of allowable activities specific to Section 180(c). A list of activities was published in the 2008 FRN. The NTSF Section 180(c) Ad Hoc Working Group created an updated list during the 2012–2013 timeframe. Then the IRT developed a third list in 2013–2014. The state volunteers participating in the Exercise requested that the 2013–2014 list be the one used during the Exercise. DOE staff agreed to use the 2013–2014 list with the provision that the operational activities on the list be grouped separately from the other budget items. Some information about potential operational activities and costs was gathered, but more discussion will be needed on this topic.

What We Learned:

The feedback from the volunteers was that the exercise helped clarify what would be considered allowable activities. The planning, training, and technical assistance activities proposed by the volunteers were mostly as DOE staff expected. In addition, although Section 180(c) of the NWPA applies only to training-related activities, giving volunteers the option to include operational activities for the purposes of the Exercise was instructive and provided some data points on the scale and type of operational activities jurisdictions expect to conduct for these shipments. The list below is derived from multiple mock grant applications and provides a sample of proposed activities:

- Public health and safety
- Sacred sites protection
- Memorandum of Understanding with Red Wing, Minnesota
- Research Public Law 280 for relevance to responding to an emergency with SNF shipments
- Risk assessment to revise the state Emergency Operations Plan
- Hire a consultant because the Tribe is small
- Full-time program coordinator and administrative assistant

- Interstate coordination
- Brief media and local officials
- Intrastate coordination
- Pay salaries for managers, inspectors, support staff, and training staff (from 10 to 100% time)
- Conduct operations for 10 SNF shipments and inspections along the proposed corridor
- Use in-house trainers through the Fire Academy plus TEPP (Transportation Emergency Preparedness Program) trainers plus Oak Ridge Associated Universities staff from Oak Ridge National Laboratory
- Use a drone to survey rail line prior to every shipment
- Training of first responders – police, fire, emergency medical service, hazardous materials team members in advanced radiological response, hospital personnel, public information officers
- Emergency response exercises
- “Road show” of the cask
- Meeting with local emergency management and public safety officials, media and local elected officials
- Radiological-specific training for state Federal Railroad Administration certified rail inspectors
- Coordinate with sites of origin, DOE, the railroads, other states and Tribes
- Finalize protocols including bad weather, shipment tracking procedures and shipment notification procedures
- TRANSCOM training and salary cost of tracking shipments
- Review DOE’s final site-specific transportation plan, site-specific security plan, and communications plans
- Point-of-origin inspections of each shipment
- Weather assessment of route prior to and during shipment

3.11 Merit Review Criteria

What Happened:

The merit review criteria used for the Exercise were the ones published in the 2008 FRN. There was some feedback from the volunteers and the Mock Merit Review Panel that the criteria were long and often repetitive. While several of the volunteers did map their work plans to each of the specific merit review criteria, the Mock Merit Review Panel seldom used it in its review of the applications because the level of detail was not necessary to assess the application. This was true for both the Assessment and Planning phase and the Training phase of the grants.

What We Learned:

The Mock Merit Review Panel believes the merit review criteria can be streamlined and shortened without losing essential information. This will make it easier for the merit review panel as well as for the applicants.

3.12 Use of the Stakeholder Tool for Assessing Radioactive Transportation (START)

What Happened:

The volunteers' feedback was that if the START tool is intended to be useful for assessing needs for training related to emergency response and safe, routine transportation, it needs further development because several states had more accurate information through their state geographic information systems (GIS).

What We Learned:

The START tool may be one source of information for states and Tribes to use, but may not be their only source, especially if they have access to expert GIS staff and software within their own government organizations. DOE will continue to work with states and Tribes as it further develops START to increase its user friendliness and relevance to state and tribal needs.

4. CONCLUSION

While the Exercise faced some challenges, most participants felt the Exercise was useful. It improved communication between the volunteers and DOE staff, as well as communication among states. DOE staff developed a better understanding of the variety of state and tribal public safety organizations and how that impacts preparedness along routes. The Exercise also improved state participants' coordination with other state agencies and helped document what role each state agency may have during actual shipments of spent nuclear fuel. The Exercise also facilitated coordination and learning between the DOE-NFST program and procurement staff at the DOE-ID office. The Exercise also helped further the conversation on specific aspects of the Section 180(c) proposed policy such as the range of allowable activities, and it identified where work still needs to occur, such as in the development of training modules for future SNF shipments. Information learned from the Exercise can be used to inform future planning and decision making regarding a Final Proposed Policy for implementation of Section 180(c).

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Appendix A

BACKGROUND INFORMATION

Under Section 180(c) of the Nuclear Waste Policy Act of 1982 (NWPA), as amended, the Department of Energy (DOE) is responsible for providing technical and financial assistance for training of local public safety officials to States and Tribes through whose jurisdiction the Secretary of Energy plans to transport spent nuclear fuel or high-level radioactive waste to a NWPA-authorized facility (NWPA shipments). In the 2000s, DOE staff worked closely with State and Tribal representatives to develop a proposed policy to implement Section 180(c). As described in the proposed policy, grants would cover assessment and planning activities as well as training for public safety officials to meet the increment of need for NWPA shipments. This proposed policy was published in a Federal Register Notice in 2008 (2008 FRN) (73 Fed. Reg. 64933, Oct. 31, 2008).

As noted in the Administration's *Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste* (DOE 2013), the "Department has established cooperative agreements with state and regional groups and engaged tribal representatives to begin discussions on transportation planning and emergency response training consistent with NWPA Section 180(c)." Since 2012, staff from the DOE Office of Nuclear Energy's Nuclear Fuels Storage and Transportation Planning Project has consulted with representatives from state and tribal governments to receive input on DOE's proposed policy for implementing Section 180(c) of the NWPA. In 2014, DOE, along with state and tribal representatives, agreed to launch a Section 180(c) Proposed Policy Implementation Exercise (the Exercise) to evaluate the efficacy of the proposed policy put forth in the 2008 FRN.

A group of state and tribal volunteers worked closely with DOE to design the Exercise and participate in it. The following interactions have taken place to date:

- October 2014: Kick-off meeting was held in Atlanta, Georgia, to discuss the design of the Exercise. DOE wrote a design of the Exercise based on that discussion and received additional comments on the document from participants.
- December 2014: DOE held a webinar to kick-off the Exercise with a projected end date of May 2015.
- March 2015: Several states asked to extend the deadline for another year and to expand the scope of the Exercise in order to conduct a more in-depth needs assessment for their grant applications.
- May 2015: Before the NTSF meeting convened, most of the participating states and one Tribe had submitted their mock grant applications to conduct an assessment of their planning and training needs prior to shipments through their jurisdictions. At a workshop held in conjunction with the NTSF Annual Meeting, volunteers received feedback from a Mock Merit Review Panel whose members were drawn from DOE and state and tribal governments.
- August 2015: A meeting in Boston, Massachusetts was held to discuss the second phase of the Exercise, which involved writing the mock grant applications for training funds.
- March 2016: A meeting was held in Washington, D.C., to discuss the mock training grant applications and to decide the next steps once the Exercise concludes in the summer of 2016.
- June 2016: A meeting was held in conjunction with the annual NTSF meeting in Orlando, Florida, to discuss this document as a group and give final feedback from the Mock Merit Review Panel to the volunteers.

- Teleconferences and webinars: The group of volunteers and DOE spoke frequently on conference calls and webinars throughout the Exercise.