

**Planning for Future Implementation of Section 180(c)
of the Nuclear Waste Policy Act: DOE's Policy Implementation Exercise -
#16612**

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ABSTRACT

The Department of Energy (DOE) Office of Nuclear Energy, Nuclear Fuels Storage and Transportation Planning Project (NFST) is currently conducting a 2-year Section 180(c) Proposed Policy Implementation Exercise (the Exercise) with eight states and one Native American Tribe. Under Section 180(c) of the Nuclear Waste Policy Act of 1982 (NWPA), as amended, the DOE is responsible for providing technical and financial assistance to states and Tribes through whose jurisdictions the Secretary of Energy plans to transport spent nuclear fuel (SNF) or high-level radioactive waste to a NWPA-authorized facility for training of local public safety officials. In the 2000s, DOE staff worked closely with state and tribal representatives to develop a revised proposed policy to implement Section 180(c), including grants for assessment and planning activities, as well as training for public safety officials. This revised proposed policy was published in a Federal Register Notice in 2008 (2008 FRN) (73 Federal Register 64933, Oct. 31, 2008). The purpose of the current Exercise is to evaluate the efficacy of DOE's 2008 revised proposed policy for implementing Section 180(c), and identify and resolve outstanding issues. This paper describes how the Exercise was collaboratively designed between DOE and state and tribal stakeholders; how it is being conducted; the interim lessons learned from the first year of the Exercise; and how it may inform and improve future consultations between DOE and state, tribal, and local public safety officials.

INTRODUCTION

DOE, along with participating state and tribal representatives, designed the Section 180(c) Exercise to inform updates to DOE's proposed policy to implement the financial and technical assistance program. The Exercise will help DOE and the participants evaluate options for implementing Section 180(c), which should lead to better working relationships among the parties involved and a greater understanding of what is required to prepare for transportation of SNF and high-level radioactive waste along potential routes.

The Section 180(c) assistance program was included in the 1987 amendments to the NWPA and DOE. Section 180(c) of the NWPA, as amended, states:

“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 tribes through whose jurisdiction the Secretary plans to transport spent nuclear fuel or high-level radioactive waste [to a NWPA-authorized facility]. Training shall cover procedures required for safe routine transportation of these materials, as well as procedures for dealing with emergency response situations.”

In the 2000s, DOE staff worked closely with state and tribal representatives to develop a proposed policy to implement Section 180(c), which would include grants for assessment and planning activities, as well as training for public safety officials. This proposed policy was published in a Federal Register Notice^a in 2008 (2008 FRN). The key components of the 2008 FRN included:

- Two grants, an initial Assessment and Planning (A&P) Grant plus an annual Training Grant. The routes and eligible state and tribal entities would be announced five years in advance of the first shipments to an NWPA-authorized facility through their jurisdictions, and A&P Grants would be available four years prior to the first such shipment. Training Grants would be available in each of the three years prior to a scheduled shipment through a state’s or Tribe’s jurisdiction, and every year that shipments are scheduled.
- Base grants up to \$200,000 (to be adjusted annually for inflation, which would be \$220,000 in 2015 dollars), and annual Training Grants consisting of a base amount of up to \$100,000 (to be adjusted annually for inflation, which would be \$110,000 in 2015 dollars).
- A variable amount of funding available for Training Grants allocated among eligible states according to a formula published in the 2008 FRN. The variable amounts for Tribes would be allocated according to their needs assessments.
- A list of activities and costs that would be allowed using Section 180(c) assistance funds.
- A chart showing the merit review criteria used to evaluate the grant applications.

In the Administration’s 2013 *Strategy for the Management and Disposal of Used Nuclear Fuel and High-level Radioactive Waste*^b, the Administration endorsed the key principles that underpin the recommendations of the Blue Ribbon Commission’s (BRC’s) Final Report on America’s Nuclear Future^c. One of the eight BRC recommendations was:

^a 73 Federal Register 64933, Oct. 31, 2008.

^b US Department of Energy, *Strategy for the Management and Disposal of Used Nuclear Fuel and High-level Radioactive Waste*, January 2013. p. 1.

^c Blue Ribbon Commission on America’s Nuclear Future, Report to the Secretary of Energy, January 2012.

“Early preparation for the eventual large-scale transport of spent nuclear fuel and high-level radioactive waste to consolidated storage and disposal facilities ... DOE should (1) finalize procedures and regulations for providing technical assistance and funds for training to local governments and tribes pursuant to Section 180(c) of the NWPA ...”^d

To carry out this recommendation, DOE has engaged with state and tribal representatives in discussions on transportation planning and emergency response training consistent with Section 180(c). As part of this effort, NFAST reformed the Section 180(c) Ad Hoc Working Group (AHWG), which had been active in the 2000s, under the auspices of the DOE National Transportation Stakeholders Forum (NTSF), established in 2010. The Working Group members included DOE staff and state and tribal representatives interested in preparing for future shipments of SNF and high-level radioactive waste.

The suggestion was made at a meeting of the Section 180(c) AHWG, held in conjunction with the 2013 annual meeting of the NTSF, that an exercise could help the AHWG evaluate the proposed policy language in the 2008 FRN. The following year at the 2014 NTSF annual meeting, the Section 180(c) AHWG met again and decided to pursue designing and implementing the Exercise.

DESIGNING THE EXERCISE

DOE designed the scope and schedule for the Exercise in cooperation with the state and tribal participants who expressed an interest in Section 180(c) implementation. The discussions were conducted by email, webinars, and an in-person meeting held in the fall of 2014. The state and tribal participants indicated they believed certain changes to the 2008 FRN were warranted based on their experience with other financial assistance programs. DOE responded that the Exercise was a means to evaluate the efficacy and reasonableness of their recommendations, which would provide DOE data points to evaluate along with potential changes to the Section 180(c) proposed policy. The result was an Exercise designed to evaluate the 2008 FRN with adjustments made to also evaluate recommendations put forth by the state and tribal participants.

To prepare for the 2014 in-person meeting, DOE drafted a “Design of Section 180(c) Proposed Policy Implementation Exercise” document that described each step of the Exercise, the goals of the participants, and the schedule to complete the Exercise. This paper became the focus of the Working Group’s discussions on the Exercise design. When the draft Exercise was proposed to the state and tribal representatives, they had questions about various aspects of the Exercise, such as the time

^d Ibid, p. xiii.

commitment required if they volunteered for the Exercise, what steps were involved, and whether they needed input from other state or tribal agencies.

The result of the in-person meeting was two-fold. First, several decisions were made regarding the scope and schedule of the Exercise; and second, the states and Tribes agreed to discuss their participation at their regular meetings scheduled for the fall and winter of 2014 and 2015 and provide DOE additional input. Based on input from recent training preparation experiences in Pennsylvania, the group understood that a volunteer could expect to commit 40 to 60 hours on the Exercise between the fall 2014 Working Group meeting and the NTSF Annual Meeting in May 2015, which was the planned completion date for the Exercise. DOE staff indicated the Exercise was intended as a mock walk-through of a grant^e application process.

Volunteers would not be expected to complete a full training needs assessment involving other state and local agencies. Instead, DOE would expect volunteers to rely on their knowledge of their state's or Tribe's readiness to estimate how much it would cost to complete a full needs assessment and to estimate training costs.

An abbreviated list of steps for the Exercise is as follows:

1. Volunteers identify mock routes through their jurisdiction using the web-geographical information system (GIS) based Stakeholder Tool for Assessing Radioactive Transportation (START) routing tool that DOE is developing.
2. DOE provides a completed generic mock A&P Grant application to all volunteers. Accompanying the application is an estimate of shipment numbers and an estimate of variable funds available to each jurisdiction according to the 2008 FRN formula.
3. Volunteers use the generic mock A&P Grant application as a reference point to conduct their needs assessment and write their mock Training Grant application. Volunteers should rely on the existing knowledge of the staff person and do not need to conduct an actual needs assessment that involves meetings with other agencies or local public safety officials.
4. Using the results of the needs assessment, volunteers will complete a mock Training Grant application, describing the training and technical assistance they will need each of the 3 years prior to the first shipment.
5. DOE will form a mock merit review panel that will review the Training Grant applications and provide feedback to the volunteers, including making a mock financial award.

^e The word "grant" is used throughout the paper because that is the language used in the 2008 FRN. One of the findings from this Exercise indicates that cooperative agreements may be the more appropriate financial assistance vehicle given the amount of desired interaction that is anticipated between DOE and the states and Tribes along the routes. DOE has made no decisions at this time whether to use grants or cooperative agreements. In practice, there is very little difference between the two award types other than the amount of involvement by DOE in the award recipient's activities.

6. The participants will review the Exercise and develop an after-action report describing what worked and what did not during the Exercise. The report will be used to identify what changes, if any, might be made to the 2008 FRN.

From DOE's perspective, the primary goal of the Exercise is to test the operability of the policy framework described in the 2008 FRN and identify any areas that need further clarification or decision. Additional goals of the Exercise include comparing policy options and implementation logistics, where appropriate; enhancing DOE and stakeholders' understanding of the Section 180(c) program implementation; and generating an experiential basis to inform future 180(c) policy decisions. The Exercise is intended to provide 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, merit review, negotiations, and award process. The anticipated outcome of this Exercise is that DOE and the states and Tribes will have a better understanding of the scope of Section 180(c), as well as the application process, program logistics, and timing, and develop a better understanding of potential training needs and funding levels.

The states and Tribes developed their own goals for the Exercise and submitted those to DOE. The state goals were developed by a committee they formed in 2013-2014 to work on Section 180(c) called the Inter-regional Team (IRT). 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 provide feedback to DOE.
- 4) To evaluate the proposed draft funding allocation method identified by the IRT.

The Tribes also submitted a list of goals that, because of its length, a partial list is provided here:

- 1) The effectiveness of communications between DOE and tribal applicants.
- 2) The jurisdictional issues between states and Tribes that arise around public safety planning.
- 3) The manner in which DOE will address the government-to-government responsibilities and Trust relationship in regard to Section 180(c).

CONDUCTING THE EXERCISE

When the Working Group finalized the design of the Exercise, DOE requested volunteers from the states and Tribes to conduct the Exercise. Eight states (two from each SRG region of the country) and one Tribe stepped forward. The state volunteers included Oregon, Nebraska, Texas, Indiana, Wisconsin, North Carolina, Pennsylvania, and Connecticut. The tribal volunteer is the Prairie Island Indian Community in Minnesota.

Once the Exercise began, adjustments to schedule and scope were almost immediately necessary. Those changes are summarized below by category.

Information Needs: The DOE support staff provided guidance to the volunteers on how to conduct their mock needs assessment and mock training grant activities and how to write their mock grant applications. Much confusion followed the delivery of that information, suggesting a misunderstanding between what information DOE believed would be necessary to complete the applications and the information the volunteers believed they needed. For example, 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 confusion about what type of training would be needed for local responders, who would conduct the training, and what options would be available for delivery of the training.

A specific example where confusion occurred was the 800-meter buffer zone on either side of the route that START uses to evaluate route attributes. Volunteers were unsure whether their mock needs assessments were limited to that distance. The DOE support staff informed the volunteers that the buffers used to report route attributes in the START tool were never intended to limit a state or Tribe's assessment of its emergency response assets or training levels, and the state and tribal needs assessments did not need to stay within the 800 meters.

Scope of the Exercise: To complete the mock Training Grant, some volunteers were asked to complete the mock needs assessment but not in the informal fashion originally planned. Instead, they saw more value in completing, or nearly completing, a needs assessment that involved members of the state and local agencies who would participate if shipments were pending.

This approach was adjusted again once the volunteers began the mock needs assessment. Most decided to complete their own A&P Grant application before tackling the mock Training Grant application and not rely solely on the generic mock A&P Grant application provided by DOE. This made the Exercise align more closely with the steps described in the 2008 FRN. It also extended the schedule for the Exercise.

Schedule: A more in-depth approach to the Exercise required that the timetable be extended by 1 year and that the mock training applications reflect 1 year each of training instead of the 2-year work scope anticipated in the Exercise design. The states requesting this expanded scope began to view the Exercise not just as a paperwork exercise but as an opportunity to build their knowledge base and to leave their state/Tribe with an action plan or template that could be used to implement a Section 180(c) program in the future. The revised schedule means the Exercise will now be complete in June 2016 when the participants hold their final meeting at the annual NTSF meeting.

Time Commitment: The expanded schedule and more in-depth approach to the grant applications meant that the original estimated time commitment of 40 to 60 hours was inadequate. While some volunteers completed the work in the allotted timeframe, most greatly exceeded the 40 to 60 hours. In addition, other staff contributed their time through meetings and the inter-agency coordination needed to complete the mock needs assessment.

Mock Merit Review Panel: The mock merit review panel reviewed the grant applications and wrote feedback based on their own experience and knowledge of the subject using DOE's merit review template. The members of the panel are geographically located across the country and have full-time employment, which has made it difficult for them to devote sufficient time to review and comment on the mock grant applications as a collective panel. As a result, the input to date from the panel has not been as detailed as the volunteers would have liked. Volunteers also said the panel should have more law enforcement members and broader representation from other DOE offices such as the Office of Environmental Management. DOE staff noted that during an actual grant application process, the merit review panel would consist of three to five DOE federal staff with varying knowledge of the subject matter. Merit review panels may ask subject matter experts for input on the applications; however, the subject matter experts do not decide on the grant awards.

Number of Grants: According to the 2008 FRN draft policy, there would be two grants—one for Assessment and Planning and another for Training. The first grant would be for 1 year, and the subsequent training grant would be for 5 years. At the recommendation of the Section 180(c) AHWG, 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 for Training. In practice, some volunteers included training in the first phase. Discussions during the Exercise made it clear that volunteers found that the two phases did not necessarily fit their needs because each state and Tribe is unique in their level of preparedness, and work plans do not fit neatly into these phases.

Grants Versus Cooperative Agreements: According to the 2008 FRN, states and Tribes would receive funding through grants from DOE; thus, for purposes of the Exercise, the volunteers applied for grants. Although discussions have revealed that cooperative agreements might be more appropriate funding mechanisms for the Section 180(c) financial assistance based on the anticipated amount of desired interaction between DOE and the recipients, DOE financial assistance officials explained that there is little difference between a grant and a cooperative agreement with respect to completing the application package. The only difference is that for a cooperative agreement, the applicant must indicate that there will be substantial involvement with DOE staff to carry out the work scope proposed in the grant application. Under a grant, this interaction between DOE and the awardee is not permitted. Every volunteer's application requested technical assistance from DOE.

Operational Expenses: The participating states and Tribe requested that operational costs associated with these shipments be included as allowable activities/costs in the Exercise. Although the statutory language in Section 180(c) of the NWSA states that funds are for *training*, to give DOE a better sense of what operational activities Tribes and states are expected to conduct, DOE staff agreed that for the purposes of the Exercise, volunteers could include operational costs in their grant applications. Examples of operational costs that the Waste Isolation Pilot Plant (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.

Base Grants: The volunteers and DOE decided to use an unconstrained analysis rather than the base grants provided for in the 2008 FRN. The results of this approach are still being evaluated by DOE and the mock merit review panel.

Variable Funds Allocated by Formula: DOE proportionately scaled the total amount of available 180(c) funds based on full waste program estimates from the early 2000s and then applied the formula to the volunteer mock routes. However, the sense of the volunteers was that the scaled application of the formula was not sufficiently representative of full-scale operations to be useful in the Exercise. An assessment of the formula will be necessary and may be completed towards the end of the Exercise or in a separate effort after the Exercise concludes.

Experience/Knowledge Gap: The knowledge/experience gap between states that had recent WIPP or other Highway Route Controlled Quantity (HRCQ) shipments of radioactive material through their jurisdictions and those that were not on routes for those shipments was significant. States that had recent HRCQ shipments completed the grant applications in line with the original time estimates, while states without recent shipments had a significantly larger body of work to complete.

States without routine transuranic waste or HRCQ shipping routes had to start from scratch to identify the appropriate state agencies and personnel involved, determine where regulatory authorities exist in their state, 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 in order to write their mock grant proposal.

Technical Assistance: 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); and (2) every mock grant application requested that DOE officials participate in planning meetings and other activities in their jurisdiction. In fact, at current staffing levels, DOE would struggle to meet all the requests for assistance if shipments began on several routes at once in geographically dispersed areas of the country.

Since the Exercise is on-going, several aspects of the Section 180(c) policy have been only partially evaluated by the Exercise at this stage. As the Exercise proceeds, DOE and the volunteers will continue to document their experience in several areas, including allowable activities, merit review criteria, funding allocation formula, timing of the assistance, and technical assistance.

INTERIM LESSONS LEARNED

The experience of DOE and the volunteers during the Exercise must be documented if the Exercise is to inform future policy decisions. The documentation for the Exercise became even more important once the schedule was extended by a year. To document the experience to date, DOE conducted an interim analysis of how the Exercise has proceeded and what lessons have been gleaned to this point. This analysis reflects initial input from the volunteers based on an in-person meeting held in August 2015 in Boston, Massachusetts. The dialogue with the volunteers will continue and will be incorporated into a final analysis or lessons learned document, produced upon completion of the Exercise in late Fiscal Year 2016.

The information below is a snapshot of the lessons learned as of September 2015. It is arranged by the same categories as the "Conducting the Exercise" section immediately above.

Information Needs:

- Explicit direction about the purpose of data, its source, and its limitations would reduce confusion, given the discussions around the START tool buffer zones along generated routes.

- There is a steeper learning curve for most applicants on the type of information needed to complete a grant than DOE expected. There is also a learning curve on how to write a grant, what forms are needed, and how to complete them unless the staff person already has DOE grant-writing experience.
- While states and Tribes need flexibility to determine the level and type of training offered, more discussion is needed with DOE to identify how proposed training activities for the different types of public safety officials meet the increment of need that commercial spent fuel shipments impose.

Scope of the Exercise:

- To avoid the mission creep that occurred, the scope of the Exercise should have been more tightly defined. This should have included a mock walk through of each step prior to launching the exercise.
- Sufficient time should have been provided early in the planning process to fully design and test the Exercise design.

Schedule/Time Commitment:

- The number of hours a participating state or Tribe needed to allocate for the Exercise could have been more appropriately estimated if the full scope of the Exercise had been known in the beginning. Additional discussion with the volunteers about how to carry out each step of the grant application and needs assessment process would have created a more accurate time estimate.

Number of Grants:

- The two grants are viewed as an unnecessary duplication of effort. A 5-year grant, with two phases that allow for both planning and training activities, would be more efficient.

Grants Versus Cooperative Agreements:

- All the mock applications requested technical assistance from DOE making it likely that cooperative agreements directly between the state or Tribe and DOE may be the appropriate financial assistance vehicle.
- DOE will continue to discuss this with the volunteers and internally with DOE procurement staff.

Operational Costs:

- There are no lessons learned regarding operational costs as of the writing of this paper because only one mock grant application considered the operational costs that would be incurred once shipments commence. There is not yet sufficient input to draw conclusions.

Technical Assistance:

- DOE will need to be specific about the type of technical assistance it can offer to awardees as part of maintaining clear lines of communications and aligning expectations.
- 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. Too many requests for assistance from too many jurisdictions along multiple routes could hamper the success of the overall program.

Mock Merit Review Panel:

- Considering the time constraints of the volunteer panel members, providing them a comparative analysis of the mock applications they were to review should reduce their time commitment and promote their engagement in the review.

CONCLUSION

As the Exercise continues through 2016, DOE and the volunteers have much more to learn. The knowledge gained through this effort will inform future potential changes to the Section 180(c) policy.

The volunteers plan to submit their final mock applications to DOE by spring 2016. DOE staff will work with the mock merit review panel to consolidate comments and provide feedback to the volunteers soon thereafter. The final in-person meeting will be held in June 2016 at the annual NTSF meeting where DOE staff, the volunteers, and the mock merit review panel will review the lessons learned from the Exercise. DOE staff will work with the volunteers over the summer of 2016 to write a final lessons learned document and any resulting recommended changes to Section 180(c) policy language.

When the volunteers and the DOE staff began this Exercise, they had extremely different levels of knowledge about the Section 180(c) process. Many were somewhat new to the work and did not have established professional relationships with each other or long-standing experience with spent fuel shipments. As the Exercise has progressed, the volunteers and DOE staff have developed a deeper understanding of how Section 180(c) assistance can help jurisdictions prepare for shipments and have started to build important professional connections. The growing base of knowledge results in more substantive discussions grounded in the operational realities of these shipments. The interaction, although heated at times, has helped build a stronger working relationship between the volunteers and DOE staff that will provide the foundation for future negotiations and problem-solving.

REFERENCES

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