

Joint Meeting of the Radioactive Materials Transportation Committee and the Transuranic Waste Transportation Working Group

Sheraton Myrtle Beach Convention Center Hotel
Myrtle Beach, South Carolina
December 7-8, 2016

Meeting Summary

The Southern States Energy Board's (SSEB) Joint Meeting of the Radioactive Materials Transportation Committee and the Transuranic Waste Transportation Working Group occurred on December 7-8, 2016. The event was held at the Sheraton Myrtle Beach Convention Center Hotel in Myrtle Beach, South Carolina.

Mr. Christopher Wells, Assistant Director of Nuclear Programs for the Southern States Energy Board, called the meeting to order. He formally welcomed the group and provided logistical and administrative meeting announcements. Following the comments, Mr. Wells turned the meeting over to Mr. Alan Jacobson (Maryland), Chair of the Radioactive Materials Transportation Committee, who issued opening remarks and commenced with the introduction of all meeting participants.

The first speaker of the event was Mr. Nils Breckenridge representing NuScale Power and addressing the topic of small modular reactor (SMR) development. He talked about the origin and development of the company from 2007 until the 2014 cooperative agreement award from the Department of Energy (DOE) to receive up to \$217 million in matching funds over a five-year period. Next, Mr. Breckenridge provided a site layout diagram to illustrate the size of a SMR footprint (34.5 acres) in comparison to a traditional nuclear power plant. He outlined efficiency and safety factors such as a design that allows for higher fuel burnup rates and reducing the amount of waste produced. Additionally, there is no need for electrical supplies or pumps to cool the reactor in case of a Fukushima-like incident because of natural convection and gravity coolant feed. As a result, the emergency planning zone (EPZ) of a SMR only extends out to its site boundary as opposed to the 10 mile EPZ radius of a pressurized water reactor. Mr. Breckenridge discussed their involvement with the Nuclear Regulatory Commission (NRC) licensing process for the SMR, which began with the initial docket in 2009 until the present timeframe with NuScale submitting

the design certification in December 2016. The first deployment of the project is scheduled to take place at DOE's Idaho National Laboratory. In conclusion, Mr. Breckenridge reviewed the overall project timeline, integration of SMRs with other energy sources, financial projections and other elements necessary for success.

Next, Mr. David Pstrak of the Nuclear Regulatory Commission presented to the committee. Mr. Pstrak informed the group he would be providing a brief overview of several ongoing activities at the Commission including reactor decommissioning, Waste Control Specialist (WCS) License Application and the safety of spent fuel transportation. He began by summarizing the three categories of reactor decommissioning: DECON (all materials removed or decontaminated to a completely safe level), SAFSTOR (plant placed in a stable condition and maintained until all materials are removed or decontaminated to a completely safe level) and ENTOMB (plant is encased in a structurally long-lived substance to allow decay until levels permit unrestricted release). Mr. Pstrak informed the audience of the 19 U.S. reactors in the decommissioning phase, 6 are listed as DECON and 13 as SAFSTOR. He also briefly talked about the Managing Aging Processes in Storage Report or MAPS, which resulted from NRC staff's need for expanded guidance regarding the renewal of licenses and certificates of compliance for the storage of spent nuclear fuel. Mr. Pstrak noted the WCS license application was submitted to NRC on April 28, 2016 and subsequent supplemental information was requested and incorporated until mid December 2016. The next steps will involve preparing an environmental impact statement (EIS) and conducting a scoping process. Mr. Pstrak also intimated an additional license application might be forthcoming for submittal from the Holtec International and Eddy-Lea Energy Alliance. Finally, Mr. Pstrak concluded his presentation with a review of the radiation level limits as prescribed by the Code of Federal Regulations for open and closed exclusive use shipments of spent nuclear fuel.

Mike Rutherford, Department of State Health Services WIPP Program Coordinator, gave an overview of the 2016 Texas WIPPTREX. Mr. Rutherford, began with a precursory overview of the Texas exercise timeline covering such areas as the initial phone calls to the host agency, internal planning meetings, meeting with local officials, radiological training along the route, exercise objectives and the tabletop exercise. Next, Mr. Rutherford shifted his focus to the actual exercise that took place in Big Spring, Texas. The scenario involved a WIPP truck, a passenger car and a delivery truck carrying radioactive material. The design was intended to allow first responders to perform scene and injury assessment and to transport a patient to the hospital for decontamination

measures. The exercise duration was approximately four hours, after which the group gathered for a hotwash to discuss corrective actions and solicit general feedback. Mr. Rutherford informed the group a draft after action report would be available on December 21st followed by the final report on January 11th.

Mr. Jason O'Connell with the Teletrix Corporation was next to address the committees. The motto of Teletrix, "prepare through simulation", was the theme of Mr. O'Connell's presentation. He began by talking about the problems or challenges associated with traditional training. He noted only 5% of information delivered in the form of a lecture is retained and how the lack of frequency and qualified instructors are symbolic of a lack of resources. The remedy to the issues, according to Mr. O'Connell, was the advent of frequent hands-on training involving realistic scenarios. He took the remainder of the time to display and demonstrate how their simulated instrumentation can ensure proficiency and preparedness in real life situations. The range of products available for meeting participants to examine included radiation meters, probe paks, alarm dosimeters, gas monitors and a interactive examination technology called VIZRAD.

Mr. Richard Arnold representing both the Pahrump Paiute Tribe of Nevada and the Tribal Caucus talked to the audience regarding tribal perspectives on emergency response and radioactive materials transportation. Mr. Arnold spoke about how it was important to recognize the tribes from their legal status and seek their input regarding policy initiatives. He briefly discussed and applauded the methods employed in Canada to garner indigenous knowledge by soliciting the participation of the Aboriginal people. Furthermore, he stressed that although states and tribes are different there was value to collaborating on transportation issues because of the geographical proximity and shared objective of achieving safe, secure and efficient transport. He agreed to continue working with SSEB and the other regional groups to bridge gaps in order to develop and foster relationships with tribes located in the region.

Darin Steen, Environmental Services Director for the Catawba Indian Nation, delivered additional tribal perspectives. Mr. Steen noted the Catawba Indian Nation was one of six federally recognized tribes in Region 4 of the Environmental Protection Agency. He displayed a map of their land and noted some of the nearby threats such as a hydro dam, nuclear facility and coal ash ponds. Mr. Steen explained how the Environmental Services Division was responsible for developing an emergency preparedness program. Furthermore, he explained how collaboration with the Federal Emergency Management Agency and the South Carolina Emergency Management Division and the South Carolina Department of Health and Environmental Control yielded grants which were

used to purchase equipment, update response plans and gather additional resources. He concluded by giving an overview of an exercise conducted in February 2016 called the "Wizard of Rex". Some of the aspects of the exercise included coordination with external partners, evaluation of handling mass care and identifying strengths and gaps in the emergency operations plan.

The final speaker of the first day of the meeting was Mr. Mike Wangler of the DOE Environmental Management's Office of Packaging and Transportation providing a short briefing about the National Transportation Stakeholders Forum (NTSF). Mr. Wangler explained the origins of the NTSF including the purpose, goals and objectives and functioning of the planning committee in handling the administrative and logistical matters of the annual meeting. He yielded the remainder of his time to Rich Pinney (New Jersey Department of Environmental Protection / Chair of Council of State Governments-Eastern Regional Conference Radioactive Waste Transportation Task Force) who gave the group more specific details regarding the upcoming June 2017 meeting in Pittsburgh, Pennsylvania.

The second day of the meeting began with an administrative business session led by Mr. Christopher Wells and Ms. Kathy Sammons of the Southern States Energy Board. Mr. Wells thanked committee members for their contribution to helping prioritize the list of National Academy of Sciences and Blue Ribbon Commission recommendations associated with the transportation of spent nuclear fuel (SNF). He alerted the committee he forwarded the results of the query to DOE's Office of Nuclear Energy (DOE/NE). Afterwards, Mr. Wells also spent a few moments soliciting ideas from the membership about plenary and breakout session topics for the 2017 National Transportation Stakeholders Forum. Next, Ms. Sammons (SSEB Director of Business Operations) addressed the committee. Ms. Sammons spoke directly to those states that have work plans with SSEB to maintain transportation programs in support of transuranic waste shipments from DOE generator sites in the southern region to the Waste Isolation Pilot Plant (WIPP) in Carlsbad, New Mexico. Ms. Sammons informed them she would be available for one-on-one consultation to provide them with details regarding their current fiscal standing. Lastly, she told committee members to be expeditious in returning their expense reports because the SSEB office would be closing soon for the holidays.

Mr. Mike Wangler with the U.S. Department of Energy/Environmental Management (EM) Office of Packaging and Transportation was the next to present at the meeting. He began by providing a broad program overview followed by the progress of EM cleanup activities of former nuclear weapons sites. Mr. Wangler indicated that nearly half (40%) of EM's FY 2017 budget

request (\$6.119 Billion) was committed to radioactive tank waste issues. He displayed a map illustrating how 107 historical sites had been reduced to only 16 today. The reduction represents a 90% decrease in the EM footprint. He provided another map geared to waste disposition activities at two sites within the EM complex located in the SSEB region: Oak Ridge and Savannah River. He mentioned that low-level waste (LLW) and mixed low-level (MLLW) waste legacy inventories remain in small volumes, but that the waste stream continues because of active decontamination and decommissioning projects. He noted that the Department still supports commercial disposition options (EnergySolutions and Waste Control Specialists) for very small amounts of this waste stream. Mr. Wangler directed the group to the Waste Information Management System as an additional resource for LLW/MLLW data. Next, he took a few minutes to talk about National Nuclear Security Administration's Off-Site Source Recovery Program whose mission is to securely store and dispose of disused radiological sealed sources that present a potential risk to national security, public health, and safety. Mr. Wangler discussed the latest news concerning Greater-than-Class C LLW Disposal noting the results of the February 2016 Final EIS for the waste streams. A report will be issued to Congress before the Secretary of DOE makes a decision on the disposal alternatives. Mr. Wangler informed the group of a few departmental changes within EM and displayed an organizational chart to illustrate these points. Next, he specifically addressed the following key program areas: Packaging Certification, Emergency Preparedness & Outreach, Regulations & Standards, Transportation Risk Reduction and Program & Site Support. He also talked about the transportation practices outlined in DOE Orders 460.1D (Packaging and Transportation Safety) and 460.2B (Departmental Materials Transportation and Packaging Management). In conclusion, Mr. Wangler gave a quick overview of the Transportation Emergency Preparedness Program (TEPP). He provided the committee with a chart of the FY 2016 training courses in the southern region (145 classes) as well as the number of students (1972) who participated in these activities.

Mr. James Mason, Institutional Affairs Manager, of the National TRU Program at the Carlsbad Field Office was the next presenter at the gathering. Mr. Mason did not have a PowerPoint presentation, so he engaged the group in an informal discussion about recovery efforts at the WIPP site, a roadshow and the renewal of the associated transportation campaign. Next, Mr. Mason shifted his focus to discussing the recovery operations at the WIPP site post the February 2014 incident. He talked about the panel room closures within the mine to isolate the waste drums that were the source of the release. He noted progress in restoration tasks such as roof bolting and radiological risk reduction thru water washing. He discussed the series of internal processes as well as those implemented by the

State of New Mexico, which must be completed before the site is declared open. After the site's reopening, the main priority will be the underground emplacement of waste stored in the WIPP surface facilities at the time of the incident. Next, he offered a March 2017 timeframe for states along the southern corridor to utilize for planning participation in a transportation roadshow. Finally, Mr. Mason noted after DOE completes the applicable technical and programmatic factors the western and southern sites would be among the first for resumption of shipments.

Mr. Christopher Boyle, Manager of Used Fuel Transportation for the Nuclear Waste Management Organization provided the committees with an international perspective for used fuel management. The Canadian measure, known as Adaptive Phased Management, requires used fuel to be contained and isolated in a deep geological repository. It also calls for a comprehensive process to select an informed and willing host for the project. The site selection process emerged through a two-year dialogue. He noted how this process reflects the ideas, experience and best advice of a broad cross-section of Canadians who shared their thoughts on what an open, transparent, fair and inclusive process for making this decision would include. A major part of this initiative included engaging with the First Nation and Métis communities, the aboriginal people of the region whom have treaty rights and applied invaluable indigenous knowledge into the process. Mr. Boyle also provide a global perspective of waste management by providing a slide detailing the various strategies regarding how all countries with commercial nuclear power production are planning to isolate the waste by-product of their nuclear fuel cycle in a deep geological repository. In conclusion, he touched on the topic of used fuel transportation in Canada by identifying the following key elements of their program:

- Use of a certified transport package
- Training of workers and emergency responders
- Maintenance of a radiation protection program
- Management of an emergency response plan
- Maintenance of security measures
- Maintenance of records
- Adherence to all regulatory requirements

Similar to November WIPPTREX that occurred in Texas, Ms. Eletha Trujillo (WIPP Coordinator within the New Mexico Department of Energy, Minerals and Natural Resources) reported on a comparable exercise in her home state. The WIPPTRAX took place in Santa Fe, New Mexico during the last week of October and involved a T-bone collision between a car and a vehicle transporting

radioactive medical supplies. As part of the scenario, a WIPP-bound truck, containing three empty TRUPACT-II containers, drove past just after the incident and ran over some debris. The situation required first responder (firefighters / police /medical personnel) to identify radiation levels at the scene, extract and decontaminate an injured woman, and perform a Commercial Vehicle Safety Alliance Level VI inspection on the WIPP vehicle to check for any issues before allowing the resumption of transit to the site.

Mr. Jamie Adam (NAC International) and Mr. Blake Williams (Secured Transportation Services) provided the committees with a brief update of their transportation activities in support of the Material Management and Minimization (MMM) program. The MMM is an international program under the auspices of the National Nuclear Security Administration which involves the retrieval of spent highly-enriched uranium fuel currently stored at Chalk River Laboratories in Ontario to be transported to the Savannah River Site in Aiken, South Carolina. They noted their organizations would continue to coordinate with the corridor states along the route for planning and emergency response purposes and that specifics regarding the shipments would be addressed with those states on an individual basis. They wrapped up their presentation by showing an animated video of the cask loading operations associated with this campaign.

Ms. Erica Bickford, of DOE's Office of Nuclear Energy, delivered the Office of Integrated Waste Management (IWMS) Update. Ms. Bickford began by showing the group an organizational chart of DOE and where her specific agency was situated within the framework and noting the name change from the former Nuclear Fuels Storage and Transportation Planning Project. She gave the committee the names of some detailees who would be working on storage and transportation as the program moves towards an operational aspect. Moving on to budget matters, she noted the Department requested \$76.3 million in their FY2017 request for an integrated waste management system. Ms. Bickford highlighted the major initiatives of the IWMS program, which included transportation work (engagement with stakeholders/railcar development/transportation plan), storage, cross-cutting measures, consent based siting and communications. Before proceeding, she mentioned IWMS had entered into new 5-year cooperative agreements with the state regional groups and tribes and gave a brief update of the efforts of the Section 180(c) and SNF Rail/ Routing Working Groups. Furthermore, she discussed the development of the ATLAS railcar, which commenced in August 2015 as AREVA Federal Services signed a contract to design and fabricate a prototype. Next, she provided the group with a projected timeline of milestones for the railcars from initiation until

the anticipated completion date of 2022. Continuing in the transportation arena, she emphasized the ongoing modification and improvement of the Stakeholder Tool to Assess Radioactive Transportation or START. She also showed some of the new features of START including infrastructure pictures added from the shutdown site visits. Ms. Bickford talked about interaction with the states and tribes thru the DOE-NE Transportation Core Group and also noted the available reports and request for information pertaining to the area of storage. In addition, she reviewed some of the applications being implemented for strategic crosscut measures that support siting, storage and transportation initiatives. Next, she updated the group on the future actions the Department will take in regard to the consent-based siting process for both the defense and commercial spent fuel repositories including the issuance of a final report in December 2016. The last topic Ms. Bickford addressed was an update on the deep geologic borehole field test. DOE issued a Request for Proposal (RFP) for a candidate site in October 2016. The RFP specifically noted no radioactive material would be used in the project and that the venture is purely for scientific purposes. She indicated proposal were currently under evaluation and will be awarded in January 2017.

Steve Johnson, Regional Response Coordinator for DOE Region2, was the next speaker and gave an update regarding DOE's Radiological Assistance Program (RAP). The RAP provides radiological assistance and training to other federal agencies, states, tribes and local agencies in response to a nuclear/radiological event. He noted assets are deployable within 2 hours of team activation and can arrive on-scene within 6 hours. Mr. Johnson took the remainder of his time to discuss actual RAP responses to incidents within his region as well as the other regions. He began with a situation that involved contaminated breathing air bottles in Augusta. Later he revealed findings on vortex cooling units in Washington, Ohio and Pennsylvania. He concluded this segment with cases involving shredded source contamination, an estate sale that included an unknown radioactive source and a maritime response to investigate US Coast Guard radiation alarms. Mr. Johnson ended his presentation by talking about how the RAP Team provided support services for activities in 2016 including the Super Bowl, Republican and Democratic National Conventions, and the Nuclear Security Summit.

The remaining portion of the meeting consisted of a round table discussion to highlight the activities of all states in attendance. After all states had provided an update, Mr. Wells reported on the status of activities at SSEB.

The final order of business at the meeting was the announcement of the location and date of the next meeting of the Radioactive Materials Transportation

Committee and the Transuranic Waste Transportation Working Group. Since the group continues to meet in conjunction with the NTSF for their Spring meeting, it was reported that they would gather again on June 5-8, 2107, in Pittsburgh, Pennsylvania.

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