

**The Council of State Governments
Midwestern Radioactive Materials Transportation Committee**

**Proceedings of the Fall Meeting
November 14-15, 2012 • Omaha, Nebraska**

Major Lance Evans (Iowa) called the meeting to order at 8:30 am, welcomed attendees, and introduced Lieutenant Carla Schreiber (Nebraska), who introduced Colonel David Sankey of the Nebraska State Patrol. Col. Sankey welcomed the attendees to Nebraska. He thanked the committee members for the work they do, adding that their work is vital to maintaining the safety and security of the states' citizens and communities. The study by the Blue Ribbon Commission on America's Nuclear Future (BRC) pointed to the need for a new path forward on managing radioactive waste. Thanks to the efforts of the committee, however, the transportation component of the federal waste management program is the only one that does not need to start from scratch. Col. Sankey said that, through the work of the committee, the states will have what they need when shipments under the new program begin. He praised the work of the states in developing a new communications protocol for ensuring a clear, consistent method of communication between state dispatchers.

Major Evans then provided his **report from the committee co-chairs**. He reminded the members that this was his first meeting as senior co-chair of the committee. Since the May meeting, Major Evans had been very busy with Commercial Vehicle Safety Alliance (CVSA) activities. He added that, in January, Carlisle Smith (Ohio) would be taking Larry Stern's place at CVSA. Major Evans said Mr. Smith would do an excellent job.

Lisa Janairo (CSG Midwest) reviewed key points from her written **project update**:

Status of the cooperative agreements: Ms. Janairo said the transportation project is on firmer financial ground than it had been since 2009, when the project had lost funding from DOE's Office of Civilian Radioactive Waste Management. The funding from the U.S. Nuclear Regulatory Commission (NRC) would soon be exhausted; however, the loss of that funding was more than made up for by the establishment of a new agreement with DOE's Office of Nuclear Energy (DOE-NE). Ms. Janairo noted that, under the new agreement, the Midwest will be planning a trip to the Waste Isolation Pilot Plant (WIPP) for legislators and other state officials from the region to observe an operating repository and learn about the transportation system that set the standard for future spent fuel shipments. The trip will take place in the spring of 2013.

Appointments: With the November 2012 election, Ms. Janairo will need to seek an appointment from the newly elected governor of Indiana, Mike Pence. She will seek the appointment in January. At the same time, she will reach out to the legislative leaders in several Midwestern states to obtain recommendations for legislators that may be interested in serving on the committee. Ms. Janairo encouraged committee members to let her know informally of possible candidates for appointment to the committee.

Ms. Janairo reported on the activities of the committee's **Integrated Spent Fuel Management work group**. In June, the work group prepared a committee letter commenting on a draft NRC report, "Identification and Prioritization of the Technical Information Needs Affecting Potential Regulation of Extended Storage and Transportation of Spent Nuclear Fuel." The work group refrained from commenting on the technical aspects of the study. Instead, the committee's letter expressed the desire

to have the NRC present information such as that contained in the report in a manner that is meaningful to the states and makes clear the possible implications, if any, for state operations.

Jennifer Clark (Kansas) provided a report on the committee's **Information and Communications work group**. Ms. Clark serves on the work group along with Melanie Rasmusson (Iowa) and Jane Beetem (Missouri). Since the May meeting, the group had held two conference calls to discuss the development of a packet of information for committee members to use when briefing state agencies, elected officials, and the public regarding the transportation and management of spent fuel. Ms. Clark referred committee members to a description of the packet. Because some of the materials would be generic and applicable to the other regions, the work group had talked to the NTSF Communications ad hoc working group about developing some of these items. That group had put a decision on hold until the next call, scheduled for December 6. Ms. Clark noted that Teri Engelhart (Wisconsin) had suggested the states might wish to prepare their own state-specific fact sheet to include in the packet. The original plan was to complete the packet by the end of December; however, the DOE program activities were proceeding so slowly that the work group members had agreed to extend the timeline. The new date for completion is June 2013, which will make the packet available for pilot testing during the WIPP trip. The work group will modify the packet based on feedback from the meeting, then distribute the final packet to members during the summer of 2013.

Ms. Beetem began the **reports on the committee's activities related to the National Transportation Stakeholders Forum (NTSF)**. The NTSF Planning Committee had decided to hold the next meeting on May 14-16 in Buffalo, New York. The agenda is under development, but the plan is similar to the last meeting. The regions will hold their meetings on Tuesday, followed by the NTSF meeting on Wednesday and Thursday. Cort Richardson (CSG/ERC) noted that a tour of West Valley had not been ruled out. Ms. Beetem added that webinars are an effective way to keep NTSF members engaged throughout the year. The NTSF held one webinar on October 23, with a second scheduled for December 4.

Ms. Janairo reported on the **NTSF Communications ad hoc working group**. The group had finalized its fact sheet development guide, which would be previewed on the December 4 webinar. In addition, the group had assisted Ella McNeil (DOE-EM) by reviewing the first issue of the NTSF e-newsletter. The group had also organized the December 4 webinar, which would focus on communication. Ms. McNeil commented that, in the development guide, the term "DOE field offices" should be changed to "DOE and its field offices." She added that Corinne Macaluso and Judith Holm would be joining the ad hoc working group to represent DOE's Office of Nuclear Energy. Ms. McNeil requested a picture of Mr. Smith for the NTSF newsletter.

Ms. McNeil provided a report on the **Transportation Emergency Preparedness Program (TEPP) Training ad hoc working group**, which was assisting DOE in preparing updates to the MERRTT training materials. The group was working on a module on case histories. The group had also planned to work on online training, but had encountered a technical difficulty. Ms. McNeil said Tom Clawson's presentation would provide more information on the working group's activities.

Major Evans reported on the activities of the **WIPP Security Communications Protocol ad hoc working group**. The group had met in New Mexico in February. Originally, the group had planned to have an exercise this fall in Colorado, but the activity was put on a back burner because of the Western Governors' Association (WGA) meeting. Now the group is planning to have the exercise take place in late spring. Lt. Schreiber added that, in March, DOE would be conducting training for dispatchers in Omaha, with everyone who is working on the new protocol invited to attend. She emphasized how

important it was for the group to focus on a common goal. Lt. Schreiber and Major Evans agreed that, under the tutelage and leadership of Capt. Josh Downing (Colorado), the group would complete its task. Bill Mackie (DOE-CBFO) commented that he had read through the group's work plan and asked WGA to rewrite it so that the focus would not be on the West's WIPP Program Implementation Guide. He also recommended that the group use Mr. Clawson's group to help develop the exercise and make it similar to a TEPP exercise. He had not received a response to his suggestion. He added that the name of the group should change to drop "WIPP," since the security protocol would apply to all shipments, not just transuranic (TRU) waste shipments heading to WIPP. A question came up regarding the staff lead of the group. Ms. Janairo said regional staff should be copied on all messages regarding all working groups. She also suggested having updates on all the working groups in the NTSF newsletter. Earl Easton (NRC) suggested the states keep in mind the new rules the NRC will promulgate on shipment security. The new rules will be relevant to the new protocol that is being developed. In fact, the new communications protocol could, in theory, become part of the NRC's own guidance. Ms. McNeil added that, from an EM standpoint, most shipments on the road are low-level waste, not spent fuel or TRU waste. For that reason, it would be important to have a graded approach to security communications.

The states reported on other meetings attended in the past few months. Major Evans had not been able to attend the **Nuclear Waste Technical Review Board meeting** in October in Idaho Falls, so he had sent a letter to the Board expressing the committee's reaction to the BRC final report. Jim Williams (WIEB) had attended the meeting and was the only regional representative to speak at the meeting. Mr. Easton had been recruited to speak during the same session as Mr. Williams. Mr. Easton encouraged the committee to get Mark Nutt's presentation on scenarios for the back end of the fuel cycle. What impressed Mr. Easton was that there were models saying spent fuel would be shipped bare. He added that the NRC is wrestling with the challenge of licensing spent fuel in storage for extended periods of time. How the NRC licenses storage will depend on what model DOE picks. It was suggested that this topic be featured on the NTSF meeting agenda or on a webinar. Mr. Williams added that two studies were supposed to be completed for DOE on October 31: a system architecture study and a report on the shutdown sites. The latter had been completed, but the former had not.

Major Evans, Ms. Beetem, and Ms. Janairo shared their perspectives on the **meeting with DOE's Office of Nuclear Energy** in Washington, DC, on October 3-4. Ms. Beetem said DOE had assembled a meeting of great people to begin discussing how to kick off the work on planning spent fuel shipments to consolidated storage facilities. One comment that had bothered Ms. Beetem was Jeff Williams' comment that some people within DOE ask him, "What do you get from the regional groups?" Ms. Beetem explained that, through its long-term support of groups like the Midwestern Radioactive Materials Transportation Committee, DOE had developed relationships with the states and the regional staff. Relationships like these would be essential for coordinating on planning and executing shipments. As proof that the ties are strong, when DOE called the meeting, the representatives of the regions showed up.

Ms. Janairo said she thought the meeting was a positive first step, but she expressed concern about the apparent lack of a plan for moving forward aggressively with transportation planning. She had expected to come away from the meeting with a list of action items for follow up. While there were some action items – notably the organization of a Section 180(c) ad hoc working group – the level of activity would be low for the foreseeable future. The attendees of the October meeting thought it would be a good idea to organize a steering committee to oversee the work being done by the regions. Meetings of this group, however, should not come at the expense of DOE attending the regional meetings. The attendees

agreed that, as Assistant Secretary Pete Lyons had mentioned at the October meeting, funding and direction from Congress would be ongoing issues for the program.

Ms. Rasmusson reported on her participation in the **Nuclear Energy Institute's Used Fuel Management Forum** in St. Petersburg, Florida, on May 8-10. Her presentation, as requested, addressed whether the states are prepared for shipments in the near term. Ms. Janairo had conducted a survey of the Midwestern states so that Ms. Rasmusson would have up-to-date, original information to report. The answer to the question was that states were not ready for shipments but could be as long as they have funding and time to prepare and cooperation from the shipper(s). Ms. Rasmusson shared her presentation slides with the group. She said most of the feedback had been positive, with a few exceptions. Overall, she found the experience to be worthwhile and encouraged the committee to continue participating in this annual event.

Major Evans moved on to the **regional roundtable**.

Illinois: Kelly Horn (Illinois) reported that things were "business as usual" in Illinois, with spent fuel having moved in October out of the Missouri University Research Reactor on its way to DOE's Savannah River Site in South Carolina. DOE continues to make shipments of TRU waste out of Argonne National Laboratory (ANL) near Chicago.

Ohio: Mike Snee (Ohio) reported that his agency keeps hearing that shipments from Piketon to Paducah might take place. Ms. McNeil said these were DUF₆ shipments and they were going on right now. USEC operates the uranium enrichment facility at Paducah. USEC is not DOE, but the facility is on a DOE reservation. If USEC were to close, DOE would be responsible for decommissioning and decontaminating the site, so allowing the shipments of material for re-enrichment was in DOE's best interests. This is the same material that is supposed to be converted to uranium oxide at Piketon and shipped offsite for disposal. Some of the material is suitable for re-enrichment, but not all of it.

Kansas: Ms. Clark reported that one HRCQ shipment had come through in early October. Ms. Beetem had called to ensure coordination between the highway patrols in Missouri and Kansas. Ms. Clark said it was good to make those contacts between state agencies. She mentioned that Tim Runyon (formerly from Illinois) had passed along information on the RADIANT system, which she felt was a good program.

Indiana: Laura Dresen (Indiana) reported that two positions had moved from the Health Department to the Department of Homeland Security two years ago. The positions were already operating, but the legislative pieces still needed to be finalized. She hoped to see that happen in the coming session. Indiana was also working with DOE's Naval Nuclear Propulsion Program to conduct an exercise in the state. The exercise will take place in the Fort Wayne area. The demonstration will be on September 5; one month prior, there will be a planning meeting for the full-scale exercise. Ms. Dresen added that she will be moving into a rad-specific position within Homeland Security and would no longer be responsible for all the CBRNE programs in the state.

Minnesota: Kevin Leuer (Minnesota) said the state was seeing more shipments from Nordion. The shipments pose a challenge because the state does not have a fee in place for shipments of HRCQ material. He said the state agencies may seek help from the legislators and public service commissioners to fix the problem. Attempts over the past few years to lift the ban on building new nuclear power plants in the state had been a Republican initiative. As a result of the November election, both chambers

of the Legislature had shifted from Republican to Democratic control. It was unlikely, therefore, that any new attempts to lift the ban will be made in the coming legislative session.

Mr. Leuer added that his agency would be rolling out a secured website to share sensitive information on radioactive materials shipments with state and community partners. Hostile Action Planning was the impetus behind this move, but shipment information will be added. It had taken longer than anticipated to get the new system running, but Mr. Leuer hoped to see pilot testing start by the first of the year.

Nebraska: Lt. Schreiber said the state was monitoring developments at the Fort Calhoun nuclear plant, which had been closed since the flooding of 2011. A meeting would take place in Blair on November 15th regarding the status of the plant.

Wisconsin: Ms. Engelhart said the state did not have a lot of shipments coming through. In previous years, the state had averaged 10 shipments per year, but only six had taken place since July. Ms. Engelhart added that the public does assume some possibility of impacts when shipments go through. As a result, Wisconsin may go forward with some fees in order to help pay for activities related to protecting the public. A proposal for this past year did not survive, but Ms. Engelhart speculated that it might come up again in the future.

In other Wisconsin news, Ms. Engelhart said five shipments were needed to move all the spent fuel from the LaCrosse reactor's storage pool into dry storage. The utility had held an open house and did a good job keeping everyone informed. For security purposes, the shipments had forced the temporary closure of the highway near the plant. LaCrosse has no decommissioning plans beyond moving the spent fuel from the pool. The big news for the state, however, was the announcement by Dominion that it would close the Kewaunee plant in northeastern Wisconsin. The move came as a big surprise and was purely based on low natural gas prices. The utility will remove spent fuel from the pool in April. Ms. Engelhart was working with FEMA to get information on how the closure will affect Wisconsin's planning and exercise requirements. She was trying to get a timeline from the plant, but had not received one yet. She added that the closure will have a big impact on the county and the community. In response to a question from Ms. Janairo, Ms. Engelhart said it was too early to tell whether Kewaunee's closing would have any impact on efforts to repeal Wisconsin's ban on the construction of new nuclear power plants.

Missouri: Ms. Beetem started with a history lesson for the states that are considering fees. She said Missouri had started seven years ago to put in place a fee. It helped a great deal to have a multi-agency team work on the legislation and communicate on a regular basis. She said it was particularly helpful to involve law enforcement agencies. In 2012, the legislature amended the language in the statute so that fees would be charged "per truck" instead of "per cask." The original "per cask" language had apparently created a burden on Nordion, which ships several casks on a single truck. Ms. Beetem added that she was surprised to hear that Nordion was shipping through Minnesota, because the company is still shipping through Missouri. She mentioned that the state's fee revenue helps to fund training in the state.

Iowa: Major Evans had sent a couple road officers to Illinois for training in the CVSA Level VI inspection procedures. Currently, six officers were trained, although one would need to be replaced due to retirement. Major Evans added that Captain Bill Reese (Idaho) and Sergeant Tom Fuller (New York) had become the Secretary/Treasurer and Vice President, respectively, of the entire CVSA organization. With these changes and the departure of Mr. Smith from Ohio, the CVSA Level VI committee would be seeing some big changes in leadership.

Ms. Rasmusson added that Rep. Steve Olson had sent his regards. She said the effort to pass legislation to allow Mid-American to charge customers for construction work in progress had failed. She did not know whether the upcoming legislative session would see any action on this subject.

The committee filled several openings on the **committee work groups** for FY13:

Information and Communications:	Mr. Snee volunteered.
Integrated Spent Fuel Management:	Mr. Horn will join. Ms. Beetem and Ms. Engelhart will step down.
NTSF:	Melanie Rasmusson will join the Communications ad hoc working group. Major Evans will join the Safeguards Training Module group, when that group becomes active. Lt. Schreiber will replace Sgt. Glenn Elwell on the Security Communications Protocol ¹ ad hoc working group.
Route Identification:	Ms. Engelhart, Mr. Horn, and Paul Schmidt (Wisconsin) agreed to join this group.
Transportation Planning:	Ms. Beetem, Ms. Engelhart, Mr. Horn, and Mr. Schmidt will serve on the group.
WIPP Tour:	Ms. Beetem, Major Evans, and Mr. Horn will join the group.

Ms. Janairo will update the list of work group assignments and send it to committee members.

Ms. Janairo explained that the **WIPP tour** would be modeled on the committee's tours of Yucca Mountain conducted in previous years. She will schedule a conference call of the work group in the coming weeks. Mr. Mackie said WIPP could accommodate up to 15 people going into the mine at one time. Having two separate groups tour the facility would cap attendance at 30. He cautioned that hotel rooms have become very expensive in Carlsbad due to the oil and gas boom. He requested that he be included on the work group's planning calls so that he can help to coordinate activities.

After lunch, Mr. Mackie provided an update on the **activities of the CBFO and WIPP**. The CBFO had recently reorganized. The office leads the TRU Waste Program and is involved in DOE's Science Program. As of November 1, there is a new mobile loading business contractor to DOE that works for Los Alamos National Laboratory but is located in Carlsbad. Mr. Mackie explained that mobile loading involves workers and equipment traveling to each site rather than DOE building a facility at each site that needs to ship TRU waste to WIPP. DOE has 5 teams of mobile loaders that rotate among the sites, as needed. Each of DOE's two waste haulers has 11 tractors and 22 drivers. Other people with these companies work as mechanics or dispatchers.

Mr. Mackie said excavation began at WIPP 30 years ago, and since then DOE has mined more than 13 miles of drifts. In 1999, WIPP received its first shipment. In the years since, DOE has moved more than 162,000 containers and has filled 48% of WIPP's capacity by volume. DOE had launched a Salt Defense Disposal Investigation (SDDI) to study how heat affects salt – i.e., if spent fuel were to be disposed of in a salt formation. Before the tests begin, DOE will have to mine a great deal of salt.

¹ Ms. McNeil noted that there is a logical connection between the ad hoc working groups on the Security Communications Protocol and the DOE Transportation/Security Order. Both working groups are waiting for the NRC to publish its final rules on shipment security, after which DOE will develop its order.

On November 25, DOE will pass the 11,000-shipment mark. Of these, 611 were shipments of remote-handled waste, with 151 of those coming from ANL. Speaking on behalf of DOE, Mr. Mackie said, "We're real proud of Kelly [Horn] and his crew." In federal FY13, DOE planned to make at least 14 more shipments from ANL, and possibly as many as 60.

Both carriers had been audited in 2012 by the CBFO and the states. In each case, there were no findings and no lessons learned. Mr. Mackie said the Carlsbad Technical Assistance Contractor would be scheduling the 2013 audits for March or April.

Mr. Mackie provided an updated list of TRU Transportation Incidents/Accidents from May 2012 through October 2012. He called attention to one case in which a shipment was released prior to the shipping site receiving authorization from the WIPP Central Monitoring Room.

The new carrier contracts had presented an opportunity for the carriers to incorporate new safety enhancements, although not required by the CBFO. Some of the enhancements include turn-by-turn navigation, the Zonar inspection system, and a lane departure system.

Looking at DOE's national cleanup status, 22 sites have been cleaned of all their legacy waste, with eight sites remaining. Regarding Knolls in New York, Mr. Mackie said the site first needed a defense determination. In addition, it was not clear whether the waste at the site was TRU or low-level waste (LLW). SPRU in New York turned out to have all LLW, so that site is no longer on the list. DOE thinks there is some TRU waste at the B&W facility in Virginia. Cleaning of sites has led to closure of three routes: GE Vallecitos; NRD in New York; and NTS to Wendover, Nevada.

The CBFO has a total of six TRUPACT IIIs, 84 TRUPACT IIs, and 15 HalfPACTs. In addition, DOE has 12 RH-72Bs available for shipments. One week ago, the CBFO received permission from its state regulator to use a shielded container. The shielded container would allow shipment of three 30-gallon drums in a HalfPACT. With three HalfPACTs on a trailer, DOE would be able to move nine drums of RH waste with one truck, as opposed to three in an RH-72B cask. In addition, the waste can be stacked on the floor at WIPP instead of having to be inserted in a hole in the wall like the RH waste has traditionally been emplaced. Mr. Mackie clarified that the RH waste would count as part of the RH inventory allowed at WIPP.

Mr. Mackie said the CBFO would release its Strategic Communications Plan by the end of the year. The site's Community Relations Plan mainly affects New Mexico, but the principles do apply elsewhere, as well. The Eddy-Lea Energy Alliance is very active in the Carlsbad area, exploring additional economic development opportunities for the region. The alliance had contracted with Areva to start designing an above-ground storage site similar to what was planned for Private Fuel Storage in Utah.

Mr. Mackie encouraged anyone in need of WIPP training to contact Marsha Beekman, who is WIPP's lead for training. From May through October, DOE had completed 344 MERRTT courses and 14 train-the-trainer courses. Louisiana is planning a WIPPTREX on April 17, 2013, in Monroe. Mr. Mackie asked whether any Midwestern states would be interested in conducting a WIPPTREX. Major Evans expressed interest in attending the WIPPTREX in April to observe. Mr. Mackie will make sure he, Mr. Horn, and Ms. Rasmusson receive information on the event so that they can plan to attend, if possible.

DOE had made recent infrastructure improvements at WIPP and on the roads leading to the site. Once funds become available, the CBFO also needs to replace fire trucks, forklifts underground, and other equipment.

With regard to TRANSCOM, Mr. Mackie said TRANSCOM will be implementing Version 3 on December 15. He predicted the users would love it, especially the law enforcement people or anyone accessing TRANSCOM while traveling. The new system will have mile markers so users can see exactly where the trucks are. In order to use the new system, everyone will need training. The former TSARs will become "Group Administrators," and they must attend classroom training. Other people who use the system but are not Group Administrators will need to take part in computer-based training.

WIPP will be shut down for maintenance from January 17 through February 28.

The attendees discussed the need for training on TRANSCOM for the Midwestern states. The scheduled dates for training in New Mexico and Georgia posed conflicts for the committee members and others in the Midwest. Ms. Janairo will poll the states to determine the level of interest in a Midwestern location for training in early 2013. She will follow up with Sharon Taylor at TRANSCOM to schedule any training.

Ms. McNeil reported on the activities of the **Office of Packaging and Transportation within DOE's Office of Environmental Management**. DOE has cleaned up 74% of the complex and is ahead of schedule. Only 243 square miles of land remains to be cleaned up. Looking at specific sites, SRS has completed cleanup of 85% of the site's footprint, while Hanford has reduced its footprint by 72%. Much of Hanford's waste is disposed of on site.

At Portsmouth in Ohio, DOE has reduced the site's footprint by 1.6 million square feet. This feat was accomplished by tearing down buildings and by cleaning up asbestos and other hazardous materials. Ms. McNeil said that, at Idaho National Laboratory, DOE had built its own haul road, just like at Oak Ridge. Oak Ridge is moving right along with decommissioning and decontamination. At one point, the plan was to keep the K-25 north end as a historical site. The decision was made not to do that, however.

Ms. McNeil mentioned that the Nevada Nuclear Security Site (NNSS) had released its FY2011 report on inbound shipments. The report is available on the [NNSS website](#). A total of 25 approved generator sites shipped waste to the site in FY2011.

In an update on the status of DOE's actions to provide storage and long-term management of mercury generated in the U.S., Ms. McNeil said DOE had published an environmental impact statement (EIS) in January 2011. The EIS considered several sites, with Waste Control Specialists in Andrews, Texas, as the preferred location. DOE had not issued a Record of Decision (ROD) because the department now intends to reconsider the range of alternatives. Ms. McNeil said DOE will issue a supplemental EIS evaluating two WIPP-vicinity locations in 2013. A ROD will be issued no sooner than 30 days after the Environmental Protection Agency publishes a notice regarding the availability of the final EIS (expected sometime in 2013).

In other EIS news, DOE had received over 5,000 comments on the EIS for Greater-than-Class C LLW disposal. A final EIS will be issued in early 2013, after which DOE will submit a report to Congress. At that point, DOE will need to await Congressional action, then issue a ROD. Mr. Williams expressed interest in knowing the disposition of the comments WIEB submitted on the draft EIS. Ms. McNeil said she would pass that request on to Arnold Edelman at DOE, who is responsible for the EIS. Ms. Janairo mentioned that Mr. Edelman had spoken on one of the NTSF webinars and had indicated his willingness to do so again, if asked.

Finally, Ms. McNeil reminded the committee that DOE manuals are being eliminated from the Directives system. All the requirements in the current Radioactive Material Transportation Practices Manual would

be folded into the revision of DOE Order 460.2 in the form of a DOE Guide. Ms. McNeil said DOE is at least six months away from reaching out to external audiences on the revised order. She expected the proposed NTSF working group on the order to be active in the second half of 2013.

Following Ms. McNeil, Tom Clawson reported on **TEPP activities**. In 2012, 14 classes had been conducted in the Midwest, training 181 students. One session is scheduled for Illinois before the year ends. Mr. Clawson explained that the Technician MERRTT (TMERRTT) sessions involve four hours of classroom training. TMERRTT had been developed to make the training consistent with the competencies identified in the new NFPA standard. The Radiation Specialist training also meets the requirements for the NFPA standard.

DOE was in the process of revising the MERRTT program with help from an NTSF ad hoc working group. From past course evaluations, DOE had received from students and instructors over 50 comments on the training materials. The members of the ad hoc working group are reviewing those comments. Revisions to MERRTT will include updating references and videos to include the 2012 Emergency Response Guide and adding more pictures of equipment. In addition, it was possible to streamline the Incident Command Module 15 and combine it with the Incident Control Module 7 to create additional time for a new module on Case Histories. The revised MERRTT materials are now in final draft form and will be piloted during the courses that are already on the schedule.

TEPP had sponsored exercises in Louisville, Kentucky, in October 2011; Charleston, South Carolina, in October 2012 (an exercise sponsored by the National Nuclear Security Administration, or NNSA); and in Beaumont-Port Arthur, Texas. Another idea for improving TEPP is to develop an interactive computer-based training program. The goal had been to make the training interactive, but that turned out to be very involved. Mr. Clawson said the first task is to work on awareness-level computer-based training using the existing MERRTT modules. He noted that the TEPP website is a great resource for all kinds of information related to transportation emergency preparedness. The site is at <http://www.em.doe.gov/otem>.

Major Evans said Iowa was planning a two-day MERRTT training course. He said he will send Ms. Janairo the information to share with the other states, in case anyone is interested in sending staff to the training. The training will be held in Des Moines. Mr. Clawson added that there was interest in a full-scale TEPP exercise in the area near Kansas City, Kansas, and Overland Park. He said that any states interested in a TEPP exercise should contact him several months in advance to get on the schedule and begin planning.

Mr. Clawson wrapped up by reviewing the new Case Histories Module. He encouraged the states to contact him if they come across any incidents that might make a good case study.

Anne deLain Clark (New Mexico) reported on the **WGA WIPP Technical Advisory Group (WIPP TAG)**. WGA just selected a new executive director: James D. Ogsbury, former legal director of the League of Arizona Cities. Ms. Clark is a co-chair of the WIPP TAG, and she is retiring along with Idaho's Craig Halverson, the other co-chair. The co-chairs for the group have to come from the states whose governors sponsor the resolution that creates and keeps the WIPP TAG going. New Mexico and Idaho were traditionally the states whose governors sponsored the resolution. Now Washington's governor is sponsoring the resolution, which means Kevin Zeller is the lone co-chair who will remain on the committee after Ms. Clark and Mr. Halverson retire. Other co-chairs will be added next year.

The WIPP TAG has a person assigned part-time to staff the group from WGA, which has had the unintended consequence of a lower level of support for the group. The members of the WIPP TAG have been concerned about that situation and are hoping the selection of a new executive director will create the opportunity for WGA to review the staffing scheme and make positive changes. Ms. Clark said the WIPP TAG did not like DOE's suggestion to reduce the regional meetings to one per year instead of two. The group is putting together a response to that proposal. Ms. Clark added that WGA has been discussing the WIPP M&O contract and would like to include the collection of bad weather data so that it can be analyzed for possible patterns and any necessary actions.

Mr. Williams reported on the **WIEB High-Level Waste Committee**. He explained that WIEB focuses entirely on spent fuel and high-level radioactive waste. On October 10-11 in Denver, the WIEB High-Level Waste Committee held a "re-activation" meeting after three years of no DOE funding. The committee went through the status of the DOE program and looked at the BRC recommendations, court cases, legislation, DOE initiatives, etc. The group spent the rest of the time going over the National Academies' recommendations, with each committee member having responsibility for leading one of the discussions. Mr. Williams is still digesting what the committee discussed and identifying possible follow-up projects. He said the meeting had generated enough ideas for five years of work, at least.

Referring back to the NWTRB meeting, Mr. Williams said it was interesting that the board is essentially brand new – none of the members has served for more than a year and a half. All members were experts in their fields, but none had expertise on the DOE program. He added that the NWTRB staff has also had substantial turnover, although Dan Metlay is still on the staff.

Mr. Williams said the BNSF settlement agreement about dedicated trains had been in the works since before 1981, when the initial court cases came up. A speaker at the WIEB meeting had said the agreement was thought to be a template for similar agreements with other railroads on how they would work with the federal government on dedicated trains – from price to service, when DOE can use it, where the pickup should be, etc. WIEB has prepared three-four pages of questions, which Mr. Williams will share with Ms. Janairo. The deadline for submitting public comments on the agreement was November 29. The notice is available at [this link](#).

With regard to future projects, Mr. Williams said WIEB would look at shutdown sites, of which three are in the West (four, if Fort St. Vrain is included). The information DOE had presented was mostly factual, but Mr. Williams asked what one might do with these facts? One idea was to arrange site visits, possibly early in the year, to be set up by members in those states. The idea would be to learn something about the sites, start thinking about what the options are for shipping, and what the difficulties might be. He said he would organize a meeting around these visits in the spring sometime, probably in Portland. WIEB will probably also focus some effort on defining how the WIPP model might be adapted to shipments of spent fuel and high-level waste by train. The "WIPP model" terminology has been used quite a bit – not least in the BRC report – but the differences between the WIPP transportation program and the effort required to move spent fuel makes Mr. Williams want to identify what it would mean to have spent fuel shipments follow the "WIPP model."

Mr. Wells reported on the **Southern States Energy Board committees**, who would be meeting on November 28-29 in Biloxi, Mississippi. Mr. Wells reported that Elgan Usrey from Tennessee would be retiring. The committees would be electing new chairs at their meeting. The meeting would also include a panel of private sector representatives, including Holtec providing a presentation on proposed solutions for high-level waste in the U.S. Waste Control Specialists would have a representative on the panel, too.

SSEB continues to work with NNSA on the foreign research reactor (FRR) shipments. Mr. Wells was looking forward to working with NNSA and the Northeast on the Canadian shipments whenever they commence.

Mr. Wells had observed the TEPP tabletop exercise “Palmetto Fallout,” which took place in South Carolina in October. He said it was similar to a tabletop exercises that SSEB used to participate in after each of the FRR shipments. The participants had talked about the incident command system, and found it useful to test their training for life-saving activities as well as recovery. A WIPPTREX planning exercise would be coming up. Mr. Wells said he would make DVDs of the Georgia exercise available to Ms. Janairo and Mr. Richardson.

Mr. Richardson reported on the activities of the **Northeast High-Level Radioactive Waste Transportation Project**. He said the major work he has been doing involves the NTSF Planning Committee – namely, hosting the annual meeting. Another major focus is TEPP work, e.g., arranging for the states to have training. In addition, Mr. Richardson had been participating in activities related to DOE’s Office of Nuclear Energy.

A major area of interest recently was the major shipping campaigns coming up with NNSA from Canada to SRS. Mr. Richardson had worked with New York and Pennsylvania over the summer to prepare for the shipments. The state working groups meet frequently for conference calls and to plan the campaign. Training and route certification are the first orders of business. The campaign is supposed to start in the spring and last three-five years. Mr. Richardson did not think the spring date for starting was likely to happen. The shipments would move target residual material from Chalk River, Ontario. The great bulk of the shipments would take place in 2014-2016. The campaign involved moving large volumes of high-level material and planning has been a very interesting activity for the two affected states. In New York, the primary and secondary routes pass through Indian nations. The Seneca are used to DOE shipping campaigns, but other tribes have not been as welcoming of the shipments (e.g., the Onondaga). The Mohawk have territory on both sides of the border.

Mr. Richardson was working with Mel Massaro (FRA) to reprise the FRA’s shortline railroad study and had submitted a paper for presentation at the 2013 Waste Management Symposium. The two men hoped to get out in the field again with site inspections and would focus on the closed or decommissioned sites in the Northeast. Mr. Richardson said there were several candidates among the older plants in the Northeast that might want to join the group of shutdown plants in the not-too-distant future.

The Northeast is tentatively planning to hold its next regional meeting in January, probably in Pittsburgh or Philadelphia.

Mr. Williams asked whether Mr. Massaro had funding to work on the shortline study. Mr. Richardson said he did not, but the activity was not very costly, involving mostly travel costs.

Ms. Janairo asked whether DOE or the states were reaching out to elected officials on the Chalk River shipments. Mr. Richardson said the state work plans were supposed to include that, but there had been a lot of round-and-round about it. NNSA was very clear early on about its desire for open engagement with the public. The Canadians do not want any publicity because of past experiences. Mr. Richardson said disagreement between the two federal agencies on this issue had nearly derailed the whole campaign. Ms. Janairo mentioned a Canadian Member of Parliament holding public meetings recently about future shipments to be conducted by Canada’s Nuclear Waste Management Organization. She

said it would be very difficult for Canada to keep a shipping campaign lasting three-five years secret from the public.

The committee resumed its discussion, starting with the **state briefing packet**. Ms. Beetem said the idea behind this project was to provide members with something thorough yet manageable to give to legislators, who are busy people. Ms. Rasmusson asked whether the user would print the materials. Ms. Janairo said that was possible but not necessary – CSG Midwest would provide folders and hardcopies of the materials. Mr. Williams said he thought the packet was a good idea.

The committee also discussed state **engagement in site selection**. There was general agreement that the committee did not have the right mix of members to work on site selection. Rather than expand the committee, the members thought it would be better to organize a task force. The concern was that tapping the committee could create a strain, especially since siting decisions will bring politics into the discussion. Mr. Leuer suggested the staff could ask committee members for help in identifying the right people to serve on a task force. Ms. Beetem asked what the committee could do besides help DOE to identify selection criteria. Mr. Easton cautioned against blurring the lines between regulatory control and a consent-based process. Ms. deLain Clark said DOE looked for a way to have the state involved in WIPP regulation, which relationships the BRC cited as a model. Mr. Easton said the NRC already shares regulatory authority with states through the Agreement States program. But authority over fissile material is not shared with the states because doing so is forbidden by the Atomic Energy Act.

Ms. Beetem wondered how it would be possible to avoid a situation in which a community wants to host a facility but the site is not suitable. Mr. Easton said the NRC was working through a public process now to rewrite the regulations for the repository and would seek public input. He suggested public comments would be one way for the Midwest to relay its position.

Ms. Janairo said CSG Midwest would hold off on pursuing any projects related to site selection until the states could hear from DOE in May about plans for site-selection. At that time, the committee could discuss whether and, if so, how the region could get involved.

The committee turned to the subject of **updates to the regional *Planning Guide* and fees flyer**. Ms. Janairo handed out the state-specific excerpts from the *Planning Guide* and asked the states to provide her with updates by December 5. She will e-mail the states the same information formatted in Word to make it easy to update the information. In addition, she will send the states Ms. McNeil's table of fees and permits for the states to update, as well. Comments on the table would also be due on December 5. Ms. Janairo will pass along the updated information on fees and permits to Ms. McNeil. She will also use the information to update the fees flyer and the information on fees contained in the *Planning Guide*.

The committee ended the day discussing **ideas for the NTSF meeting**. Mr. Leuer said it would be a good idea to have a briefing on the security communications protocol, provided sufficient progress has been made. Members also commented that, at the 2012 meeting, the regions all seemed to have briefings from the same groups (e.g., the CBFO, CVSA). The suggestion was made to have each program provide only one update during the NTSF meeting, which would be a better use of everyone's time. Mr. Mackie said that was possible, but noted that the NTSF plenary briefings were usually done by people at a higher management level.

Thursday, November 15

Rod McCullum (Nuclear Energy Institute) spoke about **Used Nuclear Fuel Management**. He described the current situation facing the nuclear industry. He said the recent election did not change anything, but getting past the election opens up a narrow opportunity for action. Sen. Bingaman's bill is not expected to go anywhere. One of the big issues for industry right now is extended storage. Mr. McCullum said that, while there is a lot of uncertainty about consolidated storage and disposal, there is *no* uncertainty with regard to extended storage – it is happening now and the utilities know it will be happening for decades to come.

As of June 2012, approximately 69,000 metric tons of uranium (MTU) were in the commercial used nuclear fuel inventory. Of that amount, 19,000 MTUs are in dry cask storage at 58 operating independent spent fuel storage installations, or ISFSIs. Estimates are that, by 2020, there will be 76 such facilities storing used fuel at all plant sites.

Dry storage at shutdown reactors is a priority for the industry and for the government, as well. The CEOs of nuclear utilities got together recently and voted to support having spent fuel from the shutdown plants go first to facilities for consolidated storage. There are nine shutdown plants now, and a tenth site will be added to the list soon because of Kewaunee's closure. Oyster Creek will shut down in 2018 or 2019. At the same time that these sites are shutting down, new reactors are going up in Georgia and South Carolina.

Mr. Williams asked for clarification of the adjective "stranded" as applied to spent fuel. Mr. McCullum explained that "stranded" spent fuel does not have access to a pool, whereas spent fuel at some shutdown plants may have pool access. He added that industry officials do not want to bring spent fuel out of storage casks into a pool for transfer to a transportation cask. His slide on "cask transportability" showed that all of the casks at the shutdown plants have transportation certificates. This means that, once DOE identifies a site, shipments from the shutdown reactors should be ready to go. Mr. McCullum noted that the whole system was optimized around storage, therefore cask vendors had tried to maximize the efficiency of storage casks by making them very big.

In response to a question about how loading affects radiation levels, Mr. McCullum said that loading 12 fuel assemblies into one cask was not the same thing as loading six assemblies into each of two casks. The longer the exposure time on the refueling floor, the greater the exposure to workers. In fact, he said, the proposal to move spent fuel from pools into dry storage would result in higher radiation exposure and more casks being used. The reason is that the casks would need to be loaded more quickly because the fuel would be hotter, therefore workers would not be able to fill in all the spaces in the casks because that takes more time.

With regard to the BRC recommendations, Mr. McCullum said one of the industry's top priorities was to reform the waste fee to get it off budget. Regarding the fee, due to court action, DOE is revising its fee adequacy assessment, with the final report due out in the next few months. Depending on what the report says, it was possible that NEI and the National Association of Regulatory Utility Commissioners (NARUC) could head back to court to challenge the adequacy again.

Consolidated storage was a second priority for the industry. Mr. McCullum said several communities besides Carlsbad, New Mexico, had come forward to express interest in hosting a consolidated storage facility. A third priority is the establishment of a new management entity, or FedCorp, to manage the federal waste management program. He said one problem with the aforementioned Bingaman bill is

that the new federal entity it proposed would be like DOE with another name: it would be led by political appointees, not a board of directors like NEI had recommended.

Mr. McCullum said the industry was trying to generate support in Congress to influence DOE's strategy and actions for implementing the BRC recommendations. He was hopeful that the incoming Congress would consider implementing legislation within months of the new legislative session beginning, but he acknowledged that the first order of business for the new Congress was to get off the fiscal cliff.

In response to a question about TVA, Mr. McCullum said he thought it was an excellent model for the new FedCorp. When he worked at TVA years ago, the organization was not running very well. But all these years later, TVA is finishing Watts Bar 2. Mr. McCullum said it was all about having good leadership, and right now TVA has some very strong, innovative leadership. He added that, under Ward Sproat's two years at the helm, DOE's former Office of Civilian Radioactive Waste Management was one of the best functioning programs. He noted that it would be detrimental to any organization to change leadership with every election.

Mr. McCullum laid out a graph of the future for both the consolidated storage program and the Yucca Mountain project, noting that the Yucca Mountain project is, at this point, completely dead. Three states and the Prairie Island Indian Community sued to get it back on track, but the court found that DOE had met its obligation by submitting the license application. The plaintiffs had asked for a mandamus to make the NRC continue with its review of the license application, but the court said it would not issue a writ of mandamus until Congress acts. Congress passed a continuing resolution, so the question is, did that count as "action"? Mr. McCullum said the most that could happen would be that the NRC would have to resume its review of the license application and issue a safety evaluation report. Mr. McCullum's slide showed the cost of restarting the licensing proceedings at \$800, with construction of a repository estimated at \$12.4 billion, followed by annual operating costs of \$1.4 billion. If the work were to begin in 2013, 2026 is the earliest date on which a repository at Yucca Mountain would be available.

On the storage side, Mr. McCullum estimated it would be 2018 at the earliest before construction could begin on a consolidated storage facility. Because the facility would be, in essence, "a really structurally sound parking lot," construction could be completed relatively quickly by 2020. If that were to happen, shipments of spent fuel could begin to move that same year. Mr. McCullum noted that Sen. Bingaman had voted to fund the salt tests at WIPP, which signals that he is not opposed to using WIPP as the repository. If New Mexico were chosen to host both the storage and disposal facilities, spent fuel could be transported to Carlsbad first for storage, then moved a short distance to a disposal facility at or near WIPP. Mr. McCullum also mentioned deep borehole technology as a possible option for disposal. He estimated that 70-80% of the U.S.'s geology would be suitable for deep borehole disposal, which is so far below the ground that it makes it unlikely for spent fuel to get into the environment. Mr. McCullum's final point on the two program paths is that, while waiting for a solution, damage awards from the taxpayer-funded judgment fund will raise from \$20.8 billion in 2020 to \$31.8 billion in 2042.

Mr. McCullum briefly addressed the NRC's Waste Confidence rule, observing that public meetings on the commission's plan to prepare an environmental impact statement had begun the day before. On August 7, two months after the U.S. Court of Appeals vacated the rule and remanded it to the commission for further action, the NRC suspended the issuance of new licenses that relied upon the rule. All the license application reviews will continue, but the NRC will hold off on issuing new licenses until the EIS is complete and the rule is revised. Mr. McCullum encouraged the states to consider weighing in on the NRC's actions. A draft EIS is expected to be released in September 2013.

Mr. McCullum said there is a strong technical basis for extended storage. Several studies had been conducted, and additional studies are ongoing to further confirm the performance of dry casks over extended periods of storage. Mr. McCullum mentioned the possibility of a shipment involving a demonstration cask, complete with instrumentation, to be loaded at the North Anna site then shipped to a Western location for monitoring as part of the ongoing studies.

Jeff Williams (DOE-NE) provided a presentation over the phone regarding **Near Term Planning for Storage and Transportation of Used Nuclear Fuel**. He began by providing background information on the BRC recommendations, issued in January 2012. DOE had developed a strategy for implementing the recommendations, but the document has not yet been released by the Obama Administration. While awaiting Congressional action to amend the NWPA and pass budgets, DOE-NE was moving forward with “prompt efforts to develop one or more consolidated storage facilities” and “early preparation for the eventual transport” of spent fuel, with shutdown reactors first in line to ship. Mr. Williams referred the states to the BRC report’s chapter on “Near-Term Actions,” which he termed “The Bible” for his program right now. Because DOE remains responsible for implementing the NWPA, the department has the authority to move forward with some activities even though the BRC recommended establishing a new non-DOE entity to manage the program in the future. DOE was, therefore, taking steps to lay the groundwork for consolidated storage, prepare to respond to information requests, begin funding through Section 180c, and promote better integration of storage into the waste management system.

The focus of the new Nuclear Fuels Storage and Transportation Planning Project (NFSTPP) is to design a consent-based process for selecting sites, conduct technical studies, initiate siting activities, and prepare for transportation under a pilot. Throughout all this, DOE will build a foundation that can be transferred to a new nuclear waste management organization in the future. Three DOE laboratories were tasked with preparing draft reports. Corinne Macaluso had sent the regions the report on shutdown sites. Other reports are in the works and will be made available when they are completed.

The NFSTPP has three components: storage, transportation, and strategic crosscuts. In terms of transportation activities, Mr. Williams said DOE had re-engaged with the regional groups to better understand stakeholder issues related to spent fuel shipments. Noting that the BRC had recommended employing the approaches that had succeeded in the past, he said a partnership between the states and DOE was the only way the transportation program would succeed. In federal FY13, the NFSTPP planned to work on a revised policy for implementing Section 180(c), develop new communication products, work on the National Transportation Plan, and begin developing preliminary routes for shipments from shutdown sites.

The objective for the storage component of the project is to begin laying the ground work for implementing consolidated storage, including the initial development of a consent-based process. DOE would also evaluate the benefits of preparing a programmatic EIS.

Ms. Macaluso spoke via telephone about the results of the October 3-4 meeting involving DOE-NE and the regional groups. At the meeting, the regions agreed to develop something similar to the 180(c) “Principles of Agreement” to articulate the mutual expectations and goals for the activities DOE and the states would be conducting. The regions were also identifying members to participate on the new NTSF Section 180(c) ad hoc working group, which would be meeting via teleconference every 2-3 weeks during the coming months. Ms. Macaluso mentioned that Angela Kordyak from DOE’s Office of General Counsel (DOE GC) would be joining the group so that all actions and decisions would be vetted by that office as the work progresses.

Ms. Macaluso mentioned that DOE-NE would also be participating on the Communications ad hoc working group, specifically working with the members to prepare new information products. While the new products would focus on transportation, Ms. Macaluso said the group could also get involved in preparing information materials related to siting once that process gets underway.

Mr. Williams wrapped up the presentation by saying that there was still a great deal of uncertainty regarding what DOE would be able to do. In the budgeting process, the House had indicated support for going back to Yucca Mountain, while the Senate supports moving forward with the BRC recommendations. Mr. Williams expressed disappointment in not being able to attend the committee meeting in person and said he hoped to have the opportunity to meet with the members at some future date.

Ms. Beetem said that, at the October meeting, there was discussion about having a draft of the National Transportation Plan available in May at the NTSF meeting. Ms. Macaluso said it might be possible to have a draft outline available in January. She added that DOE's GC would need to approve the release of the 2007 version of the transportation plan, since that office had made the decision to rescind the plan shortly after it was released for comment. Regarding future gatherings of the committee leaders and staff, Ms. Macaluso said she thought February would be a good timeframe for bringing that group together to check in on DOE's and each other's progress.

Earl Easton began his update on **NRC activities** by reprising the presentation he had given during the October 23 NTSF webinar:

- The final version of the NRC's Spent Fuel Transportation Risk Assessment will be issued on April 30, 2013.
- The most important conclusion of the severe accident studies was that the most severe fires occur in enclosed spaces. Things like "no-pass" rules can help to avoid those situations. As a result of the studies, the NRC feels comfortable that the regulations are protective.
- The NRC expects to complete its generic EIS on Waste Confidence in 24 months. A new two-branch directive is acting on this. One branch will focus solely on public outreach.
- With regard to extended storage, the NRC staff is working on incorporating comments into the final "Technical Information Needs" report.
- The NRC's final rule on 10 Part 37 RAMQC requirements is at the Office of Management and Budget. A final rule is expected in the first quarter of 2013. The final rule will go into effect one year after it is published. The states will have to implement the new rule within three years.
- The final 10 CFR Part 73.37 rule is expected to come out in the first quarter, too. That rule, which includes the new requirement for "preplanning and coordination" with states, will go into effect 90 days after publication.
- With regard to the tribal notification rule, Mr. Easton said the tribes would have to petition the NRC if they wanted to change the rule to include an "opt out" provision instead of the current "opt in" approach. The NRC had issued a draft Tribal Protocol Manual for public comment on October 12. Comments on the manual will help the NRC to write a policy for interacting with the tribes. Comments are due on April 1, 2013.

Mr. Easton reviewed the history and status of the NRC's Package Performance Study (PPS). When the NRC proposed this study years ago, it was linked to cask design for Yucca Mountain casks. The study had been terminated due to a lack of funding and a final cask design. Because of the BRC report, however, the PPS may be reactivated. Mr. Easton encouraged the states to figure out what they would want to

get from a test. That is, were they looking for a demonstration or a test to support cask design certification? Would the test be for public relations purposes, or to prove that it was possible to predict severe accident impacts using computer simulations? Mr. Easton explained that, if a cask were to hit a truly unyielding surface, the cask would absorb all the impact. But there is no way to drop a cask onto an unyielding surface without engaging the impact limiters on the ends of the cask. He asked, why not just have applicants do a full-scale test on the impact limiters? Such a test would provide the same data at much lower cost. For a demonstration test, like running a train into a cask, the train and cask both have kinetic energy. The energy left is what goes into the deformation of the train and the deformation of the cask. Because the softest object will absorb all the energy, Mr. Easton said the goal was to make casks a lot harder than anything they would hit.

Ms. deLain Clark asked what would happen if the cask were hit in the middle, not on the ends where the impact limiters are located? Mr. Easton said he could think of an accident in which that could happen. When the NRC staff first proposed the PPS, in fact, they recommended doing a “backbreaker” test. But that is not what the commissioners ultimately directed the staff to do.

On the subject of waste confidence, Mr. Easton said if storage were regulated over a long period of time, utilities would be expected to have a good aging management plan or else they would need to repackage the spent fuel. The NRC has looked at a number of scenarios and feels confident in the regulations being protective. But the agency has never published anything like an EIS on waste confidence because the commission was always confident that Yucca Mountain would be there. Now that Yucca Mountain is off the table, the NRC would make public the information on which it bases its confidence. Because so much work had previously been done, Mr. Easton was confident that the EIS would be finished in two years as promised.

Ms. Janairo asked whether DOE had been in touch with the NRC about restarting the PPS. Mr. Easton said his agency had talked to DOE about it. Money is the issue, and until DOE has funding, the test planning cannot be resumed. He mentioned that there might be an opportunity to collaborate with Canada on testing. One obstacle might be that Canada uses different casks.

Mr. Jim Williams asked whether the NRC had done a version of what full-scale tests of components – e.g., seals – had been done, what the results were, and how they informed the models. Mr. Easton said Sandia had performed some benchmarking tests but he did not elaborate on the data gleaned from the tests.

The committee resumed its discussion, addressing first the **draft statement of the states’ expectations for spent fuel shipments**. Ms. Beetem reviewed the draft, noting the changes that were agreed to during a luncheon discussion the preceding day. Mr. Easton asked what the states thought about having DOE contribute to the wording of the statement. Ms. Janairo read aloud from DOE’s summary of the October meeting, which stated that the regions would share with DOE “the planning elements they want to see DOE follow,” after which DOE would “write a vision and mission statement that captures this planning and management approach.” Ms. Janairo said she would revise the draft statement and send it to everyone by Wednesday, November 21. Mr. Wells would be able to share that version with the SSEB committee at the meeting in Biloxi. Final comments from the states would be due back by December 7 so that Ms. Janairo could reach out to the other regions to finalize the language.

The committee also discussed ideas for **new projects** the committee could undertake related to the NFSTPP. Ms. Janairo suggested that updating the old TEC/WG rail planning timeline might be a good activity to help the committee members get back up to speed on transportation planning. She said she

would put this task low on the list of priorities – possibly starting in April of next year. Visiting the shutdown plants is another activity the region could undertake, but Ms. Janairo had budgeted for that activity to take place in the second year of the project, beginning in July 2013. She had originally envisioned the trips involving only the people from that state, but the committee’s discussion made her think it would be useful to have the state representatives travel to all three shutdown sites in the region so they could compare notes and share lessons learned. The purpose of the visits would be to make contact with the utility, look at options for the first leg of the journey from each site, check out the infrastructure, etc. Mr. McCullum mentioned that one of the DOE studies had compiled this information. Mr. Williams agreed, but said it would still be worthwhile for the states to see for themselves what options exist and what sensitivities or constraints shipments might face.

The committee moved on to discuss **Midwestern representation at upcoming meetings**. Ms. Janairo said she would circulate a list of the upcoming meetings, including dates, locations, and links to papers presented at previous meetings. Mr. McCullum said NEI appreciated having the states attend the Used Fuel Management Forum and said he felt certain there would be room on the agenda for a Midwestern representative. Mr. Schmidt asked Ms. Rasmusson whether she had represented the committee when speaking at the NEI conference or her state of Iowa. She said she had represented the committee.

During the working lunch, Steve Gebers (Quantum Nuclear Services LLC) spoke about **Fukushima and its Impacts on the Industry in the U.S.** Mr. Gebers explained that he used to work at Fort Calhoun and had retired after 37 years in the industry. He began by describing the sequence of events, beginning with a tsunami, that caused the accident at Fukushima in 2011. With the loss of offsite power and explosions in the reactor building, efforts to get cooling water to the reactors were severely hampered.

Immediately after the incident, the Institute of Nuclear Power Operations (an internal quasi-regulatory industry group) issued a Level 1 Event Report on March 15, 2011. This first event report asked the utilities to review their processes and equipment that were available to keep the reactor cool and covered. Another Level I report came out in April 2011 about spent fuel cooling because, at the time, there was a concern that part of the problem at Fukushima was that the water in the spent fuel pool might have been boiling. Another Level 1 Event Report on came out in August after more about the accident was known. This report addressed “Near Term Action to Address the Extended Loss of All AC Power.” On the regulatory side, the NRC issued a request for information (RFI) on March 12, 2012, one year after the accident, asking what the utilities were going to do in light of the lessons learned from the Fukushima accident.

Mr. Gebers said that, after 9/11, power reactors were required to implement various strategies to keep the spent fuel pool and the reactor core cool and covered. Fort Calhoun tested and verified procedures, e.g., deploying flood equipment and testing to see whether it was possible to spray cooling water from a reasonable height to keep the spent fuel cool. Mr. Clawson asked about the ability to cool the spent fuel if the storage pool developed a crack, noting that the exposure rates could be very high. Mr. Gebers said exposure rates reached 300 r/hour right at the edge of the pool. Workers can approach the pool from the side, throw a hose over, and remain safer than they would if they were stationed above the pool. It takes about 12 gallons per minute to make up for the loss of water unless the pool held a freshly offloaded core. The design requirement is 200 gallons per minute, and Fort Calhoun has pumps capable of achieving this rate. The water at Fort Calhoun can be drawn right from the Missouri River.

The NRC’s RFI was really a request for the utilities to perform a hazards walk-down to reevaluate seismic event, flood events, and fire protection. The assessments were based on a set of standard assumptions for a large-scale external event occurring. For example, all on-site units would be affected, there would

be an extended loss of AC power both on-site and off-site, and access to the units would be impeded. All reactors would be operating at 100% initially and they would shut down as designed. Part of the RFI was intended to address emergency planning – namely performing and providing an assessment to identify enhancements needed to ensure maintenance of communications during a large-scale external event.

One of the strategies utilities came up with together with NEI and EPRI was the FLEX Concept for diverse and flexible mitigation capabilities, all intended to keep the core and fuel cool and covered. The concept uses a regional approach for storing equipment that would be needed in an incident – similar to what DOE does with its Radiological Assistance Program resources. The FLEX concept enhances defense-in-depth (design, operating procedures, station blackout coping capabilities, severe accident management guidelines, and emergency plans).

There are three phases to the FLEX: Initial coping with installed equipment (six hours), transitioning to on-site FLEX equipment (6-24 hours), and finally transitioning to regionally available FLEX equipment (greater than 24 hours). Facilities for storing temporary equipment on site will need to be well protected – that is, out of the flood plain and capable of withstanding seismic events. Fort Calhoun had finished its site assessment just a few weeks ago and was preparing to send in the results to the NRC. The process involved identifying capabilities and threats, and from that information, finding the gaps and figuring out how to close the gaps.

On-site, Fort Calhoun will have reliable backup electrical power and cooling capability if an extreme event disables multiple power and cooling systems at each reactor. Additional equipment will be dispersed among various locations to provide for multiple redundancies. A big lesson learned from Fukushima was that they had access to external generators but the hookups were not compatible. Also, seawater pumps were available, but connectivity was an issue. In an incident, there might be a need for heavy lifting equipment in case debris is in the way. The industry has agreements for requesting logistical support from state emergency management organizations. Mr. Gebers had worked on letters of agreement for Iowa and Nebraska to make it possible to get critical people onsite as soon as possible.

In terms of other planned or implemented procedures, Mr. Gebers noted that all plants are designed to have eight-hour capabilities for their batteries. If a plant were to strip down to only essential loads, it would be possible to get 24 hours out of the batteries. Fort Calhoun is also making improvements to Severe Accident Management Guidelines and implementing administrative controls to protect spent fuel pool cooling equipment. In addition, like many sites, Fort Calhoun now has portable generators to charge radios and communications equipment.

Ms. Engelhart asked whether Japan had expanded its emergency planning zone and, if so, whether that would affect the U.S. Neither Mr. Gebers nor Mr. McCullum had heard this news. Mr. McCullum added that, even if Japan *had* expanded the zone, the U.S. would not follow Japan's lead because the U.S. already has a better regulatory structure.

Mr. Williams referred to Mr. Gebers mentioning high winds and tornados. He asked how a utility would site equipment to avoid such conditions. Mr. Gebers said the plant would not try to avoid the tornado but rather design housing that would be able to withstand a tornado. The facilities could be underground, but that was not necessary. Mr. McCullum pointed out that, even before Fukushima, all plants were designed to withstand severe accidents. What happened at Fukushima was that an event that the plant was *not* designed for actually happened. Mr. McCullum said the plant operator should have planned for an earthquake-triggered tsunami, given the location of the plant and the magnitude of other earthquakes in the area. He said he did not think there were any holes like that in the design basis

for American nuclear plants. Nevertheless, the industry can always learn from the lessons of other plants. The FLEX concept adds another layer of safety by helping utilities plan for accidents that go beyond the design basis threat.

Ms. Jennifer Clark asked whether there were any impacts to the Eastern power plants from Superstorm Sandy. She also asked whether any utilities had implemented any of the changes Mr. Gebers had described in order to minimize the damage from Sandy. Mr. Gebers said Oyster Creek had declared an alert because of high water levels from the storm surge. But the plant was shut down for a refueling outage at the time. Mr. McCullum added that not even Oyster Creek experienced anything beyond the plant's design basis.

Ms. Rasmusson mentioned the "aquadams" deployed prior to the Fort Calhoun flood and asked whether they were part of the FLEX measures. Mr. Gebers said they were put in place to protect non-nuclear assets like Fort Calhoun's training center and office building. Dam breaches are of concern, especially along the Missouri River, but Fort Calhoun would still have three days' time to react and put up flood barriers in the event of a dam breach.

The meeting concluded with a brief **committee discussion**. Ms. Janairo announced that, after the December 4 webinar on communications, the next two would come up in January (preview of upcoming shipments and progress reports from the NTSF ad hoc working groups) and a March refresher on routing requirements. It might also be possible to recruit the DOE speaker Mr. Williams had mentioned earlier to be a speaker during a future webinar. In addition, it was likely the states would be able to participate in a webinar on Section 180(c).

Mr. Easton encouraged the states to stay involved in the NRC's waste confidence activities even though the committee no longer would receive funding from the NRC. Ms. Janairo said the lack of a funding source would make it difficult for her to engage in these activities. Mr. Easton speculated that DOE's NFSTPP might be willing to fund staff activities related to waste confidence. Ms. Beetem said that was a conversation the region should have with DOE. After some discussion, the committee members agreed not to follow the NRC's waste confidence activities formally as a group, but to share information within the region if any state does decide to submit comments on the scoping process and other actions.

Ms. Janairo reviewed the action items from the meeting. Major Evans adjourned the meeting at 1:40 pm.

Prepared by Lisa R. Janairo, December 3, 2012.