

**The Council of State Governments
Midwestern High-Level Radioactive Waste Committee**

Proceedings of the 20th Meeting

**Indianapolis, Indiana
November 29-30, 1999**

Welcome and Introductions

Mr. Don Flater (Iowa) called the meeting to order. After general introductions, Mr. Flater mentioned that, because the agenda was very full, the traditional states' roundtable would be deferred until the next meeting. He noted that he had at least one request from a state to do a brief report, and offered to try to make time for other states to do the same. Mr. Flater then turned the floor over to Ms. Lisa Sattler (CSG-MW) for the project update.

Project Update

Ms. Sattler mentioned that she had distributed a written project update in the briefing materials and would, therefore, highlight only the most important points. First, the legislative appointments to the committee had just recently come in. Ms. Sattler noted that Sen. John Judge (Iowa) was a new appointee and that Sen. Beverly Gard (Indiana) and Rep. Joann Freeborn (Kansas) would be continuing on the committee. In addition, there would be new legislative appointees from Ohio, Michigan, Minnesota, and Nebraska. She said she would contact the new members in a few weeks and would look to the gubernatorial appointees from those states to make courtesy calls to welcome the new members. Ms. Sattler added that, with the new appointees, the committee had now reached its full membership of 19.

Second, Ms. Sattler said she had attended the annual meeting of the Midwestern Legislative Conference (MLC), which met in Cincinnati in July. At that meeting, the MLC passed the committee-sponsored resolution on high-level radioactive materials transportation. Ms. Sattler had distributed copies to the committee both via e-mail and in the briefing materials. She said she would be attending the national Council of State Governments (CSG) meeting later in the week and mentioned that it would be possible to introduce resolutions for consideration either by the national CSG organization or just the MLC Executive Committee.

Lastly, Ms. Sattler said CSG-MW would unveil its new web site in early December. She said the pages related to the Midwestern High-Level Radioactive Waste Transportation Project would look different and would have slightly different content. In the coming months, Ms. Sattler hoped to add to these pages a great deal more information regarding the cross-country shipments of foreign research reactor spent fuel, the shipments to the Waste Isolation Pilot Plant (WIPP), West Valley shipments, and links to other sites of interest.

Committee Reports and Discussion

Transportation External Coordination Working Group (TEC/WG) Meeting and Topic Groups

Mr. Flater reported on the July TEC/WG meeting in Philadelphia, which he, Ms. Sattler, and Mr. Crose had attended on behalf of the committee. He asked Mr. Crose to report on the activities of the Protocols Topic Group. Mr. Crose said the group had reviewed three draft protocols at the meeting. He added that he had missed the last conference call and asked Ms. Sattler to report on the call. Ms. Sattler said she had recently received four new draft protocols, which she then handed out to the committee members. She asked the committee to provide her with comments on the draft protocols in time for the topic group's next conference call, scheduled for the week of December 13.

Mr. Flater reported on the Training Topic Group. He said the Transportation Emergency Preparedness Program (TEPP) training modules were now available. He had received the CD in the mail very recently. Mr. Dale Dietzel (DOE-Chicago) said he had brought a few copies for each of the states at the meeting and added that states could contact him to receive additional copies.

Mr. Flater said he was not sure what the Training Topic Group would do now that the modules were completed. The group had planned to hold a meeting in December, but the meeting was canceled due to a lack of funding. He said this group and the Medical Training Group both had more work to do.

Ms. Sattler said the Communications Topic Group had been reviewing public information materials for DOE. At the Philadelphia meeting, the group provided comments on some revised transportation factsheets, including the one on the TEC/WG. During the interim, the group had commented on the brochure for the TEPP modules. Lastly, the group had reviewed an outline of the emergency communications protocol, which they forwarded to the Protocols Topic Group. She said she thought the group had completed its work plan and speculated that the group might not even meet in Las Vegas at the next TEC/WG meeting.

Mr. Flater said the next meeting would be February 15-17 in Las Vegas. He said he was planning to attend. Mr. Crose and Ms. Sattler were planning to attend, as well. Mr. Flater said he had asked Mr. Frank Moussa (Kansas) to represent the committee on the newly organized Consolidated Grant Topic Group. He added that the Medical Training Group would be meeting and asked for a volunteer to represent the committee. Mr. Robert Owen (Ohio) said he had been attending those meetings, and Mr. Flater asked him to serve as the committee's official representative.

Cross-Country Transportation Working Group (CCTWG)

Mr. Flater noted that Mr. Bill Clark (DOE-Savannah River) would report in detail on the cross-country shipments. He said the CCTWG held its last planning meeting on June 29-30 in Salt Lake City and the shipments had gone through in August. Mr. Flater said that, although some things did not turn out as planned, the shipments proceeded without any major incidents. He mentioned that, in Iowa, a car had pulled in between the escort vehicle and the truck. The State Patrol pulled the motorist over, and the truck kept going. Mr. Flater said he did not think the state would escort future shipments.

He added that TRANSCOM worked well. Through special request, DOE had granted Iowa access to the shipment on TRANSCOM four hours prior to entering the state, starting from Champaign-Urbana, Illinois. Mr. Flater said his state did not have any major concerns about the shipment, other than the condition of the trailers. He said he was aware that DOE was working with its contractors to resolve this matter.

Mr. Flater said the CCTWG had gone through a lessons-learned review following the shipment. He mentioned that there had been some confusion on the part of the drivers near the Illinois-Iowa border. He said the group was pretty much done with its work on the 1999 shipment and would now turn to the 2000 shipment.

Mr. Flater deferred the report on the SSEB Transuranic Waste Transportation Working Group meeting until later in the day.

Committee Discussion

Mr. Roger Andrews (Indiana SEMA) presented some information on the State of Indiana's preparations for radioactive materials shipments. He said the state would like to see DOE go beyond the mere regulatory requirements with regard to prenotification of shipments. He cited the

example of the Fernald low-level waste rail shipments as an example of why the states might need more than seven days' notice. Mr. Andrews said these trains, which were 50-60 cars in length, were more noticeable than others because they were placarded "radioactive."

In conjunction with the rail and intermodal shipments from Fernald, the state was conducting radiological awareness training. Twenty counties had been trained to the awareness level, with over 1,000 first responders trained. In addition, two counties (29 technicians) had been trained to the technician level. Mr. Andrews showed a map of the projected high-level radioactive waste transportation routes, and noted that the state would have to do a significant amount of training to prepare the potentially affected counties.

Mr. Andrews provided a brief overview the POPEYE Radiological Exercise, which took place on October 2 in Lake County, Indiana. The exercise was the largest radiological exercise in Indiana, attracting over 300 participants and dozens of federal, state, and local agencies, as well as private organizations. The exercise involved response to a hypothetical transportation accident in which radiological isotopes were released.

Mr. Thor Strong (Michigan) asked what the rationale was for training two counties to the technician level. Mr. Andrews said the two counties had requested training to this level. One of the counties was Lake County, which was involved in the POPEYE exercise.

In response to a question from Rep. Freeborn, Mr. Andrews said the state did its own training. He added that, as a trainer, he frequently worked on weekends and at night, since many of the first responders were volunteers. Rep. Freeborn asked if the state had a flex-time arrangement to reduce the burden on its trainers, and Mr. Andrews replied that it did not. She asked if contracting with private industry might not be an efficient alternative. Mr. Andrews said he had reviewed proposals from outside companies, but thought the training they offered was not always in sync with the actual needs of the first responders.

Mr. Flater said Iowa had offered awareness-level training along the routes for the cross-country shipments and had trouble filling the classes. He noted that the problem was that local fire departments often did not see the need for nor have the time to attend training. The state did not encounter such problems with technician-level training.

Mr. Crose commented on the state's proactive stance in preparing responders to handle radiological emergencies. Rep. Freeborn asked how many incidents had occurred in Indiana. Mr. Andrews said the state had never had a radiological release resulting from a transportation accident. He said in 1998, the state Department of Health had been asked to respond to around 48 hazardous materials incidents at a industrial sites in the state.

Mr. Flater asked Mr. John Kerr (Minnesota) for an update on the private fuel storage facility. Mr. Kerr said the Private Fuel Storage (PFS) project involved eight utilities seeking to construct a centralized storage facility on land owned by the Skull Valley Band of Goshute Indians in Utah. The utilities had submitted a license application to the NRC back in 1997 and were expecting to receive the license in mid-2001. Mr. Kerr noted that the tribe in question was fairly small, with about 200 people. The shipments to the facility would all be by rail. Mr. Kerr noted that, in the mid-1980s when Monticello shipped spent fuel to Illinois, the state had seen shipments every few weeks. Under the proposed schedule for the PFS facility, shipments in Minnesota would take place three or four times per year, in trains carrying four or five cars. Mr. Kerr said the utilities were still planning to start shipping in 2003, with shipments from Minnesota running through 2007.

Mr. Flater mentioned that several Midwestern utilities had joined together specifically with regard to their nuclear units. He added that the Duane Arnold plant was about one year away from breaking ground on a dry storage facility. Mr. Stephen Malmberg (Wisconsin) said both operating plants in Wisconsin had joined the Nuclear Management Company, along with Northern States Power. It was his understanding that nuclear waste management was not going to be part of the management company's tasks, since the plants had such widely varying needs. Mr. Kerr added that the company, now called New Century Energy, would manage the nuclear units of several utilities in the Midwest.

Mr. Strong asked Mr. Kerr how the State of Utah was reacting to the PFS project. Mr. Kerr said the state appeared to be strongly opposed to the project, with several bills having been introduced in the legislature.

DOE Chicago Operations Office Update

Mr. Flater turned the floor over to Mr. Dale Dietzel, the Region 5 TEPP Coordinator at DOE's Chicago Operations Office. Mr. Dietzel said his purpose in coming to the meeting was to introduce himself to the states in Region 5 and to explain the mission of DOE's TEPP program. He mentioned that he was hoping to hold a workshop in late April in Chicago, bringing together all the states in Region 5. Along with the workshop, Mr. Dietzel expected to have ORISE provide a public information training session.

DOE's Office of Environmental Management in Washington, DC, sponsored the TEPP program. The program used to be under the Office of Transportation and Emergency Management within the Office of Environmental Management; a recent reorganization, however, would likely place the program elsewhere. Mr. Dietzel was confident DOE would continue to support the TEPP program.

Mr. Dietzel said he saw the TEPP mission as a coordinated effort. He emphasized that the TEPP Coordinators were there to assist the states and tribes, not to take things over. He noted that Region 5 included all the Midwestern states except Kansas and Missouri. Mr. Dietzel reviewed a list of products available through the TEPP program, including a Model Needs Assessment, Model Initial Response Procedures, a Tabletop Drill, and an Exercise Program Manual. These products were all available on the TEPP web site (www.em.doe.gov/otem/program.html). Mr. Dietzel said he had recently been to Nebraska, in conjunction with the cross-country shipments, to assist with a needs assessment in the state with regard to both training and emergency planning. He said the next step would be to support the state in meeting the identified needs.

Mr. Dietzel said the products available through TEPP were all very comprehensive. One of his goals for the spring workshop was to bring state personnel together with DOE and its contractors to walk through some of these model documents.

The Modular Emergency Response Radiological Transportation Training (MERRTT) program was now available. States and other stakeholders external to DOE had been involved in developing this set of training modules. There were 16 modules in all, addressing the awareness, operations, and technician levels. Mr. Dietzel said he had brought copies of the CD-ROM containing the modules. He added that additional CD-ROMs would be distributed through the mail. Mr. Dietzel said the modules were pilot tested in three counties: Aiken County, South Carolina; Montgomery County, Maryland; and Lake County, Indiana.

Mr. Dietzel said the mission of DOE's TEPP program was to assist DOE and other federal, state, tribal, and local authorities to prepare for response to a transportation incident involving DOE shipments of radioactive materials. The POPEYE exercise was an example of the type of assistance

DOE could provide. Planning for the exercise began in April 1999, and the exercise took place on October 2.

Mr. Dietzel said this exercise had assisted Lake County in developing an adequate response to a radiological materials incident and in conducting a field exercise to demonstrate the results of those planning efforts. The local participants took the lead on the exercise. Through the TEPP program, DOE provided a model needs assessment, a model transportation exercise management plan, and classroom and hands-on training to first responders. The department also helped to develop the scenario, timeline, and injects for the exercise. DOE staff and contractors served as evaluators and controllers.

Mr. Dietzel said the scenario involved a stolen truck overturning in Highland, Indiana. The truck carried radioactive and hazardous cargo, some of which fell from the truck. There were four victims of the accident, including one fatality. The scenario enabled many different agencies to participate. Responding agencies were able to test their ability to establish a unified command system, integrate state, local, and federal agencies into the response, and monitor and decontaminate the scene. Recovery stage activities were handled in a table-top exercise. Mr. Dietzel then reviewed the list of participants and observers, noting that Congressman Peter Visclosky had attended. Mr. Dietzel said the participants in POPEYE would be following up with a lessons-learned review, a final report, and a video that could be used for future training purposes. He said DOE would be interested in helping other states with similar exercises.

Rep. Freeborn asked if DOE would share training situations. Mr. Dietzel said each region had a TEPP coordinator, whose role was to provide as much support as each state desired. Rep. Freeborn asked if many tribes requested training. Mr. Dietzel said, in the West, DOE and the states work more closely with the tribes. He had not received any requests from tribes in the Midwest. Rep. Freeborn asked if DOE had received many hits on its website. Mr. Dietzel said yes, and Ms. Williams said many of the hits were from the public, university students, and state and federal agencies.

Rep. Freeborn asked how the POPEYE scenario posed the theft of the truck. Mr. Dietzel said the radioisotopes were on an express-delivery truck, the driver of which had stopped at a nearby restaurant. Rep. Freeborn asked if the materials were properly prepared for shipment. Mr. Dietzel said they were, but that a breach was still possible since the packages were crushed. Rep. Freeborn asked if this type of scenario would create undue fears that the packages were not secure. Mr. Dietzel and Mr. Andrews both said the media coverage of the exercise was positive. Mr. Andrews added that the POPEYE exercise provided greater access for observers and the media than any exercise he had ever seen.

Mr. Clark asked about real-time considerations as they pertained to the timeline. Mr. Dietzel said a compressed timeline had been established to facilitate the exercise. Mr. Clark also asked if the exercise had turned up anything that responders were totally unprepared for and which would point to a need to revise the TEPP materials. Mr. Dietzel said the final report was still being prepared, but so far no major deficiencies had been identified.

Mr. Strong commented that it would have been beneficial if the media had noted the prevalence of hazardous and radioactive materials shipments on the road. Mr. Andrews agreed, and said, although the state had tried to get that message out, the press did not report that particular bit of news. Mr. Crose added that over 100 people had attended a public meeting regarding the Fernald shipments. He urged any state that was interested in conducting an exercise like POPEYE to contact DOE.

Election of Vice Chair and Committee Discussion

Mr. Flater said Mr. Owen and Mr. Tim Runyon (Illinois) had expressed interest in being Vice Chair of the committee. He asked if any other committee members would like to be added to the ballot. Mr. Crose moved that the nominations be closed, Mr. Strong seconded. While Ms. Sattler passed out the ballots, Mr. Moussa read a proposed resolution honoring Mr. Flater's service to the committee as Chair in 1998 and 1999. The committee adopted the resolution by unanimous vote.

As Ms. Sattler tallied the vote, the committee resumed its discussion of the cross-country shipment. Mr. Runyon said Mr. Clark and Ms. Allison Blackmon did a good job of addressing state concerns to the extent that they could. Mr. Runyon suggested that both the State of Illinois and the DOE staff might do things a little differently for the next shipment, having learned some lessons from the first one.

Mr. Flater asked Mr. Runyon to comment on the situation with regard to CSG-MW establishing a cooperative agreement with DOE's Carlsbad Area Office (CAO) to handle WIPP transportation planning for the Midwestern states. Mr. Runyon said his experience with the Southern States Energy Board (SSEB) had been a good one, and he would like to maintain a good working relationship with the Southern region. He acknowledged that it was each state's decision whether to work primarily with the Midwest or the South on WIPP issues. Nevertheless, he noted that, because of their longtime relationship with CAO, the Western Governors' Association (WGA) and the SSEB seemed to command greater respect from DOE than the Midwestern region — a situation that was no longer acceptable, given the fact that TRU waste shipments would soon have an impact on the Midwest. He thought the Midwestern committee and staff should be able to work more directly on WIPP issues in order to strengthen the Midwestern region's position.

Mr. Flater asked the committee to review a draft letter from him to Mr. Roger Mulder, the chair of SSEB's Transuranic Waste Transportation Working Group. The letter stated the position of the four Midwestern WIPP states (Illinois, Indiana, Iowa, and Ohio) that the Midwestern High-Level Radioactive Waste Committee was the primary forum for addressing issues pertaining to shipments of all types of radioactive materials through the region. The letter also acknowledged the good working relationship between the Midwestern and the Southern states. Lastly, the letter noted that each state would have to decide which regional committee on which to participate.

Mr. Crose said the State of Indiana did not have any problems working with SSEB. Mr. Flater clarified that none of the states had had trouble with the Southern committee or staff. He pointed out, though, that the Midwestern states were not voting members of the SSEB committee. He said his hope was to see the Midwestern region become an entity in itself, one that would work with the other committees on the same level.

Mr. Ralph Smith (DOE-CAO) provided some background information on the reasons for CAO entering into an agreement with CSG for the Midwestern and Northeastern regions. He noted that for a few years, he had asked Ms. Sattler and Mr. Phillip Paul (CSG/ERC) to do work for WIPP without compensating them. In the CAO budget for the coming year, Mr. Smith had budgeted money specifically for these two groups. Mr. Smith mentioned that each of the WIPP states would have a travel allowance to enable them to attend several meetings each year.

Mr. Owen agreed with Mr. Flater and Mr. Runyon that the Midwestern committee should speak for the region. He clarified that this opinion did not imply that SSEB had done a bad job. Mr. Christopher Wells (SSEB) noted that the decision for DOE to establish a cooperative agreement did not come from SSEB. He said SSEB would work with the states in any way that they chose.

Ms. Carol O'Claire said the Ohio Emergency Management Agency had written to the Secretary in support of returning SSEB's funding. Ms. Sattler asked Ms. O'Claire if she was referring to the Secretary having cut all of SSEB's funding related to WIPP. Ms. O'Claire said she was. Mr. Flater asked the committee to review the letter to Mr. Mulder by the following morning, when the committee would decide whether to send the letter to Mr. Mulder.

Mr. Flater then announced that the committee had elected Mr. Runyon to be the next Vice Chair of the committee. He congratulated Mr. Runyon, and turned the floor over to him for the TRANSCOM report.

TRANSCOM Report

Mr. Runyon explained that Mr. Bobby Sanchez (DOE-NTP) would provide the report on TRANSCOM via telephone. Mr. Runyon said he was the committee's representative on the TRANSCOM Steering Group. The group had met face-to-face once and held several conference calls. Mr. Runyon thought Mr. Sanchez and Mr. Gene Carnes (TRANSCOM Control Center) had done a good job of distilling everyone's wish list into a prioritized list of needs and wants, and of incorporating these items into a new system.

Mr. Sanchez said he was the TRANSCOM program manager in Albuquerque. He introduced Mr. Rand Weidert and Mr. Carnes, who would be able to answer any questions the committee might have.

Mr. Sanchez said TRANSCOM had tracked 72 shipments in FY 99 and 14 so far in FY 00. These totals included 32 WIPP shipments and 15 shipments of foreign research reactor spent fuel. Mr. Sanchez said the current version of TRANSCOM was custom built and resided on one machine. He said DOE had contracted with some of the original designers to fix several of the major design flaws to improve access to the system.

Concurrently, DOE was working on a new internet-based system, called TRANSCOM 2000. DOE hoped the new system would prove to be more reliable and stable than the current one. As part of the new system, DOE has purchased two off-the-shelf items: the maps package and QTRACS. The steering group had identified mapping as a high priority for the new system. DOE had reviewed 25 different packages and had finally settled on a product by Object FX. QTRACS was state-of-the-art software for transforming information from the satellite service into useful information for users to view.

Mr. Sanchez said DOE was hoping to have TRANSCOM fully implemented by the end of March 2000. Implementation would take a phased approach, starting with the steering group rigorously testing the system. Beta testing was tentatively scheduled for the mid-December timeframe, however Mr. Sanchez acknowledged that the holidays and delivery of the maps package might cause a delay.

Mr. Sanchez said TRANSCOM had over 100 users, all of whom would need training. Training was so important, in fact, that DOE had decided not to provide access to the system until users had received training. Plan A was to conduct five or six large training classes throughout the country. Plan B involved computer-based training that users could access on-line, with a measurement of competency required at the end. Mr. Weidert was also working on an on-line training course.

Mr. Sanchez then addressed the workaround procedures for the existing system. He said DOE had replaced much of the old equipment, which should eliminate some of the problems users had been having in accessing the system. The original system was not designed to forward all messages pertaining to a shipment to all users who had access. DOE was now manually forwarding those messages as quickly as possible. Mr. Sanchez said DOE would also manually input position updates in the event that the QUALCOMM system did not provide this information in a timely manner.

The main problem with the bills of lading was the appearance of spurious times (e.g., departure times of 24:01). Mr. Sanchez said this problem was the result of computations in the code, and appeared to have been fixed. Another problem with the current system was the phenomenon of user computers “falling asleep” and not updating information. Mr. Sanchez said that, although this situation had been difficult to re-create, DOE had confidence in the patch it had created to solve the problem.

Mr. Sanchez described the way the system received information from QUALCOMM. QUALCOMM received an updated position from the transponder on the truck, and then placed that information in DOE’s “mailbox.” The TRANSCOM server would call QUALCOMM, receive the position update, and integrate it into the system where it would then be available to users. This automated procedure would happen every five minutes. Occasionally, the system would disconnect, and DOE would have to manually reconnect. Normally, reconnecting would take just a few minutes and the user would never be aware of the problem. At other times, the QUALCOMM system would not allow the server to reconnect until after it had powered down and powered up again. Because turning the system off and on took a great deal of time, the users would not receive updated information. DOE had received one patch to solve this problem, and had tested it and provided feedback. Mr. Sanchez hoped this problem would be solved in the very near future.

Mr. Sanchez said about 95 percent of the users could access the system without difficulty. There were still some problems with firewalls and modems, but DOE was working on these. Occasionally, a user would report that clicking on the maps feature would bring up a blank page. Mr. Sanchez said users had to reset the maps path manually, and that the help function would help the user do this.

Mr. Sanchez completed his presentation by reviewing some “helpful hints.” He said users that were experiencing problems should contact the TCC right away. He also suggested logging on at least one day prior to a shipment and/or once a week to reduce the download times. He said users could visit the TRANSCOM website (www.ntp.doe.gov/transcom) for more operational assistance and for updates. Lastly, he said the committee members could address their questions and comments to Mr. Runyon, who represented the Midwest on the TRANSCOM steering group.

Mr. Sanchez then turned the floor over to Mr. Weidert, who worked for SAIC at DOE’s Hanford facility. Mr. Weidert was involved in the development of the automated transportation management system, which DOE used to keep track of all the documentation connected with its shipments.

Mr. Weidert said he was with Ms. Tammy Edwards, who was one of the main developers of TRANSCOM 2000. Mr. Weidert said TRANSCOM 2000 was structured in a significantly different manner from the current system. There was enough similarity between the two systems, though, that current users would require very little training.

Mr. Weidert showed the new logon screen, which asked for user name, password, and database. He said this screen was the top of six layers of security built into the system. All transmissions would be encrypted for added security. The user would connect to a web server, where the application would run. A firewall existed between the web server and the actual database, which would allowed only one address (the web server) to talk to the database. As a result, the database was completely sealed from the outside world. Once in the system, users would have access only to certain commands and to particular shipments. The database would also prevent users from deleting or modifying information regarding a shipment unless the user was authorized to do so.

After connecting, the user would go directly to the TRANSCOM system. Mr. Weidert explained each of the functions available to users. He noted that, for functions to which the user did not have

access, the buttons would appear dimmed. The "Shipments" button appeared at the top, since most of the TRANSCOM users would access this function. Two buttons addressed schedules: "Scheduler" and "Campaign Schedule," which would bring up a separate web page showing the schedule for a particular campaign. "Administration" was accessible only by the TRANSCOM Control Center. Links were provided to both the Emergency Response Guidebook and Volume 49 of the Code of Federal Regulations. Clicking the "Transcom Ops Webpage" button would take the user to the website that Mr. Sanchez had described. Users could access the "Change Password" button after they had completed training and been assigned a user name and password.

Mr. Weidert then showed the "Available Shipments" screen. He reiterated that this screen would only show shipments to which the user had access. Across the bottom of the screen were buttons that linked to other portions of the system, including maps, messaging, the bill of lading, and the route. Each button would take the user to information on the highlighted shipment. Mr. Weidert noted that across the top of the screen, users would see menu items as well as icons that linked to the available commands.

The mapping feature was capable of magnifying the view down to the street level. From the messaging screen, users could send messages as well as view all messages, those that were sent, or those that were received. To assist in sending messages, the screen provided drop-down boxes containing authorized users. Mr. Weidert noted that one of the biggest differences between TRANSCOM 2000 and the current version was that there was only one source of data. In contrast, the current system contained the data on one database to start, but then downloaded the information to multiple databases housed on the users' machines.

Mr. Weidert said the "Positions" screen was useful to the user mainly in that it provided confirmation that the user was receiving updates. The revised screen would include a button for adding positions manually. Only the TCC would have access to this button. The next screen showed the route for the shipment, including the state and highway segment. The "Notes" screen was similar to the one for messaging. All the notes pertaining to a shipment would show up in chronological order, with the first line or so displayed for each one. As the user highlighted each note, the text of the entire message would appear at the bottom. Users could add notes to the shipment. Clicking the "Print" button would print all the notes for that shipment.

"Emergency Contacts" was the next screen. The screen listed the responsible DOE operations office, as indicated on the bill of lading. In addition, the screen showed the DOE Regional Coordinating Office plus state and tribal emergency management agencies in the area where the shipment was currently located. To view the same information for a different location, the user could enter the two-letter state abbreviation. The information on this screen was only for viewing; users could not enter or change any data on this screen.

Mr. Weidert quickly reviewed the "Bill of Lading" screen, which would be accessible only to users that were authorized to enter, modify, or delete bills of lading. Much of the information on the screen would have already been input by the user on the "Scheduler" screen, which Mr. Weidert would show later. The screen was laid out in a fashion similar to a written bill of lading. To reduce typing and other errors, the various screens that were linked to this one had several drop-down boxes for the carrier name, the type of material, and other fields. As a double check, on the "Calculate Classification Worksheet," the system would warn the user if he or she had misclassified the shipment. The system would not change the paperwork, however.

Mr. Weidert said the user could save each of these separate screens, as well as the entire bill of lading, as a template. Doing so would come in handy if the user were making the same type of shipment

several times. Lastly, Mr. Weidert showed the "Scheduler" screen, which was where the user would start when adding a shipment to the system. The system itself would generate a shipment id, and the first information the user would enter would be the bill of lading number. All the information entered on this screen would follow through to the "Bill of Lading" screen.

Rep. Freeborn asked if the information on TRANSCOM could be printed. Mr. Weidert said if the user's web browser was capable of printing, the user could print any information that he or she could view. Mr. Jonathan Schwarz (Nebraska) asked how long it would take for a user to log on to the system. Mr. Runyon said that it should be similar to logging on to one's Internet service provider. Mr. Weidert said his experience was that it would take about five seconds to load the application on startup.

Ms. Sattler asked Mr. Sanchez to review the schedule for implementing TRANSCOM 2000. Mr. Sanchez said the beta release tentatively would be available in mid-December. This milestone was contingent upon DOE receiving the maps package on schedule. Mr. Runyon clarified that some states had requested the ability to view mile-markers to further enhance their ability to locate a shipment in the event of an accident. This request was difficult to meet and very costly. As an alternative, DOE had ordered a separate module to enable the user to measure distances on the maps. Most of the other interfaces with the maps package were already in place.

Ms. Sattler noted that, in October, CAO had announced that it might consider switching from TRANSCOM to another tracking product. She asked Mr. Sanchez if he had any updated information. Mr. Sanchez said he did not. Ms. Williams said she had been in touch with CAO, and that the office was not looking at other systems at this time. Mr. Runyon asked how many shipments WIPP was planning to make in the December-March timeframe. Mr. Smith said not many. Ms. Williams said the small number of possible shipments was the main reason for CAO not switching.

Mr. Sanchez said if the committee members had any questions later in the meeting, they should direct them to either Mr. Runyon or Ms. Williams, who would relay the questions to him. He also said people could call the TCC directly with technical questions.

National Transportation Program Update

Mr. Flater then turned the floor over to Ms. Williams for the National Transportation Program (NTP) update. Ms. Williams said Ms. Judith Holm and Mr. Sanchez worked with her in the Albuquerque office, and that all three people would take turns coming to future regional meetings.

Ms. Williams first addressed the proposed consolidated grant. The proposal was to pool funding from all different DOE programs that were responsible for shipments into grants that states and tribes could use to assist in preparing for the department's shipments of radioactive materials. Ms. Williams cited equipment purchase, emergency preparedness planning and training, and training for vehicle inspectors as among the potential allowable activities under the grants.

DOE was looking at two different structures for administering the grants. One option would be to hand the money down to a DOE field office, which would then provide the grants directly to the states and tribes. The second structure would pass the money from a single field office to third party organizations, such as CSG-MW, which would then provide funding to the states.

Ms. Williams said DOE had begun discussing the consolidated grants with stakeholders in July at the TEC/WG meeting in Philadelphia. The discussion had drawn from responses to a 19-question worksheet that participants had received. After the meeting, DOE had received 13 written sets of comments. The discussion at the July meeting had focused mainly on the purpose of the grants,

possible funding formulae, the administrative structure, and tribal rights. Several commenters suggested that DOE should adopt a combination of a needs-based and formula approach. Stakeholders also suggested that the formula should be simple and easy to understand. The TEC/WG had also discussed what types of materials should be considered and whether to base impact calculations on population or mileage. There was also very strong support for the regional groups in planning and coordinating.

Ms. Williams said the TEC/WG would establish a topic group to address consolidated transportation grants. With input from this group, DOE would develop the program requirements for the grant, identify and develop a program budget, and develop a notice of proposed policy.

Rep. Freeborn asked if, by defining "baseline emergency preparedness," DOE would be infringing on a state's right to make a determination as to its own level of preparedness. Ms. Williams explained that many states had asked the department to provide a baseline level of preparedness that the department thought would be necessary for responding to radioactive materials incidents. From that measure, the states would then be able to tell DOE to what extent they were prepared, as well as what steps would be necessary to meet that baseline. Ms. Williams said only the counties along the major corridors would be considered. She said the states would have input into the criteria for measuring preparedness. She added that states would be in a better position to receive funding if their current resources were lacking.

Mr. Carlisle Smith (Ohio PUCO) asked if DOE had received many comments on the distinction between emergency response and safe, routine transportation, noting that this subject had been much discussed during the development of OCRWM's policy on Section 180(c) implementation. Ms. Williams said she had not seen many such comments. Mr. Smith asked how this distinction would be addressed, and Ms. Williams said she would love to receive comments on the subject.

Mr. Runyon noted that the schedule for implementing the grants was short. Ms. Williams said there was a strong push at DOE to put these grants into the budget in 2001. She acknowledged that the schedule was very aggressive. Mr. Runyon noted the experience OCRWM had with drafting a policy on 180(c) implementation, and suggested that the process might take longer than planned.

Mr. Flater noted that, years ago, Iowa had decided it could not wait for DOE to begin providing assistance. As a result, the state had begun training people on its own. He asked if there would be a way to recoup money already spent. Ms. Williams said one approach might be to request funding in areas that had been lightly funded in the past. Mr. Flater noted that DOE had not encountered any opposition from the State of Iowa over shipments, largely because the state had already trained people along the routes.

Mr. Crose said he shared some of the concerns expressed by Mr. Flater and Rep. Freeborn. He emphasized the need to identify the routes early so that states would know which counties would need training. Ms. Sattler asked how long the comment period would be for the Notice of Proposed Policy. Ms. Williams said that decision had not yet been made.

Ms. Williams next addressed the DOE-wide transportation protocols. She said at the July TEC/WG meeting, the Protocols Topic Group had reviewed two full protocols (on pre-notification and shipment planning), plus half of the routing protocol. Since then, the second half of the routing protocol had been completed. DOE was now reviewing the comments it had received on these draft protocols. Four additional protocols had gone through internal review and were now available for comment. These protocols covered safe parking, tracking, carrier/driver requirements, and transportation operational contingencies, which addressed weather and road-related delays. DOE

had hoped to receive comments through mid-December, and turn them over to the protocols writing group before Christmas.

The protocols on emergency notification and emergency response were currently undergoing internal review, and seven more were to be drafted in December. These nine protocols would all be available prior to the February TEC/WG meeting. Ms. Williams said DOE hoped to complete the final two — planning and public information — in 2000. In addition, the department would prepare a glossary and a synopsis of the process, and would review all the protocols for consistency. Ms. Sattler said the TEC/WG had prepared a glossary years ago and suggested using this document as a starting point. Ms. Williams said the writing group planned to do just that.

Ms. Williams said the Senior Executive Transportation Forum was now under the leadership of Mr. Dave Huizenga. The Senior Executive Transportation Forum was working on implementing a low-level waste container standardization initiative resulting from the “leaky-box” incident involving a shipment from Fernald.

On the subject of the TEC/WG, Ms. Williams said the winter meeting, which had moved to February, would focus solely on topic group meetings. The July meeting would follow the traditional format. DOE would schedule regular orientation sessions for new participants on the TEC/WG. In response to stakeholder suggestions, DOE had recently surveyed member organizations regarding the use of electronic media, sunset provisions for topic groups, and restructuring the TEC/WG work plans and action items.

Ms. Williams said there had been many internal and external discussions regarding the Prospective Shipments Module. She acknowledged that sometimes the information contained in the Prospective Shipments Module was inaccurate, and attributed this problem to the fact that the providers of the information were not the users of the document. She said different DOE programs participated at different levels. For example, the Naval Nuclear Propulsion Program had traditionally not participated. Now, however, the program was considering providing basic information on its shipments. DOE was trying to broaden the number of participants and would discuss this matter at the next meeting of the Senior Executive Transportation Forum.

Federal Railroad Administration Update

Mr. Kevin Blackwell said the U.S. Department of Transportation (DOT) had issued an order on November 16 on programs, policies, and procedures affecting American Indians, Alaska Natives, and Tribes. He said the purpose of the order was to ensure that DOT was responsive to the needs and concerns of native peoples. Mr. Blackwell said he hoped the issuance of this new order would facilitate the release of the long-awaited letter on the right of states and tribes to stop and inspect rail shipments. He said correspondence had been going back and forth between the FRA’s chief counsel and the chief counsel for the entire department. The intent was to have the letter finalized by the TEC/WG meeting in February.

Mr. Blackwell then addressed the ATMX railcar. He said DOE’s Mound site was hoping to use the ATMX car to ship TRU waste from Mound in Ohio to the Idaho National Engineering and Environmental Laboratory (INEEL). Exemption 59-48 was the original exemption for the car, issued in the 1968-69 timeframe. The exemption expired, but DOE was in the process of requesting a new exemption. Mr. Blackwell had, with permission, copied a presentation that Mound provided as part of its petition for an exemption. The cars were built in 1960, and modified in 1968 for the exemption request. DOE had used the cars extensively through 1987 for TRU waste shipments, with 1,118 shipments logged. There were a few minor accidents involving the cars, none of which

involved a release. In 1989, DOE performed a safety assessment and structural upgrade of all the cars.

If the renewal were granted, the cars would be subject to a "Rule 88 upgrade," which amounted to a top-to-bottom refurbishment. Also, according to the AAR and the FRA, all rail cars possessed a 50-year life. As a result, the 40-year-old ATMX cars would be limited to an additional 10 years of life. If DOE wished to use the cars for a longer period, the department would have to seek an extension of the cars' life from the FRA. Mr. Blackwell said DOT was aware of the political issues surrounding the use of the cars, particularly the Western states' position against their use. Nevertheless, Mr. Blackwell said the regulations required DOT to consider safety factors, not political ones, in reviewing the petition for an exemption. The exemption would be granted if DOT found that the cars provided an "equivalent level of safety." He said the FRA was involved in the exemption petition, but that the Research and Special Programs Administration (RSPA) was the lead.

Commercial Vehicle Safety Alliance (CVSA) Update

Mr. Jim Daust (CVSA) provided an update on the final report on the CVSA enhanced North American Standard inspection procedures. He said the report coincided with the end of CVSA's cooperative agreement with OCRWM, which ended June 30, 1999. He said CVSA had included in the study WIPP shipments through the end of September. Mr. Daust said 35 appendices to the final report were available through the CVSA office.

Mr. Daust explained that the enhanced standard was a much more stringent one than the regular North American Standard (NAS). He said CVSA felt the enhanced NAS was proven to be a viable inspection program to ensure the safety and efficiency of radioactive materials transportation. An enhanced defect-free inspection at the point of departure and the point of destination were useful. CVSA concluded that en-route inspections were only necessary if mandated by state law. CVSA adopted the procedures for all HRCQ and TRU waste shipments, including private ones. Mr. Daust said the outreach program and *Inspection News* were valuable tools. A three-day training session for the enhanced inspection proved to be effective.

Mr. Daust refrained from going into detail on the recommendations and the lessons learned. He pointed out that 363 inspections were conducted under the pilot study. Because of a request from New Mexico, CVSA put together for the drivers a ranking of commonly found violations. The most prevalent violation was problems with the driver logs.

Mr. Daust acknowledged that en-route and point of destination inspections were controversial issues. He said the en-route inspections during the pilot study turned up problems on the early shipments and also an unusual occurrence of the placard falling off during a WIPP shipment. Mr. Daust emphasized the need to keep inspectors trained in the use of the enhanced NAS, in the event that a truck experienced a problem while en route and needed to be re-inspected in order to resume travel.

Ms. Sattler asked about apparent discrepancies between two parts of the final report in the wording used to describe en-route inspections. Mr. Daust reiterated that CVSA felt en-route inspections were only necessary if required by state law. Ms. Sattler noted that en-route inspections turned up the same number of violations as did point-of-destination inspections, therefore it did not make sense to recommend one type but not the other. Mr. Daust said CVSA considered random point of destination inspections to be useful in keeping inspectors trained. Mr. Runyon commented on the value of being able to correct a violation discovered during an en-route inspection, compared to simply logging a violation at the point of destination.

Welcome to Indiana

On Tuesday morning, Mr. Crose introduced Mr. Patrick Ralston, the Executive Director of the State Emergency Management Agency. Mr. Ralston welcomed everyone to Indianapolis. He said the State Emergency Management Agency had been working very hard on planning related to DOE's radioactive materials shipments. He acknowledged the work of Sen. Beverly Gard in sponsoring environmental legislation in the state, including the recent passage of her recent radioactive materials transportation bill. He displayed Indiana's new public safety license plate, and noted that this was one of the first ones of this type in the United States. Revenue raised from the sale of the plates would go directly to preparing first responders.

Waste Isolation Pilot Plant (WIPP) Update

Mr. Flater then turned the floor over to Mr. R. Smith. Mr. Smith explained that WIPP was a geologic repository for transuranic waste, located in the southeastern corner of New Mexico, about 30 miles east of Carlsbad. DOE planned to ship TRU waste to the facility from 23 other sites. He said the routes to the site had already been negotiated with the states and written into DOE's contract with its carrier.

Inside the repository, TRU waste would be disposed of in rooms capable of holding approximately 6,600 barrels of waste per room. The target shipment rate was 17-20 per week. DOE hoped to reach this rate within three years. DOE was in the process of mining Panel 2, which should be completed by July 2000.

Mr. Flater asked Mr. Smith about the route from Ames, Iowa, to WIPP. Mr. Smith clarified that his map showed only the major shipping sites. He said there were 13 small generator sites not listed on the map, including Ames, Iowa; Rock Island, Illinois; University of Missouri; ETEC and GE Vallecitos in California; a site in Virginia; Knolls in New York; a site in Pennsylvania; Mound and Battelle-Columbus in Ohio; and Sandia in New Mexico. Mr. Smith said the plan was to lessen the impact on population by combining routes as much as possible.

Mr. Smith commented on DOE's plan to ship TRU waste by truck rather than by rail. He said the department had completed a study years ago that concluded rail was the more economical option. He noted that railroads were private property, so the states would have little control. He added that there were incidents in which railroad companies had temporarily lost rail cars, which DOE considered unacceptable for its radioactive materials shipments. Furthermore, DOE would have to double the number of TRUPACT shipping containers, which would cost a significant amount of money. He acknowledged that there was some waste that was too heavy or too big to ship by truck. DOE was considering rail as the mode for shipping this material.

Mr. Smith said that, because very few generator sites were prepared to ship, DOE had not yet fully deployed the 15 certified TRUPACTs in its possession. He said DOE had just let a contract to buy 12 more TRUPACTs with the option to buy 60 more.

Mr. Smith said DOE had used "pipe overpacks" to ship some waste from Rocky Flats. Because the curie count of this waste was so high, the shipments were considered highway-route controlled quantity (HRCQ) shipments. Unfortunately, these HRCQ shipments came earlier than expected, and DOE did not notify the affected states in a timely manner. Mr. Smith noted that DOE's agreement with the states was to treat every shipment as an HRCQ one, which meant that additional requirements would apply. To correct the notification problem, DOE would now identify all the HRCQ shipments on every e-mailed shipment notification.

Mr. Smith mentioned that DOE was considering modifying the route in western Texas. He said one of the local communities was interested in having its county highway paved, and therefore was trying to arrange for WIPP shipments to pass through the area. Mr. Smith said even though the proposed route would save time, DOE would not pursue the route change without the support of all affected parties, including the State of Texas. Mr. Strong noted that Andrews County was the location of the proposed route change, and asked if this was the same county that housed Waste Control Specialists. Mr. Smith said it was, and noted that the incentive to have WIPP shipments pass through the area involved politics beyond DOE and the WIPP site.

Mr. Smith said some waste at Rocky Flats and Idaho was so heavy that DOE would have to make overweight shipments. These shipments would not affect the Midwestern states. Mr. Smith also said DOE had trained 17,000 emergency responders along the routes over an 11-year period. Using a modified course, CAO had also trained people along the route for the cross-country shipments.

Mr. Smith reviewed the proposed schedule for shipping, and noted that DOE might move the starting date for shipments from the Savannah River Site (SRS) from November to July 2000. He said DOE had suspended all shipments to WIPP in order to recertify the sites that had previously been certified to ship. This recertification was required as part of the WIPP site's RCRA permit, which was recently issued by the State of New Mexico. Mr. Smith said DOE expected to resume shipments to the site in January or February. Shipments from Argonne were expected in 2003. Mr. Smith said that, because of agreements DOE had with the states, INEEL and Rocky Flats were the primary shipping sites.

In addition to the contract for packages, DOE was preparing to procure a new transportation carrier. The schedule was to review proposals in January and choose the new carrier in February. The TRUPACT contract had gone to NAC and EPD, a Westinghouse subsidiary. Each vendor would manufacture six TRUPACTs, and DOE would have the option of purchasing 60 additional TRUPACTs and HALFPACTs. Mr. Smith expected delivery of the first containers in the initial order to take place in April or May.

DOE was also seeking NRC approval for a container for shipping remote-handled waste. The container would be a shielded cask capable of holding three 55-gallon drums of waste. The request for proposals for these containers was under review at DOE headquarters and should soon be available for distribution. Mr. Smith added that these containers would require special trailers for transport.

Mr. Smith said the pipe overpack would allow DOE to ship remote-handled waste in a TRUPACT, which was designed for contact-handled waste. In response to a question from Mr. Strong, Mr. Smith said the pipe overpack configuration amounted to having a Type A container inside of a Type B container (i.e., the TRUPACT).

On the subject of small quantity sites, Mr. Smith said it might be possible to ship the seven drums of contact-handled mixed TRU waste directly from the University of Missouri Research Reactor to WIPP. Other sites that could take this waste included INEEL, Hanford, Oak Ridge, and SRS. Mr. Schwarz asked Mr. Smith when DOE hoped to make this shipment from Missouri. Mr. Smith did not know, but he said he would let the states know in advance.

Transuranic Waste Shipments from Ohio

Mr. Tom Baillieul presented information on DOE's cleanup of the Battelle-Columbus facility. The site, located 15 miles west of Columbus in West Jefferson, Ohio, was established in the mid-1950s as the world's first privately owned and licensed nuclear facility. The site's mission was largely

focused on investigating nuclear fuels, reactors, and reactor design. Much of the radioactive materials on-site were the residues resulting from this research.

Mr. Baillieul said the facility was originally surrounded by farmland, but gradually development had encroached upon the site. As a result, DOE was interested in closing it and opening the land for unrestricted commercial/industrial use by Battelle. A nearby interchange with I-70 was recently refurbished, so the site had ready access to the interstate system.

In the large hot cell within the hot-cell building, workers were packaging TRU waste in liners that would later be placed in 55-gallon drums outside the hot cell. Mr. Baillieul said when cleanup of the Battelle facility began, DOE was estimating 360 cubic meters of remote-handled TRU waste. Since that time, as the result of very carefully-controlled sorting and segregation operations, DOE had reduced the estimate to 25 cubic meters, with the remainder classified as low-level waste. Mr. Baillieul said the Columbus Environmental Management Project was at the forefront of DOE sites in terms of volume-reduction operations, and noted that the techniques employed at Battelle-Columbus could be used at other DOE sites. He estimated the avoided lifecycle costs of this volume reduction at between \$7-10 million just for the Battelle site.

Mr. Baillieul said the environmental assessment for the site recognized that WIPP would not be open at the time that the Columbus Environmental Management Project (CEMP) would need to start shipping. Hanford was therefore chosen as a designated interim storage site, because Battelle-Columbus was a generator for Hanford. In 1990, the governor of Washington requested that no TRU waste enter the state until DOE could demonstrate that the WIPP site would open. As a result, CEMP modified its plans to put TRU waste cleanup on the back burner. At the same time, CEMP began looking at other sites that might be able to take the TRU waste, although Hanford still looked like the best one. In 1995, the TRU Waste Steering Committee looking at all small-quantity sites linked Battelle-Columbus with the Oak Ridge facility primarily due to proximity.

Most recently, in 1998, the project was involved in an integration effort by the Office of Environmental Management (EM), under which four small quantity sites (Battelle, Mound, ETEC, and University of Missouri) were determined to have an immediate need to clean up. As a result of this initiative, DOE was proposing to move the waste from these four sites to larger facilities that had the capability to prepare the waste for shipment to WIPP. Mound was the largest of these small quantity sites, with most of the waste being contact-handled. Mound had potential problems in that some of the waste had been loaded in boxes back in the 1970s. To prepare this waste for disposal at WIPP would require opening these boxes and repackaging, characterizing, and sorting the waste. Doing this would cause Mound to delay the date for closing the site and turning it over to the City of Miamisburg for industrial use.

Mr. Baillieul noted that DOE headquarters had not yet approved the Steering Committee's recommendation. He noted that Mound was hoping to ship in the ATMX railcar because the site could not see another way to ship the material. The preferred option for shipping from Battelle-Columbus was to use an existing Type B shipping cask, designed by Chem Nuclear for spent fuel (CNS 10-160). Chem Nuclear was seeking an amendment to the cask's certificate of compliance to include the specific isotopes and waste characteristics of the Battelle-Columbus TRU waste. The casks were under construction in Canada, and Mr. Baillieul anticipated that DOE would issue a procurement to Chem Nuclear for a lease option in the next few months. He said the casks would be available sometime in the April-May time period. The cask could carry 10 drums, whereas the remote-handled cask WIPP was developing would hold only three drums. As a result, Battelle-Columbus could reduce the number of shipments required.

Mr. Baillieul said ETEC was looking at TRUPACTs for contact-handled shipments and TRUPACTs with pipe overpacks for some remote-handled shipments. ETEC was also looking at using the same cask Battelle-Mound was planning to use. In response to a question, Mr. Baillieul said Mound had additional problems related to some of the waste having a high-heat content and PCB contamination. In response to Mr. Owen's question, Mr. Baillieul said Hanford was the preferred site for waste from Battelle-Columbus, and Savannah River was the preferred site for Mound. He noted, though, that Idaho was a close second, and that the site had received a great deal of Mound's waste in the past.

Mr. Don Smith asked about the rail route from Mound. Mr. Baillieul said DOE had not selected the route because the decision to ship to Mound had not received final approval. Mr. Blackwell added that the ATMX cars would not move from Mound without an exemption from DOT. He did not know whether or when that exemption would be granted. Mr. Baillieul speculated that CEMP might be able to ship starting in the summer of 2000, whereas Mound was several years from resolving all its issues.

In response to a question, Mr. Baillieul said he did not have any routes in mind for truck shipments from Battelle. He said his office would work with CAO and NTP to identify suitable routes. Mr. Andrews asked how far in advance DOE would select the routes. Mr. Baillieul said at least 90 days if not longer. He added that his office would try to match whatever the states felt they needed in terms of advance notice. One issue that was unfolding at Columbus was the recent start of mixed-waste generation, which was a result of the sorting and segregation process. He said Battelle did not have a RCRA permit for storage of mixed waste, so once the site began to accumulate more than "satellite" quantities, the waste would have to be moved off-site. He said his office had been working closely with Ohio EPA on this matter. He added that the site would likely have to begin shipping mixed waste within one year.

Mr. Andrews asked Mr. Baillieul if his office would follow the WIPP protocols for the shipments from Battelle, and Mr. Baillieul said it would. Mr. Baillieul closed by saying the path forward would be to finalize the receiving sites, amend the Programmatic Environmental Impact Statement and Record of Decision as necessary, and then establish a shipment schedule.

Commercial Light Water Reactor Project Update

Mr. Lew Steinhoff spoke about the successes and lessons learned from the 1999 shipments of tritium-producing burnable absorber rods (TPBARs) from Tennessee to Idaho. He briefly reviewed the steps in the process. A manufacturing facility in Washington state (PNNL) prepared the lead test assemblies (LTAs), which were then inserted into four fuel assemblies in South Carolina. The fuel assemblies containing these LTAs were irradiated in the Watts Bar reactor in Tennessee for one operating cycle. From July-September, DOE made four shipments moving the irradiated LTAs to Argonne National Laboratory-West for examination. Workers at ANL-W had finished disassembling the TPBARs. Some of these would be cut up, with pieces shipped to PNNL.

The first shipment left the Watts Bar reactor on schedule on July 6, 1999. The remaining three shipments departed on schedule, as well. Mr. Steinhoff attributed the success of these shipments to a tremendous show of teamwork both within DOE and with external stakeholders. He noted that the program had taken a new approach to working with package certification within DOE, and said he expected to see other programs follow this new model.

Among the successes, Mr. Steinhoff noted that, in a few instances, the route identified in the overweight-truck permits differed from the planned route. He said DOE's Chicago Operations Office had been able to work out these differences in a timely fashion. Mr. Steinhoff noted that a

truck on each of the first two shipments had a flat tire, but that Tri-State (the carrier) was able to replace the tires in a timely fashion so as not to put the shipment off-schedule.

Mr. Steinhoff said he thought the Integrated Safety Management (ISM) approach toward which DOE was moving had a great deal of value, particularly if the entire department as well as its contractors adopted the approach. He said one part of ISM that was still lacking was the lessons-learned portion. He hoped to take the lessons learned from his own shipping campaign as well as others and compile them into one database so that there would be a feedback loop to aid in improving future shipments.

Mr. Steinhoff reviewed some of the lessons learned from the TPBAR shipments. First, he noted that the enhanced CVSA inspection was very thorough and required two to three hours to complete. Second, he said obtaining overweight permits proved challenging because of restrictions on travel through major cities, discrepancies between the route listed and the planned route, and the fact that, in some states, the permitting agency did not have contact with the agency that had been involved in reviewing the transportation plan.

As the states had agreed, DOE sent a single letter notifying them of the start of the shipments rather than one letter for each of the four shipments. One problem that came up was the two-hour notification through TRANSCOM, which sometimes did not match the estimated time of arrival specified in the prenotification letter. In addition, one of the two-hour notifications to Idaho did not filter down to all the appropriate agencies. Mr. Steinhoff said more effective follow-up action after site visits could help DOE avoid situations in which certain key actions (e.g., trial loading and unloading) were taken only just before shipments begin.

Mr. Steinhoff addressed the reason for the shipments being overweight. He said NAC had estimated the total weight of the truck configuration without actually weighing the tractor, trailer, and package. As a result, everyone was surprised when the loaded vehicle weighed over 80,000 lbs. during the trial loading. Because the contract with NAC called for legal weight shipments, Mr. Steinhoff had asked NAC to come up with a new configuration to meet the legal-weight requirements. Eventually, he decided to go with the overweight option instead.

On interaction with stakeholders, Mr. Steinhoff said DOE should seek input from the states on how they would like to see the department respond to written comments on the transportation implementation plan. He also advocated more frequent communication with states and tribes, possibly through a weekly e-mail update.

Mr. Steinhoff said the upcoming shipping campaigns would take place in 2000 and 2001. These shipments would involve moving some of the trisected TPBARs to Washington State and on-site at INEEL. Because the shipments would not have an impact on the Midwestern states, the committee told Mr. Steinhoff they would not need to review the draft transportation implementation plan.

Mr. Steinhoff briefly reviewed the transportation implementation plan that had governed the lead-test assembly shipments. He said DOE had received over 130 comments on the draft plan. Mr. Steinhoff had shared the plan with the DOE Foreign Spent Fuel Program, NTP, and the DOE Emergency Operation Center for their review. He said the same plan would be used for the production phase shipments.

Ms. Sattler asked about future shipments through the Midwest. Mr. Steinhoff said in August 2005, DOE hoped to ship the remaining TPBARs from INEEL to SRS for either disposal or startup testing of the tritium-production facility. He said it was also possible DOE might produce another lead-test assembly. The timeframe for loading this LTA would be 2001, with the shipments

occurring 18 months later. Rep. Freeborn asked about the need for the second test. Mr. Steinhoff said the second test would determine whether the aluminide coating on the cladding was necessary. The coating was there to prevent tritium release and hydrogen ingress. The preliminary data showed, however, that the coating might not be necessary to perform this function. Mr. Steinhoff said the cost of putting on the coating could be high, so DOE was interested in testing whether there was a need for it.

Mr. Emmet George asked if DOE had considered rail shipments for the CLWR program given the weight of the packages. Mr. Steinhoff said he did, however the shipments were fairly simple and, initially, DOE thought legal-weight trucks were an option.

MOX Fuel Program Update

Mr. Flater explained that Mr. Bert Stevenson with DOE's Office of Materials Disposition did not show up to present information on the MOX fuel shipments. He asked Mr. Strong if he would like to make any comments. Mr. Strong provided some background for the benefit of the committee. He said DOE had been working on a project called Paralex in which excess plutonium from dismantled nuclear weapons would be converted to fuel for commercial nuclear power plants. Both the United States and Russia were participating in this project.

Last summer, the people in Port Huron, Michigan, learned that the city was on one of three proposed routes for a single shipment of MOX fuel from Los Alamos, New Mexico, to Chalk River, Ontario. Eventually, the governor of the state became involved, and asked Mr. Strong's office to write to Secretary Richardson inviting him to a public meeting on the shipment. The Secretary responded with a letter saying DOE would remove the Port Huron route from consideration.

The following year, DOE revised the environmental assessment for the shipment. In a press release issued September 2, DOE identified the route chosen for the shipment. The route would travel through the Chicago area, up through the center of Michigan, across the Mackinaw Bridge, and into Canada at Sault St. Marie. Mr. Strong had heard about the press release one day in advance from a Michigan congressman's office, which called Mr. Strong to find out the state's position.

The shipment would involve a container about the size of a 55-gallon drum. The container would have nine rods of MOX fuel. Mr. Strong said technical issues were not a problem, since the risk associated with this material was negligible. Nevertheless, the shipment had generated a great deal of public outcry in Michigan, particularly in the areas near the Port Huron and Mackinaw Bridges. DOE had issued a "finding of no significant impact" in connection with the environmental assessment, and the state did not disagree with that finding. The congressional representatives were upset about the choice of route. Some people pointed out that, of the seven routes under consideration, DOE chose the one with the second highest risk associated with it. In addition, opponents of the shipment argued that the route would pass over two major bridges that spanned Great Lakes waterways and, therefore, could potentially contaminate one-fifth of the fresh water in the world.

DOE was not prepared for the type of public reaction that the shipment generated. Officials attended four public meetings in Michigan. At least four congressional representatives became very involved and, in fact, had managed to convince Secretary Richardson to heighten the security level for the shipment. In other words, DOE's Transportation Safety Division (TSD) would handle the shipment in the same manner as it would "strategic materials." Mr. Strong had hoped Mr. Stevenson would be at the meeting to explain exactly what this heightened security would entail. The latest word was that a representative of DOE-Albuquerque would go to Michigan in 10 days to meet with one State Police representative who was the designated contact in Michigan for the

shipment. Mr. Strong noted the irony of this new development: public and congressional outcry over their lack of involvement in the shipment had resulted in DOE making both the route and the schedule a secret from everyone, including the state government officials.

Mr. Strong said he thought DOE was still planning to ship the fuel during the fall, but he did not know for sure. From his standpoint, DOE's greatest mistake over the last few months was its lack of efforts to involve state agencies. Although he had made many phone calls to DOE and had always received a call back, never did the Office of Materials Disposition initiate a call.

Mr. Runyon said his office became aware of the shipment two years ago, when the State of Illinois submitted comments on the department's environmental assessment. He said the Illinois Department of Nuclear Safety (IDNS) had requested that DOE not take the shipment through the Chicago metropolitan area, even though the radiological risk was minimal. DOE later claimed not to be aware of IDNS's input, however Mr. Runyon's office had a copy of DOE's response to the initial letter from IDNS.

Mr. Andrews said three counties in Indiana were affected by the shipment. He had learned about the shipment from the press. Mr. Andrews added that one of the newspapers printed an article with a headline that read, "State Officials Scramble." Mr. Daust added that the enhanced North American Standard would be used on vehicle inspections for the shipment. He said the Canadian officials had already insisted that the Russian shipment entering the country also be subject to the enhanced standard. As a result, the New Jersey State Police would conduct the inspection in Canada.

Rep. Freeborn noted that several DOE offices had the roster for the Midwestern High-Level Radioactive Waste Committee and for the Cross-Country Transportation Working Group. She asked why DOE had not contacted any of these people regarding the MOX shipment. Mr. Andrews said someone at DOE had promised him a copy of the transportation plan. Mr. Strong added that someone at DOE's Oak Ridge National Laboratory was writing the transportation plan.

Ms. Sattler asked Ms. Williams whether the decision to turn the shipment over to TSD stemmed from legitimate concerns over security or if it was a reaction to the states asking too many questions. Ms. Williams said she did not know. Mr. Strong said his impression was that the Michigan congressional delegation had contacted Secretary Richardson about their concerns over possible terrorism. To address these concerns, the Secretary had decided to have TSD handle the shipment. He added that DOE had been planning to have TSD handle the transportation for the full-scale project to produce MOX fuel and ship it to U.S. reactors. Asking TSD to handle the test-phase shipment was, therefore, not a significant change in plans.

Mr. Andrews likened the situation to the one with the napalm shipment, which the Navy had tried to conduct under secrecy. Mr. Moussa said he had some concerns about having the shipment handled like a regular TSD one. If an accident were to happen, he said, it could result in political and economic costs, especially for agencies like emergency management. As an example, he cited the accident in Nebraska involving a weapons shipment. Mr. Kerr said no state would be comfortable with a shipment of this nature coming through without at least some type of prenotification.

Designation of an Alternative Route in Michigan and Ohio

Mr. Strong introduced the next panel by pointing out another irony — namely, that while the people of Michigan were intensely focusing on the shipment of MOX fuel, they were paying very little attention to the shipment of research reactor spent fuel in the state. He introduced the other members of the panel. Mr. Chris Becker, the manager of the Phoenix Laboratory at the University

of Michigan, would paint a “broad brush” picture of the shipments from the university’s research reactor. Mr. C. Smith, Mr. Rich Swedberg (DOT), and Mr. Strong would talk about the routing issues that the states had.

Mr. Becker said he was the manager of the Ford Nuclear Reactor at the University of Michigan, which was one of the largest research reactor programs. SRS received spent fuel from these sites, but DOE was not the shipper — the universities were. The University of Michigan was renewing its shipping program, which ceased in 1993 due to personnel changes. Mr. Becker hoped to make three shipments during the fall, followed by another four in the spring.

He displayed a full-scale mock-up of a fuel assembly. The fuel was shipped in the BMI cask, which could hold 12 assemblies. SRS received the spent fuel and would store it pending the availability of a permanent disposal facility. Missouri, Michigan, and two other facilities with aluminum-clad spent fuel would send shipments to SRS; others, e.g., the University of Illinois, had stainless-steel-clad spent fuel, which would head to Idaho for storage at INEEL starting in the 2003-2005 timeframe. Mr. Becker noted that these shipments were fairly regular and that there would be more to come.

In 1999, the University of Michigan decided to renew its shipments to SRS. The university started reviewing the NRC-approved route with the state agencies in Michigan. The group concluded that the straight route down U.S. 23 would be shorter than the approved route using I-75. At that point, Mr. Strong had to work with the DOT on designating an alternative route. The university, as the shipper, did not have a role in designating the alternative route. As part of the process, the State of Michigan had to consult with the appropriate agencies in Ohio, since the proposed route would cause the shipment to enter that state on U.S. 23. Mr. Strong completed his routing study in June 1999, then passed the information to Mr. Smith.

At around the same time, the State of Tennessee requested that the university use a different route than the historical one that went through Knoxville, Tennessee; Asheville, North Carolina; and Spartanburg, South Carolina. The state specifically requested that the shipments follow I-75 because emergency responders had received training along that route. The university was willing to modify the route, however it was not easy to do. Mr. Becker noted that the DOT had authority for routing, whereas the NRC reviewed the proposed route only for security. On September 1, the NRC changed its policy to make the shipper responsible for this security review. The portion of I-75 from Knoxville to Spring City, TN, had not been reviewed for security purposes. As a result, Mr. Becker had to send someone to travel along that part of the route, review potential safe havens as well as possible security concerns, and prepare a report for submission to the NRC. Mr. Becker added that the university would have to go through this process every two years.

In response to a question, Mr. Becker said the change in the security review was a stated NRC policy change. He said Ms. Gloria Benington of the NRC had informed him of the change. Mr. Becker added that the University of Michigan was one of the largest shippers of spent fuel in the country. He mentioned that, in compliance with NRC regulations, his office did notify the governor’s designee in each of the affected states at least seven days prior to a shipment. He noted that in some cases the governor’s designee was not the person serving on one of the regional committees. Mr. Becker also said some states insisted on receiving advance notice 14 days prior to a shipment.

In response to a question, Mr. Becker said TRANSCOM was used to track the shipment, although it was not required by law. He described an incident in which a state had stopped a shipment of research reactor spent fuel because it was not being tracked by TRANSCOM. Mr. George asked what the options were if a state refused to allow the shipment through. He asked if the shipment

could return to the originating site along the same route. Mr. Becker said the problem was that he could not take the spent fuel back. To do so would entail putting the cask back in the spent fuel pool within 24 hours to comply with the site's approved security plan. Once the shipment departed, however, the crane was also released. As a consequence, there would be no way to return the cask to the pool.

Someone asked about the possibility of emergency route deviations. Mr. Swedberg said DOT regulations spelled out the conditions under which a deviation would be considered acceptable. Mr. Clark added that, under the direction of law enforcement, the shipment would be allowed to proceed anywhere. Mr. Becker recommended the IAEA website as a good source of information (www.iaea.org/ns/).

Mr. Strong continued the panel discussion. In January 1999, at a briefing on the upcoming shipping campaign, the state representatives and the university looked at the possibility of shipping on U.S. 23. DOT regulations required the use of interstate routes, but they also allowed for state-designated routes. To designate a route, Mr. Strong said states needed to document their rationale for doing so. He displayed the DOT publication *Guidelines for Selecting Preferred Highway Routes for Highway Route Controlled Quantity Shipments of Radioactive Materials*, which was designed to assist states in conducting risk assessments to compare alternative routes.

Mr. Strong served as coordinator for the risk assessment study in Michigan. The Department of Transportation was also involved. He said the biggest challenge was coming up with adequate data. He addressed the primary risk factors identified in the DOT guidance: normal radiation exposures, public health risks in the event of an accident; and economic risks from accidents. Mr. Strong said he did not consider the secondary risk factors identified by DOT, although he said Mr. C. Smith had done so in his study for Ohio's route designation. The secondary factors included emergency response capabilities, evacuation capabilities, special facilities, and traffic fatalities and injuries. Mr. Strong emphasized that his principal guideline in conducting the study was to keep it simple.

Mr. Strong said DOT guidance called for assessing normal radiation exposure using an equation that attempted to quantify the dose to the population along the route, passengers in other vehicles, the truck's crew and people at truck stops. Assessing public health risks was fairly straightforward, except that it was difficult to obtain good, relevant accident data. Mr. Strong wound up using fatal accident rates along highway segments as the accident rate. He noted that the fatal accident rate for US 23 was slightly higher than that along the interstates; however, because the total population was much lower along US 23, the public health risks for the US highway were lower than for the interstates.

The economic risk from an accident was a function of land use and accident rates. Each different type of land use had a different weight. Unfortunately, the most comprehensive land-use mapping in the State of Michigan was dated 1979. Mr. Strong and Ms. Carol Jones from his office conducted a "windshield survey," in which they rode the length of the route and noted the land use every half mile.

After collecting the data and making all the calculations, Mr. Strong converted the factor values to normalized values. Route B — following US 23 — proved to be the better alternative according to the normalized values.

In terms of public involvement, Mr. Strong said the state had worked through the emergency management coordinators and the DOT contacts in the two affected counties to explain what the route designation would entail. He said the state did not conduct a comprehensive public information and comment period, largely because both Routes A and B affected the same counties.

Mr. Strong said he started the study in March, completed it in June, and sent it to U.S. DOT. Mr. Strong had been in touch with Mr. Smith since April and eventually sent a formal letter from the State of Michigan to Mr. Smith's office explaining what the state was doing.

Mr. Runyon noted that the DOT guidelines suggested considering the impact on population within 10 miles of the route, whereas the RADTRAN model looked at just ½ mile. Mr. Wells asked about Mr. Strong's decision to ignore the conversion factors included in the equation for normal population exposure. Mr. Swedburg clarified that the DOT document was just a guideline, not a requirement. DOT was responsible for reviewing the analysis, but not for approving it.

Mr. Smith said in February 1998, Gov. Voinovich had designated the PUCO as the authority for routing in the state. One year later, the PUCO had an opportunity to designate an alternative route. Preparing to address the Michigan route designation required careful coordination of the staff and legal departments of the affected agencies in the state. On August 5, the PUCO issued an order directing the staff to review the routing designation by the Michigan Department of Environmental Quality (MDEQ) and to consult with all local jurisdictions potentially affected by the route change. One commissioner wanted to have public hearings, but the others did not. As a compromise, the PUCO established a 20-day public comment period on the request from Michigan.

Mr. Smith identified 17 affected agencies/municipalities/jurisdictions in the 10-mile band on either side of the routes: 14 in Lucas County and three in Wood County. The PUCO contacted each of these entities, and only received seven responses, including two opposing comments from the City and Township of Sylvania. The sentiment was expressed that, because the Ohio Department of Transportation would not remove the snow nor provide lighting on the highway, the city claimed jurisdiction over the portion of the highway in question. He noted that this argument was raised only once. The PUCO offered training grants to the affected counties through its hazardous materials training grant.

Mr. Smith summarized the findings from the route study. On six counts (length of route, population density, traffic count, accident rates, public health risk, and secondary risk factors), Route B was the better alternative. Only in terms of the economic health risk did Route A prove to be a better choice.

On September 2, 1999, the PUCO granted the request by MDEQ to designate the three-mile segment of US 23 as an alternative route. This routing designation was authorized only for the four shipments coming from the University of Michigan. The designation was effective immediately and would terminate on December 1, 1999. Mr. Smith was aware that the university planned to make another shipment in the spring. He said the PUCO would have to issue another temporary order for that shipment. Mr. Blackwell asked why the order was only temporary, and Mr. Smith said one of the commissioners had requested it to be that way. Mr. Owen asked about the need to prepare another study for a temporary order in the spring. Mr. Smith said that, given the timing, he did not feel another study would be necessary.

Ms. Williams asked what kind of public comments the PUCO received during the 20-day period. Mr. Smith said he had received seven comments in all. Most were in favor of the change, with the exception of the aforementioned comments from Sylvania and Sylvania Township.

Mr. Swedberg commended Mr. Strong and Mr. Smith for their work on the submissions to DOT. He said RSPA originally had authority for writing and promulgating all DOT regulations, so RSPA had put out the guidelines. Two years ago, RSPA had turned these regulations over to the Federal Highway Administration. As a result, they moved from 49 CFR 170s to 49 CFR 390s under the

office of Motor Carriers. Motor Carriers was now in charge of both recording and promulgating route designations and for working with the states to make these designations.

Mr. Swedburg said that Subpart D of Part 397 of the regulations was the only rule pertaining to routing of highway route-controlled quantities of radioactive materials. The other parts dealt with non-radioactive hazardous materials routing and pre-emption determinations. He noted that Michigan and Ohio had worked together very well, but there might be cases in which boundary states would not agree. He said the regulations spelled out the method by which DOT would step in and resolve disputes between boundary states. He emphasized, though, that DOT would not *initiate* a pre-emption determination. Someone outside the department would have to make a request for a pre-emption determination.

Mr. Swedburg emphasized that DOT recognized the state routing agencies as determined by the governors. Local jurisdictions were not recognized. He said this distinction had been raised in the West, because some local jurisdictions wanted DOT to recognize their routing restrictions. Mr. Swedburg said DOT published annually in the *Federal Register* a list of recognized routing agencies in the states. The list was last published in June 1998, but DOT was in the process of updating the information. Mr. Swedburg added one more clarification, namely that the NRC-approved routes for spent nuclear fuel under 10 CFR 73 solely for safeguards and security for NRC licensees.

Mr. Clark asked about the 25-mile rule as it pertained to a situation involving South Carolina. The suggested route would have been shorter, but would have placed the shipment on non-interstate roads for a greater distance. Mr. Swedburg commented that South Carolina did not have an officially appointed routing agency. He said the NRC generally pushed for the shortest distance route. He reiterated that the DOT guidelines were just that, and advised that people should use common sense in choosing when and how to follow those guidelines.

Mr. Blackwell commented on the plethora of regulations regarding highway routing. He said the situation with rail routing was actually worse, in large part because the railways are privately owned. He said it would not be easy to transfer highway routing guidelines and principles to the case of rail routing.

Mr. Runyon asked if 49 CFR Part 397 required the use of the DOT guidelines, and Mr. Swedburg said they did not. He said DOT recognized that routes changed, construction would take place, and so the regulations and the department would have to be responsive to short-term developments.

Mr. Flater mentioned the situation with the cross-country shipment in which the overweight permit specified a different route than the planned one due to concern over a bridge not being able to bear the load. Mr. Flater said the problem was that clerical workers, not the technical staff, issued the permits. He said communication was key in making sure the people issuing the permits were aware of all the arrangements that had been made regarding shipments such as the cross-country one.

Shipments of Spent Fuel from West Valley to INEEL

Mr. Ahmad Al-Daouk (DOE-West Valley) presented information on the department's planned shipment of spent nuclear fuel from New York to Idaho via rail, scheduled for 2001. He said his purpose in appearing before the committee was to provide information and to start communicating with the states that would be affected by the shipment.

Mr. Al-Daouk said the West Valley Demonstration Project Site was located about 30 miles south of Buffalo. The facility was constructed in 1962 by the Nuclear Fuel Services company, which reached an agreement with the Atomic Energy Commission and New York State to construct the first commercial nuclear fuel reprocessing plant in the U.S. Between 1966 and 1972, the facility

reprocessed spent fuel, generating approximately 560,000 gallons of liquid high-level radioactive waste as a result. In 1972, the company shut down the plant for modifications. Around the same time, a number of environmental laws at the national level created a situation in which reprocessing no longer would be profitable. As a consequence, West Valley never resumed operations.

Between 1972-1976, approximately 750 fuel assemblies were received at the site in anticipation of the plant starting up again. In 1980, Congress passed the West Valley Demonstration Project Act. The act required DOE to solidify high-level waste at the site, develop suitable containers for the solidified waste, and transport this waste to a federal repository. In addition, DOE was responsible for decontaminating and decommissioning the facilities on the site and for disposal of low-level waste and TRU waste.

DOE came on-site in 1982. From 1982-1986, 625 spent fuel assemblies were shipped back to the generator sites and DOE took title to 125 assemblies that remained on site. In 1996, the vitrification facility started up. DOE had now nearly finished solidifying the high-level waste and was moving onto decontamination and decommissioning. As part of this next phase, DOE would need to remove 125 commercial spent fuel assemblies from their current location, inside a single-walled, 30-year-old pool.

Mr. Al-Daouk explained why Idaho had been chosen as the destination for the shipment. At the time the law was passed, West Valley was part of the Idaho Operations Office. Moreover, DOE-Idaho was interested in demonstrating the feasibility of containers for both storage and transport. The State of Idaho objected to the idea and went to court to force the department to prepare an environmental impact statement. In 1995, DOE completed the study, and one year later reached an agreement with the state that settled the earlier court action. As part of the Idaho Settlement Agreement, DOE would be allowed to ship the spent fuel from West Valley to INEEL.

Mr. Al-Daouk said there were two rail shipping casks specifically developed to ship the spent fuel to Idaho and store it: the TN-REG and TN-BRP, both designed by Transnuclear. The former was for shipping spent fuel originally from the Ginna plant, and the other was for the spent fuel from Big Rock Point. The casks were both roughly 16 feet long by 7½ feet in diameter, weighing 102-104 tons when fully loaded.

Among the participants in planning this shipment were DOE's Headquarters, Ohio, and Idaho offices. In addition, DOE's Regional Coordinating Offices would assist through the Radiological Assistance Program teams. DOE was also working with the NRC to license the casks, and with DOT/FRA on transportation. He said the states and tribes along the route would be involved, as would the regional groups. DOE contractors and the carrier would be players, as well.

Mr. Al-Daouk elaborated on some of the specifics of the transportation planning process. He said the shipment would go by dedicated train. The route would be developed using the Interline Rail Route Model developed by Oak Ridge. This model took into consideration track quality, distance, and population densities along the different routes, among other factors. DOE had already run the model and generated around 11-12 potential routes. The next step would be to select the carrier, who would then narrow the field of routes down to primary and secondary routes. Once the route plan was completed, DOE would provide it to the states and tribes for their input. Mr. Al-Daouk anticipated contracting with a carrier within a month, so he hoped to have the route plan ready in the spring of 2000.

In addition to the transportation plan, DOE would develop the appropriate security measures. The department was looking at the railroad security force provided by the railroad companies. DOE and

the railroads would also identify the roles and responsibilities of the security forces in working with the states and tribes. Mr. Al-Daouk said that the shipment would be tracked using TRANSCOM.

Mr. Al-Daouk said DOE would hold meetings and briefings with the states and tribes, particular through the regional meetings. He said the department would also provide media packets, as requested. In addition, DOE was developing a project-specific web site within the national program home page.

Mr. Al-Daouk explained DOE's planned process for interacting with the states and tribes. The initial contacts took place during the fall of 1999 through regional meetings in the West, Northeast, and now the Midwest. In the spring and summer of 2000, DOE would introduce overall campaign-specific information at meetings of the regional groups. In the meantime, if there were any developments (such as the route plan), DOE would coordinate with Ms. Sattler to make sure the Midwestern states received that information. In this way, the states would already have a chance to review all the information that would be discussed at the spring/summer meetings.

In the summer of 2000, DOE anticipated holding one to three campaign-specific meetings along the routes to bring together all the affected agencies. Again, DOE intended to make all the plans and other written materials available well ahead of these meetings so that participants would be able to provide substantive feedback at the meetings. Finally, DOE planned to have a validation meeting two weeks to one month prior to the shipment to confirm readiness. This meeting would take place in early 2001. DOE would communicate with the states and tribes periodically as information became available. The department also hoped to coordinate news releases with the states and tribes.

Another aspect of the institutional program was emergency preparedness. DOE's Emergency Preparedness Coordination Plan would outline notification roles and responsibilities along the corridor. It would also describe emergency response coordination between the shipper, DOE, the carrier, states, tribes, and TRANSCOM. DOE would also use the plan to identify emergency preparedness training resources that were available to the states and tribes.

Mr. Al-Daouk said DOE would like to continue to utilize the regional groups for the purpose of coordination. States and tribes would be responsible for executing the planning within their jurisdictions, including working with local municipalities. Mr. Al-Daouk said his team would divide the work. He would work with the Northeast Region, along with Ms. Sonja Allen. Mr. Brad Bugger with DOE-ID Public Affairs would be the principal point of contact for the Western and Midwestern regions, along with Ms. Marsha Keister. Mr. Al-Daouk stressed that, despite his status as the point of contact for the Northeast, he would continue to work with the other regions, as well.

Mr. Don Smith asked about the availability of funding for training or equipment. Mr. Al-Daouk said DOE was not planning to provide funding for either, but that the department was interested in receiving input from the states on this matter. He added that all 125 spent fuel assemblies would be moved in one shipment.

Mr. Runyon said if DOE were planning to ship by rail in 2001, then FRA would definitely need to produce its long-awaited letter regarding the right of states and tribes to stop and inspect shipments. Mr. Blackwell said DOT was aware of the plan to ship from West Valley. He reiterated that he was hoping the letter would be out by the time of the TEC/WG meeting. Ms. Sattler asked Mr. Blackwell who would be the appropriate person to contact regarding the release of the letter. Mr. Blackwell suggested contacting Secretary Slater or the Administrator of the FRA.

Spent Fuel Program Update

Mr. Clark said the Foreign Spent Fuel Program had completed 14 shipments in just over three years. Twelve had gone to SRS: eleven via rail from the Charleston Naval Weapons Station, and one via truck from Canada in December 1996. Two shipments had gone to INEEL: one by rail from the Concord Naval Weapons Station and one by truck from SRS in August 1999.

Mr. Clark said many of the customers of this program were from Europe, South America, and southeast Asia. The material that DOE shipped during the cross-country shipment was from Italy, Germany, Romania, and Slovenia. He explained that many of the shipping countries would be capable of managing their own spent fuel problems in 2009 when the program was set to end.

Mr. Clark showed a map of the routes used to transport foreign research reactor spent fuel. The route for the Canadian shipment came into the U.S. at Buffalo. The cross-country shipment followed I-57 and I-74 in Illinois, then I-80 through Iowa and Nebraska on its way west.

DOE was now three years into a 13-year program. Most of the material received had been highly enriched uranium. The U.S. had provided this fuel to foreign countries in exchange for their agreement not developing nuclear weapons programs. A total of 75 casks had been received at SRS, and eight at INEEL. Mr. Clark commented that the material going to Idaho was different than that going to SRS. He said the mock-up Mr. Becker had shown resembled the spent fuel coming to SRS. He said the TRIGA fuel going to Idaho had more similarities with commercial spent fuel. In all, the department had accepted around 1.4 metric tons of uranium.

Mr. Clark reviewed some of the challenges DOE had faced with this program. Security in developing countries was an issue, with DOE bringing back spent fuel from Colombia, Slovenia, and Indonesia. The condition of the fuel was also a problem in some cases, since often the reactor operators did not take good care of their spent fuel. Until recently, DOE did not have a certified Type B container to carry spent fuel with damaged cladding. Now, however, several casks were certified for this purpose.

Cask certifications in general had been sore point. Often, the characteristics of the actual spent fuel did not match DOE's assumptions. This problem was largely due to the fact that much of the material had been designed back in the 1950s and 1960s, and there were few records of the design specifications. It was also challenging to make the shipments in a cost-effective manner. Many countries could not afford to ship the material by themselves and so asked DOE to combine their shipments with those from other countries. Mr. Clark said chartering a ship cost \$300,000-500,000 to bring material from Europe to the United States. Casks rented for around \$1,000 per day, and the average rental period for one of these shipments was 90-100 days. On top of that, DOE charged a fee of \$4,500 per kilogram of highly enriched uranium to cover the costs of the program.

Weather was another problem: two hurricanes had interfered with shipments in 1999.

Mr. Clark then addressed the domestic spent fuel program. The University of Missouri-Columbia was a routine shipper, with three to four shipments per year. University of Virginia had a reactor that was being decommissioned, and DOE was accepting the final shipments from that facility. MIT and University of Michigan were other routine shippers. SRS also received shipments from the government-owned high-flux isotope reactor (HFIR) in Oak Ridge, Tennessee, and the National Institute of Standards and Technology in Gaithersburg, Maryland. Shipments from Oak Ridge came as frequently as two or three times per month. The operator of NIST preferred to accumulate enough spent fuel to make just one shipment every two or three years. Mr. Clark said this approach

could be the wave of the future for university shipments, since the availability of the small BMI cask (used to ship the research reactor spent fuel) after 2001 was in question.

Mr. Clark said there were more TRIGA research reactors than MTR types. Shipments of TRIGA fuel to INEEL were not planned until about 2002, partly because the Idaho Settlement Agreement limited the number of shipments to the site. Mr. Clark said the Secretary of Energy had just recently decided not to restart the high-flux beam reactor in Brookhaven, New York. This facility was one of SRS's largest customers, generating more than 100 spent fuel assemblies each year. Just as the foreign research reactors were converting to low-enriched uranium fuel, so were the research reactors in the United States. University of Massachusetts-Lowell would be completed in 2000, Purdue was tentatively scheduled for 2001, and University of Florida would be done in the 2001-2002 timeframe.

In terms of future shipments through the Midwest, Mr. Clark said DOE did have another cross-country shipment scheduled for late spring/early summer of 2000. This shipment would consist of one truck carrying one container. In general, the foreign fuel program would make one or two shipments per year between the late spring and the early fall. Shipment would likely continue by truck with two to five trucks per shipment. Mr. Clark did not foresee a switch to rail, unless there happened to be a large number of containers coming in at once. Currently, there were no cross-country shipments planned for 2001. For domestic shipments in 2000, Mr. Clark expected four from the University of Missouri, four from the University of Michigan, and one from Iowa State, which was converting to low-enriched uranium.

Mr. Clark then reviewed the 1999 cross-country shipment. The first shipment was completed safely and securely on August 31, 1999. The shipment consisted of five casks of TRIGA spent fuel on five trucks, traveling in two convoys. Mr. Clark said this transportation planning effort was the most comprehensive one to date for the Spent Fuel Program. At one time or another, the planning activities involved four DOE offices, the NRC, DOT, FBI, 13 states and three tribes along the potential routes, the three regional groups, and the shipper and carrier.

Mr. Clark said the purpose of the CCTWG was to identify, discuss, and work to resolve concerns and issues related to the shipment. The CCTWG also assisted in developing a transportation plan, provided input to DOE during the planning process, and provided a means of disseminating information to the affected agencies.

Mr. Clark showed a map with four color-coded routes representing the originally proposed routes for the cross-country shipment. The routes were generated using the HIGHWAY model at Oak Ridge. The "red" and "blue" routes were identical until Kansas City, at which point the former continued on I-70 through Kansas and the latter headed north on I-29 into Iowa. The "black" route was the one DOE used in 1999. This route passed through Illinois, Iowa, and Nebraska. The "green" route was similar to the route used for shipments from Michigan. Early on, the CCTWG agreed that the green route was less desirable than the other three, so this route was eliminated. The remaining three routes were all acceptable, however. DOE collected information from the affected states, ran RADTRAN models, and found it very hard to differentiate between the three routes. Mr. Clark said DOE dropped the red route from consideration, partly because it had not been used for spent fuel shipments in the past.

DOE was then faced with choosing between the blue and black routes. Mr. Clark said DOE had agreed to try to avoid densely populated areas during peak traffic times. In trying to construct a schedule that would accomplish this goal, it appeared that, on the blue route, the trucks would have to sit in safe parking for several hours waiting for the peak traffic times to pass. He emphasized that

avoiding peak traffic times was not a DOT requirement, but simply a DOE policy for these shipments. As a result, the department chose the black route. He said for the 2000 shipment, DOE would consider the blue, red, and black routes. He asked the states to provide DOE with any information that could help the department evaluate the different routes. SRS had sent letters to the CCTWG leads requesting input by the end of the year so that early next year, DOE could select the route.

Mr. Clark then reviewed the issues identified during the planning process. He noted that route concerns or considerations had figured prominently. In addition, the states had requested that DOE apply the WIPP protocols to the cross-country shipments. Mr. Clark said DOE could not follow all the WIPP protocols because doing so would have cost too much money. The department did follow some of them, though. The states had requested and received financial assistance to help them prepare for the shipments. Another request was for planning at the state and tribal level, which Mr. Clark said worked very well. The states and tribes had also asked DOE to use the enhanced CVSA inspections and to time the shipment carefully and in coordination with other DOE shipments. The states and tribes were also concerned about the availability and reliability of TRANSCOM.

Rep. Freeborn asked about the curfews. Mr. Clark confirmed that avoiding metropolitan areas during high-traffic times was not a regulatory requirement. He said Denver, Colorado, was one of the few cities that had a law on the books prohibiting hazardous materials or radioactive materials shipments at certain times of day.

Mr. Clark observed that the communications system worked reasonably well. He said the timeline estimates were accurate. Things DOE had planned for did not occur, such as flat tires and press interest. On the other hand, unexpected things happened, including the mediocre initial condition of the equipment, route deviations (both planned and unplanned), in the Midwest, a run-in with a gas pump in Tennessee, and a rockslide in Utah.

Mr. Clark said the keys to success had been one-on-one planning, working at the state level, and the cooperative approach and professionalism that characterized the planning effort. He said areas for improvement would include the initial condition of the trucks and trailers, as well as TRANSCOM access. He also noted the need for DOE to issue clear, timely requests for information and to coordinate route plans, permits, and driver briefings. It would also be important for states to identify early on their special timing requests (e.g., time of day and special events).

Mr. Clark reviewed the timeline for future cross-country shipment planning. He said DOE would like input on route information by December 17. In January, DOE would make a recommendation based on the input it received, then would finalize the route in February and the carrier would submit it to the NRC for approval. DOE would hold a planning meeting in March to work on the transportation plan and identify any new issues or training needs. In April, DOE would complete the transportation plan and verify all the points of contact. The shipment would take place in late spring/early summer, followed by a lessons-learned review in mid-summer.

In response to a question from Mr. Andrews, Mr. Clark said DOE would not consider using the green route. Mr. Blackwell asked about DOE's long-term planning for the shipments. Mr. Clark said there would be five-six shipments per year through South Carolina, and only four more on the West Coast. Mr. Blackwell asked when the next West Coast shipment would be, and Mr. Michael Tyacke said DOE-Idaho had not started to plan the next one.

Rep. Freeborn asked if the request for proposals for the carrier contract had included standards for the inspection at the point of origin. Mr. Clark said DOE contracted with NAC, who then subcontracted with TRISM. NAC was supposed to make sure that TRISM complied with the

transportation plan. He said DOE did not assess any penalties in connection with the trailers. Mr. Steinhoff commented that the same situation arose with the tritium shipments: the tractors were shiny and new, but the trailer and ISO containers were very worn.

Mr. Clark concluded his presentation with the *Safe Way Out* video. He offered to provide copies of the video to anyone who was interested.

Committee Discussion

Mr. Flater opened the floor for committee discussion. On the subject of consolidated funding, the committee agreed that Mr. Moussa and Ms. Sattler should coordinate to disseminate information to the committee and solicit input from the members. Mr. Steinhoff asked if the committee had formed an opinion on the approach for consolidated funding. Ms. Sattler summed up the committee's discussion at the June 1999 meeting, in which the states had expressed concern about the accelerated schedule and the matter of whether NTP or CAO should administer the grants.

Mr. Flater told the committee members to review the letter to Mr. Mulder regarding Midwestern participation on the SSEB committee. He said to let Ms. Sattler know by Thursday, December 2, whether they had any comments. If Ms. Sattler did not hear any objections by then, she would send the letter.

Ms. Sattler asked Mr. Clark if the states could provide their input on the cross-country route by the end of the year instead of by December 17. He said that would be fine.

On the subject of West Valley shipments, Ms. Sattler said she would provide Ms. Keister with a list of contacts, including security and public affairs, in the Midwest. Mr. Flater cautioned that direct communication with too many people in one state could cause problems. He suggested that DOE follow the approach used in the cross-country planning, in which there was a lead contact for each state. Mr. Blackwell asked for clarification. After some discussion, it was decided that DOE should contact the committee members, or leads, first before going to the other state agencies. Mr. Runyon said he thought electronic media was a good idea for this type of communication.

Mr. Flater noted that it had been two years since the last joint meeting of the regional groups and asked if there was interest in having another one. There was. Ms. Sattler said the Midwest and the West had hosted joint meetings, so either the South or the Northeast would be responsible for the next one. She said she would work with the other staff members to see if there was sufficient interest to hold a meeting in the fall of 2000.

Ms. Sattler distributed a meeting planning calendar and proposed agenda for the spring meeting. The committee debated the possible locations, adding Columbus to the list of cities and replacing Detroit with Traverse City. Ms. Sattler asked the members to return their calendars to her as soon as possible and the popular choice would be the location for the next meeting.

Mr. Flater thanked the committee for the opportunity to serve as its chair for two years and said he looked forward to continuing to be a member. He then adjourned the meeting.

Prepared by Lisa R. Sattler