



Nevada Site Specific Advisory Board (NSSAB)

Full Board Meeting

**National Atomic Testing Museum (Frank Rogers Auditorium)
755 East Flamingo Road, Las Vegas, NV
5:00 p.m. – November 20, 2013**

Members Present: Kathleen Bienenstein (Chair), Arthur Goldsmith, Donna Hruska (Vice-Chair), Janice Keiserman, Michael Moore, Edward Rosemark, William Sears, Jack Sypolt

Members Absent: Thomas Fisher, Cheryl Kastelic

Liaisons Present: Richard Arnold (Consolidated Group of Tribes and Organizations [CGTO]), Matthew Hodapp (The Meadows School), Ralph Keyes (Esmeralda County Commission), John Klenke (Nye County Nuclear Waste Repository Project Office [NWRPO]), Phil Klevorick (Clark County), Tim Murphy (State of Nevada Division of Environmental Protection [NDEP]), Dan Schinhofen (Nye County Commission)

Liaisons Absent: Genne Nelson (National Park Service [NPS]), Mike Lemich (White Pine County Commission), Charlie Myers (Elko County Commission), Kevin Phillips (Lincoln County Commission)

Department of Energy (DOE): Robert Boehlecke, Tiffany Lantow, Kelly Snyder (Deputy Designated Federal Officer), Scott Wade, Bill Wilborn

Facilitator: Barb Ulmer (Navarro-Intera [N-I])

Scribe: Rochelle LaGrow (N-I)

Others Present: Mary Lou Anderson (Las Vegas, NV), Chris Andres (NDEP), Mark Burmeister (N-I), Jenny Chapman (Desert Research Institute [DRI]), Cheryl Collins (DRI), Patty Gallo (N-I), Lynn Kidman (N-I), Mark Krauss (N-I), Pat Matthews (N-I), Irene Navis (Las Vegas, NV), Dr. Jacob Paz (Las Vegas, NV), Keith Rogers (Las Vegas Review Journal), Bonnie Swadling (Las Vegas, NV), Heidi Tomich (Henderson, NV), Rampur Viswanath (Las Vegas, NV)

Open Meeting/Announcements/Chair's Opening Remarks

Chair Kathleen Bienenstein announced the resignation of Member Jason Abel and introduced the new Student Liaison Matthew Hodapp. Following the Chair's opening remarks, Member Arthur Goldsmith moved to approve the agenda as presented. The motion was seconded and passed unanimously.

Public Comment

Facilitator Barb Ulmer reviewed the Public Comment procedures.

Heidi Tomich, a retired hydrogeologist, noted that she has been reading information available on the Consolidated Edison Uranium Solidification Project (CEUSP) material. Based on reports from the U.S. Geological Survey, DOE, mutual reports, and historical state reports, Ms. Tomich stated that she does not know how the Department can say that the waste will not impact the groundwater and the alluvium ultimately discharging with the Ash Meadow complex. She also noted that she does not know how the Department can say that it will take tens of thousands of years to reach the groundwater. Ms. Tomich stated that in Amarillo, Texas, which has similar evapotranspiration and precipitation rates, plutonium reached a confined groundwater aquifer in 15 years. She also stated there are no published reports on this information. Ms. Tomich does not feel comfortable with the current plans for disposition of the CEUSP material at the Nevada National Security Site (NNSS).

Dr. Jacob Paz recommended that the NSSAB review the comments that he submitted at the public meetings held during the week of November 11, 2013, specifically the request for a supplemental Environmental Impact Statement (EIS). Dr. Paz stated that it appears that there are two standards: one for the Yucca Mountain Project and one for Area 5 of the NNSS, and the end result is the same – contamination of the groundwater. Dr. Paz expressed concern over inconsistencies; the corrosion rate of the canisters is unclear, very conservative, and incomplete. He stated the amount that will be released into the groundwater was not discussed. He questioned why the radiation standard for Yucca Mountain was 100,000 years and Area 5 is only 10,000 years? Dr. Paz stated that there is noncompliance with all *National Environmental Policy Act* regulations, such as cumulative impact, cumulative effect, incomplete or unavailable information in significance. Another issue is the corrosion of the cadmium which is listed as a carcinogen class 1, and gadolinium, a highly potent toxic metal, and its interactions and effect with U-235 are unknown. There is also a long-term effect that Area 5 could become a Super Fund site. Dr. Paz concluded by stating that the Department doesn't have any data because of the large amount of contaminants deposited on site.

Mary Lou Anderson posed the following questions to the NSSAB – what is the NSSAB doing to support Governor Sandoval's quest to keep the CEUSP waste where it is currently located in Oak Ridge? What position has the NSSAB taken on the CEUSP material? Is there any further support planned per Ms. Tomich's commentary above?

U.S. DOE Update (Scott Wade, DOE)

Scott Wade, Assistant Manager for Environmental Management, provided an overview of the previous week's intergovernmental and public meetings regarding the CEUSP material. One conclusion made by the Governor Sandoval/Secretary of Energy Working Group was the need for greater public outreach in Nevada to address comments and questions, and last week's meetings

were part of that initiative. Mr. Wade stated that the goal of the meetings was to explain the major missions at the NNSS, low-level waste (LLW) management, and specifically the current management and evaluation of the CEUSP material for transport and disposal at the NNSS. Personnel from DOE Headquarters (HQ) and the Nevada Field Office were present at the meetings to provide information and address questions. Mr. Wade stated that in response to State of Nevada requests, DOE is planning to utilize the Office of Secure Transportation (OST) to transport the CEUSP material, which prompted questions from local emergency management. In response, Mr. Wade and a representative of the OST met with the local Emergency Planning Committee in Clark County to solicit and share information. Mr. Wade recapped the public meetings held in Las Vegas and Pahrump by stating that the majority of the questions posed by the public involved LLW, CEUSP material, and how the DOE will be addressing issues related to the CEUSP material. The next steps will be determined by the Working Group and additional updates will be provided as more information is available. There are no dates set for shipping the CEUSP material to the NNSS, and DOE is committed to continue dialogue with the State of Nevada regarding the CEUSP material.

In response to Board questions, Mr. Wade provided the following clarifications:

- Based on the waste categorization requirements under the *Atomic Energy Act* (1954), CEUSP material is not spent nuclear fuel, high-level waste, a by-product material, or special nuclear material; therefore classifying it as LLW. LLW does not suggest that it has low activity, but can be at a range of activities. DOE will continue to communicate more clearly the legalistic definitions in a manner understood by the public.
- The definition of LLW has legislative origins and DOE does not have the authority to change the definition.
- In the past, the NNSS has taken higher activity-level shipments than the CEUSP material.
- The DOE website will have a summary of the meetings that will include questions and answers.
- The CEUSP material is composed of 76% U-235, 10% U-233, and other trace radioisotopes. It is often referred to as U-233 due to its origin in the Thorium Fuel Cycle. In the mid-1980s, the material was stabilized into a ceramic and placed into cylinders. Congress has directed DOE to handle this material as a waste.
- DOE Order 435.1 Radioactive Waste Management is currently under revision. There have been no webinar dates confirmed and Mr. Wade has not seen the draft order to determine if it addresses how waste is classified. When new information is received, the Board will be provided further updates.
- The transport of the CEUSP material by air to the NNSS has not been contemplated; as it would introduce additional risks that would require mitigation. Waste is not currently transported by air to the NNSS, and there are no current plans to transport by air in the near future.
- The Department of Transportation has specific standards for each waste container.

Corrective Action Alternatives (CAAs) Recommendation for Corrective Action Unit (CAU) 550 (Work Plan Item #1) (Tiffany Lantow, DOE)

- **NSSAB Work Plan Item 1**
 - Provide a recommendation, from a community perspective, to DOE on which corrective action alternative (closure in place or clean closure) should be selected for CAU 550 – Smoky Contamination Area (Soils Activity)

- **What are the Issues?**
 - Surface soils at the NNSS and the Nevada Test and Training (operated by the U.S. Air Force) were contaminated by:
 - Historical atmospheric nuclear weapons tests
 - Nuclear weapon safety experiments
 - Nuclear weapon storage-transportation tests
 - Evaluation tests for peaceful uses of nuclear explosives
- **Addressing the Issues**
 - The Soils Activity is responsible for:
 - Characterizing and/or remediating surface soil contamination
 - Characterize means to identify the nature and extent of the contamination present
 - Remediate means to select and complete a closure option (clean closure, closure in place, etc.)
 - Ensuring appropriate controls (i.e., signage/postings, barriers, etc.) are in place at the sites with remaining contamination
 - Conducting long-term monitoring of sites
 - NDEP provides oversight under the Federal Facility Agreement and Consent Order (FFACO)
- **Key Terminology**
 - Corrective Action Site (CAS): A site that where a potential release of contaminants has been identified
 - CAU: Grouping of CASs that are similar in remediation technique, type of contaminants, or proximity to each other (grouped to create efficiencies)
- **Principles of Soils Strategy**
 - Build upon Soils Risk-Based Corrective Action Evaluation Process, which is:
 - Strategy approved by NDEP to plan, implement, and complete environmental corrective actions
 - Compares measurements of radiological and chemical contaminant levels to risk-based action levels
 - Corrective actions must be considered when site conditions exceed a final action level
 - Sites are not accessible by the public
- **CAAs**
 - CAAs identified in FFACO:
 - Closure in place with use restrictions, as necessary
 - Clean closure (removal of contaminants, no use restrictions)
 - No further action
 - CAAs evaluated based on general standards and remedy selection decision factors defined by the U.S. Environmental Protection Agency (40 CFR 300.430(e)(9))
- **CAAs General Standards**
 - All CAAs must meet the four general standards in order to be selected for evaluation using the remedy selection decision factors:
 - Protection of human health and the environment
 - Compliance with environmental cleanup standards
 - Control the source(s) of the release
 - Comply with applicable federal, state, and local standards for waste management

- **CAAs Remedy Selection Decision Factors**
 - Only CAAs that meet the general standards are scored on the remedy selection decision factors:
 - Short-term reliability and effectiveness
 - Reduction of toxicity, mobility, and/or volume
 - Long-term reliability and effectiveness
 - Feasibility
 - Cost
- **Soils CAU/CAS Summary**
 - 31 Total CAUs comprised of 130 Total CASs
 - 69 Closed CASs
 - 26 Closure in Place
 - 3 Clean Closure
 - 40 No Further Action
- **CAU 550 Overview**
 - One weapons-related atmospheric test (Smoky)
 - Three safety experiments (Ceres, Oberon, and Titania)
 - Washes/drainage channels, including a depositional area located south of Circle Road
 - Debris locations (15 sites)
- **CAU 550 Field Activities**
 - Field Activities
 - Sampling and radiological dose measurements conducted intermittently between August 2012 through October 2013, including:
 - Soil Sampling (chemical and radiological)
 - Terrestrial radiological surveys
 - Characterization and removal of lead debris
- **CAU 550 Results**
 - Corrective Actions are required for:
 - The area surrounding the safety experiments (CASs 08-23-03, 08-23-06, and 08-23-07 exceed action level for radiological contamination)
 - Debris CASs 08-26-01 (lead bricks) and 08-24-08 (batteries) exceed action level for lead
- **NSSAB Involvement**
 - DOE requests NSSAB provide a recommendation this evening on selection of a CAA for the sites identified in the following slides
 - Possible CAAs
 - No Further Action
 - Closure in Place with use restrictions (UR)
 - Clean Closure
- **CAA Evaluation – Safety Experiments (CASs 08-23-03, 08-23-06, and 08-23-07)**

CAA	Pros	Cons
Clean Closure	Reduces environmental risk by removing hazard	High occupational risk during excavation
\$46M (excavation and removal of ~188,000 yds ³ of	Long-term reliability and effectiveness	Moderate risk to workers
		High cost associated with

soil and debris)	Eliminates long-term monitoring and maintenance costs	excavation, waste packaging, and disposal
Closure in Place \$72K (1 st year) \$1,500/yr (post closure)	Feasible and cost effective Minimal environmental risk Consistent with other similar sites	Controls exposure but does not remove hazard Will require long-term monitoring and maintenance costs

- **CAA Evaluation – Debris CAS 08-24-08 (Batteries)**

CAA	Pros	Cons
Clean Closure \$14K (excavation and removal of ~2.5 yds ³ of soil and debris)	Reduces environmental risk by removing hazard Long-term reliability and effectiveness Eliminates long-term monitoring and maintenance costs	Moderate occupational risk during excavation due to Batteries' location in Transferrable Contamination Boundary High cost associated with excavation, waste packaging, and disposal If surrounding area remains within transferrable contamination boundary, then minimal environmental benefit
Closure in Place \$2K (establish FFACO UR within north High Contamination Area)	Feasible and cost effective Minimal environmental risk Consistent with other similar sites	Controls exposure by barriers and administrative controls but does not remove hazard Will require long-term monitoring and maintenance costs

- **CAA Evaluation – Debris CAS 08-26-01 (Lead Bricks)**

CAA	Pros	Cons
Clean Closure \$2.0M (excavation and removal of ~350 yds ³ of soil and debris)	Reduces environmental risk by removing hazard Long-term reliability and effectiveness Eliminates long-term monitoring and maintenance costs	High occupational risk during excavation High cost associated with excavation, waste packaging, and disposal Disregards the historic significance of the site Mitigating the Historical

		Preservation Act would require significant documentation
Closure in Place \$2K (establish FFACO UR)	Feasible and cost effective Minimal environmental risk Consistent with other similar sites	Controls exposure by engineered barriers and administrative controls but does not remove hazard Will require long-term monitoring and maintenance costs

- **CAU 550 Next Step**

- DOE considers NSSAB recommendations
- Complete Corrective Action Decision Document/Closure Report (CADD/CR) ~ Winter 2013/2014
 - The CADD/CR presents the CAAs and identifies the selected alternative

In response to Board questions, the following clarifications were provided:

- Long-term monitoring will continue until DOE determines that it is no longer necessary. Sites will be reassessed over time and, when appropriate, the monitoring may be discontinued. The current design for closure is based on 30 years, but regulations, standards, and land use changes.
- “Minimal environmental risk” refers to the risk of contamination left in place and is controlled with barriers and use restrictions.
- Under the Clean Closure alternative, any contaminated soil would be transported and disposed at the Area 5 Radioactive Waste Management Complex.
- The impacted area is approximately 230 acres or 0.4 square miles.
- Under the Clean Closure alternative, the lead bricks would be disposed at Area 5. In order to maintain historical significance, the bricks must be left in place.
- If the Closure in Place alternative is chosen for all three areas, the long-term monitoring costs for Lead Bricks and Batteries would be inclusive in the costs of the Oberon, Ceres, and Titania Sites as they are co-located.
- CAAs proposed by DOE are reviewed and approved by NDEP.
- There is a form of plutonium present at these sites that is readily transferrable with a long half-life, and is controlled in a radiological-control area. The activity is at a level that DOE has restricted public access to the site. There is no current or planned prevention/control for wildlife access to the site.
- Additional information on studies of biological effects on animals is available in the NNSS Environmental Report and is available online at <http://www.nv.energy.gov/library/publications/aser.aspx>. There has been no disruption in the animal population due to contamination at the sites.
- The Smoky Test was conducted in 1958 and the three safety experiments were conducted in October 1957.
- Personal protective equipment is worn when work is performed in a contamination area. The means of excavation depends on the size of the area. The DOE maintains operations at a level in which the risk to workers is as low as possible.

- The area has been re-vegetated through the passage of time.
- DRI conducts environmental monitoring, i.e. wind, precipitation, etc. at the NNSS.
- DOE has requirements to ensure both protection of the workers and the public.

Board members had open discussion regarding the information and cost/benefit analysis presented, and final recommendations were acted upon, as follows:

- Member Edward Rosemark moved to accept Closure in Place for Oberon, Ceres, and Titania Sites (CASs 08-23-03, 08-23-06, and 08-23-07). The motion was seconded and passed by a majority vote (7 to 1).
- Member Goldsmith moved to accept Closure in Place for Lead Bricks (CAS 08-26-01). The motion was seconded and passed unanimously.
- Member Goldsmith motioned to accept Closure in Place for Batteries (CAS 08-24-08). The motion was seconded and passed unanimously.

Groundwater Open House (Work Plan Item #4) *(Kelly Snyder, DOE)*

- **NSSAB Work Plan Item 4**
 - Groundwater Open House
 - DOE is seeking NSSAB recommendation, from a community perspective, on how the Groundwater Open House could be enhanced in the future (i.e., format, advertising, and subject matter)
 - NSSAB Members asked to attend the Groundwater Open House on December 11, 2013, at the Community Center in Beatty, Nevada, from 4:30 to 7 p.m.
 - Bus from Las Vegas available with details forthcoming
 - NSSAB recommendation requested by February 2014
- **Groundwater Open House Objective**
 - Provide communities near the NNSS with information on the:
 - Impacts of nuclear testing on groundwater and how the DOE is addressing these impacts through investigation and closure (under the FFAO)
 - Status of investigations
- **Groundwater Open House Setup**
 - Advertising
 - Format
 - Posters
 - Presentations
 - Displays
 - Subject Matter

The following were suggestions made by Board members for the upcoming Groundwater Open House:

- Information on the displays should be written so that the layman can understand the content.
- Name badges should be available to identify Members of the NSSAB to the general public.
- Videos should be on a shorter loop in order for more participants to receive the full impact of the message.

The NSSAB will have its informational booth at the Groundwater Open House and Chair Bienenstein will be staffing the booth. Membership applications for the upcoming membership drive will be available.

The NSSAB Office will email the Board to request reservations for the bus prior to the Groundwater Open House. Members were encouraged to attend and take notes on ways to enhance the event in the future and provide any ideas to the NSSAB Office no later than Friday, December 20, 2013; so comments can be compiled into a draft recommendation for Board action at the February 19, 2014, Full Board meeting.

Radionuclide Decay at Use-Restricted Soil Sites (Work Plan Item #3) (Lynn Kidman, DOE)

The Board received via email a copy of the report, *“Estimated Time When Dose at Selected NNSS Soils Sites Falls Below 25 mRem/yr,”* prior to the meeting for its review. The following presentation provides additional background on the report.

- **NSSAB Work Plan Item #3**
 - Provide recommendations, from a community perspective, that answer the following two questions: are there any improvements or enhancements to be made to the report? What should DOE’s actions be when the radionuclides in the use-restricted areas have decayed?
- **Scope and Purpose**
 - Scope: Previously closed Soils sites with FFACO and Administrative use restrictions based on dose
 - Purpose: This report provides the estimated time when dose will reduce sufficiently to remove the use restriction
- **Background**
 - Use restrictions consist of contaminant boundaries that are entered into the site-wide geographic information system (GIS)
 - Use restrictions are put in place to warn site workers of the presence of contamination at levels of potential concern
 - FFACO use restrictions are implemented where dose could exceed 25 millirem/year (mrem/yr) based on current and projected land use – these require a higher level of control to include warning signs
 - Administrative use restrictions are implemented where dose could exceed 25 mrem/yr if the site were to be used for industrial activities – this is a lower level of control and do not require signage
 - Both use restriction types are controlled administratively
- **Methodology**
 - As radioactive decay progresses, dose generally decreases
 - Calculate future dose:
 - Use the highest current dose from any location at each use restriction
 - Select time intervals
 - Adjust for site-specific differences
 - Select time that produces a dose <25 mrem/yr action level
 - Natural Background dose is approximately 300 mrem/yr
- **CAU 365, Baneberry Contamination Area**
 - Present
 - FFACO and Administrative use restrictions have been established at site
 - FFACO use restriction includes area of Default Contamination Boundary (i.e., crater boundary)

- 2041
 - Consider removal of Administrative use restriction
- 2171
 - Consider shrinking FFACO use restriction to include only the area of the Default Contamination Boundary
- **Results**
 - 14 FFACO use restrictions
 - Three (3) could have size reduction in 30, 60, and 70 years
 - 12 Administrative use restrictions
 - Five (5) could be removed in 30 (2), 50, 160, and 320 years
- **NSSAB Input**
 - Provide recommendations, from a community perspective, that answer the following two questions: are there any improvements or enhancements to be made to the report? What should DOE's actions be when the radionuclides in the use-restricted areas have decayed?
 - Recommendation requested by February 2014
- **Additional Considerations for NSSAB Input**
 - Provide recommendations, from a community perspective, what should DOE consider when removing use restrictions?
 - Recommendation requested by February 2014

In response to Board questions, the following clarifications were provided:

- A 25 mRem/yr dose is measured in excess of the natural background dose of approximately 300 mRem/yr.
- The crater in the Baneberry Contamination Area was deemed unsafe due to its unknown structure and potential of additional collapses.
- Removing one use restriction saves an average of \$1,500 per year.
- Under the occasional or current land use scenario, dose is calculated utilizing a conservative approach for the most exposed individual having exposure for eight hours a day for two weeks.
- Under the industrial use scenario, dose is calculated utilizing a conservative approach for a worker for 40 hours per week for a full year.
- Cover and fill have not been calculated into the industrial use scenario.
- The intended reader for the report is federal staff and for informational and long-term monitoring purposes.
- If the land use changes, the sites would be reassessed.

Chair Bienenstein began Board dialogue on the first question, "Are there any improvements or enhancements to be made to the report?" Based on discussion, the NSSAB provided suggestions that the following improvements or enhancements are included in the report:

- A definition of terms
- An inventory of radiological materials at each Corrective Action Unit
- An explanation of 25 versus 300 mRem/yr
- An explanation of Occasional Use versus Industrial Use
- Suggested reader of the report
- If land use changes, then reevaluate
- Assumptions

Member Jack Sypolt made a motion that the NSSAB Office prepares a draft recommendation letter that will be available for final Board review and approval at the February 19, 2014, Full Board meeting. The motion was seconded and passed unanimously. Member Janice Keiserman made a motion to table the second question, "What should the DOE's actions be when the radionuclides in the use-restricted areas have decayed?" and the additional consideration question, "What should DOE consider when removing use restrictions?" until the February 19, 2014, Full Board meeting. The motion was seconded and passed unanimously.

External Peer Review for Yucca Flat (Work Plan Item #2) (Bill Wilborn, DOE)

- **NSSAB Work Plan Item 2**
 - External Peer Review for Yucca Flat
 - DOE is seeking NSSAB recommendation, from a community perspective, on what types of representation should be on the external peer review panel and how the questions could be enhanced
 - NSSAB recommendation requested this evening
- **Background for External Peer Review (EPR)**
 - Required by the FFACO during the Corrective Action Investigation stage
 - Held once internal review and NDEP acceptance of the CAU flow and transport modeling work is completed and documented
 - Specific questions are developed for the EPR to answer after completing their evaluation (*these questions are presented for NSSAB consideration later in the presentation*)
 - Second CAU to undergo peer review
 - Frenchman Flat in 2010
- **EPR Process**
 - EPR consists of scientific experts in multiple disciplines (i.e., regulatory, geology, hydrology, physics, modeling, radiochemistry, etc.)
 - Planning to completion typically takes a full year
 - Conduct a mock-up peer review internally to prepare
 - Provide tour, presentations, and discussions for EPR members to become familiar with activity
 - EPR anticipated to involve many hours of work per reviewer over a six month period
 - EPR expected to read and review over 2,000 pages of technical information, view the modeling outcomes, etc.
 - DOE and EPR participate in additional discussions after review is completed, if necessary
 - DOE receives report and close-out from the EPR
 - DOE will complete additional work if necessary, or request approval from NDEP for the Yucca Flat model
- **NSSAB Work Plan Item 2**
 - External Peer Review for Yucca Flat
 - DOE is seeking NSSAB recommendation, from a community perspective, on what types of representation should be on the external peer review panel and how the questions could be enhanced
- **Criteria for Yucca Flat EPR Members**
 - During the search, DOE is concentrating on the following technical fields:
 - Geology
 - Hydrogeology
 - Groundwater flow and transport modeling

- Uncertainty analysis
 - Geochemistry/radiochemistry
 - Unsaturated-zone processes
 - Regulatory risk analysis
- Ideally, candidates will have practical, real-world experience conducting or reviewing hydrologic or contaminant transport studies within a regulatory environment
- Geologist
 - Expert to evaluate the geologic conceptual and framework models and its relationship to hydrogeologic setting
 - Experience in rock deformation effects on hydrogeologic processes and parameters around nuclear detonations
- Hydrogeologist
 - Expert to review interpretations of geologic, hydrologic and geochemical/radiochemical data to form an internally consistent interpretation of the Yucca Flat basin flow and transport system
 - Experience in hydrology of arid environment with deep groundwater tables
- Unsaturated-Zone Hydrologist
 - Expert with knowledge of unsaturated-zone flow and transport processes
 - Experience in modeling liquid and/or gas-phase transport processes
- Groundwater Flow and Transport Modeler
 - Expert with broad experience modeling groundwater flow and transport
 - Experience in fractured/faulted dual-porosity groundwater systems
- Geochemist/Radiochemist
 - Expert with understanding of processes and geochemical factors affecting transport of radionuclides in groundwater
 - Experience in applying naturally occurring isotopic and chemical variations to the interpretation of groundwater systems
- Regulator
 - Expert with earth science/nuclear waste background
 - Experience in evaluating compliance with regulatory standards and/or use of models to inform decision-making
- **Questions for EPR**
 1. Are the approaches, assumptions, and results consistent with the use of the models as decision tools for meeting FFACO regulatory requirements?
 - a) Are the models of sufficient scale/resolution to adequately forecast contaminant transport in the Yucca Flat/Climax Mine setting?
 - b) Have the key processes been included in the models?
 - c) Are the flow and transport modeling results and uncertainties technically sound and defensible?
 2. Are the datasets and modeling results adequate for a transition to model evaluation studies in the Corrective Action Decision Document/Corrective Action Plan stage—the next stage in the Underground Test Area (UGTA) strategy for the Yucca Flat/Climax Mine CAU?
- **NSSAB Input**
 - Provide DOE a recommendation, from a community perspective, on what types of representation should be on the external peer review panel and how the questions could be enhanced
 - Recommendation requested this evening

In response to Board questions, the following clarifications were provided:

- Reasons that an EPR is included in the UGTA activity, and not in the soils activity, are that it is required under the FFACO, a legally-binding agreement between DOE and NDEP, and UGTA is based on models that include uncertainties in the data collected, which is not the case in the soils activity.
- The EPR will be composed of approximately five-seven people.
- An intermediary would require a site clearance and a need-to-know determination.
- Classified and unclassified model runs are conducted and the deviations are provided to NDEP. The unclassified model encompasses any impacts that may be seen in the classified realm.

Following Board discussion, Member William Sears made a motion to provide a final recommendation to DOE to include a technical stakeholder from Nye County and an intermediary, who has site clearance, between the State of Nevada and DOE, on the EPR. The NSSAB confirmed that it would be beneficial to include members with not only academic, but also applied experience. In regard to enhancement of the questions, a final recommendation to DOE to include a question in regard to integration of the models and whether these integrated models confirm the conclusions of the individual models. The motion was seconded and passed unanimously.

Liaison Updates

Clark County (*Phil Klevorick*)

Liaison Phil Klevorick provided a written update, which was read by Chair Bienenstein, as follows:

Liaison Klevorick thanked DOE for its participation in last week's intergovernmental and Local Emergency Planning meetings. He also thanked NSSAB members who attended the DOE-sponsored public meetings in Las Vegas or Pahrump. Liaison Klevorick stated that there was a more open and transparent effort by DOE to include local governments in the sharing of information, particularly transportation planning with local emergency planners and first responders. He also recognized the long-term efforts of improved communication between DOE and other local government agencies. DOE and OST will be developing a table top exercise for first responders and emergency planners in Clark County prior to the commencement of CEUSP shipments.

Consolidated Group of Tribes and Organizations (*Richard Arnold*)

Liaison Richard Arnold reported that he attended the State Tribal Intergovernmental Working Group meeting and shared information on activities that the CGTO is involved at the NNSS and updates regarding the National Transportation Stakeholders' Forum. Liaison Arnold also participated in the first tribal dialogue with DOE's Assistant Secretary of Nuclear Energy to explore ways to enhance tribal involvement on a national level. He has been tasked with coordinating an effort on a national level with Environmental Management (EM) to enhance tribal involvement with activities at the NNSS. During the three intergovernmental meetings last week, he noted that one of the common themes of the comments made concerned the mechanism to get information to the public. Liaison Arnold is actively working with the National Transportation Stakeholders' Forum and coordinating tribal participation from EM sites across the nation in the conference. He is pursuing more tribal involvement with the Western Interstate Energy Board, and will be attending the Midwest Council of State Governments meeting in December 2013.

Esmeralda County Commission (*Ralph Keyes*)

Liaison Ralph Keyes stated that he is coordinating with appropriate personnel to arrange training for the local emergency responders in regard to potential CEUSP shipments going through Esmeralda County. His community publishes a monthly local publication called the Dyer Flyer to share information in his district.

The Meadows School (*Matthew Hodapp*)

Liaison Matthew Hodapp introduced himself to the Board. Vice-Chair Donna Hruska stated that the Membership Committee will be meeting with Liaison Hodapp in December 2013 to outline his school project and further updates will be provided.

Nye County Commission (*Dan Schinhofen*)

Liaison Dan Schinhofen stated that he also attended the CEUSP intergovernmental meetings and thanked DOE for hosting. The Energy Community Alliance was asked to approach DOE regarding elected officials from host communities serving as voting members on local citizen advisory boards. As Chairman of the Regional Transportation Commission and liaison to the local emergency preparedness committee, their main concerns are final disposition of CEUSP material and transportation through Nye County.

Nye County Nuclear Waste Repository Project Office (*John Klenke*)

Liaison John Klenke had nothing to report.

State of Nevada Division of Environmental Protection (*Tim Murphy*)

Liaison Tim Murphy stated that he attended not only the intergovernmental meetings, but also the public meetings last week. Liaison Murphy believes that the DOE open houses are beneficial for the educating the public on the issues.

Liaison Discussion Wrap-Up (*Scott Wade, DOE*)

Mr. Wade stated that the format of the intergovernmental and public meetings was determined by HQ, and a number of lessons learned were gained for the path forward with the project. Any decisions with CEUSP will be made at DOE HQs in concert with the Governor's Office. Additional tasks resulted from the meetings: local emergency management interface, perform additional crosswalk of NEPA to communicate with the Nevada Attorney's General Office, and further discussions in regard to the Special Analysis with Nye County. Mr. Wade noted that the DOE Chief of Staff of DOE agreed that two additional public outreach events in Nevada would be beneficial in the next calendar year. Mr. Wade also reported that the Transportation Working Group would reconvene in the following calendar year.

Other NSSAB Business (*Chair Bienenstein*)

The NSSAB tour of the NNSS has been rescheduled to Wednesday, January 22, 2014. The NSSAB Office will send out an email to request reservations.

Chair Bienenstein initiated Board discussion on any thoughts on requesting that an NSSAB Member be appointed to Secretary Moniz' and Governor Sandoval's Working Group to participate in the dialogue and provide a community perspective. Member Michael Moore moved that the NSSAB Office draft a letter to request NSSAB participation in the working group. The motion was seconded and passed unanimously.

Chair Bienenstein and Vice Chair Hruska attend the EM Site Specific Advisory Board (SSAB) National Chairs' Meeting that was rescheduled for November 4-7, 2013, and hosted by the Portsmouth SSAB. Chair Bienenstein recapped that Alice Williams, Associate Principal Deputy Assistant Secretary for EM, was very receptive to NSSAB's comments regarding the CEUSP materials during the round robin. Chair Bienenstein reported that during an EM HQ Waste Management Update by Christine Gelles, Associate Deputy Assistant Secretary for Waste Management, she shared that a high-level decision was made to intentionally leave out a preferred alternative in the draft Greater-Than-Class-C EIS in an effort to create dialogue. Vice-Chair Hruska highlighted the results of community survey conducted in Ohio which was presented during one of the educational sessions on Community Involvement and DOE Decisions.

The following letters were generated during the EM SSAB National Chairs' Meeting:

- Letter #1: Recommends that funding for cleanup DOE site should be maintained as a top priority. Member Moore moved to endorse the letter. The motion was seconded and passed unanimously.
- Letter #2: Recommends that DOE develop and make available to the public graphic representations of the current and planned EM legacy waste disposition paths. Member Rosemark moved to endorse the letter. The motion was seconded and passed unanimously.
- Letter #3: Recommends that DOE establish a comprehensive and structured recycling program to address volumetrically contaminated metals, that DOE develop a strategy to educate the general public on benefits and risks of recycling metals from DOE EM sites, and that DOE adopt International Atomic Energy Agency standards or their equivalence. Member Sears moved to endorse the letter. The motion was seconded and passed unanimously.

Kelly Snyder, Deputy Designated Federal Office, reviewed the results for the FY 2013 NSSAB Evaluation and received additional feedback from members, as follows:

- Interested in an educational session involving an overview of waste transportation with follow-up sessions regarding routes, security, material safety, packaging, and OST involvement
- Interested in workshops and extended educational sessions in addition to Full Board meetings based on the work plan
- Explore teleconferencing for meetings
- Provide a list of additional resources before and after briefings would be beneficial
- The current level of information provided in the briefings is appropriate
- Interested in receiving NSSAB Liaison feedback as part of the NSSAB deliberation process
- Interested in participating in ways to get to know fellow Members better, i.e. mixers, dinner, etc.

Based on planned meeting topics for FY 2014, the Board decided to hold its February 19, 2014 meeting in Beatty, NV and the May 21, 2014 meeting in Pahrump, NV.

Member Moore moved the meeting be adjourned. The motion was seconded and passed unanimously.

Meeting adjourned at 9:35 p.m.