



## ***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. – May 15, 2013**

**Members Present:** Jason Abel, Kathleen Bienenstein (Chair), Matthew Clapp, Thomas Fisher, Arthur Goldsmith, Donna Hruska (Vice-Chair), Janice Keiserman, Barry Li Marzi, Michael Moore, Edward Rosemark, William Sears, Jack Sypolt, James Weeks

**Members Absent:** Cheryl Kastelic

**Liaisons Present:** Marcy Brown (West Career and Technical Academy [WCTA]), Ralph Keyes for Nancy Boland (Esmeralda County Commission), John Klenke (Nye County Nuclear Waste Repository Project Office [NWRPO]), Phil Klevorick (Clark County), Tim Murphy (Nevada Division of Environmental Protection [NDEP]), Dan Schinhofen for Andrew "Butch" Borasky (Nye County Commission), Scott Wade (Department of Energy [DOE])

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

**DOE:** Robert Boehlecke, Jhon Carilli, Kathryn Knapp, Janis Romo, Kelly Snyder (Deputy Designated Federal Officer), 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), Sandra Brown (Las Vegas, NV), Elmer Ford (Ashtabula, OH), Gregg Geisinger (National Security Technologies, LLC [NSTec]), Jim Haber (Las Vegas, NV), Evalyn Hubbs (Las Vegas, NV), Kim Hunsinger (N-I), Kathleen Keyes (Dyer, NV), Jeff MacDougall (NDEP), Dr. Jacob Paz (Las Vegas, NV), Keith Rogers (Las Vegas Review-Journal), Dave Taylor (N-I), Judy Treichel (Las Vegas, NV), Michael Voegele (Las Vegas, NV)

## **Open Meeting/Agenda Review/Chair's Opening Remarks**

Following opening remarks and agenda review, Member Art 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.

Member Goldsmith stated that while on vacation in Nagasaki, Japan, he was approached by several individuals who had heard that he was from Nevada and participated on the NSSAB. They requested that he express their thanks to the Nevada National Security Site (NNSS) for the teams that were sent to Fukushima, Japan to help with clean-up efforts.

Mary Lou Anderson, member of a local peace organization, expressed her concerns regarding the Uranium 233 (U-233) and U-235 radioactive waste shipments from Oak Ridge, Tennessee, and inquired about the status. Ms. Anderson reiterated that she is vehemently opposed to the NNSS accepting the U-233 and U-235 waste shipments and stated that a vast amount of waste has infiltrated the earth in Nevada already. She conveyed concern with the length of the shipment route and the concerns of her colleagues with the Western Shoshone and Paiute tribes who have witnessed the results of the waste and contamination in and around the NNSS and throughout Nevada.

Jim Haber, Coordinator for Nevada Desert Experience, stated that if U-233 waste is allowed into Nevada, it sets a dangerous precedent that seems to side-step the Yucca Mountain Project rejection. Mr. Haber expressed that the state of Nevada is not a wasteland and that, while there are efforts to ensure that the transport of the waste is done as safely as possible, the material is dangerous. He also stated that the plan for burying the waste in shallow trenches seems unwise and appears to be an expedient option as opposed to handling the waste more appropriately.

Dr. Jacob Paz stated that the waste shipments [U-233] are not in compliance with the Cumulative Effect and Cumulative Impact Policy, due to the high toxicity and potential interactions during shipment. The material can penetrate the earth and begin to disintegrate leaving cadmium which can leach into the groundwater, possibly resulting in a nuclear chain reaction. Dr. Paz also expressed that there needs to be more multi-layer drilling resulting in a better model. Without a good model, there are high deficiencies. He noted that he has sent an email to the U.S. Environmental Protection Agency (EPA) submitting comments on a Complex Mixture Risk Assessment.

Judy Treichel, Executive Director for the Nevada Nuclear Waste Task Force, stated that her organization is opposed to the disposal of U-233 at Area 5 at the NNSS. The organization believes the material should stay where it is, with the building at Oak Ridge brought into compliance and up to appropriate standards to house the waste in question. If it is decided for appropriate reasons that the waste would need to come to Nevada, then it could be handled better at the Device Assembly Facility rather than being placed in trenches. Ms. Treichel finished by stating that the waste from Oak Ridge is not low-level.

Chair Kathleen Bienenstein read into the record an email submitted to the NSSAB Office for public comment from Genne Nelson, current NPS liaison and former NSSAB Member:

I was not in attendance at the Full Board Meeting on 4/17/2013. However I reviewed the presentation by Kathryn Knapp on a proposed Integrated Groundwater Sampling Plan. The concept of coordinating the efforts of the three agencies that sample groundwater at the NNSS facilities offers a thoughtful and efficient approach to focus monitoring at the most important locations. This could also result in a more cost-effective use of resources. However, a great deal of very complex background information was presented in one evening, with the goal of receiving specific recommendations from the NSSAB for five questions.

Having served on the CAB for 6 years, I remember how daunting that scientific information seemed. It was at least a year before I would venture to ask a question, because I didn't understand enough to know how to ask. I was not the only overwhelmed one, and at our request, the DOE began giving us bite-sized lessons in the fundamentals of radiation, transportation and groundwater. (They still offer these in the form of pre-meeting workshops on specific subjects) Groundwater movement, which was the focus of my own interest, is a particularly difficult concept to understand, and yet is critical to predicting how contamination can migrate at the NNSS.

We also formed committees of those persons interested in certain aspects of environmental management. These committees could delve into the details with DOE experts and, with improved understanding, develop their own priorities to address the issues. They served the CAB at large by providing recommendations on their focused areas of interest and answers about how they reached their conclusions. During full CAB member discussions of this information if issues were raised that had not been considered, the committee could return to the experts to find the needed answers. In this way the committees helped the CAB as a whole make informed decisions and recommendations.

The NSSAB is a means of citizen input to decisions about the environmental management of legacy contamination at the NNSS. I appreciate the DOE's interest in neighbor participation in this important activity. I have always found the staff to be extremely helpful in trying to improve our understanding of these complex environmental issues. I encourage you to use this resource fully to gain your own understanding of the issues. Ask questions to better understand the problem and possible solutions. Ask for adequate time to fully understand the complex processes and schedule small group meetings if they could help clarify complicated issues. Make the most informed recommendations possible for the benefit of the citizens of southern Nevada who could be impacted by legacy contamination.

### **Liaison Updates**

#### **Clark County** (*Phil Klevatorick*)

Liaison Phil Klevatorick reported that Clark County provided comments to the Site-Wide Environmental Impact Statement (SWEIS) and is waiting for the release of the Record of Decision (ROD).

Liaison Klevatorick added that Clark County is not in support of the U-233 shipments being transported to Nevada and noted that a meeting is being organized for interested stakeholders.

Clark County requests that DOE address concerns about the disposition of scrap metal from the NNSS. In January 2013, National Security Technologies (NSTec) held an auction for the disposal of 2,900 spools of wire, the origins of which were unknown. In the Terms and Conditions found both in the text of the auction and the NSTec website, there are disclaimers that the material is not characterized for radiological contamination or activation. According to the terms, it is the buyer's responsibility to determine the radioactivity and regulatory status of the scrap metal and associated objects that have been purchased. The terms also state that there are no refunds and that the buyer is responsible for the materials purchased. Liaison Klevorick noted that this is in direct conflict with DOE policy that no contaminated scrap metal be released into the commercial recycling stream. The auction also states that the buyer must possess a valid radioactive materials license which is extremely unusual for scrap metal dealers. Clark County inquired how the disposition of the material can be tracked.

**Esmeralda County Commission** (*Ralph Keyes*)

Liaison Ralph Keyes had nothing new to report.

**Nye County Commission** (*Dan Schinhofen*)

Liaison Dan Schinhofen reported that the transportation of nuclear material has been proven to be safe repeatedly. Nye County's concern is that Senator Harry Reid continues to state that Yucca Mountain is not safe, but has not spoken out about disposing this material at the NNSS. Liaison Schinhofen also stated that Federal law is clear that it is important to move forward with science, and if it is deemed safe to build and operate Yucca Mountain, Nye County would welcome the project.

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

Liaison John Klenke reported that Nye County's drilling program in Amargosa Valley is underway. On behalf of the Nye County Water District, he thanked the DOE for their participation in the Devil's Hole Workshop.

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

Liaison Tim Murphy reported that the Governor's Office is currently organizing a stakeholder group meeting to address the Consolidated Edison Uranium Solidification Project (CEUSP) or U-233 waste. DOE has already done multiple presentations on this subject to the State of Nevada, the NSSAB, and Nye County. There have also been numerous studies and evaluations regarding this waste.

**U.S. National Park Service**

Chair Bienenstein read the report provided by the NPS: Death Valley National Park's primary interest in the activities of the Environmental Management program is the study of contaminant migration in groundwater from legacy nuclear testing. Activities up-gradient of the Park that may affect the groundwater quality are an ongoing concern. The Park appreciates the opportunity to stay up-to-date on information developed by the Underground Test Area (UGTA) program through the NSSAB. Transportation of waste to the NNSS for disposal is of potential concern to the Park should either the transportation corridors or the nature of the low-level waste materials transported be changed in the future.

**U.S. Department of Energy** (*Scott Wade*)

Liaison Scott Wade reported that the Greater-Than-Class-C Environmental Impact Statement (GTCC EIS) is going through DOE Headquarters' review and is planned to be issued in the

summer 2013. Accompanying the final GTCC EIS will be a report to Congress. DOE will await guidance from Congress on GTCC materials.

The final SWEIS was issued in February 2013 with the ROD tentatively planned for issuance in June 2013. Upon ROD issuance, DOE plans to meet with local stakeholder governments to discuss the ROD and address any questions or concerns.

DOE Order 435, which regulates waste activities for DOE, is currently being updated with a release date tentatively planned for the summer 2013 for public comment via webinar.

Liaison Wade stated that DOE is in continuing resolution for the remainder of fiscal year (FY) 2013. The President has submitted his proposed budget for FY 2014, which is level with the budget that DOE put in place in anticipation of sequestration.

If the final decision is to dispose of CEUSP or U-233 waste at the NNS, Liaison Wade reported that the DOE Office of Secure Transportation, which oversees nuclear materials, would accompany the CEUSP materials to the NNS. Certain information cannot be released to the public due to restriction of classified information, but DOE will provide updates on the activities as allowable.

#### **WCTA Student Project** (Marcy Brown)

Student Liaison Marcy Brown provided a run-through of her briefing that she developed to present to WCTA high school students to increase their knowledge of the history and current activities of the Environmental Management activities at the NNS, and the role of the NSSAB in providing recommendations to the DOE. Liaison Brown explained that after contacting WCTA teachers this spring, she was informed that she would not be able to give the briefing to students during class time due to time constraints. Liaison Brown recorded a voice-over and made her briefing available for students on the WCTA teachers' website. Vice-Chair Donna Hruska presented Liaison Brown with a plaque in recognition of her time and efforts dedicated to the NSSAB.

#### **Recommendation: Corrective Action Unit (CAU) 105 Yucca Flat Atmospheric Test Site Evaluation of Corrective Action Alternatives (CAAs) (Work Plan Item #1)**

Robert Boehlecke clarified that the additional information included in the white paper, *Considerations for Inclusion of Closure in Place in Evaluation of Clean Closure Alternatives*, was provided not to advocate for closure in place, rather to explain why closure in place is an appropriate closure option within regulatory compliance. After Board discussion, it was decided that additional information included in the white paper did not change the draft recommendation that was previously discussed and developed at the April 17, 2013 NSSAB Full Board meeting. Member Edward Rosemark moved to accept the recommendation letter as written. The motion was seconded and passed by a majority vote (12 to 1).

#### **Recommendation: NNS Integrated Groundwater Sampling Plan (Work Plan Item #8)**

After review of the draft recommendation letter that was previously discussed and developed at the April 17, 2013 NSSAB Full Board meeting, Member Goldsmith moved to accept the recommendation letter as written. The motion was seconded and passed unanimously.

## **Other NSSAB Business** (*Kathy Bienenstein*)

- Environmental Management Site Specific Advisory Board (EM SSAB) Recommendations and DOE Responses
  - The EM SSAB received DOE responses from Assistant Secretary David Huizenga for the following items:
    - Recommendation dated February 27, 2013 to EM on Continued Funding Levels for Technology Research and Development
    - Recommendation dated February 27, 2013 to EM on Additional Storage and Disposal Options for Legacy Waste at the Waste Isolation Pilot Plant
- EM SSAB National Chairs' Meeting Update (April 25, 2013)
  - Chair Bienenstein, Vice-Chair Hruska, and Liaison Klevorick participated via webinar
  - Presentations provided included EM Update, EM Budget Overview, and Waste Disposition Update
  - The NSSAB sponsored recommendation letter involving a national work plan was deferred
    - Chair Bienenstein and Vice-Chair Hruska to provide a sample work plan for further discussion on the June 18, 2013 EM SSAB Chairs' Conference Call
- Public Interactions
  - Chair Bienenstein provided an update on a Channel 3 interview and a presentation to the Clark County Women's Democratic Club that she participated in regarding NSSAB's recommendation on Proposed U-233 Disposition at the NNSS
- UGTA Technical Information Exchange Update (April 30, 2013)
  - Members Janice Keiserman, William Sears, Jack Sypolt, and Jim Weeks attended and provided individual updates
- Devils Hole Workshop Update (May 1-3, 2013)
  - Members Art Goldsmith, Donna Hruska, Edward Rosemark, and Jack Sypolt attended and provided individual updates
- Membership Committee Update
  - Vice-Chair Hruska reported that the Membership Committee is reevaluating the student liaison position and will meet in June to begin discussion of a path forward
  - Member Keiserman expressed interest in joining the Membership Committee

## **Community Environmental Monitoring Program (CEMP) (Work Plan Item #6)** (*Kathryn Knapp, DOE*)

- **NSSAB Work Plan Item 6**
  - CEMP – Provide a recommendation to DOE regarding potential ways the CEMP could be enhanced to ensure it reflects current missions
    - One-two NSSAB members will have the opportunity to attend the CEMP workshop in July 2013
      - Participants brief NSSAB at the August 21 meeting
    - DOE requests NSSAB provide a recommendation by August 21 meeting
  - An independent assessment from the public on the effectiveness of the CEMP
- **CEMP Workshop in Tonopah, Nevada – Week of July 15, 2013**
  - Topics: Radiation Training, Current Radiation Topics of Interest, DOE Status of Environmental Restoration Programs, CEMP Program, and Workshop Summary and Review

- **DOE Establishes CEMP**
  - Identified need to establish a relationship with communities surrounding the NNS – address public concerns regarding nuclear testing activities
  - Recognized success of Citizen’s Monitoring Program instituted in 1980 for the Three Mile Island nuclear power plant and modeled CEMP after this program
- **CEMP in the Community**
  - CEMP began operating in 1981 with 15 monitoring stations located in California, Nevada, and Utah
  - Since inception, the program expanded to 29 monitoring stations
  - Ranchers’ stations removed in 2012, so CEMP currently consists of 24 monitoring stations
- **CEMP: A Joint Effort**
  - DOE, National Nuclear Security Administration Nevada Field Office (NNSA/NFO) – provides funding of approximately \$1.5 million/year and administrative oversight
  - Desert Research Institute (DRI), part of the Nevada System of Higher Education – manages the program, provides technical direction, employs and trains stakeholders in each community, conducts public outreach activities, and collects data to be analyzed by an independent laboratory
  - Local communities – involve residents of the communities surrounding the NNS in off-site environmental monitoring, and make results available to the public
- **Community Environmental Monitors (CEMs) Role**
  - Local citizens, many are high school teachers, manage the stations
  - Routine tasks are to maintain equipment and collect air filters
  - Trained to communicate results to the local community to be knowledgeable on radiation and potential impacts
  - Liaisons between local and federal entities help identify the environmental concerns of people in their communities.

- **Funding Profile**

| Activities                | FY 2008       | FY 2009       | FY 2010       | FY 2011       | FY 2012       |
|---------------------------|---------------|---------------|---------------|---------------|---------------|
| Program Management        | 179K          | 213K          | 221K          | 220K          | 214K          |
| Monitoring Stations       | 1,073K        | 959K          | 1,050K        | 1,057K        | 1,037K        |
| Training Workshop         | 161K          | 257K          | 134K          | 304K          | 134K          |
| Website & Data Management | 224K          | 240K          | 108K          | 108K          | 115K          |
| <b>Total Cost</b>         | <b>1,637K</b> | <b>1,669K</b> | <b>1,513K</b> | <b>1,689K</b> | <b>1,500K</b> |

- **DOE Environmental Monitoring**
  - CEMP - \$1.5 million/year
    - Public involvement
    - Provides timely results
    - Collects water, air, and direct samples for radioactivity off-site
  - Routine Radiological Environmental Monitoring Program - \$1.9 million/year
    - Required by regulations

- Results published annually in the Site Environmental report – published for past calendar year
  - Samples groundwater off-site
  - Samples for air and direct radiation on-site and calculates potential to public off-site
- **Visit CEMP DRI Station Outside**
  - Ms. Knapp and the NSSAB relocated to a CEMP station located outside the meeting facility to discuss the components and their functions
- **CEMP Station Capabilities**
  - Air – Particulate Sampler: pulls air through a paper filter collecting particles which are then analyzed by an independent laboratory for radioactivity
  - Direct – Thermoluminescent Dosimeter (TLD): measures levels of direct radiation over a three month period – must be sent to a laboratory for results; Exposure Rate Recorder: makes continuous measurements of direct radiation exposure rates, also called a pressurized ion chamber detector
  - Groundwater – Water Samples: collected by DRI from all CEMP communities
  - Weather – Microbarograph: measures and records barometric pressure. The data are useful in interpreting the radiation exposure rate records. At lower atmospheric pressures, more naturally occurring radioactive gases, like radon and thoron are released from the earth’s surface and their radioactive decay products contribute to the radiation exposure; Weather Instruments: record air temperature, humidity, wind speed and direction, and solar
- **Is Change Necessary?**
  - Program focus was for detecting potential off-site radiological releases from underground nuclear detonations conducted at the NNSS
  - Current CEMP monitoring activities are not aligned with current NNSS conditions and activities
  - Since the moratorium banning nuclear tests in 1992:
    - Activity concentrations on air sampler filters consistent with background readings found in other U.S. communities not adjacent to man-made radiation sources
    - No measurable evidence of off-site impacts from radionuclides originating on the NNSS
    - Results are well within average background levels observed in other parts of the United States
- **CEMP “30 years of community in service and looking toward the future”**
  - DOE defining what CEMP should look like considering today’s mission and operations
  - DOE committed to supporting a community monitoring program that:
    - Involves stakeholders with a meaningful role in the process of monitoring and data collection, and represents DOE in their communities
    - Adds value to the community and DOE
- **Proposed Ideas that DOE and DRI are Considering**
  - Air monitoring: retain stations that are well-located considering weather patterns and proximity to the site
  - Direct radiation: retain stations along radioactive material transportation routes and establish new stations, as appropriate
  - Groundwater monitoring: DRI evaluating possible options for community members to observe sampling under the NNSS Integrated Sampling Plan

- Weather: retain all stations even if other equipment is removed
- Emergency response: work with local responders and CEMs as a communicator
- **Items to Consider During Workshop**
  - Should DOE continue funding the CEMP?
  - Are the proposed ideas for CEMP better aligned with current NNSA missions and Environmental Management (EM) activities and remediation efforts?
  - Is the cost of the program balanced and funding well spent?
  - Should DOE continue to monitor even if radioactivity is not detected and activities do not change? If so, for how long?
  - For stations that equipment is removed/needs replacement, should equipment be replaced with less sensitive/expensive equipment?
  - Is CEMP website user friendly and is the data communicated effectively on the site?
  - Is CEMP brochure understood and is the program effectively communicated?
  - Should there be term limits for CEMs?
  - Is the level of training, time, and material appropriate?
  - Should workshop be expanded to include more entities?
- **NSSAB Consideration**
  - DOE requests NSSAB provide a recommendation to DOE regarding potential ways the CEMP could be enhanced to ensure it reflects current missions
  - Additional resources:
    - One-two CEMP participants from the NSSAB to brief the Board at the August 21 meeting
    - CEMP website: <http://www.cemp.dri.edu>
    - Additional briefings upon request

The following clarifications were provided:

- The workshop will be held in Tonopah, Nevada on July 15-17, 2013
- DOE to provide funding for the one-two NSSAB Member's travel expenses

Chair Bienenstein and Member Michael Moore volunteered to attend the CEMP workshop and develop recommendations to enhance the CEMP and provide an update at the August 21 meeting for Full Board discussion. NSSAB Office to coordinate arrangements.

### **Membership Recognition**

Chair Bienenstein and Liaison Scott Wade acknowledged Member James Weeks for his commitment and service to the NSSAB from 2006 – 2013, and presented him with a certificate of appreciation and a plaque.

### **Waste Acceptance Review Panel (WARP) (Work Plan Item #7) (Jhon Carilli, DOE)**

- **NSSAB Work Plan Item 7**
  - Review the existing WARP process and provide a recommendation for ways the process could be refined/enhanced
- **Background**
  - Cold War-related activities and nuclear research generated Low-Level Waste (LLW) at sites across the country
  - DOE is responsible for consolidating and disposing LLW generated by DOE clean-up activities

- Annually, NNSS disposes less than 5% of the total waste generated in the EM Program
- Note: “On-Site” refers to the site where the LLW was generated, not necessarily the NNSS
- **Regulatory Authority for LLW Disposal**
  - Atomic Energy Act of 1954, as amended
  - DOE Order 435.1 and DOE Manual 435.1-1
    - Disposal Authorization Statement
      - Performance Assessment/Composite Analysis (PA/CA) – analysis of the impacts to protect workers and public by meeting performance objectives in DOE 435.1
      - Disposal Facility Monitoring Plan
      - Closure Plan
      - Maintenance Plan
      - NNSS Waste Acceptance Criteria (WAC)
      - Annual Review of PA/CA
    - Independent review by LLW Federal Review Group
- **NNSS is an Ideal Location for LLW Disposal**
  - Low precipitation
  - High evapotranspiration
  - No surface water
  - No pathway to groundwater
  - Isolated location
  - Erosion deposition zone
- **Key Terminology**
  - Waste Generator – DOE and U.S. Department of Defense (DoD) sites that generate LLW and mixed LLW radioactive waste
  - Waste Stream – a waste or group of wastes from a process or a facility with similar physical, chemical, and radiological properties
  - NNSS WAC – document that establishes rigorous disposal acceptance criteria for waste generator sites and their proposed waste streams
  - Waste Profile – application by a generator to dispose a waste stream at the NNSS that demonstrates compliance with the NNSS WAC
- **Radioactive Waste Acceptance Program (RWAP)**
  - The RWAP consists of three programs: Generator Waste Acceptance Criteria Certification (audits and surveillances), WARP, and Waste Assistance and Technical Support
- **Purpose of the WARP**
  - WARP reviews the waste profiles for all waste streams planned for disposal at the NNSS to ensure the waste meets NNSS WAC
- **WARP: A Joint Effort**
  - The DOE, the State of Nevada, and the NNSS federal contractor make up the WARP
  - DOE’s responsibilities: oversee all aspects of waste acceptance and disposal and provide final approval of waste profiles
  - NDEP responsibilities: oversees hazardous waste management as outlined in the Resource Conservation and Recovery Act, and provides joint oversight to participate in RWAP processes per an Agreement in Principle

- Federal contractor (NSTec) responsibilities: reviews waste profiles for compliance with the NNSS WAC, maintains and provides technical support for NNSS WAC, performs audits and oversees any corrective actions, verifies the waste can be safely disposed, ensures the disposal facility will continue to meet requirements, ensures worker and public safety, ensures waste originated from DOE or DoD
- **Waste Profile Approval Process**
  - Generator prepares and submits detailed waste profile of each proposed waste stream to WARP
    - Similar waste streams from same generator may use same waste profile
    - Waste streams that require separate profiles due to disposal location requirements: waste containing asbestos, polychlorinated biphenyl remediation, classified, and mixed waste (contains hazardous component)
  - Items WARP reviews on profile: generator information, general waste stream information, physical/chemical characterization, radiological characterization, packaging, additional information
  - NSTec RWAP Manager distributes waste profile to WARP
  - WARP reviews waste profile individually for any concerns or questions
  - WARP meets weekly to discuss any questions/concerns on pending profiles and accepts/rejects utilizing NNSS WAC – WARP must be in agreement to move waste profile forward for approval
  - Surveillance of generator facility may be required for waste profile approval: new generator, visual verification for mixed LLW, examine proposed package configurations, NDEP participates
  - WARP recommends approval to Federal Environmental Management Operations (EMO) Manager
  - EMO Manager authorizes approval by formal correspondence to generator
  - Generator approved to ship and dispose of waste stream at the NNSS
- **NSSAB Path Forward**
  - Provide DOE a recommendation for ways the WARP process could be refined/enhanced by August 31, 2013
  - Additional information can be obtained through:
    - Two NSSAB members invited to observe WARP process – WARP meetings are Wednesdays at 3 p.m. at the NFO
    - More briefings

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

- For a generator to send waste to the NNSS, they must meet the NNSS WAC. There is no waiver available to bypass this requirement.
- The NNSS accepts waste from DOE facilities that are managed by contractors (e.g., Lawrence Livermore National Laboratory).
- Third-party transportation companies, hired by the generator, transport waste to the NNSS. Transportation companies must meet requirements of the NNSS WAC.
- The NNSS WAC does not dictate how often a site is visited by the RWAP team or when audits occur.
- There is not much fluctuation in DOE's budget when new generators are approved or existing generators are denied.
- The surveillance schedule is planned a year in advance; however generators will not know when RWAP will visit their sites for a surveillance.

- For site audits, DOE provides approximately 30 days notice in order for meetings to be scheduled and the required paperwork be evaluated prior to RWAP's arrival at the generator site. This practice enhances program efficiency and cost-effectiveness.
- In approving a waste profile, the WARP holds a thorough discussion prior to providing a recommendation to the EMO Manager. It is a rare occurrence for the WARP to proceed without unanimous agreement. The EMO Manager has the final authority to override any WARP decision.

Chair Bienenstein and Member Thomas Fisher volunteered to attend a WARP meeting and provide the NSSAB with an update at the August 21 Full Board meeting. NSSAB Office to coordinate arrangements.

### **Groundwater Activities Overview "Drilling"** (Bill Wilborn, DOE)

- **CAUs**
  - Five CAUs that make up the UGTA activity
    - CAUs are determined by location and geologic conditions
    - All CAUs require characterization which includes data collection through drilling
- **Why Do We Drill?**
  - Provides access to the complex subsurface for sampling – more than 300 different geologic units (types of rock) representing more than 500 million years of geologic history
  - Gives access to groundwater contained within multiple aquifer systems (local and regional)
  - Provides multiple/ongoing opportunities to sample and monitor
  - Expands upon approximately 50 years of groundwater research
- **Drilling Guidance Team**
  - Federal and contractor staff who address technical drilling and data collection decisions before, during, and after drilling wells
  - Decisions may include:
    - Identifying current data available (as necessary)
    - Identifying model needs and data gaps
    - Identifying drilling and/or data collection locations and their purpose
    - Defining how the well should be completed (designed)
    - Determining what the real-time field data is telling us (i.e. geologic samples and structure, water sample and water table information, logging data)
    - Interpreting well development data
- **Typical UGTA Drilling Process Preconstruction**
  - Determine data needs including well location, projected completion zones and depths
  - Survey and stake well site and route of access road from existing roads to the new site
  - Conduct archaeological and biological resource clearance surveys within the established well site and new access road
  - Develop Storm Water Pollution Prevention Plan
  - Obtain surface area disturbance permits for well sites on the Nevada Test and Training Range (NTTR)

- Obtain concurrence from NFO for National Environmental Policy Act (NEPA) compliance and surface disturbance at new sites on the NNSS based on archaeological and biological resource clearance surveys
- Conduct Environmental Baseline Surveys
  - Provides current condition of site
  - Addresses impacts on well site
  - NTTR only (similar to NNSS NEPA requirements)
- **Typical UGTA Drilling Process Construction**
  - Construct new access roads, drill pad, and sumps at the new well site after all surveys, plans, clearances, and permits have been obtained
  - Drill the conductor hole and install conductor casing
  - Mobilize and rig up the main hole drill rig and other temporary support facilities and equipment on the well site
  - Drill the main hole to target depth, install production casing and monitor tubing, as needed
  - Rig down and demobilize the main hole drill rig and temporary support equipment and facilities to next well site
  - Conduct well development and testing\* of each production zone:
    - Install high-volume test pump
    - Purge well for more representative water sample
    - Conduct flow logging to identify most productive zones
    - Obtain well water samples
    - Shut off pump and monitor well recovery

\*The pumping of wells to restore the groundwater to natural aquifer conditions after well drilling and construction, which is followed by aquifer testing to measure the productivity of the well
- **Typical UGTA Drilling Process Documentation**
  - Publish well completion report
  - Complete well development and testing data report
  - Use data from activities and reports for future modeling documentation and other publications/presentations as needed

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

- To begin the framework of a model, DOE begins with the rock cuttings and samples located at the Core Library in Mercury to understand the geology, to determine the location of water table, and to understand hydrographic units.
- During drilling, DOE utilizes an air-foam mixture versus drilling mud for lubrication as it does not taint the groundwater.
- Piezometer wells allow for secondary access without inhibiting primary well activity.
- The average lifespan of a well is approximately 35-40 years.
- The approximate time from well site selection to production is approximately one year.
- The average cost of a well is three to five million.
- During the drilling process, DOE collects cuttings rather than core samples, as the cuttings provide adequate geological information.

The next Full Board meeting will be held on Wednesday, August 21, 2013, at 5 p.m. at the Bob Ruud Community Center in Pahrump, Nevada. For Las Vegas valley residents, a bus has been chartered and NSSAB Office will provide more information as the date approaches.

Board members appreciated the informational DOE presentations. It was noted that Liaison Brown's presentation should be utilized in some way, and the Board expressed disappointment that WCTA did not support her in this effort. NSSAB Members felt positively that a number of the public were in attendance and provided public comment.

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

Meeting adjourned at 8:43 p.m.