



## ***Nevada Site Specific Advisory Board (NSSAB)***

---

### **Full Board Meeting**

**Valley Conference Center  
Valley Electric Association  
800 E. Highway 372, Pahrump, NV  
4:00 p.m. – July 18, 2018**

**Members Present:** Amina Anderson, Frank Bonesteel (Vice-Chair), Karen Eastman, Pennie Edmond, Raymond Elgin, Dick Gardner, Donald Neill, Autumn Pietras, Steve Rosenbaum (Chair), Cecilia Flores Snyder (by phone), Richard Stephans (by phone), Richard Twiddy, Dina Williamson-Erdag

**Members Absent:** Michael D'Alessio, Charles Fullen, William Sears, Jack Sypolt

**Liaisons Present:** Chris Andres (State of Nevada Division of Environmental Protection [NDEP]), Richard Friese (U.S. National Park Service [NPS]), Phil Klevorick (Clark County), John Klenke (Nye County Nuclear Waste Repository Project Office [NWRPO]), Scott Lewis (Nye County Emergency Management [NCEM]), Connie Simkins (Lincoln County Commission), Delon Winsor (Esmeralda County Commission)

**Liaisons Absent:** Richard Arnold (Consolidated Group of Tribes and Organizations [CGTO]), Richard Howe (White Pine County Commission), Dan Schinhofen (Nye County Commission),

**Department of Energy (DOE):** Pamela Bailey, Robert Boehlecke, Tiffany Gamero, Kelly Snyder (Deputy Designated Federal Officer [DDFO])

**Facilitator:** Barb Ulmer (Navarro)

**Contractor:** Pat Matthews (Navarro)

**Public Signed In:** Leo Blundo (Pahrump, NV), Greg Dann (Pahrump, NV), Melissa Gebhart (Pahrump, NV), Hepburn Klemm (Tonopah, NV), Joseph LaBossiere (Amargosa Valley, NV), Dwight Lilly (Pahrump, NV), John Pawlak (Pahrump, NV), Erica Stauffer (Las Vegas, NV), Debra Strickland (Pahrump, NV), CJ Wissmiller (Amargosa Valley, NV)

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

Chair Steve Rosenbaum welcomed everyone to the meeting and thanked members of the public for their interest and attendance. Chair Rosenbaum also welcomed two new liaisons - Scott Lewis from NCEM and Richard Friese from NPS. Following the Chair's opening remarks, Member Dick Gardner moved to approve the agenda as presented. The motion was seconded and passed unanimously.

## **Public Comment**

The following public comment was provided by Greg Dann from Pahrump, Nevada: I just have a brief statement for the members here as an ex-Tonopah Test Range worker, ex-Nevada Test Site worker, and ex-Yucca Mountain worker, retired now, disabled. John Klenke knows this as he has been involved with the water. As a resident of Pahrump for more than 30 years, we are watching water real closely out here and how this relates to you guys is the contamination issue – we are watching it like hawks. We know there is a little bit of movement going on out there; it's being tracked. Just to let you guys know that we know that there is some movement, and myself and Mr. Lilly, John Klenke, of course, it's on our radar. So when you go through these hearings and you talk to each other and you read stuff...just remember that Pahrump is eventually downstream from all this, just like Beatty and the rest of them; so just be aware. Thank you.

The following public comment was provided by Leo Blundo from Pahrump, Nevada: It's imperative to express my gratitude that we're having a meeting here in Pahrump, and that we're discussing this issue here. It's good to have good community partners and good neighbors, and we are that neighbor. We are right here. You've heard comments from other public about how we're downstream. I think it's imperative that we inform the public, and that we're all on the same page. We have the best interest, and that is public safety. I really appreciate everyone being here. I know that it is a long drive for you. Thank you. We appreciate it in this community. Thank you very much.

## **U.S. DOE Update** *(Robert Boehlecke, DOE)*

Mr. Robert Boehlecke opened that an Omnibus bill was signed on March 23, 2018, that provides funding for the Environmental Management (EM) Nevada Program for fiscal year (FY) 2018 for just over \$60 million that is allocated from Headquarters (HQs) in monthly increments. This level of funding will allow the EM Nevada Program to complete all planned work for FY 2018 and is consistent with past funding, which has been pretty level over the past several FYs.

Mr. Boehlecke provided a short update for Clean Slate II as a more extensive briefing will be provided later in the meeting. Earlier this summer, workers unearthed several large intact pieces of concrete that were unexpected and required additional time to break up and package. As of July 13, 2018, a total of 410 waste bags has been filled with 362 of these waste bags transported to the Area 5 Radioactive Waste Management Complex (RWMC) at the Nevada National Security Site (NNSS). Completion of this campaign, in terms of packaging and shipping, is projected for the end of July 2018.

Mr. Boehlecke noted that remediation of contaminated soil and debris, including excavation, packaging and shipment, at Clean Slate III is expected to begin following the completion of Clean

Slate II. Clean Slate III is projected to have a larger volume of over 200,000 cubic feet compared to approximately 90,000 cubic feet at Clean Slate II. The first shipments are expected to begin in September 2018 with 450 total shipments utilizing the same transportation routes as Clean Slate II. The Clean Slate III waste will be disposed at the Area 3 Radioactive Waste Management Site.

Mr. Boehlecke continued that the waste volume projection for FY 2018 is around 1,460,000 cubic feet. Of that volume, 90 percent is low-level waste (LLW) and ten percent is mixed LLW (MLLW).

Mr. Boehlecke reported that construction of the new MLLW cell at the Area 5 RWMC is complete and available to start accepting waste. At this time, the former MLLW cell is still being utilized until such time a large waste container does not fit and the new MLLW cell is needed for its disposal.

Mr. Boehlecke commented that the LLW cells on the eastern portion of the Area 5 RWMC are nearing capacity; so work has begun on the western portion that has not been previously utilized for waste disposal. Activities include extending the berm and moving a water line.

Mr. Boehlecke provided a short update on the 92-Acre Area revegetation project as a more extensive briefing will be provided later in the meeting. This project is a collaboration with the CGTO. Fall and spring planting is complete. The progress on the test plots continue to be monitored and photographed as the seedlings mature. Preliminary results and data will be available in September 2018 based on the first year's growth.

Mr. Boehlecke mentioned that the Rainier Mesa (RM) External Peer Review (EPR) was an independent panel of industry experts and regulators that were engaged to review and provide feedback on the RM modeling work conducted by the Underground Test Area Activity. The RM EPR submitted its draft report in April 2018. In July 2018, the EM Nevada Program met with NDEP on a path forward based on the RM EPR report. The Navarro contractor is developing a scope and work schedule to complete the responses to the draft report. Additional work is anticipated to adequately respond to the RM EPR comments.

Mr. Boehlecke reminded the Board that groundwater contamination has migrated off the NNSS in the northwestern portion of the NNSS, but remains on Federal land. It is not expected that groundwater contamination will reach groundwater public sources, although the EM Nevada Program continues investigation and modeling of any movement of groundwater contamination in order to best locate monitoring wells to ensure the public is protected.

Mr. Boehlecke provided an update on the generator that shipped waste containers containing MLLW that were mischaracterized as LLW as the waste contained chromium, a hazardous component. In October 2017, NDEP issued a Finding of Alleged Violation to the NNSS as a result. In May 2018, NDEP issued a final Finding that includes a fine. The EM Nevada Program is negotiating with NDEP to conduct additional work as Supplemental Environmental Projects (SEPs) in lieu of the fine. These SEPs would increase public safety, benefit the state of Nevada, and enhance EM Nevada Program activities. The SEPs would be 125 percent of the fine. The EM Nevada Program expects to finish negotiations with NDEP and sign a Settlement Agreement in the next couple of months. A final corrective action plan has been submitted to NDEP, and work has been initiated to close corrective actions.

Mr. Boehlecke commented that the current Environmental Program Services contract with Navarro will end in January 2020. The procurement process has been initiated with a draft

Request for Proposal (RFP) estimated to be available soon for industry interested in bidding on the contract. An Industry Day for potential bidders will be held after the draft RFP is released with the date to be announced soon. A tour of the EM sites contained within the scope of the contract will be made available.

Mr. Boehlecke reported that a recent inquiry from Congresswoman Dina Titus' Office was received regarding two separate waste shipments destined for disposal at the NNSS, previously reported to the NSSAB. In November 2017, West Valley began shipping LLW by rail to a transfer location in Kingman, Arizona that was then transloaded onto trucks to continue transport to the NNSS. When the waste containers arrived in Kingman, it was identified that two containers were punctured from its internal contents and three were not closed properly. West Valley conducted surveys of these containers and determined that no contamination had been released. The containers were repaired and disposed at the NNSS. Due to logistics with the turnaround of the waste containers from the railroad, West Valley made the decision that it was more economical to dispose its waste at a commercial disposal facility. The second waste shipment involved a split seam on a waste bag from Clean Slate II that was identified in December 2017. This was a three-layer waste bag with a separated seam on the outer layer. The contractor paused further shipments to investigate whether it was a systemic issue. The manufacturer of the waste bags was contacted, and it was determined that additional stress on the seam occurred during strapping of the waste bags to the truck flatbed; so a different work process was implemented to prevent further occurrences. There has been no repeat of this issue; so shipments were resumed.

Mr. Boehlecke noted that three members of Senator Dean Heller's staff will tour the Area 5 RWMC on August 2, 2018.

Mr. Boehlecke mentioned recent stakeholder events that were attended by EM Nevada Program staff: Tiffany Gamero attended the National Transportation Stakeholders Forum (NTSF) held in Nebraska in June 2018, the EM Nevada Program provided funding for Richard Arnold to attend the State and Tribal Government Working Group held in Idaho in June 2018, Kelly Snyder attended the Emergency Preparedness Working Group (EPWG) held in Las Vegas in June 2018, and Tiffany Gamero attended Transportation Emergency Preparedness Program training held in Las Vegas in July 2018

Mr. Boehlecke concluded with upcoming stakeholder events of interest to the NSSAB: the State of Nevada and DOE's Working Group will be meeting in the near future, the Community Environmental Monitoring Program (CEMP) workshop will be held in Las Vegas on July 24-25, 2018 with Tiffany Gamero presenting an EM update, the next LLW Stakeholders Forum meeting will be held in Pahrump, Nevada on August 1, 2018, EM staff will be attending the Office of Legacy Management Long-Term Stewardship conference in Grand Junction, Colorado in August 2018, the RadWaste Summit will be held in Henderson, Nevada on September 4-6, 2018, the six-month meeting with NDEP and the EM Nevada Program is being planned with the date to be determined, Mr. Boehlecke and Kelly Snyder will be attending the EM SSAB National Fall Chairs' meeting on September 11, 2018 and EM National Cleanup Workshop on September 12-13, 2018 both held in Alexandria, Virginia, and EM Nevada Program staff will attend the Intergovernmental Meeting in New Orleans, Louisiana in November 2018.

## **Liaison Updates**

### **Clark County** (*Phil Klevorick*)

Liaison Phil Klevorick reported that he attended the annual DOE NTSF in Omaha, Nebraska in June 2018. He noted that this conference is important as it touches on all transportation of nuclear materials across the nation. Liaison Klevorick stated that he would like Clark County to have a voice/role at the NTSF. Liaison Klevorick added that one of the biggest concerns is safety and first responder capabilities, and valuable discussions occur at the NTSF regarding these items. He appreciated that the EM Nevada Program keeps these concerns in the forefront, particular when it comes to public and worker safety. Liaison Klevorick stated that he will not be attending the RadWaste Summit, although he will be attending the upcoming EM Cleanup Workshop and Intergovernmental Meeting. Liaison Klevorick encouraged the NSSAB and the public to get involved with the planning of the I-11 corridor that will connect Mexico to Canada, passing through Nevada. The next public scoping meetings are on August 8, 2018 in Tonopah, Nevada and August 9, 2018 at the Santa Fe Casino in Las Vegas. Additional information can be accessed on the Nevada Department of Transportation's website at <https://www.nevadadot.com/projects-programs/road-projects/interstate-11>. Liaison Klevorick reiterated the importance of the upcoming LLW Stakeholders Forum that focuses locally on LLW/MLLW shipments. Liaison Klevorick concluded that the EPWG is a unique DOE program that provides funding locally for emergency response capabilities. EPWG funding has decreased although the fee structure has not changed in over 30 years; so he encouraged that the program be changed. [note: EPWG funding is based on \$.50 a cubic foot disposed at the NNSS]

### **Esmeralda County Commission** (*Delon Winsor*)

Liaison Delon Winsor had nothing to report.

### **Lincoln County Commission** (*Connie Simkins*)

Liaison Connie Simkins expanded on Liaison Klevorick's comments of the importance of the rural communities being involved in the process. Lincoln County is congressionally designated as affected by all these programs, although is severely challenged by budget constraints to remain involved.

### **NCEM** (*Scott Lewis*)

Liaison Scott Lewis reminded the Board that Vance Payne recently retired and relocated to Tennessee. Liaison Lewis has been in his new position at NCEM for two weeks. He attended the last EPWG meeting and concurred with Liaison Klevorick's comments regarding the funding sources and Nye County's request for funds had to be reduced based on total funds available. Liaison Lewis stated that Nye County is closely monitoring the status of the I-11 corridor. There has been past discussions for a bypass around the town of Pahrump, but he is uncertain whether this bypass will be included in the I-11 corridor construction. He welcomed attendance at the upcoming LLW Stakeholders Forum on August 1, 2018 at the NCEM facility in Pahrump, Nevada.

### **NWRPO** (*John Klenke*)

Liaison John Klenke thanked the NSSAB and the DOE for its efforts to hold meetings in rural communities, such as Pahrump, Nevada. He commented on the larger public attendance at the meeting compared to communities with greater populations, such as Las Vegas. Liaison Klenke reported that he will be presenting at the CEMP workshop next week to update on the Nye County Tritium Sampling and Monitoring Program results for 2017 and to receive input on sampling locations for 2018. This is an independent sampling program funded by a DOE grant that has

sampled wells in Amargosa Valley, Beatty, and Lathrop Wells for the past three years. The 2017 sampling results recorded no tritium, and samples were analyzed at the minimum detection limits of 300 picocuries per liter, which is about 1.5 percent of the Safe Drinking Water Act safety limits.

**NDEP** (*Chris Andres*)

Liaison Chris Andres echoed Liaison Klenke's remarks that it is great to see citizens of the local community at the meetings as it is NDEP's mission to protect public health and the environment. She promoted continued dialogue with the public in order to educate on activities that NDEP and the EM Nevada Program are undertaking to fulfill that mission. Liaison Andres also attended many of the meetings that Mr. Boehlecke mentioned in his update. In addition, she attended a meeting of the National Governors Association held in conjunction with the Federal Facilities Task Force and the State and Tribal Government Working Group held in Idaho Falls, Idaho in June 2018. Discussion has started on holding future meetings of these organizations together to leverage staff time and resources. As part of the conference, she attended a site tour of the Idaho National Laboratory. Liaison Andres thanked the NSSAB for endorsing a recommendation letter that was brought back by Chair Rosenbaum and Vice-Chair Frank Bonesteel from the EM SSAB National Spring Chairs' Meeting. This recommendation was originally drafted by a member of the Northern New Mexico Citizens' Advisory Board after studying a white paper published last fall by the Energy Communities Alliance on waste disposition. She concluded that it was well written, contained many pertinent points, and was a great example of collaboration among the eight local SSABs. She noted that other groups have also written letters to EM-1 and other voices need to be heard before a final decision is made on the issue.

**NPS** (*Richard Friese*)

Liaison Richard Friese updated that the Environment Assessments for Bonnie Claire Road and Scotty's Castle are complete. Construction will begin in the fall and will take at least a year. The public comment period for the Saline Valley Environmental Impact Statement (EIS) has closed, and the NPS is required to complete the EIS by April 2019. Limited public scoping was conducted for the telecommunications site on Rogers Peak in the Panamint Mountains that services the Department of Defense, the NPS, numerous other cooperating agencies, and stakeholders.

**Community Interest Analysis ~ Work Plan Item #7** (*Dick Stephans, Committee Chair*)

Dick Stephans, Community Analysis Committee Chair, reminded the Board that the work plan requirement was to pulse local communities in southern Nevada to determine the degree of interest and concern regarding EM activities at the NNSS. From this information, it was to then provide recommendations to the EM Nevada Program for improving outreach efforts.

Committee Chair Stephans reported that the survey was sent throughout southern Nevada and Death Valley communities in California with more than 180 total responses. Since his May 2018 Full Board meeting update, the committee concluded community interactions and survey collections at the end of June 2018. The committee analyzed the survey results to compile community area reports. A draft recommendation letter and final report were developed and updated through mid-June 2018.

Committee Chair Stephans continued that a final committee meeting was held in early July 2018 to agree on the draft recommendation letter and final report as well as developing lessons learned. Recommendations included in the draft recommendation letter are the ones that will be

formally responded to by the EM Nevada Program. All other suggestions and comments in the report will also be reviewed and considered by the EM Nevada Program. Committee Chair Stephans concluded that the committee's final report and draft recommendation letter were emailed to the Board last week requesting any comments. There were no corrective comments or requests for change received by the committee from the NSSAB. There were no questions from the NSSAB.

Committee Chair Stephans thanked committee members and all who contributed their efforts for the past eight months. Chair Rosenbaum thanked Committee Chair Stephans for spearheading the committee as it was not an easy project.

Member Richard Twiddy made a motion that the draft recommendation letter, including the final report and lessons learned, be approved as written and transmitted to DOE. The motion was seconded and passed unanimously.

### **Other NSSAB Business** (*Steve Rosenbaum, Chair*)

Chair Rosenbaum announced that elections will be held for the NSSAB Chair and Vice-Chair positions at the September 26, 2018 Full Board meeting. A list outlining the responsibilities for both positions was provided to the Board. Chair Rosenbaum asked members to consider running for a leadership position. Interested members are asked to notify the NSSAB Office no later than August 31, 2018.

Chair Rosenbaum reported that planning is in progress for the EM SSAB National Fall Chairs' Meeting on September 11, 2018 in Alexandria, Virginia. EM SSAB Chairs and Vice-Chairs will then attend the EM Cleanup Workshop on September 12-13, 2018 at same location.

Chair Rosenbaum continued that during the round robin agenda item, each of the eight local boards has five minutes to highlight the Board's top interest/concern and/or accomplishments to the Assistant Secretary for EM, Anne Marie White. Chair Rosenbaum facilitated discussion on topics for the round robin for Nevada.

Chair Rosenbaum updated that a potential EM SSAB recommendation for transportation has been discussed for the past year and a half at the national meetings and could come to fruition at the upcoming national meeting. He will be collaborating with the Chair of the Northern New Mexico Citizens' Advisory Board to form a draft recommendation to bring forward to the EM SSAB.

For NSSAB accomplishments, the Board chose to focus on the Community Analysis work plan item and to highlight the unique and cohesive working relationship between NSSAB members, liaisons, and EM staff in resolving issues. Another interest/concern expressed by the Board was the limited participation from rural county liaisons to attend NSSAB meetings due to limited county funding. DDFO Kelly Snyder suggested that the NSSAB consider an official work plan item in FY 2019 to research funding options and conduct an analysis on the needs of the liaisons from rural communities and provide specific recommendation(s) for how the process could be enhanced from a community perspective. NSSAB formal recommendations are distributed both locally and to EM HQs and would receive more attention if packaged as such. Member Twiddy expressed to the liaisons that their attendance is important to the Board in order to share interests/concerns and to work toward a common goal. Member Dina Williamson-Erdag suggested that this item be included as a round robin topic and also considered as a FY 2019 work plan item.

Six letters were provided to Board members for informational purposes:

- NSSAB Recommendation for FY 2020 Membership – dated May 16, 2018
- DOE Response to NSSAB Recommendation regarding FY 2020 Membership – dated May 24, 2018
- NSSAB Recommendation to RWAP Assessment Improvement Opportunities – Work Plan Item #6 (Work Plan Item #8) – dated May 16, 2018
- DOE Response to NSSAB Recommendation regarding RWAP Assessment Improvement Opportunities Work Plan Item #6 – dated June 19, 2018
- NSSAB Recommendation to Location of Monitoring Well at the Area 5 RWMC – Work Plan Item #4 (Work Plan Item #8) – dated May 16, 2018
- DOE Response to NSSAB Recommendation regarding Location of Monitoring Well at the Area 5 RWMC – Work Plan Item #4 – dated June 25, 2018

DDFO Snyder provided an update on the membership appointment process. The NSSAB Office submitted the membership package to EM HQs for consideration in May 2018. She has received feedback that the review of the membership package is proceeding smoothly and on track for approval for new members to begin on October 1, 2018.

### **Clean Slate II Update and Clean Slate III Overview, Tonopah Test Range (TTR) (Tiffany Gamero, DOE)**

- **Clean Slate II Test Photos, 1963**
  - Plutonium (Pu) and depleted uranium devices, inside a concrete bunker covered with two feet of soil, were detonated using conventional explosives
  - Test objective was to evaluate the dispersal of Pu from a simulated, accidental, non-nuclear (no yield) detonation of a weapon inside a structure
- **FY 2017 NSSAB Work Plan Item**
  - In November 2016, the NSSAB was asked to provide a recommendation from a community perspective, as to which path forward option should be pursued for Clean Slate II (briefing available at [http://www.nnss.gov/nssab/docs/Meeting-Minutes/MM\\_FY17/11-9-16\\_Handouts\\_Red.pdf](http://www.nnss.gov/nssab/docs/Meeting-Minutes/MM_FY17/11-9-16_Handouts_Red.pdf))
    - NSSAB recommended that DOE move forward with the Corrective Action Alternative of Clean Closure (NSSAB recommendation and DOE response at [http://www.nnss.gov/nssab/pages/Rec\\_FY17.htm](http://www.nnss.gov/nssab/pages/Rec_FY17.htm))
- **Other Public Communications for Clean Slate II**
  - Briefings provided at meetings in Goldfield, Tonopah, Pahrump, Beatty, and Las Vegas in May/June 2017
  - Two Community Conversations events held in Tonopah in December 2017
  - Fact sheet published on NNSS website and hundreds of copies distributed to rural communities that waste shipments travel through to the NNSS (fact sheet available at <http://nnss.gov/pages/resources/library/FactSheets.html>)
- **Clean Slate II Status**
  - Surface contaminated zones 100% complete
  - Buried debris zones 100% excavated
    - Unanticipated large debris discovered required size reduction and additional shipping containers
    - Demobilization from Clean Slate II to Clean Slate III is anticipated end of July 2018
- **Clean Slate II LLW Shipments (as of July 13, 2018)**
  - 181 waste shipments containing 362 waste packages



- Volume of waste – 86,000 cubic feet
- Mass of waste – 6.5 million pounds
- **Clean Slate II: Safety-Focused**
  - Skilled and experienced workers with appropriate training
  - Frequent communication between field personnel and management
  - Rad surveys for possible contamination collected daily and weekly
  - Results of all air monitoring equipment for workers were non-detect
    - Two air monitoring stations to continue operating for five years
  - Protective clothing, respirators, and air monitoring devices worn by workers
  - Standard dust suppression techniques in place
  - U.S. Department of Transportation (DOT)-compliant waste containers utilized
  - DOE-approved motor carriers utilized
- **Clean Slate II Challenges**
  - Delays resulted from
    - Testing conducted by Sandia National Laboratories
    - Intermittent power failures
    - Weather – wind, rain, snow
- **Clean Slate II Lessons Learned**
  - Alternative gate at TTR was utilized for transport vehicle access and exit, saving a couple of hours per day during waste shipments
  - Earlier start times for field crews during the summer months
  - Contamination control was as expected
    - Current controls deemed effective
- **Clean Slate III Pre-Test, 1963**
  - Pu and depleted uranium devices, inside a concrete bunker covered with eight feet of soil, were detonated using conventional explosives
  - Test objective was to evaluate the dispersal of Pu from a simulated, accidental, non-nuclear (no yield) detonation of a weapon inside a structure
- **Clean Slate III Overview**
  - June 1963 non-nuclear yield safety test
    - Dispersed Pu to surface soils
  - 1964-2016 – multiple radiation surveys, scientific investigations and sampling performed
    - Some concrete/metal debris removed and disposed; no soil remediation conducted
  - Geophysical surveys confirmed buried debris at ground zero
  - Outer fence presently posted as “Contamination Area” (~410 acres)
- **Investigation Results**
  - Based upon field sampling and radiological surveys
    - Approximately 7.5 acres exceed the final action level for dose (25 millirem/year) and require corrective action (remediation)
  - Land use scenario: Ground Troop
  - U.S. Air Force concurrence on land use scenario
- **Ground Troop Scenario**
  - Adult soldier who spends 100 percent of his or her time outdoors engaged in activities that may include light, moderate, and hard physical labor and periods at rest
  - Individual bivouacs at the Clean Slate III site
  - Maximum amount of time the individual could be deployed during any single mission or operation is 14 days, 24 hours per day, and will participate in three such deployments a year
  - Results in a total of 1,008 hours per year of potential exposure

- **Remediation Strategy**
  - Excavate and package ~ 202,500 cubic feet of contaminated soil and debris
    - Anticipate 10 to 15 field personnel
  - Excavation equipment to be relocated from Clean Slate II site
    - Equipment inside the Contamination Area becomes contaminated property (not releasable to the public when project complete)
  - Equipment used outside contaminated areas (e.g., water truck, forklift) are leased or shared equipment
  - Waste packaging will be soft-sided Industrial Package Type II (243 cubic feet each)
  - Approximately 450 LLW shipments to the NNSS Area 3 Radioactive Waste Management Site (RWMS)
    - Two soft-sided packages per truck
  - Waste shipments to occur over five to six-month period in a campaign style
    - Five trucks per day, four days per week, Monday through Thursday
  - Shipments are transported by commercial carrier (CAST) approved through the DOE Motor Carrier Evaluation Program
    - Drivers are badged U.S. citizens; trucks depart the TTR by 7 a.m. and return empty trailers the following morning
- **Hazard/Exposure Routes for Pu**
  - Pu is alpha-emitting radioactive particle
    - Cannot penetrate skin or paper
  - Primarily inhalation/ingestion hazard
  - Not readily mobile in the environment
  - Workers wear protective equipment
    - Tyvek suites
    - Booties/gloves
    - Respirators during intrusive activities
    - Breathing Zone Air Samplers
- **Waste Packaging and Shipment**
  - Waste will be sealed in DOT-compliant containers and loaded onto trucks for DOT-compliant shipment to Area 3 RWMS
  - Waste containers will be surveyed to ensure compliance with DOT safety limits for drivers, passers-by, and service attendants
  - Remediation planned to begin in August 2018 and shipments anticipated to begin in September 2018
- **Area 3 RWMS Background**
  - Subsidence craters created by past underground nuclear tests to dispose of bulk and containerized waste
  - 128-acre disposal area with seven craters configured into five disposal cells
  - Total disposed volume is over 19 million cubic feet
  - Maintained in “cold standby” mode since 2006
  - ~9.1 million cubic feet of disposal capacity remains
- **Area 3 RWMS Future**
  - In December 2014, the Record of Decision (ROD) for the Site-Side Environmental Impact Statement (SWEIS) for the continued Operation of the DOE/National Nuclear Security Administration (NNSA) NNSS states: *In the future and as needed, DOE may use disposal space in Area 3, subject to detailed discussions with the State of Nevada. This space may be needed for disposal of LLW, large onsite remediation debris or soils from cleanup of DOE/NNSA sites within the State of Nevada and would be limited to in-*

state generated waste. (the entire Final SWEIS and ROD available at <https://www.nnss.gov/pages/programs/em/EISpage.html>).

- EM Nevada Program will be using Area 3 RWMC for Clean Slate III waste disposal

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

- For Clean Slate II, the waste volume estimates were approximately 30 percent more than the waste actually excavated. This was due mainly to estimates that were calculated at five-six inch cuts from the surface in comparison to actual cuts that were two-three inches from the surface. This resulted in less handling and shipping of the contaminated soils. Cost savings also resulted and is trending at around 30 percent, although a large percentage of this funding was utilized in breaking up large intact concrete pieces and additional packages and equipment. Final costs will be available after the project is fully complete and all the information is available.
- If the Clean Slate II project cleanup continues as planned, the project will be under budget.
- Clean Slate III cleanup is estimated to be completed in the January/February 2019 timeframe, depending upon weather and other conditions. During Clean Slate II, the winter was very mild with a 10-15 percent down time due to weather and other variables. Field work cannot be conducted if there is snow on the ground as the snow shields the plutonium alpha particles from registering on the radiation equipment. The best weather information has been factored into the planning, but if the winter includes more snow than expected, delays could result and push back the schedule for Clean Slate III.
- The waste from Clean Slate II was disposed at the Area 5 RWMC, and the waste from Clean Slate III will be disposed at the Area 3 RWMS. Subsidence craters created by past nuclear tests will be utilized to emplace the Clean Slate III waste at the Area 3 RWMS.

### **EM Nevada Program Tribal Revegetation Project Overview** (*Tiffany Gamero, DOE*)

- **92-Acre Disposal Units**
  - Began burying waste in 1961
  - Accepted waste through 2010
- **Federal Facility Agreement and Consent Order (FFACO)**
  - Agreed to in 1996 by DOE and NDEP, the FFACO identifies sites of historic contamination to be addressed by DOE
  - In 2008, DOE agreed to address the 92-Acre Area under the FFACO closure strategy; in 2009, NDEP and DOE agreed on a closure path, consisting of a vegetative cover
  - Closure activities were initially completed in 2012 and the 92-Acre Area was closed with post-closure monitoring and use restrictions
- **92-Acre Area Closure**
  - Closure activities conducted between January 2011 and January 2012
    - Four 8-foot-thick engineered covers installed over the boreholes, trenches, and pits in the 92-Acre Area
    - Vegetation prevents precipitation from percolating deep into the soil by returning moisture to the atmosphere by evapotranspiration
    - Vegetation also minimizes wind and water erosion on the covers
- **Previous Revegetation Activities**
  - October 2011; all covers
    - Broadcast seeded and irrigated
    - Plants initially sprouted, but most were dead by May 2013

- October 2013; test plots on north-north cover
  - Broadcast seeded, hydroseeded and irrigated
  - Some plants sprouted, but a viable community was not established
- October 2014; test plots on south-north cover
  - Seeded, mulched, and irrigated
  - Some plants sprouted, but a viable community was not established
- **FY 2016 NSSAB Work Plan Item**
  - In May 2016, the NSSAB provided a recommendation, from a community perspective, on a path forward regarding the vegetative cover at the 92-Acre Area at the Area 5 RWMC (Briefing available at [http://www.nnss.gov/nssab/docs/Meeting-Minutes/MM\\_FY16/5-18-16%20Handouts%20R.pdf](http://www.nnss.gov/nssab/docs/Meeting-Minutes/MM_FY16/5-18-16%20Handouts%20R.pdf))
  - From this work plan, a number of NSSAB recommendations were implemented by the EM Nevada Program (NSSAB recommendation and DOE response available at [http://www.nnss.gov/nssab/pages/Rec\\_FY16.htm](http://www.nnss.gov/nssab/pages/Rec_FY16.htm))
    - Remove the topsoil when constructing future waste cells and stockpile for use for the closure of the cell
    - Recognize that each site is unique and should be considered separately
    - Prepare the soil in advance for revegetation, i.e. fertilizer, tribal cultural interaction, etc.
    - Consider transplants
    - Consult a horticulture expert
    - Experiment with smaller test plots (5-10) with varying parameters, i.e. transplants, fertilizer, mulching, seeding, amount of watering, etc.
    - Consider any recommendations offered by the tribes
- **Tribal Revegetation Project**
  - The Tribal Revegetation Project is a collaborative project in which representatives from the CGTO offer tribal ecological knowledge to help the DOE EM Nevada Program to revegetate a closed radioactive waste landfill on the NNSS
    - Began at the suggestion of the CGTO Spokesperson
    - Meeting held in March 2016 to brief tribal members on the project, including the details of previous revegetation attempts
    - Task Plan Development Meeting held January 31 –February 2, 2017
      - Resulted in the Tribal Revegetation Fieldwork Plan in Fall 2017, detailing the specifics for the test plots
- **Test Plot Planting**
  - Four different revegetation treatments during two planting seasons, along with four transplant treatments during two planting seasons
  - Fall planting (December 2017) – Complete
  - Spring planting (April 2018) - Complete
- **Monitoring**
  - Monitoring of test plots will be conducted throughout the year
  - Monitoring conducted
    - Count of seeded plants
    - Transplant viability
    - Soil conditions
    - Animals and insects present
  - Monitoring training was conducted February 28 – March 1, 2018
- **What's Next**
  - Continue monitoring (FY 2018)

- Collate, analyze, and synthesize data from field observations (September 2018)
- Submit preliminary results based on fieldwork and data (September 2018)

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

- A number of the NSSAB recommendations from May 2016 on a path forward regarding the revegetation of the 92-Acre Area were considered and utilized by the EM Nevada Program.
- Members of the Tribal Revegetation Project will continue to monitor the test plots through the end of this fiscal year. Based on the viability of the plants in the test plots, preliminary results and recommendations will be developed and presented to DOE. Next steps include DOE presenting a plan to NDEP for revegetating the entire 92-Acre Area.
- Irrigation was utilized on some of the test plots.
- Any lessons learned from the Tribal Revegetation Project will be used for future areas closed by DOE on the NNSS.
- The Area 5 RWMC is fenced, and the test plots on the 92-Acre Area are also fenced to prevent animals from browsing on new plants. During monitoring, the only animal that has been observed on the test plots to date has been a rattlesnake.
- The Desert Research Institute (DRI) will prepare a report on the Tribal Revegetation Project to document any recommendations and lessons learned to be utilized for future projects. This report will be publicly accessible. During its research, DRI contacted other agencies, such as the DOT and the Bureau of Land Management, regarding their revegetation projects.

### **Meeting Wrap-Up and Adjournment**

Upcoming calendar of events:

- LLW Stakeholders Forum in Pahrump, NV – August 1, 2018 with Vice-Chair Bonesteel attending
- RadWaste Summit in Henderson, NV – September 4-6, 2018 with Member Amina Anderson and Chair Rosenbaum attending
- EM SSAB National Fall Chairs' Meeting and EM Cleanup Workshop in Alexandria, VA – September 11-13, 2018 with Chair Rosenbaum and Vice-Chair Bonesteel attending
- NSSAB Full Board Meeting in Las Vegas, NV – September 26, 2018 starting at 4 p.m.
- NSSAB Orientation in Las Vegas, NV – October 10, 2018
- NSSAB Annual Work Plan Tour of the NNSS – October 24, 2018

Any questions on the calendar of events, please contact the NSSAB Office at 702-630-0522.

Member Cecilia Flores Snyder moved that the meeting be adjourned. The motion was seconded and passed unanimously.

Meeting adjourned at 6:41 p.m.