Nevada Site Specific Advisory Board
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Full Board Meeting Handouts for
Wednesday, August 21, 2013

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Giving Back: Collaborations with Others in Ecological Studies on the Nevada National Security Site

Kathryn S. Knapp
U.S. Department of Energy,
National Nuclear Security Administration Nevada Field Office

NSSAB

August 21, 2013

Overview

- Historical atmospheric and underground nuclear testing conducted at Nevada National Security Site (NNSS) from 1951-1992
- U.S. Department of Energy (DOE), National Nuclear Security Administration Nevada Field Office (NNSA/NFO) responsible for the NNSS
- Ecological/biological programs and research ongoing at NNSS for decades

Ecological/Biological Programs

- Ecological/biological programs support current missions and focus on compliance with federal and state regulations
  - Assesses radiological dose to onsite biota and offsite public
  - Ensures conservation of protected species
- Collaborations with outside agencies and organizations pursued as a means of acquiring added value and scope to ecological/biological programs

NNSS – A Unique Site for Interagency Collaborations

- Ecologically diverse; located between Mojave and Great Basin deserts
- Unique ecological and radiological investigations based on historical nuclear testing
- Restricted public access for more than 60 years

NNSS – A Unique Site for Interagency Collaborations
(continued)

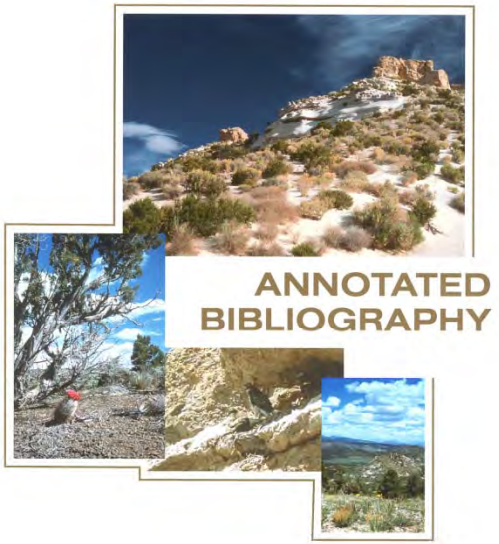
- Designated by DOE as a National Environmental Research Park in 1992
  - Last of 7 "Parks" designated by the Atomic Energy Commission (AEC) and its successor, the DOE

"As a member of DOE's Park Network, studies at the Test Site will contribute to the knowledge base in such areas as biological diversity, plant community development in disturbed and undisturbed landscapes, regional climate trends, soil formation differences and other factors that control environmental conditions."

DOE news release, April 1992

NNSS – A Unique Site for Interagency Collaborations
(continued)

- Unique history of weapons testing and investigations in ecology, natural history, and radiation ecology



- *The Ecology of the Nevada Test Site: An Annotated Bibliography* (2001) contains abstracts of 865 scientific publications and documents related to the ecology of the site including an index of keywords which lists citations by research topics and lists of site flora and fauna
- NNSS provides historical study plots established 50 years ago for long-term monitoring

Flora and Fauna on NNS

- 752 taxa of vascular plants
- 10 major vegetation alliances
- 20 vegetation associations
- 1,200 invertebrate species
- 34 reptile species
- 239 bird species
- 59 mammal species
- 1 non-vascular and 17 vascular plant species considered sensitive
- 13 bat species considered sensitive
- 234 bird species protected under Migratory Bird Treaty Act
- 1 resident species protected under Endangered Species Act (threatened desert tortoise)

Current Biological Priorities

- Ensure current missions do not harm protected species of wildlife
- Mitigate biota and public exposure to radioactivity from legacy contaminated surface soils and surface waters at the NNSS
- Prevent current missions from causing dangerous interactions with workers and wildlife
- Prioritize funds to ensure continued compliance with federal and state regulations
- Enhance biota dose monitoring and ecosystem monitoring and preservation through additional studies, as available

Current Biological Programs

- Ecological Monitoring and Compliance (EMAC) Program
  - Complies with Endangered Species Act (ESA) and Migratory Bird Treaty Act
  - Identifies and monitors distribution of important species
  - Conducts revegetation for soil stabilization/habitat restoration
  - Monitors sensitive, pristine, and unique habitats (e.g., wetlands)
  - Monitors biological impacts of chemical release tests

Current Biological Programs
(continued)

- Routine Radiological Monitoring Program (RREMP)
  - Monitors radionuclides in biota exposed to legacy contamination
  - Estimates potential dose to the public from ingestion of NNSS game animals
  - Estimates potential dose to NNSS plant and animal populations
  - Monitors radionuclides in plants which grow on, and in animals that burrow into, waste covers of closed radioactive waste disposal cells

2012 FWS Collaboration

Background Information

- Under permit from U.S. Fish and Wildlife Service (FWS), NNSA/NFO paid $240,000 in mitigation fees for disturbance of desert tortoise habitat (444 acres)
  - Fees provide no protection/conservation benefits to NNSS tortoises
  - Fees support maintenance of Desert Tortoise Conservation Center (DTCC) in Clark County

- 100% of tortoise mortalities (14 since 1992) are due to accidental road kills
- Studies of tortoises and other biota not driven by compliance or worker safety are unfunded or minimally funded

2012 FWS Collaboration

Background Information (continued)

- The FWS states in their permit issued to NNSA/NFO:

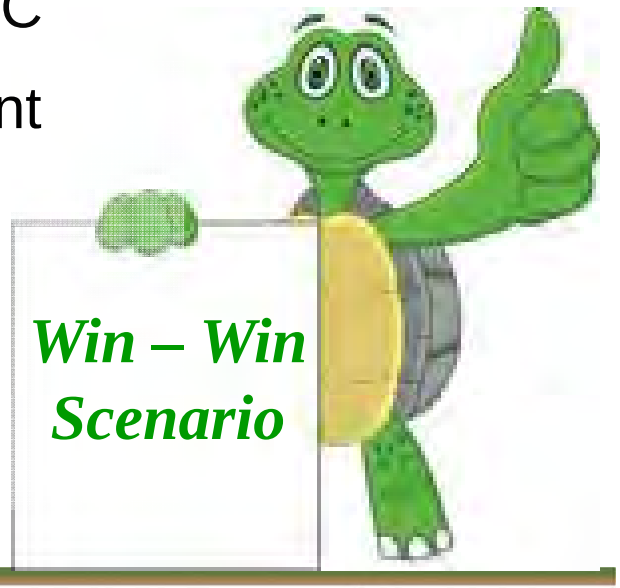
  - *"NNSA/NFO should develop a strategy to minimize road mortalities [of desert tortoises] on the NNSS by focusing efforts on roads that have a history of mortality or that traverse higher density desert tortoise areas."*
  - *"NNSA/NFO may propose projects on the NNSS and request Section 7 funding for such projects if approved by the Service [FWS].*"

- In October 2011, NNSA/NFO encouraged biologists to propose a project to minimize road mortalities and to pursue FWS funding to enhance protection of NNSS tortoises

2012 FWS Collaboration Process

Successful Conclusion

- Between November 2011 and February 2012, multiple meetings and site visits occurred as NNSA/NFO requested FWS funds to conduct radiotelemetry study of NNSS tortoises residing near roads
- FWS receptive to proposal when NNSA/NFO offered NNSS as host site for relocation of juvenile tortoises from DTCC
  - Section 7 funding for radio-tracking equipment for NNSS tortoise movements study
  - NNSA/NFO funds for NNSS biologists' labor hours to perform ESA compliance tasks
  - DTCC and San Diego Zoo fund and implement own study of relocated tortoises



FWS Tortoise Relocation Newsworthy

Tortoises find a home at Nevada National Security Site

RONDA CHURCHILL/LAS VEGAS REVIEW-JOURNAL

Roy Averill-Murray, who oversees desert tortoise recovery for the U.S. Fish and Wildlife Service, prepares to release one of the protected reptiles Friday at the Nevada National Security Site. The dark brown bump on the tortoise's shell is a radio transmitter, affixed with plumber's epoxy, to help researchers find the animal again.
» Buy this photo

BY HENRY BREAN
LAS VEGAS REVIEW-JOURNAL

- FWS approved project in April 2012
- FWS, DTCC, and San Diego Zoo personnel relocated 60 juvenile desert tortoises to NNSS on September 21, 2012
  - Study being transferred to NNSS in Fall 2013
- U.S. Geological Survey (USGS) relocated additional adult tortoises in Spring 2013
  - Study evaluates impacts/interactions of relocated tortoises with resident tortoises
- NNSS biologists radio-tagged 14 resident tortoises to identify measures to minimize road mortalities

2012 FWS Collaboration Benefits

Agency/Entity	Collaboration Benefits
NNSA/NFO	Receipt of funds from FWS Desert Tortoise Recovery Office (DTRO) to purchase radiotelemetry equipment Receipt of training from FWS for desert tortoise health assessments, tortoise handling, and radio transmitter application Access to data and expertise from the San Diego Zoo Institute for Conservation Research (ICR) and U.S. Geological Survey, Biological Resources Division (USGS BRD) personnel upon request Application of study results which will enhance the protection of the NNSS tortoise population
FWS DTRO	Furthers DTRO's primary mission of tortoise population recovery Acquisition of data needed to design effective relocation programs
San Diego Zoo ICR	Access to lands protected from human impacts on which to conduct a juvenile tortoise relocation study
USGS BRD	Access to data and expertise from NNSA/NFO and San Diego Zoo ICR personnel upon request
Public and University Community	Volunteer opportunities and undergraduate and graduate degree program opportunities

2010 USGS Collaboration

Background Information

- Largest potential contribution of dose to public is from the ingestion of game animals (0.47 millirem [mrem]/year), in comparison to the other pathways of air (0.07 mrem/year), direct radiation (0 mrem/year), and drinking water (0 rem/yr)*

**Source: NNSS Environmental Report 2011*

- Radioanalysis of game animals is labor intensive for trapping small game, and sporadic and limited for opportunistic sampling of large game
- More samples of large game tissues would provide a more realistic data set for human dose assessments

2010 USGS Collaboration
(continued)

- In January 2010, NNSA/NFO collaborated with USGS on a mountain lion radiotelemetry study (*Dr. David Mattson, Southwest Biological Science Center)*

  - Mountain lions prey on mule deer and bighorn sheep that may be hunted by the public
    - *Can more large game radioanalysis samples for the RREMP be obtained?*
  - Mountain lions are a safety issue in remote areas of NNSS
    - *Can territories and activity patterns be identified to enhance worker safety?*

USGS Collaboration Results for NNSA/NFO

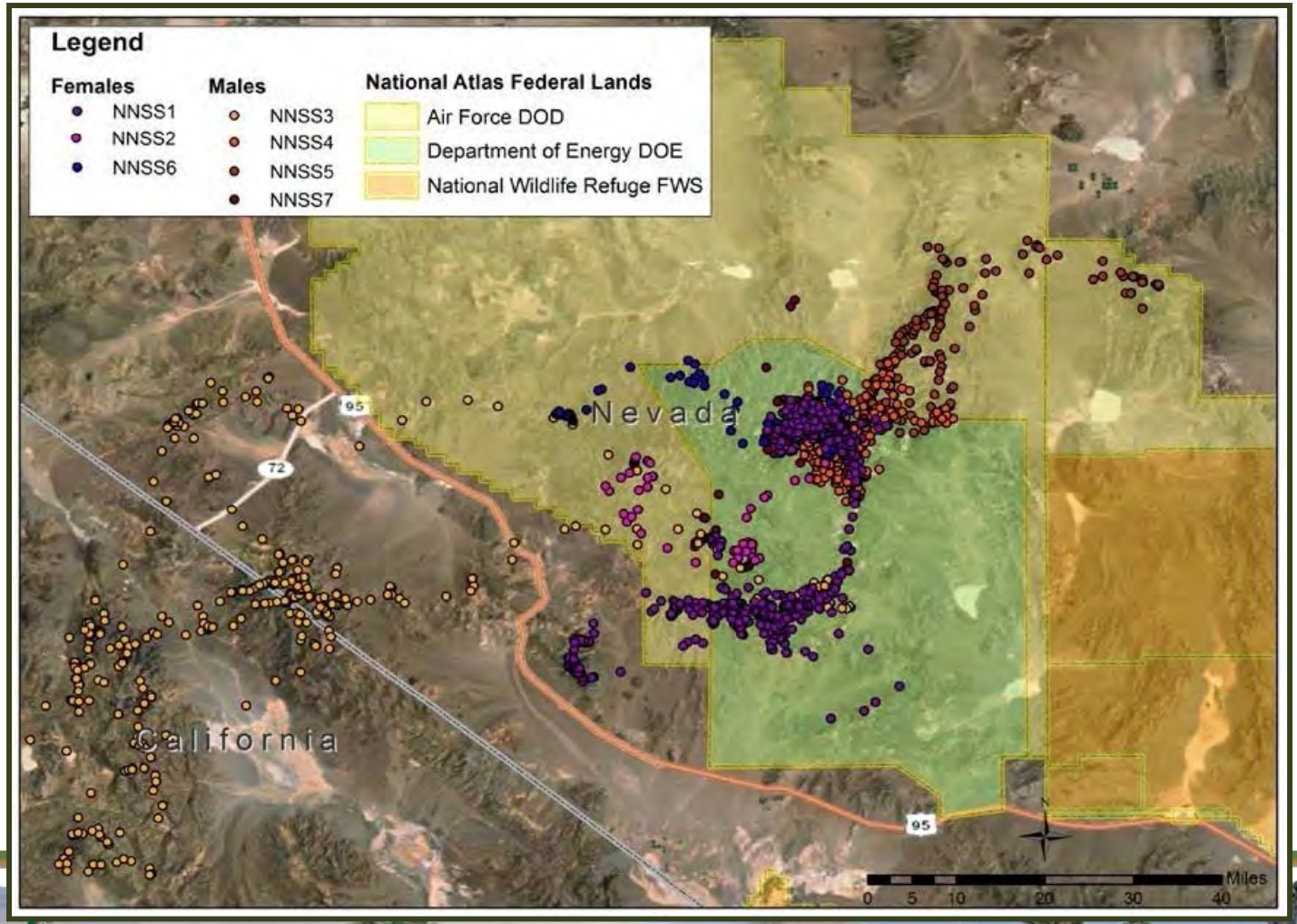
- Obtained additional large game samples (mountain lion kills) for human dose assessment
- Obtained blood samples for radioanalysis from captured mountain lions
- Discovered for the first time a reproducing population of bighorn sheep on the NNSS
- Documented possibly the largest mountain lion home range of 1,484 square miles

- Allowed the acquisition of unique mountain lion data to the scientific community

USGS Collaboration Results for USGS

ID	Sex	Age (yrs)	Weight (kg)	Capture date	Data/collar status	Fate	Notes
NTS1(NNSS1)	F	2.5	34	12/13/2010	Argos only	Alive at drop	Preyed heavily on bighorn
NTS2(NNSS2)	F	5.5	40	12/24/2010	Downloaded	Dead	Potential capture injuiries
NTS3(NNSS3)	M	5.5	63	4/19/2011	Downloaded	Dead	Accidental fall
NNSS4	M	8	65	5/23/2012	Deployed	Dead	Unknown cause
NNSS5	M	3.5	55	6/03/2012	Deployed	Alive at drop	
NNSS6	F	3.5	35	6/10/2012	Downloaded	Dead	Unknown cause
NNSS7	M	3.5	56	6/17/2012	Deployed	Alive	Recollared & still tracking

Range of Collared Mountain Lions On and Near the NNSS



2010 USGS Collaboration Benefits

Agency/Entity	Collaboration Benefits
NNSA/NFO	Acquisition of large game animal tissue samples from lion kills for radioanalysis to better assess the radiological dose to hunters from ingestion of NNSS game animals Receipt of data and NNSS maps on seasonal probability of mountain lion activity and predation to help manage human activities on the NNSS and minimize human/lion interactions
USGS Southwest Biological Science Center	Use of NNSS biologists to visit kill sites and collect prey species data Acquisition of ecological and natural history information for comparison with other USGS radiotelemetry studies of mountain lions in distinctly different habitats

2004 SNHD Collaboration

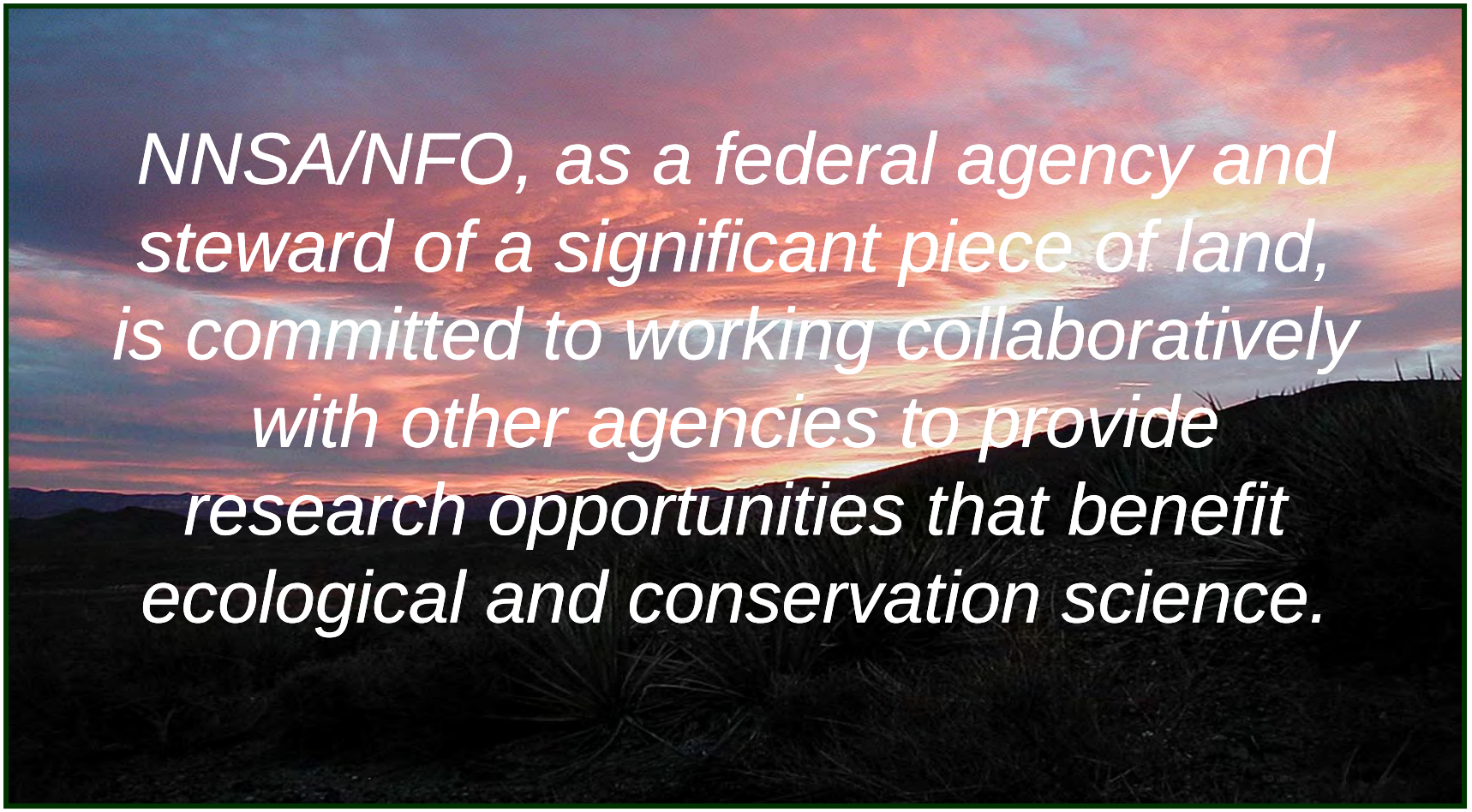
- Since 2004, NNSS biologists annually collect mosquitoes on site using traps provided by the Southern Nevada Health District (SNHD) and deliver to the SNHD for West Nile virus (WNV) testing

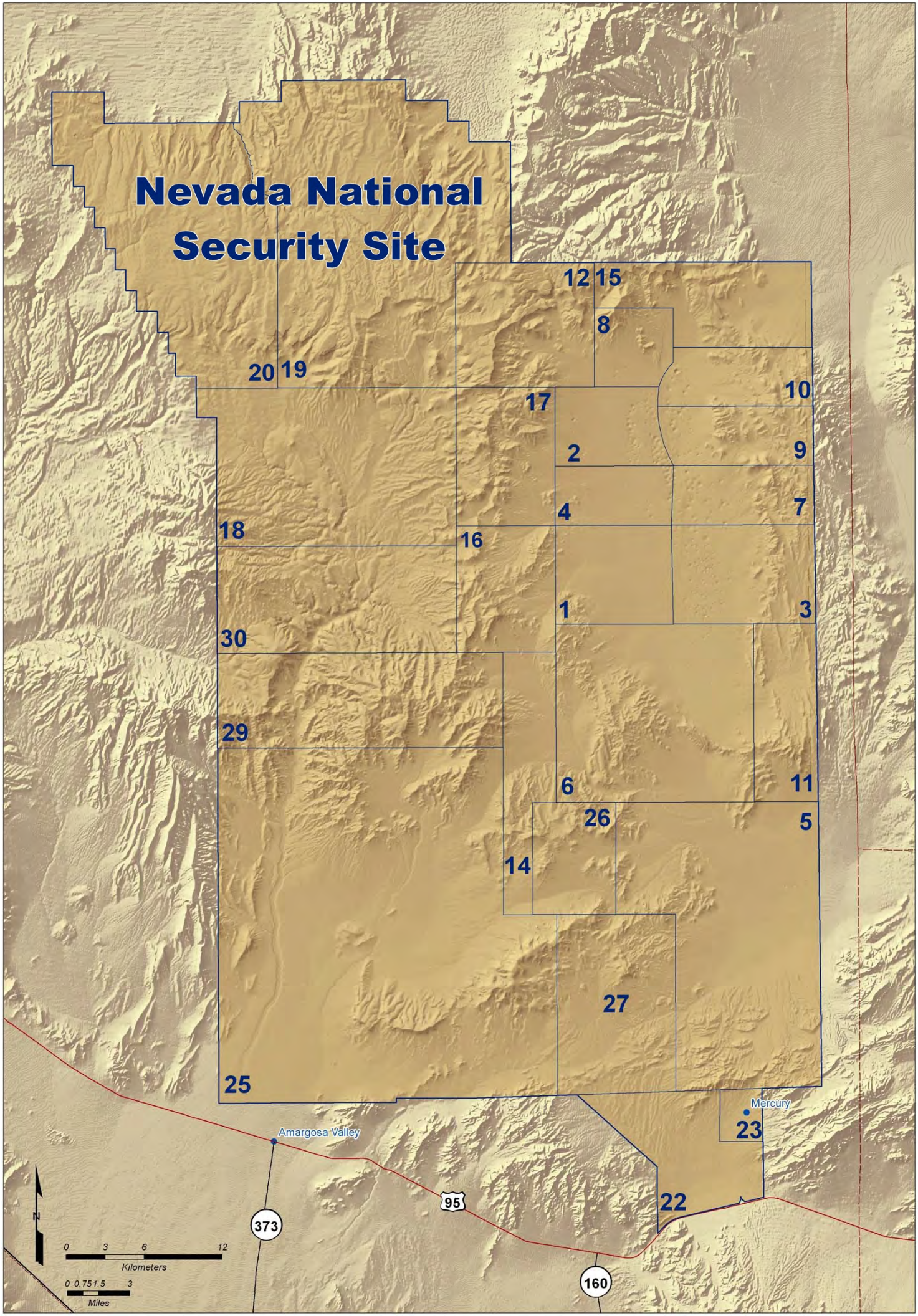
Agency/Entity	Collaboration Benefits
NNSA/NFO	Acquisition of mosquito species' distribution on NNSS and information on the incidence of WNV in NNSS mosquito populations that may threaten biota and NNSS workers
SNHD	Free collection and delivery of NNSS mosquito samples for WNV analysis

A Decade of Collaborations

Agency/Entity	Area of Investigation
USGS	Long-term climate change
Denver Museum of Science and Nature	Insect sampling
U.S. Forest Service	Forest Inventory and Health Analysis
Dr. Jonathan Richmond, Cornell University	Skink genetics
Dr. Courtney Conway, University of Arizona	Burrowing owl migration and genetics
Erin Boydston, USGS	Mountain lion distribution
Dr. Ted Cohn, University of Michigan	Camel crickets
Dr. John Klicka, UNLV	Breeding birds on NNSS
Dr. John Gelhous, Philadelphia Academy of Science	Crane flies
Dr. John Hafner, Occidental College	Kangaroo mice
Dr. Jim Simmons, Cornell University	Bat acoustic sampling
Phil Medica, USGS	Changes in small mammal populations

Giving Back


NNSA/NFO, as a federal agency and steward of a significant piece of land, is committed to working collaboratively with other agencies to provide research opportunities that benefit ecological and conservation science.


Nevada National Security Site
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U.S. Department of Energy Environmental Management
Site-Specific Advisory Boards

AGENDA

NSSAB FULL BOARD MEETING

Bob Ruud Community Center
150 North Highway 160, Pahrump, Nevada 89060

August 21, 2013
5 p.m.

Open Meeting / Announcements	**Barb Ulmer**, Facilitator
Chair's Opening Remarks ▪ Agenda approval	**Kathleen Bienenstein,** Chair
Public Comment	**Barb Ulmer**, Facilitator
U.S. Department of Energy Update	**Scott Wade,** DOE
Reports/Discussion/Recommendation: Community Environmental Monitoring Program (Work Plan Item #6)	**Kathleen Bienenstein,** Chair **and Michael Moore,** Member
Reports/Discussion/Recommendation: Waste Acceptance Review Panel (Work Plan Item #7)	**Kathleen Bienenstein,** Chair **and Thomas Fisher,** Member
Break	**Barb Ulmer**, Facilitator
Review Questions for Rainier Mesa/Shoshone Mountain Peer Review Panel (Work Plan Item #3)	**Barb Ulmer**, Facilitator
▪ DOE Presentation	**Bill Wilborn,** DOE
▪ NSSAB Discussion and Determine Path Forward	**Kathleen Bienenstein,** Chair
Liaison Updates	
▪ Clark County	Phil Klevorick
▪ Consolidated Group of Tribes and Organizations	Richard Arnold
▪ Elko County Commission	Charlie Myers
▪ Esmeralda County Commission	Ralph Keyes
▪ Lincoln County Commission	Kevin Phillips
▪ Nye County Commission	Dan Schinhofen
▪ Nye County Nuclear Waste Repository Project Office	John Klenke
▪ State of Nevada Division of Environmental Protection	Tim Murphy
▪ U.S. National Park Service	Genne Nelson
▪ White Pine County Commission	Mike Lemich
Liaison Discussion Wrapup	**Scott Wade,** DOE
Other NSSAB Business:	**Kathleen Bienenstein,** Chair
▪ Membership Committee Update-Student Liaison	**Donna Hruska,** Membership Committee Chair

- DOE June 18, 2013, Response to NSSAB's Recommendation Regarding Corrective Action Unit 105: Area 2 Yucca Flat Atmospheric Test Sites, Evaluation of Corrective Action Alternatives (Work Plan Item #1)
- DOE June 25, 2013, Response to NSSAB's Recommendation Regarding Nevada National Security Site Integrated Groundwater Sampling Plan (Work Plan Item #8)
- Chair and Vice-Chair Elections - September 2013
- Chairs' Conference Call (June 18) Update
- EM SSAB National Chairs' Meeting (Oct. 15 - 17, 2013)
  - Develop Round Robin topics

Meeting Wrap-up/Assessment/Adjournment **Barb Ulmer**, Facilitator

- Next Full Board Meeting
  - National Atomic Testing Museum
    4 p.m., Wednesday, September 18, 2013
    755 E. Flamingo Rd. Las Vegas, NV 89119
- Next Membership Committee Meeting
  - Sahara Business Center
    2-4 p.m., Thursday, September 19, 2013
    1810 E. Sahara, Las Vegas, NV 89104

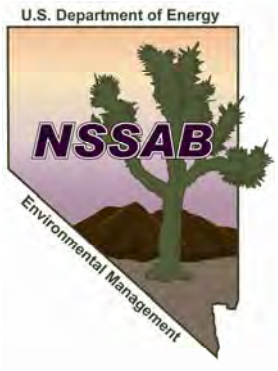
NSSAB MEETING ATTENDANCE

Full Board Meetings

October 2012 through September 2013 (FY 2013)

Name	11/28/12	1/16/13	4/17/13	5/15/13	8/21/13	9/18/13	Max Terms Limit
MEMBERS							
Jason Abel	√	E	√	√	√		2018
Kathleen Bienenstein	√	√	√	√	√		2014
Ed Brown	E	√	RS				2018
Matthew Clapp	√	√	E	√	√		2017
Thomas Fisher	√	√	√	√	√		2017
Arthur Goldsmith	√	√	E	√	√	E	2017
Donna Hruska	√	√	√	√	√		2016
Cheryl Kastelic	√	√	E	E	√		2018
Janice Keiserman	√	√	√	√	√		2018
Barry LiMarzi	√	√	√	√	E		2017
Michael Moore	√	√	√	√	√		2016
Edward Rosemark	√	√	√	√	√		2018
William Sears	√	E	√	√	√		2018
Jack Sypolt	√	E	√	√	√		2017
James Weeks	√	√	√	√			2013
LIAISONS							
Clark County	√	√	E	√	√		
Consolidated Group of Tribes and Organizations					√		
Elko County Commission	√	U	U	U	U		
Esmeralda County Commission		E	√	√	√		
Lincoln County Commission		U	U	E	U		
Nye County Commission	√	√	√	√	√		
Nye Co. Nuclear Waste Repository Project Office	√	√	√	√	E		
State of NV Division of Env Protection	√	√	√	√	√		
U.S. Department of Energy	√	√	√	√			
U.S. Natl Park Service	E	√	√	E	√		
WCTA Student Liaison	E	E	E	√			2013
White Pine Co. Commission		√	U	U	E		

KEY: √ = Present | Term Limit | E = Excused U = Unexcused | RM = Remove | RS = Resign



Community Environmental Monitoring Program (CEMP) Workshop Update

Michael Moore, NSSAB Member

August 21, 2013

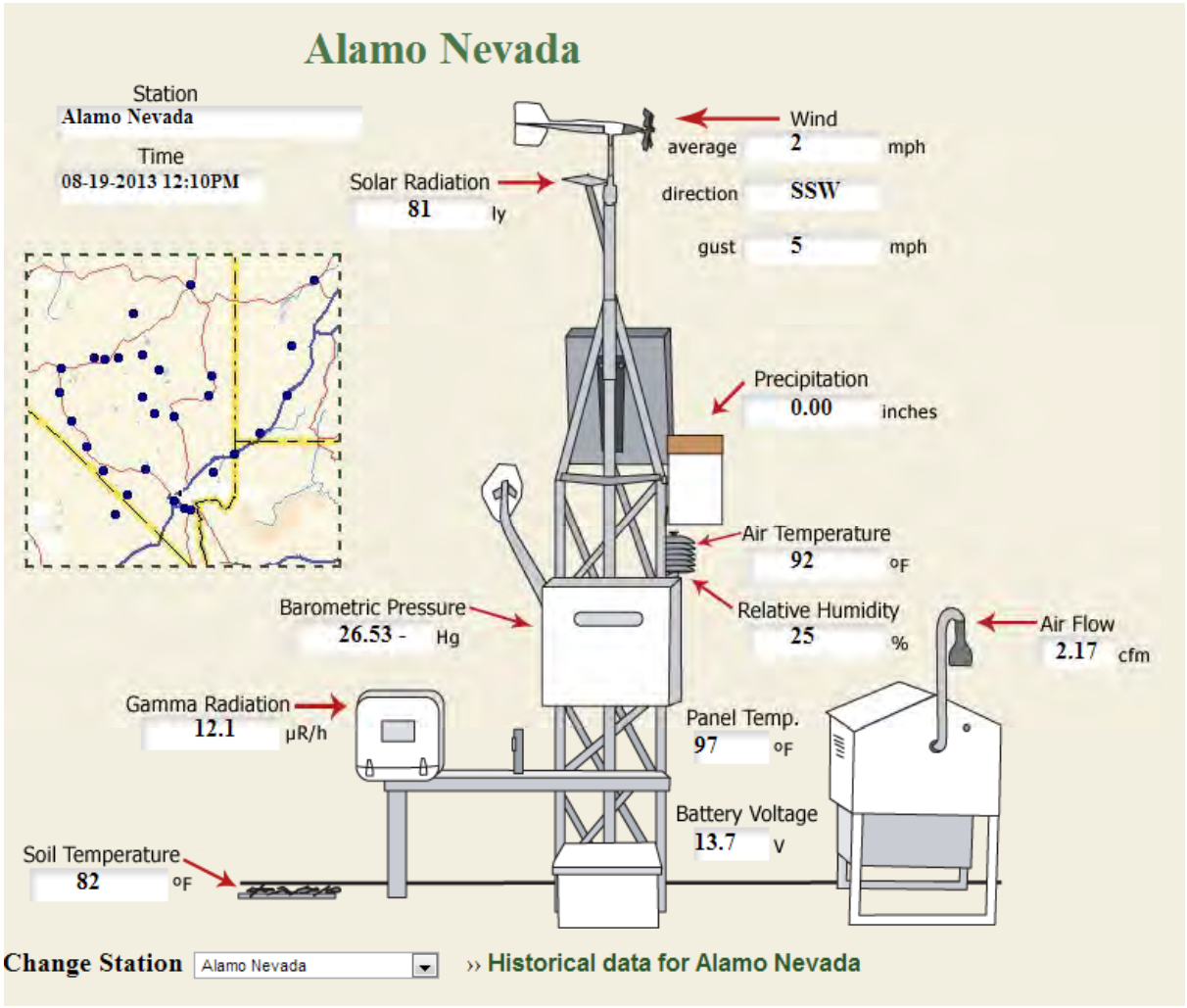
Nevada Site Specific Advisory Board (NSSAB) Work Plan Item #6

- *Community Environmental Monitoring Program* – Provide a recommendation to the Department of Energy (DOE) regarding potential ways the CEMP could be enhanced to ensure it reflects current missions

Recap

- DOE in the process of defining the future direction of CEMP based on today's mission and operations at the Nevada National Security Site (NNSS)
- Kathryn Knapp (DOE) briefed NSSAB regarding the CEMP at its May 15 Full Board meeting
  - Briefing included a list of items for NSSAB members to consider while attending CEMP workshop
- Kathy Bienenstein and Michael Moore attended biennial CEMP Workshop in Tonopah, NV, on July 15 – 17, 2013

CEMP Station



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
Total Cost	**1,637K**	**1,669K**	**1,513K**	**1,689K**	**1,500K**

List of Items Considered During CEMP Workshop

1. **Should DOE continue funding the CEMP?**
   - Yes, CEMP provides peace of mind within communities surrounding the NNSS

List of Items Considered During CEMP Workshop (continued)

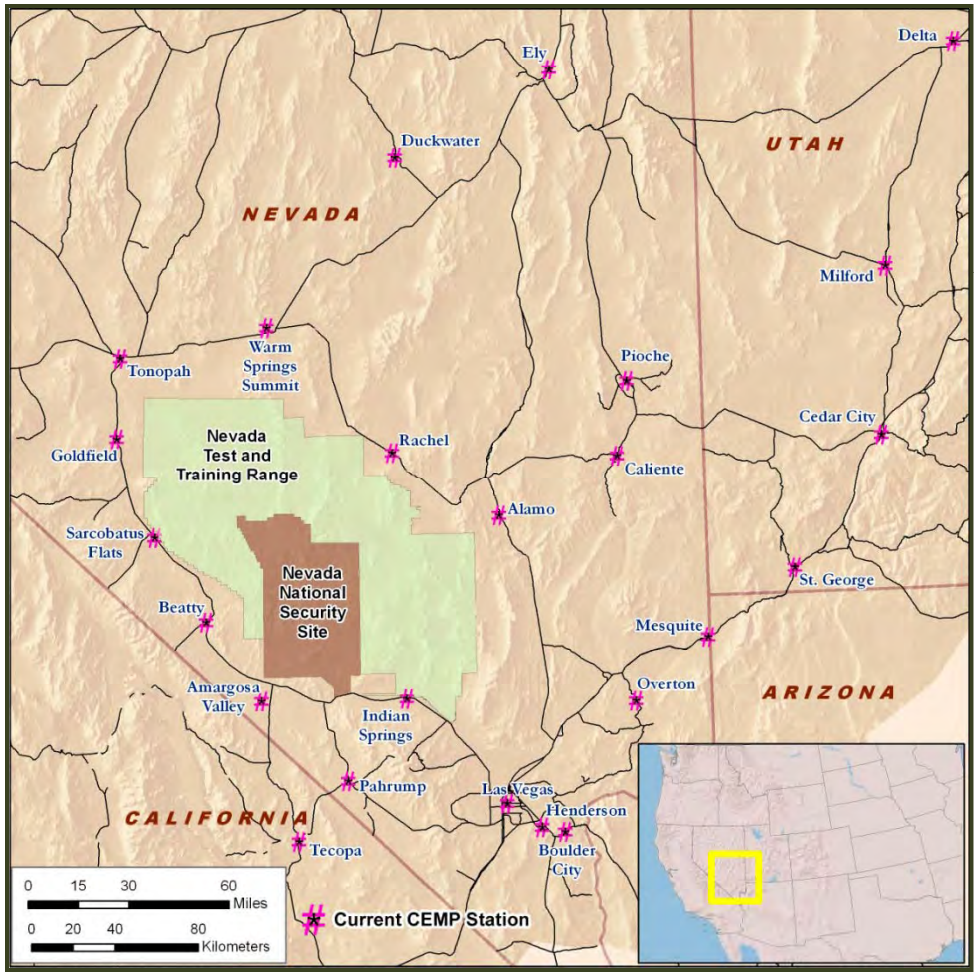
2. **Are the proposed ideas for CEMP better aligned with the current National Nuclear Security Administration mission and Environmental Management activities and remediation efforts?**
   - Yes, continued on next three slides

List of Items Considered During CEMP Workshop (continued)

- **CEMP Groundwater Monitoring:**
  - Focus on monitoring down-gradient water at the current CEMP stations at Beatty, Amargosa Valley, and Tecopa
  - Support detection levels of 300 picocuries/liter for tritium
    - If tritium detected, higher sensitivity measurement should be used, if needed
  - Do not support monitoring of water up-gradient of the NNSS as water does not flow uphill
  - Support current annual CEMP testing

List of Items Considered During CEMP Workshop (continued)

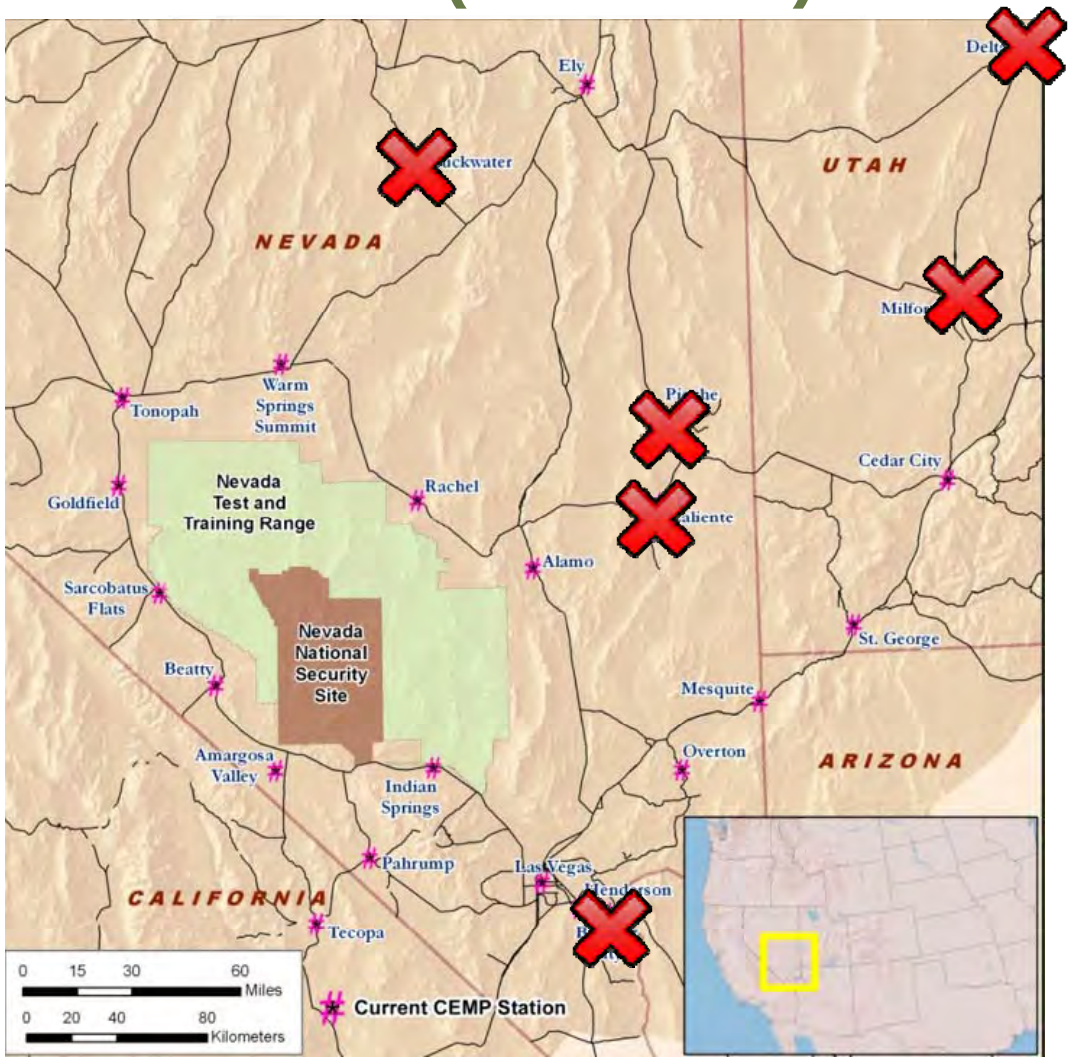
- Air Monitoring:
  - Support current frequency of monitoring



List of Items Considered During CEMP Workshop (continued)

- Air Monitoring (cont.):
  - Support eliminating air portion of CEMP monitoring stations at Duckwater, Pioche, Caliente, Boulder City, and Milford and Delta, UT
    - For the past 20 years, CEMP air sampling data have indicated no off-site dose representing a public health threat from past or present NNSS activities
    - Other CEMP monitoring stations located in closer proximity of the down-wind path of the NNSS
    - Funding could be redirected and utilized by the CEMP that provides more value to the community and DOE

List of Items Considered During CEMP Workshop (continued)



List of Items Considered During CEMP Workshop (continued)

- Transportation routes:
  - Do not support installing additional CEMP stations along radioactive waste transportation routes

List of Items Considered During CEMP Workshop (continued)

3. Is the cost of the program balanced and funding well spent?

- Overall, there is not enough information to make an informed recommendation

Activities	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
Program Management	179K	213K	221K	220K	214K
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List of Items Considered During CEMP Workshop
(continued)

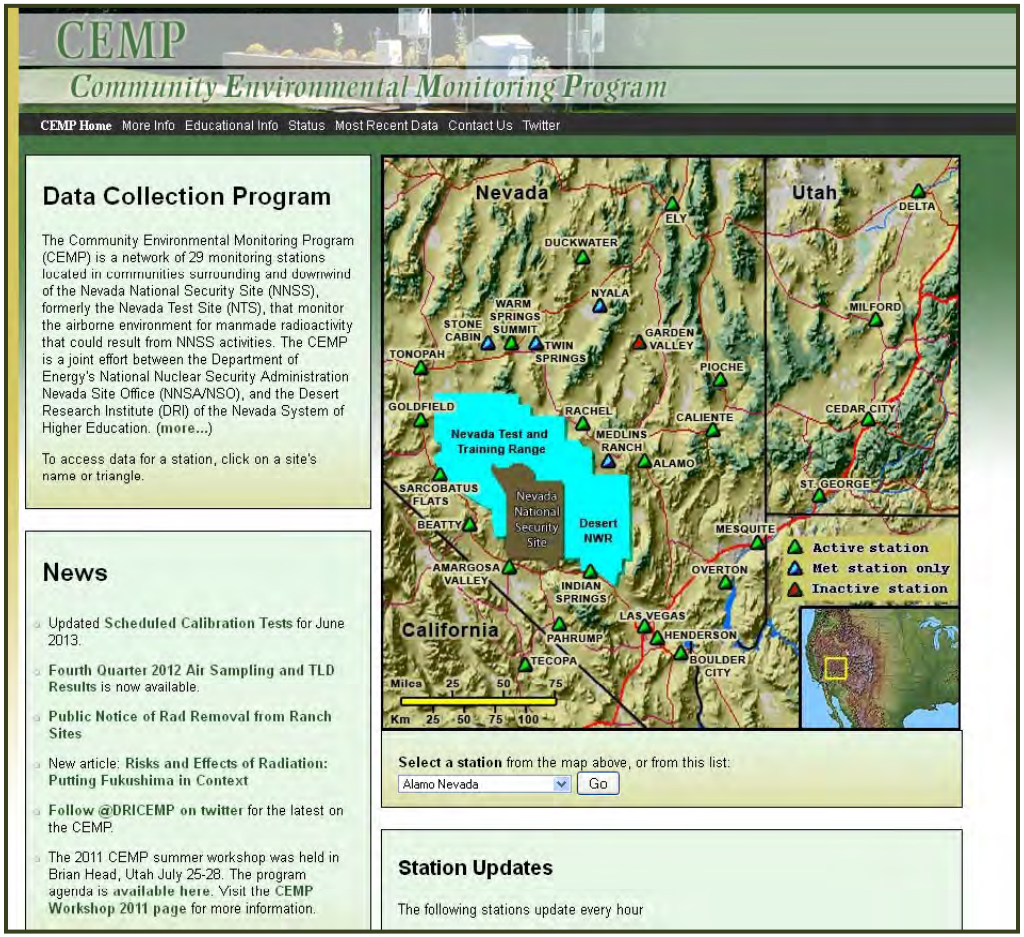
4. **Should the DOE continue to monitor even if radioactivity is not detected and activities do not change? If so, how long?**

   - Yes, reevaluate every five years

List of Items Considered During CEMP Workshop (continued)

5. **For stations that equipment is removed/needs replacement, should equipment be replaced with less sensitive/expensive equipment?**
   - Yes, if monitoring equipment needs replacement at active stations, replace with less sensitive/expensive equipment
   - Do not repair or replace weather monitoring equipment at meteorological-only stations at Nyala, Twin Springs, Stone Cabin, and Medlin's Ranch
     - Decommission and use parts for active stations

List of Items Considered During CEMP Workshop (continued)



CEMP Website: http://cemp.dri.edu/

List of Items Considered During CEMP Workshop (continued)

6. Is CEMP website user friendly and is the data communicated effectively on the site?

- Yes, website is user friendly for its intended functionality
  - Do not support making website less “technical-looking” as it is not DOE’s responsibility to provide “pretty” website to provide information
  - Graphical enhancements costly and provide little additional value

List of Items Considered During CEMP Workshop (continued)

- Development time is better spent on keeping the website up to date
  - News: Are events less than one year?
  - Station and network status: should only show stations that have a current issue
    - When a station is repaired, provide a brief update on the nature of the repair and when completed

List of Items Considered During CEMP Workshop (continued)

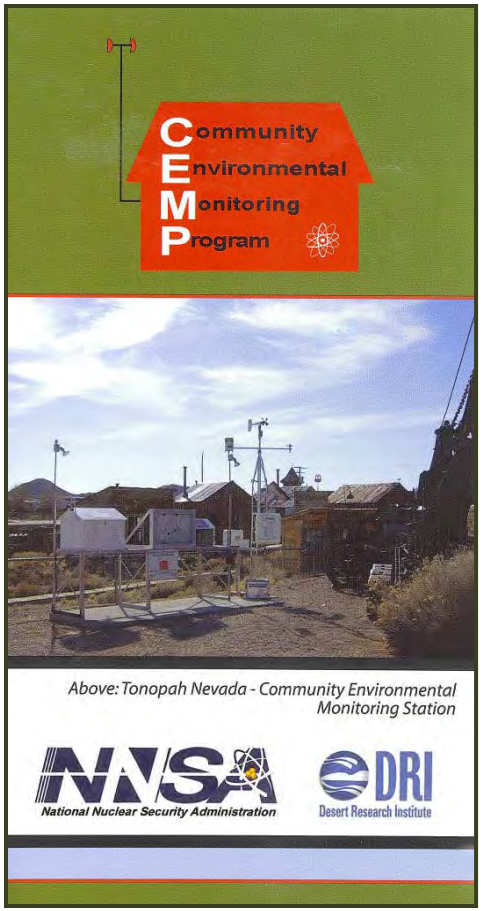
- If QR codes are used, also include human readable text by the image
- Establish website metrics and get a baseline

http://cemp.dri.edu

List of Items Considered During CEMP Workshop (continued)

7. **Is CEMP brochure understood and is the program effectively communicated?**

   - Yes, but needs updating (i.e., email address, number of stations, etc.)



List of Items Considered During CEMP Workshop (continued)

8. **Should there be term limits for the Community Environmental Monitors (CEMs)?**

- DOE is considering term limits for CEMs to expose more people to the CEMP

Pros

- More exposure to different people in the community
- The CEMP network would increase due to the new person's network being added to the existing
- Allow for a more active participant if current CEM is low-performing

Cons

- Loss of expertise
- Learning curve
- Lose stability

List of Items Considered During CEMP Workshop (continued)

9. Is the level of training, time, and material appropriate?

- Based on current setup, it is appropriate
- If term limits applied, the workshop format and content should be reevaluated

Training at 2013 CEMP Workshop

List of Items Considered During CEMP Workshop (continued)

10. Should workshop be expanded to include more entities?

- Yes!
  - Local officials
  - First responders
  - Teachers
  - NSSAB

List of Items Considered During CEMP Workshop (continued)

Additional potential ways the CEMP could be enhanced to ensure program reflects current EM missions:

- Establish performance metrics for the CEMs
  - Measure communication to the public
    - Goal to increase public interest and visitations to CEMP stations
- Eliminate CEMP station at Boulder City
  - It is inaccessible to the public (located on St. Jude's Ranch for Children)
  - Not on a transportation route
  - No benefit to DOE or community

Discussion

Discussion of draft recommendation letter included in your meeting packet

Breakout Session for CEMs at 2013 CEMP Workshop

August 21, 2013

Ms. Kathryn Knapp
Environmental Management Operations Support
U.S. Department of Energy, Nevada Field Office
P.O. Box 98518
Las Vegas, NV 89193-8518

SUBJECT: Recommendation Regarding Community Environmental Monitoring Program (Work Plan Item #6)

Dear Ms. Knapp:

The Nevada Site Specific Advisory Board (NSSAB) was asked to provide a recommendation to the U.S. Department of Energy (DOE) regarding how the Community Environmental Monitoring Program (CEMP) could be enhanced to better reflect current missions at the Nevada National Security Site (NNSS). In support of this, the DOE provided the NSSAB with a list of questions/ideas for enhancing the CEMP.

As a result of two NSSAB members attending the 2013 CEMP Workshop and thorough NSSAB Full Board discussion, the NSSAB provides the following recommendations to the DOE.

- DOE should continue to fund the CEMP, as it provides peace of mind within communities near the NNSS.

- DOE should continue working with the Community Environmental Monitors (CEMs) to better align the existing CEMP with current National Nuclear Security Administration missions and Environmental Management activities and remediation efforts.

- Regarding CEMP groundwater monitoring, the DOE should :
  - Focus on annual down-gradient water monitoring at the current CEMP stations in Beatty, Amargosa Valley, and Tecopa
  - Collect groundwater samples and analyze them with equipment that could detect tritium at levels of 300 picocuries/liter. If tritium is detected, then higher sensitivity equipment should be used at and near the station if needed
  - Discontinue monitoring water up-gradient of the NNSS, as water does not flow uphill

- Regarding air monitoring, the DOE should:
  - Eliminate air monitoring at Duckwater, Pioche, Caliente, Boulder City, and Milford and Delta, Utah, for the following reasons:

    - For the past 20 years, CEMP air sampling data have indicated no off-site dose representing a public health threat from past or present NNSS activities
    - Other CEMP monitoring stations located in closer proximity of the down-wind path of the NNSS
    - Funding could be redirected and utilized by CEMP that provides more value to the community and DOE
  - Continue current frequency of monitoring at all other stations even if radioactivity is not detected and activities do not change
  - Reevaluate the need for air monitoring every five years

- DOE should not install additional CEMP stations along radioactive waste transportation routes.

- DOE should replace monitoring equipment with less sensitive/expensive equipment when it needs replacement at active stations.

- DOE should not repair or replace equipment at meteorological-only stations at Nyala, Twin Springs, Stone Cabin, and Medlin's Ranch stations. The stations should be decommissioned and the parts used for active stations.

- The CEMP website is user friendly for its intended functionality. DOE funds should not be spent to make the CEMP website less "technical-looking." Graphical enhancements are costly and would provide little additional value. Website development would be better spent keeping the website up to date. If QR codes are used in promotional materials for the CEMP website, also include human readable text by the image; therefore http://cemp.dri.edu should be printed by the QR code. Metrics should be established to determine a baseline for number of visits to the CEMP website; so the effectiveness of a new program implemented can be determined readily.

- The CEMP brochure is understandable and effectively communicates the program, but should be updated (i.e., email address, number of stations, etc.)

- DOE (should or should not) set term limits for CEMs for the following reasons _____.

- The CEMP workshop appeared to be at the correct level in terms of training, time, and materials. If term limits for CEMs are imposed in the future, DOE should reevaluate the workshop format and content.

- DOE should establish performance metrics for the CEMs as a means to measure communication to the public with the goal of increasing public interest and visitations to the CEMP stations.

- DOE should expand the CEMP Workshop audience by inviting local officials, first responders, teachers, and the NSSAB.

- DOE should completely eliminate the CEMP station in Boulder City as it is inaccessible to the public, not on a transportation route, and provides no benefit to DOE or the community.

DOE asked the NSSAB to provide a recommendation regarding overall funding on the CEMP. The NSSAB does not have enough information to make a recommendation on whether the cost of the CEMP is balanced and funding is well spent.

The NSSAB appreciates the opportunity for representatives of the Board to attend and observe the CEMP during its 2013 workshop, and provide recommendations on ways to enhance the program to reflect current missions at the NNSS. We hope that these recommendations will be beneficial as DOE moves forward in planning for the future direction of the CEMP.

Sincerely,

Kathleen L. Bienenstein, Chair

cc: C. B. Alexander, DOE/HQ (EM-3.2) FORS
D. A. Borak, DOE/HQ (EM-3.2) FORS
M. R. Hudson, DOE/HQ (EM-3.2) FORS
R. F. Boehlecke, EMO, NNSA/NFO, Las Vegas, NV
C. G. Lockwood, EMOS, NNSA/NFO, Las Vegas, NV
K. K. Snyder, EMOS, NNSA/NFO, Las Vegas, NV
S. A. Wade, AMEM, NNSA/NFO, Las Vegas, NV
W. R. Wilborn, EMO, NNSA/NFO, Las Vegas, NV
B. K. Ulmer, N-I, Las Vegas, NV
NSSAB Members and Liaisons
NNSA/NFO Read File

Peer Review Questions for Rainier Mesa/ Shoshone Mountain

Bill Wilborn
Underground Test Area (UGTA) Activity Lead
Nevada Site Specific Advisory Board (NSSAB)

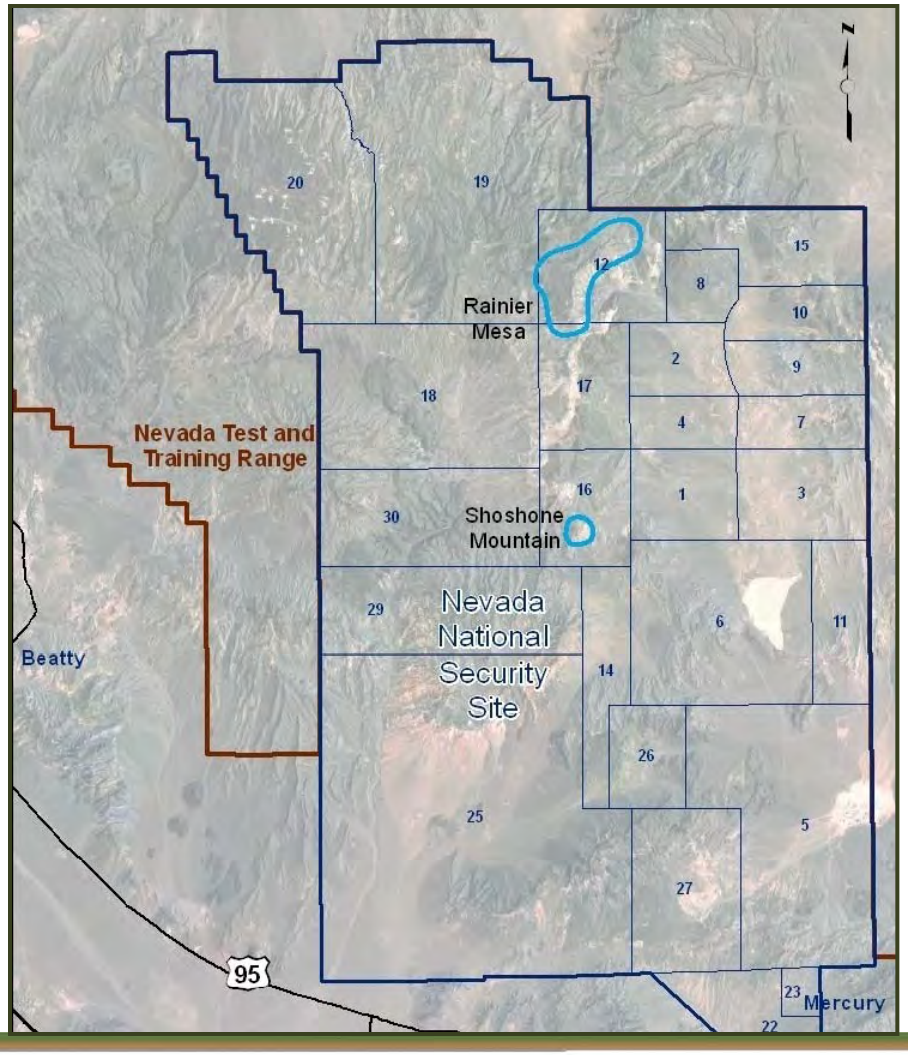
August 21, 2013

NSSAB Work Plan Item 3

- *Review Questions for Rainier Mesa/Shoshone Mountain Peer Review Panel* – Review the draft questions developed for the Rainier Mesa/ Shoshone Mountain Peer Review panel and provide recommendations on how they could be enhanced
  - Department of Energy (DOE) is seeking NSSAB recommendations on a set of draft questions prepared for the panel to answer during the review
  - NSSAB recommendations originally requested by September 18, 2013

NSSAB Members Received a Rainier Mesa Groundwater Briefing at Stockade Wash Overlook – November 2012

Rainier Mesa/Shoshone Mountain Location



Background for External Peer Review (EPR)

- Required during the Corrective Action Investigation stage of the Federal Facility Agreement and Consent Order (FFACO)
- Held once internal review and State of Nevada Division of Environmental Protection (NDEP) acceptance of the Corrective Action Unit (CAU) flow and transport modeling work is completed and documented
- Specific CAU questions are developed for the EPR to answer after completing their evaluation *(these questions are drafted for NSSAB consideration later in the presentation)*

Background for EPR
(continued)

- Second CAU to undergo peer review
  – Frenchman Flat in 2010

Frenchman Flat Peer Review Pre-Visit

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 Process
(continued)

- Participate in additional discussions after review is completed, if necessary
- DOE receives report and close-out from the EPR
- Complete additional work if necessary, or request approval from NDEP for the Rainier Mesa model

NSSAB Work Plan Item 3

- *Review Questions for Rainier Mesa/Shoshone Mountain Peer Review Panel* – Review the draft questions developed for the Rainier Mesa/ Shoshone Mountain Peer Review panel and provide recommendations on how they could be enhanced

Questions for EPR

Questions are very technical, and I will provide discussion with each; so please feel free to ask questions as we go along.

1. Is DOE's understanding of the Rainier Mesa/Shoshone Mountain flow and transport system sufficient to support the FFACO strategy?
   - Transport of contaminants is limited entirely to unsaturated zone or to unsaturated zone and saturated zone flow paths that remain well within the Nevada National Security Site boundaries for 1,000 years
   - Public exposure to contaminated groundwater above maximum contaminant levels unlikely
   - Buffer zones will be adequate to accommodate residual uncertainty due to limited simulations

Questions for EPR
(continued)

2. Do the simulation results based on appropriate compounded conservative assumptions address uncertainty to maximize the potential for radionuclide transport?

Questions for EPR
(continued)

3. Do simulation results illustrate transport direction and groundwater-velocity that provide sufficient information to support identification of monitoring well locations, use restriction boundary(ies), and Closure Objectives?

Questions for EPR
(continued)

4. Does the flow and transport report and referenced material provide sufficient documentation?

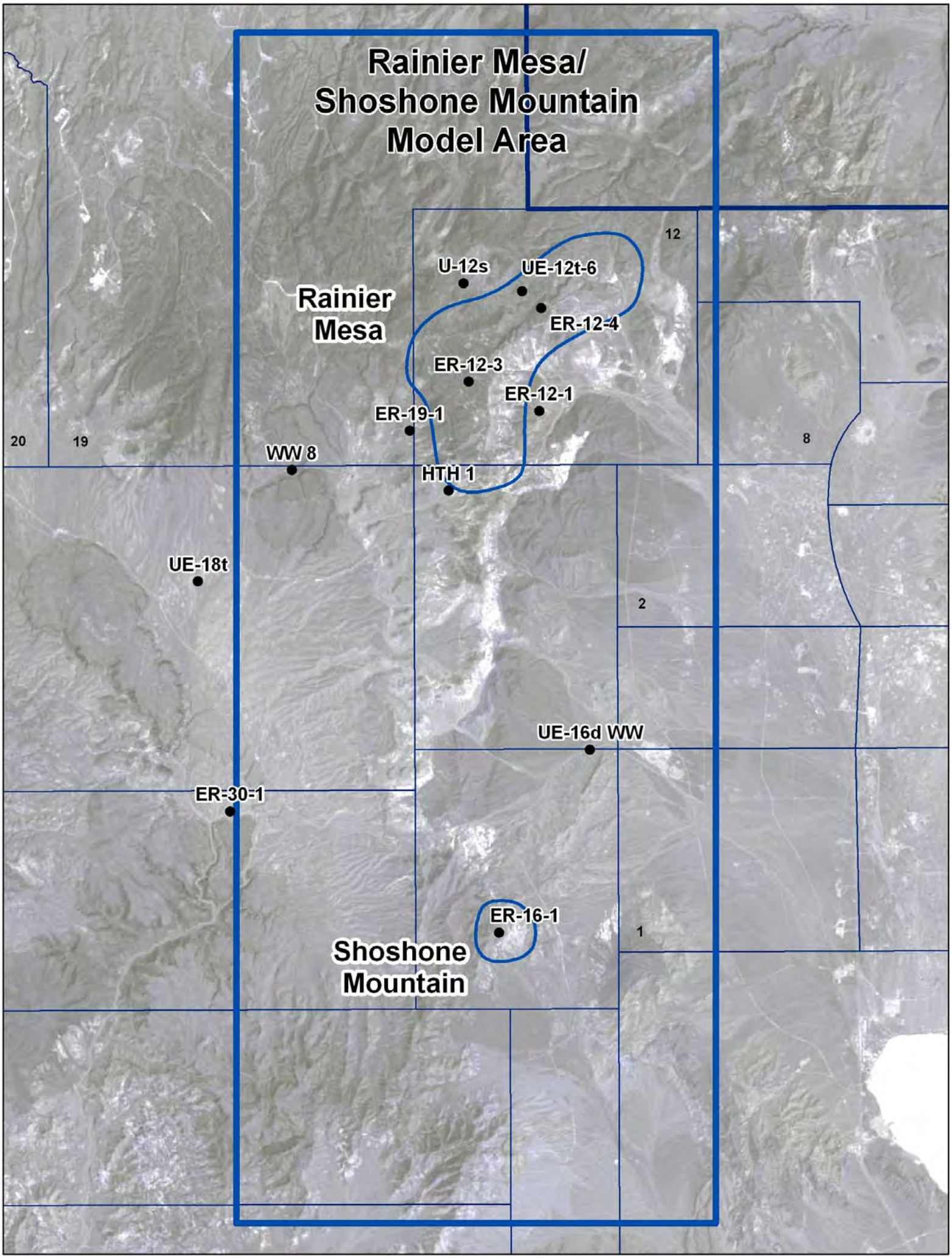
Questions for EPR
(continued)

5. Have all issues raised by past EPRs been properly addressed and documented in the report?

EPR members receive briefings during 2010 French Flat review

NSSAB Input

- Provide DOE a recommendation from a community perspective for ways the draft review questions for the Rainier Mesa/Shoshone Mountain Peer Review panel could be enhanced (are we missing any key elements or thought processes?)
- Recommendation originally requested by September 21, 2013
- Thanks for your input!


Rainier Mesa/
Shoshone Mountain
Model Area
Rainier
Mesa
U-12s
UE-12t-6
ER-12-4
ER-12-3
ER-12-1
ER-19-1
WW 8
HTH 1
UE-18t
UE-16d WW
ER-30-1
ER-16-1
Shoshone
Mountain
12
20
19
8
2
1

Department of Energy
National Nuclear Security Administration
Nevada Site Office
P.O. Box 98518
Las Vegas, NV 89193-8518

JUN 18 2013

Kathleen Bienenstein, Chair
Nevada Site Specific Advisory Board
232 Energy Way
North Las Vegas, NV 89030

RESPONSE TO NEVADA SITE SPECIFIC ADVISORY BOARD (NSSAB) RECOMMENDATION REGARDING CORRECTIVE ACTION UNIT (CAU) 105: AREA 2 YUCCA FLAT ATMOSPHERIC TEST SITES, EVALUATION OF CORRECTIVE ACTION ALTERNATIVES (WORK PLAN ITEM #1)

I would like to thank the NSSAB for taking the time to provide recommendations regarding the corrective action alternatives at CAU 105: Yucca Flat Atmospheric Test Sites. Three sites at CAU 105 exceeded the action level for lead, and the NSSAB evaluated each site for the corrective action alternatives of clean closure or closure in place with use restrictions.

For the Shasta site, the Board recommended closure in place to preserve the historic nature of the site. DOE concurs and will pursue closure in place. For the Buried Trenches, the Board recommended closure in place and the backfill of one open trench. DOE has since removed the debris from the trench, backfilled it, and will pursue closure in place for the trenches. For the T-2 site, where lead bricks were present, the Board recommended clean closure. DOE has removed the bricks and validation soil sampling shows that no lead remains at the site. This site has been clean closed.

The Nevada Field Office Environmental Management Operations Activity appreciates the support of the NSSAB in this endeavor and the efforts made by the Board to provide recommendations. As always, the NSSAB's input is valued and your efforts are greatly appreciated. Please direct comments and questions to Kelly Snyder at (702) 295-2836.

Robert F. Boehlecke, Manager
Environmental Management Operations

EMO:9702.TL

Department of Energy
National Nuclear Security Administration
Nevada Field Office
P.O. Box 98518
Las Vegas, NV 89193-8518

JUN 25 2013

Kathleen Bienenstein
Nevada Site Specific Advisory Board
232 Energy Way
North Las Vegas, NV 89030

RESPONSE TO THE NEVADA SITE SPECIFIC ADVISORY BOARD (NSSAB) RECOMMENDATION REGARDING THE NEVADA NATIONAL SECURITY SITE (NNSS) INTEGRATED GROUNDWATER SAMPLING PLAN (WORK PLAN ITEM #8)

I would like to thank the NSSAB for supporting the concept of integrating groundwater sampling data into one plan for the NNSS and providing specific recommendations on three key parameters of the NNSS Integrated Groundwater Sampling Plan.

Thanks to your recommendations, the NNSS Integrated Groundwater Sampling Plan is going forward for review with a slightly modified approach than what was presented at the meeting to address your concern about eliminating wells and reclassifying them as inactive. The Distal and Point of Use wells that the Department of Energy (DOE) proposed to discontinue sampling over time may be considered to be sampled under a community service-based plan independent of the NNSS Integrated Groundwater Sampling Plan. The content and details of this independent plan will be worked out as a part of the Community Environmental Monitoring Program workshop being held in July in which two of your members will be participating. As for the other parameters that DOE was seeking your assistance, with your support acknowledged in your recommendation letter dated May 15, 2013, DOE is going forward with the analysis of radionuclides, frequency of sampling, and levels of detection as proposed.

As always, the NSSAB's input is valued and your efforts are greatly appreciated. Please direct comments and questions to Kelly Snyder at (702) 295-2836.

Kathryn S. Knapp
Sampling and Analysis Task Manager
Environmental Management Operations Support

EMOS:9720.KK

Elections of the FY 2014 NSSAB Chair and Vice-Chair will take place at the September Full Board meeting. A response is needed from all. Please contact the NSSAB office by August 30 and advise if you would like to be considered for either position.

You may also nominate someone who you feel would be a valuable chair/vice-chair. Anyone nominated will be contacted to ensure they would accept the nomination. A list of interested members will be provided to the Full Board and the officers will be elected by ballot at the September Full Board meeting.

What are the Chair responsibilities?

- Serves at the Chair for 12 months (October 1 – September 30)
- Participates in bi-monthly EM SSAB Chairs conference calls
- Assists in the development of draft meeting agendas
- Leads full board meetings and ensures all members have the opportunity to participate
- Certifies to the accuracy of all minutes within 45 days
- Signs recommendations that the Board has passed by consensus/majority
  Serves as spokesperson for the NSSAB between regular meetings of the Board
- Attends national EM SSAB meetings and/or workshops semi-annually
- Adheres to all standard NSSAB member responsibilities (i.e. attendance requirements, etc)

What are the Vice-Chair responsibilities?

- Serves at the Vice-Chair for 12 months (October 1 – September 30)
- Participates in bi-monthly EM SSAB Chairs conference calls
- Assists in the development of draft meeting agendas
- Acts as the NSSAB chair in the absence of the elected chair
- Attends national EM SSAB meetings and/or workshops semi-annually
- Adheres to all standard NSSAB member responsibilities (i.e. attendance requirements, etc)

Please contact the NSSAB office by August 30 and advise if you are willing to be considered for the FY 2014 Chair and/or Vice Chair positions.

EM SSAB NATIONAL CHAIRS MEETING

Deer Creek State Park, Mt. Sterling, Ohio

October 15-17, 2013

DAY 1 – Tuesday, October 15, 2013	
8:00 a.m. - 12:00 p.m.	**Site Tour** • Security clearance • Travel to site • Site Tour 9:30-12:00 • Site History, D&D Project, Unique Site Challenges
12:00 p.m. - 2:00 p.m.	**Working Lunch –** • at Endeavour Center or Lake White Club • **Educational Session #1 Discussion of DOE's National Recycling Policy**
• Suggested Topics o DRAFT EA for Recycle of Scrap Metals Originating from Radiological Areas o IAEA standards vs. DOE standards o Potential changes to DOE policies	
2:00 p.m. - 2:15 p.m.	**Afternoon Break**
2:15 p.m. - 3:45 p.m.	**Educational Session #2 Community Involvement and DOE Decisions**
• Suggested Topics o Ohio University Community Study o How DOE uses community input (site rep and NEPA public involvement expert) o Around the Complex discussion on successes/ challenges	
3:45 p.m. - 5:15 p.m.	**Return to Lodge**
6:00 p.m. - 7:30 p.m.	**Welcome Reception and Networking Event**
DAY 2 – Wednesday, October 16, 2013	
8:00 a.m. - 8:20 a.m.	**Welcome and Opening Remarks** Cate Alexander, EM SSAB Designated Federal Officer Will Henderson, Chair, Portsmouth Site Specific Advisory Board Bill Murphie, DOE; Vince Adams, DOE Joel Bradburne, DDFO

EM SSAB NATIONAL CHAIRS MEETING

Deer Creek State Park, Mt. Sterling, Ohio

October 15-17, 2013

8:20 a.m. - 8:30 a.m.	**Overview of Meeting** Eric Roberts, Facilitator
8:30 a.m. - 9:30 a.m.	**EM Program Update** David Huizenga, Q&A (Each board can ask one question or make a comment – 5 minutes each board) Submit questions to Cate in advance for topics/issues you want Mr. Huizenga to cover in EM Update
9:30 a.m. - 10:30 a.m.	**Round Robin (Chairs' Site Reports)** Each Chair will get 5 minutes to cover Priority #1 issue, their 2013 Accomplishment or Activity Random draw for reporting order
10:20 a.m. - 10:30 a.m.	**Recognition of Departing Chairs** Cate to compile list of people
10:30 a.m. - 10:45 a.m.	**Break**
10:45 a.m. - 12:00 p.m.	**EM HQ Updates – Terry Tyborowski** Budget Update Achieving success in tough fiscal times
12:00 p.m. - 1:15 p.m.	**Lunch** (on your own)
1:15 p.m. - 3:00 p.m.	**EM HQ Updates – Frank Marcinowski** Cleanup options with smaller budgets (case studies)
3:00 p.m. - 3:15 p.m.	**Break**
3:15 p.m. - 3:30 p.m.	**Public Comment Period**
3:30 p.m. - 4:45 p.m.	**Product Development Session**

EM SSAB NATIONAL CHAIRS MEETING

Deer Creek State Park, Mt. Sterling, Ohio

October 15-17, 2013

4:45 p.m.	**Day 1 Wrap up** Eric Roberts, Facilitator
6:00 p.m.	**Networking Dinner**
DAY 3 - Thursday, October 17, 2013	
8:00 a.m. - 9:00 a.m.	**DOE-HQ News and Views** Cate Alexander, EM SSAB Designated Federal Officer, Office of Intergovernmental and Community Activities
9:00 a.m. - 10:15 a.m.	**Educational Session #3 Life after EM Mission is Complete**
• Suggested Topics o Property Transfer and asset reuse (ARI) o Transition to other DOE programs and/or LM o Potential speakers: Fernald - Jane Powell DOE, EM CBC - Bud Sokolovich, DOE	
10:15 a.m. - 10:45 a.m.	**Break**
10:45 a.m. - 11:00 a.m.	**Public Comment Period**
11:00 a.m. - 12:00 p.m.	**Day 2 Product Development and Summary** Eric Roberts, Facilitator
12:00 p.m. - 12:15 p.m.	**Closing Remarks and Adjournment**