



IDAHO CLEANUP PROJECT

C I T I Z E N S A D V I S O R Y B O A R D

Meeting Minutes

June 20, 2019

List of Acronyms

AMWTP	Advanced Mixed Waste Treatment Project	IWTU	Integrated Waste Treatment Unit
AoA	Analysis of Alternatives	MACT	Maximum Achievable Control Technology
ARP	Accelerated Retrieval Project	NE	Office of Nuclear Energy
ATR	Advanced Test Reactor	NEPA	National Environmental Policy Act
CAB	Citizens Advisory Board	NESHAP	National Emission Standards for Hazardous Air Pollutants
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	NRF	Naval Reactors Facility
CPP	Chemical Processing Plant	PGF	Process Gas Filter
CRR	Carbon Reduction Reformer	RCRA	Resource Conservation and Recovery Act
DDFO	Deputy Designated Federal Officer	R&D	Research and Development
DEQ	Department of Environmental Quality	RH	Remote-Handled
DMR	Denitration Mineralization Reformer	ROD	Record of Decision
DNFSB	Defense Nuclear Facilities Safety Board	RWMC	Radioactive Waste Management Complex
DOE	Department of Energy	SBW	Sodium-bearing waste
DWPF	Defense Waste Processing Facility	SDA	Subsurface Disposal Area
EM	Office of Environmental Management	SNF	Spent Nuclear Fuel
EPA	Environmental Protection Agency	SRS	Savannah River Site
GAO	U.S. Government Accountability Office	SSAB	Site-Specific Advisory Board
HEPA	high-efficiency particulate air	STEM	Science, Technology, Engineering, and Mathematics
HIP	Hot isostatic pressing	STP	Site Treatment Plan
ICP	Idaho Cleanup Project	TRU	Transuranic waste
INL	Idaho National Laboratory	WAC	Waste Acceptance Criteria
INTEC	Idaho Nuclear Technology & Engineering Center	WIPP	Waste Isolation Pilot Plant
ISA	Idaho Settlement Agreement	WTP	Waste Treatment and Immobilization Plant

The Idaho Cleanup Project (ICP) Citizens Advisory Board (CAB) held its quarterly meeting on Thursday, June 20, 2019 at the Shoshone-Bannock Hotel & Event Center in Fort Hall, Idaho. An audio recording of the meeting was created and may be reviewed by calling CAB Support Staff at 208-557-7886.

Members Present

Jackie Agenbroad
Brad Christensen
Teri Ehresman
Marvin Fielding
Brandon Leatham
Talia Martin
Trilby McAfee
Cathy Roemer
Larry Schoen
John Sigler

Members Not Present

Josh Bartlome
Keith Branter

Deputy Designated Federal Officer (DDFO), Federal Coordinator, and Liaisons Present

Connie Flohr, Deputy DDFO, U.S. Department of Energy Idaho Operations Office (DOE-ID)
Brad Bugger, Federal Coordinator, DOE-ID
Fred Hughes, Program Manager, Fluor Idaho
Mark Clough, State of Idaho
Pete Johansen, Idaho Department of Environmental Quality (DEQ)

Others Present

Mark Dehring	Doug Pruitt, DOE-ID
Nolan Jensen, DOE-ID	Jarrett Rice, Bechtel
Tami Thatcher	Chris Henvit, Naval Reactors Facility (NRF)
Susan Stiger, Bechtel	Joel Case, DOE-ID
Beatrice Brailsford, Snake River Alliance	Robbie Moss
Mark Hutchison, NRF	Brennan Summers
Kevin O'Neill, DOE-ID	Danielle Miller, DOE-ID
William Trahaut, Shoshone-Bannock (Sho-Ban) Tribes	Teresa Perkins, DOE-ID
Curtis Roth	Amy Taylor, U.S. Senator Risch
Erik Simpson, Fluor Idaho	Andrea Gumm, ICP CAB Facilitator
Jason Chapple, Fluor Idaho	Ace Whitehead, Fluor Idaho
Tiffany Atchison, Fluor Idaho	Howard Forsythe, Fluor Idaho
Jordan Davies, ICP CAB Support Staff	Kelly Green, ICP CAB Support Staff

Opening Remarks

Facilitator Andrea Gumm began the meeting at 8:00 a.m. She reviewed the agenda and noted that the public comment periods would be held at 10:45 a.m. and 3:00 p.m. She reminded attendees of the process for public comments during the meeting, time permitting, or via question cards.

Brad Bugger (CAB Federal Coordinator, DOE-ID) thanked the Shoshone-Bannock Tribes for hosting the meeting in Fort Hall and for participating in the site tour the day before. During the tour, members of the Tribes offered perspective on the history of their peoples' inhabitation of the area. Bugger also thanked Talia Martin (CAB member and Tribal liaison to the CAB) and the rest of the tribal members for their hospitality.

Martin thanked the CAB for having its meeting on the Shoshone-Bannock Tribes' homeland and told the board members she would try to answer any questions they might have. She added that the first ever lesbian, gay, bi-sexual or transgender event was happening in Fort Hall the same day and said it was a good time to be on the reservation.

Trilby McAfee (CAB Chair) expressed excitement for the upcoming year. She commented that Keith Branter (CAB member and former chair) was unable to make the meeting. While his guidance was always important and appreciated, the CAB would have the help of each other and some really insightful people to lean on throughout the day. She echoed Bugger's remarks that having tribal members along on the tour was valuable and added that the previous day's tour was the best she'd participated in during her five years on the board. She thanked everyone for attending the meeting and said she hoped they would have a good day.

Connie Flohr (Deputy DDFO) commented that Jack Zimmerman (DDFO, DOE-ID) was in Washington, D.C. testifying to the Defense Nuclear Facilities Safety Board (DNFSB) about the April Accelerated Retrieval Project (ARP) V event. Flohr added that while Jim Malmo (DOE-ID) typically attends the CAB meetings as well, he was home recuperating from surgery. She said she looked forward to the meeting.

Mark Clough (State of Idaho, Idaho Settlement Agreement [ISA] coordinator) introduced his colleague, Pete Johansen, as Daryl Koch's replacement and the new DEQ liaison to the board. He commented that Johansen is a long-time DEQ employee and professional engineer who is well-versed in the issues facing the Idaho National Laboratory (INL), particularly as they pertain to the Comprehensive Environmental Remediation Compensation Liability Act (CERCLA). Clough added that Johansen has past experience in the Resource Conservation and Recovery Act (RCRA) and had worked with Koch prior to his retirement. Before turning the time over to Johansen, he extended a heartfelt thank you to the Nation for an outstanding presence on the tour the day before and said the whole event was the most informative and well-scheduled he has ever participated in.

Johansen introduced himself to the CAB and reiterated that he would be taking over for Koch. He commented that he had been with DEQ for over 18 years. Johansen apologized for missing the site tour the previous day and said he always enjoys his visits to the site and seeing the great work being performed. He noted that he learns something new every time he goes to the site. He concluded by saying that he would be happy to any questions the CAB might have as they move through the day's presentations.

Fred Hughes (Fluor Idaho) commented that Fluor Idaho employees had made significant progress since the April CAB meeting, including a successful 50-day simulant run at the Integrated Waste Treatment Unit (IWTU). He shared that the plant worked almost flawlessly and said the board would hear more about it during the IWTU presentation later in the day.

Recent Public Outreach Activities

Brad Bugger (DOE-ID) reviewed recent public outreach activities. The document is available on the ICP CAB website: <https://energy.gov/em/icpcab>.

Idaho Cleanup Project Overview

Connie Flohr (DOE-ID) provided a presentation on the status of cleanup at the Idaho Site. The presentation is available on the ICP CAB website: <https://energy.gov/em/icpcab>.

Marvin Fielding (CAB member) asked how many shipments of remote-handled (RH) transuranic (TRU) waste there are. Doug Pruitt (DOE-ID) responded that there are approximately 300 shipments of RH-TRU that would be acceptable to go into the Waste Isolation Pilot Plant (WIPP) in the current configuration.

Martin referred to the points about spent nuclear fuel (SNF) on Slide 4 of Flohr's presentation and asked about the reference to water leaking into or near a first generation vault. Joel Case (DOE-ID) responded that first generation vaults are dry-storage, in-ground vaults for SNF that are concrete lined and have ingress from water and snowmelt. Second generation vaults are more robust and include venting.

Teri Ehresman (CAB member) asked when ARP VII is scheduled to be completed. Hughes responded that Fluor Idaho must first obtain a permit modification, which they are working with the state and DOE on, but that they plan to begin ARP VII operations in late summer or early fall 2019. Sludge processing in that facility should be finished in 2020, and work in ARP IX will conclude in August 2020. Clough added that ARPs V and VII are RCRA in nature, while ARP IX is the final CERCLA ARP.

Larry Schoen (CAB member) noted that the board toured a number of the facilities and activities Flohr covered in her presentation. He commented that he was extremely impressed by what he observed. In particular, the attention to detail at the mockup of the calcine retrieval project and the underlying concept of getting a fully functional mockup with similar material was fascinating. He asked if that has always been the methodology. Hughes responded that the calcine mockup approach is based on years of experience. There have been mockups for IWTU and the Advanced Mixed Waste Treatment Project (AMWTP) employs mockups to prepare for critical radiological work.

Flohr added that mockup requirements are mandated by some DOE organizations. She said that DOE-ID has seen the benefit of mockups with Fluor Idaho. Schoen reiterated that the process seems very thorough.

Integrated Waste Treatment Unit (IWTU) Update

Kevin O'Neill (DOE-ID) provided an update on IWTU. The presentation is available on the ICP CAB website: <https://energy.gov/em/icpcab>.

Schoen asked O'Neill to explain the function of the Process Gas Filters (PGF) within IWTU. O'Neill responded that the material produced in the Denitration Mineralization Reformer (DMR) moves out the bottom through the auger grinder. While the product is fluidized, coal is combusting. Some of the resulting fines are captured in the product, while others escape with the gas out the top of the vessel. The gas stream, containing both those fines and small particles, goes through the PGF which captures the particles on the outside of the filter. The particles are then knocked off the filter elements and fall to the bottom of the vessel before being transferred to where the material goes.

Schoen asked if there are multiple stages of the filters. O'Neill referred to Slide 5 of his presentation and said the filters pictured are typical of a filter bundle. There are 19 elements in each of the 18 bundles in the PGF, all of which are functioning during plant operations. They are all of equal position and value and not found in stages throughout the facility. As the product builds, it is periodically knocked off three bundles at a time during incredibly brief kick-backs. The solids go out and the gas, after making its way through the filter, goes to the Carbon Reduction Reformer (CRR) for further treatment. Little to no particulate leaves the PGF.

Cathy Roemer (CAB member) noted that construction was completed in 2011 and asked if the filters need to be replaced due to use since that time. She expressed concern that the filters are not functioning properly as they are a crucial part of the system. Hughes responded that they had never run the plant long enough to learn that the filters were an issue. All the issues they have addressed to date have been fundamental process and/or chemistry issues. Fortunately, the issue with the filters will be addressed with engineering and will not require a deep-dive back into the basics of chemistry and science. It is simply about choosing the right filters, making any necessary modifications to the housing forum, and installing them.

O'Neill added that DOE and Fluor Idaho realized the filters may be a problem toward the end of Simulant Run 2. They installed a similar filter with additional coating for Simulant Run 3 so they could further study some of the other things they were interested in. In the meantime, however, they had already set a course to select a new filter. O'Neill commented that there is a similar facility in Erwin, Tennessee. Although that facility is processing a slightly different waste, it has run into some of the same problems, filtration issues being one of them. DOE and Fluor Idaho received some feedback from that facility, and are using some of their results, but being that IWTU's flow sheet is different, they must find a filter that works well in the facility and will resist the types of corrosion they are seeing. Ideally, they also hope to find a filter set that can endure treatment of all 900,000 gallons of liquid sodium-bearing waste (SBW). O'Neill commented that he believes finding such a filter set is feasible and will present the least amount of risk to the operators who would be responsible for changing the filters, if needed.

Roemer asked how confident DOE is that the testing environment at Hazen exactly mirrors the environment at IWTU. O'Neill responded that Hazen's environment is very similar, but not exactly the same. The chemistry, temperature, and flow rate is essentially one for one.

Clough asked if, following shut-down of the plant in relation to electrical grid maintenance during the last simulant run attempt, the operating procedures had been revised to minimize the opportunity for an upset of the facility. O'Neill responded that there is certainly an understanding with respect to power, but it would not be put into IWTU's procedure as the grid maintenance was occurring outside the plant. That said, the same people who authorized the maintenance would not authorize it today. He added that they are working on other potentially problematic systems, such as the air and steam coming from the Idaho Nuclear Technology and Engineering Center (INTEC).

Hughes commented that Fluor Idaho went through a very detailed review of all utilities INTEC supplies to IWTU and identified potential single point failures or equipment that needs to be refurbished or replaced. He said they have been working with DOE and have a list of items they would like to address prior to taking the plant into hot operations.

Brad Christensen (CAB Vice-Chair) observed that if IWTU is run at 1.6 gallons per minute, it would take three years to process all 900,000 gallons of SBW. O'Neill responded that if IWTU could run continuously, it would finish its mission in just 14 months. The three to five year estimates are based on an operational study that considers the pieces of equipment that could potentially cause the plant to shut down. Some of the work being performed now attempts to fortify the system and improve operability and maintainability.

Christensen asked at what point, such as one gallon per minute, DOE will say that the process is not really working. O'Neill responded that it would be a value judgement the Department would have to make when looking at the total impact. For example, a slower processing rate will increase the volume of the waste as coal is being fed into the plant even if SBW is not. That would not be efficient, but if it allows for removing the waste from the tanks, it would be subject to substantial discussion. O'Neill added that DOE does not have a specific number in mind to gauge efficiency, but believes the plant runs great at 1.5 gallons per minute. He said he believes they can find filters capable of handling that flow rate.

Schoen asked what the Governor's and Attorney General's staff will see on their tour in a few weeks. O'Neill responded that they will see what the CAB saw on their tour the day before. While they will likely ask different questions, there is nothing special planned for their visit aside from bringing them up-to-date. They want to come, see, and touch to assure themselves that what DOE is telling them is viable.

McAfee commented that she believes every CAB member who participated in the tour was proud of the progress made at IWTU. She said she could tell that the workers are proud, too. To have an opportunity to see the plant and talk to the people actually performing the work was fantastic.

McAfee asked O'Neill if he would be retiring soon. He said that he would be. She thanked him for the hundreds of questions he had answered for the CAB, oftentimes more than once.

Tami Thatcher, Idaho Falls, commented that O'Neill's slides state that DEQ oversight will establish final permit conditions using the tank waste. She asked for confirmation that this would occur after they had begun running radioactive waste. O'Neill confirmed and said that they will start the plant on simulant and then slowly add tank waste, increasing the ratio of actual waste to simulant. Once they have introduced radioactive material into the facility, they will have 720 hours to get the plant settled down and operating in a way they feel is both satisfactory and typical. At that time, they will conduct a systems performance test, which will take several days. The results from that test will be analyzed and a report written which the state will review. The state will then issue judgements on adjustments that need to be made. An example of an adjustment would be a change to the waste feed rate in order to control emissions.

Thatcher asked if special testing equipment will be used during the systems performance test. O'Neill responded yes. When they conducted the dry-run for Simulant Run 3, they brought in the professional environmental sampling firm they will be using. They made sure their equipment was fitting IWTU's system and that the plant's system was set up right to obtain those samples in the correct manner. He added that it is important that the sample be taken at the right location in the process off-gas line and across that line. Knowing that the environmental sampling firm and their equipment is ready was one of the purposes of the simulant run.

Thatcher asked if the environmental sampling would include radioactive sampling. O'Neill responded that he does not believe so. Thatcher asked if IWTU can meet Environmental Protection Agency (EPA) Maximum Achievable Control Technology (MACT) requirements. O'Neill responded that he is not qualified to answer that.

Case added that they will perform radioactive mission sampling. IWTU is a RCRA Part B Permit Facility, so the state has no authority over radiological emissions. DOE must, however, monitor for EPA National Emission Standards for Hazardous Air Pollutants (NESHAP), and will monitor off-gas radiological contaminants per internal DOE requirements. DOE will report those results to EPA Region 10 under NESHAP. IWTU does not need to meet MACT standards because it is a thermal treatment unit, not an incinerator. NESHAP, the standard used to monitor nitrogen oxide emissions for thermal treatment units under RCRA requirements, is an equivalent to MACT.

Fielding asked if the 900,000 gallons of liquid SBW has stratified in the three holding tanks, and if DOE will pre-mix the waste prior to feeding it into IWTU. O'Neill responded that each tank is primarily homogenous, but that it is possible some solids could drop out. Testing to-date indicates that it is of little to no consequence, but further pilot testing at Hazen is planned to better understand how the facility will react to the slight variability between the three tanks.

Hughes commented that Fluor Idaho was concerned about the impact of solids and the possibility of entrainment with the liquids, so they performed a test wherein they ran up to 70 percent solids through the nozzles. The nozzles ran fine.

Clough noted that Fielding's question goes to the variability of the feed process and how that might change the material itself. He asked O'Neill to confirm that the material is mixed thoroughly as part of the process prior to introduction into the DMR. O'Neill responded yes, there is continuous circulation and mixing of the waste in the waste feed tank.

Bugger thanked O'Neill for his support to the CAB over the years and said he would be missed when he retired.

Calcine Analysis of Alternatives (AoA)

Joel Case (DOE-ID) provided a presentation on the AoA. The presentation is available on the ICP CAB website: <https://energy.gov/em/icpcab>.

Schoen asked if it was an ISA requirement that DOE select a treatment method by way of the National Environmental Policy Act (NEPA) process by 2008. Case responded yes, the ISA required DOE to issue a Record of Decision (ROD) after following through with the NEPA process by December 31, 2008. He clarified that the ISA did not specify that the treatment had to be hot isostatic pressing (HIP).

Schoen thanked Case for the time he has spent with the calcine and HLW subcommittees. He commented that vitrification of HLW seems to perhaps be a better treatment option than HIP. On the pre-screening results chart in Case's presentation, however, vitrification and HIP share a red negative in implementability. Schoen asked Case to speak to that.

Case responded that vitrification is a very mature treatment technology, however there are some issues related to the glass chemistry for calcine, which is why it scores negative in the implementability category of evaluation. Another reason vitrification scored in the negative on implementability is because retrofitting IWTU could present some challenges. Case said he believes these issues are workable.

Fielding asked if DOE can take steps now which would mitigate risks and allow for progress toward the 2035 ISA milestone mandating that calcine be road-ready. Case responded that the other DOE Office of Environmental Management (EM) sites with HLW are using vitrification for treatment. The Savannah River Site (SRS) is vitrifying their HLW in the Defense Waste Processing Facility (DWPF) and Hanford is moving forward with the Waste Treatment and Immobilization Plant (WTP), to vitrify their HLW. West Valley has already finished vitrifying its HLW.

As for next steps, Case said that in parallel to demonstrating they can retrieve the waste, DOE-ID should connect with its regulator and see if they need to revisit the Site Treatment Plan (STP). He acknowledged that these decisions are so often about funding, but noted that funding for calcine should start to rise as the TRU waste mission is completed.

Flohr agreed with Case and said West Valley is the best example for vitrification of HLW as they have already completed their mission. SRS's DWPF is not as productive as it should be, though, and DOE pays a lot of money to run an inefficient process. It functions, and it works, but it is not efficient. Flohr added that WTP at Hanford is wrought with complications, in excess of \$15 billion, and still not running. When it comes to implementability, there is certainly concern about starting a new facility that might never run.

Fielding asked what steps would be involved in a direct disposal decision. Case responded that WIPP is a good model for direct disposal. However WIPP has a no-migration petition, which basically states that waste does not need to be treated to the treatment standard and can be disposed directly because there is no groundwater pathway near the facility. Case said that DOE had talked a lot with Yucca Mountain about doing something similar, but the State of Nevada was not receptive. He commented that the lowest risk, lowest cost option and the most logical path forward from a technical and implementability perspective is disposition of calcine in a robust package. He added that calcine is HLW and therefore subject to the treatment requirements laid out in the STP.

Case commented that he is working toward current deadlines for regulatory compliance despite there being policy issues that need to be addressed long-term. The 2035 deadline for making calcine “road-ready” is getting closer, but the state’s primary focus has been treatment of SBW at IWTU and exhumation of buried waste.

Brandon Leatham (CAB member) said he believed the mockup for calcine retrieval was a crucial step and that he was impressed with the time and effort DOE and Fluor Idaho had put into it. He asked if IWTU would be able to be transformed into a vitrification facility. Case responded yes, the IWTU facility could be retrofitted for vitrification but that the specifics are complicated.

Public Comment Session #1

No one from the public signed up to provide public comment during this session.

Tour Reflections

McAffee directed a round robin discussion of the CAB’s site tour the previous day. She started the conversation by saying that it was the best tour she’d participated in during her five years on the CAB. She commented that the presence of Shoshone-Bannock Tribal members was an excellent addition and that she enjoyed speaking with site workers, who she said were obviously proud of the work they do and enthusiastic about the progress being made at the Site. Each worker knows his or her job backwards and forwards.

Christensen said IWTU has been a primary focus of the CAB’s since he joined the board five years ago and that it was great to tour the facility and actually see what they had been talking about. He commented that the highlight of the tour was the mockup of the calcine retrieval project. In terms critique, Christensen said the wind was a detriment and that the CAB was sometimes given the same information twice, once in the briefing room and again as they were touring each facility. Being given the information as they are actually touring the facilities might prove more effective, and would help shorten the long day. He agreed with McAfee that it was nice talking to the workers.

John Sigler (CAB member) suggested that they reverse the process next year and have the public meeting the day before the site tour. There was a lot of information to digest on the tour and it may have helped to go through the technical discussions first. Sigler commented that the tour was certainly very interesting and agreed with McAfee and Christensen that the workers knew their roles well and were engaged and proud.

Fielding said the tour was really good and noted that it was helpful splitting into smaller groups so the CAB members could hear the tour guide and have more opportunities to ask questions. Both John Law and Ron Ramsey participated in the tour and Fielding said they seemed closer to site activities and were able to provide good information. He added that he would like to visit the Advanced Test Reactor (ATR) on a future tour, as it is relevant to the fuel transfer the CAB had discussed. Fielding also said it would be interesting to see where they did ammunitions testing and understand how that testing affected the cultural resources areas.

Clough echoed Sigler’s and Fielding’s comments. He agreed that breaking into smaller groups facilitated better discussion but recommended that the tour participants be together on the drive out to the site to ensure everyone was receiving the same information. He added that more guidance on attire might have sped up logistics.

Gumm noted that giving every participant safety glasses and vests at the onset of the tour may have increased efficiency.

Leatham agreed with Christensen that the calcine mockup was impressive and said he also enjoyed the archaeological portions of the tour. He commented that he was fortunate to have worked at IWTU during the construction phase. Like others, he said he was impressed with the knowledge of the workers and

commended Fluor Idaho for spending a significant amount of time and money on training. He concluded by saying he thought splitting into two smaller groups worked really well.

Teri agreed that splitting into two groups was beneficial and suggested that swapping technical experts and tribal members in the vans might be an option as opposed to one bus. She agreed with McAfee and others that the employees they spoke with were proud of their work, knew what they were doing, and were able to answer the CAB's questions.

Jackie said she appreciated that archaeologists and Shoshone-Bannock Tribe members were included in the tour to help protect the historical aspects of the site that are so important to the Tribes. She commented that she learned something new about the Site every time she turned around and that the tour guides and technical experts did well to explain what was going on. She noted that interaction with the other CAB members was great and said there is an incredible amount of experience between the 12 of them.

Bugger thanked the tour participants for their feedback and said their comments will help with implementation of next year's tour. He acknowledged that the wind was a detriment and said he was grateful everyone in the group made it back from the Site safely. He thanked Fluor Idaho for their support and commented that their employees made the difference. They were engaged, knowledgeable, and went out of their way to accommodate the board. It was a great day, a few minor logistical snafus aside. Bugger said DOE also appreciated the Tribes' support and that he was looking forward to working with them again when the EM Site-Specific Advisory Board (SSAB) chairs came to Idaho in October.

Martin said she would relay to the Tribes' cultural resources staff how much the tour participants appreciated their support. DOE and BEA have worked closely with the Tribes to ensure a tribal member is always available on these tours so that participants get both a technical and a more traditional look at what's at the site. In response to Fielding's interest in seeing the ammunitions testing areas, Martin added that the tribes are still impacted because there are unexploded ordnance in areas where they would like to have ceremonial access.

Clough added that the badging and TLD process went smoothly and that DOE and Fluor Idaho did well keeping everyone hydrated at the difference facilities. The safety component was strong.

EM SSAB meeting report

McAfee commented that she attended a bi-annual EM SSAB meeting hosted by the SRS CAB in Augusta, Georgia in May. The meeting included a site tour, which she said was interesting and enlightening, as well as opportunities to discuss shared concerns with the chairs from other CABs in the complex. McAfee reported that the SSAB chairs discussed two recommendations during the meeting which they all agreed to take back to their respective boards for consideration. She said she would walk the ICP CAB members through the recommendations and ask whether they should be sent to DOE Headquarters with the Idaho CAB's support.

The first recommendation pertained to EM's review of cleanup milestones. McAfee commented that several of the SSAB chairs noted that their boards do not receive regular updates on their sites' milestones and that their CABs are often unaware of missed or upcoming milestones. She acknowledged that this lack of information is quite foreign to the ICP CAB because DOE-IDs primary focus at every meeting is the ISA and any approaching or missed milestones. However, McAfee said several CABs would like this recommendation to go to DOE from the collective SSAB and asked if the Idaho CAB would support it.

Flohr commented that a group had been established at DOE Headquarters to address issues related to milestone communication. That group is already working to execute many of the suggestions contained the in the SSAB recommendation. By way of standing meetings with the sites, they found that because each of the sites is governed by various agreements, there are terminology differences across the complex. There are sometimes a whole litany of terms referring to the same thing.

Flohr continued on to say that the U.S. Government Accountability Office (GAO) report showed that some sites have milestones related to very small accomplishments, such as drafting a report, and that those milestones are being reported in the DOE system. At the same time, other sites, like Idaho, only have milestones related to very large, decades-in-the-making accomplishments, such as the 2035 milestone to make calcine road-ready. The DOE Headquarters' goal is to reach some consistency in the terminology and definition of these various types of milestones. Each site will keep every milestone they already have, but when it comes to reporting to GAO, things will be more consistent across the sites moving forward. Flohr added that this is obviously a heavy effort, but said she wanted to share that some of the things in the recommendation are already in the works.

Leatham asked Trilby if she thought the SSAB should hold off on submitting the recommendation until the DOE Headquarters team had made further progress. McAfee responded that other CABs are not receiving this important information, and that this recommendation may help encourage the other DOE operations offices to begin sharing these milestones with their CABs, which all deserve to know whether DOE is meeting its milestones or not.

Sigler asked Flohr for the timeline associated with the DOE Headquarters effort. Flohr said they are making substantial progress on the milestones and definitions. DOE-ID has assigned two people, an environmental regulatory person who tracks milestones and the reporter on the milestones, to the team. They were recently required to provide DOE-ID's definitions. Flohr added that this recommendation would be a way to codify their efforts.

Following some additional discussion, the ICP CAB reached consensus to support this SSAB recommendation.

McAfee turned to the second SSAB recommendation, which encourages DOE-EM to better promote and support Science, Technology, Engineering, and Mathematics (STEM) programs.

Martin said she believes INL does a lot to support STEM initiatives. However, she reminded the CAB that the laboratory side of the Idaho Site falls under DOE's Office of Nuclear Energy (NE) and that not all DOE sites have a research facility. Idaho has the benefits of being an NE/EM site. She added that this recommendation is very specific to DOE-EM and to some of its deficiencies in supporting STEM and said it would be a good driver. While she would like to see something focusing more on youth, she said she understands there are economic and cleanup components are at work.

Flohr remarked that this recommendation may be less about STEM and workforce development than it is about the Technology Development and Deployment program. As DOE-EM has already solved many of its most complicated problems, investment in technology developments has been lacking. Some sites, such as Hanford, need that investment to address the problems that are still unsolved. Unfortunately, Flohr added, the entities that approve DOE-EM's funding levels mistakenly believe that technology development only makes things faster, better, and cheaper. In reality, though, there are still issues that need to be solved. While the majority of Idaho's challenges have been addressed, DOE will be unable to achieve its mission at some of the sites across the complex without this type of investment.

Schoen commented that he supports funding the effort to apply the best, most up-to-date techniques of chemistry, metallurgy, and engineering to solve problems at each of the sites, and the recommendation being considered says that, albeit in an obscure way.

Sigler commented that at some point, all across the DOE complex, designs will need to be modified to address any given site's specific problems.

Bugger commented that in 1994, the Idaho National Engineering Laboratory (INEL) was desperately in search of a mission because the Cold War had wiped out the Idaho Chemical Processing Plant (CPP), the

Clinton Administration had killed Experimental Breeder Reactor (EBR) II, and the Navy was retrenching. So DOE-ID issued a Request for Proposal essentially asking the private sector to tell them what the Idaho Site should be. Lockheed proposed that they “make Idaho the Nation’s environmental laboratory.” By coming up with technological solutions for all of the complex’s environmental issues, Lockheed suggested the world would come to Idaho to solve its problems. Then Senator Kempthorne liked the idea so much he inserted the extra E in the site’s name, making it Idaho National Environmental and Engineering Laboratory (INEEL). However, some lawmakers would later on say that a laboratory was unnecessary, and technologies could be bought off the shelf. Bugger said he brought this up not because these individuals were right or wrong, but because there is a philosophical argument to be made: The pendulum swings back and forth over time.

After continued discussion the ICP CAB reached consensus to submit this recommendation to DOE with Idaho’s signature on the condition that they draft their own recommendation to be considered at the October meeting in Teton Village.

Solid waste treatment successes

Jason Chapple, Ace Whitehead, and Tiffany Atchison (Fluor Idaho) provided an overview of solid waste treatment successes. Their presentation is available on the ICP CAB website: <https://energy.gov/em/icpcab>.

Flohr asked about the size of the waste encased in the large mound boxes. Atchison responded that most of the mound boxes contained gloveboxes that were used to process plutonium-238. Each glovebox was encased in layers of foam within the mound box. She added that the gloveboxes themselves are large, and highly contaminated. Due to their size, some had to be cut into smaller pieces to fit into containers for repackaging.

McAffee asked if every box was consistent. Atchison responded that every box was actually different. Chapple added that the boxes were too large to fit in AMWTP’s real-time radiography machines, so they used generator-supplied information to identify what was in each box and then looked inside using borescopes to formulate a plan of approach.

Schoen asked about the use of a reciprocating saw. Whitehead responded that they used reciprocating saws to cut into each box and the foam surrounding the contaminated objects. He added, however, that they used everything from prybars to saws. It wasn’t very high-tech, but they were the best tools for the job.

Schoen asked how the gloveboxes were broken into smaller pieces. Whitehead explained that the workers ensured they had a negative on the glove box before popping out the glove port, holding up negative air on both sides of the cut, taking out the bolts on the windows, and putting them into a bag. They made cut lines with drill holes first and then cut dot to dot. He added that some of the gloveboxes had shelves, and workers had to reach in and physically cut the shelves out.

Schoen asked about containment of radioactivity during this process. Whitehead responded that the objects had been wrapped very well and that there was hardly any contamination outside the plastic or the foam. The outside of each box was thoroughly surveyed.

Schoen asked for confirmation that this particular type of radiation is contained in that type of wrapping. Atchison responded that alpha contamination, the largest culprit, is contained within plastic wrapping and said the outside of the packages were completely clean. As workers surveyed, they would have a point of source ventilation directly next to the saw. As things came loose, they were pulled into the ventilation system and prevented from going airborne. She added that the ventilation of the tent itself also helped. Workers kept distance between themselves and the object, and airflow between the two kept contamination away from the workers. Atchison commented that they often painted the gloveboxes with a fixative paint several times before cutting into them.

Schoen asked how these boxes, shipped during the Cold War, were transported from Ohio. Chapple responded that much like the waste now at the Subsurface Disposal Area (SDA), these boxes were transported by truck, likely a soft-sided trailer. The waste may have come to Idaho that way, but it certainly won't leave that way.

Clough asked if there were any objects that were an elevated source term. Atchison responded that a few boxes had elevated dose rates, but only a couple actually presented dose issues.

Fielding asked how long it took to get through all 74 boxes. Chapple responded that it took one year. The first box took weeks, but workers became more efficient and were eventually able to do some boxes within three to five days.

Gumm asked if they were able to keep the same workforce throughout that year. Chapple responded yes, for the most part.

Sigler asked what the facility's filters caught. Chapple responded that there are three different stages of filtration on the building itself: A bank of high-efficiency particulate air (HEPA) filters right ahead of the fan, a bank of pre-filters ahead of the HEPAs, and inside the facility a bank of what is called pre-pre filters, which is meant to capture dust and any of the larger particulate. The facility has its own filter crew, whose responsibility it is to rotate around the facility and ensure the filters are in top condition.

Sigler asked for confirmation then, that under normal operating conditions there is nothing in the air that is a radioactive source. Chapple replied that there is indeed radioactive contamination in the air, such as dust or other particles stirred up by equipment, but that it is captured in the three filter phases. Every ventilation unit has a stack cam monitor to ensure nothing is getting through those filters. Sigler asked where the filters will go. Chapple responded that they will go out as waste.

The CAB applauded Chapple and his team on a job well done.

Subcommittee reports

Christensen reported on the work of the Public Outreach Subcommittee since the April meeting. He noted that a newsletter went out to the CAB's mailing list and thanked everyone for stepping forward to produce that edition. Newsletter articles can be found on the CAB website. Christensen added that the subcommittee is planning to produce another newsletter just ahead of the October meeting in Teton Village, Wyoming and summarized the potential topics for that edition.

Christensen also discussed the possibility of establishing a social media presence for the CAB. Some conversation about quality control and posts and responses as well as administration of the site and content development occurred before Jordan Davies (CAB Support Staff) committed to checking in with other CABs prior to the October meeting. Sigler commented that there would need to be a firm protocol describing who is in charge of the site and when. He suggested trying it for six months to see if it would be successful.

Fielding briefed the CAB on the Calcine Subcommittee's actions since the April meeting. He commented that a potential recommendation might ask the question, "If not Yucca Mountain, then what?" and raise awareness of the 2035 ISA deadline for making calcine road-ready as it appears there is no feasible way of meeting that milestone.

Fielding commented that writing recommendations to Zimmerman telling him to do something he has no control over is not particularly helpful. As previously discussed, other sites are vitrifying their HLW. He noted that while they are proceeding at risk, without a repository or waste acceptance criteria (WAC), it has been suggested that Idaho could also vitrify its HLW and maybe even meet the 2035 ISA milestone for making the waste "road ready."

Case clarified that there is WAC, but that it is not site-specific. Glass is the standard for HLW and it must pass EPA requirements for leachability. He added that DOE is not investing in research and development (R&D) for options other than HIP. Billions of dollars are being spent at Hanford and SRS to convert HLW to glass, so glass will be accepted in whatever disposal facility is ultimately chosen.

After additional CAB discussion, Gumm summarized that there were two schools of thought at play regarding next steps for the subcommittee: Frustration that a path forward was not clear and that there was no repository, and a preference for vitrification as the treatment method. She asked how the Calcine Subcommittee could spin these sentiments into a recommendation.

Christensen suggested putting forth a recommendation to the EM SSAB urging establishment of a final repository.

Schoen commented that he would support a recommendation encouraging R&D for other treatment processes. Fielding agreed.

Schoen added that any recommendation put forth to the EM SSAB should focus not on Yucca Mountain specifically, but on a HLW repository for the nation, no matter where it ends up being located.

The Calcine Subcommittee committed to continuing its work and drafting a recommendation for consideration at the October meeting.

Public Comment Session #2

Thatcher thanked the CAB for the difficult discussion they had regarding calcine. She noted that it is interesting that Yucca Mountain is treated as though it is dead at DOE-EM meetings, but that it is framed as being only inches away at the Idaho Leaders in Nuclear Energy (LINE) Commission meetings. She commented that an awful lot is being left out in discussing what is acceptable at Yucca Mountain versus what would be acceptable at WIPP, if allowed. Thatcher stated that DOE has not formally reclassified the calcine from HLW to low-level waste. She expressed concern that DOE intends to reclassify the waste and leave it in place.

Thatcher continued on to say that one of the things that has not been discussed adequately at any CAB meeting is the safety of calcine. It resides in a flood plain and is vulnerable both to flooding and seismic activity. She commented that Idaho can insist that it be moved into a safer configuration that does not close the door to a future repository.

Thatcher said that she recently became aware of a report by the Defense Nuclear Facilities Safety Board (DNFSB) including a letter of recommendations and concerns about gas buildup in transuranic waste drums. She noted that Zimmerman was at a DNFSB meeting in Washington, D.C. to discuss the problem of gas buildup in waste drums and how that issue can be mitigated. In 2018, at ARP V, four drums ejected their lids one-by-one expelling their contents all over the facility. Thatcher said she submitted a question about these explosions and was told there were no explosions.

Thatcher concluded by asking if the state had looked into an April 2018 report noting unusual radioactive particulate (americium and plutonium) close to the Radioactive Waste Management Complex (RWMC).

Conclusion

Flohr concluded the meeting.

Trilby McAfee, Chair
Idaho Cleanup Project Citizens Advisory Board