



INL Site Environmental Management

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

Meeting Minutes

February 23, 2017

List of Acronyms

AMWTP	Advanced Mixed Waste Treatment Project	NE	Office of Nuclear Energy
ARP	Accelerated Retrieval Project	NRC	Nuclear Regulatory Commission
ATR	Advanced Test Reactor Complex	NRF	Naval Reactors Facility
CAB	Citizens Advisory Board	PCE	Tetrachloroethylene
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act, also referred to as superfund	PPE	Personal Protective Equipment
CH-TRU	Contact-Handled Transuranic Waste	RCRA	Resource Conservation and Recovery Act
CPP	Idaho Chemical Processing Plant	RFP	Request for Proposal
CWI	CH2M-WG, Idaho	RH-TRU	Remote-handled transuranic waste
D&D	Deactivation and Decommissioning	RI	Remedial Investigation
DDFO	Deputy Designated Federal Officer	ROD	Record of Decision
DEQ	Department of Environmental Quality	RWMC	Radioactive Waste Management Complex
DOE	Department of Energy	SDA	Subsurface Disposal Area
EM	Office of Environmental Management	SEPs	Supplemental Environmental Projects
EM-1	Assistant Secretary for Environmental Management	TAN	Test Area North
EPA	Environmental Protection Agency	TRU	Transuranic waste
INL	Idaho National Laboratory	WAC	Waste Acceptance Criteria
IWTU	Integrated Waste Treatment Unit	WIPP	Waste Isolation Pilot Plant

The Idaho National Laboratory (INL) Site Environmental Management (EM) Citizens Advisory Board (CAB) held its quarterly meeting on Thursday, February 23, 2017 at the Hilton Garden Inn in Idaho Falls, Idaho. An audio recording of the meeting was created and may be reviewed by calling CAB Support Staff at 208-557-7886.

Members Present

Bob Bodell
Herb Bohrer
Keith Branter
Brad Christiansen
Marvin Fielding
Jim Huston
Talia Martin
Trilby McAfee
Betsy McBride
Cathy Roemer

Members Not Present

Kristen Jensen
Bill Roberts

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

Jack Zimmerman, DDFO, U.S. Department of Energy Idaho Operations Office (DOE-ID)
Brad Bugger, Acting Federal Coordinator, DOE-ID
Fred Hughes, Program Manager, Fluor Idaho
Kerry Martin, State of Idaho
Pete Johansen, Idaho Department of Environmental Quality (DEQ)
Dennis Faulk, U.S. Environmental Protection Agency

Others Present

Howard Forsythe, Fluor Idaho
Troy Burnett, Fluor Idaho
Erik Simpson, Fluor Idaho
Clark Jones
Tami Thatcher
Luke Ramseth, *Post Register*
Teresa Perkins, DOE-ID
Kathleen Hain
Kevin Trevellyan, *Post Register*
Brandt Meagher, Fluor Idaho
Rich Abitz, Fluor Idaho
Danielle Miller, DOE-ID
Amy Taylor, U.S. Senator Risch
Bryant Kuechle, Facilitator

Kurt Hibbert
Emerald Laijn, EPA
Marc Jewett, Fluor Idaho
Ann Riedesel, Fluor Idaho
Chris Henvit, Navy
Mark Hutchison, NRF
Beatrice Brailsford, Snake River Alliance
Susie Barna
Jim Malmo, DOE-ID
Nolan Jensen, DOE-ID
Ethan Huffman
Mark Shaw, DOE-ID
Jordan Davies, Staff
Travis Moedl, Staff

Opening Remarks

Facilitator Bryant Kuechle started the meeting at 8 a.m. He reviewed the agenda and noted that the public comment period would be held at 10:30 a.m. He reminded attendees of the process for public comments during the meeting, time permitting and at the CAB Chair's discretion, or via question cards. Kuechle asked CAB members to complete their ballots for the election of a new Chair and Vice Chair and submit them during the morning break.

Herb Bohrer (CAB Chair) welcomed everyone to the meeting. He commented that there were interesting topics on the day's agenda and said he was looking forward to hearing a status. Bohrer congratulated DOE and Fluor Idaho on completing retrieval of the 65,000 cubic meters of stored transuranic waste (TRU) at the Advanced Mixed Waste Treatment Plant (AMWTP).

Jack Zimmerman (DOE-ID) commented that there would be an event to celebrate the completed retrieval of TRU waste. He noted that his presentation was slightly out of date as 10 boxes remained when his slides were prepared. On February 23, Fluor Idaho removed the last box from the transuranic storage area which was a tremendous accomplishment and a long time coming. Zimmerman said completion of this milestone will allow DOE-ID to repurpose some of that space and accelerate treatment activities at the Site.

Kerry Martin (State of Idaho) commented that the Idaho Department of Environmental Quality (I-DEQ) is pleased that the transuranic waste retrieval was finished and that WIPP is restarting. Martin added that DOE is getting closer to meeting the Settlement Agreement requirements.

Pete Johansen (State of Idaho) commented that he works for the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) program out of Boise, Idaho and was filling in for Daryl Koch at the meeting. He told the CAB to let him know if they had any CERCLA related questions.

Dennis Faulk (EPA) said he was glad to be at the meeting. He introduced Emmy Lija, and told the Board that she will be picking up some of the work at the Idaho National Laboratory (INL) Site. He commented that it was a pleasure to be at the meeting and great to be out at the Site the day before.

Fred Hughes (Fluor Idaho) commented that Fluor Idaho had a negative safety trend over the last couple of months. He said that while it could be attributed to the winter weather, Fluor Idaho maintains they did not react quickly enough. As a result, there were significant injuries to employees. To counter the trend, Fluor Idaho obtained more equipment at the Site, employed safety monitors to warn employees of potential hazards and crews to come out at midnight to remove snow. Beginning the week of February 20, a rolling safety stand-down was put into effect; the accidents were discussed and the employees provided input as to what could be done as a team to improve performance. Hughes noted that Fluor Idaho's safety performance is back where it should be in February.

Hughes also commented that the last four containers to be retrieved at AMWTP were deteriorating and collapsing. Crews coordinated with engineering and management to brainstorm methods of more safely and efficiently retrieving them, including adjustments to ventilation and use of better personal protective equipment (PPE). In January they successfully, and without contamination, retrieved those difficult boxes. Hughes said this achievement was a tribute to the collaboration between the crews and engineers.

Betsy McBride (CAB Member) asked Hughes what makes a box more highly contaminated. Hughes responded that it is a combination of the condition of the box and the makeup of the material within it. He added that one particular box contained debris from the fire at Rocky Flats, so the contamination was readily available to spread, and the condition of the box made it difficult to handle.

Bob Bodell (CAB member) asked Hughes if all the accidents that occurred were weather related. Hughes responded that 75 to 80 percent of the accidents were weather related and associated with slips, trips and falls.

Recent Public Outreach Activities

Zimmerman reviewed recent public involvement activities. The presentation is available on the INL Site EM CAB website: inlcab.energy.gov.

McBride referenced articles in *The Statesman* related to the \$3600/day fines associated with the delayed startup of the Integrated Waste Treatment Unit (IWTU). She asked if those fines will continue to accrue unless DOE is able to negotiate a new schedule with the state. Zimmerman confirmed that McBride was correct, but added that until operation is reached through Fluor Idaho's phased approach, they do not have better dates to offer with confidence. Once they have that information, they will approach the state and attempt to renegotiate the schedule. He commented that DOE-ID intends to propose Supplemental Environmental Projects (SEPs) in lieu of cash penalties as the state and DEQ generally support that approach. Zimmerman added that DOE-ID can likely discuss with the CAB potential SEPs at the April meeting.

Idaho Cleanup Project Overview

Zimmerman provided a presentation on the status of cleanup at the INL site. The presentation is available on the INL Site EM CAB website: inlcab.energy.gov.

Bohrer asked for confirmation that Fluor Idaho is not currently certifying waste. Zimmerman responded that certification was stopped in July 2016 when the Waste Isolation Pilot Plant (WIPP) issued the new waste acceptance criteria (WAC) and documented safety analysis. Bohrer then asked when DOE-ID expects to resume waste certification. Zimmerman responded that WIPP created a new requirement for a generator site technical review and that Fluor Idaho completed that review the last week of January. While they have not yet received the final report, there was nothing that would preclude Idaho from shipping waste. WIPP's basis of knowledge document is not yet complete and will be the last piece before they return to certification. Zimmerman said he expects this to occur in the April timeframe.

Bohrer commented that WIPP's priority is contact-handled transuranic waste (CH-TRU). He asked how far out shipment of remote-handled transuranic waste (RH-TRU) is. Zimmerman responded that the schedule for RH-TRU is not yet finalized. The RH-TRU that goes into WIPP is emplaced in the wall for shielding. Because they are running the mine in ventilation mode, due to the radiological accident, they do not have the capacity to perform those drilling activities at this time. There are many hazards the workers must deal with. So it does put emplacement of RH-TRU on hold. However, a working group has come up with some concepts that involve shielding containers, so shipment of RH-TRU may be possible before the ventilation upgrades have been made.

Bohrer asked for a status of the future mission of AMWTP. Zimmerman responded that the report was being briefed through Headquarters and said the transition slowed the process during the November/December timeframe. The Assistant Secretary for Environmental Management (EM-1) will be briefed, and she will make a decision on the path forward. At some point, it may even require secretarial input. The facility will be fully occupied until 2019, when the mission is completed, but a decision by the end of 2017 is critical.

Bohrer asked what the end state is at which the Office of Environmental Management (EM) will finish with Test Area North (TAN) and transfer ownership of the facility to a different agency. Zimmerman responded that EM will not likely turn it over to the Office of Legacy Management until the mission at the Site is completed. It may eventually be turned over to the Office of Nuclear Energy (NE) along with the funding associated with monitoring. Bohrer asked for confirmation that the end state has not yet been defined. Zimmerman said Bohrer was correct.

Faulk added that a 100 year compliance date was set for the INL, which means groundwater must be returned to drinking water standards by 2095. Thus, EM bought into being in Idaho for a very long time.

McBride asked if Zimmerman meant to say that DOE would “hopefully” cap the area to prevent water penetration. Zimmerman responded that DOE will definitely apply an engineered barrier cap, as dictated by the Record of Decision (ROD). Betsy asked Zimmerman to confirm that the engineered barrier is for the top. Zimmerman confirmed and added that an engineered cap merely means the design was engineered, the cap itself will be a combination of natural and other materials.

Jim Huston (CAB Member) asked if the new administration has engaged in discussions with DOE-ID regarding the geological repository. Zimmerman responded that it is a significant issue that was raised with the transition team. However, until the new Secretary of Energy has been confirmed, there is little that can be done.

Beatrice Brailsford (Snake River Alliance, Pocatello) asked what Zimmerman meant when he said “preparing to deal with Navy waste” during the TRU portion of his presentation. Zimmerman responded that DOE-ID is supporting the Navy by helping to treat some of the waste stored in Idaho Chemical Processing Plant-666 (CPP-666) so it is packaged and certified to go to WIPP. Brailsford asked what other RH-TRU the Navy is sending to DOE. Zimmerman responded that they are not sending any right now.

Brailsford said she assumes the soil near the tank farm is significantly contaminated as it has not been covered by a temporary cap. She asked what is going to the perched water and what is going all the way to the aquifer. Jim Malmo (DOE-ID) responded that some work has been done to help divert groundwater away from the tank farm area. Brailsford asked if Malmo was confident that, given the latest winter, there is not enough moisture on top of these areas to drive the contamination downward. Malmo responded that they will need to wait until spring to determine that.

Brailsford also asked if this is the last Advanced Test Reactor (ATR) fuel shipment to go into the INTEC fuel pool. Zimmerman confirmed and added that NE currently plans to utilize temporary storage at ATR while they look into options for dry storage.

Tami Thatcher (Idaho Falls) commented that she was glad to see Zimmerman mention the discovery of a Tetrachloroethylene (PCE) contamination during routine well monitoring in 2015. She noted that these wells are monitored as a way of overseeing the aquifer, but when the PCE contamination was found, the public was told that it is simply something in the well. She asked why they are monitoring the well if it does not correspond to the aquifer.

Thatcher added that there was a tremendous amount of PCE injected into the aquifer at TAN decades ago and said it would only take a couple decades for that contamination to migrate 30 miles to these wells. As the contamination migrates, it goes deeper into the aquifer, so shallow wells may not detect it but deeper wells like these would. She asked for a realistic explanation tying together where the contamination came from. Zimmerman responded that DOE has entered into the new site process, which is mandated by CERCLA. That process will be followed and will identify the source, or potential source, of the contamination. He noted that the investigation process is just beginning.

Integrated Waste Treatment Unit (IWTU) Update

Zimmerman provided an update on the IWTU project. The presentation is available on the INL Site EM CAB website: inlcab.energy.gov.

Cathy Roemer (CAB Member) asked what the original auger grinder was made of and if the interaction between the cementitious material and stainless steel makes it more operable. Zimmerman responded that stainless steel is being used for testing because it is inexpensive and readily available, but it would not be suitable for ongoing, radioactive operations. The final auger grinder will be made of Haines 556, which is able to withstand high-temperature, corrosive environments. Roemer noted that the auger grinder design is different and asked Zimmerman to explain. Hughes responded that the original design would crush material as it was rotating, breaking it into fine particles that, combined with the added steam, would cause cementitious material to form. The new design does not crush and grind the material, but allows it to pass through the blades. The intended product will resemble small beads and pass through the facility easily.

Huston asked for the diameter of the ring header and wondered if they always intended to cut a hole in the side of the vessel. Zimmerman responded that the ring header is approximately 30" in diameter. He added that the previous cleanup contractor, CH2M-WG, Idaho (CWI), was planning to cut off the bottom of the vessel, but the benefit of the manway is that Fluor Idaho will bolt the flange on, guaranteeing easy access in the future. They have been working on the design and looking at the code implications to ensure they remain code compliant. Hughes added that Fluor's southern California office performed a stress analysis that came back satisfactory and said they plan to practice extensively before doing the real thing. Huston asked if they are planning on making personnel access part of the welding process. Hughes confirmed yes.

Roemer asked who is responsible for making contact with the entities shown on the map on Slide 12. Zimmerman responded that Fluor is the primary interface. Roemer asked how the map differs since Fluor took over the contract. Zimmerman responded that CWI had started the outreach, but Fluor has expanded it. Roemer commented that she believes the Board can expect to see better results moving forward.

Brad Christensen (CAB Member) said he appreciated seeing the details. He referenced failures in the flange joints during the last heat up (Slide 2) and asked for clarification. Zimmerman responded that those issues are suspected based on process data indicators and cannot be confirmed until the facility cools down. Christensen asked if the flange joints were failing before. Zimmerman responded that there were previous indications of failure. He explained that these things are impossible to predict until the cell is heated to operating temperatures and the materials heat up and cool down, expand and contract. Each of the flanges is located within a closed cell with shielded walls and ventilated exhaust. The facility is designed to address these failures.

Hughes added that Fluor Idaho will look at the design of the flange to see how they can modify it to be a more positive fit.

Waste Isolation Pilot Plant (WIPP) Preparations to Resume Shipping

Jim Malmo (DOE-ID) provided an update about the WIPP Facility. The presentation is available on the INL Site EM CAB website: inlcab.energy.gov.

Bohrer asked when they expect to certify the first drum of waste. Malmo responded that it will come in stages. The main thing delaying the certification of waste is regaining WIPP's authorization to certify waste. Each waste will then need to be analyzed by stream. The first waste examined will be free of oxidizers. Bohrer asked how long it will be before they obtain authorization. Malmo responded that once a waste

stream is cleared, all wastes associated with that stream are cleared to ship. There are nearly 35 waste streams total.

Bohrer asked how long it will take to prepare a shipment for payload. Malmo responded that his expectation is to resume shipping toward the end of April.

Huston asked for clarification regarding the date of the first shipment. Malmo responded that May 15 is the date on the official schedule. Zimmerman added that Idaho will be ready to ship by April, and the first shipment will depend upon WIPP's ability to schedule it.

Bohrer commented that he witnessed the first of the 65,000 drums being retrieved. He noted that the original 2018 completion date is now outdated and asked when DOE will publish a new schedule. Malmo responded that he can only speculate based on WIPP's capacity and committed to share information with the CAB as it comes available. Herb clarified that DOE-ID's intent is to, at some point when the data is available, establish that new target date. Malmo said yes. Faulk asked Malmo what the shipping rate was at its best. Malmo responded approximately 20 shipments per week. Faulk encouraged the Board members to do the math on their own.

Roemer asked for clarification on Slide 3 of Malmo's presentation. Malmo responded that the slide shows the result of the reviews DOE-ID must complete to get recertified to ship waste to WIPP. Roemer asked what an enhanced acceptable knowledge process is. Malmo explained that an entire history of a waste stream is compiled using historical records.

Brailsord asked a question pertaining to Zimmerman's IWTU presentation. She asked who, in the contract between Fluor Idaho and DOE, is paying when the facility does not perform as anticipated. Zimmerman responded that the original Request for Proposal (RFP) included operation of IWTU, but not solving these technical issues. Fluor Idaho's contract had to be modified to include this scope and DOE must pay them for executing that scope on its behalf. DOE is adding scope to the Fluor contract by phase.

Public Comment

Tami Thatcher commented that there was a recent article about INL's profile in the *Post Register* suggesting that NE should be sharing information about its research projects with the public. The report of recommendations suggested that public input be sought on some of these programs. They are energy related, not defense or security, and are more on the commercial side of investment. Thatcher encouraged the CAB to consider folding into its scope some of the research activities at the Lab.

Brailsford commented that she believes the INL Site EM CAB should continue its focus on EM activities and avoid getting sidetracked by other things. The INL Site EM CAB has a lot to do and is doing it well. It wouldn't serve anyone well to do otherwise. She added that DOE may want to establish another advisory board for NE purposes.

Thatcher added that research makes messes, too.

Calcine Update

Mark Shaw (DOE-ID) provided an update about Calcine. The presentation is available on the INL Site EM CAB website: inlcab.energy.gov.

Keith Branter (CAB Member) asked what DOE will do with the calcine waste once it is retrieved if not repackage it. Shaw responded that DOE plans to develop technology to treat calcine and move it from bin set 1 to bin set 6 until there is someplace to ship it.

Roemer asked Shaw to elaborate on the regulatory strategy. Shaw responded that calcine is a Resource Conservation and Recovery Act (RCRA) high-level waste. In addition to the standard RCRA closure actions, there is a CERCLA piece if part of the project involves Deactivation and Decommissioning (D&D). Because it is high-level waste, a 3116 Determination must be made: After the bin sets are emptied, DOE must show that those containers and any remaining contents are no longer high-level waste. This requires participation from the Nuclear Regulatory Commission (NRC) and approval from the Secretary of Energy.

Huston asked if a specific order mandates that DOE complete this project, or if this project simply fits the set of issues around disposal. Shaw responded that retrieval and treatment of calcine by 2035 is mandated by the Idaho Settlement Agreement and said this is the best thing DOE can do now to move calcine in the right direction. Huston clarified that it is not a project that someone has specifically mandated. Shaw confirmed.

Zimmerman commented that DOE must retrieve the waste at some point, and considers retrieval a high-risk activity as the bin sets have been closed a long time. Consolidating bin set 1 into bin set 6 shrinks the risk profile because it eliminates the bin set that is oldest and highest risk. There is no regulatory driver mandating that the material be moved and the bin sets consolidated right now.

Shaw said from a project perspective, retrieval is considered really low risk as it is something that they must do. Figuring it out will be money well spent.

Bohrer commented that calcine retrieval and treatment have historically been viewed as one and said he respects DOE's current approach, which separates the two and focuses on retrieval alone. There is no reason to delay development and implementation of this retrieval. Bohrer applauded DOE for beginning to make some measurable progress regarding calcine. Shaw commented that they are very early in the process and said a lot of interaction will be required with the state and EPA moving forward.

Bohrer asked if, from a budget standpoint, there is support from Headquarters for retrieval of calcine at this time. Zimmerman responded that under the current budget guidance, this project is supported, but said without an immediate regulatory driver, it will be the first thing to drop off the chart in the event of a budget crunch.

Kerry Martin asked to go back to the picture of bin set 1 on Slide 10. She asked if all 12 tanks are full of calcine. Shaw confirmed that all 12 tanks are full of calcine.

Brailsford asked about the estimated budget for this retrieval project. Shaw responded that a preliminary estimate for the entire project out to 2022 came to \$45-50 million.

History of the Waste Area Group 7 Record of Decision – Cap Design

Nolan Jensen (DOE-ID) provided a presentation about the History of the WAG 7 ROD – Cap Design. The presentation is available on the INL Site EM CAB website: inlcab.energy.gov.

Bohrer referenced a tour of Idaho's Accelerated Retrieval Project (ARP) by members of the Hanford TRU program and asked Zimmerman if DOE is attempting to learn from Idaho's successes and employ some of the techniques developed at the Site complex-wide. Faulk responded that EPA implored the Hanford DOE to visit Idaho and learn from what is going on. He said he hopes some current ARP employees will ultimately perform some of the cleanup work at Hanford.

Christensen asked how the vapor extraction process works. Jensen responded that there are three treatment units with active pumps and approximately thirty wells that go to different depths into the subsurface. The pumps pump those wells into a manifold. The water then goes through a catalytic oxidizer so it is treated as it comes out of the ground. Christensen asked if it is done just once. Jensen responded that the three treatment units run 24/7.

Jensen commented that there has been a significant downward trend in the data as the waste has been exhumed and the vapors extracted. A rebound test will be conducted before the cap design is finalized. The current system is in the Subsurface Disposal Area (SDA) itself, so those wells will need to be closed to put the cap on. Christensen asked to see those graphs.

Talia Martin (CAB Member) asked about the possible locations for and the characteristics of the materials they are considering putting within the cap. Jensen responded that the spreading area just south of the Radiactive Waste Management Complex (RWMC) is being considered. It is where they did the characterization last year and it looked good. He added that there are a lot of issues related to excavation of that soil and commented that DOE will talk a lot more about this in June. He added that this is planned to be an evapotranspiration cap, which is essentially stable and enduring layers of soil.

Brailsford referenced the photo on Slide 3 of Jensen's presentation and asked if the background shows the effects of early snowmelt. Jensen responded that it may be ponded water.

Thatcher commented that a previous agenda for the day's meeting showed a presentation on Pad A. She commented that Pad A, a twenty-foot high stack of barrels covered with dirt, complicates the design of the soil cap as it elevates the area. Thatcher asked Jensen how long the soil cover must stay intact. Jensen responded that Remedial Investigation (RI) involved simulations out to 1,000 years, which is why natural, enduring materials such as soil will be used. He added that the slope will be taken into consideration, and Pad A is part of that.

Thatcher noted that the DOE study of waste migration into the aquifer requires the soil cap and that the waste is radioactive for hundreds of thousands of years. She asked why then the simulation was only performed for 1,000 years. Faulk agreed the cap must last in perpetuity because the hazards will be there forever. However, there is so much uncertainty in the models when they reach beyond 1,000 years that they choose to cut it off there. He added that this cap will be built as close to nature as is possible so it can adapt over time. Synthetics aren't made to last forever.

EM Budget Priorities

Jack Zimmerman (DOE-ID) provided a presentation about the EM Budget Priorities. The presentation is available on the INL Site EM CAB website: inlcab.energy.gov.

Bohrer asked why the calcine project is not on the list. Zimmerman responded that it is on the next page and will be prioritized for FY 19. Zimmerman added that without risk and a regulatory driver, it is considered a lower priority. Under a level funding scenario, it will fit within the budget, but if there is a reduction of funding it will be one of the first items to be bumped from the list. As items are completed, new scope will be pulled into the priorities list.

Huston asked if that is what happened to EBR-IP's containment dome. Zimmerman responded yes, it was essentially the same thing. Huston added that he believes people enjoy seeing the containment dome and Zimmerman concurred that many people wish it could be repurposed.

Faulk asked if the money for IWTU will still come to Idaho to be used on other projects, like D&D, once the 900,000 gallons are treated. Zimmerman responded that the general assumption is a flat funding profile. As projects are completed, future funding should come in at the same level so other projects can be tackled.

Brailsford asked how much of EM's budget is for flat funding. Zimmerman responded it is about \$6.2 billion for EM and \$370 million in Idaho per year.

Conclusion

Zimmerman concluded the meeting.

Herb Bohrer, Chair
Idaho National Laboratory Site Environmental Management Citizens Advisory Board
HB/ar