



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

October 24, 2019

List of Acronyms

AMWTP	Advanced Mixed Waste Treatment Project	ISA	Idaho Settlement Agreement
ARP	Accelerated Retrieval Project	IWTU	Integrated Waste Treatment Unit
CAB	Citizens Advisory Board	MFC	Materials and Fuels Complex
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	NE	Office of Nuclear Energy
CH	contact-handled	NOx	nitrogen oxide
CPP	Chemical Processing Plant	NRC	Nuclear Regulatory Commission
DDFO	Deputy Designated Federal Officer	NRF	Naval Reactors Facility
D&D	Decontamination and demolition	PGF	Process Gas Filters
DEQ	Department of Environmental Quality	RCRA	Resource Conservation and Recovery Act
DOE	Department of Energy	RFP	Request for Proposal
EBR-II	Experimental Breeder Reactor II	RH	remote-handled
EM	Office of Environmental Management	ROD	Record of Decision
ET	Evapotranspiration	RWMC	Radioactive Waste Management Complex
HLW	High-level waste	SDA	Subsurface Disposal Area
ICDF	Idaho CERCLA Disposal Facility	SNF	Spent Nuclear Fuel
ICP	Idaho Cleanup Project	TRU	Transuranic waste
INL	Idaho National Laboratory	WIPP	Waste Isolation Pilot Plant
INTEC	Idaho Nuclear Technology and Engineering Center		

The Idaho Cleanup Project (ICP) Citizens Advisory Board (CAB) held its quarterly meeting on Thursday, October 24, 2019 at Teton Mountain Lodge & Spa in Teton Village, Wyoming. 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
Josh Bartlome
Keith Branter
Brad Christensen
Teri Ehresman
Marvin Fielding
Brandon Leatham
Talia Martin
Trilby McAfee
Cathy Roemer
Lawrence “Larry” Schoen
John Sigler

Members Not Present

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

Jack Zimmerman, Deputy Designated Federal Officer (DDFO), U.S. Department of Energy Idaho Operations Office (DOE-ID)
Connie Flohr, Deputy DDFO, 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

Shayna Martin, Shoshone-Bannock Tribes
Lorie Cahn
Tami Thatcher
Mark Hutchison, Naval Reactors Facility (NRF)
Trevor Atkinson, DEQ
Marynette Herndon, DEQ
Jim Malm, DOE-ID
Ty Sanders, DOE-ID
Lori Galloway, Jacobs
Bret Griebenow, HII-TSD
Nolan Jensen, DOE-ID
Rich Abbotts, Fluor Idaho
David Swale, BWXT
Jordan Davies, ICP CAB Support Staff

Sara Schmieg, Tetra Tech
Brandt Meagher
Erik Simpson, Fluor Idaho
Ted Livieratos (DEQ)
Josh Gilmore
Chris Henvit, NRF
Don Sticinski, HII-TSD
Jarrett Rice, Bechtel
Susan Stiger, Bechtel
Bryant Kuechle, ICP CAB Facilitator
Joel Case, DOE-ID
Gunder Peterson, Daniel B. Stevens & Associates
Kelly Green, ICP CAB Support Staff

Opening Remarks

Facilitator Bryant Kuechle began the meeting at 8:00 a.m. He reviewed the agenda and noted that the public comment periods would be held at 9:45 a.m. and 11:45 a.m. He reminded attendees of the process for public questions during the meeting, time permitting, or via question cards.

Trilby McAfee (CAB Chair) welcomed everyone to Jackson Hole and said the day's agenda was a good one. She said she hoped everyone enjoyed the area and encouraged them to drive safely home after the meeting.

Jack Zimmerman (DOE-ID) commented that there were more members of the public in attendance than was expected for a meeting in Teton Village, Wyoming. He explained that the CAB chooses a site outside of the Idaho Falls region once a year, recognizing that there is regional interest in the Idaho Cleanup Project. He encouraged all attendees to be cautious and check their routes before heading home as a storm was projected for the afternoon.

Mark Clough (State of Idaho Settlement Agreement Coordinator) commented that the day's agenda was full of interesting presentations and that he looked forward to a good, vigorous discussion.

Pete Johansen (Idaho DEQ) introduced himself and said he would be available to answer questions throughout the day.

Fred Hughes (Fluor Idaho) reported that Fluor Idaho was continuing to make progress at ICP and successfully adjusted the workforce without layoffs. The Advanced Mixed Waste Treatment Project (AMWTP) facility finished processing the debris waste and Fluor Idaho and DOE commemorated the milestone on October 10. He said he looked forward to the meeting.

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

Jack Zimmerman (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>.

Brad Christensen (CAB Vice-Chair) referred to Slide 4 of Zimmerman's presentation. He asked when the Idaho Settlement Agreement (ISA) requires the 243 tons of spent nuclear fuel (SNF) to leave the State of Idaho. Zimmerman responded 2035. He added that like high-level waste (HLW), SNF will require a geologic repository for disposal. Christensen said it concerned him that a repository had not yet been identified. Zimmerman replied that identification of a SNF repository is an issue that goes beyond DOE-ID. All sites and commercial nuclear reactors are facing the same problem.

Marvin Fielding (CAB Member) referred to Zimmerman's assertion that the fuel elements are delivered to, and processed at, the Materials and Fuels Complex (MFC). He asked what is involved in processing the elements once they arrive at MFC. Zimmerman responded that processing SNF is not the responsibility of the cleanup program, but of the Department of Energy's Office of Nuclear Energy (NE). They are reprocessing SNF, essentially extracting the useful uranium and heavy metals that could be remanufactured as fuel for reuse. It is basically a recycling program.

Lawrence Schoen (CAB Member) acknowledged the great turnout at the meeting and commented that in addition to contractors, he hopes there are some members of the public in the crowd. He referred to Slide 4 of Zimmerman's presentation and asked what the illustration depicts. Zimmerman responded that it shows the Radioactive Scrap Waste Facility at MFC, which Idaho National Laboratory (INL) uses to store fuel.

Schoen asked if Chemical Processing Plant (CPP) 749 is at the Idaho Nuclear Technology & Engineering Center (INTEC). Zimmerman responded yes.

Schoen asked Zimmerman to elaborate on the water seepage issue. Zimmerman explained that the first-generation vaults, which are now 60 or 70 years old, were not fully enclosed. The seepage is believed to result from diurnal variations in temperature which affect pressure. As the area cools, it pulls water and moisture vapors from the soil up into the vault, which could potentially lead to corrosion of the baskets that hold the fuel assemblies. Upon learning of the issue, DOE immediately installed vents to prevent a vacuum in the vault, which mitigated the potential for water seepage. Zimmerman added that the next step is to move the fuel from those vaults into a newer generation vault with a better design.

Schoen asked what form the fuel in the vaults is in. Zimmerman responded that the fuel is in rods, held in place by baskets that make them easily retrievable. For this reason, the baskets are of immediate concern. Corroded baskets would make retrieval significantly more difficult.

Fielding asked Zimmerman to explain the photo on Slide 7 of his presentation. Nolan Jensen (DOE-ID) responded that the photo depicts a shallow injection well at a small Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) project in summer 2019.

Fielding asked when Fluor Idaho's contract ends and how many of the remaining cleanup activities will spill into the next contract. Zimmerman responded that Fluor Idaho's contract ends in May of 2021. He commented that Integrated Waste Treatment Unit (IWTU) operations will spill into a future contract period as will fuel transfers slated to occur into 2023. Certification, shipping, and handling of transuranic (TRU) waste will be within the scope of the next contract. Per a Record of Decision (ROD), DOE's intent is to repurpose the IWTU facility for the treatment of calcine, which means the next phase of calcine cannot begin until the current IWTU mission is completed. Zimmerman added that DOE will essentially be pivoting in the post 2021 timeframe to different activities focused on HLW and closure of the Radioactive Waste Management Complex (RWMC).

Fielding asked for the status and schedule of the Request for Proposal (RFP) for ICP. Zimmerman responded that he did not wish to comment on the RFP.

Teri Ehresman (CAB member) referred to Slide 7 and asked Zimmerman what MFC waste is being stored at the Idaho CERCLA Disposal Facility (ICDF). Zimmerman responded that the waste from MFC resulted from some decontamination and demolition (D&D) activities at MFC, such as auxiliary facilities like the Experimental Breeder Reactor (EBR) II. Jensen added that recent construction had also revealed a couple contamination areas, which were being addressed.

Talia Martin (CAB Member) referred to Slide 3 of Zimmerman's presentation. She commented that the calcine demonstration project is a proof of concept project but asked whether the eventual closure will be guided by the Resource Conservation and Recovery Act (RCRA) or CERCLA. Zimmerman answered that it will be a RCRA closure. Martin asked if DOE anticipates any issues during the closure phase. Zimmerman said he does not anticipate issues as they have closed seven of 11 liquid waste tanks in the past, and this closure would follow a similar process. He noted that analysis and performance assessments will drive selection of the removal demonstration techniques. Martin asked who the regulators are for this project. Zimmerman responded that the State of Idaho and the Nuclear Regulatory Commission (NRC) are the regulators for this type of closure.

Martin referred to Slide 6 and asked what the Agreement to Implement refers to. Zimmerman responded that the State of Idaho and DOE disagreed about what was covered by the 1995 ISA, so they settled this issue outside of the ISA and resolved to deal with retrieval under CERCLA. Clough added that the source of disagreement was over above-ground versus below-ground TRU waste. The ISA covers the above-ground waste, and the Agreement to Implement covers the buried waste.

Schoen referred to the words "new site identifications at MFC" on Slide 7 of Zimmerman's presentation, as well as Jensen's earlier assertion that new areas of contamination had been discovered during recent

construction activities. He asked for an explanation of the reference to new sites. Jensen responded that CERCLA required DOE to determine what would happen if they discovered contamination in the future. One of the last RODs laid out the process for newly discovered contamination, a process they termed the “New Site Process.” It ensures that DOE and its contractors have a pre-defined process for documenting and dealing with newly discovered contamination.

Josh Bartlome (CAB Member) asked how the contamination is identified. Jensen responded that there are always radiological control technicians on site monitoring as work is performed.

Integrated Waste Treatment Unit (IWTU) Update

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

Cathy Roemer (CAB Member) asked why the current outage is labeled Outage J. Joel responded that there have been many outages over the lifecycle of IWTU. She asked what the average length of every outage is. Case responded that outages under Fluor Idaho have averaged nine to 10 months, a timeframe dictated by major facility modifications. He added that Outage J is Fluor Idaho’s third or fourth outage, and is slated to last until June or July 2020.

Roemer asked for an explanation of activities occurring during Outage J. Case responded that the facility is undergoing a systems reliability maintenance effort, which involves cleaning up the plant to ensure it is ready for operations. Infrastructure support, such as INTEC utilities and power and air supply, are being addressed and all single-point failures upgraded.

Romer asked if resolving the filter issue will be the eureka moment of IWTU, where everything suddenly comes together and is solved. Case responded that the filters are an engineering issue, not a flaw in the process.

Zimmerman further explained that DOE relies on a technical review group, comprised of individuals from national labs and industry and chemical process experts, to provide expert recommendations. This group recommended that the issues with the filters are solvable with engineering solutions. The technical review group maintains that a confirmatory run completed in spring 2019 verified stable operations in making the intended product. The confidence level of this group is reasonably high that the facility is going to work and that this is the last issue remaining to be dealt with before IWTU can enter into hot operations.

Fielding asked Case how much decontamination waste will be generated. Case responded that the goal is to minimize as much as possible, but that it may be as much as 2,000 gallons of nitric acid, which is relatively insignificant compared to the 900,000 pounds of waste to be treated. The composition of waste in each of the three tanks varies slightly, and DOE will use the Hazen Research Facility in Golden, Colorado to pilot test each tank. Fielding asked if the nitric acid decontamination waste can be circulated back through the facility for processing. Case confirmed that it will be put back through the facility.

Christensen asked if the three tanks containing the liquid sodium-bearing waste are above-ground. Case responded that the four tanks, of which three contain waste and one functions as a spare, are all below-ground, stainless steel, and encased in concrete vaults.

Bartlome asked Case to elaborate on the permitting process. Case responded that IWTU will undergo a systems performance test with real, sodium-bearing waste during the initial 750 hours of hot operations. In that time, DOE must obtain off-gas measurements to demonstrate the facility’s emission levels. They will then submit to the State of Idaho a report detailing the results, and the state will evaluate that report before finalizing the permit. DOE will be allowed to continue running the plant during the evaluation period. Case noted that the company set to perform the sampling for the systems performance test practiced obtaining

the necessary measurements during Simulant Run 3. They were able to do so in one week, so the 750 hours allowed by the state should be a sufficient window to do so during hot operations.

Bartlome asked if the systems performance test can be summarized as running the facility with radioactive waste, obtaining off-gas measurements, and then putting those numbers in the permit. Case responded that the systems performance test is meant to verify and validate the levels. Some of the key measurements will be nitrogen oxide (NO_x) and mercury. DOE has a NO_x permit condition for the site and there are mercury requirements and limits for off-gas emissions. Those are really the key parameters for the off-gas measurements.

Schoen noted that 1500 hours is two months and said that while he is not familiar with the permitting process, it sounds as though the facility will be allowed to operate for up to two months while DEQ works out the parameters for the process. Case responded that DOE obtained a permit for IWTU prior to construction. There have been many permit modifications since, but the systems performance test merely verifies and validates that processing real waste will meet conditions.

Schoen commented that IWTU's process will be what it will be. He asked if the permit will match the process, or certain absolute standards. Case responded that there are absolute standards.

Zimmerman clarified that the systems performance test is intended to confirm that the process matches the permit. A dry run has essentially been conducted with the simulated waste, which should reflect all aspects of the real waste aside from mercury, which is not an additive in the simulant.

Schoen referred to the photographs of filters on Slide 4 of Case's presentation and asked for confirmation that those filter conditions resulted from a simulant run. Case confirmed. Schoen asked if the new filters had been tested at Hazen Research Facility rather than in IWTU during a simulant run. Case responded that the new filters will be tested in the facility as part of the confirmatory run prior to hot operations. Their effectiveness will be verified in the facility at that time.

Hughes clarified that Hazen Research Facility pilot tests use the same simulant that is used during IWTU simulant runs, so the conditions should present the same there as they do in the facility.

Schoen asked if they will decontaminate the cannisters after they are filled with solids. Case responded yes but clarified that there are two separate decontamination systems: One is wet-to-dry and process oriented, and the other cleans the cannisters at the can-fill station prior to their placement in the storage vaults. Schoen asked if this will be a continuous process. Case confirmed that it will be continuous until all the waste is processed.

Schoen asked what the phrase "source term" means. Case answered that the remaining residual radioactive material is called the source term.

Brandon Leatham (CAB Member) referred to the Process Gas Filters (PGF), a critical component of IWTU. He asked if they have an estimated number of filters needed, or the number of changes that will be made. Case responded that they will have spare filters for hot operations. He noted that they are not particularly expensive and have a procurement time of just six to eight weeks. He commented that he did not have an exact number but could follow-up with that information at the next CAB meeting.

John Sigler (CAB Member) asked what will happen to the four underground tanks once all the liquid sodium-bearing waste has been emptied. Case said they will be cleaned and grouted.

Clough addressed Schoen's earlier question about the off-gas measurements and the systems performance test. He made clear that these discharge luminates are based on both significant modeling and effort. Clough

reassured Schoen that the facility will not operate unregulated and that there is a very meticulous and strong oversight component to ensure that once it does operate, it meets that modeling.

Public Comment Session #1

Tami Thatcher, Idaho Falls, noted that IWTU air emissions are estimated in DOE's recent proposed test range expansion. In providing that information for this radiological test range expansion in Environmental Assessment 2063, DOE provides expected air emissions from IWTU which are seven times the INL's current total emissions dose. Thatcher commented that it is noted in that document that the receptor location is unknown for this modeling of IWTU air emissions, so they are proposing fifteen years of new radiological test range for training and the highly enriched uranium fuel manufacturing is off the charts for new air emissions from the INL.

Thatcher turned to buried waste. She recalled asking DOE how many curies of americium-241 were going to remain buried at RWMC after waste exhumation activities were completed. She said she already knew the answer: Of the 230,000 curies of americium-241 that were buried, 215,000 curies would remain buried after waste exhumation activities had been completed. Thatcher commented that DOE would not answer her question in scientific terms, but instead stated that they "are removing 6,238 cubic meters by exhuming 5.69 acres." She said she believes DOE does not want to admit how much of the radioactive waste they are actually removing from RWMC.

AMWTP closure and status on transuranic waste program

Jim Malmo (DOE-ID) provided a presentation about AMWTP closure and a status of the transuranic waste program. The presentation is available on the ICP CAB website: <https://energy.gov/em/icpcab>.

Keith Branter (CAB member) asked how much remote-handled (RH) TRU waste remains and when shipping to the Waste Isolation Pilot Plant (WIPP) will resume. Malmo responded that of the 65,000 cubic meters of contact-handled (CH) TRU waste, 2,000 shipments await departure to WIPP. Approximately 1,000 shipments of buried waste covered by the CERCLA process remain, as do 200 to 300 shipments of RH-TRU waste. Malmo pointed out that the RH-TRU waste has been treated and awaiting shipment for years, but since the accident in 2014, WIPP has stopped bore-hole placement. It will likely be 2023 or 2024 before they entertain resumption of those activities. In the meantime, DOE is evaluating other alternatives for shipping RH-TRU waste out of the state.

Bartlome asked for an explanation of the permit modification. Malmo responded that the permit modification allowed DOE to work with the state to show them the controls they would put in place to handle that waste stream. He said they were not allowed to knowingly permit pyrophoric material into the treatment facility until these controls had been demonstrated.

Schoen referred to the process of combustion that occurs in the hot cell. He asked if it is accurate to say that combustion initially occurred accidentally, but they are now forcing that process intentionally. Malmo said that was accurate.

Schoen asked if the trough is thoroughly cleaned following each combustion. Malmo responded that they clean the troughs to rid them of debris and prevent the accumulation of waste.

Bartlome asked if DOE is confident they are exhuming all the pyrophoric material, or if it is possible some is being left behind. Malmo responded that there are targeted areas of TRU waste in the Subsurface Disposal Area (SDA), and that the targeted areas contain these pyrophorics. He said it is possible some pyrophoric material would be left in the SDA, however, but that they will never know how much of it has been reacted and how much has not. Bartlome asked what type of bag the waste was sealed in. Malmo responded that the waste was sealed in a standard plastic bag. He noted that plastic lasts a long time when it is not exposed to sunlight.

Ehresman referred to Slide 7 and asked Malmo to provide a timeline. Malmo explained that the remaining ARP facilities and infrastructure will be closed per RCRA and dismantled beginning in 2020 and continuing into 2028.

SDA cap design complete

Nolan Jensen (DOE-ID), Rich Abotts (Fluor Idaho) Gunder Peterson (Daniel B. Stevens and Associates) provided a presentation regarding the cap design for the SDA. The presentation is available on the ICP CAB website: <https://energy.gov/em/icpcab>.

Bartlome asked how many acres the exhumed waste areas occupy. Jensen responded 5.69 acres.

Schoen referred to Slide 11 and asked how deeply the waste is stored beneath existing grade. Peterson responded that it varies but there are anywhere from three to four feet of soil currently over the waste. Jensen added that the cap design accounts for at least four feet of soil on top of all waste, but that in some places, it will be as much as 12 feet.

Roemer asked if material other than that from the nearby borrow areas was considered for the cap. Peterson responded that there are many types of caps and explained that that traditionally, the RCRA standard cap was composed of compacted clay. Over time, they have learned that evapotranspiration (ET) covers are most effective west of the Mississippi, as it is a more arid environment and clay caps dry out and fracture. While synthetic materials, such as plastics, can be used, natural materials are best for the period of performance of thousands of years in this case. The nearby borrow area materials can make a cap that prevents infiltration, essentially forever. Avoiding man-made materials was an active choice.

Roemer asked how the borrow area landscape will look. Peterson replied that a plan will be developed as part of the construction process to address how the borrow area is sloped. From an engineering standpoint, however, there is not a flood threat even with existing conditions.

Keith Branter (CAB Member) commented that some native vegetation, like Canadian Thistle, has penetrated the waste at RWMC before, uptaking strontium-90. He asked how this scenario will be prevented in the future. Peterson responded that this is one of the reasons the cap will be 10 feet thick. In addition to cap thickness, they have chosen a seed mix composed of native flora with a good potential for evapotranspiration and with relatively shallow rooting depths. Branter asked how the deep rooting weeds will be stopped. Peterson said it will be difficult, but that the cap will go through a succession of vegetative communities. Over time, this progression will lead to grasslands and shrublands much like those in other areas of the site. The seed mix plants will ultimately transition out.

Roemer asked if an ET cover was chosen because it is most expedient, with the borrow area nearby, or if it is actually the best cap for the SDA. Johansen clarified that an ET cover is the best option for this site. Peterson added that it is merely coincidental that the nearby borrow area has the best soil for the cap.

Clough added that the SDA is an alluvia deposit environment and has historically been a low point at the site. A graded mixture of soils, including granulars, fines, silts, and clays, are present. This kind of cap is constructed with a mixture of these types of soils in a very careful manner. It is not an accident that it is here, nor is it a poor substitute for better capping material. It is the best solution.

Fielding asked about long-term settlement in the areas that have been backfilled and if there is a long-term maintenance plan for the cap. Peterson responded that a long-term maintenance plan will be developed. There are compaction requirements for the grade-fill layer, but they expect to see a fair amount of subsidence, or pushing down of the existing material, during construction. The maintenance plan will detail the process of restoring the cap's grades using material from the same borrow areas. Jensen added that before there is a declaration of completion, the maintenance plan will be in place.

Fielding asked if compaction occurred in the pits and trenches after the excavations were backfilled. Peterson said they were probably compacted in a variety of ways, but that usually a natural state of

compaction occurs after areas have been exposed for a long period of time. He reassured Fielding that anything that was not compacted before, will be well compacted as construction is completed

Schoen asked where on the map on Slide 14 the buried waste is confined. Peterson pointed out that the blue line shows where the SDA is today and noted that the cap itself will extend a significant amount beyond that area.

Schoen asked if some of the waste would simply be laid down on the existing ground surface before being covered with the cap. Zimmerman responded that the ARPs are temporary structures made of tent material and held up by a frame. When they drop those buildings down, they will essentially lay flat on the surface and be covered by the cap.

Schoen asked what the distance to groundwater is on this site, below existing grade. Jensen responded over 600 feet.

Ehresman asked if there is concern about wildfires on the cap and the vegetation they intend to plant on top of it. Peterson responded that they modeled for that scenario. Modeling software allows them to determine how much vegetation is on the surface. They evaluated the cap design without any vegetation at all as a potential option, in the case of a fire or even the likelihood of little vegetation the first year. This model, called an "E Cover" for evaporation without any vegetation, is what determined how thick the cap must be.

Clough referred to Fielding's compaction question and Schoen's question about what will be buried in place. He clarified that the bottom of the waste is approximately 28 feet below grade, so they will put the materials that did not have to come out back in before filling the area in with dirt, dropping down the ARP facilities, and applying more dirt, which should bring the area to level grade.

Clough added that they will not want to compact the area very tightly because doing so will make it more resistant to collapse than surrounding areas, causing a differential settlement which is undesirable. Loading this height of dirt on a landfill will result in an immediate settlement from the surcharge load during construction. He finished by saying that the toe of the slope extends well beyond the boundary of the SDA to keep water running in form the sides.

Ehresman asked if there will be security around the cap. Peterson responded that a fence will be installed around the perimeter of the cap and that eventually there will not be guards with guns on the area.

Bartlome asked what will happen if the lysimeters prove failure. Peterson responded they will likely show that the thickness of the fine materials in that storage layer aren't necessarily as much as they need to be. It is not a failure of the concept, but of the volume of material on the cap. Because there will be 10 feet of fill over the waste, there is a fairly good cushion against failure. The design criteria shows that only 39 inches of soil are actually needed, but the decision was made to have 10 feet over everything.

Jensen added that from the evapotranspiration standpoint, they may not need 10 feet, but there were other drivers for that decision. DOE certainly does not want burrowing animals to ever reach waste, or someone building a basement to hit waste, or even deep-rooted plants to get to waste.

Martin stated that the Tribes have some concerns. She said that DOE addressed the Fort Hall Business Council in 2017 and worked with tribal cultural resource specialists, not archaeologists, during that time. DOE is correct that there are no cultural resource impacts to the Tribes, but she noted that the Tribes are not merely interested in stones and bones. They are also concerned about environmental aspects, such as the seed mix selection, and impacts to the viewshed. The Tribes have determined that the viewshed will indeed be impacted and Martin said it is important that DOE not diminish that. The viewshed is valuable not only to tribal people but to the people who will eventually inhabit the area.

Thatcher observed that DOE continually uses 1,000 years as a period of performance for the cap, but commented that the cap's purpose is to limit water infiltration that could ultimately drive waste into the aquifer. That waste will be radioactive for more than a million years and that is the period of performance

that should be considered when talking about long-term institutional controls and maintenance plans. She noted that CERCLA permitted infiltration caps approved and installed in recent years have already failed.

Thatcher asked why Pad A was taken off the figures. Jensen responded that the reason this cap will be so tall, as much as 40 feet in some places, is because there will be 10 feet atop existing Pad A. The grading and the entire layout of the cap is driven by the fact that Pad A exists. Peterson added that during installation of the cap, some of the waste on Pad A is likely to be compressed, but this will not reduce the overall height of the cap. Therefore, it is likely that there will be more than 10 feet of soil on top of Pad A by the time construction has been completed.

Board Perspectives on National Cleanup Workshop

Ehresman and Sigler provided perspectives obtained during their participation in the 2019 National Cleanup Workshop in Alexandria, Virginia.

Ehresman thanked McAfee and Christensen for allowing her and Sigler to attend the National Cleanup Workshop where DOE was celebrating the 30th anniversary of EM. She and Sigler had a chance to speak with many of the senior EM leaders which she said was very interesting. Most notably, EM began with 107 nuclear cleanup sites across the country and has successfully completed 91 of those, including two of the three in Idaho and both of the sites in Wyoming. The 16 remaining sites are the most difficult. Ehresman commented that Zimmerman and Kliss McNeal (Fluor Idaho) represented ICP at the event. She concluded that some of the other sites, like Hanford, have significantly more serious problems than Idaho does and credited former Governor Cecil Andrus for establishing the ISA. He did Idaho a great service.

Sigler added that there was a lot of information presented and that it was impressive to see the many vendors who were there and are involved in everything from large scale projects down to the minutia of how everything gets done. He and Ehresman had the opportunity to participate in the cleanup caucus with some House Representatives. Sometimes the involvement of Congress gets lost in the procedures and practices, but these folks are absolutely committed to making things happen at that level. He encouraged the board to send a CAB member to the workshop every year.

Public Comment Session #2

Thatcher commented on the treatment and packaging of TRU waste, some of which is conducted under CERCLA, but a lot of which is conducted under RCRA. She reminded the CAB that the State of Idaho DEQ approves RCRA permits. She said it was interesting that the pyrophoric waste was treated at the treatment facility during the summer because the permit did not allow treatment of pyrophoric materials during that timeframe. DEQ approved the RCRA modification allowing for treatment of pyrophorics before public comments were submitted. Thatcher commented that when she attended a question and answer meeting with Fluor Idaho about that treatment, their own in-house experts were in conflict about the answers.

Thatcher commented that the addition of magnesium oxide to the treatment facility and the supercompactor, what DEQ deemed a Class 2 permit modification, was actually a huge change to the operation. She said DEQ put workers and the public at risk with their approach to this RCRA permit, is very much enmeshed with DOE, and is not providing oversight.

Vice-Chair Election Results

Bugger reminded the room of the CAB's new procedures for electing chair and vice-chair. He commented that McAfee's membership term will expire in April 2020, and that Christensen will succeed her as chair. Bugger announced that the CAB members voted to elect Ehresman as their new vice-chair.

Conclusion

Zimmerman concluded the meeting.

Trilby McAfee, Chair
Idaho Cleanup Project Citizens Advisory Board