



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 25, 2018

List of Acronyms

AMWTP	Advanced Mixed Waste Treatment Project	INTEC	Idaho Nuclear Technology & Engineering Center
ARP	Accelerated Retrieval Project	ISA	Idaho Settlement Agreement
CAB	Citizens Advisory Board	IWTU	Integrated Waste Treatment Unit
CAMS	Control, Alarm, and Monitoring System	LINE	Leadership in Nuclear Energy
CH	Contact-Handled	MFC	Materials and Fuels Complex
CPP	Chemical Processing Plant	NE	DOE Office of Nuclear Energy
DDFO	Deputy Designated Federal Officer	NRF	Naval Reactors Facility
DEQ	Department of Environmental Quality	ORR	Operational Readiness Review
DFO	Designated Federal Officer	OWL	Observe, Watch, Learn
DMR	Denitration Mineralization Reformer	PPE	Personal Protective Equipment
DOE	Department of Energy	ppm	parts per million
EBR-II	Experimental Breeder Reactor II	RADCON	Radiological Control
ECA	Energy Communities Alliance	RH	Remote-Handled
EM	Office of Environmental Management	SNF	Spent Nuclear Fuel
EMAB	Environmental Management Advisory Board	SSAB	Site-Specific Advisory Board
EPA	Environmental Protection Agency	TRU	Transuranic waste
ICP	Idaho Cleanup Project	VPP	Voluntary Protection Program
INL	Idaho National Laboratory	WIPP	Waste Isolation Pilot Plant

The Idaho Cleanup Project (ICP) Citizens Advisory Board (CAB) held its quarterly meeting on Thursday, October 25, 2018, at the Sun Valley Inn in Sun Valley, 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
Josh Bartlome
Keith Branter
Brad Christensen
Teri Ehresman
Marvin Fielding
Brandon Leatham
Talia Martin
Trilby McAfee
Cathy Roemer
Larry Schoen
John Sigler

Members Not Present

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

Jack Zimmerman, DDFO, U.S. Department of Energy Idaho Operations Office (DOE-ID)
David Borak, Designated Federal Officer (DFO), DOE Office of Environmental Management (EM)
Brad Bugger, Federal Coordinator, DOE-ID
Fred Hughes, Program Manager, Fluor Idaho
Mark Clough, State of Idaho
Daryl Koch, Idaho Department of Environmental Quality (DEQ)

Others Present

Joe Giebel, Fluor Idaho
Chip Schwarze, Idaho Falls Chamber of Commerce
Chris Henvit, Naval Reactors Facility (NRF)
Mark Hutchison, NRF
Tami Thatcher
Shayne Martin, Shoshone-Bannock Tribes
Erik Simpson, Fluor Idaho
Wendy Wilson, Snake River Alliance
Andrea Gumm, ICP CAB Facilitator
Jordan Davies, ICP CAB Support Staff

Kevin O'Neill, DOE-ID
Jim Malmo, DOE-ID
Beatrice Brailsford, Snake River Alliance
Brennan Summers
Kent Miller
Amy Cox
Amy Taylor, U.S. Senator Risch
Avery Maghan
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 10:15 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.

Keith Branter (CAB Chair) welcomed everyone to Sun Valley and the last CAB meeting of 2018. He observed that the meeting was well-attended and encouraged the board members to participate in the day's discussions. Branter introduced David Borak, Designated Federal Officer for the EM Site-Specific Advisory Board (SSAB) and thanked him for attending.

Jack Zimmerman (DOE-ID Deputy Manager and ICP CAB DDFO) commented that he was losing his voice so Brad Bugger, ICP CAB Federal Coordinator (DOE-ID), would help deliver the day's presentations. He said the meetings in Sun Valley were always a success and that the day's agenda was full of informative presentations. He added that there were two particularly important things to discuss: The most recent Integrated Waste Treatment Unit (IWTU) simulant run results and the Accelerated Retrieval Project (ARP) V causal analysis event update.

Daryl Koch (DEQ) stated that Rod Lobos, Environmental Protection Agency (EPA) liaison to the CAB, had recently accepted a position with DOE in Hanford. As such, Dave Einan would be the acting EPA liaison until someone else had been identified for the role. Koch also introduced Mark Clough, the new Idaho Settlement Agreement (ISA) Coordinator and Susan Burke's replacement as liaison to the CAB. He commented that Clough has been with DEQ for 18 years and presented to the CAB many years ago. Koch asked the CAB to welcome Clough.

Clough thanked Koch for the introduction and said Susan Burke was a great asset to the State and would be missed. He commented that he spent 10 years in the Navy, worked at the Naval Reactors Facility (NRF) several years ago, and has lived in Idaho for 21 years. Clough stated that he also oversees the Quality Management System for all I-DEQ offices. He offered to answer questions from the CAB throughout the day and said he was looking forward to serving alongside them.

Fred Hughes (Fluor Idaho) said Fluor Idaho had made a lot of progress on IWTU and on their safety performance since the June CAB meeting and that he would speak about both in more detail later on.

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

Brad Bugger (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 Member) asked Jim Malmo (DOE-ID Assistant Manager for Waste Disposition) to remind the CAB how many shipments WIPP was receiving prior to the incident at the Waste Isolation Pilot Plant (WIPP) in February 2014. Malmo responded that WIPP was accepting 17 shipments per week prior to the incident, and a proposal to increase shipments to 25 per week was being considered. Malmo commented that it is DOE's goal to eventually resume making 17 shipments per week, however the ventilation system in the mine must be upgraded first. Currently, workers at WIPP are unable to emplace waste and mine Panel 8 at the same time, so they dig most of the week, accumulate shipments above ground during that time, and then emplace that waste once they have finished mining and the ventilation system has cleared the airborne salt.

Koch asked Malmo to explain the difference between Contact-Handled (CH) and Remote-Handled (RH) Transuranic (TRU) waste. Malmo explained that workers can handle CH-TRU waste with their hands, but must utilize gloveboxes and hand manipulators to process RH-TRU waste as it is too radioactive to have direct physical contact with. Once RH-TRU is taken out of the hot cell, it is housed in special, shielded containers. Malmo noted that treating RH-TRU waste requires a much higher level of effort than CH-TRU waste does.

Christensen asked when the business case study analyzing a continuing mission for the Advanced Mixed Waste Treatment Project (AMWTP) would be made available to the public. Bigger responded that the Department had not yet made a decision, but said he expects that the report will be available very soon.

Christensen asked if there will be layoffs at AMWTP if DOE chooses to forego a future mission. Hughes commented that because the workers at AMWTP belong to unions, it is difficult to reassign workers to areas represented by a different union. He said he has been working with the unions to address the potential layoffs and added that any AMWTP worker who applies for a position at another facility is given preferential consideration. Fluor Idaho is planning for all scenarios and the ramifications of each.

Christensen asked if the layoff would be sudden and definitive, or more gradual. Hughes responded that Fluor Idaho has already lost many AMWTP employees due to uncertainty surrounding the facility's future. He added that the impact would be less dramatic than what is being reported.

Teri Ehresman (CAB Member) asked if the employees Fluor Idaho is losing are being replaced. Hughes responded no, not unless their position is absolutely essential. As there is uncertainty about the stability of most positions at AMWTP, Fluor Idaho has replaced as few employees as possible.

Ehresman asked if Fluor Idaho is attempting to retrain the vulnerable employees. Hughes responded that further educational opportunities in partnership with the College of Eastern Idaho and some other educational institutions is one aspect of their transition plan.

Larry Schoen (CAB Member) commented that a member of the Leadership in Nuclear Energy (LINE) Commission recently reported that she had learned, while on a trip to Washington, D.C., that the facility would be closed. Zimmerman responded that no final decision has been made, but said he believes the analysis is complete and DOE-HQ is sifting through the information. He commented that they would likely make a decision by the end of November.

Beatrice Brailsford, Snake River Alliance, Pocatello, referred to the upcoming public comment period regarding the Site Treatment Plan's deadline for TRU waste processing. She asked if there is a relationship between the treatment plan and the ISA. Bigger responded that the ISA requires that all TRU waste be shipped out of the state by December 31, 2018. DOE will be unable to meet that deadline.

Brailsford then asked if there is a procedure for first addressing the deadline for TRU waste processing in the Site Treatment Plan and then having a discussion with the State in the context of the ISA. Zimmerman responded that the treatment plan and the ISA are two separate agreements. The former establishes annual goals and is more reflective of reality. Modifying the Site Treatment Plan does not necessarily indicate an ISA modification. Zimmerman added, however, that it would be prudent to have those discussions with the State at some point.

Brailsford referred to the DOE Office of Nuclear Energy's (NE) recent adoption of the Experimental Breeder Reactor II (EBR-II) dome. She asked what that means. Bigger responded that demolition of the dome was in Fluor Idaho's original contract, but that will no longer happen as NE may have future uses for the facility. It has been transferred to NE and is no longer under EM's purview.

Brailsford referred to an earlier comment that DOE had finished treating RH-TRU waste from the Idaho National Laboratory (INL) and moved on to treating RH-TRU waste from the Navy. She asked if all RH-TRU waste from the scrap yard at the Materials and Fuels Complex (MFC) had been treated. Malmo

responded that all RH-TRU waste identified in the ISA had been treated. He confirmed that DOE had begun treating the Navy waste, but said once they finish, probably around March or April 2019, they will begin treating the TRU waste generated after establishment of the ISA in 1995, called newly-generated TRU waste. Following that step, all RH-TRU waste that Idaho has will have been treated, at which point DOE will move into RH mixed low-level waste.

Brailsford asked if the degradation of the dry-storage wells at Chemical Processing Plant (CPP)-749 was recent, or if it was the result of the fire water leak. Zimmerman responded that the vaults in CPP-749 are Generation I vaults for Spent Nuclear Fuel (SNF) storage and were not designed like newer generations. Some moisture has entered the vaults and led to corrosion. While it has not impacted the safety margin associated with the storage, it could if no action is taken. Zimmerman commented that DOE is proactively working to install some vents that will allow the moisture to escape in addition to evaluating relocating that fuel to a new generation vault.

Brailsford commented that she thought she remembered there being a fire water leak at some point in the past. Zimmerman responded that he would need to look into that and get back to her.

Brailsford asked Hughes to name the two unions he referred to when discussing Fluor Idaho's plans for potential layoffs at the conclusion of AMWTP's current mission. Hughes responded that the Operating Engineers is the union that works at AMWTP and the Steelworkers is the union that covers the rest of Idaho's work scope.

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>.

Josh Bartlome (CAB Member) asked where the three tanks storing 900,000 gallons of liquid sodium-bearing waste are located. O'Neill responded that the tanks are stored underground just north of the New Waste Calcining Facility at the Idaho Nuclear Technology and Engineering Center (INTEC), about a quarter of a mile from IWTU.

Bartlome asked O'Neill to describe the consistency of the simulant, and asked if it will eventually break down into a power form. O'Neill responded that it looks like sand, but is not as hard. While it could be crushed with a moderate amount of pressure and dissolved if wetted, it is stored in cans to prevent mechanical agitation and moisture. Bartlome asked if DOE expects the waste to be a similar consistency. O'Neill responded yes. The waste will be radioactive and contain metals, but the simulant was made to replicate the waste quite closely.

Schoen asked O'Neill to explain what process gas is. O'Neill responded that the Denitration Mineralization Reformer (DMR) is a dry bed, so the reactor is sprayed with liquid as fluidization is driven with steam. In short, water and waste are injected into the DMR. The liquids are vaporized in the process. The solids come out the bottom and are put in canisters while the gases go overhead. These gases have picked up radioactive particulates in the process, which must be filtered out. As the vapors move through the facility, they are filtered several times before eventually escaping out the stack as steam.

Bartlome asked if DOE air permits are site-wide or project-specific. O'Neill responded that the permit is site-wide.

Branter asked how DOE plans to replace the process gas filters (PGF) once the facility begins treating waste. O'Neill responded that they are augmenting their ability to clean those filters in situ to help reduce risk of contamination before the Radiological Control Team (RADCON) follows the procedure of utilizing glove bags and remote-tooling to remove and replace the filters. He added that a set of mockups have been built at Diversified Metals which are helping to determine the tools and procedures for replacement of the PGF.

Branter commented that past experience tells him the RADCON team should be practicing replacement of the PGF before the facility goes hot. O'Neill agreed and said replacement of the PGF is the greatest worker hazard during hot operations. He commented they are building a PGF at the Hazen pilot plant so workers can practice cleaning and replacement operations prior to startup of IWTU.

Christensen asked how many bundles are in the PGF. O'Neill responded that there are 18 bundles in the PGF and each bundle has 19 elements.

Christensen asked O'Neill to elaborate on the process for cleaning the PGF. O'Neill responded that they are examining numerous methods and seeking input from various engineering outfits and laboratories on how best to clean them. The material is embedding into the filter media itself, so washing the filters from the inside out with acid may produce the best cleaning results. This cleaning method is, however, causing the nickel to come out of the alloy, so they are also examining whether they are using the right material for the filters. O'Neill added that they have consulted with the team at the Energy Solutions facility, which is similar to IWTU and also struggled with filter issues early on. They have had great success cleaning the filters in situ.

Schoen asked if it is an option to simply dispose of the PGF. O'Neill responded that while it is an option to dispose of the filters, successfully cleaning them without exposure or undo costs improves their ability to dispose of them.

Bartlome asked how much secondary waste DOE expects to generate. O'Neill responded that very little high-level waste will be generated, but cleanup work always produces some contaminated items, such as clothing and gloves. He added that the waste they generate cleaning the PGF will go back through IWTU to be processed again.

Branter asked if DOE will be required to complete another Operational Readiness Review (ORR), and if not, why not. O'Neill responded that as long as they are in operations mode and not shut down for more than a year, they are not required to complete another ORR. However, they will conduct a very focused readiness assessment of their procedures, manpower, and the plant in preparation for radiological operations. Currently, they also post the facility and treat all simulant runs as radioactive operations in order to continue building the experience and mindset of the IWTU workforce.

Marvin Fielding (CAB Member) asked if the issues with the PGF could actually indicate a process problem associated with material being passed through the DMR to the PGF. O'Neill responded that the issue seems to be caused both by the process and the filters themselves. Some of the reactions are a little slower than originally believed, which is why they are feeding simulant at 1.6 gallons per minute rather than 2.5 gallons per minute. They've also added phosphoric acid to the process. These adjustments resolved the bark issues and improved the reactions, but it is possible that some unreacted material could now be making its way to the PGF. By the time the PGF is removed and examined following each simulant run, those reactions are long passed, making it difficult to accurately detect what is going on when the particles hit the filter. O'Neill added that it could also be that the pores on the filters are too large.

Schoen asked if DOE has identified a disposal facility for the treated 900,000 gallons of liquid sodium-bearing waste. O'Neill responded that they initially envisioned it going to WIPP as RH-TRU waste, but are not sure it qualifies anymore. They would need to change the permits at WIPP to make that happen.

Zimmerman commented that sodium-bearing waste is being managed as high-level waste. Unlike calcine, however, sodium-bearing waste has the potential to be classified as waste incidental to reprocessing. It is the result of cleaning out some of the fuel processing facilities at the site, so it has a much lower concentration of radionuclides than the calcine waste does. If that were to happen, it could be determined to be TRU waste and disposed of at WIPP with a permit modification. Zimmerman said that while it is true that they do not have a repository for sodium-bearing waste or calcine, there are several options they are trying to work through. It is a national issue and somewhat out of DOE-ID's control.

Schoen asked O'Neill for the volume of this waste. O'Neill responded that a rough estimate would be 600 cubic meters. He added that DOE originally estimated the output of treated waste to be around 650 canisters, but estimates have varied by simulant run. Fluor Idaho is conducting an estimate now based on the most recent simulant run, but O'Neill said he has not yet seen that number. As they proceed through the simulant runs, they will continue to refine the estimate.

Public Comment Session #1

Tami Thatcher, Idaho Falls, said she would first like to comment on the operating procedures of the CAB. She stated that CAB decisions are typically reached through consensus, but that she now understands the board does not follow Robert's Rule of Order. Thatcher recalled that DOE took time at the last meeting to ensure the CAB could vote on a recommendation that was not on the agenda. They learned that there are no restrictions on the agendas, and they can be changed at any time during the meetings.

Thatcher recalled that when an issue, whether or not to support a continuing mission for AMWTP, had already been voted on during a previous, special phone-in meeting, and certain members of the CAB did not like the outcome, they called for a vote again, completely unannounced. They also took an unannounced vote on a topic there had not been a presentation on. Thatcher expressed her surprise, and argued that the ground rules should be made very clear as this lack of restriction tarnishes the results of the vote. She added that the CAB website makes it look as though the board fully endorsed a continued mission for AMWTP despite there being a dissenting opinion.

Thatcher also referred to the Energy Communities Alliance (ECA) report the CAB discussed during their June meeting in Idaho Falls. She acknowledged that the report contains some very detailed and useful information, but said it makes many unjustified assertions throughout and does not include references. She noted that it lists artificial standards and overly conservative strategies as the reasons for DOE's failure to clean up its toxic legacy at Hanford, Idaho, and Savannah River, but does not offer evidence to support those claims.

Thatcher went on to say that the ECA report leaves out any description of the toxic hazards at DOE's sites as well as the difference between short-term waste and waste that will be radiotoxic for hundreds of thousands of years. The report also does not mention the many technically unresolved issues regarding confinement of this material over time.

Finally, Thatcher commented that the ECA report makes interesting statements about calcine. After reading a brief excerpt from the report, she asked why people in other communities know more about where Idaho's calcine cannot go than Idahoans do.

Fluor Idaho Safety Initiatives

Fred Hughes (Fluor Idaho) provided a presentation regarding Fluor Idaho safety initiatives. The presentation is available on the ICP CAB website: <https://energy.gov/em/icpcab>.

Roemer asked how one employee can report another employee for unsafe behavior without disrupting the work environment. Hughes responded that he expects the employees to tell each other when they observe unsafe behavior. Beyond that, employees may report unsafe behavior through the Observe, Watch, Learn Program (OWL) and Employee Concerns, or to any manager or director within Fluor Idaho.

Branter asked if Fluor Idaho employees have stop work authority. Hughes responded yes.

Zimmerman commented that DOE took contract action with Fluor Idaho's fee in June. While it was a fairly significant and unprecedented action, it was warranted based on Fluor Idaho's safety statistics at the time. Prior to June, DOE had worked with Fluor Idaho to resolve the safety issues, without success. Zimmerman noted that the performance since that time has certainly met expectations in the short run and said DOE is monitoring their long-term progress.

Zimmerman explained that when DOE took fee action in June, Fluor Idaho was given an opportunity to earn two thirds of the penalty back by taking actions that turned the safety trends around and then sustaining those trends. In December, DOE will evaluate the progress Fluor Idaho has made since taking action and then revisit their progress in June 2019. For now, however, Fluor Idaho is heading in the right direction. DOE remains cautiously optimistic and is focused on safety performance.

Schoen acknowledged Fluor Idaho's investment into safety and congratulated them on achieving the Voluntary Protection Program (VPP) Star. He commented that during the CAB's June facilities tour, he realized just how difficult some of the work is. He asked how often employees review their processes if that exercise is part of the regular culture. Hughes responded that processes are not reviewed as often as he would like, but they are emphasizing that more now by implementing learning teams. He said the feedback loop is not as strong as it should be and Fluor Idaho's leadership is focusing on that now.

Brandon Leatham (CAB Member) referred to the graph on Slide 23 and asked why OWL observations spiked in August. Hughes explained that they told every employee they could earn a safety buck for each safety related activity they participated in. Those safety bucks would then be entered into drawings for three ATVs and three drift boats. The initiative was orientated toward encouraging safe behaviors. Hughes said changed employee behavior would result in improved safety rates.

Talia Martin (CAB Member) said she was interested in the correlation between experience and injuries. She asked if Fluor Idaho specifically examined ways to improve that metric. Hughes responded that they have a lot of employees who grew up on farms and ranches, where the risk acceptance is fairly high. One of the challenges is adjusting their risk acceptance to a much keener level.

Thatcher asked how many workers needed non-routine lung counts this year. Hughes responded three.

Thatcher commented that the potential for high neutron dose is unique to TRU work and is not monitored by the badge dosimeter. She asked what workers understand about neutron dose through training, and what are they told about it. Hughes responded that as part of the Rad-Worker I and II trainings, employees develop a detailed understanding of all ionizing radiation, the impacts, and how they can minimize their exposure to it.

Thatcher asked if the employee who experienced the puncture wound earlier in the summer required chelation, and if the initial chelation occurred within two hours of the event. Hughes responded that medical personnel excised the wound almost immediately on the recommendation of the doctor on duty and at the request of the employee. The employee was also told the benefits and potential adverse effects of chelation and that employee opted to have it done. The initial chelation was not delivered within two hours and Fluor Idaho is still analyzing the final test results from the bioassays. The lifetime dose to that employee is minimal due to the treatment the employee received.

Report on EM SSAB Chairs Meeting/Cleanup Workshop and any Motions to be Discussed

Branter reported that he and Trilby McAfee (CAB Vice-Chair) traveled to Washington, D.C. for the semi-annual EM SSAB meeting in September. The meeting was held jointly, for the first time, with the Environmental Management Advisory Board (EMAB). Branter commented that he and McAfee learned about the many things going on across the complex. In comparison to other sites, cleanup at the Idaho Site is in good shape. He said that one of the highlights of the meeting was Assistant Secretary for the Office of Environmental Management, Anne White's presentation. He and McAfee had an opportunity to informally meet Assistant Secretary White, and Branter said she is down-to-earth, personable, and eager to advance the successes of the EM program.

Branter explained that the EM SSAB meeting was just one day, and that the Chairs were then invited to attend the National Cleanup Workshop, a massive conference attended by more than 1,000 people. He said

many interesting presentations regarding new technologies and approaches were delivered. DOE EM's budget was also approved that week. Of \$7.1 billion, Idaho received \$443 million for cleanup.

McAfee commented that it was both educational and interesting to speak with the other CABs. Everyone has frustrations at their sites and wants to see progress. She reported some of the facts she learned about the other sites: Moab houses 9 million tons of uranium tailings, "residual" amounts of mercury slated for cleanup at Oak Ridge wound up being 2 ¾ tons, and the waste storage tanks at the Hanford Site sit just 400 yards from the Columbia River and are leaking. She commented that while Idaho does not want to see more waste brought into the State, it has a responsibility to help its neighbors. Everyone working together is always a good thing. McAfee concurred with Branter that the CAB members should be very proud of Idaho's facilities and leadership.

Branter asked Borak to introduce a recommendation pertaining to public outreach that the SSAB chairs discussed during the September meeting. He added that the ICP CAB had formed a public outreach subcommittee during their annual Administrative & Preparatory Session the day before.

Borak commented that the Nevada Site Office performed a community analysis to see how well their outreach had been doing in the communities surrounding the Nevada National Security Site. The Nevada CAB asked the SSAB to consider putting forward a recommendation encouraging a closer look at community outreach efforts surrounding DOE sites and listing potential activities that could be performed. The recommendation asks Assistant Secretary White to direct the field managers to work with their advisory boards to come up with activities that might work well in their respective communities.

Borak explained that there are two tasks involved. The ICP CAB first needs to decide whether or not this recommendation should be put forward to the Assistant Secretary, and then the public outreach subcommittee should determine which activities they would like to perform as a board.

After some discussion, the CAB reached consensus on sending this SSAB recommendation to Assistant Secretary White with the Idaho CAB's support.

Amendment to ICP CAB Procedures

Bugger commented that the CAB had discussed the possibility of changing its approach to leadership elections during the annual Administrative & Preparatory Session the day before. Currently, the chair and vice-chair are chosen for two-year terms apiece. Their terms expire prior to the June meeting, after two years. The CAB members vote six months before that expiration for the new chair and vice-chair, allowing for a two-meeting mentoring period. The CAB discussed moving to a process where the chair serves a year, and the vice-chair, who also serves a year, automatically succeeds the chair for a one-year term.

Gumm added that this amendment would not change the roles and responsibilities of these offices within the group but simply the terms of service.

Gumm read aloud the proposed, amended language:

The chair-elect shall be chosen by the CAB six months prior to the seating of new members on the biannual rotation of CAB membership. Nominations (open or self-nominations) will be made at the close of the first day of the CAB meeting. Voting will be by secret ballot during the second day of the CAB meeting. The chair-elect will serve a one year term in office as vice-chair, following a two-meeting period under the previous chair and vice-chair. Following the one-year term as vice-chair, that individual will serve a one-year term as chair. The vice-chair will substitute for the chair, as needed.

Christensen, who drafted the amendment, said the idea was to allow more members of the CAB the opportunity to partake in leadership responsibilities and visit more CABs and sites around the complex. The

newly elected chair serving a preparatory two-meeting period is pre-existing under current procedure. Under the new process, a member would be elected, serve six months in preparation, one year as vice-chair, and then one year as chair, for a total of 2.5 years. The process would cycle every year, though, so more members would be able to participate.

Bugger commented that according to CAB procedure, all changes to the operating procedures must be approved unanimously by the board. The proposed amendment must then be approved by DOE Headquarters.

After some further discussion of the proposed amendment, the CAB members unanimously agreed to send it to DOE Headquarters for review and approval.

Accelerated Retrieval Project V Incident Update

The Fluor Idaho Investigation Team provided an update on the ARP V drum incident. The presentation is available on the ICP CAB website: <https://energy.gov/em/icpcab>.

Bartolome asked for some examples of prohibited items, and what specifically makes them prohibited. Hughes responded that prohibited items are items that are potentially pressurized, such as a fire extinguisher or small propane cylinder.

Branter asked if beryllium has a radiological signature. Giebel responded no. Branter asked, then, how Fluor Idaho knew that no beryllium escaped the facility. Giebel explained that the design of the facility would not allow it. Branter asked about employee beryllium exposure. Giebel responded that event responders were wearing respiratory protection and were part of the site beryllium program.

Zimmerman added that while beryllium does not have a radiological signature, it would have gone along with other radiological contaminants. As no radiological contaminants appeared, they assume beryllium was not there either.

Schoen asked if the incident would have occurred had there not been beryllium in the drums. Giebel responded that both depleted uranium (the heat source) and beryllium carbide (which generated the methane that popped the lids) had to be present for this particular event.

Christensen asked if the four barrels were processed consecutively. Giebel responded they were processed within a short window.

Christensen asked if there is any mechanism for pressure monitoring on each of these barrels. Giebel said no, the barrels are equipped with filters designed to vent a slow-production of hydrogen. They are unable to handle a rapid pressurization such as the out-gassing in this reaction.

Christensen observed that they might have had an indication of an event like this if they had had pressure monitoring on the barrels. He asked how this will be avoided in the future. Giebel said he would cover some of the controls later in his presentation.

Clough asked at what pressure a drum lid will pop off. Giebel responded 30 to 50 pounds per square inch.

Clough commented that this buildup of methane would have occurred very rapidly, so pressure monitors on the drums may not have provided a forewarning. Giebel agreed that in this instance, pressure monitoring would not have helped.

Fielding asked at what temperature the beryllium carbide reaction was initiated. Giebel responded about 250 degrees Celsius.

Branter wondered if headspace gas monitoring would have helped identify this potential issue. He asked if they were doing that. Giebel responded no, and said they are not pursuing an active control involving

headspace gas monitoring for methane at this time. Rather, they will focus their energy on controlling the depleted uranium.

Schoen asked if they could seal the drums in an inert, or nitrogen-rich environment. Giebel responded that from a depleted uranium and heat source perspective, an inert environment would certainly help. However, they are attempting to implement a more robust and broad control that will force the reaction, thereby preventing any future reaction. The control is more extensive raking and a longer hold time prior to packaging.

Branter commented that there seems to be quite a bit of radiological data, and asked about involvement of industrial hygiene professionals in analysis of the event. Giebel responded that the industrial hygiene team has been heavily involved with the technical team's activities since day one of the event.

Roemer referred to the last bullet point on Slide 20 of the presentation and asked for confirmation that unpredictability beyond control remains with this waste. Giebel responded that while it is certainly not zero risk, those risks can and will be driven into an acceptable range through implementation of adequate controls.

Branter asked if there are other reactive metals or materials that could be in the waste they are treating. Giebel responded that in this case, in this specific material, there was one to three percent zirconium, and a very small amount of aluminum, but nothing that would provide a signature or a heat source.

Schoen referred to a bullet on Slide 20 that reads "Controls/Corrective Action will be robust so no uncontrolled reactions occur in the future." He commented that it seems unrealistic to think there will be no uncontrolled reactions. Giebel responded that they are attempting to force those reactions early and in the facility.

Koch commented that many years ago there were five distinct waste streams set for exhumation at the ARP facilities. ARP III contained unreacted roaster oxides from Rocky Flats and the facility was shut down for at least a year as a full investigation was conducted into treatment of those unreacted roaster oxides. He said that is where the solution of raking the waste originated and commented that it is unfortunate that this knowledge did not carry over to this workforce all these years later. Giebel responded that it is clear to him that those lessons learned were not put into the safety basis.

Thatcher referred to one of Giebel's earlier comments that there had been recognition of a minor over pressurization, the cause of which went unanswered. She asked what that was. Giebel clarified that it was not an over pressurization. One of WIPP's acceptance criteria is 1,250 parts per million (ppm) of methane prior to shipping on the road. When sampling, they had a handful of legacy drums from the 2015 timeframe that had a greater than 1,250 ppm but no pressurization. Thatcher asked if those could have contained beryllium. Giebel confirmed that they contained beryllium, but said they did not know that at the time.

Thatcher asked if the causal analysis will be made available to the public. Giebel responded that it is posted on the Fluor Idaho website.

Thatcher asked about the drum lid that had been missing for some time after the incident. Giebel responded that all four lids were ejected. The building structure has an inner liner and an outer liner. The inner liner had a small tear, and when that fourth lid was ejected, it landed in between the inner and outer liners. Giebel noted that despite the tear, the structure never lost its integrity.

Thatcher asked if the radiological alarm sounded following the event. Giebel responded that the Control, Alarm and Monitoring System (CAMS) was in alarm, but when there is a lot of particulate, it goes into alarm and is saturated. Both the smoke detector and the CAMS did alarm.

Thatcher asked if the responding firemen were wearing self-contained breathing apparatuses. Giebel responded that the first responders went into the vestibule, smelled smoke, backed out, and donned the appropriate personal protective equipment (PPE) prior to entering the airlock.

Public Comment Session #2

Thatcher commented on the ARP V drum event. She said the presentation today was very strong and that it is good Fluor Idaho consulted independent reviewers. However, the press release the day of the event reported only one drum. She said she did not understand that.

Thatcher noted that she had not grasped that SD-176 alluded to multiple generators. She commented that it was concerning that Fluor Idaho did not know what was in the drum, and proceeded anyway. They are lucky that all employees had already left for the day and no one's life was dramatically changed due to the incident.

Thatcher again referred to the missing lid and asserted that the safety question may be too limited to just the ARP V facility. DEQ has already issued for public comment the renewal permit for AMWTP. The drums that ruptured were from the AMWTP. She commented that she did not understand why they would submit for public comment a draft permit that does not incorporate the changes involving this waste. She expressed concern about drums being punctured, allowing oxygen in, and over pressurizing.

Announcement of 2019 ICP CAB Leadership Election Results

Bugger announced the results from the 2019 ICP CAB leadership election. As McAfee was the only person nominated for chair, she will take over for Branter following the April meeting.

Three people were nominated for the vice-chair position, and the winner was Brad Christensen.

Bugger congratulated McAfee and Christensen.

Conclusion

Borak concluded the meeting.

Keith Branter, Chair
Idaho Cleanup Project Citizens Advisory Board