



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 26, 2017

List of Acronyms

AMWTP	Advanced Mixed Waste Treatment Project	MEI	Maximally Exposed Individual
ARP	Accelerated Retrieval Project	MFC	Materials and Fuels Complex
ATR	Advanced Test Reactor Complex	NOAA	National Oceanic and Atmospheric Administration
CAB	Citizens Advisory Board	NON/CO	Notice of Noncompliance Consent Order
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act, also referred to as superfund	NRC	Nuclear Regulatory Commission
CPP	Chemical Processing Plant	NRF	Naval Reactors Facility
CWI	CH2M-WG, Idaho	PCE	Tetrachloroethylene
D&D	Decommissioning and Dismantlement	PPE	Personal Protective Equipment
DDFO	Deputy Designated Federal Officer	ROD	Record of Decision
DEQ	Department of Environmental Quality	RCRA	Resource Conservation and Recovery Act
DFO	Designated Federal Officer	REDI	Regional Economic Development for Eastern Idaho
DMR	Denitration Mineralization Reformer	RWMC	Radioactive Waste Management Complex
DOE	Department of Energy	SDA	Subsurface Disposal Area
EIS	Environmental Impact Statement	SNF	Spent Nuclear Fuel
EM	Office of Environmental Management	TCE	Trichloroethylene
EM SSAB	Environmental Management Site Specific Advisory Board	TRU	Transuranic waste
EPA	Environmental Protection Agency	USGS	United States Geological Survey
ICDF	Idaho CERCLA Disposal Facility	VOC	Volatile Organic Compound
ICP	Idaho Cleanup Project	WAC	Waste Acceptance Criteria
INL	Idaho National Laboratory	WAG	Waste Area Group
ISA	Idaho Settlement Agreement	WIPP	Waste Isolation Pilot Plant
IWTU	Integrated Waste Treatment Unit		

The Idaho Cleanup Project (ICP) Citizens Advisory Board (CAB) held its quarterly meeting on Thursday, October 26, 2017, at the Sun Valley Resort 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

Josh Bartlome
Keith Branter
Brad Christiansen
Marvin Fielding
Jim Huston
Kristen Jensen
Trilby McAfee
Betsy McBride
Bill Roberts
Larry Schoen

Members Not Present

Bob Bodell
Talia Martin
Cathy Roemer

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

Connie Flohr, U.S. Department of Energy Idaho Operations Office (DOE-ID)
Bob Pence, Federal Coordinator, DOE-ID
Fred Hughes, Program Manager, Fluor Idaho
Susan Burke, State of Idaho
Daryl Koch, Idaho Department of Environmental Quality (DEQ)
Rod Lobos, Environmental Protection Agency (EPA)

Others Present

Erik Simpson, Fluor Idaho
Beatrice Brailsford, Snake River Alliance
Margaret Stewart, Snake River Alliance
Preston Abbott
Natalie Creed, DEQ
Scott Lee
Tim Miller
Montgomery
Betsy Holmes, DOE
Roy Bartholomay, USGS
Brad Bugger, DOE
Andrea Gumm, Facilitator
Kelly Green, Staff

Kathryn Hitch, U.S. Senator Mike Crapo
Dana Kirkham, REDI
Randy Jensen
Amy Taylor, U.S. Senator James Risch
Jim Malmo, DOE-ID
Kevin O'Neill, DOE-ID
Nolan Jensen, DOE-ID
Teresa Perkins, DOE
Tami Thatcher
Sarah Batena
Ann Riedesel, Fluor Idaho
Jordan Davies, 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 1:30 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 the meeting. He introduced Larry Schoen as the CAB's newest member and commented that Trilby McAfee (CAB Member) had recently been elected to serve as Vice-Chair of the Board.

Connie Flohr commented that Jack Zimmerman (DOE-ID Deputy Manager and CAB Deputy Designated Federal Officer) was leading a review at the Hanford Site and was unable to make the day's meeting. She said she would be filling in for him and was looking forward to the presentations.

Susan Burke (State of Idaho) commented that she always enjoys the meetings in Sun Valley. She said she had visited the site the week before and saw good, continuing progress. She observed that there were many drums awaiting shipment to the Waste Isolation Pilot Plant (WIPP). During her tour, she visited the Accelerated Retrieval Projects (ARPs). She stood inside ARP IX, construction of which has just been completed, and was encouraged to see that waste exhumation at ARP VIII was nearing completion. She concluded by saying that the day's agenda looked interesting and that she was looking forward to the presentations.

Daryl Koch (DEQ) commented that the CAB's last meeting was in June. He provided a brief summary of site activities since then. As of October 23, about 40,000 drums of buried waste have been repackaged from the CERCLA buried waste retrieval project. DOE had already shipped 76 percent of these drums prior to the WIPP shutdown. Just yesterday, DEQ staff were out at the Site to take a final look at the tank farm low permeability paving project over the western 2/3 of the INTEC Tank Farm. The tank farm paving project was completed in September to reduce infiltration into the perched water zone. Workers will complete the remaining eastern side of the tank farm after the four remaining high-level liquid waste tanks are closed under the Resource Conservation and Recovery Act (RCRA) program after the Integrated Waste Treatment Unit (IWTU) treats the remainder of the liquid waste. He also introduced Natalie Creed as the Hazardous Waste Program Manager.

Rod Lobos (EPA) introduced himself as the CAB's new EPA liaison and Dennis Faulk's replacement, with whom he worked for over 12 years. He commented that he is up to speed on what is happening in Idaho and has been out on the site. He said he would be available for questions from the CAB throughout the day.

Fred Hughes (Fluor Idaho) commented that Fluor Idaho just finished installing the cap on part of the tank farm. He added that the Hazen Pilot Facility had been running for the last several weeks to support redesign of the Integrated Waste Treatment Unit (IWTU), and said Fluor Idaho was gearing up to install the new double plenum and cone in the Denitration Mineralization Reformer (DMR) in the IWTU. Workers at the Advanced Mixed Waste Treatment Plant (AMWTP) were approaching the 60th shipment to WIPP this year, and workers at ARP had less than an acre left to exhume at the Subsurface Disposal Area (SDA).

Recent Public Outreach Activities

Flohr reviewed recent public outreach activities. The presentation is available on the ICP CAB website: <https://energy.gov/em/icpcab>.

Idaho Cleanup Project Overview

Jim Malmo (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>.

Fred Hughes commented that Fluor Idaho's safety performance is not where it should be. In order to refocus the workforce's safety mindset, Hughes and/or his management team:

- Suspended field activities in September and issued an executive directive requiring directors to review training, qualifications, and job documents before authorizing work
- Conducted a company-wide safety pause meeting in Fort Hall where Hughes discussed company performance and laid out his expectations
 - Invited to the meeting a guest speaker who communicated the lifelong consequences of a workplace accident
- Performed additional management training and ensured every employee had participated in two to three safety meetings
- Conducted detailed reviews of the work and increased senior oversight in the field by bringing in four senior mentors who are coaching supervisors, managers, and work teams
- Brought in four safety experts to examine field activities
- Called on a physical therapist to perform training for the entire company, emphasizing risks associated with an aging workforce, and to observe and critique work in the field from an ergonomic perspective
- Participated in a safety audit performed by Fluor Corporate; Fluor Idaho passed at 86 percent

Betsy McBride (CAB Member) asked how Fluor Idaho discovered someone was not wearing appropriate personal protective equipment (PPE). Hughes responded that the incident in question involved an employee who was observing the over-heating of computer equipment. Rather than calling for help, the employee replaced the air conditioning cover with cardboard in an effort to increase airflow. More generally, DOE and Fluor Idaho managers are constantly observing work activities at the site. Hughes added that he requires his managers to perform two or three observations per month, and that supervisors are required to do even more.

Brad Christensen (CAB Member) asked if there is any reference to the severity of these injuries. An insect bite does not necessarily pose the same risk as a laceration. Malmo responded that DOE and its contractors report all injuries. Even an insect bite could initiate a severe, life-threatening allergic reaction.

Schoen referenced installation of low permeability pavement at Waste Area Group (WAG) 3 in order to prevent infiltration of precipitation that could drive contaminants into the aquifer. He asked which contaminants could be driven into the aquifer and if this area has ever been paved in the past. Malmo responded that the pavement will help contain the contaminated soils around the tank farm and divert water away from the area, which has been exposed since 1972.

Schoen asked what caused the contamination. Koch responded that much of the contamination resulted from the release of a valve box in 1972. During that event, 15,100 curies of strontium-90, three curies of technetium-99, some tritium, and about 16,000 curies of cesium were released. The strontium-90 and technetium-99 are still an issue today. Schoen asked why the area is being paved now, decades after the incident. Koch responded that this part of the tank farm was active until the 2000s. The piping from the last three tanks in the tank farm will be active until operations are completed at IWTU.

Schoen asked if this material was exhumed before it was paved over. Koch and Malmo responded no, it was graded and then paved.

Marvin Fielding (CAB Member) asked what the capacity of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) cell accepting debris from upgrades to the Chemical Processing Plant (CPP)-603 crane and Naval Reactors Facility (NRF) decommissioning and dismantlement (D&D) activities is. Malmo responded there is enough capacity to accept these wastes and commented that additional cells can be added. In addition to the CPP-603 and NRF wastes, the CERCLA cell accepted debris from the D&D of reactors at the Advanced Test Reactor (ATR) and the cargo containers from the AMWTP, which were grouted in place. Additional cells will be added moving forward to accept waste and debris from future D&D activities.

McBride asked what happens to the volatile organic compounds (VOCs) once they are extracted. Nolan Jensen (DOE-ID) responded that the VOCs go through a catalytic converter and are burned off. Any leftover vapor is exhausted. He added that there are three treatment units around the SDA and three times that many wells that feed into those units.

Schoen asked about disposal of sludge and other solid wastes that are exhumed. Malmo walked him through the process: Workers open the excavated areas and pull out the drums, which are in various states of deterioration. Once the waste is exposed, trained observers identify it using acceptable knowledge collected during waste generation. When an observer identifies transuranic (TRU) waste, they ask the excavator to set the waste aside in a tray, which is then sent on for processing. The remaining waste is put back into the pit and trench.

Schoen asked if some of the low-level waste will go into the Idaho CERCLA Disposal Facility (ICDF). Malmo responded that the pits and trenches will continue to house the mixed low-level waste. Once the TRU waste has been completely removed, a cap will go over all 90 acres of the SDA.

Malmo continued on to say that once the TRU waste is put into a tray, it is sent to a drum packaging station and workers sort through the waste to ensure there are no prohibited items. This is key as a recorded visual examination of the waste must be included in the waste's record. After sorting, the waste is placed inside a clean drum and undergoes further characterization. Once it is certified for WIPP, it is placed in storage until it can be shipped.

Jim Huston (CAB Member) congratulated Fluor Idaho for a job well done. He asked if the contractor and DOE performed a lessons learned. Malmo responded yes, following construction of each ARP structure, lessons learned were put to use building the next ARP. He credited this process as the reason the project is two years ahead of schedule and \$6 million under budget.

Fielding commented that the mixed low-level waste going back into the pits and trenches looks really dry. He asked what is being done to backfill and compact that material to reduce future settlement. Malmo responded that when needed, they put waste in soft-sided soil sacks, which help prevent ground subsidence as digging continues.

Malmo commented that ARP IX was built between ARP II (on the east side) and ARP VII (on the west side) and a tunnel was constructed to connect the three, allowing for utilization of existing packaging stations and maintenance bays. This innovation made ARP IX almost half the cost of the other ARPs and \$10 million less than the most recent ARP VIII.

Josh Bartlome (CAB Member) asked if the new cells at the SDA are lined. Malmo explained that there are no new cells there. The buried waste is located within the SDA, a 90 acre area containing multiple unlined pits

and trenches that were filled between 1950 and 1970. The final Record of Decision (ROD) is to cap the entire 90 acre area, allowing the water to roll off the sides rather than penetrate the waste.

Bartlome asked if there are plans for an intermediate cover at the SDA. Malmo responded no.

Schoen commented that he finds the decision to cap rather than line the SDA a curious one. He added that if DOE were to remove the mixed low-level waste, line the pit, put the waste back, and install a soil cap, they would be able to reclaim it. Malmo responded that they should have lined these pits in the 1950s, when they began emplacing the waste. Now, multiple pits and trenches are dispersed across 90 acres and there is no way for them to remove all the waste to install a liner beneath it, though this was an option considered during the CERCLA process.

Bartlome asked if new cells are created for buried waste work at the SDA. Malmo responded that no new cells are created for buried waste work at the SDA. At ICDF, however, there are new standard RCRA cells with double, synthetic liners and leachate collection systems.

McBride asked if the ATR fuel is cool enough to bypass wet storage. Malmo responded that they are evaluating how the fuel is stored in CPP-603. Depending on where they are able to put it, the heat from this fuel will not interact with the other spent nuclear fuel (SNF). McBride asked how the distance at which the ATR fuel must be placed away from other fuels is being determined. Malmo responded that he is not a criticality expert, but that those calculations are being performed.

Hughes commented that when the fuel comes out of ATR it briefly goes into a working canal that initiates the cooling process. Malmo added that fuel can be stored in the working canal for a short period of time.

Schoen asked what the advantage of dry storage, as opposed to wet storage, is. Malmo responded that dry storage is a safer configuration, while wet storage has high operating costs and involves maintaining water chemistry and resolving issues with leaks.

McAffee commented that she appreciated DOE and Fluor Idaho taking the action they did to address recent safety incidents. She asked for confirmation that there was an incident six months ago regarding lock-out/tag-out. Hughes responded that numerous lock-out/tag-out incidents are thought to have been caused by employees who were performing the lock-out/tag-out processes but had not yet completed their training. This drove Fluor Idaho to require that all employees ensure their training and qualifications are current.

Integrated Waste Treatment Unit (IWTU) Update

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

Bartlome asked for the capacities of the DMR. O'Neill responded that the DMR is about 18 feet tall, the active bed is five to six feet in the lower portion and four feet in diameter. The gas is flowing through at about one foot per second.

McBride asked if the Hazen test will be completely understood and any issues resolved before Fluor Idaho performs the next simulant run. O'Neill responded that they have already learned enough about the general process from Hazen testing but are using it to fortify their knowledge. For example, they would like to test the chemistries and unique characteristics of each of the three tanks at Hazen.

Branter asked if the DMR is a certified pressure vessel. O'Neill responded that it is not certified. It is built to the pressure vessel code, but it operates at less than one atmosphere. All modifications are checked against the code.

Koch asked what will happen if something goes wrong with the ring-header after the facility has become operational. O'Neill responded that they would need to decontaminate the area, but said it is built for reentry. Koch asked what the value would be in that area. O'Neill responded the canisters would probably be 30-50R (roentgen), but could be as high as 100R. (A roentgen is a unit of measurement for exposure of X-rays and gamma rays.)

Huston commented that there is no neutron radiation, and asked if they are only worried about the radioactive particles that get trapped in the nooks and crannies of the vessel and cause it to be contaminated. O'Neill confirmed. Huston asked for a start-up date. Hughes responded that they will not provide a date until they have finished the third simulant run.

Natalie Creed (State of Idaho) introduced herself. She commented that she has been with DEQ for 23 years in the Hazardous Waste Program, the first 16 of which were spent as an inspector, and the last seven as the enforcement manager. She has worked on issues related to IWTU, specifically the Notice of Noncompliance Consent Order (NON/CO) and any related modifications. Two months ago, she moved into her new role as the Hazardous Waste Program Manager and is looking to continue cooperation with DOE, EPA, and all other counterparts. She offered to discuss with CAB members any questions they may have about IWTU from an enforcement or schedule perspective.

Public Comment Session #1

Margaret Stewart, Snake River Alliance, commented that the morning's presenters had continually referred to the budget, but had completely neglected to mention protection of the Snake River Plain Aquifer, which lies directly beneath the entire INL facility and is the impetus for cleanup. She said the aquifer should be an integral part of every presentation and mentioned every 10 to 15 minutes.

Tammy Thatcher, Idaho Falls, commented that she has deep roots in Idaho. Her grandfather came to Idaho in 1900 and homesteaded in Howe. She added that she worked at INL as a nuclear safety analyst. She referred to an accident at Materials and Fuels Complex (MFC) in 2011 involving workers who inhaled powdered plutonium while examining plutonium plates at the Zero Power Reactor. The Idaho CAB was briefed on this accident soon after it occurred and the person delivering the briefing assured the Board that the work of those involved would not be curtailed due to their inhalation.

Thatcher said that despite DOE's assurance, more than one worker was not released to return to radiation work for more than eight months. When these employees finally, through litigation, obtained their test results, they discovered they were still contaminated and excreting above detection levels of plutonium. She reported that three lawsuits regarding this event have been settled in the last year and a half.

Thatcher commented that the nuclear safety chairman at MFC warned management nineteen times specifically about the hazards of performing the plate inspections at that facility and no action was taken. The workers were not informed of the risks. Thatcher said it is unfortunate that the CAB was never updated on this event.

Thatcher also commented on the radioactive resin beads that the INL has been ejecting into the open air evaporation pond at the ATR complex. She stated that there has not been documentation to explain why this is not a new CERCLA cleanup site. She added that DOE's violations of the air permit with the State have never been questioned.

Transuranic Waste Disposition Update

Jim Malmo (DOE-ID) provided a transuranic waste disposition update. The presentation is available on the ICP CAB website: <https://energy.gov/em/icpcab>.

Schoen asked what a boxline is. Malmo responded that a boxline is a large trough that allows workers to sort through waste brought into the treatment facility using a robotic arm. Operators open the waste and dump it into the boxline, sort through it looking for prohibited items and liquids, size and fit the waste down to allow it to be loaded into another drum. Schoen asked what type of waste is handled in the boxline. Malmo responded that it is debris waste, such as tools, clothing, PPE, and construction and D&D materials.

McBride asked if DOE could use TRUPACT containers for transuranic wastes from a different site that had not been through a boxline and compacted. Malmo responded that it is possible, but involves changing the Nuclear Regulatory Commission (NRC) licensing on the TRUPACTs. DOE-ID is working with DOE-HQ to do so in order to define a potential future mission for AMWTP. McBride asked if, with the WIPP delays, they will have enough TRUPACTs. Malmo responded yes.

Schoen asked what qualifies as treatment, and if that process is chemical or physical. Malmo responded that treatment is a physical process allowing workers to open the drums, remove the waste, sort through it to document it and validate the acceptable knowledge found in the documentation that accompanies the waste. Sometimes, the workers must remove certain items, such as pressurized containers, before sizing and fitting the waste into the port.

Schoen asked what the latest in drum technology is, and if there are newer, lighter, better drums. Malmo responded that drum technology is still fairly simple and unchanged.

Schoen referred to the ARPs and asked if they are mobile tent systems. Malmo responded no, they have cement foundations.

Fielding asked if the ARP enclosure materials will be buried at ICDF once work is finished. Malmo responded that the state and EPA are allowing DOE to design these materials into the cap. ARP I and ARP VI have already been collapsed, moved, and covered with dirt. The rest of the ARPs will be collapsed and made part of the existing landfill that will ultimately be capped.

Flohr asked Malmo to clarify that the shielded containers are expensive and space consuming. Malmo confirmed, and said any shielded containers purchased and used to store waste will be replaced in WIPP, taking up space that could be used for contact-handled TRU waste. From a holistic, life-cycle stand point, it is best to limit use of shielded containers.

Huston asked if there are plans to bring waste back to Idaho from WIPP. Malmo said no.

Fielding commented that employment is stable at AMWTP, but said unless a mission can continue there, those employees will begin looking for new work. Malmo responded that DOE-ID is working with DOE-HQ to see if there are wastes from other sites that could be brought to Idaho in the 2019-2020 timeframe. The State also must provide approval for this process. A future mission could affect some of the workers who are treating the waste, but Fluor Idaho is working with DOE to utilize these employees elsewhere.

McBride asked why recertification takes so long. Malmo responded that WIPP has added an enhanced chemical compatibility evaluation for the Waste Acceptance Criteria (WAC) which requires DOE-ID to look at all the data created when the waste was generated and identify the chemicals that could conceivably be present. They then must assume that those chemicals are indeed present, and evaluate any potential reaction between them to ensure the chemicals are compatible.

Flohr added that before the WIPP event, entire waste streams could be certified, but now each drum must be evaluated individually.

Waste Isolation Pilot Plant Update

Jim Malmo (DOE-ID) provided an update on the Waste Isolation Pilot Plant. The presentation is available on the ICP CAB website: <https://energy.gov/em/icpcab>.

McBride asked if it would be possible to temporarily store more waste above ground at WIPP in order to increase the shipment rate. Malmo responded that they are considering constructing a pad above ground at WIPP, but because DOE's agreement with New Mexico states they are only allowed to store waste in that storage area for a year, the amount they could store is limited.

Branter asked how many shipments are left in Idaho. Malmo responded about 3,200.

Huston asked how many shifts are worked a day at WIPP. Malmo responded that WIPP currently has a limited number of crews which affects how many shifts can be worked, but they are attempting to increase shifts to seven days a week.

Christensen commented that with 3,200 shipments still to go, Idaho is far from reaching its goal. He asked at what point DOE begins to think of a Plan B for WIPP. Malmo responded that there probably is not a Plan B. Christensen asked about shipment frequency prior to the incident at WIPP. Malmo responded that Idaho was sending 17 shipments a week.

Flohr added that WIPP was being pushed too hard prior to the incident. They were accepting about 35 shipments a week and did not have time to maintain the facility. She reminded the CAB that WIPP is a pilot plant that was not intended to run for 50 or 100 years, and encouraged them to accept this new normal. WIPP will never get back to 35 shipments a week because the mine must be maintained.

Fielding referenced talks regarding abandonment of Panel 7 so WIPP employees could work in a clean, rather than contaminated area. Malmo responded that once they consulted experts, they realized it was not as difficult working in Panel 7 as they thought it might be. He likened the work in that panel to work performed every day at the ARPs.

Update on Monitoring Well Contamination

Nolan Jensen (DOE-ID) provided an update on monitoring well contamination. The presentation is available on the ICP CAB website: <https://energy.gov/em/icpcab>.

McAfee asked why the well contamination was just recently detected if DOE believes it occurred in 2005. Roy Bartholomay (USGS) responded that organics were not being sampled. The previous cleanup contractor, CH2M-Washington Group Idaho (CWI), sampled wells 2050 and 2051 in 2005 and 2006, and samples came up clean. When Fluor Idaho wanted to begin using Middle Well 2051 as an up-gradient well for WAG 7 at the Radioactive Waste Management Complex (RWMC), they sampled it again and detected a high concentration of Tetrachloroethylene (PCE). Bartholomay stated they believe it was the result of a leaky valve that had been contaminated with water. Jensen added there is no way to know when the contamination occurred.

Schoen asked how the water infiltrated the casing, if the water column is static, and if the water in the water column can simply be replaced. Jensen responded that the water in the tube has no communication with the water in the aquifer, but was put there upon well construction to equalize the pressure and maintain the

integrity of the tube. They are evaluating the potential of replacing the water, but it is logistically challenging because its presence ensures pressure equalization of the tube so it does not collapse. The challenge is how to replace the water without ever emptying the tube.

Public Comment #2

Thatcher referred to page 31 of USGS Report 2017-5021. She commented that normal background for gross alpha in the field blanks should be below three picocuries/liter, but measurements from 2012 and 2013 were 29 and 23 picocuries/liter respectively. She stated that there is no information in the report about where these samples were collected or why this occurred.

Thatcher referred to another USGS report, 2015-002, and said it covers 2009 to 2013. She commented that the report showed that no PCE or Trichloroethylene (TCE) sampling was performed in that timeframe, but said total organic compounds were monitored and measured in the deep wells. In this section of the report, USGS stated that variable results were obtained and that they were a result of poor reproducibility. Thatcher noted that the two wells with the poorest reproducibility from that report were deep wells 2050 and 2051, which were covered in Nolan Jensen's presentation. Had there been more investigation of the total organic compounds, this problem may have been discovered sooner.

Thatcher added that the agencies cannot know if they were sampling water inside the tube, or water from the aquifer based on the degree to which the sample port was stuck open. She said this will continue to be an issue.

Thatcher stated that some multiple level wells are not being actively sampled, particularly 131 and 134. She added that for decades, tritium levels published by the USGS obtained during monitoring south of INL were less than 134 picocuries/liter, but that in 2011, there were 800 picocuries/liter in the deepest level of a newly dug very, deep well. Thatcher noted that there was no mention of INL and no explanation of why that value was as high as it was in the report. She encouraged the CAB and meeting attendees to read USGS reports.

Dana Kirkham, Regional Economic Development for Eastern Idaho (REDI), referred to the possibility of a future mission for AMWTP and said she was curious about 2018 employment deadlines and the idea that AMWTP employees can be easily absorbed both at ARP and for work on buried waste. She asked if ARP is understaffed, and if it is really as easy as it sounds to find jobs for these employees.

Snake River Plain Aquifer Update

Roy Bartholomay (USGS) provided an update on the Snake River Plain Aquifer. The presentation is available on the ICP CAB website: <https://energy.gov/em/icpcab>.

Fielding asked if Bartholomay's model is the same as the ESPAN model. Bartholomay responded that it is part of the eastern Snake River Plain RASA model that was completed in the 1980s.

McBride commented that she does not understand what the data in Bartholomay's presentation is saying and asked him to summarize. Bartholomay responded that the data shows there is still some contamination 16 years later.

Schoen asked how deep the USGS 47 Well is. Bartholomay responded that the water level in that well is 450 feet below land surface, and that the well itself is 650 feet deep.

McBride asked if anything else is tested, such as wheat or fish, to detect these contaminants. Brad Bugger (DOE-ID) commented that Betsy Holmes (DOE-ID) would deliver a presentation later in the day and provide a breakdown of what is sampled.

Schoen commented that it is upsetting that strontium-90 was put into the aquifer via injection wells. He asked how much monitoring is performed well down gradient, somewhere like Thousand Springs. Bartholomay responded that in 1989, USGS began looking at tritium at Thousand Springs. DEQ took over that monitoring in 2003 and continues the work today.

Bartlome asked if there are any trends going up off site. Bartholomay responded that nitrate is increasing throughout, but said the increase is attributed to anthropogenic influences such as agricultural processes up-gradient in the regional aquifer system. Bartlome asked if there is a good working relationship between USGS and DEQ. Bartholomay and Burke responded yes.

Site Environmental Monitoring Annual Report

Betsy Holmes (DOE-ID) provided a presentation about the Site Environmental Monitoring Annual Report. The presentation is available on the ICP CAB website: <https://energy.gov/em/icpcab>.

Schoen commented that it is interesting that the maximally exposed individual (MEI) is situated south of the site when it seems the prevailing winds are westerly. Holmes responded that the winds change and that the model used has inputs of site-specific meteorological conditions. There are 34 separate National Oceanic and Atmospheric Administration (NOAA) towers from which weather data are collected. Schoen asked if the MEI changes every year. Holmes responded that for many years the MEI has consistently been Frenchman's Cabin.

Schoen referred to Holmes' statement during her presentation that monitoring shows that strontium-90 is not attributable to human activities. He asked if it is an artifact of weapons testing from a previous era. Holmes responded yes.

Idaho Settlement Agreement Status

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

Koch referred to the second bullet under Transuranic Waste on slide 14 of Flohr's presentation. He clarified that the December 31, 2018 deadline provided is for stored waste only, not buried waste.

Christensen asked what the consequences are for not complying with the Idaho Settlement Agreement (ISA). Flohr responded that DOE is already out of compliance with the Agreement, and the consequence now is that Idaho cannot accept spent fuel into the state for research, which affects DOE's Office of Nuclear Energy's mission.

Christensen asked for confirmation that there is not a daily or weekly fine for the delayed startup of IWTU. Flohr responded there is not a fine related to the ISA. Creed added that there is a RCRA requirement to cease use of the tank farm tanks. That milestone was missed. There is also a milestone under the modification of the NON/CO to begin treatment of the waste by September 30, 2016. This milestone was also missed and has an associated daily fine of \$6,000.

Huston asked if there are non-ISA penalties that will be imposed by the state for delayed shipments of TRU waste to WIPP. Burke responded no. The only waste that crosses over between another program and the ISA is liquid waste, as Creed previously mentioned when discussing IWTU.

Creed clarified that there is also the Site Treatment Plan which is in place pursuant to a separate consent order, and the state could have authority to assess penalties via that channel but is not currently planning to do so.

Schoen asked if there are other restrictions on operational activities aside from the ban on spent fuel. Flohr responded no.

Thatcher referred to the “Today” side of the chart on slide 9 of Flohr’s presentation and commented that much of the TRU buried waste will remain buried at RWMC. She said it would have been clearer to say “the stored above-ground TRU waste that had been covered with soil has been treated.” Koch confirmed that Thatcher is correct.

Schoen referred to Thatcher’s comment that much of the buried TRU waste will remain buried at RWMC. He asked if it will be buried in the way in which it was originally buried. Malmo responded by clarifying the difference between the two types of TRU waste: Stored and buried. Stored waste refers to the 65,000 cubic meters of waste covered under RCRA, all of which must be treated and shipped out of the state. Buried waste is located in the SDA. Only the buried TRU waste covered under the ROD will be exhumed. Once the remaining acre is exhumed, the buried waste will be removed from the state.

EM SSAB Chairs Meeting Report

Branter commented that he and Kristen Jensen (CAB Member) attended the Environmental Management (EM) Site Specific Advisory Board (SSAB) meeting in Richland, Washington in mid-October. As part of the meeting, they toured the Hanford Site, where there are 177 tanks ranging in capacity from 50,000 to 1 million gallons, 66 million gallons of high-level waste to treat, nine reactors along the Columbia River (six of which have been abandoned), and a vitrification plant that does not operate (despite \$16 billion having already been invested). Branter said the visit put Idaho’s cleanup in perspective.

Branter added that the EM SSAB Chairs received presentations from DOE Headquarters representatives. He and Jensen learned that the EM program received \$6.6 billion for cleanup in 2018 and that Jim Owendoff, Principal Deputy Assistant Secretary for DOE-EM, is leading a 45 day review to prioritize EM actions.

Jensen commented that she was impressed with Stacey Charboneau, Associate Principal Deputy Secretary for Field Operations for DOE, and her knowledge of Idaho’s challenges and successes. The DOE-HQ presenters were all concerned for DOE-ID’s ability to send shipments to WIPP. Jensen commented that touring the Hanford Site contributed to a better understanding of why EM funding is divided the way it is. There are different needs across the complex.

Branter added that one of the things the chairs normally do at these meetings is produce recommendations. Although they did not draft a recommendation in Washington, the chairs worked to produce guidelines for writing effective recommendations moving forward.

Conclusion

Flohr concluded the meeting.

Keith Branter, Chair
Idaho Cleanup Project Citizens Advisory Board
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