



INL Site Environmental Management

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

Meeting Minutes

March 15, 2011

The Idaho National Laboratory (INL) Site Environmental Management (EM) Citizens Advisory Board (CAB) held its bi-monthly meeting on Tuesday, March 15, 2011, at the Hilton Garden Inn, Idaho Falls, Idaho. An audio recording of the meeting was created and may be reviewed by phoning CAB Support Staff at 208-557-7886.

Members Present

Willie Preacher, Vice Chair
Seth Beal
Sean Cannon
Doc DeTonancour
Harrison Gerstlauer
Harry Griffith
Nicki Karst
April Mariska
Robert Rodriguez
Tami Sherwood
Fred Sica
Teri Tyler

Members Not Present

R.D. Maynard, Chair
Damond Watkins
Bruce Wendle

Deputy Designated Federal Officer, Federal Coordinator, and Liaisons Present

Jim Cooper, Deputy Designated Federal Officer, U.S. Department of Energy Idaho Operations Office (DOE-ID)
Bob Pence, Federal Coordinator, DOE-ID

Daryl Koch, State of Idaho
Dennis Faulk, U.S. Environmental Protection Agency (EPA), Region 10
Mark Lindholm, CWI

Others Present

Jean Holdren, ICP
Carl Lovell, ICP
Jeff Miller, DOE-ID
Natalie Packer, ICP
Pete Johansen, DEQ
Brandt Meagher, ICP
John Tanner, Coalition 21
Chris Henvit, Naval Reactors
Kevin Daniels, ICP

Bob Holmes
Mark Hutchison, NRT
Bruce LaRue, DEQ
Kathleen Hain, DOE-ID
Nicole Hernandez, DOE-ID
Frank Webber, ICP
Lori McNamara, Support Services
Bryant Kuechle, Support Services Facilitator
Peggy Hinman, Support Services

Opening Remarks

Mr. Sica, filling in for the co-chair, kicked-off the meeting. The DOE, State of Idaho, and EPA representatives welcomed everyone to the meeting. Mark Lindholm, CWI, provided a brief update of contractor activities since the last meeting. He described the safety status and progress of the cleanup project.

Recent Public Involvement

Mr. Cooper provided an overview of public involvement since the last meeting.

Progress to Cleanup

Mr. Cooper provided a status of the cleanup progress with active discussion among the CAB, including American Recovery and Reinvestment Act (ARRA) work. Mr. Cooper briefed the CAB on Transuranic Waste Disposition, the Advanced Mixed Waste Treatment Project (AMWTP), Waste Area Group (WAG) 7 Radioactive Waste Management Complex (RWMC), the Subsurface Disposal Area (SDA) Record of Decision (ROD), the Accelerated Retrieval Project (ARP) Interim Actions, the Idaho Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Disposal Facility (ICDF), as well as CERCLA remediation: WAG 1 – Test Area North (TAN), WAG 3 – Idaho Nuclear Technology and Engineering Center (INTEC), and WAG 10 – Site-wide Miscellaneous Sites/Snake River Plain Aquifer. He continued by outlining the progress related to the decontamination and decommissioning (D&D) at TAN (completed), the Advanced Test Reactor (ATR) Complex, INTEC, RWMC, the Power Burst Facility (PBF; ARRA funding), and the Materials and Fuels Complex (MFC; ARRA funding). Additionally, Mr. Cooper briefed the CAB on the Nuclear Materials Completion, the Integrated Waste Treatment Unit (IWTU; Sodium-Bearing Waste), the INTEC Liquid Waste Treatment Facility (Tank Farm Closure), Spent Nuclear Fuel (SNF) Disposition, and Calcine Disposition. The status update also included the safety performance for CWI and AMWTP.

Mr. Cooper provided an outline for the Transuranic Waste Disposition project, listing accomplishments since January. They have completed a total of 240 remote-handled (RH) transuranic (TRU) waste shipments to the Waste Isolation Pilot Plant (WIPP). They have received all approved RH-TRU waste from the MFC. Two shipments per week have been implemented for U-233 waste. They have completed off-site transport, treatment, and disposal of AMWTP U-233 and Hot Chemistry Lab waste. They will continue repackaging and shipping RH-TRU waste out of Idaho, with a new target date for completion of March 2011. Alternatives for the Sodium Process System Design are being developed.

Mr. Cooper outlined the accomplishments of the AMWTP. Since October 1, 2010, they have shipped 645 cubic meters of stored TRU radioactive waste out of Idaho. Since May 2005, AMWTP has shipped 7,905 cubic meters of historically managed TRU waste reclassified as mixed low-level waste out of Idaho (through February 28, 2011). Since April 1999, 42,750 cubic meters of stored TRU and mixed low-level waste has been shipped from the INL site (through February 28, 2011). A new Retrieval Containment Enclosure is being developed for the final waste retrieval operations (about 10% of the waste). AMWTP employees worked 11.4 million hours without a lost time injury. The contract has been extended through June 30, 2011.

Mr. Cooper briefed the CAB on the RWMC (WAG 7) project objectives. They will conduct targeted waste retrieval at the ARP I, II, III, and IV and disposition waste. The targeted waste, i.e., Rocky Flats 741, 742, and 743 sludges, graphite waste, roaster oxides, and filters/prefilters will be dispositioned. They have completed the objective of in situ grouting of 21 locations. They will continue subsurface solvent vapor extraction and environmental monitoring and institutional controls. Remediation work will be completed in accordance with the ROD for Operable Units (OUs) 7-13/14. Mr. Cooper outlined the project accomplishments since January. They have started ARP V exhumation operations. They have completed waste exhumation at ARP IV. They have completed ARP VI

construction. They have completed waste exhumation of 2.13 acres under the CWI contract. They have exhumed 49,091 cubic yards of waste zone materials and packaged 22,370 drums of targeted waste. In upcoming months, DOE will complete ARP VI readiness testing and begin waste exhumation and continue ARP VII construction.

Mr. Cooper briefed the CAB on other CERCLA remediation project objectives. WAG 1: continue TAN groundwater remediation. WAG 3: complete Phase I, II, and III of the OU 3-14 ROD (in the near term this includes installation of drainage ditches and low-permeability pavement inside and outside of the tank farm to support the continued reduction of perched water in northern INTEC). WAG 10: maintain site wide institutional controls and maintenance requirements, maintain Groundwater Monitoring Program, maintain the site wide CERCLA Ecological Monitoring Program, remediate WAG 10 CERCLA sites at Central Facilities Area (CFA) and ATRC, maintain the New Site Identification Process for future CERCLA sites, and remediate unexploded ordnance (UXO) and explosives at designated areas in accordance with the OU 10-04 ROD.

Mr. Cooper outlined the Site-Wide (WAG 10) accomplishments since January. They have completed the Five-year review of CERCLA sites and the Ecological Long-Term Monitoring Report. Upcoming activities include revising the OU 10-04 Phase IV Work Plan and performing surficial ordnance remediation at the Mass Detonation Area.

Mr. Cooper explained the ongoing activities INTEC (WAG 3). They are monitoring perched water levels with radio controlled telemetry system. They monitor water usage to prepare a facility water balance. Some upcoming activities include completing Phase I of the OU 3-14 remedy. The project includes upgrading and installation of drainage ditches and low permeability pavement inside and outside the tank farm. They will continue to eliminate sources of facility water releases to the perched water in northern INTEC.

Ongoing activities at TAN (WAG 1) include performing bi-monthly injections to support in-situ bioremediation, operating the New Pump and Treat Facility, operating the Air Stripper Treatment Unit (ASTU), and collecting required groundwater samples to track the progress of the remedial action. An upcoming activity will be the development of a 5-year test plan for remediation strategy.

The ICDF accomplishments since January include the receipt of 302 cubic yards of soil and debris in the landfill, and the receipt and disposal of the Materials Test Reactor (MTR) vessel. An upcoming activity at the ICDF is the receipt and disposal of soil and debris from INTEC, ATRC, and RWMC site areas.

Mr. Cooper outlined some D&D objectives. They will decommission and demolish under the baseline program 7 high-risk facilities (6 completed) and 164 excess facilities (158 completed). Under ARRA funding they will decommission and demolish 4 high-risk facilities (Test Reactor Area (TRA) Hot Cells, Experimental Breeder Reactor (EBR)-II Reactor, CPP 601, and CPP 640) (1 completed), and 39 excess facilities (36 completed) and 6 stretch goals (2 completed). The ARRA D&D-ATR project objectives include the demolition of 16 excess facilities (one stretch goal completed) and 2 high-risk facilities (MTR and TRA Hot Cells). Mr. Cooper provided a timeline illustrating the accomplishments and goals of the ATR/PBF D&D from 2006 to 2012. The ARRA D&D-ATR project accomplishments since January include: completed MTR reactor vessel transport to ICDF; continued TRA-632 Hot Cell 3 hazardous waste removal, completed WMF-711 exterior demolition, and completed WMF-736 demolition. Upcoming activities include: initiate TRA-603 exterior demolition preparations; initiate TRA-610 reroute preparations; complete TRA 603/604 basement shared-wall construction; complete waste removal from TRA-632 Hot Cell 4; initiate TRA-632 exterior demolition; and continue Retention Basis D&D.

ARRA D&D-INTEC project objectives include the demolition of 60 excess facilities and the demolition of two high-risk facilities: CPP-601 (Fuel Processing Facility) and CPP-640 (Head End Fuel Processing Facility). Mr. Cooper provided a timeline that depicts the accomplishments and goals for the D&D-INTEC project from 2006 to 2012. Some accomplishments since January include: continuing CPP-602 interior demolition, mechanical/electrical

isolations and waste removal and completing demolition of CPP-1638 and CPP-1637. Upcoming activities include completing demolition of CPP-601 and D&D of CPP-602.

The ARRA D&D MFC project objectives include the demolition of 8 excess facilities and the demolition of one high-risk facility, the EBR-II reactor. Mr. Cooper provided a timeline of accomplishments and goals for the ARRA D&D-MFC project from 2009 to 2012. Accomplishments since January include completing the tank internal video inspections, electrical isolations, and characterization sampling of 2 MFC-793A Alcohol Recovery Facility tanks, completing preparations for passivated sodium treatment in the MFC-766/767 transfer lines completing disassembly and removal of EBR II Primary coolant pumps, beginning preparations for steam and condensate isolations in MFC-768, and beginning MFC yard-piping sodium processing. Upcoming activities include completing preparation of MFC-767 shutdown coolers for sodium/NaK processing, and completing preparation of MFC-767 for sodium processing.

The IWTU (Sodium-Bearing Waste) project objectives are to design, construct, test, and operate the Sodium-Bearing Waste Treatment Facility and process all sodium-bearing waste material no later than December 31, 2012. Mr. Cooper provided a timeline of the accomplishments and goals for the IWTU (Sodium-Bearing Waste) Project from 2006 to 2012. Accomplishments since January include: completing construction on 33 of 33 systems needed for integrated plant testing. The project is at 94% for physical completion and 94% for overall project completion. Upcoming activities include completion of construction of remaining items in process and off-gas buildings, systems testing, and achieving CD-4.

Mr. Cooper provided a timeline of accomplishments and goals for the INTEC Liquid Waste Facility (Tank Farm) Closure Project from 2006 to 2012. Current activities include preparing the west side of the tank farm for D&D and closure in Fiscal Year (FY) 2011.

Mr. Cooper briefed the CAB on the SNF Disposition Project objectives. They will transfer legacy, EM-owned SNF from wet storage to appropriate dry storage (completed). Receive and store SNF from the ATR and receive Domestic and Foreign Research Reactor SNF for storage. They will prepare the SNM facilities for transition to another government entity by installing a segregation fence (completed). Additionally, they will provide safe, regulatory-compliant, routine operations for INTEC SNF handling and storage facilities. Mr. Cooper provided a timeline of the accomplishments and goals for the SNF Disposition Project from 2006 to 2012. Accomplishments since January include initiation of planning for relocation of two 125B NuPac casks from CPP-666 to CPP-603 and initiation of planning for receipt of a DRR shipment from Reed College in FY 2011.

The Calcine Disposition Project objectives are to meet the requirements of the Idaho Settlement Agreement; issue a ROD regarding the treatment of calcine by December 31, 2009 (completed); submit an application for a Resource Conservation and Recovery Act (RCRA) Part B Permit governing the treatment and in-state disposition of calcine (transport and interim storage, if necessary); render calcine in a "road-ready" form (ready to be shipped out of State) by a "target" date of December 31, 2035; and meet the requirements of the Idaho Site Treatment Plan for the safe management of calcine as a mixed hazardous waste under the RCRA permits and agreed-upon milestones. Mr. Cooper provided a timeline of accomplishments and goals for the Calcine Disposition Project from 2006 to 2012. Accomplishments since January include completing the Site Treatment Plan milestone to identify Calcine Disposition Project (CDP) funding; contracting the services of Hot Isostatic Press (HIP) vendors for waste-form and equipment development; undergoing an Independent Technology Readiness Assessment, and completing the CDP Technology Maturation Plan. Upcoming activities include: continue engineering evaluations and design in support of the RCRA Part B permit modification; and conduct waste-form and HIP can tests.

Mr. Cooper continued his presentation with additional information on the ARRA Buy-Back Scope. On February 7, 2011, an 8-month project was initiated to exhume 0.25 acres of waste from ARP V (Pit 9). In addition, the contractor has completed demolition of CPP-694 and completed demolition of the TRA-730 A, B, C, and D Tanks

under buy-back scope. Additional scope contemplated includes TAN CERCLA site remediation; ARP-IV demolition; D&D of lines under the hot cell at ATR, CPP-659 acid tank demolition, and CPP-621 Pipe trench demolition. Mr. Cooper noted that buy back scope may be reduced as a result of being required to pay for ARRA workforce restructuring from ARRA funding. Initial estimates show that if this is the case, only the TAN CERCLA site remediation will become affordable.

Mr. Cooper provided a table illustrating the ARRA performance measures, and provided a timeline of accomplishments and goals related to key activities and completion dates from 2005 to 2013. The Idaho project milestones, post 2012, were also displayed in a timeline up to 2027.

In conclusion, Mr. Cooper identified the Continuing Budget Resolution as an item of potential interest for the CAB.

Discussion

In response to a question about the schedule for construction of the IWTU, Mr. Cooper noted that there had been delays due to quality issues related to the welds at the facility. DOE is going through the documentation on the welds, and welds that do not meet standards are being redone. The right steps are being taken to get the project under control and moving forward. The regulatory milestone is the end of December 2012; right now the schedule is to have treatment completed by the end of September 2012.

Teri Tyler asked what percentage of welds had problems. Mr. Cooper stated that, looking at the project as a whole, it has examined 500 welds or more, and has to do repairs on about 100. The review of welds continues. Within 3 to 4 weeks DOE will know more about the amount of rework needed.

Mr. Sica noted the CAB's previous interest in the grouting that was done for CPP 601 and asked how smoothly the grouting went. Mr. Cooper replied that the grouting process was smooth; the difficult part was the extensive rebar involved. CWI did a good job addressing these challenges.

Harry Griffith asked what activities would fall off the work scope of D&D activities if ARRA buy-back funds were used for workforce restructuring costs. Mr. Cooper identified that some of the projects at ATR and INTEC would not be completed.

Mr. Sica noted that he is hearing that the performance issue is not the competence of the contractor, but is the relationship between the contractor, DOE, and the public. Mr. Sica noted this was an issue at Hanford. Mr. Faulk commented that across the complex, the sites were doing well on ARRA, but INL was a big plus. Hanford had some delays because of having to get paperwork in place. Also, some D&D projects were tougher than anticipated. Mr. Cooper also commented that size-wise, the buildings at other sites are much bigger than the buildings at INL. Mr. Cooper's assessment of the key to success of the safe performance is the dedication of the federal personnel to completion of the project as a team with the contractor. He feels that the contractor and the government have taken ownership of the work.

Teri Tyler asked about workforce restructuring. How many individuals were hired with ARRA funding? Mr. Cooper replied that about 650 were hired, including about 100 at AMWTP. There, 50 of the Recovery Act employees were retained at AMWTP. On the CWI side, about 550 were on the payroll or hired due to ARRA. This does not include employees who have been affected in some way by the stimulus funding. He estimates that between 150 and 200 people will be retained past September. He will address this issue later in the meeting.

In response to a question from Mr. Beal about waste disposition, Mr. Cooper replied that DOE is evaluating treatment forms and wants to be consistent with respect to the processes that generate waste. Complex-wide, Dr. Triay has asked Hanford to look at HIP technology for its tank waste. Mr. Cooper also commented that DOE is

working to identify technologies that could be shared between DOE sites. Dr. Triay now has two scientific advisers visiting the sites and reporting to her on opportunities.

Willie Preacher asked about the HIP process. Is it the final process for the calcine or is something else going to be used? Mr. Cooper noted that DOE is also monitoring the viability of a cold crucible technology as well, but right now good progress is being made on the HIP technology. BEA has a cold crucible bench scale system that will be used for evaluation of the calcine waste. Mr. Faulk noted that the best situation would be for the HIP waste form to be accepted as the final waste form.

Idaho Cleanup Project 2004 – 2009 Five-Year Review

Ms. Nicole Hernandez briefed the CAB on the Five-Year Review that had recently been completed for the INL. The purpose of the Five-Year Review is to evaluate the implementation and performance of the remedies and determine if the remedies were or will be protective of the environment. This Five-Year Review is required if hazardous substances, pollutants, or contaminants remain on site in concentrations that preclude unlimited use and unrestricted exposure. DOE conducts the Five-Year Review, prepares the report and submits it to the agencies for review and comment. The current Five-Year Review examines 9 of the 10 WAGs, assesses all response actions that are subject to Five-Year Review, and covers activities between October 2004 and September 2009.

EPA Guidance was followed to conduct the major steps of the review: gather information, assess progress since the last review, review and evaluate data, conduct technical assessments, identify issues and recommendations to address those issues, and develop protectiveness statements. Technical assessments were conducted to answer three questions: is the remedy functioning as intended; are the assumptions and objectives used at the time of the remedy still valid; and has any other information come to light that could call into question the protectiveness of the remedy? Items that have the potential to prevent a response from being protective now or in the future were identified as issues.

Ms. Hernandez presented a summary of the results of the review. Progress has been made on resolution of issues identified in the last review; 8 new issues and recommendations involving 4 WAGS were identified; and each remedial action reviewed is currently protective of human health and the environment and is expected to be protective in the future. The WAGS with issues, are WAG 1, TAN (continued evaluation of effectiveness of remedy and monitoring strategy); WAG 4, CFA (nitrate contamination); WAG 9, MFC; (completion of new site identification process); and WAG 10, Miscellaneous Sites and Site-wide Groundwater (institutional controls tracking). DOE is implementing the Five-Year Review recommendations to resolve these issues.

Ms. Hernandez reviewed the history of OU 1-07B, at WAG 1. This is an area where an injection well used from 1953 to 1992 contaminated the aquifer. Groundwater cleanup activities have been taking place since 1992. The technical assessment determined that in situ bioremediation is remediating the source; however, some concentrations remain elevated; elevated concentrations in the hot spot and medial zone should be evaluated to ensure that remedial objectives will be met; and the plume expansion should continue to be monitored.

Ms. Hernandez concluded her presentation by noting that the completed remedies at the INL site are protective of human health and the environment. Issues are being tracked to closure. The next Five-Year Review will encompass FY 2010 through FY 2014, and it is due to EPA by February 2016.

Discussion

Mr. Sica asked what is signified by pCi/L. Ms. Hernandez replied that this means is picocuries per liter. Ms. Tyler commented that pico means 10^{-12} . Mr. Gerstlauer asked about the half life of Cesium-137 and Strontium-90. Ms. Hernandez replied that the half-lives of both radionuclides are about 30 years.

Mr. Sica noted that a residential well costs between \$10,000 and \$30,000. Ms. Hernandez indicated that a new well in TAN area would cost about \$100,000. The depth to the aquifer is about 240 feet at TAN. Mr. Gerstlauer asked how far away from the hotspot would a new monitoring well be located. It is about 10,000 feet. The water moves about a half a foot to a foot per day. By the hot spot it is less than one-half a foot per day, which amounts to less than 350 to 400 feet per year.

Teri Tyler asked how situ bioremediation (ISB) works. Ms. Hernandez replied that they inject nutrients every other month to feed the bugs. ISB does not treat radionuclides, it only treats TCE. The ROD does not include a remedy for radionuclides. It was assumed they would be absorbed into the vadose zone structure. Right now, they are seeing radionuclides being released as the TCE is being treated, but it should be reabsorbed when that ceases.

Ms. Sherwood asked how the limits of plume expansion are determined for purposes of assessing if the plume has expanded beyond 30%. Ms. Hernandez indicated that it was originally assessed by the center-line of the plume, but now that the plume is shifting, a new approach will be developed.

Mr. Sica asked how much of the site is represented by the plume at TAN, in terms of the percentage of the area of the INL that is affected? He notes that there are many different opinions about this. Ms. Hernandez notes that the actual facilities at the INL represent less than 5% of the total area. There are plumes at nearly each facility. No plumes have gone outside the boundaries of the INL. Mr. Koch responded to the question about whether contamination in the aquifer would surface at Thousand Springs. From DEQ's assessment, the water from the aquifer would come out at King Hill, but it would not be contaminated. The state has not seen any plumes going off the INL.

Mr. Griffith asked what communications to the public were planned for the Five-year review. Ms. Hernandez commented that it was made available to the public and that the Shoshone-Bannock Tribes would be briefed. Mr. Griffith commented that this topic may be of interest to the public. Mr. Faulk commented that the Five-Year Review represents the institutional memory of making sure things are working as they are supposed to. It is a key step to understand how to publicize the report. At TAN, it should pay off to be aggressive about clean up over the next 5 years. One other advantage of the INL is that it has a continuing mission.

Public Comment

No public comment was provided.

Idaho's Cleanup Vision

Mr. Jim Cooper briefed the CAB on the Environmental Management Idaho Operations Office 2015 Cleanup Vision, which is to complete the EM cleanup mission, except for the calcine, by 2015. Building on the ARRA momentum, the Idaho team will: reduce the Idaho cleanup cost to American taxpayers by \$2.4 billion; protect the Snake River aquifer; shrink the active footprint by 92%: (Idaho footprint reduced from 775 acres to 62 acres). Deactivate and demolish over 240 facilities/structures); complete all TRU waste disposition: (65,000 meters³ of stored contact-handled TRU waste 4 years ahead of the Idaho Settlement Agreement requirement, all RH-TRU waste out of state 4 years ahead of the Idaho Settlement Agreement requirement, all targeted buried waste in the SDA 9 years ahead of schedule, and optimize WIPP operations); disposition and demolish over 240 facilities and structures at the INL; treat and close the last 4 HLW tanks: (construction and operation of the SBW facility by 2012 enables closure of the last 4 of 15 HLW tanks by 2014); and complete all of Idaho's EM legacy cleanup missions, advance calcine disposition and maintain SNF in safe/dry storage.

Mr. Cooper reviewed the economic benefits in Idaho from ARRA funds. So far, \$468 million in funds has been received. 569 jobs were created and 380 jobs were saved. The \$306 million of ARRA funding has been paid to

date. Also, \$46 million in contracts was awarded directly by DOE to small business in FY 2010, and \$73 million of the \$460 million in base contracts was awarded to small businesses in FY 2010. Mr. Cooper showed the progress to date, and noted that Idaho had been very successful in meeting its goals. DOE Idaho would like to build on this success by accelerating cleanup to achieve the 2015 vision. This could result in \$2.4 billion in life-cycle cost savings.

Discussion

Ms. Sherwood asked a question about the EBR II fuel and how it fit into the cleanup vision. Mr. Cooper noted that security costs would be avoided by moving the fuel from its current location to the MFC. The fuel will be processed in the Electrometallurgical System. It produces uranium, and DOE is negotiating with the Tennessee Valley Authority to send the uranium to them for use.

Mr. Sica asked about savings achieved by accelerating the work. He noted that, if we are accelerating the work and utilizing recovery act money, then how are we rewarding the people who help us save the money? Is there anything in the plans to help the people who are working their way out of their jobs? Mr. Cooper acknowledged that it is a double-edged sword. There needs to be a balance in hand as DOE works through the initiative.

Mr. Griffith asked about what appears to be a lull in the next few years with more activity in 2014 and 2015. Mr. Cooper replied that the Cleanup Vision would involve an increase of funding to allow work to be completed 9 years ahead of schedule. Two activities are affected by the acceleration: ARP and D&D. The vision is to use the skilled crew working on accelerated retrieval to move to D&D. ARP VIII will accommodate 8 crews. The D&D crew at INTEC will be added in 2014 and 2015 to increase the excavation work. This will increase the other work such as waste management in those years. So the 3rd crew results in increased numbers.

Mr. Griffith asked about the risk that DOE Idaho can't get the funding to get this going, because then there is a gap. Mr. Cooper commented that cooperation is needed to get the initiative started. DOE is evaluating other alternatives to getting the work done even if additional funding does not become available. They are looking at how to maintain the crews to do the accelerated work.

Mr. Griffith asks whether support from the CAB would help with DOE's position in Idaho. Mr. Cooper commented that continual pressure is needed to remind decision-makers that citizens support acceleration.

The goal of DOE is to minimize the work force impact and is looking for ways to transition workers to new operations or facilities. Support from the CAB is needed. DOE is in a position to show how it has succeeded with Recovery Act funds and how it can continue to save the government money by acceleration. There are also potential workforce opportunities with Areva and with DOE's Office of Nuclear Energy that could be maximized if the timing of workforce availability can be managed.

The Congressional Budget Cycle: Authorizations and Appropriations

Mr. Jeff Miller briefed the CAB on the Congressional Budget Cycle. He identified the definitions commonly used in the budget process. He described the budget-cycle authorization process and the appropriations process. The result is legislative action on an appropriations bill that gets sent to the President. Mr. Miller presented a time line that shows how the budget for FY 13 starts to be developed in FY 11.

Discussion

Mr. Gerstlauer commented that the letter the CAB sent on the Idaho EM budget was also forwarded to the congressional representatives. Mr. Miller commented that he understands that these communications are

appreciated by the congressional representatives as indicating the voice of the people. Tami Sherwood commented that individual CAB members may also want to comment if they feel strongly about the issue.

Subsurface Disposal Area Progress

Ms. Kathleen Hain briefed the CAB on the status of cleanup at the SDA. Activities at the SDA including grouting trench and vault locations to reduce mobility of technetium-99 and iodine-129; ARP enclosure structure construction; retrieval of soil and buried waste; shipment of TRU waste to the WIPP; and removal of organic compounds from the vadose zone (OCVZ).

Grouting is complete, and the final report was submitted to the Agencies in January 2011. Ms. Hain provided drawings that show the planned layout for the ARP facilities. She provided details on the status of waste exhumation efforts along with photographs showing the work in progress and a retrieval status map current to February 2011. She noted that since January 1996, when operations began in the OCVA units, approximately 235,000 pounds of total volatile organic compounds have been removed from the vadose zone under the SDA. Of this amount, over 136,000 pounds has been carbon tetrachloride. Ms. Hain provided the plans for upcoming activities at ARP, which include continued construction of structures and exhumation of waste until ARP is completed in 2015, pending funding. Ms. Hain also provided the CAB with some of the history and background of the SDA.

Discussion

Mr. Sica asked whether INL was passing on its success with the grouting process it used. Ms. Hain replied that the INL report captured the lessons learned from the grouting program so that other sites can benefit from the INL's experience.

Tami Sherwood asked what would be done with the structure from ARP IV. Ms. Hain replied that DOE was currently coordinating on this question with the regulators to determine the best way to dispose of the material.

Mr. Gerstlauer asked whether there were any big items being retrieved from Pit 9. Ms. Hain stated that nothing from the SL-1 accident was put in Pit 9. She believes that the SL-1 debris was disposed in a trench close to the SL-1 reactor site. The photos of the disposal of the SL-1 debris depict a different area of the site than the SDA.

Discussion of Current Events in Japan

Mr. Ken Whitham provided information to the CAB on the current situation in Japan where nuclear reactors have been damaged due to an earthquake and tsunami. He answered many questions regarding the type of dangers posed by the reactors, the status of the response and the potential impacts. Mr. Whitham described the fallout pattern that is typically expected from radionuclides that would be emitted from a reactor in Japan. He indicated that the distance between Japan and the US was so far that it was unlikely there would be any fallout here.

Mr. Preacher asked how the reactor core, containment vessel and buildings were involved in the releases. Mr. Whitham explained that the reactor is a boiling water reactor in which the fuel causes the water to boil, which generates the steam to turn the turbine. He is speculating that when coolant is lost to the reactor core because the back-up generators have failed, the water boils off, which reduces the heat transfer process so the fuel could burst. You must avoid throwing cold water on the hot elements because they could cause off-gas, which is hydrogen. So the explosions were probably due to hydrogen, and they may have lost the blow-out panels on the confinement building. Mr. Preacher asked what it meant when the control rods were exposed. Mr. Whitham replied that it meant the rods were no longer covered by water.

Mr. Whitham commented that these incidents will be closely reviewed by the nuclear energy to see what lessons learned can be obtained. One lesson may be to pay close attention to the older reactors.

Ms. Mariska commented that Germany has announced that it is shutting down some of its older reactors.

Mr. Sica commented on a friend's remark that that no one had planned for such a severe earthquake at a reactor before, but, now maybe they should.

Mr. Rodriguez asked what the US could do to help. Mr. Whitham noted that Secretary of Energy Chu had provided a report to Congress about areas where DOE may be able to help. The NRC is the lead federal agency and is coordinating any requests for assistance from Japan. Right now, we are waiting to hear what kind of help is needed.

Mr. Griffith asked about the cooling cycle to try to bring the reactors back to temperature and how long that process could take. Mr. Whitham replied that when a reactor is defueled, the core goes into a fuel pool to allow the heat to cool. The water also provides radiation shielding. If the water is not there to cool, the heat may be too great. The cooling period depends on how long the reactor was operated. For active power reactors, it could take a long time. The ceramic fuel itself is slow to lose heat.

Mr. Griffith asked about the borate solutions the U.S. has sent. Mr. Whitham had not heard this, but he commented that boron is very good at capturing neutrons and it may have been used to poison the reactor to inhibit criticality. Some reactor designs allow you to inject boron into the core to shut down a reactor. We understand that the reactors were safely shut down.

Mr. Griffith asks why the reactors are not just encased in cement. Mr. Whitham replied that there will be a lot of study to determine the best solution.

Mr. John Tanner, member of the public, commented that radiation levels in the containment had gotten so high that workers could no longer stay in the area to spray water on the core. Mr. Whitham commented that this was conceivable. He also noted that the environmental conditions (heat, ventilation) could also be a limitation to workers. It may be a question of what exposures are appropriate for personnel.

Ms. Sherwood commented that the concerns are all about nuclear. She noted that there are also concerns about gallons and gallons of oil being dumped into the ocean. She feels a remarkable job is being done by Japan, and that we should support the country.

Interactive Radiation Demonstration for CAB

Mr. Whitham provided a briefing to the CAB on radiation. He demonstrated the basic types of radiation and contamination survey instruments. The purpose of the survey instruments is to measure radiation and contamination and help evaluate radiological hazards. He explained the theory behind the radiation detector and how it is constructed. Contamination survey instruments typically read in counts per minute. They are not designed for measuring radiation exposure; they are designed to locate contamination on personnel and equipment, determine the effectiveness of decontamination, verify contamination control boundaries, and to determine the extent and magnitude of a contaminated area. Radiation exposure survey instruments typically read in milliroentgen/hour (mR/hr) or roentgen/hour (R.hr). They are best suited for use when entering a field of radiation. They can be used to establish control zone boundaries, control personnel exposure, and locate sources of radiation. Other radiological instruments may be used for detection and identification of radioisotopes. Mr. Whitham described the use of dosimeters to measure accumulated dose. Electronic dosimeters use a digital readout, and many options are available, including a dosimeter with an audible response. Thermoluminescent dosimeters (TLDs) are also used. TLDs do not provide on-the-spot indications of dose, and specialized equipment is required to 'read' a TLD. Mr.

Whitham addressed the purpose and usage of Personal Protective Equipment (PPE) and demonstrated proper donning and doffing procedures. He described the factors that are considered when assigning PPE, such as personnel location, heat stress, and changes in dose rates.

Discussion

Mr. Griffith asked about use of the instruments in Japan and whether they were useful. Mr. Whitham replied that they instruments are good at detecting radiation. Mr. Griffith asked what they cost – they are \$600 to \$1,800 per unit. They can be purchased by the public. Mr. Cooper commented that there is a big range of costs for these units.

Ms. Tyler asked if people use personal dosimeters when working in high radiation areas. Mr. Whitham replied that they are used routinely. Some of the dosimeters are designed to alarm when a dose rate is of concern. Doses can also be assigned to a particular job and tracked that way using dosimeters.

Ms. Karst asked how the PPE clothing is handled after use. Mr. Whitham replied that it is often best to dispose of the clothing. You can wash contaminated laundry but it is not always effective. INL has moved to a disposable type of clothing.

Mr. Gerstlauer asked whether the yellow nylon scrubs are used for wear under the PPE clothing. Mr. Whitham replied that the typical practice is to wear scrubs so that one's personal clothing is not contaminated.

Sodium-Bearing Waste Treatment Update

Mr. Shawn Hill provided the CAB an update on the Sodium-Bearing Waste Treatment Project. The project is for design, construction, and commissioning of a new treatment facility to treat 900,000 gallons of radioactive liquid waste currently stored in underground tanks at the INTEC Tank Farm. The Idaho Settlement Agreement requires treatment of tank waste by December 2012. A Consent Order requires the remaining INTEC Tank Farm tanks to be emptied by December 2012. The tank farm tanks' secondary containments are non-compliant with RCRA. The planned steam reforming technology converts acidic radioactive liquid waste to solid carbonate particles. The new facility includes a process building with reinforced concrete process cells inside a structural steel building, along with a product storage building. It will produce approximately 650-700 RH waste canisters. The product storage building provides interim storage for entire product volume. The project is at times referred to as the IWTU.

Construction is complete on most individual systems, with those systems now turned over from construction group to the test organization. Completion of all construction turnovers was not achieved by the end of December 2010 as previously planned. All 33 major systems necessary for integrated plant testing have been turned over. Twenty-nine of 40 additional plant systems have been turned over. Previous plans for a DOE Deputy Secretary and Stakeholder visit/celebration have been postponed until the end of May. Completion of construction and turnover of remaining systems will occur over the next few weeks. A system test program is now underway on completed systems. The testing phase is scheduled to run through April/May 2011.

Mr. Hill related that the startup date for the facility may shift. Construction delays have resulted in unsupportable systems test schedule compression. A schedule analysis was completed which shows a need to shift the project completion forecast date from August 2011 to December 2011 to re-establish appropriate confidence levels. This change in the project baseline was approved by DOE. A contract modification was executed in December 2010 to cap project costs to the government at the approved Total Project Cost of \$571 million. The modification incentivizes CWI to complete by November 2011 or earlier, with fee penalties for later completion. The impacts of this shift are as follows. Forecasted Readiness Review dates for the Contractor Management Self-Assessment (MSA) – July 2011, for the contractor Operational Readiness Review – October 2011, and for the federal

Operational Readiness Review – November 2011. Given a 10-month waste treatment campaign – still allows time to complete processing under current contract by December 2012 Settlement Agreement milestone.

In summary, Mr. Hill noted that construction activities are nearing completion, with the majority of systems turned over for testing, and system testing underway. Testing program and readiness review activities will occur in 2011. Construction delays have prompted a forecasted shift in the project completion date to November/December 2011. Adequate time remains to complete the waste treatment campaign by the December 2012 Settlement Agreement milestone.

Discussion

Mr. Preacher asked about the lifespan of the containers for the waste product. Mr. Hill replied that the containers had been built to meet the WIPP Waste Acceptance Criteria, but he did not know what the lifespan was. Mr. Preacher asked whether head space gas sampling would be done of the containers. Mr. Hill replied that head space gas sampling of the containers would not be required because the material is known and no off gases would be expected.

Mr. Griffith asked about the delays of the project and what the problems were. Mr. Hill stated that delays began early in construction. Plans were in flux to use the facility for additional waste treatment in the future. The safety requirements for the facility were increased because the additional waste may be more radioactive than the sodium bearing waste. As construction continued, activities took longer than anticipated, rejection rates on welds were higher than planned, and there were other constructability issues. The testing phase has now started.

Mr. Gerstlauer asked how long the HEPA filter bank would run before it needed to be changed out. Mr. Hill replied that there were pre-filters upstream of the HEPA filters and it was hoped that the HEPA filters would not need to be changed out during the treatment process. However, the filters are designed so they can be changed out if needed.

Mr. Gerstlauer asked what protection had been designed into the facility to address earthquake hazards. Mr. Hill replied that the classification of the facility had been upgraded to withstand a design basis earthquake. For example, the concrete pours had stringent requirements.

Ms. Tyler asked what air emissions were expected from the facility? Mr. Hill replied that there was water vapor, carbon dioxide, some carbon monoxide, some nitrogen oxide and no mercury. Ms. Tyler noted that people had relayed concerns to her about the carbon dioxide emissions. Her view is that the short term emissions are outweighed by the benefits of the treatment.

Mr. Griffith asked if the automatically operated system for transferring the canisters could be operated manually. Mr. Hill indicated that there was the capability for manual operation.

Mr. Gerstlauer asked if hydrogen would be produced. Mr. Hill replied that water is used in the treatment process, and a very small amount of hydrogen is produced. The amounts are measured going in and out. It is more an issue at lower temperatures when the hydrogen is not burned off. The off gas is monitored to make sure hydrogen concentrations do not get too high.

Mr. Preacher asked about the background of the operators. Mr. Hill replied that he thought there was a good mix of operators who had worked on processes at the site in the past and could share their experiences. The other operators are former Navy nuclear facility operators. He noted that this is a unique situation where the operators have been involved in the construction and testing of the plant. He thinks this will contribute to the readiness of the operating crew when the facility starts up.

Mr. Beal asked where the canisters would go when treatment was completed. Mr. Hill replied that it was still being evaluated whether they could go to the Waste Isolation Pilot Plant or would have to be treated like high level waste and go to a repository.

Mr. Griffith asked what the single biggest risk was to completion of the project. Mr. Hill replied that it was delays in completing the construction. The biggest construction risk Mr. Hill sees now is that an unknown issue exists that will impact the project.

Mr. Gerstlauer asked about the weld issues. Mr. Hill replied that there is a packet of documentation that goes with each weld. DOE is going back through all the documentation to validate what was done. If it can't be validated, then the weld is cut out and redone. This is taking time. Another delay is that if a welder has 3 welds that fail, then 100% of the welds done must be tested ultrasonically or through radiography. DOE is working to bring in more resources to conduct the ultrasonic testing and move the process along.

Public Comment

No public comment was provided.

CAB Work Session

The CAB work session started with announcement of the results of the election of a Chair and Vice-Chair. Willie Preacher was elected chair, and Nicki Karst was elected vice-chair. They will serve a two-year term beginning with the July 2011 meeting. Bob Pence reported that the names of three new CAB members would be submitted to DOE Headquarters for approval. These new members would be invited to the May meeting.

The CAB reviewed and commented on the top 3 issues to be presented at the upcoming CAB Chair's Meeting April 12 – 14, in Las Vegas Nevada. On the first issue, Mr. Preacher commented that the events in Japan may bring some more urgency to the need for DOE to address a permanent repository. Harry Griffith commented that it may be useful to put numbers of how much waste is involved, and maybe some pictures. Mr. Preacher agreed and also commented that this issue should also include the settlement agreement milestone.

On the second issue, regarding funding to support accelerated cleanup, Mr. Preacher commented that he thinks INL is right now a great cleanup site with a supreme record. We should take advantage of this and push for more support to do more cleanup. Hanford is the biggest issue, but INL should not be ignored. He sees a need for the sites to get together and conduct a lessons-learned about what works. He thinks maybe another letter is needed. Mr. Cooper indicates that it would be good to submit a letter in March or early April. He requests that it consider the 2015 mission and the opportunities to use the work force more efficiently by accelerating cleanup. Willie also felt that the accomplishments achieved to this point are a major selling point. Tami Sherwood volunteered to begin a draft of the letter.

On the third issue, Willie comments that there should be another bullet addressing the concern about the workforce and what ICP is doing to address the work force. That is a positive point for Idaho. The bullet will address the ability of ICP to look into workforce restructuring as funding is being taken away. There are efforts to help the employees, and this is viewed positively. The efforts to work with other potential employers such as Areva are also of note.

On the slide showing Accomplishments, the group identified improving communications and outreach as an accomplishment. The subpoints could be annual report, attending events, recruitment, and outreach efforts. Another accomplishment could be the safety record recognized by the CAB in a letter to DOE.

Annual report – the CAB discussed the report and its purpose. The goal is to have a finished annual report by the May meeting. Actions were identified to meet this goal.

The CAB planned the tour for May. They would like to look at RWMC, the ATR Complex, and INTEC to see progress to date. DOE would like to involve the contractors in the tour and also in the presentations on the areas toured the next day. This would provide the CAB with a different perspective. The group also had an interest in the Middle Butte Cave, and it was discussed that a tour of the history and cultural resources of the site should be planned for 2012.

The CAB discussed the Greater-Than-Class C (GTCC) draft Environmental Impact Statement (EIS). There is a public meeting on May 11 in Idaho Falls. The CAB discussed having a designated member attend the meeting and report to the CAB at the May 18 meeting. Then, the CAB could consider making a comment on the draft EIS. Teri Tyler agreed to attend the meeting and report to the CAB.

In addition to a review of the areas toured the previous day and a discussion of the GTCC EIS, topics for the May meeting will include MFC Transfers including EBR-II Fuel, and an EPA Region 10 update

Harry Griffith requested DOE to provide any information it gains about the situation in Japan and forward it to the CAB. Bob Pence commented that he thought there may be information of this type in the future, and as matters unfold, he will continue to provide information to the CAB.

Action Items:

1. Tami Sherwood, Nicki Karst and support staff to complete draft of Annual Report for May meeting, with input to be provided by the Chair and DOE (Rick Provencher).
2. Tami Sherwood to draft letter from CAB to DOE regarding support for accelerated cleanup and opportunities to maximize the use of the workforce.
3. Teri Tyler to attend May 11 public meeting on the draft GTCC EIS and report back to the CAB at the May 18 meeting.
4. DOE to continue to provide information it obtains regarding developments in Japan to the CAB.

Members provided written feedback forms to support services at the conclusion of the meeting. Presentations given at this meeting are available on request from the INL EM CAB Support Staff.

I certify that these minutes are an accurate account of the March 15, 2011, meeting of the Idaho National Laboratory Site Environmental Management Citizens Advisory Board.



R. D. Maynard, Chair
Idaho National Laboratory Site Environmental Management Citizens Advisory Board
RDM/ph