



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

July 14, 2010

The Idaho National Laboratory (INL) Site Environmental Management (EM) Citizens Advisory Board (CAB) held its bi-monthly meeting on Wednesday, July 14, 2010, at the Shilo Inn, Idaho Falls, Idaho. An audio recording of the meeting was created and may be reviewed by phoning Support Services at 208-419-4158.

Members Present

R. D. Maynard, Chair
Seth Beal
Sean Cannon
Doc DeTonancour
Harrison Gerstlauer
Harry Griffith
Nicki Karst

April Mariska
Willie Preacher, Vice Chair
Robert Rodriguez
Tami Sherwood
Fred Sica
Teri Tyler
Bruce Wendle

Members Not Present

Damond Watkins

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
Dennis Faulk, U.S. Environmental Protection Agency (EPA), Region 10
Susan Burke, State of Idaho
Daryl Koch, State of Idaho
Brent Rankin, CWI

Others Present

Ceri Chapple, Support Services
Lori Isenberg, Support Services Facilitator
Curtis Rosh, DOE
Bruce Culp, ICP
Jason Casper, DOE
Natalie Packer, ICP
Chris Henvit, NR/IBO
Ed Gulbransen, Public
Erik Simpson, ICP
Joel Case, DOE
Kathleen Hain, DOE
Brian Edgerton, Public
Barbara Beller, DOE

Jean Holdren, ICP
Richard Dean, Public
Mark Arenaz, DOE
Beatrice Brailsford, Snake River Alliance
Carl Lovell, ICP
Michael Ebben, ICP
Bruce LaRue, DEQ
Ben Roberts, DOE
Mark Hutchinson, NRF
Jeff Perry, DOE
Markus Pinzel, DOE
Clay Condit, Public

Opening Remarks

Chairman R. D. Maynard welcomed everyone to the meeting. Mr. Cooper welcomed everyone, thanked the CAB for its efforts, and provided brief updates. Additionally, the liaisons provided brief updates.

Recent Public Involvement

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

NRF Project

Mr. Chris Henvit briefed the CAB on the Environmental Impact Assessment (EIA) for Recapitalizing the Infrastructure at the Expended Core Facility. He explained that the Naval Reactor Facility (NRF) has two missions: 1) It supports the receipt, packaging, and handling of Naval Spent Nuclear Fuel (SNF), 2) It examines irradiated materials. The Expended Core Facility supports both those missions. They want to recapitalize to ensure that they can support the nuclear powered Navy's missions and operations for the next 40 years, as well as uphold the Navy's commitment to the 1995 Idaho Settlement Agreement. The EIA will evaluate three Siting alternatives and one No Action alternative: 1) Locate both projects at NRF. 2) Spent Nuclear Fuel at NRF and Examine Irradiated Materials at the Advanced Test Reactor Complex (ATR). 3) Keep the SNF at NRF and move the Irradiated Materials Examination project to the Material Fuels Complex (MFC). 4) Overhaul the existing ECF to support meeting the mission over the next 40 years. The Notice of Intent will be filed July 20, 2010 and will contain additional details. They will hold public scoping meetings in Idaho Falls 8/24, Pocatello 8/25, and Twin Falls 8/26. All public comments on the EIA are invited.

Discussion

R.D. Maynard asked if the Navy was looking for a recommendation by the CAB. Mr. Henvit responded that they were not, he was just providing the CAB a briefing before the official Notice of Intent was filed, all comments will need to be submitted by 09/03/2010.

Ms. Teri Tyler asked who will perform the EIA and what is the Navy's preferred Alternative. Mr. Henvit explained that the Naval Reactor Project will perform the assessment and that there isn't a current preferred alternative, they are performing the assessment to determine that.

Decisions/Disposition

The report satisfied the informational need for the CAB.

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, Waste Area Group 7 (Radioactive Waste Management Complex), the Subsurface Disposal Area Record of Decision, the Accelerated Retrieval Project Interim Actions, the Idaho CERCLA Disposal Facility, as well as CERCLA Remediation: Waste Area Group 1 – Test Area North, Waste Area Group 3 – Idaho Nuclear Technology and Engineering Center, and Waste Area Group 10 – Site-wide Miscellaneous Sites/Snake River Plain Aquifer. He continued by outlining the progress related to the decontamination and decommissioning in Test Area North (completed), the Advanced Test Reactor (ATR) Complex, Idaho Nuclear Technology and Engineering Center (INTEC), Radioactive Waste Management Complex (RWMC), the Power Burst Facility (ARRA), and the Materials and Fuels Complex (ARRA). Additionally, Mr. Cooper briefed the CAB on the Nuclear Materials Completion, the Integrated Waste Treatment Unit (Sodium-Bearing Waste), the INTEC Liquid Waste Treatment Facility (Tank Farm Closure), Spent Nuclear Fuel Disposition, and Calcine Disposition. The status update also included the safety performance for CWI and Advanced Mixed Waste Treatment Project (AMWTP).

Mr. Cooper provided an outline for the Transuranic Waste Disposition project, listing accomplishments since May. They have disposed of over 28,843 m³ of Low Level/Mixed Low Level Waste. They have shipped over 2,500 m³ of CH TRU waste to WIPP of the 5,108 m³ planned. Three more ARRA RH TRU containers have been transferred from MFC to INTEC, 139 of 160 containers have now been relocated. The waste from 16 more recovery act canisters have been repackaged, 69 (6.9 m³) of 160 (25.6 m³) now complete. Five more ARRA shipments have been completed, 16 of 88 planned are now complete. Mr. Cooper highlighted a couple of **upcoming activities**. They will continue repackaging and shipping RH-TRU waste out of Idaho. A small business contract for Sodium Process System Design will be awarded in August 2010.

Mr. Cooper outlined the accomplishments since April of the AMWTP. Since May 1, 2005, AMWTP has shipped 6,687 cubic meters of historically managed transuranic waste reclassified as mixed low-level waste out of Idaho (through June 23, 2010). Since April 1999, 40,142 cubic meters of stored transuranic and mixed low-level waste shipped from INL site (through June 23, 2010). They are on schedule to complete all ARRA production and employment goals for the May through Aug. 31, 2010 extension period. The AMWTP contract award is being reviewed by DOE.

Mr. Cooper detailed the AMWTP contract extension. He explained that Bechtel BWXT Idaho, LLC, was awarded a contract extension from May 1, 2010, to August 31, 2010, with DOE having an optional extension from September 1–30, 2010. The scope includes the characterization, treatment, packaging, shipment, and disposal of TRU, MLLW, and LLW stored at the Idaho facility.

Mr. Cooper briefed the CAB on the Waste Area Group (WAG) 7 project objectives. They will conduct Non-Time Critical Removal Actions at the Accelerated Retrieval Projects (ARP) I, II and IV. They will exhume targeted waste material from the Subsurface Disposal Area. The targeted waste, i.e., Rocky Flats 741, 742, and 743 sludges, graphite waste, roaster oxides, and filters/prefilters, will be dispositioned. Remediation work will be completed in accordance with the Record of Decision (ROD) for OUs 7–13/14. They will conduct In-situ grouting in SDA as per OUs 7–13/14 ROD through ARRA funding. Mr. Cooper outlined the project accomplishments since June. They have initiated construction of Accelerated Retrieval Project VI. They have completed waste exhumation of 1.58 acres under the CWI contract, packaged 19,300 drums of targeted waste. DOE will award a small business contract for construction of Pit 10W. They will continue construction of ARP VI and continue in-situ grouting operations.

Mr. Cooper briefed the CAB on other CERCLA Remediation project objectives. WAG 1: continue TAN Groundwater Remediation to reduce TCE concentrations below MCLs in accordance with the OU 1-07B Record of Decision. WAG 3: complete Phase I, II and III of the OU 3-14 Record of Decision (in the near term this includes installation of drainage ditches and low-permeability pavement inside and outside of the tank farm, and reduction of anthropogenic water, all 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 CFA and RTC, 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 Record of Decision.

Mr. Cooper outlined the site wide – Waste Area Group 10 accomplishments since May. The Draft Final OU 10-08 work plan was submitted to the agencies for review and approval. TNT/RDX removal within the Naval Proving Grounds has been completed. Some future activities include the complete five-year review of CERCLA sites and submit draft to Agencies for review and comment, the finalization of the OU 10-08 work plan, and TRA-74 soil site remediation.

Mr. Cooper explained the on-going activities INTEC – Waste Area Group 3. They are monitoring perched water levels with radio controlled telemetry system. They monitor water usage to prepare facility water balance; inflows are compared to outflows to calculate water loss. The Snake River Plain Aquifer annual sampling event has been

completed: High Sr-90 concentrations (>10,000 pCi/L) continue to persist in the shallow perched water beneath INTEC, RPA groundwater beneath and down gradient of INTEC continues to exceed drinking water MCLs for Sr-90, Tc-99, and nitrate, COC concentrations in SRPA groundwater continue to decline, as expected. They have also upgraded the surface drainage around the tank farm. Some upcoming activities include the continuation Phase I part II 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. Phase I (outside tank farm) estimated completion is at the end of FY11. Phase II Part A (West side of Tank Farm) estimated completion is by 9/12. Phase II Part B (East side of Tank Farm) estimated completion is by FY13. They will continue to eliminate sources of facility water releases to the perched water in northern INTEC. On-Going Activities at Test Area North – Waste Area Group 1 include performing bi-monthly injections to support ISB, operating the New Pump and Treat Facility and collecting required groundwater samples to track the progress of the remedial action. Some upcoming activities will be the development of the new work plan for remediation strategy (mid FY11) and beginning operation of the Air Stripper Treatment Unit (ASTU) (July 2010). The Idaho CERCLA Disposal Facility accomplishments since May include the receipt of 2,087 cubic yards of soil and debris in the landfill and the performance of in-cell grouting of void spaces. An upcoming activity at the ICDF is the receipt and disposal of soil and debris from INTEC, ATRX 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 162 excess facilities (135 completed). Under ARRA funding they will decommission and demolish 5 high-risk facilities (MTR Reactor, TRA Hot Cells, EBR-II Reactor, CPP 601, and CPP 640), and 85 excess facilities (55 completed). The ARRA D&D – Advanced Test Reactor Complex (ATRC) Project Objectives include the demolition of 15 excess facilities and 2 high-risk facilities (MTR Reactor and TRA Hot Cells). Mr. Cooper provided a timeline illustrating the accomplishments and goals of the Advanced Test Reactor Complex/Power Burst Facility D&D from 2006 to 2012. The ARRA D&D - Advanced Test Reactor Complex Project accomplishments since May include: the removal of the Materials Test Reactor (MTR) vessel interior thermal shield plates, asbestos, and 75 tons of graphite blocks, the TRA-604 exterior demolition completion, the TRA-632 Hot Cell Drain Network (HCDN) concrete floor cutting **completion**. Some upcoming activities include completing the TRA-632 Hot Cell 3 interior hazards removal, completing the remaining TRA-632 Hot Cell Drain Network (HCDN) activities, completing the remaining hot cell manipulator removal activities, completing the engineering for TRA-632 Hot Cell 1, and awarding the DOE contract for D&D of the TRA Retention Basin.

ARRA D&D – INTEC Project Objectives include the demolition of 59 excess facilities and the demolition of 2 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 May include: completing the CPP-601/640 grouting, completing demolition of CPP-630, -634, and -730, the complete removal of 32,050 pounds of lead for a total of 428,450 pounds from CPP-601/640 and completing the Nuclear Safety downgrade of CPP-602. Some upcoming activities include the continued exterior demolition of Fuel Reprocessing Building (CPP-601), the completion of the CPP-762 demolition, the completion of the CPP-619 demolition, and to continue CPP-602 D&D.

The ARRA D&D – Materials and Fuels Complex (MFC) Project Objectives include the demolition of eight 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 – Materials and Fuels Complex (MFC) Project from 2009 to 2012. Accomplishments since May include the completed final sodium / bicarbonate treatment bench-scale testing, issued an EBR-II Action Memo, completed MFC-795 demolition, and started the Sodium Treatment Process. Upcoming activities include the continued asbestos removal in EBR-II, the continued sodium steam treatment in the west basement of MFC-766, the award for the Haul Road construction project, and the finalization of the EBR-II Historical Preservation Actions.

The Integrated Waste Treatment Unit (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 Integrated Waste Treatment Unit (Sodium-Bearing Waste) Project from 2006 to 2012. Accomplishments since May include: the completion of the Specialty Coatings work, i.e., surface prep, primer and coatings application in the Mechanical (10,863 sf), Off-Gas (40,032 sf) and Process (4,537 sf) buildings, the installation of 2,350 lf of piping (treated water, instrument air, chilled water, steam/condensate, nitrogen, etc.), and the installation of 14,510 lf of conduit and 56,755 lf of wire in the Mechanical, Process, Off-Gas, Product Storage buildings and SRE). Upcoming activities include the completion on the building ventilation systems, the completion of Operator training in advance of oral tests, systems testing/turnover, and construction completion by September 2010.

Mr. Cooper provided a timeline of accomplishments and goals for the INTEC Liquid Waste Facility (Tank Farm) Closure Project from 2006 to 2012. Accomplishments since May include the continued D&D to remove above-ground structures on the Tank Farm. Upcoming activities: Once IWTU begins processing waste, tank washing will resume (2011), Complete Tank Farm D&D.

Mr. Cooper briefed the CAB on the Spent Nuclear Fuel Disposition Project Objectives. They will transfer legacy, EM-owned spent nuclear fuel (SNF) from wet storage to appropriate dry storage. Receive and store SNF from the Advanced Test Reactor and receive Domestic and Foreign Research Reactor SNF will be received for storage. They will prepare the SNF facilities for transition to another government entity by installing a segregation fence. 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 Spent Nuclear Fuel Disposition Project from 2006 to 2012. Accomplishments since May include the completion of 3,186 wet-to-dry transfers three weeks ahead of schedule. Upcoming activities include the resumed shipments of fuel from ATR to INTEC and the receipt of Domestic Reactor Receipts (DRR) Spent Nuclear Fuel (SNF).

The Calcine Disposition Project Objectives are to meet the requirements of the Idaho Settlement Agreement; issue a Record of Decision regarding the treatment of calcine by December 31, 2009 (Completed); submit an application for a 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 Resource Conservation and Recovery Act per 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 May include the completed 3-day project review, communicated project strategies, presented system-by-system status, and waste form and equipment technology development approach. Upcoming activities include: Technology Readiness Assessment (July), Project Definition Rating Index internal and external assessment (Sept/Oct), and Submittal of CD-1 P-1 Site Treatment Package (STP) Package.

Mr. Cooper provided a map illustrating where the \$6 billion of ARRA-DOE funding is going. Mr. Cooper illustrated the financial details of the INL Recovery Act Projects with a pie chart. He provided a table with an update of the ARRA – Jobs Retained/Created. ARRA Performance Measures were illustrated in a table. Mr. Cooper 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 discussed a few items of potential interest. He outlined the 2012 Budget Development. Mr. Cooper discussed the American Nuclear Society Workshop on D&D, August 29 – September 2, 2010, in Idaho Falls.

Discussion

Harrison Gerstlauer asked if NRF plans to build new wet basins for the hot SNF. Mr. Cooper responded that they will continue to use CPP-666 for wet storage and that NE may have an interest in taking ownership of CPP-666 in the near future.

Harrison Gerstlauer asked if EBR-II was going to be deemed a historical site. Mr. Cooper explained that in the EECA it was decided to form an interest group to gather the good historical aspects of EBR-II and incorporate that with The EBR-I visitor's center.

Tami Sherwood requested the Calcine Readiness Assessment when it is completed.

R.D. Maynard wondered if the small business concerns regarding safety were a training issue. Mr. Cooper explained that site work is a totally different world from the private sector. There is a culture of work practices created in small businesses with work performed in industry that must be adjusted to meet the safety standards of government work practices.

Doc DeTonancour asked if there is mandatory drug testing with the small businesses employed at the INL. Katie Hain explained that if one works in a nuclear facility, transportation, or any other hazardous job drug testing is required.

Beatrice Brailsford asked with regard to the TAN groundwater if they are still using bioremediation and the pump and treat method, and if it is working. Daryl Koch explained that there are three parts to the groundwater remediation at TAN: 1) bioremediation, 2) pump and treat, and 3) natural attenuation. They are concerned about meeting the Mcl by 2095 and will be looking at more aggressive treatments.

Ms. Brailsford asked if the AARA money from non-performing sites is biased to stay within the state it was originally allocated. Mr. Cooper explained that if the originally allocated sites are not performing the money will be returned to headquarters and reallocated without bias to states.

Decisions/Disposition

The report satisfied the informational need for the CAB.

Idaho Cleanup Project (ICP) Re-compete

Mr. Joel Case briefed the CAB on the status of the ICP contractor re-compete. It is currently in the acquisition planning stage. Procurement is being conducted through the Environmental Management Consolidated Business Center. The scope focused on remaining ICP work which includes: Completion of targeted buried waste, Stabilization/disposition spent fuel and high-level waste, Tank farm final closure and, D&D and CERCLA remediation. Sources Sought Solicitation issued in Federal Business Opportunities June 24, 2010, whose purpose is to identify potential small business capabilities and be used as a market survey tool to support development of the final acquisition approach. Responses are due by July 19, 2010. Mr. Case explained that the next steps involved are as follows: in FY-2010 evaluation of responses to Sources Sought and the final Acquisition Plan, in FY 2011 they will issue an RFP, and in FY 2012 a Proposal evaluation will be done and a contract will be awarded.

Decisions/Disposition

The report satisfied the informational need for the CAB.

Spent Nuclear Fuel Transferred to Dry Storage

Ms. Barbara Beller briefed the CAB on the Spent Nuclear Fuel (SNF) transfer to dry storage. She explained that the Transfer of ICP SNF to Dry Storage is complete. All Idaho Cleanup Project (ICP) assigned spent nuclear fuel (SNF) has been transferred from the CPP-666 basin into dry storage per Settlement Agreement clause E.8., “DOE shall complete the transfer of all spent fuel from wet storage facilities at INEL by December 31, 2023. The last of 3186 SNF items (called fuel handling units) listed in the ICP contract was put into dry storage on Sunday, June 6, 2010. The CPP-666 basins still hold Navy and Office of Nuclear Energy-assigned SNF. Navy SNF is being returned to NRF for dry storage in canisters. Transfers currently scheduled to complete prior to 2018. Advanced Test Reactor (ATR) SNF continues to be generated. It is stored in the ATR canal for initial cooling and will be transferred to CPP-666 basins for interim storage; planned through 2012. Ms. Beller provided a photo of INTEC highlighting the SNF facilities: CPP-603, CPP-666, CPP-749, CPP-1774, and CPP-2707.

Ms. Beller outlined the INTEC SNF Dry storage. CPP-603 is the Irradiated Fuel Storage Facility – Fort Saint Vrain, ATR, TRIGA Domestic and Foreign Research Reactor, Power Burst Reactor, Pathfinder, Buffalo Pulstar, BORAX, etc. The 125B Casks, CPP-666 dry interim storage– are to be moved to CPP-603 prior to contract completion. Miscellaneous fuels, 208 cans. CPP-749 is the Underground Fuel Storage Facility (Vaults) – Shippingport Light Water Breeder and Pressurized Water Reactors, Fermi, Peach Bottom and Tory IIA. CPP-2707 is the Cask Pad containing 20 types of SNF including 5 from Loss of Fluids Test (LOFT) experiments. The Rail Cars contain SNF from West Valley– Big Rock Point, BWR and Robert E. Ginna PWR. CPP-1774 is the Three Mile Island Independent Spent Fuel Storage Installation (ISFSI) contains 29 HSMs filled, one vacant. Ms. Beller provided a photo of the CPP-666 storage. She explained that there are 4538 positions and it is approximately 44% full. The photo captures the loading of 125B in CPP-666.

Ms. Beller explained the fuel transfer wet to dry storage. The ATR Fuel transfer has 636 positions and is approximately 85% full. The underground storage vaults, CPP-749, has 218 vaults (1st=61, 2nd=157) is only 44% full (2nd only). She provided photos depicting the Shippingport PWR fuel transfer and the Tory IIA fuel transfer from CPP-666 to CPP-749. She also added pictures showing the spent fuel dry storage: Cask Pad CPP-2707, West Valley Cask, TMI CPP-1774, and the Fort St Vrain fuel.

Ms. Beller outlined the Path Forward for EM Fuel. The Blue Ribbon Commission report is due out by January 2012. The revised national policy on SNF (used fuel) management may be developed considering recommendations. ICP will review the mission need for Idaho Spent Fuel Facility (ISFF) and if necessary revise in response to any changes to the national policy. The ISFF Functions (new or reuse of existing facilities) include: the receipt of SNF, characterization, stabilization, packaging, packaged storage, and load-out to transport casks. The requirement is to comply with Settlement Agreement – E.8., “DOE shall complete the transfer all spent fuel from wet storage facilities at INEL by December 31, 2023” and C.1, “DOE shall remove all spent fuel, including naval spent fuel and Three Mile Island spent fuel from Idaho by January 1, 2035”.

Discussion

Tami Sherwood inquired if there was a certain amount of “heat” from the casks and if it was monitored. Ms. Beller explained they perform a thermal evaluation, which is part of the safety analysis report in the engineering design file.

Harry Griffith asked if the storage facilities were seismically coded. Ms. Beller explained that is also part of the safety analysis report. Some facilities have been updated and are periodically checked; all buildings meet seismic code and design standards.

Beatrice Brailsford if NE asks the INL for advice or input regarding casks in the commercial sector. Ms. Beller explained that there are committees that they participate on, as the commercial sector and the government have many of the same concerns regarding materials.

Decisions/Disposition

The report satisfied the informational need for the CAB.

Public Comment

Mr. Clay Condit provided public comment.

Remediation of Buried Waste (WAG 7) Status Update

Mr. Mark Arenaz briefed the CAB on the status of the Subsurface Disposal Area (SDA) at the Radioactive Waste Management Complex (RWMC). He provided a photo of the RWMC as well an aerial view of the targeted waste retrieval areas. He explained that the requirement is to exhume targeted waste from 5.69 acres in the SDA. The status through June 2010: ARP I (Pit 4) (.50 acres) completed Mar 08, ARP II (Pit 4/6) (0.34 acres) completed June 09, ARP III (Pit 6) (0.38/0.43 acres) completed Oct 09 (ARRA funded from April 2009 to completion), ARP IV (Pit 5) (0.79 acres) 43.0% complete - Started Jan 10 (ARRA funded). They have exhumed 1.58 acres (27.8 % of total requirement). The requirement is to retrieve 6,238 m³ of Targeted Waste; Measured by Packaging 7,485 m³ of Targeted Waste. Through June 2010 the status of the buried waste: 4,018 m³ have been packaged (19,317 drums) which is 53.7% of requirement and 2,729 m³ have been shipped offsite (13,120 drums) which is 36.5 % of requirement. Mr. Arenaz explained the Volatile Organic Compound (VOC) issue with WIPP. Shipment information since resumption is from 4/18 thru 7/4. Total TDOPs Shipped: 219, Shipments of Buried Waste Made: 119, Number of drums shipped: 1,952. They average 8.9 drums per TDOP mainly due to weight restrictions. He provided a computer model of the SDA layout for the ARP facilities. Mr. Arenaz also provided photos of the ARP V interior/ liner installation, ARP VI north foundation base plate, the ARP VI canopy piles, ARP VI south foundation, the steel erection at ARP VI and the SDA/ARPs/ ISG panorama.

Decisions/Disposition

The report satisfied the informational need for the CAB.

Update to the Phase 2—In Situ Grouting in the Subsurface Disposal Area

Mr. Markus Pinzel briefed the CAB on the in-situ grouting in the Subsurface Disposal Area (SDA). He began by summarizing in situ grouting. In situ grouting will reduce mobility of technetium-99 and iodine-129 and possible threats to the aquifer. In situ grouting addresses Remedial Action Objective to inhibit migration of contaminants of concern into the vadose zone and the underlying aquifer. Very specific waste forms that contain releasable technetium-99 (Tc-99) and collocated iodine-129 (I-129) will be grouted. These isotopes are contaminants of concern to the aquifer and they are mobile in the environment. These isotopes have not been detected in the aquifer and are sporadically detected in the vadose zone. Mr. Pinzel outlined the grouting locations. Twenty-one trench and vault locations were identified for ISG based on shipping records and geophysics. There are 2168 individual drilling locations. These locations encompass: primary shipments containing 50% of the releasable Tc-99 in the SDA, collocated shipments with additional releasable Tc-99, and other shipments with no releasable Tc-99. Mr. Pinzel provided an aerial map highlighting the twenty-one in situ grouting sites. He provided an update on the ISG operations. A cold test pit demonstration for MSA was conducted on 5/26/10. Actual ISG operations started on 6/9/10 in T49A. The second ISG drill rig was operating in the SDA on 6/21/10 in T45B. Mr. Pinzel displayed a table of the ISG Performance Objectives Report from 6/30/10. He also provided photos of the ISG operations at T45B, the

prepping for T34, at T49B and T45B, the mixing plant #1, loading grout in hopper, the RCT survey, T45B, the T45B buffer areas.

Discussion

Nicki Karst asked why they need the Radiological suits. Mr. Pinzel explained that they are protecting the workers from the drill steel that has gone through the waste. The drill is treated with oil as it comes out, the suits are merely precautionary.

R.D. Maynard asked what the set-up rate was for the grout. Mr. Pinzel explained that it sets up quite quickly on the surface, taking longer deeper with less air exposure.

Fed Sica wondered if the project can be performed in inclement weather. Mr. Pinzel said they try to avoid work in below freezing weather.

R.D. Maynard wondered what percentage of the waste will be covered. Mr. Pinzel explained that they had an initial goal of 80% coverage. They have achieved 83.7% in 49A and the rest have been in the 95-87% range.

Daryl Koch asked what type of grout they are using and its durability. Mr. Pinzel said the grout is a 50/50 mixture of water and cement and it sets up like a sidewalk. He explained that this is just an interim solution before the cap will be placed over it.

Nicki Karst asked if the grouting will just remain exposed at ground level. Mr. Pinzel explained that the grouting stops at 3.8 feet below grade, well above the top of the waste. CWI will then place a mound of dirt over the top, and eventually a cap will be put in place.

Decisions/Disposition

The report satisfied the informational need for the CAB.

Public Comment

Mr. Daryl Siemer provided public comment.

Haul Road EA Status

Mr. Jeff Perry briefed the CAB on the status of the Haul Road Environmental Assessment (EA). They received a total of 43 public comments in eight comment documents. The comments received were categorized into five areas: General/Purpose and Need, Alternative Selection, Cultural Resources, Ecological Resources, NEPA Process. The General/ Purpose and Need comments included: the need for the road (number of shipments), cost issues, concerns about long-term maintenance, and cumulative impacts. The Alternative Selection comments included the use of the Filmore road and justification for a new road. The Cultural Resources comments included: operational controls, additional sampling/studies to provide baseline, additional cultural resource surveys, and training of construction personnel. The Ecological Resources comments included: the fragmentation of habitat, operational controls, protective actions for pygmy rabbits, re-vegetation/non-native plant species, updated sage grouse studies, and "No Net Loss" for habitat, two for one habitat restoration. The NEPA process comment involved the timing of the project. Mr. Perry explained what the next steps will be for the EA. The final EA is due to be published later in July. A FONSI is expected to be issued following the Final EA.

Decisions/Disposition

The report satisfied the informational need for the CAB.

DOE-ID White Paper on Spent Fuel and High-Level Waste

Mr. Jim Cooper briefed the CAB on the DOE-ID white paper on Spent Nuclear Fuel (SNF) and High-Level Waste (HLW). Mr. Cooper referred to the Blue Ribbon Commission (BRC) advisory committee charter, explaining that there are certain items that DOE Headquarters recognizes as Blue Ribbon commission responsibilities and requirements for SNF and HLW. Mr. Cooper highlighted Item 3 of the charter, Objectives and Scope of Activities, which emphasizes the focus on the back end of nuclear fuel, particularly the process for storage and disposal. He asked the CAB to pay particular attention to Items 3b, 3c, 3d, and 3f. Item 3b states that the BRC examine options for safe storage of used nuclear fuel while final disposition pathways are selected and deployed; Item 3c states that the BRC should examine options for permanent disposal of used fuel and/or high level nuclear waste, including deep geological disposal; Item 3d states that the BRC should examine options to make legal and commercial arrangements for the management of used nuclear fuel and nuclear waste in a manner that takes the current and potential full fuel cycles into account; and Item 3f states that the BRC needs to examine options to ensure that decisions on management of used nuclear fuel and waste are open to transport, with broad participation.

Mr. Cooper continued by referencing Mr. Frank Marcinowski's presentation, "Overview of DOE's Spent Nuclear Fuel & High-Level Waste," which was presented to DOE corporate earlier this year. Mr. Cooper reviewed the types of SNF in DOE Inventory. Defense fuel is defined as DOE Production Reactors and Research and Development (R&D) Reactors. Non-Defense is defined as Core Debris from the Three-Mile Island Reactor, Commercial Power Demonstration Projects like Shippingport, Peach Bottom, and Fort St. Vrain, Domestic Research Reactors (DRR), and Foreign Research Reactors (FRR).

The current State commitments from the Idaho Settlement Agreement state that the spent nuclear fuel needs to be placed in dry storage by December 31, 2023. All EM spent fuel will be placed into dry storage by the end of June 2010. The settlement agreement states that all spent nuclear fuel has to be out of Idaho by January 1, 2035. The penalty if this milestone isn't reached would be the suspension of SNF receipts into Idaho and payment to the State of Idaho \$60,000 per day for each day in violation, subject to appropriations.

The Colorado Commitment states that the Fort St. Vrain spent nuclear fuel must be out of Colorado by January 1, 2035. Hanford's has currently moved all SNF from wet to dry storage. The SNF is stored in -400 multi-canister overpacks and other dry casks. Idaho National Laboratory currently has a diverse inventory of SNF in different waste configurations, which includes both DOE-origin and commercial SNF. The INL has diverse storage facilities, with numerous dry storage methods as well as a wet storage pool in use. The INL will continue to receive Foreign Research Reactor (until 2019) and Domestic Research Reactor fuel. Fort St. Vrain currently has 15 metric tons of SNF in dry storage facilities, managed by DOE. Savannah River Site's SNF is currently in wet storage.

Mr. Cooper explained that the FRR program supports the U.S. Non-proliferation policy. More than 9,200 assemblies from 29 countries have been received as of March 2010. Current plans are to receive FRR until 2019.

Mr. Cooper reviewed the 2010 DOE HLW Inventory. Idaho has projected 3,590–5,090 canisters. Hanford has a projected 9,700 canisters. West Valley has a projected 275 canisters by 2010. Savannah River has a projected 2,900 canisters by 2010 and 6,300 canisters total projected. The total HLW inventory will be 3,175 canisters by 2010 and 19,865–21,365 canisters total projected. Savannah River Site has produced about 2,900 canisters (of 6,300 planned). However, 31 million of the 37 million gallons of tank waste remain to be treated (51 tanks; 2 closed) at Savannah River. The Idaho National Laboratory has three waste streams: 4,400 m³ of calcine (a granular solid) stored in 7 bin sets (43 bins) to be converted to monolithic solid by hot isostatic pressing; projected to produce 2,900–4,400 canisters; Sodium-Bearing Waste (SBW) – 900,000 gallons stored in four tanks to be treated by steam reforming –

about 590 10-foot canisters of granular powder will be produced, 7 of 11 tanks closed; Sodium bonded fuel, FFTF fuel (Hanford), to be treated at MFC with NE funding, should be completed by 2011. Hanford has 53 million gallons of liquid waste (177 tanks, 6 emptied) awaiting treatment in the Waste Treatment Plant (WTP).

Mr. Cooper outlined the path forward for HLW. Savannah River Site and Hanford will vitrify/immobilize tank waste and store the canisters of treated waste on-site. Idaho National Laboratory will treat HLW calcine by hot isostatic pressing to form a monolithic solid; and treat SBW by steam reforming and store the canisters of treated calcine and SBW onsite.

Mr. Cooper emphasized that the main stakeholder concern is that the waste may be stored onsite indefinitely, but DOE must uphold state commitments, the Hanford TPA, the Idaho Settlement Agreement, and the South Carolina Federal Facility Agreement. DOE will maintain institutional controls, develop technical basis for extended storage, and assess environmental impacts.

In conclusion, DOE will continue the safe management/storage of HLW and SNF, without any significant near-term technical or safety impacts for 50+ years. DOE will continue to develop improved techniques to reduce treatment costs and schedules. There are potential compliance issues with affected states without a disposal path for defense wastes.

Decisions/Disposition

The report satisfied the informational need for the CAB.

EBR II Sodium Treatment Status

Mr. Perry outlined the MFC D&D project status. Asbestos Abatement in MFC 766, Sodium Boiler Building has 1.7 linear miles of asbestos covered piping. The West and East basements are completed and the east main floor is underway. At MFC 767, the EBR-II Reactor, abatement is underway. Regarding the Lead Abatement, they have identified approximately 500,000 lbs of lead, and are continuing to find more. The Mechanical and Electrical Isolations include: MFC 766 – Sodium Boiler Building is 60% complete, MFC 767 is 10% complete, MFC 793 A – Alcohol Recovery Facility Pad and Tanks has not yet started, MFC 793 B – Alcohol Recovery Facility Annex – has not yet started, and MFC 795 – Cover Gas Cleanup System is below ground. The following buildings are to be demolished: MFC 757 – EBR-II Cooling Tower foundation, MFC 757A – EBR-II Cooling Tower System Building, MFC 793E – Sodium Components Maintenance Shop (SCMS) Storage Building, MFC 793F – SCMS Storage Building, and MFC 795 – Cover Gas Cleanup System – above ground

Mr. Perry emphasized the importance of preserving EBR-II history. DOE has formed a team to coordinate a public focus group to help design an EBR-II historical exhibit to be located at the EBR-I visitors center and historic landmark. The focus group met in June 2010. Video interviews were conducted and the design of the future display is ongoing.

Mr. Perry briefed the CAB on the Passivated Sodium Treatment. There were two research and development activities. The CAES facility performed chemistry research for slowing down the reaction. Premier Engineering performed bench scale testing of flooding and trickle methods to dissolve the sodium bi-carbonate layer and react the residual sodium. The research was completed in April. The treatment system design and construction was completed in June.

Mr. Perry addressed the question “What is Sodium?” It is the sixth most abundant element on Earth, making up 2.7% of the crust. It is a group 1A Alkali Metal, having only one electron in its outer shell. It does not occur in elemental form in nature. Extremely reactive with elements like chlorine, fluorine, etc. and compounds like water. Its melting temperature is 208°F, and has a boiling temperature of 1621°F. It is a shiny, white metal in elemental

form. It makes an ideal coolant in a Fast reactor: due to mass of the sodium atoms, it did not moderate or slow neutrons, it's a good conductor of heat and electricity, low vapor pressure means low operating pressures lighter weight components and piping, it's inexpensive as a coolant, and its fluid properties are similar to water. Some disadvantages of sodium are that in molten form it burns readily in air and reacts violently with water. They have specialized fire fighting techniques for sodium.

Mr. Perry provided a table of the estimated quantities of sodium remaining in EBR-II. The Primary Sodium Tank has less than 500 gallons. The Primary Sodium Tank Ancillary Equipment has less than 350 gallons. The Secondary System (includes auxiliary systems) has less than 780 gallons. The Intermediate Heat Exchanger has less than 150 gallons. The Container Storage Areas have less than 50 gallons. The total sodium residuals are less than 1830 gallons.

NaK is a eutectic mixture of sodium and potassium (78% Potassium, 22% Sodium). It has a freezing point of 10°F and a boiling point of 1445°F. It reacts violently in water and burns readily in air. The estimated quantities of NaK in EBR-II: Pressure transmitters (primary and secondary systems) less than 0.3 gallons, Shutdown coolers bayonets (Includes captive gallons) less than 50 gallons, total NaK is less than 50 gallons.

Mr. Perry explained the Passivation of sodium. After drain of the sodium coolant, the residual elemental sodium in the reactor tank and secondary piping was put in a stable form or passivated with low purge humidified carbon dioxide gas ($2\text{Na} + \text{CO}_2 + \text{H}_2\text{O} \rightarrow \text{Na}_2\text{CO}_3 + \text{H}_2$). The advantage to the process is that it slowly reacted the residual sodium and formed a sodium carbonate layer that reduced the hazards with sodium. The disadvantage is that the carbonate layer inhibits conventional treatment options. The process went on for several years and examination of one of the steam generators in MFC-766 found the several inches of carbonate on top of the elemental sodium; however it does not guarantee all sodium is reacted. Only a handful of plants (Fermi I, Super Phoenix, and Dounreay) have undergone passivation with varied success in processing. There are three parts to treat at EBR-II: West sodium boiler building (non-passivated), East sodium boiler building (Passivated), Reactor tank (passivated) and associated primary sodium process piping. The Superheated Steam Treatment will entail CWI contracted with Creative Engineers. Creative Engineers has performed similar operations worldwide and various commercial and DOE sites. They will work only on the non-passivated sodium located in the MFC-766 west basement. Mr. Perry provided a diagram of the Secondary drain tank treatment and the MFC-766 Sodium Boiler Building (East Side). With regard to sodium treatment, characterization is mostly complete. Most sodium will have been reacted with moist carbon dioxide (i.e., passivated) to form sodium bicarbonate, a much more stable compound than elemental sodium: MFC 766 east piping and MFC 767 primary reactor tank and equipment. Non-passivated sodium still exists; it resides mostly in the secondary sodium drain tank and associated piping in the west basement of MFC-766.

Mr. Perry continued by explaining the Elemental Sodium Treatment. The steam treatment system was designed by CWI and Creative Engineering. The skid mounted equipment was built at Premier Engineering. The facility is complete and the management Self-Assessment was completed on June 28, 2010. The initial treatment ran from June 28 – June 30. They are reconfiguring the system to address MFC 766 East and MFC 767 reactor vessel.

Decisions/Disposition

The report satisfied the informational need for the CAB.

Public Comment

No public comment was provided.

Announcements and Other Board Business

The CAB Retreat will be held in Coeur d'Alene, ID at the Coeur d'Alene Resort from 1pm to 5pm on Tuesday, September 28, 2010. The full board and public meeting will be held at the Coeur d'Alene resort on Wednesday, September 29, 2010.

CAB Work Session

Bruce Wendle suggested the CAB write a letter to EM Assistant Secretary, Dr. Inez Triay commending the contractor, CWI, for outstanding safety performance. The CAB formed a subcommittee to draft the letter: Bruce Wendle, April Mariska, and Harry Griffith.

The CAB had some small issues with the wording of the Chairs Letter and did not approve at this time.

The CAB decided who will attend the September Chairs Meeting September 14-16 in Santa Fe, NM: Willie Preacher, Sean Cannon, Harry Griffith, Tami Sherwood, and Nicki Karst.

The CAB developed an agenda for topics of the September 29th public meeting:

- Progress to Cleanup
- Safety Performance Process
- Overview Legacy Management and Long-term Land Use
- Integrated Waste Treatment Unit (IWTU) Update
- Remote Handled Low Level
- Buried Waste Process Idaho/Hanford

The CAB developed their Top 3 Issues, 1 Accomplishment, and Major Board Activity:

- 1) Budget / Funding
 - Full Base Funding in light of ARRA Completion.
 - ARRA Funding extended until 2015.
- 2) High-level Waste Repository / Stakeholder Involvement
 - Calcine and Sodium Bearing Waste Final Disposition
 - Idaho Settlement Agreement
 - Spent Nuclear Fuel
 - Other Treatment Processes Comparable to Vitrification.
- 3) Funding Long-term Liability / Unfunded Liability
 - Long-term Monitoring and Surveillance.
 - Ensure Funding for Liability Transfers.
- Accomplishment:
 - Recommendation # 145: Engineering Evaluation/Cost Analysis for Experiment Breeder Reactor (EBR) II D&D
 - Recommendation #146: Workplan for Fiscal Years 2011 and 2012
 - Recommendation #147: Multipurpose Haul Road Environmental Assessment
- Major Board Activity:
 - Blue Ribbon Commission Presentation: R.D. Maynard and Willie Preacher
 - New Member Orientation

The CAB developed an agenda for topics of the September 28th Retreat:

- Annual Work Plan
- Self-Evaluation

- CAB Format

Action Items:

1. Bob Pence will discuss the Chairs Letter procedure with Cate Brennan.
2. Ceri Chapple will send an email asking for board approval or disapproval of the Chairs Letter by COB July 26, 2010.
3. Ceri Chapple will draft, finalize, and send out the safety letter, with R.D. Maynard's approval.
4. Support staff will coordinate and distribute travel information to CAB members attending the September Chair's meeting in Santa Fe, New Mexico.
5. Support staff will coordinate and distribute travel information to CAB members attending the September meeting in Coeur d'Alene, Idaho.

Members provided written feedback forms to support services at the conclusion of the meeting. Attachments to these minutes are available on request from the INL Site EM CAB support office.

I certify that these minutes are an accurate account of the July 14, 2010, meeting of the Idaho National Laboratory Site Environmental Management Citizens Advisory Board.

R. D. Maynard, Chair

10/04/2010



Idaho National Laboratory Site Environmental Management Citizens Advisory Board
RDM/cc