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2010 Annual Report

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INL Site Environmental Management

CITIZENS ADVISORY BOARD



Site-Specific Advisory Board Chairs Meeting | Santa Fe, New Mexico
Left to right: Willie Preacher, Nicki Karst, Tami Sherwood, Dr. Inés Triay (Assistant Secretary for Environmental Management), Harry Griffith, Sean Cannon, Bob Pence (DOE)

INL CAB Mission Statement

The Idaho National Laboratory (INL) site Environmental Management (EM) Citizens Advisory Board (CAB) is a federally-appointed citizen panel that provides advice and recommendations to the US Department of Energy (DOE) EM Program for the Idaho Cleanup Project (ICP) at the INL.

The CAB was formed in 1994 in accordance with the Federal Advisory Committee Act. The CAB consists of 15 members who serve in a voluntary capacity to represent a wide variety of key perspectives on issues of relevance to Idaho citizens.

The CAB is a broad cross-section of citizens affected by cleanup activities at the INL. The CAB is dedicated to providing advice and recommendations concerning the following EM site-specific issues: clean-up standards and environmental restoration; waste management and disposition; stabilization and disposition of non-stockpile nuclear materials; excess facilities; future land use and long-term stewardship; risk assessment and management; and clean-up science and technology activities. The CAB may also be asked to provide advice and recommendations on any other EM project or issue. The CAB reports to the Assistant Secretary for EM and the DOE Field Managers or Assistant Managers for EM.



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

Citizens Advisory Board Members

Seth Beal | Moore, Idaho (Butte County)
Sean Cannon | Rexburg, Idaho (Madison County)
D.H. “Doc” DeTonancour | West Yellowstone, Montana
Harrison R. Gerstlauer | Blackfoot, Idaho (Bingham County)
Harry Griffith | Sun Valley, Idaho (Blaine County)
Nicki T. Karst | Idaho Falls, Idaho (Bonneville County)
April Mariska | Chubbuck, Idaho (Bannock County)
R.D. Maynard - Chairman | Meridian, Idaho (Ada County)
Willie Preacher - Vice Chair | Fort Hall, Idaho (Bingham County)
Robert Rodriguez | Burley, Idaho (Cassia County)
Tami K. Sherwood | Idaho Falls, Idaho (Bonneville County)
Fred Sica | Shelley, Idaho (Bingham County)
Terri Tyler | Idaho Falls, Idaho (Bonneville County)
Damond Watkins | Idaho Falls, Idaho (Bonneville County)
Bruce Wendle | Sagle, Idaho (Bonner County)

INL CAB Federal and State Liaisons

Dennis Faulk | US EPA Region 10
Bob Pence | Federal Coordinator
Daryl Koch | Idaho Department of Environmental Quality
Susan Burke | State of Idaho INL Oversight

Support Staff: Portage Environmental

Lisa Aldrich, Ceri Chappelle, Lori Isenberg
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Annual Report Contributors

Sean Cannon; Harry Griffith; Nicki Karst; R.D. Maynard; Tami Sherwood; Teri Tyler; Bruce Wendle



Message from CAB Chairman R.D. Maynard

The year 2010 has been a time of accomplishments for the cleanup program and of changes for the Idaho National Laboratory (INL) Site Environmental Management (EM) Citizens Advisory Board (CAB). Spurred by funding under the American Recovery and Reinvestment Act (ARRA), the INL cleanup contractor, CH2M-WG Idaho (CWI) and workforce, had a bumper year for cleanup, and the Bechtel BWXT Idaho Advanced Mixed Waste Treatment Project (AMWTP) increased the amount of waste treated and shipped off-site.

Starting at the southern end of the site with the Radioactive Waste Management Complex, cleanup crews are now exhuming waste from the fifth phase of the Accelerated Retrieval Project. Two acres of 5.69 has been excavated to date; and the project is ahead of schedule and on budget.

At the Idaho Nuclear Technology and Engineering Center (INTEC), cleanup efforts have focused on demolition of two high-risk facilities: the Fuel Reprocessing Building (CPP-601) and the Head End Fuel Processing Facility (CPP-640). Construction of the Integrated Waste Treatment Unit continues for treatment of the sodium bearing waste remaining in tanks at INTEC. In late 2009, DOE selected the Hot Isostatic Press technology to treat calcined waste currently stored in bin sets at INTEC.

At the Advanced Test Reactor area, CWI's workforce has made significant progress toward demolition of two high-risk facilities: the hot cells and the Materials Test Reactor. In addition, 16 excess facilities were demolished.

At the Materials and Fuels Complex, the Experimental Breeder Reactor-II closure has included approaches for preserving the historic value of the reactor. The CAB had the opportunity to review DOE's plans for capturing this aspect of the INL's history.

At the north end of the INL site, cleanup is nearly completed. Groundwater treatment, using a pump and treat and in situ bioremediation technologies, is the remaining cleanup activity.

In all, six high-risk facilities and 157 excess facilities were decommissioned and demolished under the INL baseline program, and 37 additional facilities were decommissioned and demolished under ARRA funding.

At AMWTP, ARRA funding provided a boost to the contractor's ability to prepare and ship waste off-site. ARRA production goals were met by September 30, 2010. All employees hired with ARRA funding who chose to stay now have full-time jobs at AMWTP.

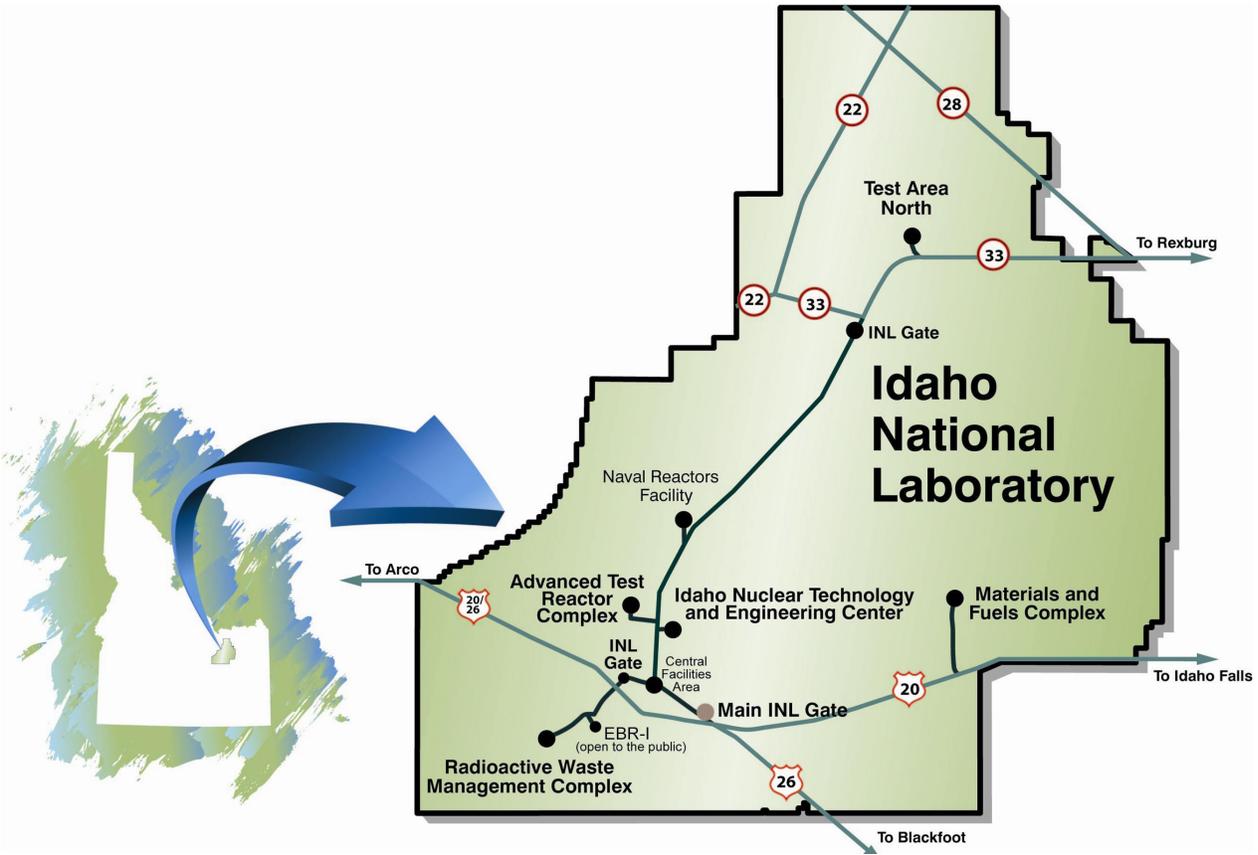
During 2010, the CAB's Deputy Designated Federal Official (DDFO) Rick Provencher, was named DOE Site Manager. I would like to take this opportunity to personally thank Rick for his hard work, professionalism, and commitment to the CAB. I wish him the best in his new position. On the same note, we welcome Jim Cooper as he steps in as the new DDFO. Also in 2010, there was another major change in support services as the CAB says thank you to Portage for a job well done and welcome to North Wind Services as it picks up the laboring oar. In the midst of this, the CAB managed to add two new CAB members, reach consensus on three major recommendations for high-risk cleanup projects, and issue two key letters to DOE – one on the Blue Ribbon Commission and one commenting on the DOE budget. The CAB is pleased to represent Idaho's citizenry through our continuing involvement in INL site cleanup challenges and accomplishments. We are encouraged by the tremendous progress in 2010 and look forward to continuing strides forward in the final years of cleanup at the INL.

Serving as the CAB's chair for the past few years has been a rewarding experience. I would like take this opportunity to thank DOE-ID, the EPA and state regulators, and CWI for their help and cooperation in working with the CAB. I would also like to thank the members of the CAB for the many hours of volunteer time spent in behalf of the CAB.

R.D. Maynard



INL History & Facts*



The INL, an 890-square mile section of desert in southeast Idaho, was first used by the U.S. Government to test artillery. In 1949 it was established as the National Reactor Testing Station. Initially, the missions at the INL were the development of civilian and defense nuclear reactor technologies and management of spent nuclear fuel. Over the decades, 52 reactors – most of them first-of-a-kind – were built, including the Navy’s first prototype nuclear propulsion plant. Of the 52 reactors, three remain in operation at the site. In 1951, the INL achieved one of the most significant scientific accomplishments of the century – the first use of nuclear fission to produce a usable quantity of electricity at the Experimental Breeder Reactor 1 (EBR-1).

Beginning in the 1950s the emphasis of work at the site turned toward defense missions. The support of the Navy nuclear propulsion program continued and INL became a training site for Navy reactor operators. The Chemical Processing Plant was constructed to reprocess spent nuclear fuel from navy submarines to recover uranium to be used in nuclear weapons applications. Plutonium contaminated waste from nuclear weapon production at Rocky Flats, Colorado was shipped to INL for disposal. Much of the current Idaho Cleanup Project is focused on cleanup of contamination at the Chemical Processing Plant and at the plutonium contaminated waste burial grounds.

* Information on INL in this section is based on information from the Idaho Department of Environmental Quality INL Oversight Program website: http://www.deq.idaho.gov/inl_oversight

Idaho Nuclear Technology & Engineering Center (INTEC)

INTEC was established in the 1950s as a location for extracting reusable uranium from spent nuclear fuel (SNF). Until 1992, reprocessing efforts recovered more than one billion dollars worth of highly enriched uranium. The highly radioactive liquid waste created in this process was turned into a solid through a process known as calcining. Calcining converted over 8 million gallons of liquid waste into a granular high level waste (HLW) material called calcine, which is stored at INTEC awaiting treatment using the Hot Isostatic Press (HIP) process followed by final disposition outside of Idaho. Past activities at INTEC have also included the storage of SNF in water basins to cool the fuel prior to reprocessing. Movement of SNF from water basins to dry storage to await final disposition at a national repository was completed in 2010. DOE continued demolition of excess buildings at INTEC in 2010. Demolition at INTEC is scheduled to be complete by the end of 2012. In addition to demolition of facilities, ongoing INTEC activities include:



- Constructing the Integrated Waste Treatment Unit (IWTU) to treat sodium-bearing waste
- Packaging remote-handled transuranic (TRU) waste for shipment to the Waste Isolation Pilot Plant (WIPP)

Materials & Fuels Complex (MFC)

MFC, formerly Argonne National Laboratory-West, was established in 1949. For the next 50 years, the primary function of the facility was to design and develop the next steps in nuclear reactor power stations.

Some of the facilities still standing at MFC that played a role in reactor design include the Transient Reactor Test facility (TREAT), the Experimental Breeder Reactor II (EBR-II), and the Zero Power Physics Reactor (ZPPR). TREAT was used for testing the performance of materials in a nuclear reactor, especially during power excursions. EBR-II operated for 30 years, providing power and serving as a point of reactor research and development (R&D) and testing. The ZPPR facility was used to test reactor design features for different fuel materials and configurations and had a unique design which allowed it to open into two halves. Experimental materials



were placed into each half and brought into proximity with each other when the reactor was closed. The ZPPR is being decommissioned and the building that housed it will be used for other activities. DOE maintains and operates nuclear facilities at the MFC crucial for the advancement of nuclear energy technology R&D. Major activities include:

- R&D associated with nuclear reactor fuels
- Constructing and evaluating prototypes of new nuclear reactor fuels
- Reprocessing sodium-bonded SNF using electrometallurgical treatment
- Examining nuclear materials to determine how well they have withstood introduction into nuclear reactors
- Characterization, packaging, and disposal of radiological waste from current and past research activities
- Producing radioisotope power systems (space batteries) for use in NASA space programs



Test Area North (TAN)

TAN was established in the 1950s to support the federal government's program to build and fly a nuclear powered airplane. Although that project was cancelled in the 1960s, prior to completion, many other projects and activities have been hosted at TAN. The Loss of Fluid Test Reactor (LOFT), which was a smaller scale version of a commercial power reactor, completed nearly 40 reactor accident experiments in the 1960s and

1970s. Scientists and engineers at TAN examined the fuel and core debris from the Three Mile Island Unit 2 core after the accident in 1979. Other reactor research facilities at TAN have included the Containment Test Facility and the Water Reactor Research Test Facility.

Forty-six facilities at TAN have been dispositioned, including the Technical Support Facility and the LOFT Reactor. Ongoing activities at TAN include:

- Manufacturing armor for the U.S. Army's M1 Abrams Main Battle Tanks
- Treating ground water to reduce volatile organic compound (VOC) contamination

Advanced Test Reactor (ATR)

The ATR Complex has served as a focal point in the INL's energy research mission for over 50 years. Three major test reactors have operated at the ATR Complex:

- Materials Test Reactor (MTR; 1952-1970)
- Engineering Test Reactor (ETR; 1957-1982)
- Advanced Test Reactor (ATR; 1967-present)

The MTR was used to test metals and components for use in reactors. The MTR is currently being demolished. The ETR provided more testing space and flexibility than the MTR. When it started up ETR was the largest and most advanced materials test reactor in the world. Demolition of the ETR is complete. The ATR continues to be used to study the effects of radiation of fuels and materials used in nuclear reactors and creates a wide range of reactor environments in which to run experiments and tests. The ATR also produces nuclear isotopes for medical and industrial uses.

Radioactive Waste Management Complex (RWMC)

The RWMC was established in 1952 as a burial location for low-level radioactive waste (LLW). Starting in 1954; however, TRU waste and organic sludge from Rocky Flats, Colorado, was also buried in the Subsurface Disposal Area (SDA)—the actual burial grounds at the RWMC.

In 1970, the federal government stopped burying TRU waste at the RWMC and began placing it in retrievable storage for later transfer to a federal repository, but INL continued to dispose of LLW in pits at the SDA. Historical waste disposal practices have resulted in the release of radioactive and organic contaminants to the soil and ground water below the SDA. RWMC has multiple ongoing activities including:

- Disposal of remote-handled LLW generated from ongoing INL site operations
- Packaging, certification and shipment of stored TRU waste to the Waste Isolation Pilot Plant (WIPP), a permanent geological repository near Carlsbad, New Mexico.
- Excavation, treatment and disposal of target waste from pre-1970 waste burial pits
- Implementation of the final remedial action of the RWMC burial grounds
- Extraction and treatment of chlorinated organic solvent vapors from soil above the aquifer.



Advanced Mixed Waste Treatment Project (AMWTP)



Aerial Photograph of the Advanced Mixed Waste Treatment Project showing: 1: Waste Storage Facilities; 2: Treatment Facility; 3: Characterization Facility

The Advanced Mixed Waste Treatment Project (AMWTP) was built to meet DOE's obligations and milestones to prepare TRU waste now buried or stored at the INL for shipment to the WIPP.

The vast majority of the waste processed at the AMWTP resulted from the manufacture of nuclear weapons components at Colorado's Rocky Flats Plant. Shipped to Idaho in the 1970s and early 1980s, the waste contains industrial debris, such as rags, work clothing, machine parts, and tools, as well as soil and sludge, and is contaminated with transuranic radioactive elements (primarily plutonium). Most of the waste is "mixed waste" contaminated with non-radioactive hazardous chemicals such as oil and solvents.

At the AMWTP, waste is retrieved from storage, examined in the AMWTP Characterization Facility, treated, and packaged for shipment to WIPP. AMWTP houses a Supercompactor treatment unit that is capable of reducing

a 55-gallon drum to one-fifth its original size. Compacting waste reduces the volume of waste, reducing the number of truck shipments leaving the facility, as well as the amount of permanent disposal space required at WIPP.

American Recovery & Reinvestment Act at INL

D&D projects received \$207, 875,000 of ARRA funding. The objective is to D&D surplus nuclear, radiological, and industrial facilities that no longer have a mission. It includes D&D of buildings and structures at INTEC, MFC, ATR, the Power Burst Facility, and RWMC. Major facilities to be D&D'd include the CPP-601/640 Fuel Reprocessing Complex, the Material Test Reactor complex, the Waste Experimental Reduction Facility Incinerator Building, the Test Reactor Area Hot Cells, and the EBR-II reactor and ancillary structures. This project will D&D 88 buildings resulting in a total footprint reduction of 812,277 square feet. This project also includes the development of a haul road between MFC and INTEC.

TRU Waste Project received \$137,000,000 of ARRA funding that provides for preparation of Remote Handled and Contact Handled TRU waste for characterization and shipment to WIPP. This project also provides for characterization, packaging and shipment of Mixed (hazardous and radioactive) LLW and LLW off-site. Finally, this project provides for the disposition of debris waste generated from D&D projects at the INL. Primary operations are conducted at AMWTP, RWMC and INTEC. The project has accelerated key work necessary for

the Office of EM to meet obligations under the Idaho Settlement Agreement to send waste managed as TRU out of the state by 2018. The remote-handled TRU portion of this project accelerates repackaging and preparations for certification and shipment off-site of non-sodium containing remote-handled TRU waste that was accepted by EM from the Office of Nuclear Energy (NE) in 2009. Accelerated Retrieval Project received \$122,300,000 of ARRA funding. This project completes the construction of two new facilities for retrieval of targeted waste from the SDA and accelerates retrieval of buried targeted waste. This allows for earlier completion of targeted waste retrievals per the Record of Decision for Radioactive Waste Management Complex Operable Unit (OU) 7-13/14 and the Idaho Settlement Agreement. Earlier completion of the retrievals allows for early construction of an evapotranspiration barrier over the entire SDA (to be completed with base funding after FY2012). Accelerated remediation work scope for the in-situ grouting of mobile radionuclide sources will be completed as well. This will result in completing an approximate .91 acres with ARRA funds for a cumulative value of 1.77 acres exhumed from 2005 through 2011.

2010 Year in Review



Top 3 Issues

Issue #1: Budget/funding support for

- Full base program funding in light of ARRA completion
- ARRA funding extended until 2015

Issue #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

Issue #3: Funding long-term

- Liability/unfunded liability
- Long-term monitoring and surveillance
- Ensure funding for liability transfers

Accomplishments

- Blue Ribbon Commission presentation
- Blue Ribbon Commission letter on Idaho high-level waste & spent nuclear fuel
- New member orientation

Recommendations

#145: Engineering Evaluation/ Cost Analysis (EE/CA) for Experiment Breeder II D&D

#146: Work-plan for Fiscal Years 2001 and 2012

#147: Support DOE's preferred alternative out-lined in the Environmental Assessment (EA) for the multipurpose haul road.

January 15

The first meeting of 2010 started out "business as usual" with eleven CAB members, regulators and state representatives. Rick Provencher, provided a status of progress to clean up, including safety performance with typical agenda topics that followed. Several questions arose concerning Calcine HLW that currently has no disposition path. Ron Ramsey explained the alternative analysis and the alternative selection HIP, which will meet with Resource Conservation Recovery Act (RCRA) requirements. HIP will cost-effectively reduce volume, treat and prepare calcine for shipment out of Idaho by 2035 as pursuant to the Idaho Settlement Agreement. Additionally, this technology is the most likely form for disposition at a non-RCRA or RCRA-permitted site. While the briefing and Q&A session addressed the CAB's concerns, calcine will continue to be a topic of discussion at future meetings.

Jeff Perry provide a detailed briefing on EBR II D&D EE/CA that reviewed four alternatives: no action; long term maintenance/monitoring; D&D above ground structures and grout the reactor in place; D&D above ground structures, removal and disposal of EBR II reactor vessel at ICDF. The thoroughness of the EE/CA was evidenced in the details provided. Questions and discussion on the alternatives followed the presentation with particular interest in the preferred alternative #3: D&D above ground structures and grout the reactor in place.

While the above briefings engaged the CAB with dialogue and questions, and the Radiation Tutorial was creative, In Situ Grouting (ISG) at WAG 7

stimulated lively discussion. Marcus Pinzel began by providing background and history on the SDA, and WAG 7 Record of Decision. As the details of ISG "Phase 2" were described, a barrage of questions followed. Open dialogue continued with CAB concerns regarding risk of drilling, possible combustibles; unease with the entire process, insufficient diagrams; feelings that the project is being rushed.

March 26

The bi-monthly meeting was held at the Hilton Garden Inn, Idaho Falls. There were 14 members present and the usual number of DOE members and Regulators. Rick Provencher gave the CAB his usual excellent Progress Report outlining all that had gone on at the INL site during the last two months. Other presentations included In Situ Grouting (ISG) in the SDA by Mark Arenez, EBR II Reactor Report by Jeff Perry, and Fast Flux Test Facility Spent Fuel Treatment at the INL by Gregory Bass. CAB Recommendations #145 and #146 were presented and approved. The CAB developed the three top issues and one board accomplishment to be presented at the Spring EM Site-Specific Advisory Board (SSAB) Chair's meeting. Willie Preacher was elected to be the CAB's Vice Chairman.

May 28

Chairman R.D. Maynard and Rick Provencher, DDFO, welcomed everyone, thanked the CAB for its efforts and provided brief updates. Additionally, the liaisons provided brief updates. Mr. Provencher provided a status of the cleanup progress with active discussion among the CAB, including ARRA work

and other waste management areas. He also provided an outline for the TRU Waste Disposition project, listing accomplishments and goals from 2006-2012. In addition to the overview, he detailed the White Paper on Idaho HLW Calcine and SNF, outlined the 2012 Budget Development, and briefed the CAB on DOE-EM Greater than Class C Environmental Impact Statement. Mr. Provencher discussed the American Nuclear Society Workshop on D&D, August 29—September 2, 2010 in Idaho Falls. Jim Cooper briefed the CAB on the DOE-ID white paper on SNF and HLW. 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 SNF will be placed into dry storage by the end of June 2010. He reviewed the 2010 DOE HLW Inventory. DOE will continue the safe management/storage of HLW and SNF without near-term technical or safety impacts for 50+ years. There are potential compliance issues with affected states without a disposal path for defense waste.

Anna Carter briefed the CAB on the AMWTP contract extension. The contract extension will allow DOE to continue meeting the commitments of the Idaho Settlement Agreement, the Site Treatment Plan, and the accelerated TRU waste shipment schedule at the WIPP.

July 14

Jim Cooper reported on recent public involvement and on the current state of clean-up efforts at the INL.

Joel Case reported DOE is currently in the process of identifying potential small business capabilities to aid in development of the final acquisition approach. In FY 2011, DOE will issue an RFP and in FY 2012 evaluation of proposals will be completed and the new contract will be awarded.

Katie Hain presented information on the activities of the Blue Ribbon Commission. To supply background information to the members of this commission, each DOE site will be drafting a “white paper” to submit to the commission in order to provide the members with information about the history and current state of each DOE site. The document presents the history of each project at the INL which led to the storage of nuclear waste, treatment and storage of that waste.

Barb Beller briefed the CAB on the SNF transfer to dry storage and said the last of 3,186 fuel handling units listed in the ICP contract has been put into dry storage. The CPP-666 basins still hold Navy and Nuclear Engineering fuel which must be moved to dry storage according to the Idaho Settlement Agreement by January 1, 2035.

Mr. Jeff Perry reported on the results of the Haul Road Environmental Assessment (EA). DOE received a total of 43 public comments regarding many aspects of purpose and need, cultural resources, ecological resources and the National Environmental Policy Act (NEPA) process. The final EA should be published in late July. Mr. Perry also briefed the CAB on the status of the beginning steps in the D&D of EBR II. Asbestos Abatement in MFC 766 has been completed and is underway in MFC 767.

In the CAB work session, a decision was made to write a letter to EM Assistant Secretary, Inez Triay commending the contractor, CH2M-WG Idaho (CWI), for outstanding safety performance.

September 29

The CAB Retreat at the Couer d’Alene Resort provided the CAB with an opportunity to focus on organizational matters unique to the CAB and to get updates on major cleanup projects across the INL footprint with input from CAB members, DOE participants, and representatives from federal and state environmental agencies. The meeting began with opening remarks from R.D. Maynard, who reviewed the agenda. He was followed by the DDFO, Jim Cooper. Representatives from the state and federal environmental agencies followed, and Brent Rankin, representing CWI, provided an update on the ICP. Mr. Cooper then reviewed recent public involvement events with the Office of EM, as well as the status of cleanup projects. Brent Rankin gave an outstanding presentation which detailed CWI’s safety performance process for the ICP. Dan Shirley then gave an overview of legacy management and long-term land use at the INL. He highlighted two major construction projects at the site that will be managed by the Office of NE.

After lunch, the meeting reconvened with a presentation on the IWTU by Keith Lockie. The new facility to treat 900k gallons of waste is on track to be completed in December 2012, with construction of a storage building for interim storage of all products produced by the waste treatment process.

Julie Connor followed with a short but informative discussion regarding remote-handled LLW disposal. Mark Arenaz provided the background and history of the SDA in his presentation on buried waste and discussed the five alternatives that were originally discussed to dispose of the waste. The preferred alternative was selected after an extensive public comment period and includes a combination of the original five alternatives.

The concluding presentation came from Ben Roberts, the Idaho Recovery Act Site Representative.

SSAB Spring Meeting



Recommendations

The EM SSAB approved a Recommendation to Reinstate the DOE EM Five Year Plan.

1. The EM SSAB approved a Recommendation to Reinstate the DOE EM Five-Year Plan.
2. The EM SSAB recommends that cleanup decisions, including choosing remedial actions at remaining EM cleanup sites. (Susan from Hanford presented the proposed recommendation). The Board decided that this recommendation will be revised as necessary with input from each SSAB.
3. A proposed recommendation to identify unfunded liabilities was presented and the SSAB Chairs agreed to wait for the DOE official response before pursuing a recommendation on this matter.



R.D. Maynard and Nicki Karst

The April 2010 EM SSAB Chairs meeting was held in Oak Ridge, Tennessee, April 28th and 29th with a tour of the Oak Ridge site on the 27th.

Dr. Ines Triay provided an EM Program update. The EM Program vision is that “EM completes quality work safely, on schedule and within cost, and delivers demonstrated value to the American taxpayer.” Primary EM priorities include; improving project management, treating/disposing tank wastes, SNF, dispositioning TRU and mixed LLW, remediating soil and groundwater, and D&D of excess facilities. Program goals include risk reduction, using ARRA funds to help maintain compliance and establish strategic options. Radioactive tank waste cleanup represents the highest life cycle costs with facility D&D costs the next highest costs.

Joann Luczak (Program Planning and Budget Deputy Assistant Secretary) explained that budget priorities include safety and compliance in the EM complex; radioactive tank waste disposal; SNF disposition; soil and groundwater remediation; TRU and mixed LLW disposition; and D&D of excess facilities.

Frank Marcinowski (Technical & Regulatory Support, Acting Chief Technical Officer and Deputy Assistant Secretary) stated that the TRU waste challenges include shipments

from Idaho have been impacted due to carbon tetrachloride limits. The DOE’s application for the proposed Yucca Mountain (YM) repository will be discontinued in 2010. A Blue Ribbon Commission will be formed to develop a new strategy for nuclear waste management and disposal (interim report

in 18 months). The Office of NE will develop and execute an R&D program to address issues of HLW. In 2010, DOE will prepare the YM site for stewardship and remediation. The Mercury Storage Facility will be ready to accept mercury in 2013.

David Geiser, Office of Legacy Management (LM) Deputy Director, stated that the LM mission is to manage the DOE’s post-closure responsibilities and ensure the future protection of human health and the environment. LM will maintain long-term surveillance of 85 sites (in FY 2012, total 101 sites). Currently, there are 37 category 1 (records only) sites; 40 category 2 (inspections of caps, institutional controls, groundwater samples); and 8 category 3 (need staff nearby to monitor groundwater treatment system or leachate management system). LM evaluates sites for land reuse opportunities that include solar and wind energy development. LM Business Center in Morgantown, West Virginia is open and can hold approximately 140,000 cubic feet of records including 1,700 cubic feet of x-ray records for former DOE workers. LM manages electronic data also. A specific protocol (Site Transition Plan) is in place to transition sites from EM to LM with an overlap observation period. LM was formed in 2003 and is in the 6th year of operation.

Current elements of stewardship at closed DOE sites include restrictions on use of, or access to, land and water (institutional controls); information management (gathering, storage, retrieval, and dissemination); monitoring, operation and maintenance of implemented remedies; periodic reevaluation of remedies; and R&D activities.

SSAB Fall Meeting

In September 2010, over 50 representatives from the 10 EM cleanup sites, along with 13 officials from the DOE attended the SSAB Chairs meeting in Santa Fe, New Mexico. The meeting kicked off with a site tour of the Los Alamos facilities, home of the 1st nuclear bomb assembly. The tour started with the TA-21 D&D site which contains 24 Manhattan Project and Cold War-era plutonium, uranium, polonium, actinide and tritium research facilities. After touring the Tritium Systems and Test Assembly facility which housed research facilities for bomb components, we travelled to some of the legacy waste storage areas where LLW stored in pits and shafts is being classified and prepared for shipping to WIPP. It was interesting to note that the local risks at Los Alamos, while akin to INL, are subtly different. They are primarily concerned with surface water transportation of radionuclides instead of ground water transportation to deeper aquifers.

The tour also included a unique visit to the ancient Tsirege Indian dwellings, occupied by ancestors of the Pueblo of San Ildefonso between AD 1325 and the late 1500's. On day 2, presentations from the DOE on the \$5.9 billion in projects funded by the ARRA highlighted the many metrics and milestones reported on a common basis by each of the EM sites. In general, all the projects across the country are broadly on track with \$2.7 billion in payments, 24,000 workers employed, and plans in place to spend 90% of the allocated funds by FY 2011.

One of the more interesting presentations from the DOE addressed "Footprint Reduction & Energy Parks." Current plans call for a system-wide reduction in footprint from 900 to 450 square miles, and a number of sites have

already developed detailed specific plans and targets. The DOE is seriously considering opportunities to leverage some of this released land to support investment in renewable technologies like wind, solar, biomass and geothermal. Additional presentations for Day 2 focused on other land use issues, waste deposition progress and budget status.

On Day 3, Dr. Ines Triay reported that overall program goals remain unchanged in the current economic and political environment, specifically:

1. Timely completion of tank waste treatment facilities
2. Reduction in life-cycle cleanup costs
3. Completion of disposition of legacy transuranic waste
4. Reduction of EM footprint

In practical terms for INL, this translates into completion of the sodium treatment plant, careful evaluation of capital vs. operations costs, maintaining current levels of throughput and shipping of LLW to WIPP, and an increased focus on post cleanup land use.

Day 3 closed out with a review of each sites top three issues and accomplishments. Not surprisingly, there were many similar issues such as composition and structure of the CABs and the implications of the cancellation of the YM site evaluation.

CAB Members in attendance: Sean Cannon, Harry Griffith, Nicki Karst, Willie Preacher, and Tami Sherwood.



Willie Preacher and Sean Cannon

LTS&M Conference

The 2010 Long-Term Surveillance and Maintenance Conference was held on November 15th 2010 at the Two Rivers Convention Center in Grand Junction, Colorado. Two hundred ninety two attendees were present at the four day conference. INL CAB members attending included Board Chair R.D. Maynard and board members Harrison Gertslauer and Bruce Wendle. The meeting included many presentations on the excellent work done by the Office of LM.

LM is responsible for management of former nuclear

facilities once cleaned up by EM. LM takes over any remaining environmental and human issues. The office currently manages more than 100 sites located throughout the country. Two sites managed by LM were included in tours attended by conference attendees.

Although the conference covered many great achievements carried out by LM, it was felt by the INL Board Members attending the conference, that the nature of the land associated with INL and its location away from any urban areas would prohibit any major usage by LM.

2010 Waste Mngmt. Symposium

With a focus on achieving excellence Dr. Inez Triay opened the Waste Management Symposia 2010 (WMS2010) plenary session in Phoenix. “Good enough for government work” would once again be the standard of excellence as it had been when the term was first coined during World War II. “Excellence in risk reduction, project management and life cycle cost through science and technology. Taxpayers deserve no less,” said Triay. Triay outlined EM priorities, goals and highlighted work accomplished with ARRA funds and concluded with a call to press forward to excellence so that “Good enough for government work is a phrase that makes us proud”.

The outlined EM priorities and goals will be tackled utilizing science and first-of-a-kind technology as evidenced by the 82 different sessions offered during the WMS2010. Sessions covered HLW/SNF/TRU; Nuclear Power Plants, Relicensing WIPP; Packaging & Transportation, and Soil & Groundwater Remediation to name a few. As the featured site for the WMS2010, technologies used at Hanford were highlighted. DOE EM Technology, Innovation and Development Program (session 27) provided encouragement that with more funding to R&D, science and technology will provide solutions to environmental remediation and solutions to the energy/environmental trade off.

Even though Hanford was the featured site, sessions referring to Yucca Mountain and geological repositories drew the largest crowds. Closing the fuel cycle and identifying geological disposal systems is one of the biggest challenges nuclear energy faces globally. For example, China’s aggressive plans for construction of nuclear power plants expect to exceed estimates of 83,000 metric tons of uranium in SNF. Performance Assessment of Geological Disposal Systems (session 57) addressed the shortcomings of pump and treat, while it does a fair job it does not provide the desired outcome in long term reduction of contamination; “knowledge gaps” that exist in some of the current technology being used in waste

management, i.e. the long term ability of cementation materials to isolate waste is not demonstrated, ...” behavior of cementation material in a subsurface environment is poorly understood,” said Dr. Ming Zhu, DOE Office of Groundwater and Soil Remediation. Additionally, Dr. Ming Zhang (Japan) noted, “...higher concentration of constituents increases the measurement of error in geological formations.” Session 57 not only addressed “knowledge gaps” and areas of necessary improvement through R&D, it also demonstrated DOE’s openness and commitment to transparency.

Attendees were asked to vote for the best presentation. A popular choice was the Geo Politics of Energy, authored by James L. Conca, Ph.D., Institute for Energy and the Environment, New Mexico State University. Conca’s presented a comparative analysis of energy life cycle cost including construction, production and fuel cost; environmental impact and waste streams. The big three were included in the through analysis, fossil fuel, renewable (hydro, wind, solar) and nuclear. The Geo Politics of Energy presentation also addressed the global accelerated spike in energy demand and workforce development that is essential if we are to expand our energy portfolio and replace our existing outdated nuclear fleet. “Access to energy is essential to quality of life” said Conca.

Likewise, EM’s commitment to cleaning up legacy waste with new technology through research and development is essential to quality of life.

While there is confidence in current practices there is always the lingering question, “What are we leaving for our grandchildren, great-grandchildren, and future generations?” Therefore we must be engaged in the process and continue to ask specific questions regarding remedial actions and outcomes, seeking excellence through science and technology in environmental risk management, the future deserves no less! CAB Members: Tami Sherwood, Teri Tyler.

Left to right:

*Lori Isenberg: Facilitator
Ceri Chapple: Admin. Support
Lisa Aldrich: Project Manager
Bob Pence: Federal Coordinator
R.D. Maynard: CAB Chair
Tami Sherwood: CAB Member
Nicki Karst: CAB Member*





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

Seth Beal | Moore, Idaho (Butte County)

Seth Beal holds an associate's degree in agriculture from Ricks College and has been self-employed in farming for 30 years. In addition, he served as a Butte County commissioner since 1988. He is interested in serving on the CAB as he has a general interest in the health and welfare of the area and in the role the INL plays in the community. Mr. Beal has been a member of many organizations, including the Rural Economic Task Force. He joined the Board in May 2004.

Sean Cannon | Rexburg, Idaho (Madison County)

Mr. Cannon is a professor of geography at Brigham Young University-Idaho. He earned his bachelor's degree in geography from Brigham Young University and his master's from the University of Utah. Mr. Cannon's interests with the Board stem from his background in environmental geography and cultural preservation. He has a strong interest in environmental restoration and land use change. He is also interested in comparative international policy regarding the safeguarding and disposal of nuclear waste. Mr. Cannon resides in Rexburg, Idaho, and was appointed to the board in May 2010. He is currently serving his first full term.

D.H. "Doc" DeTonancour | West Yellowstone, Montana

D. H. "Doc" DeTonancour has had training in many areas, including pipe fitting, federal taxes, and law enforcement. He is currently working at the INL as a pipe fitter and is president of the Paper, Allied International, Chemical, and Energy Workers (PACE) Union. He has worked at many construction sites around the country, owned a tax business, and has been a deputy sheriff for Deer Lodge County, Montana. Mr. DeTonancour is interested in the impact of the INL on its workforce. He joined the Board in May 2004.

Harrison R. Gerstlauer | Blackfoot, Idaho (Bingham County)

In 2001 Mr. Gerstlauer retired from INL, where he spent more than 32 years working as a reactor operator and reactor mechanic, and a trainer for hot cell operations and radiation workers. He also helped develop and teach the computer-based radiation worker programs at the INL. His career includes time in the Navy as an aircraft jet engine mechanic. He attended Navy Nuclear Power School and served aboard the USS Enterprise. He is an active member of the American Nuclear Society Idaho Section. Mr. Gerstlauer resides in Blackfoot, Idaho, and was appointed to the board in May 2008. He is currently serving his second full term.

Harry Griffith | Sun Valley, Idaho (Blaine County)

Mr. Griffith has spent the last two years consulting on a wide variety of energy, geopolitical, and business development issues after retiring from a 25 year career with British Petroleum. Most recently, Mr. Griffith took a full-time role as Executive Director for SustainBlaine Inc., a public-private partnership dedicated to improving the economic vitality and diversity of Blaine County, Idaho. Originally trained as a geologist, Mr. Griffith received a Bachelor of Arts from Dartmouth College and an MBA from the Amos Tuck School of Business. Mr. Griffith is involved with a number of local community organizations such as the Ketchum Community Development Corporation, Sun Valley Ski Educational Foundation, and Blaine County Recreation District. He is also a member of the Association of Independent Petroleum Negotiators and the Society of Petroleum Engineers. Mr. Griffith resides in Sun Valley, Idaho, and was appointed to the board in May 2010. He is currently serving his first full term.

Nicki T. Karst | Idaho Falls, Idaho (Bonneville County)

Ms. Karst is the Contracting Manager for Idaho Physicians Network in its Idaho Falls office. For the past 12 years, she has been the contract negotiator for national and statewide managed health care organizations. She earned a Bachelor's degree in Health Care Administration from Idaho State University. Her interest in the INL EM CAB is based on family involvement (her father was a physicist at the INL for more than 30 years) and a concern for the financial viability of INL as an economic driver for the area, as well as protection of recreational and agricultural resources. Ms. Karst resides in Idaho Falls, Idaho, and was appointed to the board in December 2007. She is currently serving her second full term.



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April Mariska | Chubbuck, Idaho (Bannock County)

April Mariska has earned her Master's Degree in Social Work and currently works as a licensed clinical social worker at the State Hospital South located in Blackfoot, Idaho. Ms. Mariska is a member of the National Association of Social workers. Her interest in the CAB stems from a desire to contribute to the welfare of her community, protect the environment, and collaborate with peers working toward a common goal.

R.D. Maynard—Chairman | Meridian, Idaho (Ada County)

Mr. Maynard is a current commissioner of the Idaho Industrial Commission, which is responsible for evaluating, adjudicating, and administering claims of injured workers. Mr. Maynard attended Idaho State University, and has more than 30 years experience in construction, and was President of the Idaho Building and Construction Trades and a union representative for the operating engineers at the INL Site. Mr. Maynard is interested in bringing his knowledge of the site history and understanding of the consensus process to the issues the INL EM CAB is currently addressing. Mr. Maynard resides in Meridian, Idaho, and was appointed to the board in May 1997. He is currently serving his seventh full term.

Willie Preacher—Vice Chair | Fort Hall, Idaho (Bingham County)

Mr. Preacher serves on the INL EM CAB as a representative of the Shoshone-Bannock Tribes, a federally-recognized Indian Tribe. Mr. Preacher is a member of the Tribes and is employed as the Director of the Tribal/DOE Agreement-in-Principle Program. Mr. Preacher is also a member of the DOE Environmental Management Advisory Board, the State and Tribal Government Working Group, and the National Transportation Stakeholder Forum. He was previously employed at INL for 30 years. Mr. Preacher resides in Blackfoot, Idaho, and was appointed to the Board in January 2003.

Robert Rodriguez | Burley, Idaho (Cassia County)

Mr. Rodriguez is a retired employee of the FMC Astaris Plant in Pocatello, Idaho, where he worked as an environmental technician and received extensive training in operations, safety, and worker protection. At FMC, he was a member of the cultural diversity program, was a trained fire fighter with special training in chemicals, as well as a safety union representative and confined space supervisor. Throughout his career, Mr. Rodriguez had the opportunity to work with all levels of management, co-workers, and plant engineers. He also worked in construction at INL many years ago. He is concerned about the environment and the potential impacts of INL projects on the people of Idaho. He resides in Burley, Idaho, and was appointed to the Board in May 2006. He is currently serving his third full term.

Tami K. Sherwood | Idaho Falls, Idaho (Bonneville County)

Ms. Sherwood currently serves as Business Development/ Investor Relations Manager for Grow Idaho Falls, Inc. the economic development agency for Idaho Falls, Ammon, and Bonneville County, that serves to market economic strengths and community assets to prospective companies and organizations. Ms. Sherwood promotes the retention/expansion of local businesses, and conducts community outreach. She is the Youth Exchange Officer for the Idaho Falls Rotary Club and an Ambassador for the Greater Idaho Falls Chamber of Commerce. She is also a member of the Eastern Idaho Economic Development Partners, Idaho Economic Development Association, and the International Economic Development Council. Ms. Sherwood resides in Idaho Falls, Idaho, and was appointed to the Board in December 2007. She is currently serving her second full term.

Board Members who said “Hello” - “Good Bye”

Board members who said “good bye” : John Bolliger, Dick Buxton

Board members who said “hello” : Sean Cannon, Harry Griffith



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

Fred Sica | Shelley, Idaho (Bingham County)

Fred Sica lives in Shelley, Idaho and is employed by the Better Business Bureau. He previously served as Director of Business and Research Development for the Inland Northwest Research Alliance, a consortium of eight universities that conduct research in cooperation with the Department of Energy. He holds a Bachelors Degree from Long Beach State University and has 25 years experience in working with chambers of commerce, foundations and non-profit agencies. In addition to his current employment, Mr. Sica has been involved in INL issues through the Idaho Falls Chamber of Commerce and with environmental issues affecting Idaho through his directorship of the Henry's Fork Foundation. He joined the Board as an in-cycle replacement in January 2006 and was appointed for permanent seating in May 2006. He is currently serving his third full term.

Teri Tyler | Idaho Falls, Idaho (Bonneville County)

Ms. Tyler is a licensed Professional Engineer and Certified Hazardous Materials Manager who previously worked at INL between 1985 and 2008. She possesses a Bachelor's degree in Chemical Engineering from the University of Kentucky, a Master's degree in Environmental Science from the University of Idaho, and is currently a member of the National Society of Professional Engineers and the American Institute of Chemical Engineers. Past memberships included the Society of Women Engineers, American Nuclear Society, and the Sierra Club. A long time resident of Idaho, Ms. Tyler is interested in serving on the INL EM CAB because she has concerns regarding conservation and future environmental impacts. Ms. Tyler resides in Idaho Falls, Idaho, and was appointed to the Board in October 2009. She is currently serving her first full term.

Damond Watkins | Idaho Falls, Idaho (Bonneville County)

Damond Watkins holds a Bachelors Degree in political science from University of Utah, where he was student body president, and a Masters Degree in liberal arts from Dartmouth College. He resides in Idaho Falls and is currently employed as the Director of Corporate Affairs for Melaleuca, Inc., where he has the opportunity to interact with people world-wide. He brings a broad educational background and understanding of the local community to the CAB. He joined the Board in May 2006.

Bruce Wendle | Sagle, Idaho (Bonner County)

Mr. Wendle is a retired Chemical Engineer who earned his Bachelor's degree from the University of Idaho. During a 38-year career that ended in 2000, he worked extensively in the plastics engineering business, where he managed environmental projects. He is interested in further development of the nuclear industry in Idaho, as long as it is not a detriment to the environment. He is currently involved with several volunteer functions such as AARP tax preparation. Mr. Wendle resides in Sagle, Idaho, and was appointed to the Board in February 2006. He is currently serving his third full term.





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For more information visit:

inlcab.energy.org