

**FINAL MEETING SUMMARY**

**HANFORD ADVISORY BOARD**

*April 5 – 6, 2007*

*Clackamas, OR*

**Topics in This Meeting Summary**

Executive Summary..... 1  
Welcome and Introductions..... 3  
Approval of November Meeting Summary ..... 3  
100 Area Cleanup Status ..... 4  
Status of Groundwater Projects ..... 6  
Site Specific Advisory Board (SSAB) Chairs Meeting Update..... 8  
Columbia River Toxics Reduction Initiative ..... 9  
Letters of Appreciation..... 11  
Public Involvement and Scoping of the Global Nuclear Energy Partnership (GNEP) Programmatic  
Environmental Impact Statement (EIS)..... 12  
Tank Waste Committee Issues Update ..... 13  
Update on Board Charter Changes ..... 15  
Agency Updates ..... 15  
Committee Reports ..... 16  
Public Comment ..... 18  
Board Business ..... 18  
Attendees ..... 20

*This is only a summary of issues and actions in this meeting. It may not fully represent the ideas discussed or opinions given. Examination of this document cannot equal or replace attendance and public participation.*

**Executive Summary**

**Board Action**

The Hanford Advisory Board (HAB or the Board) sent letters of appreciation to Keith Klein and Roy Schepens, retiring managers of the offices of the Department of Energy-Richland Operations Office (DOE-RL) and the Department of Energy-Office of River Protection (DOE-ORP), respectively. The Board agreed to send a letter to DOE requesting review of past pensions and benefits advice. The Board also signed a Site Specific Advisory Board (SSAB) Chairs letter thanking DOE for its commitment to engaging advisory boards early in public policy issues and commending DOE on the application of standard engineering project management tools for all Environmental Management projects.

**100 Area Cleanup Status**

Donna Morgans, Oregon Department of Energy (State of Oregon), presented a table she compiled showing the cleanup status of waste sites in the 100 Area by waste site type and operable unit.

**Status of Groundwater Projects**

Mike Thompson, DOE-RL, updated the Board on the status and path forward of the Columbia River Protection Projects that received direct funding (\$10 million) in Fiscal Year (FY) 2006.

#### **Columbia River Toxics Reduction Initiative**

Helen Rueda, US Environmental Protection Agency (EPA), gave a presentation on the history of key EPA Columbia River efforts, fish consumption surveys, strategic planning, and the general design of the River Toxics Reduction Initiative.

#### **Public Involvement and Scoping of the Global Nuclear Energy Partnership (GNEP) Programmatic Environmental Impact Statement (EIS)**

The Board discussed the GNEP Programmatic EIS and its public involvement effort, the potential for impact to Hanford cleanup, and the Department of Ecology's scoping comments and questions.

#### **Board Business**

The Board discussed topics for the June Board meeting and confirmed committee conference calls and meeting schedules.

## **HANFORD ADVISORY BOARD**

*April 5 - 6, 2007*

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Susan Leckband, Hanford Work Force (Non-Union, Non-Management Employees), Board Chair, called the meeting of the Hanford Advisory Board (HAB or Board) to order. The meeting was open to the public and offered ongoing opportunities for public comment.

Board members in attendance are listed at the end of this summary, as are members of the public. Four seats were not represented: Franklin and Grant Counties (Local Government), University of Washington (University), a vacant University seat, and the Confederated Tribes of the Umatilla Indian Reservation (Ex-Officio).

The Board meeting was audio recorded.

### **Welcome and Introductions**

Susan welcomed the Board and other attendees to Oregon. She noted some agenda modifications and additions, including a discussion on a proposed Public Involvement and Communications Committee (PIC) letter. Susan recognized Norma Jean Germond, Public-at-Large, and her husband on the recent honor bestowed upon them by the Lake Oswego Chamber of Commerce for the positive impact they have had in their community.

Gerry Pollet, Heart of America NW (Regional Environmental/Citizen), introduced Floyd Hodges, the new alternate for Citizens for a Clean Eastern Washington (Regional Environmental/Citizen).

Keith Klein, manager of the Department of Energy-Richland Operations Office (DOE-RL), is retiring in May and came to say farewell and personally thank the Board for its contribution to cleanup during his time at Hanford. He announced a recent agreement to enter into the natural resource damage assessment phase of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) cleanup. He said it is a complex and interesting phase and he is pleased DOE is looking ahead to the end of cleanup. He hopes DOE continues to exhibit more "trustee-like behavior" and avoids reactionary responses as the process moves forward. He was excited and cautiously optimistic that this collaboration may usher in a new era of cooperation with the Natural Resource Trustee Council (NRTC).

Keith asked the Board to give his successor the same support and opportunities it gave him. He is confident that Karen Lutz, DOE-RL, and Dave Brockman, DOE-RL, will assist the new manager and help in the transition.

Greg deBruler, Columbia River Keeper (Regional Environmental/Citizen), thought the transition would be smoother if Keith were able to stay on an additional three months.

Pam Larsen, City of Richland (Local Government), was excited that DOE and the Trustees are moving forward with the natural resource damage assessment and thanked Keith for his role in it. Pam noted that she is compiling questions that could potentially be used in the interview process for the new DOE-RL manager, and asked for Board suggestions.

Susan thanked Keith for his work at Hanford and wished him well.

### **Approval of November Meeting Summary**

Changes were submitted for the February Board meeting summary. The Board approved the summary.

## 100 Area Cleanup Status

Donna Morgans, Oregon Department of Energy (State of Oregon), updated the Board on the status of cleanup in the 100 Area. As issue manager in the River and Plateau Committee (RAP), she created two handouts to describe cleanup status by operable unit (OU) and status by waste type: *100 Area Cleanup Status by Operable Unit* and the *100 Area Overall Remediation Status by Waste Site Type*. Operable units were organized by reactor area, milestone, and the date the Interim Action will be complete. Cleanup status of each operable unit was analyzed with the following:

- Total number of waste sites
- Number of unremediated waste sites
- Number of remediated waste sites – no action sites, interim closed sites, and closed out sites
- Percentage of total number of waste sites remediated as of 2006
- Curies remediated as of 2006
- Waste by volume remediated since 1995 (tons)
- Major contaminants of concern in remaining unremediated sites
- Planned activities in 2007

The committee also looked at how many remediated waste sites require vadose zone institutional controls to prevent uncontrolled digging or excavation in soils deeper than 15 feet below ground surface. The status of each operable unit's risk assessment was identified by:

- Number of remediated waste sites
- Number of remediated waste sites in the risk assessment
- Percentage of remediated waste sites included in the risk assessment: The percentage only reflects the waste sites with available soil data instead of an accurate estimate of overall completion of remediation at each operable unit
- Groundwater operable unit milestone number and date

Donna used the 100-B/C-1&2 operable unit as an example. There are a total of 109 waste sites at that operable unit and currently 80 have been remediated. She noted it is important to remember that usually large volume, low concentration waste sites are addressed first, leaving until last small sites (sumps, French drains, etc.), or ones that cannot be remediated because they are immediately adjacent to the reactor. She said the remaining unremediated sites at 100-B/C-1&2 are small.

Donna noted that deep zone soils (deeper than 15 feet) are not cleaned up to contact level, resulting in the need for institutional controls for some operable units. Institutional controls are required on 27 sites at 100-B/C-1&2. Donna also said that the percentage of remediated waste sites in the risk assessment is misleading because not all operable units are at the same stage. She said 100-B/C-1&2 is further along, yet it looks like there are not as many waste sites included in the risk assessment.

Donna worked with Washington Closure Hanford (WCH) to categorize different types of wastes sites on the *100 Area Overall Remediation Status by Waste Site Type* table. Waste site types included:

- Liquid effluent (including French drains, sumps, etc.)
- Burial grounds
- Solid waste/burn pits
- Pipelines (including outfall structures)
- Reactors (includes the reactor building, the core and interim storage and stabilization, below grade structures and underlying soil, fuel storage basin and side slopes, and ancillary support areas)
- Sanitary sewer
- Buildings
- Unplanned releases
- Fuel tanks
- Others (includes sites with sand filters, stacks, electrical substations, or pump stations)

Donna noted that liquid effluent types were easier to characterize because there were many records on how much and what kind of effluent was discharged. They were a top priority, given that they had the highest potential to contaminate groundwater.

Donna said contractors are applying “lessons learned” from small remediated waste sites to large burial grounds.

#### *Agency Responses*

Keith Klein appreciated the difficulty in presenting waste site information in an understandable way and thought the tables were very helpful. He noted that waste sites closest and most threatening to the river are the highest priority in investigations. He encouraged continued support to keep up the momentum. Keith said DOE wants to clean up sources of contamination when possible, and is working on being able to shift priorities when sources are discovered.

Dennis Faulk, Environmental Protection Agency (EPA), thought the tables helped quantify the status of the cleanup. He thought that even though most of the tough sites are complete, some very difficult and visible ones remain. Dennis said the agencies are dedicated to getting an integrated schedule for groundwater milestones along the river.

John Price, Washington State Department of Ecology (Ecology), thought most of the “heavy lifting” is done, as shown by total tonnage moved. However, he said the remaining waste sites will be a different type of cleanup. He noted that the agencies are working with DOE to define final cleanup requirements for the river corridor, and wrestling with how much data is needed to declare a site cleanup complete. The agencies are discussing performing more vadose zone characterization to finish groundwater and the vadose zone at the same time as surface work. DOE has been cooperative in developing those final cleanup requirements.

#### *Board Discussion*

Pam asked why remediated sites are in the risk assessment. Donna said the remediated sites included in the risk assessment were remediated prior to 2006. Those not included in the risk assessment were remediated after 2006 or had media that could not be evaluated, such as concrete.

Keith Smith, Public-at-Large, asked if remediated sites still have institutional controls and if there was a plan for evaluation or further remediation. He thought it was hard to call a site remediated if there are unresolved issues. John said the River Corridor will have unrestricted surface use to a depth of 15 feet. For example, a home could be built as long as the basement is not deeper than 15 feet. John said that contamination remaining below 15 feet is challenging, and the agencies do not quite know what to do with it except require institutional controls.

Susan asked if institutional control decisions will be revisited every five years. John said that it would more frequent than that: the 15-foot depth institutional control is part of an Interim Action and a final decision is needed.

Rob Davis, City of Pasco (Local Government), asked if the 96 vadose zone waste sites were candidates for capping. Dennis said waste left in place would be immobile, and some waste sites are dug out deeper than 15 feet because of chromium issues. He said they will dig deeper if waste is mobile, but capping may be a suitable alternative in some cases.

John noted that the agencies assume there will be 30 inches of irrigation a year. It will be evaluated whether or not that irrigation will drive contamination deeper and if irrigation institutional controls could be implemented.

Robert McFarlane, Oregon Hanford Cleanup Board (State of Oregon), asked about unplanned releases. Donna said that unplanned releases were just that – unplanned, such as spills or a broken pipe. Dennis said

it was a category used to define sites that did not receive intentionally released waste. Keith Klein noted that, in the past, 400 billion gallons of liquid were released into the ground in planned releases.

Greg said he did not think the cleanup level should only satisfy surface use. He thought the site should be cleaned up to unrestricted use and the work needs to be protective of the whole system, holistically. He said many variables, such as climate change, can impact the success of institutional controls. He thought it was unwise to assume that institutional controls are protective of groundwater over the long-term. Greg thought the data in the presentation opened up a whole new set of questions for the Board to look at.

Dennis thought cleanup in the 100 Area is robust and was confident that the sites will pass a final assessment. He thought that River Corridor cleanup has been consistent with Board advice.

Rob asked RAP to look further into definitions of institutional controls and maybe the Budgets and Contracts Committee (BCC) could see if the budget is adequate to complete the actions laid out in the tables.

### **Status of Groundwater Projects**

Mike Thompson, DOE-RL, gave a presentation on the status and path forward of the Columbia River Protection Projects and the Fiscal Year (FY) 2006 direct funding (\$10 million). He said there are opportunities for funding in FY 2007 which were discussed at the groundwater science and technology needs workshop held in March.

In 2006, the Government Accountability Office (GAO) audited DOE and found that “technology used in several remedies is not performing satisfactorily, and there is a lack of new technologies to address contamination issues.” This resulted in \$10 million of direct funding to projects including:

- Hexavalent chromium in the 100-D and 100-K Areas
- Strontium-90 in the 100-N Area
- Uranium in the 300 Area
- Carbon Tetrachloride in the 200 Area

Mike said DOE kept HAB and stakeholder values in mind when they selected the nine projects for the FY 2006 work:

- Protect the Columbia River
- Deal realistically and forcefully with groundwater contamination
- Get on with cleanup
- Do no harm during cleanup
- Use the most practicable, timely, available technology while leaving room for future innovation

Mike described the importance and characteristics of the Columbia River. He said the Hanford Reach is designated “Class A Excellent” (a Washington State Designation of Water Quality) and the mainstream of the river is not adversely impacted by Hanford. However, the potential for contamination lies in groundwater upwelling into river gravels and seeps from shoreline springs in the riparian zone during low river stages. Mike noted that the largest source of uranium is from irrigation returns. He also noted that increased tritium and iodine levels are found in the river at Hanford, but the levels are consistent with drinking water standards. Mike said the vast majority of the tritium plume is from the Hanford Town Site.

Mike thought the most concerning contaminant at Hanford is chromium. Chromium-6 is mobile, persistent, and toxic to aquatic life at levels lower than drinking water standards; it is ten times more toxic to fish than to humans. He said lots of it was used in the 100 Areas. The good news, Mike said, is that it is easily treatable – chromium-6 can be converted to chromium-3 which is not as toxic or mobile and can be precipitated out of the soil as chromium hydroxide. He thought cleanup work should focus on chromium-6. Mike said iron injection technology was utilized to prevent chromium-6 migration and seven new wells were drilled to refine the location of chromium sources at the 100-D Area.

Mike remarked that past technologies for strontium-90 did not work well, but there is now exciting progress in the 100-N Area. After realizing that pump-and-treat was ineffective, apatite barrier tests were implemented and are underway to support vadose zone application. The preliminary results are favorable.

Progress has been made with 300-Area uranium and a field phosphate injection test is scheduled for June. Mike said the uranium plume looks the same as it did ten years ago because it is in the lower vadose zone, which is continually rewetted by contaminated groundwater.

The March workshop identified the following groundwater priorities:

- Protection of the Columbia River is the primary short-term goal of Hanford.
- Protection of the groundwater from further degradation from mobile/long-lived contaminants in the vadose zone (100/200/300 Areas) should also be considered.
- Restoration of the aquifer is the long-term goal of Hanford groundwater cleanup.

Proposed prioritization of science and technology “needs” for funding consideration was also identified:

- Priority A: “Needs” affecting contaminants currently entering the Columbia River (e.g., 100 Area vadose zone chromium remediation)
- Priority B: “Needs” affecting 200 Area contaminants that could reach the Columbia River (e.g., deep vadose zone Tc-99 remediation in the 200 Area)
- Priority C: “Needs” that may be deferred until FY 2008 (e.g., science and technology activities to support full-scale implementation of FY 2006/2007 projects)

Mike noted that the group agreed that some Priority B “needs” are as important as Priority A, and identified those that, given sufficient funding, would be shifted to Priority A. The workshop group also identified a proposed path forward for future projects, which includes developing a portfolio of science and technology needs and pursuing multiple funding sources for projects.

#### *Agency Perspective*

Dib Goswami, Ecology, stressed the need for increased funding for science and technology, and emphasized that it takes time to test, implement and see the results of new technology.

Dennis thought that creative problem solving resulted in the pump and treat system for the technetium-99 plume. He said that RAP will receive an update soon.

#### *Board Discussion*

Keith Smith asked if technetium has a chemical impact to health. Mike said health effects from technetium-99 are mainly from radionuclides. He noted that uranium has contamination from radiological elements and from heavy metals, and the health effects from heavy metals are of higher concern.

Susan noted the National Academy of Sciences invited participants from DOE sites to a panel discussion that provided information to develop a technology roadmap. She said Hanford was well-represented. Susan said she would obtain a copy of the technology roadmap for the Board.

Rob Davis thought that waste should be removed, treated, and disposed. Leaving waste in the ground during treatment, such as waiting for chromium-6 to convert to chromium-3, should be a last option. Rob thought pump-and-treat should be utilized as much as possible.

Jim Trombold, Physicians for Social Responsibility (Local/Regional Public Health), asked about the status of new groundwater technology funding and how the Board could help secure funding. Mike said science and technology funding for FY 2007 is currently unknown, but he thought the solidarity shown at the groundwater workshop will help resolve outstanding questions. Mike said he may revise the needs list, given the discussion about some Priority B work possibly shifting to Priority A.

Dennis thought the groundwater workshop solidified agreement on the priority levels. Mike said Mark Gilbertson, DOE-Headquarters (HQ)), was reviewing the workshop outcomes.

Jim asked how drinking water standards were established. Mike said there is a standard list of analytes, which is modified based on the known former use of an area. He said there is a common suite of things to test for all over the site.

Jim inquired about standards for the City of Richland's drinking water and the sampling process for newly discovered contaminants. Pam Larsen said the City of Richland regularly tests at its water treatment facility and could provide Jim with a list of which materials it tests for. To her knowledge, no new contaminants have been identified and a process is in place to change analytical procedures if necessary.

Earl Fordham, Washington State Department of Health (Ex-Officio), said the Department of Health utilizes indicator sampling to help identify things that may require more testing. The Department of Health governs and controls drinking water standards. Jerry Peltier, City of West Richland (Local Government), said cities are required to report on drinking water standards each year.

Pam commented on the politics of research and technology funding. Mike said decisions are made by DOE, the regulators, and various stakeholders. Vendors are there to offer technology that meets the site's needs, but they do not define the need.

#### **Site Specific Advisory Board (SSAB) Chairs Meeting Update**

Susan reported on the recent SSAB Chairs meeting in Las Vegas. She said Jim Rispoli, DOE-EM Assistant Secretary, discussed trade-offs between sites and DOE's complex-wide approach. He has implemented a robust project management plan for each site and expects to partner with industry contractors to take advantage of discreet skills. Susan said the FY 2008 budget is expected to be \$5.6 billion, far higher than was previously thought. DOE is in communication with Ecology regarding the HAB's charter, and Susan said DOE values the Board and Jim verbally committed to maintaining the HAB's independence.

Susan said Mark Gilbertson attended the SSAB Chairs meeting as well, providing evidence to the increased emphasis on science and technology development and deployment. Mark said he expects to translate EM needs to the researchers to reduce technical uncertainty.

Susan commented on the immense size of the Nevada Test Site and the interesting tour the Chairs had the privilege of experiencing. She asked Dave Moody, manager of the Carlsbad Field Office, if there is room for the planned shipments of high-level transuranic (TRU) waste from Hanford. He said they have the ability to make space for it. Susan noted that the SSABs will continue discussing pre-1970s TRU waste at the national level, although it is not a top priority for all of the sites.

The SSAB Chairs wrote a letter to DOE thanking them for their commitment to engaging advisory boards early in public policy issues and commending DOE on the application of standard engineering project management tools for all EM projects.

#### ***Board Discussion***

Jim Trombold asked if science and technology issues lack consistent interest. Keith Klein said funding is competitive and sometimes limited the research and development budget. Keith observed that the FY 2008 budget will make it challenging to meet compliance agreements and noted the importance of connecting technological impacts to cleanup.

Pam Larsen described the evolution of research and development, and how funding for pure research has shifted to funding for specific technology development. Pam thought it was a big deal for EM to fight for a good science and technology program. Maynard Plahuta, Benton County (Local Government), noted there is a big difference between "research for research's sake" and applied research.

Susan said Jim Rispoli charged individual members of the SSABs to communicate to their congressional delegates the huge interest in technology development and utilization.

Ken Niles, Oregon Department of Energy, expressed discomfort with the SSAB letter process. He thought the Board should see supporting documents and the reasoning behind SSAB letters prior to asking for their approval at the Board meeting. Susan acknowledged his concern and noted the letter and supporting draft documents were emailed to the Board prior to the meeting. Lynn Lefkoff, EnviroIssues, added they will try to get minutes from the SSAB Chairs meetings to provide context for how SSAB Chair letters are developed.

The Board authorized Susan to sign the letter.

### **Columbia River Toxics Reduction Initiative**

Helen Rueda, EPA Region 10, provided background on EPA's leadership in watershed approaches, including its 20 years of experience in collaborative watershed efforts. She described how toxics are a contemporary issue and outlined EPA's history of key Columbia River efforts, beginning with the 1989 National Bioaccumulation and National Pulp and Paper Mill Study documenting high fish contamination in the Columbia.

Helen highlighted the Columbia River Inter-Tribal Fish Commission (CRITFC) Fish Consumption Study, which began with a 1999 agreement between EPA and the Columbia River Treaty Tribes to study the relationships of tribal fishing and exposure to toxic contaminants. The first phase was a fish consumption survey, which showed that tribal people consume higher amounts of fish than the average US resident. The results were used to revise water quality criteria methodology for toxic contaminants and are influencing negotiations on Oregon water quality standards. Helen noted that the "average US resident" or general public fish consumption statistic was based on studies on the east coast of the US, not the Northwest.

A 2002 fish contaminant survey showed that 92 pollutants were detected in fish consumed by tribes and Columbia River fish consumers.

The Columbia River is a national EPA priority with a focus on toxics and was designated a "Great Water Body" in 2006. One of EPA's goals is to protect, sustain, or restore the health of people, communities, and ecosystems using integrated and comprehensive approaches and partnerships. A 2011 goal is to prevent water pollution and improve and protect water quality and ecosystems in the Columbia River Basin to reduce risks to human health and the environment. Targets include:

- Protect, enhance or restore 13,000 acres of wetland habitat and 3,000 acres of upland habitat in the lower Columbia (below Bonneville dam).
- Clean up 150 acres of contaminated sediments.
- Demonstrate a 10 percent reduction in mean concentration of contaminants of concern found in water and fish tissue. Helen said there were a number of contaminants that need baseline information.

Helen described the basic principles of Columbia River toxics reduction:

- Partnerships are critical and the effort must be collaborative.
- Goals must be shared and mutually agreed upon: Reduce toxic loads in the Columbia River and reduce toxics in fish that people eat.
- Identify problems and outcomes and coordinate with ongoing efforts in each of the three areas: Upper-, mid-, and lower-Columbia River.

EPA is leading the Columbia River Toxics Reduction Initiative in the mid-Columbia, which includes Oregon, Washington, and Idaho. Superfund work is ongoing in the upper-Columbia, and the Lower Columbia River Estuary Program (LCREP) leads work in the lower-Columbia. EPA is currently working on a number of programs in the mid-Columbia, including Umatilla Agricultural Pesticide Reduction, Walla

Walla Legacy Pesticide Collection, and Columbia River Toxics Monitoring. Information and data can be found at EPA's new Columbia River website:  
<http://yosemite.epa.gov/r10/ECOCOMM.NSF/Columbia/Toxics+Reduction>.

Helen said the Umatilla Agricultural Pesticide Reduction work is a model for the region. EPA awarded the Umatilla Soil and Water Conservation District \$50,000 in spring 2007 to implement precision agriculture to demonstrate reduction of pesticides and fertilizers on 2000 acres in the Umatilla River Basin and to provide educational demonstrations to the agricultural community. EPA is also funding two legacy pesticide collection events with the Oregon Department of Environmental Quality (DEQ) and others in the Walla Walla Basin, slated to begin in 2007.

Future work on toxics reduction includes:

- Developing monitoring design and initiating new monitoring for fish, sediment and water.
- Identifying funding resources and mechanisms, roles and responsibilities, and work schedules.
- Implementing priority toxic reduction work efforts – pesticide partnerships, legacy pesticide collection, and cleanup actions.
- Checking in on the status of these work efforts and begin planning work efforts for 2007.

Helen likened work and leadership in the Columbia River to “running a series of marathons.” Governance and technical issues are complex and leadership requires persistence and strong leadership from many partners in the Columbia Basin.

#### *Board Discussion*

Dennis Faulk asked if additional funding went along with the Great Water Body designation. Helen said no, but it does create more awareness of the river which can lead to more funding.

Greg deBruler commented that the river is safe for the average resident, but not for a Native American consuming an above average amount of fish or for a recreational fisherman. He appreciated looking at the whole river system, but asked how the HAB can work with EPA to make sure the river is clean for all users.

Maynard Plahuta asked if any other currently used chemicals are found as pollutants in the river. Helen said that EPA has found high levels of polybrominated diphenyl ethers (PBDEs), which are commonly used as flame retardants. EPA has also found pharmaceutical and personal care products that are not removed by effluent treatments in waste water treatment plants.

Socorro Rodriguez, EPA, said that EPA is primarily looking at legacy contamination. She added that integration along the river and between projects is necessary and EPA is working hard to integrate Superfund efforts and water quality program work.

Gene Van Liew, Richland Rod and Gun Club (Local Environmental), asked how many locations on the Hanford Reach were surveyed in the 1994 fish survey. Helen said two general locations surveyed upstream of the Tri-Cities at the Hanford Reach. She thought there may have been some surveying in the Snake River confluence, but was not sure. She offered to send specific specimen information to Gene. Gene asked if EPA surveyed upstream of the Reach; Helen said no, the methodology was different and different contaminants were studied.

Socorro said 389 grams per day was the high for tribal persons' fish consumption, and all ages were included. Gene asked if cancer rates were different for people who lived in a particular area or consumed an above-average amount of fish; Socorro did not have that information.

Jim Trombold asked if the river is polluted with fertilizers. Helen said their program only looked at toxic contaminants, not nutrients.

Rob Davis thought that the majority of uranium in the river originated from fertilizer run-off. He asked why the Columbia River received a Washington State water quality designation of “A for Excellent” if EPA has shown it is contaminated. Helen said that levels in the water column would not make the river unsafe for people to drink, but toxics bio-accumulate up the food chain and can make fish consumption unsafe. Jane Hedges, Ecology, agreed and said the designation is a federal water quality classification for river water; EPA looked at toxins that are absorbed biologically up the food chain. Jane said this indicates the river is a good place to recreate but there are some problems that need to be dealt with.

Norma Jean Germond noted that fishermen in the past have commented on abnormal fish in their catches and windsurfers have complained that river water makes their skin itchy. Norma Jean thought chemicals from far upstream in Canada were major sources of pollutants, not Hanford.

Gerry Dagle, Benton-Franklin Public Health (Local/Regional Public Health), thought it would be helpful to see how the Columbia compares with other major rivers. Helen said that the US Geological Survey (USGS) had done some river comparison studies and noted that the Columbia has one of the highest amounts of dichloro-diphenyl-trichloroethane (DDT) in North America.

Harold Heacock, TRIDEC (Local Business), asked if the fish consumption studies used full body scans or any other body chemistry testing to confirm and validate the amount of fish claimed to be consumed. Helen said no.

Harold also asked if there was any data showing that contaminants in the river came from Hanford and not from chemical plant or farm effluents. Helen said EPA was not sampling for radionuclide levels in fish because Hanford was already conducting that effort.

Bob Parks, City of Kennewick (Local Government), asked when DDT was last sold in the US and why such a large amount was found in Oregon’s Puget River (14,000 lbs). Helen said it was banned in the 1970s and she supposed farmers had held onto some stock.

Bob asked how close to the river DDT and other pesticides were used. Helen said she did not know exactly how close, but the studies were conducted near smaller streams and tributaries.

Helen Wheatley, Heart of America NW, asked what other work EPA was planning for the mid-Columbia. Helen Rueda said there is a lot of progress with the three states, tribes, USGS, the National Oceanic and Atmospheric Administration (NOAA), and others. They are prioritizing which toxics to study if there were additional funding; which toxics are lesser priorities; and what kind of sampling methods could be used. She said there is still a lot of discussion and committed to send materials to the Board.

Dennis said that EPA is focusing on the Yakima River Basin and Wilson Creek (by Ellensburg) to reduce toxics and sediment to the Granger Drain.

Floyd Hodges agreed that water quality does not indicate fish quality or contamination. He stated that contaminant in the Columbia River are carried by the bottom sediments not the water.

Gene asked if the survey took into account the time of year and life cycle of diadromous and bottom-dwelling resident fish. Helen said yes, both salmon and resident fish were collected and sampled. She did not know if sampling ever occurred when salmon and steelhead were not present.

### **Letters of Appreciation**

The Board decided to send letters of appreciation to Roy Schepens, DOE-ORP, and Keith Klein, DOE-RL, thanking them for their work at Hanford and wishing them well in retirement.

## **Public Involvement and Scoping of the Global Nuclear Energy Partnership (GNEP) Programmatic Environmental Impact Statement (EIS)**

Betty Tabbutt, Washington League of Women Voters (Regional Environmental/Citizen), introduced a letter drafted by PIC regarding the Programmatic EIS for GNEP being prepared by DOE-Office of Nuclear Energy (NE). Public scoping meetings were held in Pasco on March 13 and in Hood River on March 26. The public comment period was recently extended from April 4 to June 4. The committee was concerned about GNEP's public involvement effort and the impact GNEP will have on the Hanford site if Hanford is selected. The letter discussed how GNEP should be consistent with the Tri-Party Agreement (TPA) Community Relations Plan. The committee thought the Board could discuss what its role should be regarding cleanup advising and responsibilities with offices outside of DOE-EM.

In March, Ecology submitted GNEP Programmatic EIS scoping comments and questions to DOE-NE.

### *Board Discussion*

Jim Trombold thought the letter was a good tool to remind the agencies that they need to stay committed to the TPA. He also thought GNEP's impact to the TPA will need to be analyzed.

Rick Jansons, Benton-Franklin Council of Governments (Local Government), agreed that potential impacts should be analyzed, but thought the Board should avoid commenting on it for now.

Harold Heacock recognized the impact GNEP could have on cleanup activities, but thought a product concerning an office other than EM needs broad circulation and review by Board members. Advising about GNEP is not in the Board's scope.

Ken Niles thought the Board could deal with GNEP issues more broadly. For example, the Board could advise DOE to meet a certain standard of public involvement at Hanford regardless of the office or issue. He was also cautious about venturing into an area that has potential for contention and lack of consensus. Helen Wheatley agreed and suggested broadening the letter to refer to "any other DOE project" rather than specifically calling out GNEP.

Pam Larsen thought there were fundamentally different beliefs on the Board, and she could not support the letter without first discussing it with the City of Richland. She anticipated the letter would be divisive and thought the Board cannot hold DOE-NE to a community relations plan it is not a part of.

Keith Smith thought it was important to discuss GNEP, but thought the timing was premature. He suggested the Board weigh in when there is more information.

Jerry Peltier said he will not support any immediate Board product on GNEP because it is not a DOE-EM program. He thought that, fundamentally, the Board should not get involved, but he also thought the Board may be able to address the program when the draft EIS is released.

Helen reminded the Board that the scoping period closes three days before the June HAB meeting, so the issue is time-sensitive. She agreed that it may be outside the Board's scope, but thought that GNEP may impinge on Hanford's cleanup mission.

Maynard Plahuta did not think it was an appropriate time for the Board to address GNEP and thought the Board could not advise DOE-NE on how to hold public meetings. Even if the Board were to agree on the letter, Maynard did not know who it should be sent to.

Norma Jean Germond agreed that it was too early in the process, but was glad the Board had the chance to begin discussing GNEP and its implications.

Gabe Bohnee, Nez Perce Tribe (Tribal Government), thought the Board could potentially want to advise different DOE offices or areas as Hanford transitions from a cleanup mission to an on-going mission.

Jerry Peltier asked that GNEP and the Board's role be discussed at the Leadership Retreat.

The Board did not adopt the letter.

### **Tank Waste Committee Issues Update**

Dirk Dunning, Oregon Department of Energy, gave a brief update on the Tank Closure and Waste Management EIS (TC&WM EIS). There was a workshop on alternatives and cumulative analysis that identified persistent issues. Dirk said things seem to be progressing. There will be a second workshop on Monday, April 16, so Dirk will have a more complete report at the June Board meeting.

Dirk and Rob Davis gave an issue manager report on double-shell tanks and the Double-Shell Tank (DST) Integrity Report, which was issued in March 2006. Rob described the history of the Double-Shell Tank Integrity Program using a timeline showing how activities (regulatory, technology, field work, documents, and expert panels) were conducted over time. Rob said there are 28 double-shell tanks which are expected to last until the Waste Treatment and Immobilization Plant (WTP) is up and running and processing waste. The integrity of the double-shell tanks is essential.

Rob described some identified aging mechanisms and potential failure modes:

- Leakage of the primary shell due to formation of through thickness degradation
  - General corrosion
  - Localized pitting or crevice corrosion
  - Stress corrosion cracks (where the tank metal was purposefully bent to shape)
  - Concentration cell or waterline corrosion
- Local ductile rupture or buckling of the primary shell due to corrosion-induced cracking
- General failure of the primary shell due to large displacements (seismic or accidental)
- Differential settlement of the soil beneath the tank

DST corrosion monitoring and controls include ultrasonic testing. All of the tanks have been ultrasonically examined, have established baseline data, and will be reexamined every eight to ten years. Visual examinations take place every five years and new technology is under development to aid in tank inspections.

Rob said the TWC issue managers were originally unhappy with the Double-Shell Tank Integrity Report that they reviewed in the summer of 2006. There was an initial meeting with DOE-ORP at the October 2006 TWC meeting and the report was also discussed at the November 2006 HAB meeting. Following the HAB meeting, DOE-ORP committed to open discussions with the Board to resolve concerns. Issue managers met with DOE-ORP and CH2M Hill staff and obtained additional information about the scope and planning of the Integrity Report. Outstanding issues were resolved in a December meeting and the Integrity Report was revised. Rob commended the process and expects to see a copy of the revised report soon. Previous issues that are now resolved include:

- Data quality
- Data analysis
- Inspection
- Corrosion monitoring
- Data correlation
- Vaults and piping

Rob said the tank integrity inspection guides are based on construction "roll-out" drawings, one for each tank. Areas of interest are catalogued to guide future inspections and document changes between inspections. The guides show results from visual inspections, ultrasonic testing, and material data. Rob thought the guides were a big improvement.

Rob said the budget for the double-shell tank integrity assessments and waste chemistry is approximately \$6 million per year. Additional funding is provided for corrosion probes and investigation chemistry optimization, and more funding is proposed for the study of corrosion mechanisms and cathodic protection.

Rob and the TWC issue managers agreed that all the double-shell tanks are presently fit for service and they have confidence in the people and processes involved in the double-shell tank integrity program. DOE-ORP has committed to a transparent process and welcomes HAB participation. Most importantly, the inspection program appears to allow sufficient lead time for identification of the need for new double-shell tanks. Rob said new tank construction takes seven years and inspections provide at least a ten year window to allow the construction or repair of tanks.

#### *Agency Responses*

Dana Bryson, DOE-ORP, agreed that the double-shell tank integrity assessment program is a success and should be maintained. He thanked TWC and its issue managers for their involvement.

Jane Hedges thanked Rob and Dirk for their work on analyzing the report. She thought they did a great job and agreed that the process is good and could serve as a model of collaboration and cooperation for other work.

#### *Board Discussion*

Harold Heacock said DOE previously reported that the double-shell tanks were fit for 100 years. Rob said DOE now agrees that the tanks will be fit for two inspection periods (an inspection period being eight to ten years), which allows sufficient time to repair or replace faulty tanks. He added that each inspection period has three data points that are revisited at each inspection, and he was confident about getting repeating data.

Harold asked if seismic events were studied. Rob said a report on seismic events was referenced within the Integrity Report. It utilized an independent panel and review process and appeared adequate.

Keith Smith wondered at what point DOE will declare that a tank's integrity is compromised; he asked what repair techniques would be utilized. Rob said a tank's shell varies in thickness. Pressure varies with thickness and the acceptability of thickness varies. DOE enters into an analysis process if there is more than 20% of a defect. There is not just one value used for the entire tank. As to when a tank needs to be repaired, Rob said that extra space in tanks is maintained in case of an emergency pump. He noted that some people talk of using single-shell tanks in an emergency, but Ecology does not want to consider that. Rob will ask DOE about a formal corrective action plan in case of an emergency. Keith thought DOE should not wait for a problem before developing a plan.

Pam Larsen commended TWC and DOE on such a positive process; she thought it should be codified as a major achievement. She emphasized that having confidence in the double-shell tank integrity is essential, especially given the delay of WTP.

Jim Trombold asked how much it costs to build a new tank. Dana said a 1990s estimate was about \$75 million per tank; now it would cost substantially more. Dana said a repair will not be necessary in the next few years but costs are being investigated now and will be addressed in the future.

Rick Jansons thought the current estimate was \$600 million for four tanks. He asked if further delays of WTP will hurt the double-shell tank program. Rob thought that the budget for replacing double-shell tanks most likely will not need to be addressed until WTP is started. He said everyone is generally confident for the next ten years and very likely for the next 20 or 30 years. Dana agreed, though Jane said that in Ecology's view, they hope not to have to use the tanks for that long.

Larry Lockrem, Non-Union, Non-Management Employees (Hanford Work Force), asked how much money was set aside for corrosion investigation. Dana said it would probably cost close to \$10 million.

## Update on Board Charter Changes

Dave Brockman, DOE-RL, had nothing new to report on the status of the Board charter changes. DOE-RL and DOE-ORP provided the charter to DOE-HQ and described the effort and consensus that went into the initial changes. Erik Olds, DOE-ORP, noted that DOE-HQ is looking at other boards' charters as well.

## Agency Updates

### *DOE-ORP*

Erik described the new Hanford Events Calendar format. It can be organized by public involvement activity type (e.g., HAB meeting) and viewed in different formats, like list or calendar view, which helps show event overlap. All events on the calendar are open to the public. Things like the HAB agenda are linked to the Events Calendar as well as other event supporting documents. Erik hoped the calendar will be a very useful tool and asked for Board feedback and suggestions.

Erik noted that the budget submittal is due on June 15, much later than in years past. The Richland budget workshop is on May 9 and regional budget and priority meetings will be held around the region, in Spokane, Seattle, Portland, and Hood River. Erik said PIC identified the first couple weeks of June as good dates for meetings. He said input and comments will be collected and sent along with the budget submittal to DOE-HQ. He said DOE-RL and DOE-ORP will continue to collect comments on the budget after the submittal and forward them on.

Erik noted that DOE-ORP added much more detail to their budget presentation since presenting to BCC, and presented the revised version to the Oregon Hanford Cleanup Board.

### *Board Discussion*

Susan asked for the HAB website to be linked to the calendar.

### *DOE-RL*

Dave Brockman, DOE-RL, used a handout to illustrate the FY 2009 budget timeline. He drew attention to the public budget workshop on May 9 and noted the 100 and 300 Resource Conservation and Recovery Act (RCRA) Workshop on May 16 in Richland. The Hanford Integrated Groundwater and Vadose Zone Plan is also coming up.

Dave said the DOE-RL manager position was announced and closes on May 4, and DOE hopes to make a selection soon after. Dave also noted that Ron Gallagher, the president of Fluor Hanford, Inc., is moving on and being replaced by Con Murphy.

DOE-RL is continuing to make improvements to recover from the compaction problems at the Environmental Restoration and Disposal Facility (ERDF). Dave will continue to brief RAP. He said there is progress, and initial density testing indicates that the compaction is adequate, but has yet to be verified by EPA. There are continued improvements to discipline operations and oversight. DOE-HQ is involved and taking the issue very seriously.

Dave said the 100 K Area sludge transfer is picking up momentum. DOE believes it can beat the May 31, 2007 milestone. There have been significant improvements made to the sludge transfer and Dave anticipates all the sludge will be moved to K West Basin by the end of July.

### *Board Discussion*

Pam saw a pattern of contractors not taking adequate precautions for regulatory compliance or for the safety of their workforce. She asked Dave if there were disciplinary actions DOE could take. Dave said there are some possible contract actions. A cure notice could result in full or partial termination if there was no cure implemented, or DOE could “de-scope” the contractor. Dave noted that if there were any actions under consideration, DOE would not be able to discuss them.

Keith Smith said the workforce appreciated the pressure DOE is applying to the contractor to turn things around.

### ***Ecology***

Jane Hedges said a major WTP milestone was missed and Ecology believes that start up will be delayed. The TPA agencies will be in a negotiations kick-off meeting on May 29 that will involve the state Attorney General, the EPA Region 10 Administrator, and the Assistant Secretary of Energy.

Ecology is working on the responsiveness summary for the WTP 2+2 Melter Configuration Permit Modification. The public comment period on the proposed changes to the permit for the Integrated Disposal Facility (IDF) is April 23-June 8.

Jane said Ecology will be fully staffed within a month. Nolan Curtis, Ecology, announced that some of the regional budget and priority meeting dates are set: the Seattle meeting will be held on June 4 and the Spokane meeting on June 6.

### ***EPA***

Dennis Faulk said EPA penalized DOE for the ERDF problems. He described it as a unique penalty in that DOE can offer different environmental projects to pay for part of the penalty.

Dennis noted there are two sites in 100 B Area that are having problems meeting groundwater protection standards; boreholes are being utilized to characterize those sites’ groundwater.

### ***Board Discussion***

Maynard asked if EPA identified any specific environmental programs DOE could offer to pay for part of the penalty. Dennis said the only rule is that it cannot be something DOE is already required to do. It does not have to be related to Hanford; if it has an environmental benefit, it can be proposed.

Rob hoped that DOE would visit RAP with a “lessons learned” presentation and discussion on ERDF.

### **Committee Reports**

#### ***Tank Waste Committee (TWC)***

Rick Jansons said TWC has been looking at the combined issue of leaking tanks and their effects on groundwater, which they have tracked since August. Rick thought the joint meeting with RAP in April would be beneficial. TWC will discuss the Demonstration Bulk Vitrification System and the TC&WM EIS and have more information at the June HAB meeting. Rick mentioned that the committee was also investigating steam reforming, a supplemental waste treatment that was considered in the past.

Rick said DOE-ORP created a good logic diagram that looked holistically at the site and the potential for ripple effects from WTP startup delays. TWC may discuss that at the Board meeting in June.

#### ***River and Plateau Committee (RAP)***

Jerry Peltier reminded everyone RAP is meeting on April 11 to discuss the supplemental characterization for the M-15 milestone and the Central Plateau ecological risk assessment, followed by a joint TWC afternoon meeting to discuss groundwater issued. Vince Panesko, City of Richland (Local Government), is working on draft advice on records management. The committee will also discuss becoming more

involved with the Natural Resources Trustee Council (NRTC). Jerry said the committee hopes to have the groundwater values flow chart prepared for the June HAB meeting.

Pam Larsen thought it was important to develop a relationship between the HAB and NRTC and investigate how they can more frequently collaborate. She thought the Board could bring issues to DOE that NRTC cannot, and NRTC can provide technical expertise to the Board. She and John Stanfill, Nez Perce Tribe, will work on how to develop the relationship.

John thought there were many overlapping issues with the Trustees and the Board; he thought they should collaborate and offered to help in any way he can. He said the tribes are heavily involved with NRTC actions; he sits on the NRTC and has access to information that can be shared with the RAP committee and the Board.

John noted that the Trustees do not have an avenue to provide a product such as advice. He also said NRTC's focus is primarily on natural resources and current and past damages that may have occurred. NRTC looks at compensation in the form of environmental restoration – it evaluates damages, how they affected the environment, and how that environmental damage can be repaired or replaced. John thought the Board should be aware of Hanford issues and the natural resource damage assessment from NRTC's perspective.

Jerry asked if NRTC is working with DOE on natural resource damage assessments. John said it is possible the NRTC will weigh in on that work, but it needs more information.

#### *Health, Safety and Environmental Protection Committee (HSEP)*

Keith Smith said HSEP is struggling to find consensus on a workers' compensation product and hopes to find a solution soon. The committee plans to meet in April, ideally outside of committee week on April 15 or 16.

#### *Budgets and Contracts Committee (BCC)*

BCC is not meeting in April. Gerry Pollet and Harold Heacock compiled a list of questions from the committee to provide to the agencies on May 9 at the FY 2009 budget workshop in Richland. The committee has questions on the 100 Area funding in relationship to schedule and accomplishments. He said they are waiting on the release of the final Requests for Proposal (RFPs) for new contracts and the committee may have draft advice in September. Gerry anticipated having draft budget advice for the June Board meeting.

Becky Holland, Hanford Atomic Metal Trades Council (Hanford Work Force), was disappointed that workers' compensation was not on the Board meeting agenda. She thought workers' compensation is a time-sensitive subject and proposed that BCC and HSEP have a joint meeting to discuss it since it is related to the draft RFPs. Becky was concerned about how the draft RFPs eliminated workers compensation for non-bargaining employees for the first six months of disability, and DOE is looking to do the same to bargaining employees.

Susan reminded Board members to recuse themselves from workers' compensation and pensions and benefits discussions if there is a chance of a conflict of interest.

Keith said RFP advice had already been issued but thought HSEP could discuss pensions and benefits issues again. Keith said DOE told the Board that advice on the RFPs any time now through the fall would be helpful.

Gerry said DOE is conducting a pension and benefits policy review and asked that DOE report back to the Board about whether or not the policy review will result in changes.

Larry thought DOE recognizes that the workforce is aging and Hanford needs younger professionals to support the long-term mission. He said the benefits package is an important draw and affects the ability to

attract potential employees. Larry thought DOE should take a hard look at attracting younger workers. Susan said Jim Rispoli discussed the aging workforce at the SSAB Chairs meeting.

Pam suggested sending a letter to thank DOE for reopening the comment period and ask them to review past applicable pensions and benefits advice, which should be attached to the letter. Becky agreed. Rob thought taking away perceived benefits from Hanford workers will hurt worker morale and affect work.

The Board agreed Susan will draft a letter and send it with past advice on pensions and benefits to DOE.

#### *Public Involvement Committee (PIC)*

Helen Wheatley said PIC has primarily focused on budget outreach and public involvement. She thought this year's process has the potential to be much better and DOE is more motivated go out with better and more detailed information. GNEP is a major topic PIC is addressing; Helen said PIC determined that it has the potential to impact the Board's mission and she was glad the Board had the chance to discuss GNEP itself and GNEP's public involvement process.

PIC will have a conference call on April 19 to discuss priorities for the leadership retreat.

#### *Executive Issues Committee (EIC)*

Susan said EIC had a short meeting in preparation for the Leadership Retreat. She will report on the retreat at the June Board meeting.

### **Public Comment**

No public comment was offered.

### **Board Business**

Dennis noted that there are two vacancies on the Board, a Public-at-Large seat and a University seat. Susan said Board members are expected to attend meetings regularly and the Board will review seats that are unattended for three meetings in a row.

Betty thought the Board should reduce the amount of paper it uses and suggested making a limited number of copies of presentations and handouts and ask that people access documents on the Internet.

Larry said there will be a Technology Readiness Assessment for DOE-ORP treatment alternatives. DOE is compiling a team with local DOE-ORP staff, contractors, and other DOE sites to analyze various techniques.

Vice-Chair selection will take place in June. Nominations are open until then.

Erik asked Board members to report travel booking problems to Kelly Brazil, DOE-ORP.

Pam noted that the 2006 State of Site meetings were filmed and made into a television program, which is available on DVD.

June meeting topics include:

- HSEP advice or letter on workers compensation
- RAP groundwater flow chart
- BCC budget advice
- Update on the TC&WM EIS
- Update on the DOE-ORP logic diagram
- FY 2008 draft priorities developed at the Leadership Retreat
- Charter updates

- Bulk vitrification briefing

Conference call and meeting dates:

- April 11: RAP meeting (morning)
- April 11: Joint RAP and TWC meeting (afternoon)
- April 16: HSEP call (1:30), TWC and RAP calls to-be-determined
- April 19: PIC call (11:30), EIC call (2:00)

**Attendees**

**HAB MEMBERS AND ALTERNATES**

|                            |                             |                           |
|----------------------------|-----------------------------|---------------------------|
| Gabe Bohnee, Member        | Keith Smith, Member         | John Stanfill, Alternate  |
| Rob Davis, Member          | Jim Trombold, Member        | Betty Tabbutt, Alternate  |
| Greg deBruler, Member      | Gene Van Liew, Member       | Art Tackett, Alternate    |
| Norma Jean Germond, Member |                             | Charlie Weems, Alternate  |
| Harold Heacock, Member     |                             | Helen Wheatley, Alternate |
| Becky Holland, Member      | Al Boldt, Alternate         | Steve White, Alternate    |
| Rick Jansons, Member       | Gerry Dagle, Alternate      |                           |
| Mike Keizer, Member        | Dirk Dunning, Alternate     | Earl Fordham, Ex-Officio  |
| Paige Knight, Member       | Floyd Hodges, Alternate     |                           |
| Pam Larsen, Member         | Steve Hudson, Alternate     |                           |
| Susan Leckband, Member     | Wayne Lei, Alternate        |                           |
| Jeff Luke, Member          | Larry Lockrem, Alternate    |                           |
| Ken Niles, Member          | Jerri Main, Alternate       |                           |
| Bob Parazin, Member        | Robert McFarlane, Alternate |                           |
| Bob Parks, Member          | Donna Morgans, Alternate    |                           |
| Jerry Peltier, Member      | Laura Mueller, Alternate    |                           |
| Maynard Plahuta, Member    | Nancy Murray, Alternate     |                           |
| Gerald Pollet, Member      | Wade Riggsbee, Alternate    |                           |

**AGENCY, CONTRACTOR, AND SUPPORT STAFF**

|                       |                          |                                |
|-----------------------|--------------------------|--------------------------------|
| Dave Brockman, DOE-RL | Sharon Braswell, Ecology | Tammie Holm, EnviroIssues      |
| Keith Klein, DOE-RL   | Madeleine Brown, Ecology | Hillary Johnson, EnviroIssues  |
| Karen Lutz, DOE-RL    | Nolan Curtis, Ecology    | Lynn Lefkoff, EnviroIssues     |
| Mike Thompson, DOE-RL | Dib Goswami, Ecology     | Cathy McCague, EnviroIssues    |
| Mike Weis, DOE-RL     | Jane Hedges, Ecology     |                                |
|                       | John Price, Ecology      | Karen Caddey, CH2M Hill        |
| Erik Olds, DOE-ORP    |                          | Kayle Boomer, CH2M Hill        |
|                       | Dennis Faulk, EPA        | Janice Williams, Fluor Hanford |
|                       | Socorro Rodriguez, EPA   |                                |
|                       | Helen Rueda, EPA         |                                |

**MEMBERS OF THE PUBLIC**

|                               |  |  |
|-------------------------------|--|--|
| Annette Cary, Tri-City Herald |  |  |
| Beverly Penney, CTUIR         |  |  |