

**FINAL MEETING SUMMARY**

**HANFORD ADVISORY BOARD  
RIVER AND PLATEAU COMMITTEE MEETING  
September 10, 2008  
Richland, WA**

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*This is only a summary of issues and actions in this meeting. It may not represent the fullness of ideas discussed or opinions given, and should not be used as a substitute for actual public involvement or public comment on any particular topic unless specifically identified as such.*

**Welcome and Introductions**

Maynard Plahuta, River and Plateau Committee (RAP) Chair, welcomed everyone and introductions were made. The August committee meeting summary was approved by the committee.

**Overview on D, H, and K Reactors**

Jim Hanson, Department of Energy – Richland Operations Office (DOE-RL), provided an update on the reactors. Jim displayed posters that showed the hexavalent chromium contamination near the reactor areas and the horn. Jim began by discussing the D Area contamination. He said in the past, DOE has treated chromium with an in-situ redox manipulation (ISRM) barrier and a pump and treat. The effluent from the pump and treat is sent to a processing center on site. Jim said some characterization was done recently and higher concentrations were found up gradient from the ISRM barrier than they had originally thought. Jim said the maximum chromium concentration is 40 parts per million (ppm).

Jim said DOE needs to evaluate what the best solution is to deal with the source of contamination to groundwater in the D Area. Jim said they have done some characterization to try to identify the source. Through monitoring wells, they have been able to narrow the source area down to the size of one hectare. At 100 D-30 they have excavated down to 18 feet; at 14 feet they ran into chromium at concentrations around

300 ppb. Jim said there are a couple spots where there are concentrations of hexavalent chromium at the surface. Jim said there are still some areas where they need to do additional investigations. Some of that will be part of the north plume investigation. They are planning to use a new technology, a hydraulic hammer, to test its effectiveness in this area. They want to test the hydraulic hammer to see if they can push this sampling device through the material as a less expensive method to sample in the vadose zone.

Jim said at H Area, DOE has been conducting pump and treat activities for 11 years. Jim said they have had success and are lowering the contamination levels in this area. Jim said the contamination in D Area is affecting H Area. The average chromium concentration is 20 parts per billion (ppb) to 50 ppb between the reactor areas. However, there are a few areas right in the middle of the reactors that are above 100 ppb, which is the drinking water limit. Jim said they have also identified some issues along the reach where the contamination exceeds 20 ppb, which is the threshold for aquatic standards. Jim said the characterization is helping to identify the extent and magnitude of the contamination. Jim said DOE's highest priority is to address the hexavalent chromium at the D Area in order to turn off the spigot of contamination into the groundwater. Jim said they are currently planning to do additional investigations in the north plume area next year. Jim said they were hoping to do this work this year, but were not able to get out in the field. Jim said they are also working on a remediation investigation work plan for the D and H Areas.

Jim said the K Area does not have the contamination levels that they currently see at D Area; at K west they have a maximum concentration of 3-4 ppm. Jim said they are doing a groundwater pump and treat and have three treatment plants at K Area. Jim said they are in the process of putting in a new pump and treat system which will pump 600 gallons per minute, bringing the total capacity of the pump and treat system in this area to 900 gallons per minute. Jim said they drilled 23 additional wells while installing the expanded pump and treat. Jim said they are observing a shifting of the plume down river near K Area. Jim said they want to make sure the plume does not end up down at N Area. They have placed some new wells between N and K Areas and will inject effluent there to keep the chromium from migrating down river. Jim said DOE is trying to be protective of the river and is using a hydraulic containment system to achieve this. At K West they are trying to understand the magnitude of the higher concentration area. Jim said the remedial investigation (RI) work plan for the 100 K Area is in process and a draft will be out at the end of May. Jim said they have interim records of decisions (ROD) in place for the reactor areas, and are currently going through a process to update those. Jim said they will provide an update to the public on this work as it progresses.

### **Regulator Perspectives**

- John Price, Washington State Department of Ecology (Ecology), reminded everyone that D and H Areas are 17 square miles and on their own would be one of the largest Superfund sites in the state. John said 44 pieces of spent nuclear fuel have been pulled out of D Area. John said this work is really important because it contributes to cleaning up the river. John said over the years there has been a lot of soil and debris

taken out and moved to the Environmental Restoration Disposal Facility (ERDF). John said in doing this work, they have learned a lot about the chromium areas and sources. He said they have been strategic at D, but are still are not confident about what the source is. John said he had a few areas of concern about this work: 1. The remedial investigation work plan for 100 D Area needs to show how confident the agencies are in the problem and lay out the steps to deal with the problem. Ecology is concerned about DOE's ability to lay out this document in a clear way that shows the logic because some of their recent documents have been difficult to follow. John said Hanford Advisory Board (HAB or Board) Advice #202 refers to readability of documents and he hoped DOE would consider the advice when writing this report. 2. Ecology is concerned that DOE has not looked at all the technologies available and selected the right ones for this work. 3. DOE is currently struggling with integrating contractors, which may affect the progress of this work. 4. Ecology is questioning DOE's sense of urgency needed in the 100 D Area. John said the colors on the maps are misleading because the concentrations are higher at D Area than at K Area, but DOE is planning to expand treatment in K Area. John said Ecology has had concerns about D Area since 2003 and five years have gone by with no work started yet.

- Dennis Faulk, Environmental Protection Agency (EPA), said the Hanford site is in an important chapter of cleanup along the river. Dennis said he would like to see the chromium cleanup work in 100 C Area expedited. He said DOE has a milestone for this work, and needs to get people working on it. Dennis said DOE can pump and treat forever but if they do not take out the source at D Area they will not address the problem. Dennis said if the field work did not happen this year because they needed a hammer from the tank farms the team should have bought an additional hammer so the work could move forward. Jim said this is a technology demonstration and they do not know if it will be effective so they did not want to buy additional equipment in case it did not work.
- Briant Charboneau, DOE-RL, said John's and Dennis' points were valid. Briant said DOE has gone through a system of performance metrics which created a standard for colors to show concentrations on all of their maps to help with consistency. Briant said DOE is putting in aquifer tubes along the river to fill gaps in information. Briant agreed that D Area has higher concentrations than K. He said the K expansion will triple capacity of that area and is a better candidate for ion exchange; ion exchange is not as effective with higher concentrations. Briant said DOE went through a technology assessment process this spring to look at alternatives to technology and are still in the process of developing a work plan. Briant agreed that in-situ has to be part of the answer; the pump and treat on its own will take a long time. Briant also said he shared the regulators frustration with addressing the source. He said they are working to go after those sites but cannot dig them up until they know where they are. Briant agreed with Dennis that 100 C is an area DOE needs to jump on. He said the cleanup estimate was \$25 million for work at 100 C. Briant said DOE has tasked the contractors to look at in-situ to see if it could be done cheaper. Briant said the site includes a sizable amount of soil and would take up a lot of the capacity at ERDF. Briant expected a decision to be made on the approach in this area within the next few months.

- Dennis said C Area is a long way from the river and is the perfect place to test in-situ. Jacquie Shea, Ecology, said in some places it might be better to do in-situ because of the depth of contamination. However, Jacquie said there are areas with easier problems like surface stains, and those sites have sat there for years. Jacquie said in one area, the stains were discovered more than two years ago and nothing has been done about it. John agreed and said under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), DOE has the ability to tell the contractor to dig up the material when it is found. Other sites seem to be able to mobilize contractors the next day to get them to dig it up. John said this relates to his comments about the sense of urgency that DOE has for cleanup.

### *Committee Discussion*

- Bob Suyama asked if the groundwater is cutting under the horn in this area and if the D Area is the source of the H Area contamination. Jim said there are currently two hypotheses for what is happening in this area; both involve the plume source originating in D Area. Jim said the river elevation in this area moves the water from high at D Area, to low near H Area. One hypothesis is that the contamination is taking a shortcut across the horn. Jim said another thing happening here is that a long shore current is moving groundwater through the soil and stripping some of the contamination off and spreading it across the horn. The other hypothesis involves the disposal method in the 1960s when they injected hexavalent chromium into the vadose zone. The disposal method could have created a mound under the water table which pushed the water across the horn.
- Dick Smith asked how DOE is going to clean up the chromium plumes. Jim said the ISRM barrier is knocking down the contamination levels. However, when the river stages go up fifteen feet due to the dams, the plumes take on a different configuration. Jim said they are looking at ion exchange, and are doing an investigation to see if they are using the right ion exchange and resin feed. Jim said they will also look at in-situ treatment with ferrous chloride. Lastly, they are considering a remedial process oxidation. Fluor Hanford (FH) has brought a new contractor on board to look at the alternatives. Jim said they are in the process of discussing more than forty alternatives with Ecology.
- Dick said it seems like remediation of the source areas is essential to keeping the contamination out of the groundwater. Jim agreed and said they are looking to couple many technologies to address the contamination in the vadose zone and groundwater because one may not enable them to complete the entire remedy. Briant added that this area has been known to be a problem for a decade. Most of the sites at Hanford with groundwater contamination were from a known discharge. Briant said they are doing monthly sampling to quantify the concentrations at the heart of the plume to narrow down the area. They have also brought in a tractor to scrape the surface to identify the specific source of chromium. Briant said once they know where the source is at, they can remediate it. Briant said they are considering digging it up, bioremediation and chemical injection.

- Shelley Cimon asked what is needed to get going on digging up the area with contamination at the surface. Jim said the open location is the one they wanted to do this year, but the rig was held up in tank farms. He said the area is ready to be done next fiscal year. Jim said they will be doing characterization of that hotspot at depth to get a better handle on what they need to do to deal with it.
- Dick Smith asked how far it is to groundwater in this area. Jim said it is 85 feet. Dick said it seems like this is a good place to dig until you get all of the contamination. Dick asked if there any other contaminants other than chromium in these areas. Jim said there is tritium at K Area and they are being careful of that while pumping. Late yesterday, they encountered petroleum material near K Area at 20 feet below surface. Briant said K West had an underground diesel storage area which could be the cause of this contamination but they do not know much yet.
- Dick thought that the high cost of excavating C Area should be looked at further. He warned that the contractors may be postulating and in the past have proposed processes like copper mining which is very expensive. He said there may be better ways to do localized excavations. Dennis said all the soils with chromium contamination will need to be treated, which accounts for the high cost. Dennis said this is why in-situ may really help bring down the cost.
- Pam Larsen asked if all of this work falls under the same contractor. Jim said the groundwater is currently FH and is transitioning to CH2M Hill which will be the prime. The source remediation is the River Corridor contractor which is Washington River Protection Solutions (WRPS).
- Bob said he would be interested in being briefed on the 40 alternatives that are being considered for the remedy. Jim said this is part of the remedial process optimization that they are currently sharing with Ecology and EPA and it is not ready to share publicly yet. Jim said the document is called The Remedial Process Optimization for 100 D. Dennis explained that this document would be the basis for the proposed plan and ultimately the final ROD.
- Shelley asked what the public process is for this work and what happens if it does not fit the interim action. John said the feasibility study (FS) will be made available for review and public comment will be a part of the proposed plan. Jim offered to come back and talk with the committee after he talks to EPA and Ecology about the plan. Jim said this will not be ready until the end of the first quarter of next fiscal year (around December). John suggested that the committee screen the things they are interested in because there are too many topics to deal with. Dennis thought that the policy question in this work is how much this work will cost. He said if this work goes ahead, something else may not get done, and the Board will have to consider the trade-offs.
- Pam said that typically the remedy selection happens behind closed doors and then the public gets to weigh in. Pam thought this process was frustrating and said there is a court case from Moses Lake that may allow local government to get a place at the table. Pam said it would be nice to have the opportunity see what the agencies are looking at. Briant thought it would be good to have a small stakeholder workshop at the end of the year on the 100 D Area. Briant said they need to have an approach to

start design by the beginning of the year, so it would be appropriate to talk with stakeholders about it at the end of this year. Maynard said the committee will identify issue managers for this topic and will follow up with DOE and the regulators about this.

- Dick said the selection of remedy is made in the FS and by the time it is shared with the Board it is cast in concrete and limits Board members ability to comment. Dick said he would like to offer suggestions on the FS to improve the product. Briant said this is the perfect time to do that because they are in the process of getting feedback from the regulators right now. The decisions will not be firmed up until the beginning of the year.
- Bob asked if the committee could see DOE's performance matrix. Briant said DOE already received feedback from the Board on the performance matrix, and the feedback was incorporated into the latest version which Shelley has copies of. Shelley thought this should be on the agenda next month for the committee to review.
- Maynard asked what the aquifer tubes are. Jim said the tubes were installed upstream of D, all the way down to the 300 Area. The tubes are used to fill in the gaps where there was no data. Dennis said these tubes were put in as a test, and no one was sure they would last. They have turned out to be an inexpensive way to collect additional data.
- Pam asked if the chromium contamination is draining into the river in the K Area. Jim said it is at low levels.

Susan Hayman listed potential future topics as follow up on this agenda item:

1. Chromium staining in D, H and K Areas
2. Presentation on 100 D alternatives specific to groundwater (remedial process optimization / RIFS and work plan)
3. DOE performance matrix – soil and groundwater for cleanup along the river (2 different presenters)

### **RAP Committee Work Plan Update**

Bob reviewed the committee work planning table and discussed the new organization of topics. Bob consolidated the work plan table to prioritize the topics into policy issues that would go to the whole board and site or specific issues that RAP would address independently. Bob asked committee members to review the work plan, rearrange, add or consolidate items as necessary, prioritize work, and assign issue managers to each topic. The committee reviewed the work plan and made a number of changes that are summarized below.

#### **Groundwater Cleanup & Integration**

The committee renamed the first topic to Central Plateau Waste Site Remediation and Cleanup Configuration and combined it with the Strategy for Central Plateau Cleanup

topic in the next section. They eliminated the Groundwater EIS modeling topic, and renamed the Groundwater Registries to Groundwater Annual Report. The committee also decided that the 100 & 200 Area Groundwater Operable Unit topics were policy level issues rather than site specific issues. The committee revised the framing questions and assigned issue managers for a number of these topics.

#### Waste Disposition & Central Plateau Cleanup

The committee revised the first topic to be focused on TRU waste going to WIPP and deleted the second topic regarding a complex wide waste disposition strategy. The committee decided that 618-10 & 11 is a policy level issue. The committee worked on identifying issue managers and revising some of the framing questions on these topics.

#### Science and Technology Needs Assessment

The committee deleted the Groundwater Technology Deployment issue from this section.

#### Institutional Controls

The committee worked to assign new issue managers and revise the framing questions for the issues in this section.

The committee decided to have committee leadership continue to revise the work plan and contact issue managers to make sure they are still willing to work on these topics. The committee leadership will send out the revised work plan for additional comments from committee members and the agencies in the next few weeks.

### **River Risk Assessment**

Jamie Zeisloft, DOE-RL, provided an update on the River Remedial Investigation (RI) work. Jamie said DOE has issued a work plan for the RI for Hanford site releases to the Columbia River. Jamie said they received six sets of comments on the work plan and have met individually with each commenter to resolve the issues they raised. Jamie said they are currently in the process of revising the work plan. He said the comments helped DOE improve the work plan. DOE would like to implement the plan and be out on the river collecting samples by early October.

Jamie reviewed a map of the study area. He said they split up the river into subareas for data management purposes while sampling. Jamie reviewed each subarea; the total study area includes a 100 mile stretch of the river. Jamie said some areas of the river were already covered by the River Corridor Baseline Risk Assessment (RCBRA). The RI work will pick up where the RCBRA stopped and the two will be integrated to make a final decision. Jamie said the objective of the RI is to augment and supplement existing data gaps in the databases as need for CERCLA and human and ecological health assessments. Jamie reviewed each sub-area data needs; he said they anticipate collecting 842 samples total as a part of the work plan. Jamie explained how the data would be used to develop baseline and to determine where the issues are and how to deal with them. Jamie clarified that residential exposure is meant to address exposure to dredged sediments; the other

human health exposures are from direct river activities. Jamie noted that sediment sampling includes island sampling as well as fish samples. The sampling will take one year to collect, input, and analyze. Jamie said they are taking a phased approach and will see what information they get from this effort and will then evaluate what other work needs to be done. Jamie said DOE will get all interested parties involved in additional work and as they move from the RI into the risk assessment (RA).

### **Regulator Perspectives**

- John said in 2004 the regulatory agencies saw a need to evaluate sediments in the Columbia to come to a final decision on the river. They looked at historical data, and identified data gaps. Ecology and EPA asked DOE to fill in those data gaps. The regulatory agencies would not like another year go by before data is collected. The additional data will help narrow the agencies uncertainty about contamination in the river and improve their understanding of any issues. October is a key month because the water is low and allows for sampling. John said when he saw the first draft of the work plan, he had issues with it and was faced with the choice of rejecting the work plan and delaying the sampling, or re-working the work plan with DOE. John said Ecology staff spent four days going through the document with DOE and revising it. They also talked with Oregon, tribal nations, and Washington about their comments. John said DOE has incorporated all major comments. John thought the work plan is coming together and Ecology is comfortable with the sampling numbers and types. John said the previous draft was missing the supporting logic about why the samples were needed. John said he continues to work daily with DOE and contractors to get things in place to get in the field to take advantage of October's low water.
- Laura Buelow, EPA, said pore water was not mentioned in the original draft but has been added to the current version, which was a significant change. Laura said the new version also includes random samples so the sampling would not be based on a focused sampling schedule. Laura said she thinks the agencies are getting to a place where everyone agrees on this document. Laura agreed that these data gaps need to be evaluated before the agencies can look at the RA. Laura said this is a work in progress and the agencies will continue to work on what data is needed as sampling moves forward.

### **Committee Discussion**

- Pam asked if this work will look at historic impacts and current impacts. Jamie said the sampling will look at anything currently there, past and present. John said the key issue is remedy selection. Ecology and EPA did not want to move to a final decision on the river without this information. Jamie said DOE should brief the committee on their final ROD strategy for the River Corridor. Pam asked that the committee include this briefing on a future agenda. Laura added that EPA expects that there is contaminated groundwater and it will be taken care of when groundwater is addressed on the site. If there are sediment areas that are not part of a cleanup unit that are contaminated, then a separate ROD will need to be developed to address those.

- Pam asked if a decision has been made about the old pipes in the river that drew water out for the reactors. John said Ecology did an evaluation of the pipes and looked at a worst case exposure scenario. Ecology decided that the contamination would last another 15 years. The concept is to use institutional controls (IC) to limit access along the river if a pipe breaks free for the next fifteen years.
- Gene Van Liew asked if the fish samples would be taken from both sides of river and middle. Jamie said that both sides and middle of the river would be sampled including the stretch of river above Wanapum Dam down to McNary Dam. John said there are three sub-areas plus upstream; in each of those there are five species being collected in addition to sturgeon. John explained that five fish will be collected and that information will be composited into one sample; this will be repeated five times. For sturgeon, they plan to collect five individual fish in each sub-area and look at them individually. John said they will look at kidney and liver together, filet with skin (no skin for sturgeon), and carcass. For sturgeon, they will look at eggs if they can find them. They will also look at stomach content for sturgeon. Jamie added that there is an extensive sturgeon sampling effort in the Lake Roosevelt for the Tech Cominco efforts, and that information will be reviewed as well.
- Maynard asked if they are planning to look at salmon. John said they are not because adults go out to sea and do not digest Hanford contaminants.
- Shelley asked why they are not sampling eel. John said there are not a lot of eel in the Hanford Reach.
- Shelley asked how old the sturgeon are that will be sampled. Jamie said they are sampling 15-20 year olds. Dick asked if the samples will reduce the population to a dangerous level. John said estimates for sturgeon are around 8,500 and DOE will get a permit for the number to be sampled.
- Gerry Pollet asked what public notice was given for the work plan. Jamie said DOE held a series of workshops and sent out public notices. They also talked with the committee and issues managers who provided input in the data quality objective (DQO) process. Gerry asked if there was a broad notice distributing the work plan and goals for public comment. John said he was not sure if that happened. Gerry commented that this is a major effort that concerns the public. Gerry said the RA under the Model Toxics Control Act (MTCA) requires public notice and comment periods. Gerry thought that public notice should be given if the data collected is intended to be used for the RA. John said he would check with the toxics cleanup program to see if they are meeting the rule. He clarified that this is a work plan not a RA, but said he would check anyway to make sure.
- Gerry asked if the exposure scenarios included tribes living along the river. John said they have to look at a reasonable scenario, and will look at what the tribes have shown is reasonable. Barbara Harper, Confederated Tribes of the Umatilla Indian Reservation (CTUIR), said living along the river was included as an exposure scenario in the RCBRA. Barbara said she was unclear how the RCBRA and the RA would get put together. Gerry asked how the areas that are not covered by the RCBRA would be dealt with. Gerry said the Board's comments have said to look at units without looking between them. John said Ecology has told DOE they have to

look at a reasonable maximum exposure scenario, if that includes fishing, then it needs to be looked at. John said if the samples from the island soils show a contaminant level that is too high they will have to make a decision on how to take action. Gerry thought the same maximum reasonable exposure should be used for both the RA and the RCBRA. Barb clarified that CTUIR asked that DOE evaluate everything as one unit so they do not end up with a scenario where the islands are a different cleanup level.

- Pam said the meetings on the work plan have been on the Hanford calendar and the Board received notice. Pam said during previous briefings on this topic, DOE shared a level of detail that was too great for most of the general public. Pam thought that the general public would not be able to interact the way the state and tribes have on this issue. She said the people that care about the environment have looked at this. Gerry clarified that the public notice should alert people that DOE is looking at exposure scenarios along the river, and allow people who live there to provide input on what is a reasonable expectation for exposure.
- Dick asked what action will be taken if lawyers determine that this work is not done correctly. John said they can have an action appealed through a Resource Conservation and Recovery Act (RCRA) permit or a CERCLA challenge. Dick commented that he hopes the agencies are not rushing into this process. John said if they go out to do sampling and find something they did not expect to find, they can modify the program to do additional investigation. Gerry asked if these areas along the river would become a state site or a Superfund site. John said they will be addressed under RCRA corrective action.

Susan listed additional follow up topics that were suggested during the discussion:

1. River Corridor ROD strategy
2. Integration of risk assessments
3. 100-D/H Areas RIFS work plan
4. System optimization plan.

### **Science and Technology**

Mike Thomson, DOE-RL, said he understands that the committee has a desire to reinstitute the Site Technology Coordination Group (STCG). Mike explained that funding for technology primarily comes from Mark Gilbertson's organization at headquarters (HQ). He said there is some site work on field technologies, but DOE does not do a lot in terms of site funding for basic science because that is done by the Office of Science. The fiscal budget last year was \$20 million for tanks, Deconstruction and Decommissioning (D&D), and everything else across the whole complex. Mike said there is very little discretionary funding available. In 2009, \$39.5 million was allocated for technologies, however, because of the upcoming change in administrations DOE will be on a

continuing resolution and therefore will have their budget frozen at a percentage of last years budget. Mike said the timing of such a group like STCG is not great.

Mike said Mark Gilbertson is continuing on the technology roadmap map work which incorporated technology development needs from all the sites. Mike said the focus at Hanford is on deep vadose zone contamination. The funding allocated to each site for this work is only around \$200,000 per year, so all they can do is plan for future work at this point. Mike said no science and technology work will be done until those budgets get increased. Mike reviewed his priorities for funding if additional money is allocated: vadose zone treatment of chromium in the 100 Area, groundwater contamination of phosphates in the 300 Area, and uranium in the 200 East Area. Mike thought the best way to influence future technology work at this point was to do that through the Environmental Management (EM) 20 roadmap work.

Nancy Uziemblo, Ecology, provided a summary of the National Academies review of DOE-EM's work on the technology roadmap development. Nancy said the National Academies wrote a letter to Mark Gilbertson to address the technical and resources issues they identified with technology development. Nancy said in the past, projects that could utilize technology at more than one site would get additional points. Nancy said that sites have unique problems and may not be able to be share technology because the work needs to be customized. Mike agreed and said an example is Oak Ridge where they have an issue with mercury. Solving that issue would be a major accomplishment for DOE at that site, but it has no applicability at other sites. Nancy felt that it is important to deal with issues like this that may not be ubiquitous across the sites.

Nancy said the National Academies went to all the sites and found there are more needs than solutions; they are recommending looking at cost effective solutions to cleaning up the site. Nancy said in fiscal year 1990 the budget for technology was \$184 million; it increased to \$410 million, and now is at \$20 million. Nancy said the contractors are onsite for five or maybe ten years at the most. When the money gets to the contractor, they want to be successful with the technology for the timeframe they are responsible. Nancy felt that this is not effective for the site and specific issues. Nancy said the site needs technology over the long term and funding needs to go beyond the contractor and their contract period. Nancy felt that this change will require federal support. Nancy said the report from the National Academies will come out later this year. Nancy provided a link to the Technology Road Map:

[www.em.doe.gov/pdfs/FINAL%20ET%20Roadmap%203-5-08\\_.pdf](http://www.em.doe.gov/pdfs/FINAL%20ET%20Roadmap%203-5-08_.pdf)

### **Regulator Perspectives**

- Ginger Wireman, Ecology, asked what happened to the technologies that were tested during the peak funding period. Ken Gasper said he worked for the tank contractors during that time and managed that money. He said the technology funding that came to Hanford contractors directly for tank waste in 1995 was something over \$25 million and was focused on those technologies that got written into the flow sheet. He said this included ion exchange, technetium removal, filtration work, and others. Ken

said a key element of the 1995 budget was the pilot plant work. He said most of the issues the expert team identified two years ago for the pilot plant were the open issues in 1995. Ken said they identified open issues and, because of funding, the issues were never resolved so they have remained open issues for all of these years and the technology could not move forward. Mike commented that during peak funding there was a glut of funding. Mike said there were small accomplishments from this funding like the direct push technologies that were developed, but the hard problems that require a significant resource allocation for a long period were not completed. Dennis said part of the problem was also timing of where the site was in the cleanup process twelve years ago. Dennis said additional work was needed on chromium in the vadose zone and ten years ago there was not enough information to work with.

### *Committee Discussion*

- Pam said the STCG and focus areas were clumsily administered and a lot of money was spent flying people around the country. Pam said there were also people from Rocky Flats where they were closing the site and were not interested in new technologies so the program was gutted. Pam said the budget for technology has now been moved to the Office of Science. The small amount of money for technology now means that work needs to be prioritized. Pam thought the agency program managers should help identify the problems and determine if science and technology could be used to solve some of their problems. Pam thought the dialogue about science and technology is not happening currently. Pam said she felt that something could happen locally to help with this effort of identifying needs and prioritizing work without any money. Pam suggested holding a brown bag lunch forum to have project managers share issues. She said right now there is not a process for identifying science and technology needs across the site.
- Shelley agreed; she said the system is broken and as a stakeholder she is not sure how to advocate for it in order to fix it. Shelly said Jim Rispoli, DOE-EM, gave the Board the go ahead to try setting up a forum to deal with technology and science issues. Shelley said she has already received calls from scientists at Oak Ridge who would like to help in this effort. Pam said if the Board can help get a better handle on what the science and technology needs are, through a grassroots effort, and document those needs, then the site will be in a better place to get funding if additional funding becomes available in the future. Pam said she thought the Board should also talk with the Pacific Northwest National Laboratories (PNNL) about the money they received from the Office of Science.
- Mike said he attends the EM 20 annual review each year and each year the sites talk about needs and how the Office of Science can provide basic science support. The Office of Science wants to focus their support on needs so there is some impact after the money is spent. Mike said Hanford is the only site that attends the annual meetings. Maynard thought that the laboratories and universities also apply for money from the Office of Science. Maynard said it is challenging to get that money with so many interests asking for pieces. Mike said the Office of Science used to rank projects based on science and cost. Now, they figure out areas of need and have

individual labs champion this work and give money for plans that develop science to fit that need.

- Shelley said Washington State University (WSU) received \$1 million to study plutonium movement. Shelley said DOE is looking at developing RODs next year and, it appears, will not be able to consider anything that WSU learns from this money allocation.
- Dennis agreed that there needs to be more communication about science and technology needs. Dennis thought the site could benefit from even a one day workshop to discuss where there are challenges and needs across the site. Dennis agreed that the Board should fulfill Rispoli's request to have Hanford be the model for this new forum.
- Nancy said the site is in a desperate mode, and this is often where inspiration comes from. She said during tank retrieval, crews had issues with spattering on the camera lens and the camera focused on the lens instead of focusing on the waste. They thought they may need to look for money to get better cameras. One of the crew took a Gatorade bottle and modified it to fit on the lens of the camera so that the waste could not splatter on the lens which fixed the problem. Nancy said success happens often happens when people are desperate.
- Maynard asked if there is a mechanism for the contractors on site to inform the lab of the needs they have. Mike said Andy Ward from PNNL has been funded to use a fiber optic technology to look for chromium plumes near the river. Mike said there is a desire for these connections to happen but the mechanism needs to be tailored to the technology and the site.
- Kim Ballinger asked if DOE develops a list of areas that they are interested in seeking technology for PNNL or other contractors. Mike said the development of the roadmap does that. Mike said all of the project managers represented the groups to the roadmap team and they took that further and created the site wide roadmap. Dick said he has been tracking the roadmap process and felt that the input from various sites was controlled. He said he provided input into the site needs and his suggestion to explore iron phosphate glass was not included in the site wide roadmap. Dick said he was able to speak with Mark Gilbertson when he was at Hanford and talked to him about this issue and made a presentation about iron phosphate glass. Dick said iron phosphate glass has now been included in the roadmap but there is still no money to explore the technology even though it could have tremendous impact on the Waste Treatment Plant (WTP) program. Dick said it has been a huge struggle to get anybody to consider this alternative because the process is often controlled by people who have tunnel vision.
- Dennis said it would be great to get the people working on the river together to identify the issues they have with cleanup. Ginger thought PNNL would be interested in participating in that discussion as well.
- Shelley thought that there needs to be a forum to manage this process and let the public know what is happening. Mike said the roadmap process includes a working group made up of DOE, users, stakeholders, federal agencies, and industry. Mike

suggested that the Board contact Mark Gilbertson to see if they might be able to participate in that group. Maynard thought that a process needs to happen to identify what the site needs are before participating in the roadmap group.

- Pam suggested that the RAP committee form a task force of people willing to work on this and as a first step gather information and meet with PNNL. Pam said the task force could come up with a proposal for structuring a brownbag forum and put the word out through regulators to program managers. She suggested having each project manager come to a brown bag with their science and technology needs written down, but also have them present their needs at the forum so that everyone can hear what the needs are across the site.
- Nancy said the new contractors are coming in and this might be a good time to tap into them while they are full of energy. Mike said that it is transition time between the contracts, and the contractors may not have time to commit right now. Maynard thought the subcommittee could work on this and refine the idea over the next couple months while the contracts are transitioning. Maynard thought that the process could gain a lot by getting upper management to support it.
- Mike said one of the first things the Board should do is look at the roadmap and the statement of needs. He said the Board could look at the articulation the department has made for technology and see if there are gaps between that and the roadmap. Ken said Billie Mauss from DOE – Office of River Protection (DOE-ORP) worked with the committee as she developed the roadmap for the tank farm side of the site. Ken asked if Mike could talk with the committee about how the River Corridor priorities were developed. Mike said he would be happy to do that.
- Pam said she thought that contractors will only put their money into technology if they could get their money back in two years. Pam said she was also concerned that project managers would not participate because they would have to volunteer their time. Bob said that the Board will have to be able to tell project managers how this information will be useful. He said if he were working on site and were asked to do this, he would want to know that there is a potential to actually get help or it would be a waste of time. Dennis said if the Board came to him and asked him to participate, he would wonder why the Board was doing this. Dennis also thought it was important to articulate why the HAB wants to understand all of this.
- Ken, Shelley, Pam and Bob will form a subgroup to work on this. Maynard asked the subgroup to come back and report to the committee as this work advances. Shelley asked if the subgroup could expect any support from DOE. Mike said he will do whatever is necessary to fulfill the promise of HQ in the June 20 letter. Pam asked to see a copy of the guidance provided by EM 20 to the field when they asked for proposals to the roadmap. She said this might be helpful in thinking about what this group should ask of the project managers.
- Mark Triplett, PNNL, suggested that the subgroup also look at projects underway funded by the Office of Science and EM. Maynard suggested having PNNL come to a future committee meeting to discuss how they are applying the funding from the Office of Science. Pam said she would still like Terry Stewart to come to talk about the roadmap work as well. Mike explained that Terry Stewart was on a deadline today

and could not make it. Pam said she and Shelley will meet with PNNL to talk about the funding and start the conversation.

- Mark offered to help Terry form a presentation on what work is in progress on the roadmap, and how that work was selected to bring back to the committee at a future meeting. The committee decided to follow up on this topic in during their January committee meeting and will have the small group do some planning work in the meantime.

Science and technology subgroup work plan proposal (Pam, Shelley, Ken & Bob):

1. Gather information: how did DOE collect information from field offices for roadmap, review projects underway and roadmap priorities.
2. Meet with PNNL (Mark Triplett): determine what funding they have been allocated and what their process is for directing that funding.
3. Develop proposal for structuring brownbag forum: solicit needs from project managers.
4. Information sharing through forum: include lab representatives, project managers, and DOE management.
5. Follow up with RAP committee.

### **Thursday Night Tutorials & Site Tours**

Maynard asked for input for topics to restart the Thursday night tutorials before Board meetings. He said previously, the Board used Thursday evening meetings to become more informed on current issues. Barb Wise, FH, said that when they did these tutorials previously the challenge was to simplify it so members of the public would walk away better informed and wanting to become better informed on Hanford issues. She said the topics should be kept to two hours and should include opportunities for comments and questions.

The committee brainstormed a list of potential topics:

1. Plutonium toxicity
2. Uranium, hexavalent chromium, technetium 99, and carbon tetrachloride (the “bad actors”) -- chemistry and health effects
3. RCRA vs. CERCLA, NEPA, MTCA, and operable units.
4. DOE-RL, DOE-ORP and Pacific Northwest Site Office (PNSO) scope of work and contracts.
5. Site wide permit

Dennis suggested tying the topics to something the agencies are currently working on so it is timely and applicable. Maynard said the Public Involvement Committee (PIC) will ultimately decide which topics to move forward with.

Maynard said Dave Brockman said DOE is interested in having the HAB get a greater presence on the site. Maynard asked if there were things the committee would be interested in seeing on site if a tour were planned. Peter Bengston, Washington Closure Hanford (WCH), suggested looking at 618-7, 618-1 and ERDF. Bob thought that committee tours are more effective than higher level Board wide tours. Maynard said he would review the list of topics previously developed by the committee in the spring and send that along to DOE.

**Action Items / Commitments**

- Status of PW 1/3/6
- Institutional Controls
- M91 update
- ZP1 – update on procurement strategy
- CW5
- Treatment of chromium stained areas
- Hanford barrier/the burn plan – lessons learned (Oct/Nov status update by Kevin Leary)
- Groundwater and soil metrics for cleanup along the river (October)
- Overview of roadmap and PNNL projects underway (January)
- DOE ROD strategy – how remedy decisions are made, and how they connect to the work plan and risk assessments
- 618-7 & 1 (October)

**Handouts**

*NOTE: Copies of meeting handouts can be obtained through the Hanford Advisory Board Administrator at (509) 942-1906, or tholm@enviroissues.com*

- Remedial Investigation Work Plan for Hanford Site Releases to the Columbia River, DOE-RL, September 10, 2008.
- EM Development of a Cleanup Technology Roadmap, Department of Ecology, September 2008.
- River and Plateau Committee FY 2008 Work Planning Table, September 2008.
- 2009 Board Priorities, HAB leadership retreat, September 2008.
- Major Releases for Consideration by the Hanford Advisory Board (HAB) for 2008-2009, Tri-Party Agreement, September 2, 2008.

**Attendees**

**HAB Members and Alternates**

Shelley Cimon	Dick Smith	
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Ken Gasper	Bob Suyama	
Pam Larsen	Gene Van Liew	
Maynard Plahuta		
Gerry Pollet		
Mike Priddy		

**Others**

Kim Ballinger, DOE-RL	Dib Goswami, Ecology	Joy Shoemake, CH2M Hill
Briant Charboneau, DOE-RL	John Price, Ecology	Barbara Harper, CTUIR
Jim Hansen, DOE-RL	Jacquie Shea, Ecology	Susan Hayman, EnviroIssues
John Morse, DOE-RL	Ginger Wireman, Ecology	Emily Neff, EnviroIssues
Mike Thomson, DOE-RL	Nancy Uziemblo, Ecology	Janice Williams, FH
Jamie Zeisloft, DOE-RL	Dennis Faulk, EPA	Barb Wise, FH
	Laura Buelow, EPA	Tyler Gilmore, PNNL
		Mark Triplett, PNNL
		Annette Cary, Tri-City Herald
		Peter Bengston, WCH