

FINAL MEETING SUMMARY
HANFORD ADVISORY BOARD
RIVER AND PLATEAU COMMITTEE

May 11, 2011
Richland, WA

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<p><i>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.</i></p>

Welcome and Introductions

Pam Larsen, River and Plateau Committee (RAP) chair, welcomed the committee, introductions were made, and the committee adopted the March meeting summary.

Briant Charboneau, United States Department of Energy-Richland Operations Office (DOE-RL) said he wanted to make RAP aware of a decision the Tri-Parties Agencies (Agencies) recently agreed to regarding groundwater remediation at the Hanford Site. He said the Agencies set milestones along the River Corridor several years ago to address groundwater contamination, specifically to stop all chromium contamination from reaching the Columbia River by 2012. Briant said at that time, the Agencies planned to increase interim actions in the area by increasing the pump and treat operations at K, D, and H Areas. Briant said flow rate volumes have increased by 400-500 percent and there is a dramatic improvement in the amount of contamination in those areas. Briant said the Agencies initially thought no interim action would

be needed in two of the areas - BC and F. However, river sampling revealed somewhat unexpected contamination below the Columbia River. Briant said this finding prompted additional activity including the installation of more groundwater monitoring wells plus increased core and river sampling. He said results of the additional samples were very positive; only two samples were above ambient water quality. The BC and F areas are within federal drinking water standards. Briant added there is a great deal of uncertainty with these measurements.

Briant said the Agencies thoroughly discussed the issue. The United States Environmental Protection Agency (EPA), in particular, thought it was not prudent to divert cleanup dollars on the issue when the Remedial Investigation/Feasibility Study (RI/FS) process is just about complete. A proposed plan is expected to be available during the current calendar year with a final decision next year. Briant said making a pre-decision and taking an interim action in the meantime does not seem appropriate. The Agencies reached an agreement for the 2012 milestone. No action will be taken prior to the Record of Decision (ROD). Briant said the good news is that for areas where the Agencies know they have a problem, they have dramatically increased capacity to pump and treat water. He said F Area is probably not an issue. BC may be the worst case because it is right at the ambient water level.

Briant said he is reluctant to state that a decision for the 300 Area will be made this calendar year because DOE may propose to change the target date. DOE will reach Milestone I next year, but the target date is this year. Briant said the chemistry for in-situ stabilization of uranium in the soil column does work. DOE has tested the method to ensure that contaminated soil responds to the chemical. Briant said the first two tests failed because the chemical did not reach the soil. Some of the soil used for back-filling did not allow water to seep through enough to apply the chemical. Briant said DOE would like to run the test again, but must change the target date in order to do this. He added that changing the date would still allow DOE to stay within the milestone.

Briant said he and Susan Leckband recently attended a DOE deep vadose zone conference. He said they learned that DOE-Office of Environmental Management (EM) will be building on work from other DOE offices and field resource centers. Briant said the many attendees were able to talk about their hopes and expectations for work on the deep vadose zone. He said that both he and Susan L. asked about whether the work would be funded despite the tight budget. People were optimistic that it will be funded. Dennis Faulk, EPA, said he is not quite as optimistic about funding. He believes the work will receive some amount of funding, but that it will take a few years to build. Briant said there is a lot of support and that even during the leanest of years it is important to keep long-term efforts alive. He said there are some positive indications that EPA might be willing to re-schedule some milestones for the Central Plateau. Briant said there should be a method for prioritizing contaminants where the highest priority are

those reaching the Columbia River, then for contaminants in the groundwater, then contaminants on the way to reaching the groundwater and so forth working back from the Columbia. He said that this is a convenient approach because the Columbia is the point where the public is being exposed to contaminants. Briant said the deep vadose zone is a pressing problem, however, because contaminants may get to the groundwater if not addressed for two years.

Pam asked Paula Call, DOE-RL, to provide an update on the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) 5 Year Review. Paula said she had spoken with individuals working on the project the previous afternoon. They told her the schedule might be accelerated slightly, but would not be accelerated as much as was previously thought. The CERCLA Review may be available in early June, but the exact dates are unknown. DOE plans to brief RAP in June on where the schedule is and provide a high-level summary. Paula said she assumes the document will be available sometime between June and August. Once the document is available, it will be sent to RAP via email and DOE will offer a full briefing session in August.

Dale Engstrom asked if DOE would hold the typical short comment period. He said he has heard some discussion that the document would not be available for comments, but that DOE was looking for feedback. Paula said there is a distinction between formal comment periods required by law and informal opportunities for review. One option is to offer a 30 day opportunity for stakeholders to review the document, which would coincide with a regulator review. She said when a document is due to EPA, DOE would like to make it available to stakeholders at the same time. Paula said this feedback opportunity will not result in a comment response document. DOE may be able to provide a summary of input on the website.

Liz Mattson said the issue has come up before in RAP where they cannot develop advice during the specified comment period. Paula said she understands this concern. The Board could provide advice in September, which DOE would read and consider.

Update on Building 324 – B Cell Contamination

Don McBride, Washington Closure Hanford (WCH), provided an update on Building 324 B Cell contamination. He said because Building 324 is a Category 2 Nuclear Facility, WCH may need to suspend shutting down the building while continuing to maintain controls in order to avoid creating a pathway for contaminants. WCH is focused on avoiding any source of water to the ground and any excavation that could impact the plume. This requires monitoring where the contamination is located and determining how to obtain an actual sample of the material.

Don referenced an image from his presentation showing a map of the plume. He said WCH found an initial measure of contamination in the sand layer underneath the building. WCH was not able to access the underlying cobble layer, but have good information for all areas the probe was able to access.

Don said WCH has completed some characterization measures in the cobble layer. WCH inserted an ignition push at a 25-degree angle. Don said WCH initially ran the radiation measurement instruments in an area where they did not expect to find contamination, but there were measurable dose rates. These rates were lower than what was detected in the sand layer. Readings in the sand were between 8,000-9,000 rems per hour (R/hour), which coincide with the area directly below the concrete joints in the slab floor of B Cell. Don said the relatively low dosage was encouraging, but it is concerning that contamination is present. The average groundwater level is approximately 54 feet below grade so the contamination is close to groundwater.

Don discussed the nonintrusive sampling unit. He said the tubes were inserted at the same trajectory as the first push – straight under the sump. This second push found background levels, which he said is very good news because it provides confidence that contamination is not reaching the groundwater. He added that more analysis was needed on the first push and they are working to get a spectral analysis of what caused the gamma rays at that location.

Committee Discussion

- Maynard asked if the probes are one under the other. Don said the probes are targeted directly under each other. He said the probes hammered into the ground can be flexed if they hit a rock. Don did not think the second probe deflected very much, but the first probe did hit some rocks. He said WCH does not have full coverage of the ground, but he expects when WCH does excavation over the long-term they will be looking at deflection and following the plume.
- Maynard asked if WCH was able to tell where in the seam the contamination originated. Don said the seam is around the perimeter of the building and WCH believes the entire seam leaked, leading to a box-shaped plume approximately 20 feet by 20 feet.
- Shelley Cimon asked about the size of the contaminated area between the seams. She asked whether there were any calculations on the volume of material leaked. Don said he did not have that information handy, but WCH had begun those calculations to start determining a remediation approach. He said WCH is asking about remediation technology. They will go through that selection in the winter, largely driven by the amount of high levels of contamination they encounter and also depending on receipt of sample analysis. The immediate focus is to collect physical samples of material. Don anticipates this will happen early next month.

- Pam asked if WCH considered the possibility of cutting a hole in the bottom of B Cell. Don said that is one of the remediation technologies under consideration. He added that the nuclear quantities of material require a lot of protection for workers and the environment. One approach would be to go through B Cell and use the existing ventilation system, but the structural integrity of the cell is a concern.
- Larry Lockrem said with the first deep push, when WCH saw radiation, there was a signal under the leading edge and another signal at the far end. This result indicates that there does not appear to be a lot of lateral transport, but the contamination does appear to have continued downward. Larry said it is fortunate the extent of transport does not appear to have reached the groundwater, although it is close. The vertical movement will be helpful for containment. He said the building essentially functions as a cap over the contamination.
- Pam asked if the leak occurred around 1980. Don said the leak did occur around the 1980's. There was a spill to the cell in the early 1980's, but it is unclear when the actual leak to the soil occurred. Don estimated that the leak must have occurred sometime after the spill, but before grouting in the early 1990's.

K Area Cleanup

Joe Franco, EM, said he would open the discussion of K Area Cleanup with an update on EM status for the M-16-140 milestone. DOE proposed several new dates to EPA for the milestones.

Joe said in 2009 the Tri-Party Agreement (TPA) milestones set an interim commitment M-16-140 for the 100K Area Sludge Treatment Project and 105K West Reactor Complex. The milestones were established to determine actions to take over the remainder of the project life, giving DOE enough time to assemble packages that would address seven to nine items. Joe read through a list of those items including: complete removal of the K West Basin, complete removal of all sludge (including container and settler tank sludge) from K West Basin except knock out pot contents, complete removal of knock out pot contents, complete treatment and packaging of first container of Transuranic (TRU) sludge waste certifiable for disposal at the Waste Isolation Pilot Plant (WIPP), complete treatment and packaging of sludge for disposal at WIPP, begin 105K West reactor interim safe storage (ISS), initiate soil remediation under K West Basin, and complete all interim response actions at the 100 K Area.

Joe discussed where DOE is today with the proposed 105K West and Sludge Treatment Project (STP) Milestones. He said M-016-00C is expected to be completed by 2029. He said DOE examined the work scope and funding levels and decided to address milestones in a series instead of in parallel, which offers a conservative approach with a high confidence level to complete all items.

- M-016-00C, Complete all interim response actions for the 100K Area, proposed completion 12/31/2020 (Initial proposal 12/31/2028) for facilities and known waste sites
- M-016-173, Select K Basin sludge treatment and packaging technology and propose new interim sludge treatment and packaging milestones 3/31/2015 (initial proposal 3/31/2016)
- M-016-186, Initiate soil remediation under 105KW fuel storage basin 12/31/2019 (initial proposal 10/01/2024)
- M-093-26, Initiate 105KW reactor interim safe storage (ISS) 12/31/2015 (initial proposal 10/01/2019)
- M-093-27, Complete 105KW reactor ISS 12/31/2019 (Initial proposal 9/30/2024)

Joe said Dennis was not enthusiastic about the dates and told DOE what EPA's expectations were. The agencies held a series of discussions afterward and changed the dates, largely due to DOE pre-planning and conducting parallel work.

Joe said the challenge for DOE is still a desire to beat the milestones and complete work sooner. He asked that the Board keep 100K West and STP as high priorities. Joe stressed the importance of continued funding, which the Hanford Advisory Board (Board or HAB) could help influence.

Regulator Perspective

- Dennis said he would like the TPA milestones to drive the decision process, not the reverse. Dennis said the dates presented today are much better than those in the original proposal. He said the priority is getting the sludge out of the River Corridor, and a lot of the work must be suspended until that happens. Removing the sludge is a priority for the Agencies and a priority for the Board. EPA was hoping 2018 would be the timeframe to finish the River Corridor part of the cleanup. Dennis said they might be able to reach that goal if there are only small challenges. The biggest challenge is the sludge treatment.
- Dennis said a robust facility will be needed if all the sludge must be treated for hydrogen, which will require coordination with other programs to have a facility able to handle these waste streams. Dennis said the challenge with building a robust facility is how to do that while also working on WIPP (concurrent capital projects).

Committee Discussion

- Pam asked if other complexes needed to treat similar materials. Dennis said there will be some other remote handling. Joe said the K Basin sludge is a small quantity of material compared to the rest. The treatment side produces a high volume of waste because of the need to meet waste acceptance criteria. Joe said when DOE is designing a facility they spend a great deal of time talking through treatment tests that have already been

conducted throughout the complex. He said Idaho had a program established. DOE is considering whether other mechanisms can be utilized to address each of the different waste streams, potentially including the K East sludge. Joe said some facilities can be portable, such as those being located by CH2M Hill Plateau Remediation Company (CHPRC).

- Chris Smith, DOE-RL, said testing has been conducted site-wide and complex wide. He said DOE reviewed efforts underway in Europe, but was unable to find anyone with a similar waste type. Waste at the Hanford Site is unique and highly radioactive. There is a large range in radiation levels, which complicates treatment. Chris said they are also speaking with individuals at Carlsbad, New Mexico to review the issues and challenge the waste acceptance criteria for WIPP. He said the Carlsbad people were being involved in the design process up front.
- Pam said she did not understand whether the slowdown is technology or budget driven. Dennis said the new schedule is based on sludge removal and is driven by neither. It takes a few years to remove sludge from the River Corridor, which is DOE's highest priority work at Hanford. DOE was told not to look at budget constraints and to develop a schedule based on what is possible.
- Pam asked if DOE Headquarters understands where they are in the process of K Area cleanup. Joe said the 2015 vision includes sludge removed from K West. DOE knew they would still be working on the site and planned to kick-off the initial ISS at that time. There is a lot of work occurring in the basin itself and there are no technology or funding issues. DOE is working to shorten the timeframe by shipping material to the facility and processing some material through pre-treatment. After that is completed, equipment for sludge removal can be brought in.
- Pam asked if DOE is considering providing comments on the Greater than Class C (GTCC) Environmental Impact Statement (EIS) since WIPP waste acceptance criteria may be addressed in the EIS coverage. Joe said DOE is currently working with people at Carlsbad through their field office to understand what Carlsbad needs for material to be shipped to them. Chris said DOE needs to make sure their documentation is straight before actually shipping anything. They are removing aluminum wires and other items to obtain a pure product. The actual content of the material will be ready in 2012.
- Pam encouraged DOE to provide any input into the GTCC EIS process that is needed. She does not want EPA to open the EIS process again. Dennis said his sense is that these are not directly related. The bigger issue is that when WIPP set up the acceptance criteria they were not thinking about the type of material being discussed. Dennis said the sense from a high level is that the way acceptance criteria is written DOE may have to treat waste, which he believes would be unnecessary treatment. Joe agreed.

- Maynard returned to the comment about capping the facility. He asked if DOE examined what the dollar range may be. Dennis said that in the future, if DOE ends up having to treat only a small percentage of waste, he could see the facility as being portable. Maynard said that would likely not be a huge cost. Dennis said the facility would have to be fairly substantial for everything they need to do.
- Shelley said she was concerned about Pam's question about GTCC. She wondered whether the Board should be weighing in. Paula said the EIS covered where GTCC should end up. GTCC includes material from a variety of sources – DOE, hospitals, NASA, etc. The EIS does not delve into detail on specific waste sources. Shelley said it is important to maintain focus. The consideration of moving the K Reactor to the Central Plateau was a distraction and a lot of money was spent with no result. She is not sure whether anything has been accomplished yet. Shelley would like to see the schedule moved up even more. Dennis said the reality is no matter how much money they spend, removing the sludge requires a long time. He said DOE was still working towards a 2018 date, but he could not commit at this point.
- Dale said he agrees with the comments mentioned and is hearing the same thoughts he would like to ask about. He wonders about conducting work in parallel, but said it sounds like the sludge must be gone before other work occurs. Dale said it seems like work could happen earlier. Joe said a safety basis must be maintained at all times. When DOE starts removing material they do not want to impact the ventilation of other systems. There is the possibility of doing some minor work such as removing asbestos.
- Dale said he would like to hear more about the higher volume of material to be treated at WIPP. He asked if this was related to dilution. Joe said the analysis has not been completed. There are limits on the amount of material that can be placed in a 35 gallon drum from transportation concerns or safety design. Shelley asked if hydrogen was the issue. Joe said that was the biggest concern right now.

Tom Teynor, EM, moved into his portion of the presentation. He said the goal for DOE is to obtain the purest waste form to limit the amount of material put in canisters. There are only 30 slots left in canister storage and DOE would like to keep some available for future needs. He showed a picture of the 105 K East Reactor in March of 2008 compared to a March 2011 picture that showed the buildings had been demolished. He said the working substructure will also be removed.

DOE took four probes underneath the structure and found high levels of contamination. Tom said they do not know if the plume is localized. The leak occurred on the east end of the KW Basin, which is now the focus. He said the new water treatment facility is operating. By 2015 there will only be a few structures remaining. Most of the soil that can be removed will have been exposed.

Tom said DOE was working with the tribal nations because the 100 K Area contains a very sensitive birthplace for the Wanapum Tribe. He said DOE may decide not to disturb the burial ground that is on-site because in one hundred years the contamination will have decayed below levels where it would be a concern.

Tom said there is a lot of activity in the basin itself. DOE hopes to remove fuel from the trench, including pieces found from the 118 burial ground. He said getting the K West Basin fuel free is the first step toward deactivation. DOE is draining glycol and other oils from machines that are not needed. There are two operating facilities with many people working on safety concerns. Tom said DOE Phase 2 is lagging Phase 1, as Dennis mentioned earlier. The design workshop will provide the decision for what technologies to move forward for the treatment plant.

Committee Discussion

- Bob Suyama asked what the overriding reason was for ISS instead of taking out the K East reactor. Tom said it was funding related and there were higher priority concerns. Joe said there were also technology issues in terms of the team being able to handle the reactor. They were not ready and more study is required. Dennis said reactors will have to be dealt with in 15-20 years when they do become priority just like ISS is now. Tom said DOE is leading up to conceptual design and never lost track of ISS. They are conducting similar actions on ISS as well as core removal. Tom said funding will be a struggle.
- Dick Smith said DOE did a good job on preplanning for removal of the K East reactor, although K East turned out not to be a huge danger and other efforts took priority. The positive is that the issue has already been studied so when money does become available, DOE can proceed in a rational approach without needing to go into the same level of detail.

Hanford Site-Wide Permit

The committee received a handout containing a synthesis of the Washington State Environmental Policy Act (SEPA) discussion during the Resource Conservation and Recovery Act (RCRA) Permit issue manager (IM) meeting on April 13, 2011.

Liz said she would begin the discussion by sharing what the IMs learned during the meeting. She read through the handout, describing how SEPA is a part of the permit application process, SEPA determinations and conditions, environmental impact statements and environmental assessments, incomplete permit applications, and the SEPA administrative record. Liz concluded by noting IM questions and concerns. She said the IMs and the Washington State Department of Ecology (Ecology) are discussing what the next IM discussion topic should be.

Agency Perspective

- John Price, Ecology, said many times Ecology is thought of as agency that enforces regulations or ensures compliance. He said Ecology also has to comply with dangerous waste regulations and SEPA regulations. The point of SEPA is to prevent government agencies from making poor decisions. He said an agency can completely follow the dangerous waste regulations and still make a bad decision. SEPA provides a way to verify that actions taken really are protective of the environment.
- John said for each of the units in the permit, in this case about 30, Ecology will look at each decision from a SEPA perspective to determine if it makes sense. All of these will be available in a public comment period. Ecology is considering how to make SEPA material available for public review. The typical process is to put the documents on the SEPA site register, but John believes all these SEPA documents will be made available through Ecology's Nuclear Waste Program website. There are currently fact sheets available on the website explaining how the public can obtain SEPA documents. John said Ecology will receive comments on the SEPA documents and looks forward to speaking with everyone.

Committee Discussion

- Gerry Pollet said the first big issue the Board should consider involves review of the impacts, which is a fundamental policy question. As John just explained, the public is supposed to be able to review how Ecology considers impacts and then mitigates for those impacts. He brought up the landfill question. Gerry said that the total cumulative impact of DOE for the draft tank closure will violate standards. He said no matter what DOE proposes, those standards cannot be mitigated when combined with the cumulative impacts from all units. Gerry said the question becomes whether it is even feasible. He asked why Ecology was considering alternatives other than needing to complete an EIS for many of the units to be covered and asking if the proposed permit conditions are adequate. Gerry expressed alarm that Ecology used a mitigated determination of non-significance because Ecology has already accepted that there are significant probable impacts from the units. Gerry said the fundamental question for RAP is what the role of the public will be for review and how Ecology will review the document.
- Gerry said another related issue involves new findings about tank farm piping. Most of the pipe is covered under dangerous waste regulations and there is a question on what coverage there would be in the permit. He said Heart of America Northwest commented on the Tank Waste EIS, saying a delay in retrieving waste from the tanks by 20 years would need to be covered with a discussion of the risk from leaving waste in the tanks beyond 2018. Gerry said the discussion triggers issues about the tank farms and

Ecology's EIS review process. He asked how Ecology would permit the tank farms if none of the issues were covered in the EIS. Susan Hayman noted this as a future topic for IM discussions.

- Pam asked if DOE can only transfer tank waste in RCRA compliant transfer lines. John said that was correct. Gerry said the lines were not RCRA compliant. Pam said the lines were being replaced to be compliant. One issue that has remained consistent for the previous ten years is the concern over when the RCRA compliant pipe-in-pipe is replaced. The space where the pipes run into the vaults isn't compliant. DOE has a new system for pipe-in-pipe that requires administrative controls. There is a high risk for failure when replacing the piping that leads up to jumper vault where it enters the cement wall. That is a major potential failure with high consequences for worker exposure. Gerry said there is a reason the law requires double enclosure, but there is no easy way to accomplish that. DOE had to use administrative controls when they were confronted with the issue several years ago.
- Susan L. said it would be more productive if the Tank Closure & Waste Management EIS (TC&M EIS) was finalized prior to this discussion and wondered why that was not the case. Pam said it was because the TC&WM EIS is not yet available. John said RAP should consider timing. The solid waste EIS would have allowed Ecology to issue a permit for the single shell tanks (SSTs), including for closure. Ecology did not agree with DOE's draft TC&WM EIS and forced the agency to re-work it, which threw the timing off.
- Susan L. asked why the timing remained off and why Ecology did not allow time to complete the tank closure EIS before the permit is issued. She said the process seemed backward and it was a policy question in her mind. John said the main focus is on closing the tank farm. DOE has declared that all SST systems need to be taken out of service immediately. In the case of the Hanford Site, DOE is forced to write conditions that allow them to operate in a non-compliant system. DOE has been dealing with old lines and conversion boxes for decades so they can attempt to write conditions in order to deal with the situation. DOE cannot legally come to a decision until they have SEPA coverage.
- Gerry said there are some units for which Ecology may not have to rely on the TC&WM EIS while others will require the EIS. This would be the case regardless of whether the Board offers early advice stating the need for SEPA determination and perhaps recommending that the permit be delayed until there is a public EIS review.
- Jean Vanni said the information presented at the IM meeting, and today, was designed to provide an overview of SEPA. Parts 1 and 2 were discussed. The rest of the SEPA documents will provide permit conditions for other units. Jean said she would like to see those before the documents are made available to the public. Jean suggested that RAP

draft a letter stating that the Board would like to see draft documents prior to public review so the Board would be able to provide input. She said many of the decisions have already been made by the time the public receives a document. Jean said she would like to ask DOE to complete the TC&WM EIS before the permit is issued because many SEPA items are dependent on that document.

- Maynard said they have the cart before the horse in the whole process. He said if they know what some of the conditions are, they have to keep it going so the process does not get delayed. Maynard said they need to identify key conditions and determine whether those conditions seem reasonable. Determining mitigation conditions could allow continued operation. He said DOE is already aware of the Board's desire to receive the EIS early.
- Gerry said RAP has not seen anything relating to how a proposed condition resolves an impact, which would be in the TC&WM EIS. The permit conditions might specify actions such as moving a certain quantity or completing an action on a certain date, but it does not address whether those actions actually address an impact. Gerry said that information is provided in the SEPA document, which is why the SEPA and permit accompany one another.
- Susan H. asked what early advice would mean, given the Board's schedule. She noted that June advice would need to be developed in two weeks while September advice might not be considered early.
- Jean asked if the Board could write a letter that simply states the Board is requesting to see the SEPA and Permit conditions in a draft form before the documents are made available to the public. Susan L. said the Board could write a letter if they feel it is important. She asked that the letter be as simple as possible. Susan H. clarified that the letter would be from Susan L. who would bring it to the Board for approval. Susan L. noted that the Board does not technically need to approve of a letter, but she would bring it forward as a matter of respect.
- Gerry asked how much material is still being pumped from one tank to another and if DOE is still using diversion boxes. He said the diversion boxes are out of commission, unless waste is being transferred from one SST to another. Gerry said that would relate to the second issue raised about the scope as opposed to timing on the SEPA review. Jean said some of the issues are that the tank farms are unpermitted, un-compliant systems that need to be used anyway.
- John asked what happens after the Board sends this letter requesting to see a draft. He said to suppose Ecology does provide the draft - what would the Board's next step be. John said concerns the Board might bring forward could be items Ecology is already concerned about. He added that Ecology would probably be unable to continue a dialogue

with the Board about the draft from the present time until the draft is issued in the summer.

- Gerry said the Board is not focused just on conditions. The Board should also be focused on SEPA determinations, review and documentation. By having the draft early, the Board might be in a better position in September to provide advice on whether the SEPA advice is adequate to support the determinations.

The IMs will draft a letter for Susan L. to bring to the board. The draft letter will be completed by close of business Tuesday, May 17.

Greater than Class C Draft Environmental Impact Statement

Dale said the Greater than Class C (GTCC) draft Environmental Impact Statement (DEIS) is not a local DOE document. The GTCC DEIS is a report out of DOE Headquarters and is programmatic in nature.

Dale offered a short primer on the GTCC EIS. He said waste is divided into low level and high level. High-level waste (HLW) originates from the reactor and low-level waste (LLW) includes all other wastes. LLW is further divided into categories A, B, C, and so on. Any waste classified as greater than Class C is considered dangerous. This waste category includes a variety of waste in different forms with different levels of radioactivity, mostly elements with long half-lives that are mobile. The Board is concerned that the GTCC EIS still includes the Hanford Site as an alternative for waste disposal, especially now that Yucca Mountain is unavailable. Dale said the understanding was that DOE will not bring waste into the Hanford Site until the Waste Treatment Plant (WTP) begins operation.

Dale said the GTCC EIS applies to all DOE programs with GTCC waste, not only Hanford. GTCC waste originating at any site could potentially be brought to Hanford. He said there were a number of schemes being considered that are relatively shallow and do not seem protective. Dale said the Board issued advice after the TC&WM EIS came out, which demonstrably showed that there is already enough waste at the Hanford Site. The site is over-limits for some things so it would not be sensible to add more material and compound the problem.

Dale said the GTCC EIS is available right now for comment. The comment period will end before the September Board meeting. The Board would either need to say something at the June meeting or find a way to create advice between June and September.

DOE Perspective

- Arnie Edelman, DOE-HQ, said the GTCC DEIS comment period ends on June 27. He emphasized that the DEIS honors the moratorium on importing waste until 2022. After

2022, there would need to be an additional National Environmental Policy Act (NEPA) analysis if the decision is made to import waste. Arnie said the DEIS does not identify a preferred alternative in the GTCC DEIS. DOE is looking for input from the public and the Board on what should be considered. Arnie said the GTCC DEIS has been structured with an inventory of about 12,000 cubic meters of waste being generated. DOE is confident there will at least be 5,000 cubic meters, but 6,000 cubic meters of waste may never be generated. He said multiple decisions could be made, including a “no action” decision that would result in waste being handled as it is currently.

Committee Discussion

- Dale said the other point to be aware of is the cumulative impacts. Some waste contains technetium and cesium, which will also need to be taken into consideration. DOE does not want to create additional contamination at the Hanford Site, especially for those two isotopes with the potential to move through the water table. Dale said input will be important from the tribal nations, the Board and the public. He said public hearings will be held the following week in Pasco on Tuesday night at 5:30, and there will be another meeting in Portland on May 19.
- John said Ecology is working on a letter commenting on the current GTCC DEIS. Ecology does not think disposal at the Hanford Site is a viable alternative and that option should be taken off the table.
- Larry said EPA’s Hanford Office is not actively looking at the GTCC DEIS. The DEIS is being reviewed by the Seattle EPA Office.
- Gerry thanked Arnie and the NEPA Headquarters Office for sending additional notice to everyone who commented on the GTCC DEIS and was on the Hanford Cleanup public involvement list. Gerry said the Board recently issued advice about open government planning. This advice offers a model for a major piece the Board has been concerned about regarding public involvement. As the Ecology comments show, the second impact statements are integrally related and are something that the Board has been concerned about for years. Gerry said the Board should issue advice as soon as possible. The position of Ecology is very clear from the comments they have made. These comments provide a good basis for possible Board advice. He said the fatal flaw that the TC&WM EIS and GTCC DEIS mention, but do not attempt to address, is the integration of cumulative impacts at the Hanford Site. The GTCC DEIS estimates that the dose to groundwater two miles away in the Central Plateau is 48 millirem (mrem) per year. He said RAP should think about that exposure in terms of the 15 mrem goal for total exposure. Gerry said the advice should highlight that this is unacceptable. Gerry said the borehole estimates indicate only a tenth as much radiation escapes when it is known that boreholes contaminated groundwater. He said there is no realistic consideration of a deep

geological repository in the draft; the only consideration is WIPP. Gerry said it is a failure and major flaw in the EIS to not consider a deep geologic repository in granite, which scientists have recommended for decades. He said the Board needs to be concerned that the existing decision considers two regional disposal sites – Hanford and Nevada from a 2004 decision. He said the Board should issue advice beyond whether a new EIS would be needed if DOE allows waste to be imported to the Hanford Site in 2022. He said the Board should also advise that cumulative impacts need to be highlighted instead of being discussed piecemeal between two documents.

- Pam said she does not think the Board needs to get involved in technical advice on the issue because they can cite previous advice and information in the EIS. The Board does not need to comment on the appropriateness of other sites. Pam said the important point is that importing waste to the Hanford Site does not work, which can be backed up with scientific research. She said the advice does not need to be complicated.
- Jean said she is concerned about what the GTCC DEIS calls TRU-like waste. Arnie said TRU waste is subset of GTCC waste. This waste category includes TRU waste generated from non-defense sources at DOE sites, which is not currently permitted to be disposed of at WTPP. Dirk Dunning said defense related TRU waste is not part of the GTCC inventory, which GTFF non-defense related TRU waste is part of the inventory. These are the same radionuclides; the only difference is the pedigree.
- Jean asked if there are wastes at the Hanford Site that will not go to WIPP and are TRU. Gerry said the Board should include an advice point on the question.
- Pam asked if there is any GTCC waste at the Hanford Site without a path forward. Arnie said all Hanford wastes are in the GTCC inventory with a path for disposal.
- Susan H. suggested that RAP consider initial framing of the discussion and talk about fast-tracking any potential advice. She cautioned that it has been difficult to get advice through the Board without full committee development and discussion. She asked if RAP wanted to bring advice forward in June.
- Dale said the Board is on a very short timeline if they want to comment on the EIS because the deadline is June 27. After that date input will not really matter. Dale said he believes this is a very big issue that the Board should weigh in on as a Citizen Advisory Board. He suggested offering simple policy-level advice directed toward DOE-HQ.
- Shelley wondered if International Atomic Energy Agency requirements correspond to the findings in the GTCC DEIS. She said there are many position papers discussing how to handle radioactive material including discussions on the need for shallow or deep geologic disposal. Shelley questioned if the alternatives in the GTCC DEIS represent international level thought. Jamie Joyce, EM, said the GTCC DEIS does not propose a

preferred alternative. He is aware of the classification system and said waste considered intermediate level generally requires deeper disposal. Jamie said DOE is considering Nuclear Regulatory Commission (NRC) requirements.

- Arnie said NRC regulations state that geologic is preferred for GTCC waste unless there are other methods. The regulations do not cover deep versus shallow geologic deposits. Arnie added that the NRC is a commenting agency on the GTCC DEIS.

The committee decided that Dale, Shelley and Gerry would draft some high-level advice and it would be refined by the committee through email. This advice will go before the Board at the June meeting.

River Corridor Baseline Risk Assessment

Dale said everyone in the room is familiar with the River Corridor Baseline Risk Assessment (RCBRA). He said the iteration of comments received since the last RAP meeting had been incorporated in the draft advice. Dale said he received many comments from Ecology saying the advice does not correspond to how they operate, but he said the advice is recommending Ecology operate differently in some areas. Dale provided a handout of the draft advice along with a second handout that contained alternate text for the first advice point that was written by Dick.

Agency Perspectives

- John Sands, DOE-RL, said the main comment he had at this point is that the first two advice points seem to contradict each other.
- Beth Rochette, Ecology, made a comment on the interpretation of the Model Toxics Control Act (MTCA) in the advice. She said MTCA does not cover both chemicals and radionuclides. MTCA only covers carcinogens. Gerry said the official position of Ecology explicitly states that chemicals and radionuclides are covered. Beth said she is aware of some court rulings that have required radiation to be excluded, but she considers those rulings a little unclear. She said her tendency would be to say all carcinogens determine risk because that is what the regulations require for determining risk.
- Larry said he provided quite a few comments and saw that some had been incorporated. He said that he would like to highlight how the advice might be interpreted. In the first advice point, it is important to keep in mind that the interim actions selected include industrial cleanup for part of the Hanford Site and unrestricted use for the rest. Larry said the advice reads as though the Board wanted the entire Hanford Site to be cleaned to unrestricted use standards. He suggested the Board be conscious of whether that is truly the recommendation being made. Larry said the intended advice of the Board should be made more clear because as he read the advice, he questioned whether the Board was

advocating for site-wide unrestricted use cleanup levels or not. Larry moved into the second advice point where the Board discusses what a risk assessment (RA) ought to include. He said the Board should keep in mind that a ROD is based on everything in the administrative record. The process requires an examination of how the CERCLA decision integrates with other activities. Larry said the advice is reading as if the Board would like all the information in one document.

- Dale said he has heard this concern before so he will re-examine how the advice point is written. He said the Board is not advising everything be in one document. The Board is advising all these elements be completed before the RI/FS.
- Larry said the agencies appreciate receiving clear advice that had clear recommendations on what should be done. He suggested clarifying the advice language to provide straightforward “do this” recommendations.
- Dennis echoed Larry’s comments and asked the Board specify what the advice is asking for. He questioned if the Board wanted a delay in some of the RI/FS plans to accommodate comment periods and if the advice recommended deliverables in two or three months. Dennis said he reads the advice as asking DOE to re-do the RCBRA, hold workshops to explain the RCBRA and then conduct the RI/FS. He said the Board might have more meaningful advice if it focused on the RI/FS because it is already in process. He said if DOE followed the Board’s advice, it would delay the process and the Board should be aware of that.

Committee Discussion

- Jean asked how the RI/FS process works. Dennis said a work plan is developed that lays out all tasks from the data and RA. This is followed by a remedial investigation and feasibility study. Once these are completed, DOE develops a plan to complete the work. John said there is an RI/FS work plan for each of the six units at the Hanford Site.
- Gerry asked if DOE issued the draft of these documents and proceeded to write the work plan without waiting for comments. Dennis said that in the normal CERCLA process the public views all the work together in the RI/FS.
- Gerry said he remembered a lengthy seminar from Ecology three or four years ago detailing the process. He said the Board offered advice at that time and they are again discussing many of the same concerns. John said many more elements were considered than were in the draft. That initial draft was considerable unsuitable for the process and DOE did a major revamp, which is part of the reason for the long timeframe. Gerry asked if the formulations presented to the Board were used in the second draft. John said the

scenarios have not changed. Dennis said the Board's comments were factored in as DOE moved forward in the process.

- Pam said she had a general observation that parts of the advice were complicated and difficult to understand. She brought up an example of a county commissioner who asked whether DOE was doing an adequate job of cleaning up the Hanford Site and, if not, how could that person become engaged. Pam said she had planned to share this advice, but did not feel like it was understandable for most people.
- Jean said she would not accept the alternative first advice point provided by Dick. She said accepting that position would be disregarding the entire point of the RA. The RCBRA should identify risk at the bottom of the cleanup to give a starting point.
- Dale said the first advice point, as written, speaks to the fact that DOE tried to find ways to lower the residential and tribal scenarios. He said the point of the advice is that DOE should not do that. DOE should recognize what the numbers are and move forward. Dale said he has heard a number of times DOE did not do the assessment right. DOE should have taken samples across the surface because they are building on top of the fill, which is why Dick supplied the alternative wording to the first advice point. Dale said DOE has already gone through the process and are discussing the RI/FS RODs being written. DOE is not going to re-do the RCBRA so the advice should read that DOE should move forward with what they have already done, but recognize that DOE did not sample across the fill.
- Maynard agreed with Pam that the advice is too long and should be shortened. He asked what studies were being referenced in the background section of the advice suggesting agricultural use for the Hanford Site. Gerry said he thought a study from Bechtel is cited and a report completed the previous quarter by a group of students. Maynard said agriculture was often talked about, but he did not think agricultural land use is currently projected by most people.
- Vince Panesko said the background section should be limited to one or two paragraphs. Susan H. said the length of the background section is a common concern for any Board advice with extended backgrounds. Vince said he would attempt to shorten the background.
- Jean said there are regulations that need to be followed with specific methods for conducting calculations. Calculations cannot be adapted to minimize the risk. Dick said the assumptions used in those calculations should be realistic, which they are not in the current version of the RCBRA. Jean said the assumptions need to include contamination beneath sites that have been cleaned up. People have to dig into the ground to construct buildings.

- Gerry said the advice is specific to the RCBRA, which he understands is a reiteration of the initial version. He said the RCBRA does not cover all the relevant considerations, but the advice is not asking for a revised RA to incorporate that information. The Board is asking for additional detail to be included in the work plans that detail what actions will be taken.
- Gerry said the public involvement aspect will be difficult if all information is not incorporated into one document. He said having piecemeal responsiveness in six separate documents makes it challenging to engage the public. Gerry said the RCBRA is one of the documents that will lead to a final ROD. The process may never be available for public comment. Dennis said there are opportunities for public comment. He said the point he would like to make is that if the Board would like to slow down the process to allow documents to be vetted, that should be clearly stated in the advice.
- John asked if the advice was asking DOE for forward thinking into the future instead of revising previous work. Gerry said Board comments should reflect the process.
- Jerry Peltier said the problem is that the RCBRA disappeared for two years before the Board was able to view it. He said that was because of DOE and he is not sure the Board should support regulatory relief for the RCBRA being delayed. He said DOE followed through on something the Board was always critical of while simultaneously developing work plans. Jerry does not think the public will review six different work plans. He said concerns may be addressed piecemeal in the work plans, but that is not acceptable. Jerry thought that Board should state that the Board would like DOE to consider the big picture in the work plans, even if that would take an additional six months.
- Susan H. said she was hearing different concerns. Some people would like to go forward with the advice and accept that it would require a delay in the process, while some feel the advice should be directed at future efforts in the work plans.
- Dick asked John if the development of the proposed plan would be based on the risk results from the RCBRA as it presently exists. John said the risk results identify if there is a basis for action. If there is a basis for action, DOE will develop preliminary remediation goals. For the RI/FS process DOE will consider different factors and various preliminary remediation goals (PRGs). All of these elements will be weighed to develop a final cleanup level.
- Dick said he assumes that when DOE is developing the RI/FS, the risks generated by the RCBRA will be heavily incorporated into the document. John said scenarios are needed to calculate cleanup levels. Data is not necessary.

- Larry said there are quirky aspects to how the RCBRA was developed. He said DOE would be looking at PRGs and MTCA plus cleanup standards for reasonably anticipated land use. Dick said decisions were tied to assumed risks and how those are calculated.
- Dale said most of the advice points are not meant to read that the Board is advising DOE to re-write the RCBRA. He said advice points eight and nine state that when DOE goes through the process again and when developing the RI/FS, DOE should incorporate the Board's advice. The Board does not want DOE to re-do the RCBRA or to delay the process. The Board is stating that they do not think the RCBRA was done correctly in a number of ways and is not being used to the full extent possible for decision-making. The Board is offering advice for future RA development. Dale said the Board appreciates all the effort DOE put into drafting the RCBRA. The Board understands how the RCBRA was developed and advises DOE to use the data available, but to also think about the additional aspects noted in the advice.
- Susan H. said she was not sure there was committee consensus to bring that forward. Others seemed to have different opinions on what the advice should recommend.
- Dale said the process and RCBRA document are extremely complicated. He said while he has heard from some that the advice is overly complicated, he has also received feedback from regulators that they understand the advice, as these are things they consider everyday. Dale is concerned that if the document is overly simple people will not understand the connections. He asked for committee input.
- Gerry asked if the advice is to look at the ROD process that incorporates the RCBRA as a baseline. He said the Board should advise additional considerations need to be taken into account for the ROD. He said the Board is not examining the RCBRA specifically; the Board is examining the process that culminates in the final RODs.
- Jerry disagreed. He said DOE will use the RCBRA repeatedly without incorporating changes recommended by the Board. He said the Board's recommendations need to be incorporated into a comprehensive RA document, even if DOE is moving forward with the process simultaneously. He said the next step would be to present this information in a way the public would be able to understand. Jerry said the public will respond better if there are workshops on the entire River Corridor Baseline Risk Assessment than if the proposed plan is divided into individual components.
- Jean said she remembers having a similar conversation previously. The Board recognizes they are not going to receive a compiled RA document. She understands that the process requires separate documents. The Board would like the information to be available in a way that they can be discussed together. She said the advice does not only address process; the advice also asks DOE to present to the Board the other supporting documents that should have been in the RCBRA.

- Dennis said he does not think the advice will move through the Board as it is written. He asked that they focus on writing policy level statements that offer solid recommendations on actions DOE can take.
- Gerry asked if the Board wanted to make comments focused on revising the RI/FS or make comments about the process. Jerry said he is in favor of advising DOE to revisit the RCBRA. Maynard disagreed. He said the advice should focus on what DOE should do for future efforts.
- Jean suggested that the Board request a workshop when the completed documents are available.
- Susan H. asked if the IMs could revise the advice to include a discussion of how it could be beneficial to the RI/FS proposed plan and items to think about for future RAs plus a discussion of public involvement workshops.
- Susan L. said the work put into this advice should not be lost. She suggested writing a white paper on the RA process.
- Nick Ceto, DOE-RL, asked for clarification on the Board advice. He said his understanding is that the Board is asking for workshops when the proposed plan is available. The purpose of these workshops would be to explain how the RCBRA is used to develop a proposed cleanup decision. He said DOE normally holds workshops or meetings on proposed plans and do value the importance of explaining how the RA fits into the RI/FS proposed plan.
- Jerry said the proposed plans would be available one at a time. He said DOE would not hold six different meetings; they would hold meetings once with the RA for the entire River Corridor. Nick said it is difficult for the public to understand how the RA is used unless it is in the context of a proposed cleanup.
- Susan H. asked if the committee thought the advice would be ready for the June Board meeting. Dale said the comment period will be over by the September meeting so the Board does need to offer advice in June.
- Liz said it would be helpful to recruit some new people to infuse the IM team. She said the people with strong ideas should join the advice development phone calls.
- Susan L. said explaining this advice to the Board would be difficult. She suggested removing most of the background section and incorporating those into a white paper on Board values for what would be expected in an RA. Gerry said he is not sure there is going to be a future RA.
- Maynard suggested appending the background to the advice.

The committee decided to write another draft of the advice with new RAP members. Susan L., Jerry and Vince will make the first revision, and then send this revision to Dale, Gerry and Liz for review and comment before it goes out to the committee for review, comment and consensus.

PW-1, 3, 6 and CW-5

Shelley provided a handout with background information on PW-1, 3, 6 and CW-5 to help RAP understand the issue.

Nick gave a presentation on the proposed plan for PW-1, 3, 6 and CW-5 Operable Units. He said input received from a TPA agencies workshop, tribal nations, the state of Oregon, and the Board all influenced the preferred alternatives in the proposed plan. Nick said significant changes were made since the original proposal.

Arlene Tortoso, DOE-RL, said there were two feasibility studies (FSs). She is responsible for the PW 1, 3, 6 FS. Draft C is currently available for review. During the Central Plateau strategy, it was decided to combine several units into one proposed plan and ROD. She said most of the discussion now focused on combining all the information into one document. Arlene reviewed background information on the Operable Units. She then described Operable Unit Remove, Treat and Dispose (RTD) options, comparing the benefits for each. She said the full documents are available for review and comment.

Regulator Perspective

- Emy Laija, EPA, said PW-1, 3, 6 was a great example of how the Board can influence a project. The consideration of additional alternatives is a direct effect of early Board involvement. She said EPA is looking at protectiveness for the proposed alternatives.

Committee Discussion

- Shelley said 95 percent of sites with cesium are within the footprint of the industrial area. She asked about criteria and points of compliance for those sites. She said the agreement to dig 15 feet is the default. She asked if that was because of cost or risk. Arlene said all the cesium is within the Central Plateau. Fifteen feet is a separation depth that must be maintained with 15 feet of soil cover.
- Shelly asked how deep the cesium is. Jean said she thought it was between 28-36 feet. Kathy Davis, CHPRC, said in some cases the cesium is shallower than 15 feet.
- Shelley said she is pleased to see the pipelines and process lines were being taken out as waste sites are remediated. She said there seems to be a ten-foot stop with pipelines that reach 15 feet with remediation. Arlene said the pipelines associated with dig sites are removed regardless of how deep they are. Emy said anything deeper than ten feet within

the dig sites will be removed by default through the process. She said the ten-foot language can be confusing. All the pipes will be removed.

- Shelley said the concern is the 2024 milestone for RTD. She said they should not be waiting until the end; they need to move forward with the RTD. She asked about TRU waste. This waste needs to be exhumed, treated and disposed of at WIPP. She asked if there was a ROD evaluation for technetium-99 and nitrates, which would need to occur during remediation instead of waiting until after the ROD is completed. Shelley would like to see characterization done far in advance.
- Jean agrees with the concerns mentioned. She said DOE should begin the RTD process. She said the PW-3 sites that contain cesium should also go through RTD. She is concerned about how the risks were evaluated years ago. She said digging down an additional ten feet would remove approximately 96 percent of the waste present. Jean also asked where all the soil for the Hanford Site is coming from. She does not support the barrier design concept.
- Maynard asked if DOE will continue digging if contamination is found deeper than 15 feet. Arlene said DOE examined the mass below the waste site. The area with the highest concentration of contamination is directly below the waste so. She said from a cost-benefit perspective DOE is not going below that level. Dennis said DOE would dig deeper if there was a groundwater concern.
- Maynard said he is concerned DOE will cease cleanup once 51% of the contaminants are removed, ignoring the other 49%. Dennis said there will be a mass of contamination for low salt waste sites and cost will be a major driver. Putting a barrier over these sites will be protective under Superfund law. He said DOE is concentrating on the highest risk waste, which is in the two feet below the surface. Dennis said if cost were not an issue DOE would remove the low mass waste as well. Jean said DOE would not have to dig down to 45 feet. She said 95% of contaminants could be removed by digging an additional ten feet.
- Dennis said another issue for the Board to consider is that the cleanup of the inner area of the Central Plateau is obviously being approached differently than cleanup at the rest of the site. He said DOE is proposing to use clean fill to create an adequate buffer. The risk scenario is set up so that the trench could either be piped or DOE could use the MTCA default of 15 feet. Dennis said EPA would like to know what the Board believes would provide a protective remedy. He said this is completely an external exposure issue.

Greg Sinton, DOE-RL, began his portion of the presentation on 200-CW-5 Operable Unit Section. He said Draft B of the FS/Proposed Plan (PP) was issued in November of 2008. The preferred alternative in the draft is to RTD ends of trenches and place a barrier over the more

contaminated center portion. The RI/FS process is near completion for CW-5. A combined draft for CW-5 and PW-1, 3, 6 PP was submitted to the EPA in January 2011.

Greg provided background information on the trenches in CW-5. He said there were three trenches because when one trench became contaminated, DOE would create a second trench. Vince said the trenches became so contaminated they could not be controlled. He said there is a lot of plutonium in the trenches. Greg said the three trenches were in use from 1944 through 1981 and then a crib was used.

Greg said DOE did find the bottom of the structures and found plutonium near the bottom. He said as trenches were retired they would be buried under several feet of soil. Greg reviewed a comparison chart for the different remedial alternatives considered. He said two of the alternatives did not meet the threshold criteria. The preferred alternative is RTD because it reduces risks, is cost effective between balancing long-term effectiveness and short-term risk, and readily implemented with the on-site Environmental Remediation Disposal Facility (ERDF). Greg added that these Operable Units could generate a lot of TRU waste that is expensive to handle, although the estimates are overly conservative.

Regulator Perspectives

- Emy said CW-5 is fairly straightforward and on-schedule. She said EPA has a commitment to complete a ROD by the end of the fiscal year. They need to get through the public comment period and issue the ROD in a timely fashion.

Committee Discussion

- Dennis said another question is whether this topic would warrant public meetings. If public meetings are going to be held, they would need to start planning right away.
- Susan L. asked why DOE did not want the waste to be TRU. She said TRU waste is removed from the Hanford Site to permanent disposal in a much safer manner. Susan said TRU waste reduces the burden of removing contaminants from one area to place them in another area of the Hanford Site. Dennis said if DOE uses standard excavation techniques, contaminants can be moved to ERDF so that would be the logical choice.
- Shelley said there are hot spots with very high levels of plutonium. Dennis said highly contaminated waste would be sent off-site. He added that standard excavation techniques should address low-level waste. Greg said DOE's assumption is that waste meeting low-level waste acceptance criteria will be sent to ERDF and other wastes will be sent to WIPP.
- Vince said he heard RI/FS drafts are going to be finalized and then there will be a proposed plan (PP) and finally a ROD. He asked when those four documents would be

available. Vince said he has been told the ROD will be ready by September 30 and a PP is available now. He asked how RAP should respond to these. Greg said there are RI documents followed by FS documents and then PP documents. He said there is an RI document for the six sites plus another that covers CW-5 because the two projects were separate. He said the RI was issued in 2004. The FSs are also separate and one for CW-5 will be issued soon. PW-1 is shortly behind that and should be issued within weeks. The PP is in a draft stage right now. Greg is sure there will be small changes as regulators and stakeholders review the draft. He said depending on the feedback DOE receives, they are planning to issue a ROD by September 2011.

- Dennis said a ROD is not a public input document, it is a decision document. Public input is solicited before issuing a ROD. Paula said this is the reason DOE is briefing the Board without the draft PP. She would like to give the Board an opportunity to decide if they want to offer advice in June.
- Jean said she does not know how the regulators have a PP without an FS. Dennis said the FS is in Draft C so they have the content. He said normally a PP is issued with a draft FS. DOE did not like the first proposal very much in the 2007 timeframe and the Board was not happy with it either. EPA requested holding off on proposed plans until DOE was closer to issuing a ROD. Dennis said DOE is asking the Board to weigh in from a public policy perspective on whether DOE meets the Board's values. He asked if DOE's proposal to bring in clean fill over the top of contaminants is acceptable.
- Shelley asked what the points of compliance are. Dennis said the plutonium sites are quite deep to begin with. By the time DOE removes an additional two feet of soil they will be 23-24 feet below the surface. DOE must ensure there are no groundwater risk drivers and they have already committed to building an evapotranspirator over the top of the contamination. Dennis said the evapotranspirator is a compromise because of the argument over whether the plutonium will move. He said all plutonium sites are cleaned up below 15 feet and some are cleaned to almost 30 feet.
- Pam said there are trenches with cesium within the Central Plateau that are a long distance to groundwater. She does not have a problem with installing a barrier over cesium, but she does have a huge problem with not packaging plutonium and sending it to WIPP. Vince said there are grams of plutonium in the trenches, which is a very high level. There are also high concentrations of americium. He said a series of process mistakes can further contaminate the trenches.
- Maynard asked if there was a way to determine how broad the contamination had spread. Vince said it did not move laterally. Shelley said contamination was present all the way to the pond. Vince said there was not a lot of money for sampling, which has limited the

amount of sampling DOE was able to conduct. Shelley said she has seen sampling maps that contain hot spots.

- Maynard said the advice would depend on how easy or difficult the contamination is to remove. Greg said he is not sure the answer to that. Sampling would be required to characterize the contamination at each layer. He said the bottom of the trench would be a likely hot spot to a certain extent. These areas have already been identified as having higher levels of contamination than others.
- Vince said the trenches were only about four feet wide and two to three feet deep, which does not seem like a lot of area. Greg said the trenches are half a mile long. Dennis said the amount of plutonium is a legitimate policy question that could be incorporated into future Board advice.
- Jean said she would like the Board to offer advice on leaving the cesium in place. She said her organization (Yakama Nation) has supported the RTD, but would like DOE to go an additional ten feet. Jean offered to send the Yakama's recommendations to anyone who is interested in reading this document. Shelley asked if the advice is to dig ten feet deeper than what is currently proposed. Jean said if the current barrier is the surface level, clean dirt should be added so there is 15 feet between the contamination and the surface.
- Pam said she is frustrated that the April committee meetings were cancelled. She said RAP cannot just "wing it" and prepare advice to be presented to the Board two weeks later. Advice needs to move through committee meetings, which is difficult given the current RAP workload.
- Jean said the Board does need to offer some kind of statement since the ROD will be out in September. She suggested the Board offer a letter because the PP has already been issued. Pam said the Board could write a letter asking DOE not release the ROD until the Board has the opportunity to offer advice. Dennis said if the Board did offer such a letter, EPA would reply by saying they need to move forward. He said EPA had hoped to complete these documents earlier so the Board would have an opportunity to offer advice. Dennis added that simply hearing a sounding board at the June Board meeting would be valuable for the agencies.
- Jean said she was concerned about the emphasis on using barriers. She would like the Board to comment on that issue. Shelley said there are flow charts and previous advice on the use of barriers. Pam said the Board was referring to burial ground waste that have not been characterized. They did not address cesium contamination deep in the soil. Shelley said the Board could reference their advice from June 6, 2008. Susan H. asked if the Board needed to offer the same advice if they had already voiced their concern. Dennis said a judgment must be made. For the three sites being discussed, DOE is willing to dig two feet below the engineered structure. There is a substantial difference in cost.

- Paula said no one mentioned risk in the discussion. She asked what the risk reduction would be or the cost difference would be to dig further. Vince said the point is that plutonium exists forever, while cesium will decay. Dennis said the other proposal is to bring in three feet of clean fill without removing any contamination. Vince said the question is whether to remove two feet or four feet.
- Jean said the Yakama Nation does not want anything buried without identifying how much soil is brought in. They would like the contamination removed. Jean said they know it can decay, but they would like it removed.
- Pam asked Shelley if she would be willing to compile some advice points since she reviewed the document. Shelley agreed.
- Shelley said technetium-99 and nitrate samplings need to occur during remediation. Dennis said he is fairly confident there are no problems with technetium and nitrate. He said the only problem is possibly the new technology they are dealing with.
- Shelley asked if the Board should include an advice point about industrial use or unrestricted use for the River Corridor. She also asked if there was a screening level test for technetium. Dennis said testing for technetium is not a problem, carbon tetrachloride is a much more pressing concern in terms of testing. The agencies are not comfortable with the current numbers.
- Dennis recommended that the Board draft advice at the policy level similar to Vince's statements about how plutonium lasts forever. He said cesium is different at different waste sites and does not correspond to the discussion.
- Jean said EPA issued comments and an RTD plan for cesium, but now EPA is agreeing to a soil layer placed over the contamination and that it will be protective. Emy said the Board will see in EPA's comments that the original FS language states that cesium will decay in 350 years, which EPA does not think is a reasonable timeframe. EPA recommends Option B to remove any contamination below the ground surface. She said EPA does recognize the barrier issue as a different and new way to be protective with backfill. Dennis agreed that adding soil to create more depth (to an existing soil barrier) is precedent setting. Jean said they do not agree with the use of this approach.
- Pam said work is conducted based on budget priorities. DOE is more concerned about the Plutonium Finishing Plant being torn down than in excavating cesium.

The committee agreed to write a first draft of the advice by the following Monday; Shelley and Vince will write the first draft. Susan H. will send that draft to the entire committee. Susan H. will also circulate the handout Shelley provided to RAP and the Public Involvement Committee.

Susan H. wrapped up the meeting by saying Tuesday was a placeholder call for RAP, but it would need to be re-scheduled because of the GTCC briefing. RAP decided to have a committee call Wednesday, May 18 at 3:00 p.m. Susan H. said she would need all materials by Tuesday so that committee members would be able to review them before the call.

Handouts

- 324 Building Update River and Plateau Committee. Washington Closure Hanford, May 11, 2011.
- M-16-140 Proposed Milestones for the 100K Basins Closure Project. U.S. Department of Energy-Office of Environmental Management, May 11, 2011.
- Synthesis of the SEPA Discussion: RCRA Permit Issue Manager Meeting, April 13, 2011.
- Draft HAB Advice for the River Corridor Baseline Risk Assessment – Human Health Risk Assessment (Volume 2), Draft C.
- Alternate Advice Paragraph 1: Draft HAB Advice for the River Corridor Baseline Risk Assessment – Human Health Risk Assessment (Volume 2), Draft C.
- Background on PW-1, 3, 6 and CW-5. May 4, 2011.
- 200-CW-5, 200-PW-1, 200-PW-3, and 200-PW-6 Operable Units Proposed Plan. U.S. Department of Energy, May 11, 2011.
- EPA Comments on *Feasibility Study for the Plutonium/Organic-Rich Process Waste Group Operable Units: Includes 200-PW-1, 200-PW-3, and 200-PW-6 Operable Units, DOE/RL-2007-27, Draft C*. U.S. Environmental Protection Agency, February 24, 2011.
- 200-CW-5, 200-PW-1, 200-PW-3, and 200-PW-6 Operable Units Proposed Plan Presentation: Additional Handouts.

Attendees

Board Members and Alternates

Shelley Cimon	Liz Mattson	Dick Smith
Dirk Dunning (phone)	Vince Panesko	Bob Suyama
Dale Engstrom	Jerry Peltier	Jean Vanni
Steve Hudson (phone)	Maynard Plahuta	Steve White
Pam Larsen	Gerry Pollet	
Susan Leckband	Daniel Serres	

Others

Joe Franco, DOE-EM	Rick Bond, Ecology	Kathy Davis, CHPRC
Jamie Joyce, DOE-EM (phone)	Madeleine Brown, Ecology	Sonya Johnson, CHPRC
Arnie Edelman, DOE-HQ (phone)	John Price, Ecology	Reed Kaldor, MSA
Paula Call, DOE-RL (phone)	Beth Rochette, Ecology	Dale McKenney, CHPRC
Nick Ceto, DOE-RL	Dennis Falk, EPA	Nicole Addington, EnviroIssues
Briant Charboneau, DOE-RL	Larry Gadbois, EPA	Susan Hayman, EnviroIssues
Cameron Salony, DOE-RL	Emy Laija, EPA	Barb Wise, MSA
John Sands, DOE-RL		Peter Bengtson, WCH
Greg Sinton, DOE-RL		Don McBride, WCH
Chris Smith, DOE-RL		Mike Priddy, WDOH
Tom Teynor, DOE-RL		Michele Gerber, URS Corp
Arlene Tortoso, DOE-RL		

APPENDIX 1: TRANSCRIBED FLIP CHART NOTES

Hanford Site-Wide Permit – Draft Letter

Task:

The RAP Committee will bring a draft letter to the June Board meeting. An issue manager team (represented by Gerry P., Jean V. and Liz M.) will draft a letter for Susan Leckband's signature, including the three content points listed below. The IMs will be responsible for the draft content only -- Susan Hayman will take care of the formatting.

Content:

1. Concerned with Ecology's plan to make a decision on the site-wide permit before the TC&WM EIS is finalized. The Board feels it would make more sense to complete the EIS first.
2. Request Board review and comment on draft permit conditions before they go out for public review and comment.
3. Request Board review and comment on SEPA determinations before they go out for public review and comment.

Process:

1. IMs prepare 1-page draft letter and send to Susan Hayman for formatting by COB on Tuesday, May 17.
2. Draft letter will be distributed by Susan H. to RAP members by COB on Wednesday, May 18 for review and comment/concurrence by Monday, May 23.
3. Following any revisions from RAP members, the draft letter will be distributed by Susan H. to Board members in the Board packet on May 25.
4. The draft letter will be acted on at the June Board meeting.
5. Final letter will be addressed to Ecology, and will be either copied or also addressed to DOE (re: reference to TC&WM EIS), as appropriate based on the content.

APPENDIX 1: TRANSCRIBED FLIP CHART NOTES

Greater Than Class C Draft EIS – Draft Advice

Task:

The RAP Committee will bring draft advice to the June Board meeting. Issue Managers drafting the advice include Dale E., Shelley C. and Gerry P. The advice should be succinct and pithy, reference past Board advice, and reflect the following content points.

Content:

1. “Just say no” – advice doesn’t need to be overly technical.
2. Draft TC&WM EIS should discuss GTCC waste.
3. GTCC draft EIS doesn’t address cumulative effects at Hanford.
4. If trenches are used, the dose just from the GTCC waste is unacceptably high (48 mrem/year vs. 15 mrem/year).
5. Borehole estimates are too low.
6. No realistic consideration of a deep geologic repository is included in the GTCC draft EIS.
7. Subsequent 2022 decision would need further NEPA analysis and documentation.
8. Off-site waste should be properly treated before any disposal at Hanford (reconsider 2004 decision).

Process:

1. Dale, Liz and Gerry will provide the draft advice to Susan H. by COB on Tuesday, May 17.
2. Draft advice will be distributed by Susan H. to RAP members by COB on Wednesday, May 18 for review and comment/concurrence by Monday, May 23.
3. Following any revisions from RAP members, the draft advice will be distributed to Board members in the Board packet on May 25.
4. The draft advice will be acted on at the June Board meeting.

APPENDIX 1: TRANSCRIBED FLIP CHART NOTES

River Corridor Baseline Risk Assessment – Draft Advice

Task:

The RAP Committee will bring draft advice to the June Board meeting. A “fresh” set of RAP Committee members (Susan L., Jerry P., and Vince P.) will substantially reduce the length and technical content of the draft advice (v.6) to reflect the following content points.

Content (focus for advice):

1. Take policy-level statements from current advice and develop “forward-looking” advice that applies to the proposed plan.
2. Comment on the RCBRA as a “lessons learned” for future risk assessments.
3. Suggest that concerns identified for the RCBRA be addressed in individual proposed plans.
4. Propose the public/Board workshops described in current advice bullet #6.

Process:

1. Susan L, Jerry and Vince will provide the revised advice to Dale, Liz and Gerry by Tuesday, May 17. If there are significant concerns to address, a call will be convened to discuss with the IM group and the rewrite group no later than 3pm on Wednesday, May 18.
2. Draft advice will be distributed by Susan H. to RAP members by COB on Wednesday, May 18 for review and comment/concurrence by Monday, May 23.
3. Following any revisions from RAP members, the draft advice will be distributed to Board members in the Board packet on May 25.
4. The draft advice will be acted on at the June Board meeting.

APPENDIX 1: TRANSCRIBED FLIP CHART NOTES

PW-1/3/6 and CW-5 – Draft Advice

Task:

Issue Managers drafting the advice include Shelley C. and Vince P. The advice should be succinct and pithy, reference past Board advice, and reflect the following content points.

Content:

1. “Surgically remove” “hot” plutonium material in CW-5 to WIPP.
2. Technetium and nitrates sampling should be done to support the remedial design.
3. RTD for cesium to 15 feet below the ground surface in PW-3, instead of adding soil to create a 15 foot barrier.
4. Reference June 6, 2008 advice regarding RTD.
5. Conduct RTD concurrently with vapor extraction to ensure meeting the milestone.
6. “Plutonium is forever.”

Process:

5. Susan L, Jerry and Vince will provide the revised advice to Dale, Liz and Gerry by Tuesday, May 17. If there are significant concerns to address, a call will be convened to discuss with the IM group and the rewrite group no later than 3pm on Wednesday, May 18.
6. Draft advice will be distributed by Susan H. to RAP members by COB on Wednesday, May 18 for review and comment/concurrence by Monday, May 23.
7. Following any revisions from RAP members, the draft advice will be distributed to Board members in the Board packet on May 25.
8. The draft advice will be acted on at the June Board meeting.