DRAFT MEETING SUMMARY (v.0)

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HANFORD ADVISORY BOARD
TANK WASTE COMMITTEE
May 9, 2002
Richland, WA

Topics in this Meeting Summary

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.

Steam Reforming Primer

John Orchard, Department of Energy-Office of River Protection (DOE-ORP), gave a presentation on steam reforming technology. Bechtel gave DOE-ORP a proposal for steam reforming last August. Bechtel came back last week with some additional information and a proposal for a testing program. DOE Headquarters has challenged DOE-ORP to speed up the waste treatment process, and steam reforming looks like it could be a viable technology to help with that.

Garth Duncan, Bechtel, gave a brief overview of steam reforming technology. The baseline is to design and build a vitrification plant to produce 39,000 metric tons of high-level glass and 600,000 metric tons of low-level glass. Bechtel is looking at steam reforming in conjunction with the vitrification plant. Garth noted that steam has been used by at least three companies that they know of. One of the potential benefits of steam is that it can be put into the current flowsheet with essentially no impact to the baseline. It has very good environmental performance as a waste form. The impact of steam reforming on the Waste Treatment Plant (WTP) baseline performance, in conjunction with other initiatives, would enable Bechtel to pull the entire waste effort back to 2028. The next step is to get DOE's approval to perform a durability test on the waste product. The next step will be bench-scale testing. If those activities continue to prove that the technology works, a pilot effort will begin in 2003.

Ron Naventi, Bechtel, said that product durability is evaluated by looking at melting point and solubility. An initial quick analysis showed that steam reforming has a very high melting point, even higher than glass. John Orchard added that one possible

advantage of steam reforming is that it takes sodium and sulfate concentrations and puts them into a different waste form.

Regulator Perspectives

- Steve Wiegman, DOE-ORP, reemphasized that this plan includes all milestones to get the plant built and operating as currently designed. The steam option is included as a test and development concept.
- Roger Stanley, Department of Ecology (Ecology), was a bit skeptical in light of the huge pressure from headquarters to find alternative technologies. Ecology is open to considering whether or not there are alternative technologies that have merit.
- Al Conklin, Washington State Department of Health (DOH) commented that if steam reforming is designed into a separate facility, it would be a clean licensing product. If it is incorporated into the Immobilized Low Activity Waste (ILAW) building, it would represent a significant modification and may need controls not planned for in the existing footprint. Al was also concerned with giving adequate time to go through the licensing process.
- Steve Wiegman asked the committee to let the regulators know if the context of the report had a logical flow to it in the way they would ultimately amend the baselines. Was the committee satisfied that the process laid out the right kinds of steps? DOE-ORP wants the Hanford Advisory Board's (HAB) support if it agrees and its suggestions if it does not.

Committee Discussion

- Paige Knight asked if steam reforming reduced the volume of waste. Garth replied that, based on small-scale testing, it reduces both mass and volume. Ron Naventi said that the total number of glass containers that would be produced with ILAW would be more than the number produced with steam reforming. Roger Stanley noted that was contrary to what Ecology had heard at Cleanup Constraints and Challenges Team (C3T) sessions and needed to be verified.
- Ron Skinnerland, Ecology, asked if this would be a new facility or a system built into one of the major components of the WTP. He also asked if it would have a negative schedule impact to WTP Phase 1. Garth replied that it could be either a new facility or part of one of the WTP components, depending on the size and configuration. He did not believe there would be a negative impact to the schedule, since there would not be a change to the basic process flowsheet.
- Paige commented that steam reforming was called out in the Performance Management Plan for the Accelerated Cleanup of the Hanford Site (PMP). She wondered if Bechtel would invest its own money into this. Ron Naventi replied that Bechtel would invest its own money if it turned out to be a benefit.
- Todd Martin remarked that the sulfate issue in glass is not as much a function of the glass as it is a function of the melter that is being put into this waste treatment plant. There are tools out there for which sulfate would not be a problem. Todd said that the HAB's tank waste task force had found two values for which steam seems to apply: 1) the task force's distrust of pretreatment processes and 2) leaving room for future enhancements.

- Marty Bensky said there should be a separate effort to perform a risk assessment to determine leaching characteristics of the material.
- Ken Bracken said he was glad DOE was looking at alternative technologies but wondered how much to invest in those technologies and at what point in time the current baseline would be influenced.
- Condensation from melters is currently sent to pre-treatment. With this plan, it would be sent to a steam reformer instead. The effluent to the Liquid Effluent Retention Facility (LERF) comes from the pre-treatment plant. Instead of 1,200,000 tons, it would only be 400,000 tons, since it would be treated in the steam reformer rather than LERF. Water needs to exit the plant at some point. If it doesn't go to LERF, where does it go?

The Tank Waste Committee (TWC) discussed the path forward. The committee requested the updated report due out in July and an update at the next committee meeting on lab scale testing.

Permitting Process for WTP

Al Conklin, DOH, gave an update on the DOH permitting process for the WTP. DOH, DOE-ORP and Bechtel National decided to go with a full application, rather than phased construction. There was no way to get approval by July with continuing uncertainties in the design, and Harry Boston, DOE-ORP Manager, wrote a letter requesting phased approval for construction. DOH agreed to offer limited phasing, requiring a limited application be submitted. DOH could have a draft out by the next week and would then have no difficulty approving limited construction by July.

Another complication is that the U.S. Environmental Protection Agency (EPA) Region 10 also has to approve the project, including the monitoring equipment, which is not designed. One of the significant conditions for phased approval is that DOE-ORP has to accept the risk associated with construction. DOH has not finished its review of the rest of the design, so there is some potential it could require additional controls and change the footprint of the facility. Harry Boston has agreed to accept the risk that that might happen. Al was more concerned with Phase 2, since he still did not have a lot of confidence in the estimates for source-term or calculations for controls, etc. DOH continues to work with DOE-ORP and Bechtel on those issues. Al noted that DOH could not find the originator of a piece of uncertain data, causing DOH to look askance at other numbers as well. The lack of design was creating frustration for DOH. Al had a correction from the last HAB meeting. The concept of adding another melter to the ILAW building is a significant permitting issue. It is not a non-issue.

Ron Skinnerland, Ecology, said that Ecology is doing three permits for this facility. It is in the final process of working out the wording of the Resource, Conservation and Recovery Act (RCRA) permit, which begins a 45-day public comment period around May 15. Ecology is working through a lot of the same issues as DOH. The two air permits are Prevention of Significant Deterioration (hopefully ready for public review around May 28 with a 30-day public comment period to begin in June), and toxic air

pollutants and criteria pollutants (set to go out for public review at the end of May at the latest). Ecology should have all public comments by the middle of July.

Paige Knight asked if the whole unique permitting process pressure would let up after July 7. Steve Wiegman said that there would be pressure on DOE-ORP until the plant was operating at a uniform rate. Al Conklin said permitting would be a significant issue for DOH for many years to come. Ron Skinnerland said that when Ecology gets information on the compliance schedule for design information, it will have time pressure to turn that around and conduct demonstration tests when the facility is ready to operate.

The TWC discussed the path forward on the WTP permitting process. The committee agreed not to comment on the permits as they are released. Leon Swenson suggested that the agencies or TWC provide an update at the next HAB meeting.

Ron Naventi said that DOE-ORP and Ecology should be complimented, noting that three years of design and four years of construction were occurring in parallel. Ron pointed out that Bechtel was setting up internet access to a data warehouse with all of the permit information.

Updates

Potential Showstoppers

Todd Martin said that one potential showstopper with the WTP is bubbler performance risk. Harold Heacock added a corollary issue about the ability to retrieve waste from tanks and make sure they have a viable tank farm complex.

Joel Ecker, CH2M Hill Hanford Group (CHG), discussed tank farm risk. The top risk for CHG is the overall waste feed delivery system and getting a compliant and safely installed system in place. They will need too many expensive upgrades to transfer systems over the next several years. CHG will be working in multiple tank farms at the same time while continuing to operate the facilities, so they will have to maintain facilities and safely install new equipment. The size of lines to the vitrification plant is not really an issue; it is more about staging and getting waste ready to be taken to the plant. Right now the top risk is waste feed delivery. The second risk is if they cannot get treated waste coming out, the facility would not be running for very long. Both ILAW and upgrades to the canister storage building are issues and must be constructed in time to meet the needs of the WTP. The third risk is single-shell tank retrieval. The cold test facility is pretty much complete and will be dedicated in the near future.

Joel noted that Bechtel, DOE-ORP and CHG have formed a committee and put together a systems integration plan where they lay out the operating methods of the vitrification plant and, at a high-level, the tank farms. They will then put it under configuration controls, to ensure the whole system works as the plant changes.

Staffing and Workscope Update

Steve Wiegman said that the work scope is high, and staffing is low. This is still an issue between DOE-ORP and headquarters. DOE-ORP has been filling the gap with consultants. Paige Knight was very concerned that the PMP calls for a ramping up of staff, while DOE keeps ramping down managers.

Status of DOE Budget Requests

Steve Wiegman discussed the status of DOE-ORP's budget request for FY03 and FY04. FY03 is still on track. The split that Steve had shown earlier between DOE-ORP and DOE-RL no longer exists, since Jessie Roberson, DOE Assistant Secretary, has not yet made that decision. Until Jessie decides on the split for FY03, DOE-ORP cannot prepare the FY04 budget. The FY04 budget delivery has been changed. DOE-ORP owes something to headquarters on May 20 and another, more detailed delivery in June. During the public meetings in late May, there will be an emphasis on describing the PMP and its implications for the budget.

Cold Test Facility

Joe Cruz, DOE-ORP, gave an update on the Hanford cold test facility. The facility has been designed to support needs of both single-shell tank (SST) and double-shell tank (DST) programs. The facility has been located near the Hazardous Materials Management and Emergency Response facility (HAMMER), so they can share resources. The intent is to make the cold test facility as accessible and open to people as possible because seeing one of the tanks changes people's perceptions of the cleanup. People should call Joe or Jim Thompson if they would like to schedule a time to view the facility. Joe added that they would be doing a media event, which will be broadcast on tv.

Ken Bracken suggested they have examples of pumping systems for the public, if possible.

Public Status Tracking Chart

Paige Knight updated the committee on the public status tracking chart. Her group, Hanford Watch, has been tracking tanks issues. Paige shared a form she had developed that can be updated and made available for the general public. Issues are marked with a "t" for trouble, "p" for potential trouble, and "o" for on track. Paige noted that Todd Martin could help her write short definitions for each item. Her goal is for the public to get easy access to understandable information, so they can get behind the activities and support them.

Doug Huston suggested Paige get comments on the chart from the Public Involvement Committee (PIC).

Gordon Rogers and Ken Bracken thought the form should be set up like a table of contents, where people could click on an issue to go to a more detailed data page.

Todd Martin suggested that public comments be included with the form.

Project Review Meeting Update

Pam Brown gave an update on the April 17th project review meeting. Things seem to be pretty much on track, and Pam was very encouraged with the progress. Bechtel National (BNI) and DOE are confident they will pour concrete in July. This is good news as it was not scheduled to occur until November, giving a buffer as construction proceeds. One cost challenge is that BNI has been asked to build a lab that either was not planned or was not supposed to be as elaborate, so that will impact the baseline.

Pam also referred to an article she had sent out from a CHG tank technology management publication, which addresses alternative technologies for tank waste treatment. Under the C3T process, DOE is working with Ecology and EPA on selecting alternatives that could be evaluated for alternate paths for some low-activity waste. DOE is documenting four alternatives in the PMP that it thinks will be high on the consideration list for initial testing during this year and next year.

Pam wondered if DOE-ORP was still interested in bulk vitrification, since it was not very interested one year ago. Steve Wiegman told her that it was interested enough to take another look. He commented that the TWC might want to take a look at the other three options being considered (bulk vitrification, fractional crystallization, and grout), as it had done for steam reforming.

Workplan Review and Draft Accelerated Closure Work Plan

The TWC discussed which issues arising from the PMP specific to tank waste should be noted for the next Committee of the Whole meeting.

Steve Wiegman asked the committee what ideas they do not want to lose, no matter what budgeting process DOE is in. He said he wanted the TWC's help with getting a plan that is credible and allows them to move forward. Steve said it would help if they shared, from the perspective of people in the Northwest, what risk means in relation to DOE's statement that it can accelerate it. Also, what is the HAB's expectation of the quality of cleanup on the current baseline compared to what DOE thinks it is doing.

Committee Discussion

- Pam Brown noted that the PMP talks about proceeding with tank closure, and it would be interesting for the TWC to know how they plan to do that. It might be a good idea to insert "real interim closure" into the language of the document, rather than "real closure."

- Paige Knight asked when all of the negotiating would occur. Steve Wiegman replied that DOE has to produce the PMP before the C3T process is completed. Closure is the biggest gap, and that is where the most conversation has to occur between now and August.
- Todd Martin said that he would like to see the rationale for the acceleration alternatives that were selected. Also, some of the proposed tank acceleration options seem to present large challenges to maintaining Tri Party Agreement (TPA) compliance, such as closure and not retrieving all of the waste.
- Ken Bracken endorsed looking for alternatives, as long as they do not change the baseline. Grout would be acceptable if it met criteria for the Atomic Energy Act (AEA) requirements and environmental requirements for disposal.
- Pam Brown commented that alternative technologies for treating tank waste make many people nervous because they think the waste would stay in their backyard. The HAB will want to know what the path forward is in terms of technical analysis and National Environmental Policy Act (NEPA) scrutiny for the alternatives.
- Todd Martin shared his ideas on the PMP. He had six items of note: 1) The HAB should thank the agencies for putting in language about being committed to using the processes and cleanup objective within the TPA to deploy the plan. The agencies should not remove that language before August 1. 2) Between now and 2012, several hundred million more dollars would be spent every single year on Hanford cleanup. The HAB recognizes that this is a heavy lift. 3) The HAB has always been in favor of acceleration, and it is okay to consider the plan as long as it does not cause any unwise actions today. 4) A lot of detailed work needs to be done on the technical and regulatory assumptions. 5) The HAB should succinctly reiterate its expectations and assumptions about cleanup. 6) What is risk reduction?
- Pam Brown commented that Jessie Roberson said risk has to be decided by the site, and a definition will not come from headquarters. The material in the tanks continuing to leak is a risk to the region, so getting material out of the tanks faster is a risk reduction to the region. If steam reforming is used, what is the risk to the region of the waste form they will end up with?
- Doug Huston said committee members should be prepared to discuss the PMP at the May 21st Committee of the Whole meeting, so they can put together advice at that time. Doug asked that people provide comments on the task force's draft advice by May 17th, and he would have more finalized advice ready on May 20th.

The TWC discussed and updated its work planning table.

The TWC agreed by consensus that for the coming year, Doug Huston will be TWC committee chair, and Leon Swenson will be vice chair.

Handouts

- TWC Draft Meeting Agenda; May 9, 2002.
- TWC Work Planning Table; March 5, 2002.
- Letter to Harry Boston, Al Conklin, Washington State Department of Health; May 6, 2001.

- Waste Treatment Plant Phase 1 – Notice of Construction Outline, from WAC 246-247 Appendix A; May 9, 2002.
- Letter to Al Conklin, Harry Boston, DOE-ORP, re: U.S. DOE-ORP Request for Phased Approval to Start Waste Treatment and Immobilization Plant (WTP) Construction by July 2002; April 25, 2002.
- Risk Assessment Results; May 9, 2002.
- BNI-DOE WTP Project Review; March 2002.
- Draft Hanford Tank Waste Issues Tracking; May 9, 2002.
- Hanford Cold Test Facility Summary Sheet, Joe Cruz, DOE-ORP; May 2002.
- Waste Treatment Plant Project Top Programmatic Risks and Technical Risks; May 9, 2002.
- River Protection Project Waste Treatment Plant – Steam Reforming Briefing to Hanford Advisory Board, DOE-ORP; May 9, 2002.

Attendees

HAB Members and Alternates

Marty Bensky	Doug Huston	Jeff Luke
Pam Brown (by phone)	George Jansen Jr.	Todd Martin
Jim Curdy	Dave Johnson	Gordon Rogers
Harold Heacock	Paige Knight	Leon Swenson (by phone)

Others

Dennis Bowser, DOE-ORP	Robbie Biyani, Ecology	John Britton, BNI
Mary Burandt, DOE-ORP	Ron Skinnerland, Ecology	Suzanne Heaston, BNI
Joe Cruz, DOE-ORP	Roger Stanley, Ecology	Sue Kuntz, BNI
Al Hawkins, DOE-ORP		Sandi Murdock, BNI
Lori Huffman, DOE-ORP		Ron Naventi, BNI
Billie Mauss, DOE-ORP		Janet Roth, BNI
Delmar Noyos, DOE-ORP		Lynn Lefkoff, EnviroIssues
John Orchard, DOE-ORP		Natalie Renner, EnviroIssues
Yvonne Sherman, DOE-ORP		Barb Wise, Fluor Hanford
John Swailes, DOE-ORP		Sandra Lilligren, Nez Perce Tribe
Russ Treat, DOE-ORP		Peter Bengtson, PNNL
Don Wodrich, DOE-ORP		Al Conklin, WDOH