DRAFT MEETING SUMMARY (v.1)

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HANFORD ADVISORY BOARD
TANK WASTE & HEALTH, SAFETY & ENVIRONMENTAL PROTECTION & BUDGETS & CONTRACTS COMMITTEES
October 8-9, 2003
Richland, Washington

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

Joint Committee Meeting with Tank Waste and Health Safety and Environmental Protection Committees

Tank Farm Safety Issues

Keith Smith, chair of the Health Safety and Environmental Protection Committee (HSEP), stated the issue of tank vapors is not a new subject. The discussion at this meeting is to focus on what the tank vapor issue is, what is being done about it, how it will be approached, and the effects to mitigate it. Also, the committees would like the speakers to identify how the Integrated Safety Management System (ISMS) broke down, what is being done to re-energize the process, and what the plan is to use ISMS to meet these safety issues.

John Swailes, Department of Energy-Office of River Protection (DOE-ORP), talked specifically to the vapor issue, and more broadly of the integration of safety processes into the day-to-day processes.

The Hanford tanks contain mixed wastes with both radioactive and chemical hazards. Chemical vapors are emitted from the tanks through designed ventilation points and from other tank penetrations. The tank waste and vapors, though thoroughly characterized in the past, are now being re-measured and re-characterized and vapor controls for worker protection have been implemented. There must be good trust and integrity for the project to move forward. It is important to take employees' health concerns seriously, so no effort is made to determine the difference between what people may perceive as a health issue or what may be an actual health concern.

The recent vapor exposures have been below the established industry exposure limits for ammonia, butanol, and nitrile. Due to the difference in individual tolerance levels, however, vapor exposure symptoms have varied. In response to these vapor issues, DOE-ORP's Safety Division performed five assessments of the contractor's safety programs. Two independent assessments of the contractor's Safety Programs and DOE-ORP oversight were completed.

DuPont was contracted to review the tank vapor issues. A draft copy of the report was determined by DOE-ORP to be a thorough review with sound recommendations. The report contained the following recommendations:

- Analyze workplace-monitoring results and develop controls using a statistically sound model.
- Improve management and worker training on chemical hazards and risks of exposure
- Implement engineering controls to minimize the exposure of workers to tank vapors
- Improve communication between workers and management

In summary, DOE-ORP mandates and ensures that its contractors perform work in a safe manner. Based on assessment results and daily reviews, DOE-ORP has determined that the contractor is taking appropriate action to address the vapor issues. John Re-emphasized that vapor concerns are being addressed in a systematic manner to ensure the continued safety of the workers.

Joel Eacker, CH2MHill Hanford Group (GHG), provided a brief overview of the vapor situation. Workers have been exposed to chemical vapors that are at levels below occupational exposure limits, however, these exposures have impacted some workers. CHG is using its established learning and improvement processes to minimize these impacts and address worker concerns.

Vapor releases are more significant in single shell tanks (SSTs)because double shell tanks (DSTs) have active ventilation. SST vapors are released through passive vents, penetrations, seals, and other pathways.

The tank farm industrial hygiene program is based on extensive sampling and monitoring data. Monitoring requirements are established on a case-by-case basis using a graded approach that considers the nature of the tank and the work activity. Worker health is

monitored through established medical programs overseen by Hanford Environmental Health Foundation (HEHF).

Joel briefly reviewed exposures:

- ⇒ During 2002, a total of nineteen workers reported exposure to vapors and received medical evaluation. Only one of these was considered an OSHA Recordable due to the administration of a prescription medication.

- ⇒ Between January and September 30, 2003, a total of forty workers reported exposure to vapors and received medical attention. One of these exposures resulted in a lost day, Occupational Safety and Health Administration (OSHA) Recordable.

CHG is committed to improving the margin of safety for its workers and is addressing their concerns. Even though vapor levels are within established limits, they are still impacting workers. CHG is committed to making improvements to minimize vapor exposures. The recommendations from the DuPont report are currently being implemented. Additionally, the Vapor Solution Team, which is lead by workers, continues to assist with vapor issue resolution.

Several engineering improvements are being made to reduce the frequency and intensity of exposures, including sealing fugitive emission pathways in tanks, raising the stack height in tank C-103, and other physical improvements such as filters that absorb chemical vapors.

Improvements have also been made to the respiratory protection provided to the workers. Worker involvement helped identify the new Powered Air Purifying Respirator, which is now being pilot-tested on the site. Half-face respirators are also being evaluated as protection from "nuisance level" vapors. Carbon filter "nuisance masks" are made available to workers who desire them.

Joel introduced Dr. Larry Smith, who oversees HEHF. Larry stated that all workers in the tank farms are enrolled in the hazardous worker program. Extensive evaluations of each worker are completed annually because the waste is not broadly quantified. If when an exposure is reported the source is known, there is a specific protocol to follow. In many cases, however, the exposures are unquantified and unqualified so it is necessary to take an aggressive, broad-based and comprehensive path. .

The most important part of the process is maintaining open communication. Not only are potential adverse health affects being addressed but also anxiety and concerns. Workers are asked to report back after three or four days, face to face, even if they are feeling fine. After thirty days, workers are sent a letter with a self-addressed envelope asking that any questions be sent back to the medical team.

Larry also pointed out that often the exact cause of symptoms cannot be determined because the chemical levels in the body are too low. The workers have a difficult time

understanding why test results are normal when they felt sick. Because of this, there is mistrust of the physicians, so whatever can be done to help workers deal with anxiety and concerns is done. Second opinions and specialist referrals are often important pieces of this.

AW-01A Contamination Event

The AW-01A Contamination Event occurred during pit upgrade work. During the removal of a waste transfer hose, a powdery substance rolled out of the hose onto the floor. The pit cover was replaced to stabilize the condition of the equipment and site. Eighteen workers were potentially impacted. Fifteen workers were found to have low-level internal uptakes and six were identified with skin and nasal contamination. Follow-up blood analysis on these workers found no abnormalities.

To prevent another similar incident in the future, the following corrective actions have been taken:

- Work will be re-evaluated if there is significant potential of radiological or chemical contamination.
- Integrated documents for responses to personal contamination were developed. This includes the protocol for returning to work.
- Job Specific Enhanced Work Planning has been implemented for pit work.
- The response for all unplanned spills/leaks will be per Abnormal Operating procedures.

To ensure that these changes are effective, an endpoint assessment will be performed to prevent a recurrence. This incident drove management to look at the performance indicators, some of which indicated that safety procedures were not headed in the right direction. A team was created to look at many factors and several suggestions have resulted from this process, some behavioral-based and others performance-based. Also, an observer program has been put in place to monitor workers' adherence to safety procedures in a non-threatening way.

Committee Discussion

- Keith stated he appreciates the energy that has gone into this program. He believes if the project continues along this path, it will be fine. Marjory Swint congratulated CHG on having DuPont perform the review. .
- Doug asked committee member Becky Holland what the perspective is from the workers. Becky stated there is a vapor issues team because workers are concerned. This group has called out a variety of issues of concern which CHG is currently looking into. She feels she has gotten adequate responses to some of her questions.
- The Government Accountability Project (GAP) has produced a report based upon worker testimony and footnotes from CHG and DOE regarding these concerns. Tom Carpenter commented he is disappointed that no one from CHG or DOE has called him to discuss these concerns. Joel stated that while CHG appreciates feedback, they

do not necessarily agree with everything in the GAP report. Steps have been taken to improve documentation and an external law firm has been hired to look into allegations of falsification of documentation.

- Tom asserted that DOE is requiring workers who have more than three injuries to speak to management about why they are an unsafe worker. It is the perception of the workers that they should not report their own accidents or they will lose their jobs. Joel clarified the worker will have to explain what happened, what could have been done to avoid the injury, and what can be done in the future. For a lost time accident, the discussion will be at the Deputy Manager level after every accident. CHG is working to include the employees in this process and have hired Little Harbor Inc. to help ensure that CHG is addressing these issues correctly.

Wednesday Handouts

- Tank Farm Vapor Issues, John Swailes, October 8, 2003
- AW-01A Contamination Event, Joel Eacker, October 8, 2003
- Improved Worker Protection from Chemical Vapors, Joel Eacker, October 8, 2003.

Wednesday Meeting Attendees

HAB Members and Alternates

Shelley Cimon	George Jansen Jr.	Richard Smith
Dirk Dunning	Susan Leckband	Margery Swint
Harold Heacock	Todd Martin	Amber Waldref (via phone)
Rebecca Holland	Keith Smith	Dave Watrous

Others

Beth Bilson, DOE-RL	Max Power, Ecology	Pam Doctor, BHI
Steve Chalk, DOE-RL	Dennis Faulk, EPA	Nancy Myers, BHI
Kevin Clarke, DOE-RL	Larry Gadbois, EPA	David Houghton, BNFL
Jim Daily, DOE-RL	John Martell, WDOH	Joel Eacker, CH2MHill
Larry Earley, DOE-RL	Mike Priddy, WDOH	Liana Herron, EnviroIssues
Jodi Manley, DOE-RL		Lynn Lefkoff, EnviroIssues
John Sands, DOE-RL		Penny Mabie, EnviroIssues
Yvonne Sherman, DOE-RL		S. Kooiker, Fluor
Mike Thompson, DOE-RL		Barb Wise, Fluor
Robert Barr, DOE-ORP		Chuck Wolfe, Fluor
Greg Jones, DOE-ORP		Jan McKee, HEHF
Erik Olds, DOE-ORP		Joseph Samues, HEHF
		Larry Smith, HEHF
		Peggy Terlson, Innovations
		Sharon Braswell, Nuvotec
		Tom Brouns, PNNL
		John Stang, TC-Herald

HANFORD ADVISORY BOARD
TANK WASTE & BUDGETS & CONTRACTS COMMITTEES
October 9, 2003,
Richland, Washington

Doug Huston, Chair of the Tank Waste Committee, opened the day and welcomed the committees. The August Tank Waste Committee meeting summary was adopted.

Department of Energy-Office of River Protection (DOE-ORP) Baseline

Steve Wiegman, DOE-ORP, discussed the new DOE-ORP baseline. The baseline is now structured differently than in the past. Due to this restructuring, some of the questions posed by the committees have not been answered. This fiscal year, DOE-ORP will be managed as two principle projects: the construction of the Waste Treatment Plant (WTP), which is fully approved through hot commissioning and the baseline that has been set; and the tank farms, which will become a single project managed within the department. This will be very challenging because it is a long-term project with many components. This part of the project will include the vitrification plant operations and will also include all system operations, the waste retrieval and delivery system, the single-shell tank farm closure, the development and deployment of supplemental technology, disposal of Low Activity Waste (LAW), the storage and shipment of High Level Waste (HLW) canisters, and the WTP operations after hot commissioning.

John Swailes, DOE-ORP, is the director of this new project. The one exception to the two-project management scheme is the Canister Storage Building (CSB), which will continue as a separate capital project and will be funded as a line item. Steve noted one of the most significant changes with the baseline is, in the past, it established the delta between the baseline and the contract funding. This delta no longer exists, because the funding profile must now match a contracting profile, which is laid out in a series of baseline change requests (BCR) that accommodate the difference between the two. Once this is done, the new baseline must be reviewed by a DOE-Headquarters (DOE-HQ) change board and then the Undersecretary. This ensures the baseline will have a credible framework for Congress. The recommendations from these reviews are incorporated into the baseline. With a project of this scope, the challenge is how to best manage the baseline on an annual basis. The baseline includes very specific milestones for a variety of actions to ensure the productivity of the project.

The commitment to the schedule is not be diminished by this baseline but rather the schedule is being accelerated. DOE is committing to complete all the treatment by 2027 or sooner and the baseline is being structured to ensure this. For this schedule to work, it will be necessary for the baseline to be adequately structured. The WTP will need to be completely commissioned on time and the supplemental technology will need to be online at the same time in 2011. Because the CH2MHill Hanford Group (CHG) contract ends in 2006, it is necessary to establish a contracting strategy that is committed to a stable project, which is completed on or ahead of schedule.

The team is in the process of developing a plan to retrieve all the single-shell tanks (SST) by 2018. The tank farms are now connected to the WTP site by pipeline and the systems are coming together. The C-106 closure demonstration is underway and the S-112 demonstration has started. The issuance of the tank closure Record of Decision (ROD) is underway and the Supplemental Technology Environmental Impact Statement (EIS) will be started in the spring. The intent is still to package some of the waste as transuranic (TRU) waste and ship it to the Waste Isolation Pilot Project (WIPP). The current baseline re-structuring supports this schedule and will provide the details of how this schedule will be accomplished. The key programmatic risks are put on the schedule to determine when these must be addressed. There are still many steps to determine and it is important to stay focus on risk management.

Leon Swenson asked if the push toward privatization of waste cleanup will change the way funding is allocated each year. Jennifer Sands, DOE-ORP, stated the only change is in the way money is allocated between projects. Only capital improvement funds must stay with a specified project. For all other projects within a same line item, funds can move between projects. Steve added this provides a more apparent picture of how funds are spent. In a project with this many pieces, it can be difficult to have the right context described at the correct levels and still ensure the BCR's are approved.

DOE-ORP Baseline Questions/Responses

The Tank Waste and Budgets and Contracts Committees submitted questions regarding the DOE-ORP baseline in August. Steve provided a handout with each of the questions and a response to each of those. He briefly reviewed the answers to each of the questions

The budget forecasts for the CHG responsibilities show significant changes, up to $100 million, per year. How will budget changes of this magnitude be effectively accomplished and not result in significant disruptions of the work force? The estimated cost and contract funding profiles have been brought into alignment for the contract period. No further significant disruptions to the workforce are anticipated.

- Gerry asked if the committee can receive the updated budget profile. Steve replied this will be available at the end of the year after it has been approved by DOE-HQ.

Could the committee receive additional information regarding the costs for tank closure? The current estimated cost for tank closure is substantially less than the cost of the C-106 demonstration project. Recent Value Engineering studies found overlapping layers of duplicative documentation, unnecessary engineering analyses, costly removal and disposal of contaminated but re-useable retrieval equipment, expensive restoration of supporting infrastructure, and less than optimum deployment of field resources. It is anticipated that many of these can be addressed to reduce overall costs.

Regarding tank closure, how will the work be accomplished? This will be done by: retrieving the tank per the ongoing retrieval program, preparing the necessary closure

plans, completing other required documents and planning public involvement activities. The end state of tank closure will be decided through the appropriate regulatory processes. The costs for a tank closure range from two to ten million dollars. These estimates are based on data from other DOE sites, actual cost information, application of lessons learned, and the application of several suggestions from Value Engineering Studies.

- Todd Martin asked if DOE-ORP is still committed and will continue to stay committed to performance based retrieval. Steve replied this is the case.

- Suzanne Dahl, Washington State Department of Ecology (Ecology), asked if the closure plan for C-106 has been certified. Steve replied he thought Ecology had an interim closure plan. Suzanne stated it is a component closure plan for C-106 and C farm. It is still necessary to consider the cumulative plan. Closure plan permits are in the process of being written and these will be released for public comment. Ecology continues to maintain that as much waste as technically possible must be retrieved, in order to comply with the Nuclear Waste Policy Act. The risk-based approach ignores that groundwater will be at the site forever and that it is important the aquifer not be degraded.

- Gerry Pollet expressed concern about closure plans. Originally, interim closure was not to become final closure and an end state. He asked how a final closure permit can be drafted without an EIS. Steve replied that no closure plan has been certified. Suzanne stated that what is envisioned is that the work would be done through component closures. Dependent on how well the tank is retrieved, interim closures could be taken which would become final. A closure plan permit cannot be issued until the Tank Closure EIS is released.

- Gerry asked how a permit can be processed without the proper risk analyses. Suzanne stated a cumulative look must be provided. A risk assessment has been completed that addresses vadose zone characterization, and an estimate of what residuals are left in the tank. There are also assumptions on what will be left in C-106. This provides a general idea of what a permit will look like. A permit cannot be written until it is known what will be left in the tank.

- Gerry asked if the baseline will reflect the addition of a leak detection system before retrieval as well as a vapor emission control system. Steve replied that DOE-ORP has committed to demonstrating an advanced leak detection system as well as vapor control.

What is the schedule for the performance of the required tank closure work and regulatory compliance? The current baseline schedule will provide retrieval and interim closure of 26 tanks over the next three years. The number of tanks per year will depend on double shell tank (DST) space and WTP interfaces including waste feed characteristics, waste types, regulatory approvals, and availability of supplemental

treatment/disposal pathways. All tanks required by the Tri-Party Agreement (TPA) are currently scheduled to satisfy the TPA requirements.

How does the proposed tank closure schedule relate to TPA commitments? The proposed schedule for SST retrieval and closure supports TPA commitments including modifications to the M-45 milestones in the recently approved Change Request M-45-02-03. Due to the integral relationship between waste treatment capacity, DST space, and SST retrieval rates, the current project completion of SST retrieval and closure is 2024.

What are the risks to the workers, public, and environment for the proposed actions? The most comprehensive estimate of risk for tank waste activities was completed in the 1998 Tank Waste Remediation System (TWRS) EIS. The new Tank Closure EIS is under development to examine closure and disposal options for tanks and tank wastes. Safety to the workers, public, and the environment is central to DOE-ORP's operations. Analysis of risk at Hanford is a continuous and ongoing process. Risk to the workers is embedded in the work planning process and the Integrated Safety Management System (ISMS).

How will the removal of TRU waste from the tanks be accomplished? A vacuum system will be used as the waste retrieval approach for all of the 200-series tanks. The vacuum is introduced to the tank waste by means of an articulating mast system (AMS) that has a horizontal reach of 15 feet, and rotational capabilities of 360 degrees. This system is identical to the AMS and vacuum system designed for tank C-104 and used in the mobile retrieval system design.

When will the required National Environmental Protection Act (NEPA)/Resource Conservation and Recovery Act (RCRA) reviews and RODs for the proposed acceleration actions that are excluded in the baseline be available? NEPA reviews are currently ongoing. Low-level mixed waste (LLWM), contact-handled (CH) TRU, and remote handled (RH) TRU activities will be evaluated as part of the Tank Closure EIS. However, the extensive body of existing NEPA documentation that has been developed for the tank waste is currently being evaluated to determine if it already provides NEPA coverage for CH-TRU activities.

Discussions are ongoing with Ecology on RCRA permitting for the CH-TRUM Waste project, and permitting documentation is scheduled for submittal to Ecology for review in October 2003.

- Several committee members stated they are surprised to see that DOE-ORP is trying to use existing NEPA documentation for EIS coverage of current TRU activities.

When will an acceleration program schedule and funding profiles at the Work Breakdown Structure level be available? These should be available in December after they are approved by DOE-HQ.

- Harold Heacock asserted that that the committee had been led to believe these items would be available in October. Steve commented that the approval process has been lengthened due to changes in the baseline. As the project has evolved, so has the review process. Steve is sympathetic to the frustration; he is also frustrated that he does not have the requested information.

- Melinda Brown, Ecology, asked if DOE-ORP is working with DOE-RL to develop a site-wide baseline. Steve replied that the fundamental structure of the site-wide baseline has been developed. Discussions are in progress to address how to mesh all the parts together.

What previously approved work scope items have been deleted from the present baseline? Any scope that is not needed to achieve TPA commitments has been removed. One example: miscellaneous and unscoped equipment upgrades were deleted. Equipment will be fixed where required by maintenance staff. Additional HLW storage modules that are not required per the repository-shipping schedule were also deleted.

- Jeff Luke noted that the Health, Safety and Environmental Protection Committee (HSEP) would be interested in more information about what the deleted equipment upgrades were.

- Al Boldt asked why the third LAW melter in the WTP, which has been deleted from the baseline, does not show up on the list of deleted scope. Steve replied they were thinking of this in terms of the DOE line item and the CHG baseline for the WTP, not the TPA.

How many of the SSTs in the initial closure list are leaking or were previously classified as leaking? None of the tanks is known to be currently leaking. The Integrated Management Acceleration Plan (IMAP) identified 12 tanks as potential or historical leakers.

Is a specific work plan available for the retrieval of material from the initial group planned for closure? A "Functions and Requirements" document supports each tank retrieval. These documents are reviewed and approved by Ecology. Appropriate RCRA closure plans are being developed to support the closure activities.

What work and funding are included in WBS 5.07.02? Work includes activities not otherwise covered by other WBS elements to comply with the TPA. This includes compliance efforts to meet the requirements of TPA milestones M-23, M-48, and M-46. It also includes Tank Farm Contractor involvement in site-wide permitting and reporting, compliant solid waste management operations, compliance upgrades to the DST systems, and tank waste volume management operations.

- Gerry commented the committee wanted to link actual dollars with the work being done. Steve replied when the updated BCR is approved he will provide that level of detail.

What is the work task and funding relationship between the BCR, IMAP, and the TPA? The BCR is a statement of what the contractor wants to achieve. The TPA lays out the fundamental regulatory process and the commitments to achieve. The primary target is the TPA commitments. The TPA is what has to be met; the BCR has to meet the TPA; and the IMAP is how the contractor is going to meet the BCR.

What additional information supports the $1.4 billion supplemental technology life-cycle cost? Life-cycle cost estimates, scope descriptions, schedules, and assumptions are being matured as part of the technology selection process. Current estimates are $0.9 billion to $1.5 billion. These figures include dealing with the secondary waste streams.

Is the estimated $20 billion life-cycle reduction for processing tank waste still valid? DOE-ORP believes this figure is still valid. The Fiscal Year (FY) 2001 DOE-ORP life-cycle cost in the DOE financial statements was $46.1 billion. Savings to date include: 1) $12 billion for the elimination of the second vitrification facility, and 2) about $6 billion for revised waste retrieval estimates moving from a technology demonstration approach to a production approach which makes more use of standardized equipment, fewer technology demonstrations, and fewer equipment procurements since the equipment will be mobile and deployed on multiple tanks,.

The basis for this estimate: the estimated $20 billion savings for the tank program in the 2002 Hanford Performance Management Plan (HPMP) was a rough order of magnitude estimate based on possible savings that might be achieved through the acceleration of tank retrieval, treatment, closure, and elimination of the second vitrification facility.

- Gerry asked if supplemental technology will really save $20 billion. Steve replied this figure is based on the early project figures and the baseline currently being projected. Gerry asserted that DOE-ORP is using an inflated cost figure for the second plant; it is not truly clear if there is a cost savings achieved by not building the second plant. Suzanne added that she is concerned that decisions are being made in the 2005/2006 timeframe and one of the possibilities is a second vitrification plant. She shares Gerry's concern that this baseline is not an adequate base from which to have a discussion.

- Jeff Luke asked if DOE-ORP appears to be using the 1995 baseline that included higher costs because it reflected the privatization concept. Jennifer replied the 2001 baseline was used for comparison purposes. However, the updated costs for the WTP were not included nor was the second plant and the associated $12 billion cost. Gerry asserted the public is being misled into thinking the potential savings are much higher than they actually are. He is concerned that the $20 billion savings estimate is based on a discredited plan, so there is not an accurate estimate for what the cost savings would be from diverting from the TPA path. Steve replied they are still trying to determine this.

What are the estimated costs of the additional infrastructure needed to add the third LAW melter? This will be evaluated if required. Two melters can process the same amount of waste as three due to throughput constraints. The committee initially asked for this information because they believe the most cost efficient and lowest risk method of treatment is to have the third melter.

How much of the LAW is plan to be vitrified? Based on the System Plan Rev. 2, there are two cases being evaluated.

Case 1 is the Target Case. Under this case, 40% of the LAW waste stream will be processed through the LAW Vitrification Plant and 60% is planned to go through supplemental treatment. If bulk vitrification technology is selected, the remainder of the LAW waste stream would be processed as bulk glass (a bounding case). However, there are three supplemental technologies being considered which could result in a reduction in the amount that would be processed using bulk vitrification.

Case 2 is the Stretch Case. Under this case, 60% of the LAW waste stream will be processed through the LAW Vitrification Plant and 40% is planned to go through supplemental treatment. Again, if bulk vitrification is selected, the remainder of the waste stream would be processed as bulk glass (a bounding case). If the other technologies are selected, the amount of glass would be reduced accordingly.

How will the increased vitrification plant cost be coordinated with increased CHG cost projections to provide a flat funding profile? There is no change in the annual funding requirements for the River Protection Project. The increased WTP cost does not modify the $690 million funding level, it just adds two more years at $690 million. In addition, the CHG contract states that DOE will provide $360 million annually for FY 2004-2006.

Committee Discussion

- Several committee members expressed the opinion that the committees did not get the information they asked for.
- Gerry reemphasized the estimate of supplemental technologies saving $20 billion is inaccurate. He suggested it is also unwise to proceed as if removing the third melter is a given because it may still be the best investment from a risk and cost standpoint. Suzanne replied that the permit modification for the removal of the third melter will be released for public comment in the next couple of months. Doug Huston added that there are two questions: Is $20 billion still the accurate cost for completing the mission? and, What is the cost comparison between building the second LAW facility and supplemental technologies?
- Suzanne asked what the cost benefit is of adding the third melter and what are the additional costs of making the necessary modifications. Doug noted there are additional questions stemming from the original set of questions.
- Harold Heacock expressed concern that DOE-ORP and Ecology are moving toward supplemental technology too fast. While this may be the correct way to go, there are

still a number of questions and risks that need to be resolved before a decision is made. It is important to identify the risks before resources are irretrievably committed.

- The committees decided that advice is needed addressing the $20 billion figure, the lack of NEPA coverage for TRU decisions, and the removal of the third LAW melter.
- Todd Martin stated it is not clear from DOE-ORP's answers where the rigor in the decision making process is. He believes it is appropriate to issue advice on the $20 billion figure and perhaps the Board should formally submit comments to Ecology on the permit modification for the removal of the third melter.

Tank Waste Committee Meeting

Status of M-45 Negotiations

John Swailes, DOE-ORP, briefly reviewed the status of the M-45 negotiations. These negotiations will establish milestones for near term SST retrieval and closure between now and 2006. The second part of the negotiations, milestone M-45-00C, drives the planning for the second phase of SST retrieval and closure between 2006 and 2015. Having this process split adds operational and procedural flexibility. What results from these negotiations will be a streamlined and integrated closure process. There will be an annual update to the TPA agencies on progress and status.

Preliminary meetings were held in September and October for information exchange and discussion. Formal negotiations will begin in November; these must be completed no later than February 2004. DOE-ORP's goal is to reach full agreement with Ecology on how to proceed with SST retrieval and closure mission.

Roger Stanley, Ecology, stated that, since M-45-00C is a major milestone, the Environmental Protection Agency (EPA) will be involved with these negotiations. Roger emphasized the M-45 series of milestones is the largest in the TPA. The negotiation teams are charged with developing sufficient milestones. Currently, there are four to five milestones for each tank. One of the challenges is to develop an enforceable matrix of milestones and a template so there is a standard system that all involved can follow. Schedules for M-45 have been developed and split into three phases.

M-45-00A identifies seven tanks for near-term closure. Two basic criteria were used in developing the schedule for these closures: up-front risk reduction and the development of demonstration projects that help craft the closure process. For the next round of closures, there will be a larger set of basic guiding principles including:

- Maintaining the focus on near-term risk reduction
- Providing balanced feed to the WTP
- Being sensitive to the need or lack of need for additional DST storage space

The milestone runs from 2006 to 2015, through the start up of WTP operations and beyond.

A great deal of attention will be focused on maintaining the tank farm work force. There is a tremendous amount of work to do in the tank farms and it is important to have an experienced work force.

Roger added the outcome of the negotiations surrounding the legal challenges to DOE Order 431.5 is important because it deals with similar issues. It is important to get enough waste out of the tanks and systems so the public and state know that a credible job has been done with the accelerated schedule.

Finally, Roger said the input of stakeholders is important and a notice will be released to determine what the interest level is and what type of participation would be best.

Committee Discussion

- Al clarified that there are up to five milestones per tank. Moses Jurayssi, CHG, added those were developed in order to establish a process, but won't work for long-term closure plans. While this will be changed, there will still have to be an effective regulatory process in place also.
- Doug asked how these negotiations will align with the Tank Closure EIS. John Swailes replied that M-45 lays out a defined sequence for the DSTs, but the EIS determines the outcome. M-45 provides the opportunity to balance everything learned to date. Roger added the EIS will need to be released and permitting decisions will need to be made well before any closure decisions are made. These are all closely related and it is important to see how they weave together.
- Dan Simpson asked how the risk-based end states process affects the EIS program and M-45. Rodger stated negotiations are based on the existing requirements of M-45. As Steve Wiegman described earlier, the performance-based approach will be noted as a variance in the site's end states report.
- Suzanne stated the EIS is information that is fed into the decision which then feeds into the closure plan permit decision. The closure plan is the decision that actually allows work to take place. The ROD cannot identify that closure activities will be done and a closure decision cannot exceed any of the information from the EIS.
- In considering advice, Todd suggested it would be best to wait until there is a change package and comment on that. Rodger stated he will keep the committee posted on the negations as they are happening.

NEPA Coverage for TRU Removal in the Tanks

Paul Dunigan, DOE-RL, joined the meeting to discuss the concern raised earlier in the day about whether the TWRS-EIS provides the necessary NEPA coverage for DOE-ORP to begin removing TRU waste from the tanks. Paul stated a supplemental analysis has

been completed to see if previous NEPA coverage is adequate. Several committee members were concerned that the committee did not know about this.

DOE believed they had the opportunity to investigate using the TWRS EIS as the base document. The work could be:

- Completely bounded by the previous EIS.
- Bounded by an alternative in the EIS that was not chosen.
- Outside the bounds of the EIS.

If it is bounded, no further review is needed. If it is bounded by an alternative that was not selected, a new ROD must be developed and released for public comment. If it is outside the bounds of the EIS, a full EIS process must be completed. Paul said that, to DOE, it appears this work will be bounded by the previous EIS.

Committee Discussion

- The TPA envisioned that all the waste would be vitrified and now it appears one of the waste streams will not be vitrified. Doug asked what the logic is of describing this as bounded by the EIS when vitrification will not be used. Steve replied that from a programmatic perspective, the scope of the analysis does not include the final disposition of the TRU. This would be covered in the Tank Closure EIS..
- Suzanne asked about the approach when there was a co-author for an EIS that is to be used for a different reason. (Ecology was a co-author of the TWRS-EIS.) Is there an obligation to involve the co-author? Suzanne stated she had not heard this was the chosen path until the supplemental analysis had been sent to headquarters.
- The committee asked to see the supplemental analysis that has been prepared. Paul and Steve replied that they talk to the program staff and find out if the analysis is publicly available.

Tank Closure Environmental Impact Statement

Mary Beth Burandt, DOE-ORP, provided the committee with a brief update on the Tank Closure EIS. The internal review of the document was completed on August 19. This review focused on the EIS at a high level. Two modifications were made to the alternatives, one at the direction of the DOE-ORP manager and the other due to comments received related to the all-vitrification alternative.

As a result of the additions of alternatives and staff health problems, there is a six-week delay in the schedule. The draft will be released December 17, with a 45-day comment period. Public meetings will be held January 13, 14, 15, and 20. The final EIS will be published on April 16, 2003 and the ROD will be issued on May 28, 2004.

DOE-ORP has proposed a two-day Board workshop, January 7-8 to discuss the EIS. DOE-ORP has also requested that the Board consider moving its February meeting to late January in order to issue advice within the comment period.

Committee Discussion

- Leon Swenson asked what will happen if it is not possible to move the Board meeting to January. Will DOE-ORP still consider the Board's advice? NEPA states that comments will be accepted to the extent possible after the closure of the comment period.
- Doug noted it would be less expensive for DOE to extend the comment period a week than for the Board to re-schedule a meeting.
- Todd voiced concern that this schedule is not realistic. This is a multi-binder document that is being released days before Christmas. DOE-ORP is then expecting people to have read this in preparation for a workshop a couple of days after New Year's. He stated that he fully anticipates public interest groups and Tribes being unable to meet this timeline. From the Board's standpoint, it would be best to have the workshop as suggested and be at risk on submitting comments after the close of the comment period. He added that he is not confident the document will actually be available on December 17. Todd stated if any help is needed designing the public meetings, Mary Beth should talk to the Public Involvement Committee.

Supplemental Technology Downselect Information

Rick Raymond, CHG, provided a summary of the compilation of the data. A tremendous amount of information has been gathered over the last year. A series of workshops has been held with Ecology, vendors, EPA, DOE, and the contractors. The data was analyzed and a consensus evaluation was reached for each technology. One conclusion reached was that with the exception of one, none of the goals and measures were effective discriminators among the technologies. The only clear discriminator was waste form performance.

Additional analyses will be performed to provide decision-makers with needed information and a full performance update will be completed in July of 2005. An extensive suite of sensitivity analyses has not been performed yet, however, information should be sufficient for the upcoming downselect decision.

The key uncertainties for this project are as follows:

- Average vs. actual inventory, including secondary waste inventories
- Limited Database for bulk vitrification
- Contaminants of Concern are not fully immobilized for bulk vitrification
- Conceptual model for cast stone release
- Limited database for steam reforming
- The surface area for steam reforming

The path forward for evaluating secondary waste issues will include:

- inventory evaluation, which is an ongoing effort
- evaluation of the ability of cast stone to immobilize iodine

- continued measurement of the mass balance of secondary wastes

The results of these evaluations were more complex than originally expected. Secondary wastes are more important for groundwater impacts than products from thermal treatment. Groundwater impacts from thermal treatment products generally are low and are comparable to each other.

Committee Discussion

- Leon asked if the cast stone used was the best formulation. Rick stated this was the best the vendor was able to develop and it exceeded the parameters for Technecium contamination.
- Doug asked which waste form will be used to treat the secondary waste. Suzanne replied that steam reforming appears to be the best option but there is still a lot of uncertainty.
- Al asked if sulfate was present in the steam-reforming product. Rick stated that the levels were not as high as cast stone.
- Leon asked if different simulants were used. Rick stated that Pacific Northwest National Laboratory (PNNL) found this should not make a difference nor does the simulant formulation make any difference. He did acknowledge, however, that there is not enough information yet.
- Doug asked how many samples of bulk vitrification and cast stone product were tested. Rick replied that 20 different direct formulations were tested but only one sample was used for steam reforming because of cost issues. Rick added they are anxious to test more samples of the steam-reforming product.
- Suzanne stated Ecology is concerned about where the contaminants ended up. Bulk vitrification testing was able to determine a materials balance; however, steam reforming was not being run as a complete system so the resulting information is not based on direct measurements.
- Harold stated that these are all very short-term results. The Nuclear Regulatory Commission (NRC) criteria for waste form acceptance are all long-term test results. He asked if long-term testing is planned. Rick stated the waste form qualification program will begin next year and a full suite of tests will be completed.
- Al asked if only one contract will be awarded. Rick replied that it is unlikely it would be cost effective to choose two technologies.
- Doug commented that this discussion grew out of the fact that the Board felt left out of the downselect decision. The decision has been delayed to December and therefore, the Board needs to offer advice of some kind.
- Al stated he believes DOE-ORP is moving in the right direction. He would like to see another option in the downselect that uses the third melter in the LAW facility for comparison and iron phosphate glass. There is currently a good database for iron

phosphate and with three melters running, it comes closer to vitrifying all the waste by 2018 at a lower cost.

- Doug stated that he is concerned the downselect decision has become an economical decision rather than a technical one. Billie Mauss, DOE-ORP, replied they will have to see what cost figures the vendors submit. Some of the figures are high because there are licensing issues involved. Doug added that the point is bulk vitrification has a compliance issue and what is the certainty this can be addressed through engineering? Suzanne stated that either the solution that best suits all needs must be chosen or a way must be found to fund all three.
- Leon asked why this performance-based assessment is being used if the site is serious about risk-based assessment. This has forced the project into a one-solution-does-all box.
- Harold asserted that a final irrevocable decision is not being made. Two technologies have been selected for further investment and study and more decisions are still to be made based on that data.

Planning for the November Board Meeting

The committee will be providing information on supplemental technologies at the November Board meeting. The impression is that many Board members do not have a firm grasp on what the technologies are nor do they understand the waste streams. It is important for Board members to have a solid framework in place in order to understand the downselect process. The committee decided the best method to provide this framework would be through the following:

- A presentation by Todd about the philosophy of waste disposition
- A poster session about the technologies that will be used for LAW treatment.
- A presentation on the decision process by Rick Raymond.
- A presentation by Suzanne Dahl about tank closure

Also, brief updates on tank retrieval activities, the Tank Closure EIS schedule, and WTP progress will be included at the Board meeting.

Thursday Handouts

- M-45-00C Negotiations, John Swailes, October 9, 2003
- Tank Closure EIS Briefing, Mary Beth Burandt, October 9, 2003
- Waste Form Performance, Richard Raymond, October 9, 2003
- DOE-ORP Baseline Questions, DOE-ORP, October 9, 2003
- Tank Waste Committee Meeting Agenda, October 9, 2003

Thursday Meeting Attendees

HAB Members and Alternates

Allyn Boldt	Jeff Luke	Richard Smith
Harold Heacock	Todd Martin	Leon Swenson
Doug Huston	Gerry Pollet	

Others

Yvonne Sherman, DOE-RL	Melinda Brown, Ecology	Carrie Meyer, BNI
Mary Beth Burandt, DOE-ORP	Suzanne Dahl, Ecology	Moses Jurayssi, CHG
Greg Jones, DOE-ORP	Jeff Lyon, Ecology	Rick Raymond, CHG
Billie Mauss, DOE-ORP	Roger Stanley, Ecology	Liana Herron, EnviroIssues
John Swailes, DOE-ORP		Lynn Lefkoff, EnviroIssues
Steve Wiegman, DOE-ORP		Sharon Braswell, Nuvotec