MEETING HIGHLIGHTS
Hanford Site Technology Coordination Group
Management Council

February 18, 1998
ETB Columbia River Room
8:30 a.m. to 12:30 p.m.

PURPOSE

- To provide an introduction to Hanford's cost savings documentation process.
- To discuss the possibility of using cost savings to fund the use of innovative technologies.
- To learn about Hanford's involvement in the EM-40 Innovative Treatment Remediation Demonstration (ITRD) program.

AGENDA

INTRODUCTION/ANNOUNCEMENTS

UPDATES

-- Clean Energy Technologies, Inc. (CETI)
Norm Olson (FDH) updated us on the status of CETI's technology to reduce radioactive waste activity. PNNL has been evaluating this technology, and the results show that there is transmutation that can't be explained. The results are still undergoing scrutiny.

-- In Situ Redox Manipulation (ISRM)
Arlene Tortoso (DOE-RL) and John Fruchter (PNNL) gave an update on the ISRM treatability study in the 100-D Area, where there is a high-concentration chromium plume. A decision to deploy the technology on a larger scale could be made by the end of this year.

INNOVATIVE TREATMENT REMEDIATION DEMONSTRATION (ITRD) GROUNDWATER PROGRAM

David Olson (DOE-RL) presented information about the ITRD program, which is funded by DOE-HQ/EM-40 and managed at Sandia National Laboratory. The purpose of ITRD is to accelerate the adoption of innovative remedial technologies. ITRD would fund site-specific treatment studies and pilot studies. There is a workshop scheduled for March 10-11.

TECHNOLOGY COST SAVINGS

Steve Abernathy (DOE-RL), Team Leader for the Hanford Cost Savings Team, gave an introduction to their cost savings initiatives, including where cost savings are generated and what happens to the dollars.

BRAINSTORM ON FUTURE AGENDA ITEMS

- Update on cost savings issues
- Corps of Engineers cost savings estimation process
- Successes at other sites -- technology; cost savings
- EM-50 Strategic Positioning
- ITRD Status (after March 10-11 meeting)
- FY99 Budget Update
- ASTD Update

ACTION ITEMS

None

WRAP-UP

The next meeting will be on March 18, from 8:30 a.m. to 12:30 p.m. in the EESB Snoqualmie Room.

HANFORD SITE TECHNOLOGY COORDINATION GROUP
MANAGEMENT COUNCIL MEETING MINUTES

February 18, 1998
ETB Columbia River Room
8:30 a.m. - 12:30 p.m.

INTRODUCTION / ANNOUNCEMENTS

Lloyd Piper opened the meeting. Introductions were made around the room.

Safety: Tom Anderson described how he recently got stuck in the snow despite having a four-wheel drive vehicle. He reminded everyone to be very careful driving in ice and snow no matter what kind of equipment you have.

CPI: Tom Anderson talked about how easy it is to get into a rut. He suggested that we pay attention to important details (e.g., which meeting room we're heading to).

Announcements

Lloyd mentioned that he felt the last meeting was a good meeting because we talked about real progress, not plans. Although it wasn't as interactive as it usually is, it was a good meeting talking about accomplishments.

Al Alm has left DOE, and Jim Owendoff is the acting Assistant Secretary for EM.

Dr. Moniz (Under Secretary of Energy) was here last month. The focus of his visit was on groundwater and vadose zone issues.

Since the last meeting, the GAO was here regarding EM-50 technology deployments. They are visiting other DOE sites as well. They were given all the information they requested, and their report will be coming out soon.

DOE is in the middle of the budget season again. The fiscal year 1999 budget submittal to Congress shows that Hanford's funding went up from $1.5B to $1.8B. Our EM budget went from $1.093B to $1.114B. TWRS is up to $330M, and non-EM is at $366M.

General work prioritization criteria and a schedule for the FY 2000 budget submittal were provided. There is a workshop next week, on the 26th, at the Hanford House. Public meetings will be held on March 9 in Oregon, March 10 in Seattle, and March 12 in Richland.

Rick Gonzalez is leaving, after serving as Chair of the D&D Subgroup since 1995. He was presented with an "On the Spot" award and picture of the laser developed for use in the D&D area.

Dave Biancosino reviewed the meeting purpose and agenda.

UPDATES

Clean Energy Technologies, Inc. (CETI) Amelioration of Radioactivity -- Norm Olson (FDH-Technology Management)

PNNL evaluated this technology related to the Patterson Power Cell from the end of July through the end of December (Phase 0) under a non-disclosure agreement and funding from CETI. Stage 1 uses graphite beads; Stage 2 uses ceramic beads, and results on Stages 1 and 2 have been published by CETI. The device featured on Good Morning America was Stage 3, in which the design features are still held proprietary by CETI.

The following may be disclosed at this time. PNNL tested Stages 1 and 2 to evaluate CETI's results of reducing radioactive waste activity. For the tests, small amounts of thorium and depleted uranium were associated with about 1 gram of beads. Using gamma-ray spectroscopy, U-235 and Th-232 and U-238 related activities showed reductions of less than 5% in all reacted cells, including all process losses.

The technology still is in the basic research phase. If CETI can demonstrate potential for much larger activity reductions than shown in this evaluation, additional evaluations may be considered.

Due to the proprietary nature of this evaluation, this is the only summary that can be released at this time. No requests for more detailed information can be honored.

In Situ Redox Manipulation (ISRM) -- Arlene Tortoso (DOE-RL) and John Fruchter (PNNL)

There is a high-concentration chromium plume in the 100-D Area, thought to be coming from the 100-DR process sewer line or a sodium dichromate transfer station. Based on this information, it was decided to put the ISRM treatability study in that area.

There was an ASME peer review of ISRM in February 1997 to respond to the issues raised by the Nez Perce Tribe regarding remobilization or uranium, reoxygenation of the groundwater, and the need for long-term monitoring. The results of the peer review are as follows:

- ISRM is a widely applicable technology.
- The project is state of the art, and will further our understanding of reactive barriers.
- ISRM could be a superior alternative to pump and treat because it provides permanent remediation at relatively low cost.
- Once in place, ISRM requires minimal maintenance.
- Additional studies are needed to investigate:
  - the rate and extent of uranium remobilization
  - the mechanisms and rates of reoxygenation of anoxic groundwater.
- Long-term monitoring of the ISRM demonstration will be incorporated into the Hanford Groundwater Monitoring Plan.

Better characterization of the D-Area "hot spot" is needed. EM-40 funding has been requested for the characterization wells, but they are "below the line" for this year's budget. Data will be evaluated by the end of this year for potential full-scale application of ISRM. John asked how the stakeholders, regulators, and DOE want to manage the risks of deploying ISRM. To lower the risk, we should do performance assessment tracer tests to ensure that the water is going through the barrier and not around it. EM-40 will pay for the monitoring. It is estimated that the barrier will last about 30 years, after which time we would have to inject more dithionite.

Pump-and-treat systems are operating at other chromium plumes in the 100-K and 100-H Areas that are a lot more widespread, making it more difficult to install a barrier wall. ISRM is more cost-effective on smaller plumes with higher concentrations.

The ISRM technology is a permeable reactive barrier made by injecting a reagent (sodium dithionite) through wells into the aquifer. The sodium dithionite reacts with the aquifer sediments to form a barrier wall, and the contaminant plume is treated as it passes through the barrier. The 150-foot long test barrier in the is next to the well with the highest chromium concentration. In the reduced zone, chromate levels are now below detection limits (less than 8 parts per billion).

100-D Area ISRM status:

- First sodium dithionite injection/withdrawal completed in October 1997
- Dissolved gas tracer test planned for March 1998
- Remaining 4 sodium dithionite injections/withdrawals planned for April-June 1998
- Performance assessment monitoring
  - -- Groundwater monitoring through end of FY 1998 (will be continued by Hanford Groundwater Monitoring Program after that)
  - -- Performance assessment tracer test, hydraulic tests, and coreholes (not yet funded)

<u>INNOVATIVE TREATMENT REMEDIATION DEMONSTRATION (ITRD) GROUNDWATER PROGRAM</u> -- David Olson (DOE-RL/Environmental Restoration)

This program is funded by EM-40 (from HQ, not out of Hanford budget) and managed by Mike Hightower at Sandia National Laboratory. Mike wanted to get involved in a project at Hanford. The strontium-90 plume in the 100-N Area groundwater was selected by DOE as the problem to be addressed after obtaining input from the Subcon Subgroup. Discussions were also held with Jim Wright from SCFA.

Barriers to adoption of new cleanup technologies:

- lack of teamwork
- lack of communication
- barriers to industry participation
- procurement and budget barriers
- technical barriers
- regulatory barriers

The purpose of ITRD is to accelerate the adoption of innovative remedial technologies:

- Reduce communication barriers by involving DOE, EPA, and industry in innovative technology implementation and evaluation
- Reduce regulatory barriers by involving federal, state, and local regulatory agencies in innovative technology evaluation and validation
- Develop an operational test and evaluation program to generate the full-scale, real-world cost and performance data necessary to validate promising new remediation technologies

Benefits:

- Provides technical support to site ER Programs in identifying and implementing applicable, cost-effective, remediation technologies
- Reduces barriers to the use of new technologies by directly involving DOE-EPA, industry, and regulatory agencies in technology testing and validation
- Leverages DOE funding with in-kind technical and laboratory services from EPA and industry partners of approximately $250K/yr per project
- Technologies identified should reduce remediation costs by 25-70% and the remediation period by 10-70% at participating and other DOE sites

Services and Products:

- Technical assistance to site ER programs
  -- ITRD would fund site-specific treatment studies and pilot studies
- Performance assessment of innovative technologies

The Technical Advisory Group consists of participants from DOE-RL (both EM-40 and EM-50), EPA, the Washington State Departments of Ecology and Health, the Oregon Office of Energy, the Tribal Nations, the Hanford Advisory Board, Bechtel Hanford, Inc., the Pacific Northwest National Laboratory, and the Pacific Rim Enterprise Center. It also includes participants from DOE-HQ, other DOE sites, EPA Laboratories, other National Laboratories, TechCon, and industry. Participants have been contacted by letter stating that a workshop and Site tour are scheduled for March 10-11, 1998 at Hanford. This workshop will develop a list of potential technologies to be evaluated for remediation of the strontium plume.

<u>TECHNOLOGY COST SAVINGS</u> -- Steve Abernathy (DOE-RL)

Steve is the Team Leader for Hanford Cost Savings Team. They track, validate, and report cost savings. They don't come up with cost savings ideas nor do they implement the ideas. That’s all done in the line organizations. Technology deployment activities represent only one type of cost savings for the Site, as shown below.

Cost Savings Initiatives:

- Outsourcing/Privatization
- Contract Reform
- Overhead Reduction
- Regulatory Streamlining
- Reengineering
- Technology Deployment

Claimed Savings are either: 1) workscope deletions or 2) efficiency savings (earned value cost variance).

Total FY97 EM savings at Hanford:

Baseline Planning Actions	$105M	Planning phase
Workscope Deletions	$ 45M	Execution phase
Efficiencies (CV overrun)	$ -7M	Execution phase
TOTAL	$143M	

Work commitments have been higher than available funds for the past 3-4 years. That requires RL to change baseline plans, delete workscope, and re-price the work. These changes should be documented with the Baseline Change Request process. Deferrals are workscope that is pushed out into the future. They are not savings, but they are a source of funds. Efficiency savings are the actual cost variances taken from the earned value performance reporting system at the end of the fiscal year.

FY97 Scorecard:

Beginning Baseline	$1171	
Carryover	47	
Deletions	(45)	(only item that is a cost savings)
Transfers	(16)	
Deferrals	(109)	
Accelerations	5	
Additions	98	(new work scope not in the baseline)
Ending baseline	$1151	

FY 1998 Savings Initiatives:

- $2.5B target through FY 2006 based on Salt Lake City workout
  - -- running behind that target right now
- $6B technology deployment target through life-cycle
- FY 1998 performance agreements for indirect cost reductions, efficiencies, and technology deployment
  - -- Indirect cost reduction does not necessarily create savings. It is cost avoidance, not necessarily savings.

Comments/Questions

Dirk Dunning: What he would like to see is: when we apply a technology, what does that do to the actual cost of completing the project?

Maureen Hunemuller: The problem the we are running into is that cost savings are applied first to compliance shortfalls, not to technology deployments.

Barbara Harper: There needs to be a formal “value of information” process in place to justify any reduction of workscope (e.g., number of tank samples required) so we can avoid problems due to not getting enough information.

Dirk Dunning: Sometimes when you spend dollars chasing cost savings, the outcome is that it costs more. We could spend more than it's worth to find cost savings.

Debbie Trader: We are starting to wrestle with how to measure the cost savings due to implementation of technology. We are measuring the number of technology deployments and the resulting cost savings. How we calculate savings is a real touchy thing.

Pete Knollmeyer: You can't lose sight of "better" versus "cheaper". Sometimes technology is used to do a better job, not just to save money. The 2006 Plan is trying to pay off mortgages sooner (e.g., PUREX, B-Plant, PFP). This requires a hefty near-term investment in order to reap the big cost savings in the future.

Kim Koegler: Some cost estimates are easy to make, such as when one gadget is exchanged for another. It is more difficult to estimate cost savings for a technology like ISRM.

Wayne Martin: What is the value of a new technology, and how do you calculate the gain if there isn't a firm baseline to compare it to? Don't we prefer a solution rather than an interim action? A cost/benefit analysis is needed.

Dave Biancosino: Due to the Al Alm ten-point memo, there is a cost savings methodology from FETC that is now being reviewed. They are trying to implement a Complex-wide methodology, and it may not work for Hanford.

Shannon Saget: How do we distinguish efficiencies from technology deployments?

Barbara Harper: How do you incentivize the "better" aspect? Ideal endstates should be considered--the cost of not meeting that entire goal is important.

Nancy Uziemblo: Where did the $85 million savings from FDH technology deployments come from? Where is the money that was saved? Tom Anderson offered the opinion that the money disappears--it gets dispersed over all projects as inefficiencies in the system. No standard life-cycle cost template exists, so estimates are not precise. The savings are mainly due to labor costs.

Don Wodrich: Projects should submit a change control and move the money elsewhere to use it.

Bob Rosselli: The change control process we have in place today doesn't allow us to capture the relatively small savings from technology deployment. As our baselines mature, we will have a better basis to measure from. We are looking across the Complex for a possible model to implement, and Savannah River has a good one that FDH will investigate.

Stuart Harris: Why aren't technologies with projected cost savings communicated to other projects on Site that could use them? There seems to be a barrier that we need to work on.

Steve Abernathy: We haven't seen many cases where a technology made a big impact at the project level. The savings were far overshadowed by the other high-priority activities that needed to get done. As a result, you don't really see any additional funds

coming available. Technology could be already built into the baseline, so there is nothing to eliminate. Execution of the baseline in FY 1998 included technologies added to the baseline in previous years. The savings should have been taken when the baseline changed. The tank corrosion probe is an example where the technology was demonstrated and added to the baseline in the same year. Some technologies are included in the baseline to begin with, betting on the expectation that they will become available, so there's no cost savings realized.

Shannon Saget: The FETC document recommends calculating cost savings for every technology. Hanford's response says that we should do a graded approach (i.e., track ISRM with a baseline change request, but not a small grinder). We need to figure out which ones are worth tracking and which ones are not.

Dirk Dunning: What we are talking about are expenditures, not costs. Habitat destruction is an example of a cost that we are not tracking.

BRAINSTORM ON FUTURE AGENDA ITEMS

- Update on cost savings issues
- Corps of Engineers cost savings estimation process
- Technology cost savings successes at other sites
- EM-50 strategic positioning
- ITRD status (after March 10-11 meeting)
- FY99 budget update
- ASTD update

COMMUNICATIONS

Mary Ace is the new STCG communications person. Contact Dave Biancosino if you have any ideas for Hanford Reach articles or press releases.

WRAP-UP

The next meeting will be on March 18, from 8:30 a.m. to 12:30 p.m., in the EESB Snoqualmie Room.

TOUR -- EMSL

A tour of the Environmental Molecular Sciences Laboratory was scheduled from 2:00 p.m. until 4:00 p.m.