

HANFORD ADVISORY BOARD

A Site Specific Advisory Board, Chartered under the Federal Advisory Committee Act

Advising:

US Dept of Energy
US Environmental
Protection Agency
Washington State
Dept of Ecology

CHAIR:

Steve Hudson

VICE CHAIR:

Susan Leckband

BOARD MEMBERS:

Local Business

Harold Heacock

Labor/Work Force

Mark Reavis
Thomas Carpenter
Jeff Luke
Lynn Davison
Rebecca Holland

Local Environment

Gene Van Liew

Local Government

Maynard Plahuta
Pam Larsen
Art Tackett
Rob Davis
Jerry Peltier
Gary Garnant
Bob Parks

Tribal Government

Russell Jim
Gabe Bohnee
Armand Minthorn

Public Health

Tony Brooks
Howard Putter

University

Gregory Korshin
Richard Stout

Public-at-Large

Norma Jean Germond
Keith Smith
Sam Dechter
Bob Suyama

Regional Environ- ment/Citizen

Dan Serres
Steve Hudson
Floyd Hodges
Susan Leckband
Gerald Pollet

State of Oregon

Ken Niles
Mecal Seppalainen

Liaison

Representatives
Washington State
Department of Health

Envirolssues

Hanford Project Office
713 Jadwin, Suite 3
Richland, WA 99352
Phone: (509) 942-1906
Fax: (509) 942-1926

March 7, 2014

David Huizenga
Senior Advisor for Environmental Management
EM-1/Forestal Building
U.S. Department of Energy
1000 Independence Avenue
Washington, D.C. 20585

Matt McCormick, Manager
U.S. Department of Energy, Richland Operations
P.O. Box 550 (A7-76)
Richland, WA 99352

Kevin Smith, Manager
U.S. Department of Energy, Office of River Protection
P.O. Box 450 (H6-60)
Richland, WA 99352

Dennis Faulk, Manager
U.S. Environmental Protection Agency, Region 10
309 Bradley Blvd., Suite 115
Richland WA 99352

Jane Hedges, Manager
Washington State Department of Ecology
3100 Port of Benton Blvd.
Richland, WA 99352

Re: Path Forward on Tank Waste

Dear Messrs. Huizenga, McCormick, Smith, Faulk and Ms. Hedges,

Background

Hanford's tank waste poses a long-term risk to the environment, Columbia River, and future generations. Performance Assessment studies of tank waste that has leaked into the soil and groundwater show additional risks and demonstrates the urgency with which cleanup of Hanford's tank waste must be addressed. The tanks and infrastructure have continued to age and degrade. Effective removal, treatment, and storage of Hanford's tank waste is essential for the protection of the Columbia River, humans, groundwater, and the ecological health of this region. The Hanford Advisory Board (Board) has long advocated that protection of human health and the environment

HAB Consensus Advice # 275

Subject: Path Forward on Tank Waste
Adopted: March 7, 2014

Page 1

requires successful treatment of Hanford's tank waste to a quality that is at least "as good as glass."¹ The U.S. Department of Energy (DOE)² and the Washington State Department of Ecology (Ecology)³ agree.

The Board has provided advice about tank waste treatment at Hanford since its inception in 1994. The Board has addressed its concerns with the treatment of tank waste from a variety of positions including: openness and transparency (Board Advice #273); funding and budget priorities (Board Advice #266); the building of new tanks and tank integrity (Board Advice #271, 263); safety culture (Board Advice #258); transuranic (TRU) waste in tanks (Board Advice #149); and systems planning (Board Advice #238, 233, 209, 189).

On June 19, 2013, Secretary Moniz referenced a DOE plan related to Hanford's treatment of tank waste, stating: "We will put together a plan, going forward, that recognizes today's realities, both technical realities and the uncertainties of budget realities."⁴ On September 24, 2013, Secretary of Energy Moniz released the *Hanford Tank Waste Retrieval, Treatment, and Disposition Framework* (Framework), which is described as a high-level strategic framework to begin conversations about addressing challenges at the Waste Treatment Plant (WTP).

Based on Secretary Moniz's June 2013 statement, the Board expected that the following information would have been made available: details on technical issues; the sequencing of startup at the WTP; the findings of the Secretarial expert review teams; supporting information used to develop the draft Framework's suggested approaches; cost and schedule information; and analysis of systemic design and quality assurance verification issues. Unfortunately, the Framework failed to provide this critical information. The Board issued advice focused on openness and transparency in the Framework in December 2013 (Board Advice #273).

The Board is concerned about timely and effective treatment of Hanford's tank waste. The concept of direct feed low-activity waste (LAW) treatment, as outlined in the Framework, appears encouraging if it can be done safely and without major impacts to the rest of the tank waste treatment system. Early start of the LAW facility may help to relieve the urgent tank space needs, and allow continued retrieval of waste from single-shell tanks.

The Hanford tank wastes are comprised of greater than 99 percent inert chemicals⁵ which were added during reprocessing and storage. The broad variations in the tank waste compositions are a

1 HAB Advice #183 http://www.hanford.gov/files.cfm/HAB_Adv_183.pdf

2 Roy Schepens defined the term "as good as glass" in his letter to Mike Wilson, Ecology, (June 12, 2003).

<http://pdw.hanford.gov/arpir/pdf.cfm?accession=1207240710>

3 Between 2003 and 2006, Washington State agreed to allow DOE to consider alternative supplemental treatment approaches as long as they performed "as good as glass." DOE stated that its goal was to identify alternative approaches that were faster and cheaper and still performed just as well as glass. This effort examined many different technologies; however, in the end no viable approaches were identified. <http://pdw.hanford.gov/arpir/pdf.cfm?accession=1207240710>

4 Associated Press, June 19, 2013, "Energy Secretary Ernest Moniz Visits Hanford Site in Washington.

5 Agnew, S.F. 1997. *Hanford Tank Chemical and Radionuclide Inventories (HDW Model Rev. 4)*. Los Alamos National Laboratory. Los Alamos, New Mexico. LA-UR-96-3860

poor match with the borosilicate glass. Alternate glass formulations that may better handle some of these constituents should be seriously considered for the second low-activity vitrification facility.

In light of the deteriorating tank infrastructure, most evident in the active leaks in double-shell tank AY-102 and single-shell tank T-111, the Board continues to believe additional double-shell tank storage capacity is urgently needed as an interim measure while solutions to the WTP's technical issues are developed and implemented. Serious unresolved technical issues, as well as the uncertain status and timeline for a safe and effective operational WTP, concern the Board. These concerns include quality assurance documentation of components used in the construction of the WTP that could impact the future safe start-up of the facility.⁶

Finally, the Board is dismayed that DOE has deliberated behind closed doors, excluding regulators, stakeholders, and the public from its review of the technical problems, possible solutions, and possible paths to resolve these, even going so far as requiring those involved to sign non-disclosure agreements. The Board has advised and continues to advise DOE to proceed with open and transparent conversations and information sharing with the Board and public. Openness and transparency are essential for public trust, and for good decision-making. This advice is written to provide the Tri-Party Agreement agencies with the Board's input on finding a safe and effective path forward for successful treatment of Hanford's tank waste.

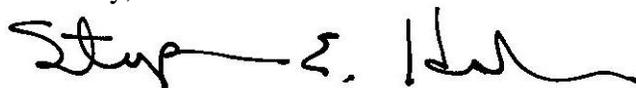
Advice

- Expanding on the Board's previous advice on openness and transparency (Board Advice #273), the Board advises DOE to clearly and thoroughly communicate technical and design considerations and problems with the WTP and any proposed solutions with the Board and public. The Board expects DOE to provide and discuss in-depth information on the WTP path forward that enables the development of well-informed, policy-level advice. This information should include detailed suggestions and findings by the former Energy Secretary Chu - appointed expert panel, and Energy Secretary Moniz expert panel.
- The Board advises DOE to use the systems plan and coupled lifecycle cost analysis to identify and evaluate alternatives, and for scenarios to be developed, and shared with the Board for timely input, that reflect proposals in the Framework.
- The Board advises DOE that any implementation plan that results from the Framework include:
 - Easy-to-understand conceptual diagram for the proposal for resolving the issues
 - An operations plan that maps waste-flow-rates through the alternative routes over time
 - Updated projected costs
 - Risks to implementation
 - Impacts to related TPA milestones

⁶ DOE Memorandum, January 28, 2014; To: Daniel B. Poneman, Deputy Secretary of Energy, From: Richard H. Lagdon, Jr., Chief of Nuclear Safety Office of Environmental Management

- The Board advises DOE to brief the Board on the status and actions taken to address nuclear quality assurance concerns with the WTP.
- The Board advises DOE to abandon any and all proposals to dispose of material in waste forms that do not perform as well as glass in a near-surface burial onsite, as this increases the risk to humans and the environment. It is clear to the Board that these technologies fail to meet required performance standards; are too immature; are too costly to implement; and/or compete with vitrification to the detriment of the mission.
- The Board reiterates its advice to DOE to immediately initiate the process for funding and design of new regulatory-compliant tank capacity and support infrastructure, and to initiate an accelerated process for obtaining this additional capacity that would be integrated into the needs of the WTP. [Board Advice #271 (September 6, 2013) and Board Advice #263 (November 2, 2012)]
- The Board advises Ecology and the U.S. Environmental Protection Agency to take near-term action under their regulatory authority to direct DOE to:
 - Empty the leaking single-shell tank T-111
 - Build new fully compliant tanks and infrastructure on a schedule with sufficient capacity to complete the mission
 - Design all such new systems to allow complete and easy retrieval and clean closure
 - Release to Ecology and make public all information DOE has relative to the path forward for waste treatment

Sincerely,



Steve Hudson, Chair
Hanford Advisory Board

This advice represents Board consensus for this specific topic. It should not be taken out of context to extrapolate Board agreement on other subject matters.

cc: Jeff Frey, Deputy Designated Federal Official, U.S. Department of Energy Richland Operations Office
David Borak, U.S. Department of Energy, Headquarters
The Oregon and Washington Delegations