

**FINAL MEETING SUMMARY**

**HANFORD ADVISORY BOARD  
HEALTH, SAFETY, AND ENVIRONMENTAL PROTECTION COMMITTEE**

*December 10, 2015  
Richland, WA*

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

**Opening**

Becky Holland, Health, Safety, and Environmental Protection Committee (HSEP) chair, welcomed the committee and introductions were made. Committee members adopted the June 2015 HSEP meeting summary with minor edits.

**Enterprise Assessment of Safety Culture at the Waste Treatment and Immobilization Plant (joint w/ TWC)**

Steve Pfaff, U.S. Department of Energy—Office of River Protection (DOE-ORP), provided HSEP members with a briefing on the U.S. Department of Energy (DOE) independent Office of Enterprise Assessments (EA) Follow-up Assessment of Safety Culture at the Hanford Site Waste Treatment and Immobilization Plant (WTP). Key points from Steve’s presentation <sup>1</sup> included:

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**Attachment 1:** Office of Enterprise Assessment Briefing (DOE presentation)

- The DOE Office of Health, Safety, and Security (HSS) conducted the initial safety culture review of the WTP in 2010. HSS was not experienced at conducting this type of review, and DOE felt that the study was not comprehensive. HSS conducted a follow-up survey in 2011 that addressed many of the concerns raised by DOE following the initial 2010 safety culture review. A third WTP safety culture review was completed by the EA in 2014 using consistent methodology.
- The 2014 EA review demonstrated a slight decline in measured safety culture since the 2012 review. In response, U.S. Secretary of Energy Ernest Moniz committed to conducting a follow-up assessment in 2015.
- The 2015 report demonstrated that, overall, DOE-ORP and Bechtel National, Incorporated (Bechtel) have made improvements since the 2014 safety culture assessment. It also noted that strategies were on track to continue increasing effective safety culture at the WTP. The measured results in 2015 were similar to those of the 2012 review.
- EA used five methods to collect information on the organizational behaviors associated with safety culture traits, including (1) a functional analysis, (2) structured interviews and focus groups, (3) behavioral anchored rating scales, (4) behavioral observations, and (5) an organizational and safety culture survey.
- The assessment notes that WTP safety culture has made progress in all of the twelve measured behavioral norms associated with safety culture.
- The 2015 review noted that DOE-ORP still needs to improve in several areas, including setting clear roles and responsibilities in interactions with the contractor and continuing to decrease organizational avoidance. The review noted safety culture improvements on the DOE-ORP side; however, these improvements were not statistically significant.
- Part of safety culture that DOE-ORP and Bechtel are continuing to work towards is defining principles of professionalism and educating staff in creative ways. Steps to accomplish these goals have already been undertaken, and they will continue.

Steve closed by encouraging committee members to read the full 2015 EA Follow-up Assessment of Safety Culture.

#### *Committee Questions and Responses*<sup>2</sup>

*Note: This section reflects individual questions, comments, and agency responses, as well as a synthesis where there were similar questions or comments.*

Q. Are there any go-to international standards for nuclear safety culture?

*R. [DOE-ORP] The survey instrument incorporated the standard Organizational Culture Inventory questionnaire, which is a tested tool. For nuclear safety culture in particular, there are*

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**Attachment 2:** Transcribed flipchart notes

*many documents that have been published in the years since Chernobyl, but there is no standard tool for measuring safety culture.*

Q. If an employee brings up a concern, is there a distinction made between immediate and long-term risks?

*R. [DOE-ORP] There is a distinction drawn, and the report demonstrates that workers are not hesitant to bring up immediate safety risks.*

Q. Does the 2015 EA assessment include the ability for DOE-ORP to talk to contractors? What does that look like?

*R. [DOE-ORP] The report comments on the working relationship between DOE-ORP and the contractor in several ways. It notes that some of the mistrust that existed between DOE-ORP and Bechtel has been resolved. Bechtel is doing a better job of identifying and resolving internal issues, which strengthens their working relationship with DOE-ORP.*

Q. What are DOE-ORP's perspectives on the decline in safety culture that the 2014 review presented?

*R. [DOE-ORP] Changing an organizational culture is complex, and it often takes between five to seven years to do so. Sometimes, as organizational culture is changed, individuals become much more aware of the current culture—this could describe the decline noted in the 2014 EA assessment. The 2015 review provides evidence that safety culture improvement efforts are on the right track.*

C. Past efforts to evaluate and improve safety culture have demonstrated that it is very important for senior leadership to lead cultural shifts by listening to employee concerns, providing strong feedback, and leading by example. They have also demonstrated that organizational values are very important.

C. Hanford Challenge reviewed the 2015 EA review, and found it concerning that 35 percent of employees still felt that they could not openly challenge management decisions. In addition, the review needs to note that there was no outside or independent consultation incorporated into it. Setting examples are more important to Hanford workers than numbers and goals are, and positive examples will lead to stronger safety culture.

Q. How does DOE-ORP feel about the statistic that 35 percent of employees reported a lack of ability to openly challenge management decisions?

*R. [DOE-ORP] DOE would like to improve this number. However, this statistic could mean different things. Workers may view their ability to challenge management decisions as being distinct from their ability to raise an issue. In addition, many employees may feel that it is not their job to report issues.*

C. A changing work force at the WTP may view safety culture differently, as they do not have the same history and terminology as more established members of the work force.

C. Organizational safety culture is complex and difficult to measure using a survey. Those who create surveys tend to frame questions in ways that may not reflect the broader need for understanding. Also, issues raised through surveys appear to be very minor to the overall workforce, but they may be very important to impacted individuals. Conversely, issues that are very important to the overall workforce may seem unimportant to individual workers.

Committee members thanked Steve for the information. The committee agreed to follow this on their next call, and they noted that they would work with the Tank Waste Committee (TWC) to determine if the EA safety culture review should factor into the development of HAB advice. The committee identified that, if HAB advice on safety culture were explored, it may need to be separated into two pieces: one highlighting design and the other highlighting behavior.

Committee members agreed that a safety culture sounding board would be explored in conjunction with TWC members for the April 2016 Board meeting.

### **Infrastructure Updates – Traffic Safety (joint w/ RAP)**

Richard Bloom, HSEP vice chair and issue manager, introduced Terry DeJuan, rideshare manager for Ben Franklin Transit, who provided committee members with a presentation on vanpools traveling to the Hanford Site. Richard noted that enhanced vanpools might represent a strategy for lessening the traffic burden on roads leading to work areas at the Hanford Site. Key points from Terry's presentation<sup>3</sup> included:

- There are currently 193 vans serving the Hanford Site, providing transportation to an average of 1,654 workers.
- The fare structure for vanpools are based on average workdays and average daily miles (including fuel, insurance, tires, and maintenance).
- Vanpools offer a “guaranteed ride home” for workers who need to leave the Hanford Site for family emergencies, illnesses, or unexpected non-business related appointments.
- The average processing time for a new vanpool is approximately two weeks.

Richard thanked Terry for the information. He also noted that Washington has an administrative code that works to reduce commute trips. This code requires companies with more than 200 employees to strategize ways to reduce commute trips; however, he noted that the Tri-Cities is exempt from this obligation.

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**Attachment 3:** Vanpooling to the Hanford Site (Ben Franklin Transit presentation)

## *Committee Questions and Responses*<sup>2</sup>

*Note: This section reflects individual questions, comments, and agency responses, as well as a synthesis where there were similar questions or comments.*

Q. Is Ben Franklin Transit a private company or a government organization? The Board should not promote the work of private entities.

*C. [Ben Franklin Transit] Ben Franklin Transit is a municipal corporation that is funded by tax dollars.*

C. Traffic to the Hanford Site is very difficult for workers to navigate, and it extends their already long work days. The Occupational Safety and Health Administration has set industrial standards for work day length; the traffic getting to and from the Hanford Site may add an additional three hours onto worker's daily schedules. This increases the potential for on-the-job accidents and traffic safety issues.

C. Could DOE work with contractors to set up a mapping tool that could group employees coming from and going to similar places in their work commute. This would streamline the vanpool and rideshare process.

C. Another traffic challenge is that workers on site are all on the same work schedule. Therefore, the entire workforce is attempting to arrive and depart at the exact same time. The roads from Richland to the Hanford Site cannot currently support this level of traffic. If employees are more than three minutes late for a shift, they are reprimanded. Parking spaces at work sites are limited, as well. Staggered work shifts may improve each of these issues.

C. Commute trip reduction is a challenging issue for the State, overall. The Tri-Cities area should not work to repeal the administrative code exemption from commute trip reduction because it would be onerous to other large employers in the region.

C. There are other safety issues associated with traffic congestion. If a major evacuation of the Hanford Site were ordered, it would not be easy to get workers out of the area in a timely fashion. There used to be evacuation buses available to workers in case the need arose, but those may not be available anymore.

C. There used to be bus service available to workers commuting to the Hanford Site. Why is this no longer an option?

*R. Buses needed to be driven by a Teamster, and they needed to be on-site all day in case of evacuation. DOE was not reimbursed for the cost of operating these buses.*

C. HSEP should construct advice on this topic that would advise senior DOE managers to encourage contractors to consider trip reduction programs and to explore infrastructure updates to Route 10, Highway 4A, and the Wye Barricade.

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**Attachment 2:** Transcribed flipchart notes

*C. Staggering the work hours makes sense. Washington River Protection Solutions tentatively looked into schedule changes, but workers were overwhelmingly supportive of keeping the four ten-hour shifts schedules. If no contractor is currently looking into the potential of staggering work hours, the advice should also recommend this idea.*

*C. [DOE-ORP] The Board should consider reviewing rideshare policies for each individual contractor as this advice is developed. DOE may have limited abilities to influence contractors on this matter.*

HSEP issue managers for the topic were interested in continuing to develop advice on traffic safety in anticipation for Board review in February 2016. Issues managers agreed to use the December 2015 HSEP committee call to clarify advice, and the committee identified that they would continue the discussion in January 2015.

### **Beryllium Program**

Peggy Mroz, National Jewish Health, provided committee members with a briefing on the Chronic Beryllium Disease (CBD) Prevention Program's Epidemiological Study. Peggy noted that she would focus on epidemiological study findings that concerned Beryllium exposure. Key points from Peggy's presentation included:

- At the Hanford Site, beryllium was initially used experimentally in the 1950s, and then integrated into the production of fuel rods in the 1960s. Beryllium use in fuel rods continued at the site until 1986, when production at Hanford ceased. After 1986, beryllium was still used in research and development labs, routine metal alloy applications, and non-sparking tools. Legacy beryllium remained at the Site.
- The primary objective of the epidemiological study was to identify past and present jobs, work areas, or processes that contributed to an increased probability of beryllium sensitization (BeS) and CBD.
- As a secondary goal, the epidemiological study aimed to look into individuals associated with the Hanford Site that had sarcoidosis (CBD is sarcoidosis with demonstrated BeS), but who did not show the immune response associated with BeS. The goal of this portion of the study was to look into other factors at the Hanford Site that may also cause sarcoidosis.
- The study included current and former workers that were diagnosed with BeS, CBD, and sarcoidosis, as well as current and former workers that were not diagnosed with BeS, CBD, and sarcoidosis. Industrial hygienists who conducted interviews did not know the status of participants conducted in the interviews.
- The work history of participants spanned 159 job titles, 154 tasks, 134 buildings, and eight decades (1947-2013).

- Challenges associated with the exposure assessment included limited industrial hygiene sampling data, changes in worker job title, the long time period associated with potential exposure, and the large, complex nature of the Hanford Site.
- Results of the study indicated individuals who worked in beryllium buildings and worked tasks that generated dust were more likely to have a diagnosis of CBD. Those individuals with CBD were more likely to have been hired during times of active fuel rod production (pre-1986). Nearly all of the individuals who had post-1986 exposure were involved in dust-generating tasks, which means that exposure to legacy materials is a possibility.
- The secondary goal of the study identified that those participants with sarcoidosis worked many different jobs and all cases worked in beryllium buildings. Individuals with sarcoidosis were more likely to work in trades and maintenance, management, or outdoor jobs. Results indicated that sarcoidosis was a distinct disease from CBD at Hanford, and further examination of the differences may help to illustrate potential causes.
- The epidemiological study is limited in that there is incomplete industrial hygiene data available, as well as minimal information on the historic uses of beryllium at the Hanford Site. Also, the participation rate was lower than expected.

#### *Committee Questions and Responses*

*Note: This section reflects individual questions, comments, and agency responses, as well as a synthesis where there were similar questions or comments.*

Q. How many cases of sarcoidosis have been identified at the Hanford Site?

*R. [National Jewish] There are 33 cases of CBD and 21 cases of sarcoidosis. The number of cases are similar to one another; therefore, sarcoidosis appears to be a distinct disease.*

Q. Were there any epidemiological studies done at Oak Ridge in Tennessee?

*R. [National Jewish] There was a similar study done at Oak Ridge that also looked into genetic risk factors. There were CBD cases at Oak Ridge's Y-12 National Security Complex, but no cases of sarcoidosis.*

Q. Was genetic sensitivity taken into account for the Hanford epidemiological study?

*R. [National Jewish] No, it was not in the scope for the Hanford study.*

Q. What is the number of overall cases of sarcoidosis in the Tri-Cities area?

*R. [National Jewish] The study team does not have access to numbers indicating the sarcoidosis occurrence for the overall area. Under normal circumstances, the overall public occurrence of sarcoidosis is well under one percent.*

Committee members thanked Peggy for her review of the epidemiological study findings. HSEP members agreed to continue tracking information related to the CBD Prevention Program as updates become available.

### **Committee Business**

#### *Tank Vapors Response*<sup>45</sup>

Committee members identified that the DOE response to HAB Advice #282, Tank Farm Vapors, advice point #2 appeared to focus on the Tank Vapor Assessment Team's suggestion that DOE convene an epidemiological study to look into the long-term health effects of tank vapor exposure. Committee members identified that the advice suggested a follow-up evaluation to identify long-term health effects, as opposed to a full epidemiological study. HSEP members felt that this was an important clarification, as the nature of vapor exposure precluded an epidemiological study. They also wanted this remark noted in the meeting summary as a point of clarification to the advice response.

#### *HSEP 3-Month Work Plan*<sup>6</sup>

HSEP will plan to hold committee calls in December 2015 and January 2016, as well as a committee meeting in January 2016 that will tentatively include the following topics:

- Discuss and clarify draft advice on transportation and worker safety
- Discuss and scope a safety culture sounding board for an upcoming Board meeting (joint w/ TWC)

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**Attachment 4:** HAB Advice #282 (Tank Farm Vapors)

**Attachment 5:** DOE Response to HAB Advice #282 (Tank Farm Vapors)

**Attachment 6:** HSEP 3-Month Work Plan

**Attachments**

**Attachment 1:** Office of Enterprise Assessment Briefing (DOE presentation)

**Attachment 2:** Transcribed flipchart notes

**Attachment 3:** Vanpooling to the Hanford Site (Ben Franklin Transit presentation)

**Attachment 4:** HAB Advice #282 (Tank Farm Vapors)

**Attachment 5:** DOE Response to HAB Advice #282 (Tank Farm Vapors)

**Attachment 6:** HSEP 3-Month Work Plan

**Attendees**

Board members and alternates:

Richard Bloom	Steve Hudson	Emily Peterson
Shelley Cimon	Mike Korenko	Bob Suyama
Dirk Dunning (phone)	Pam Larsen (phone)	Marjorie Swint
Becky Holland	Liz Mattson	

Others:

Kris Holmes, DOR-RL	Ginger Wireman, Ecology	Todd Nelson, Bechtel
Steve Pfaff, DOE-ORP		Terry DeJuan, Ben Franklin Transit
		Cathy McCague, EnviroIssues
		Brett Watson, EnviroIssues
		Jen Copeland, MSA
		Peggy Mroz, National Jewish Health (phone)
		Sharon Braswell, North Wind/DOE-ORP
		Kelsey Shank, SN3
		Annette Cary, Tri-City Herald
		Katherine Bittinger, WSU
		Pedro de la Torre, public