



**Environmental Management &
Stewardship Committee Meeting Minutes
Wednesday, February 19, 6 p.m.
DOE Information Center
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Committee Members Present

Dale Bignell
Alfreda Cook
Susan Gawarecki
Bob Hatcher, Co-Chair
Dave Hemelright
Bruce Hicks
Jennifer Kasten
Roger Macklin
Donald Mei
Bob Olson
Belinda Price
Lorene Sigal
Ellen Smith
Corkie Staley, Co-Chair

Others Present

Dave Adler, Department of Energy (DOE)
Susan DePaoli, Pro2Serv
Sid Garland, UCOR/RSI
Spencer Gross, SSAB staff
John Kubarewicz, UCOR/RSI
Roger Petrie, Tennessee Dept. of Environment and
Conservation
Jamie Raymer, Alliant, Corp.

Absent

Jimmy Bell
Donna Campbell
Carmen DeLong
Gracie Hall
Steve Kenworthy
Dick Ketelle
David Martin
Fay Martin
Gloria Mei
Lance Mezga
Norman Mulvenon
Julia Riley
Ray Smith
Wanda Smith

Additional Waste Disposal Capacity on the Oak Ridge Reservation: Status of EM Disposal Facility – Alfreda Cook, issue manager.

Mr. Adler began the discussion by saying that DOE continues to work with the regulators to resolve comments on the remedial investigation/feasibility study (RIFS) (DOE/OR/01-2535&D2) for a proposed second waste disposal facility on the Oak Ridge Reservation (ORR). There are enforceable milestones for a proposed plan and a record of decision in 2015.

Mr. Adler said the decision of whether or not to build a second disposal facility is an important one and is an area where DOE would like to have a formal recommendation from ORSSAB.

The current Environmental Management Waste Management Facility (EMWMF) will take about half of all the waste forecast for completing cleanup of the ORR. Mr. Adler said two decisions should be made:

- Should DOE continue with planning assumptions to finish needed cleanup of the ORR?
- If the answer is 'yes' what is the best site for a new waste disposal facility?

Mr. Adler turned the program over to Ms. DePaoli for a discussion of proposed sites for a new facility.

Prior to the construction of EMWMF, 35 sites across the ORR were evaluated (Attachment 1, page 3). Many were eliminated from consideration for a number of reasons. Three sites were selected for EMWMF in Bear Creek Valley near Y-12 National Security Complex.

For the RIFS, 14 of the original 35 sites were evaluated again as the proposed location for a new proposed facility, currently known as the Environmental Management Disposal Facility (EMDF). Again the choices were narrowed to the three sites in Bear Creek Valley (Attachment 1, page 4). The D0 version of the RIFS considered only the White Wing Scrap Yard and the West Bear Creek Valley Sites (Attachment 1, page 5). The regulators requested that East Bear Creek Valley be considered because White Wing Scrap Yard and West Bear Creek Valley are in a zone designated for future unrestricted use. East Bear Creek Valley is the site for EMWMF and other old disposal facilities and is a zone of controlled industrial use.

In reconsidering East Bear Creek Valley four options were considered (Attachment 1, page 6). Option 1 would require an excessive amount of cutting and filling; Option 2 would infringe on the existing Bear Creek Burial Grounds; Option 4 did not allow for sufficient capacity.

Option 3 is adjacent to EMWMF, is near facilities currently used by EMWMF, and has sufficient space to handle estimated waste volume (about 2.5 million cubic yards).

Ms. DePaoli said Option 3 is being considered as the best site, but a final decision has not been made. Other advantages of Option 3 are noted on page 7 of Attachment 1.

Ms. DePaoli then discussed management of surface and groundwater at the proposed facility. All three sites in Bear Creek Valley would require construction of an underdrain system to handle discharges from seeps, springs, and/or a stream within the footprint of the disposal area. The need for an engineered underdrain requires a waiver of a TDEC rule that an area used for disposal will not discharge groundwater to the surface within the disposal site (Attachment 1, page 8).

Ms. DePaoli discussed the conceptual design of EMDF and noted a number of features (Attachment 1, page 9). She said the underdrain system is incorporated as a new feature as opposed to EMWMF, which did not have an underdrain in the original design of the facility. The engineered underdrain system consists of two parts:

- A broad, shallow blanket underdrain under portions of the landfill that drains water to a trench system;
- Trench drains under the blanket drain, one of which follows North Tributary 3.

The French drain system will channel any surface water coming off Pine Ridge around the disposal site. Pages 11 and 12 of Attachment 1 show the footprint of EMDF and placement and cross sections of the drainage system.

The series of 'bumps' on the cross section drawing on page 12 indicates berms between the six waste disposal cells.

The liner system is installed over the geologic buffer and consists of multilayers with a thickness of 5 feet and includes the leachate collection system. The final cover over the disposed waste will be 13 feet thick.

Ms. DePaoli then discussed volume reduction practices. She said the sequencing of cleanup projects has a waste generation forecast. The current sequencing of projects does not indicate any excess soil waste (Attachment 1, page 13).

Mr. Adler said that some clean fill will be used to fill in gaps as waste is disposed. The cleanup program involves buildings and contaminated soil. The buildings come down first, which will require clean fill as debris is disposed, but DOE will look for opportunities to use contaminated fill material.

Each cleanup project is addressed on a project-by-project basis, and EM has an established procedure to reduce volumes of material disposed:

1. Reuse or recycle material where possible
2. Use Subtitle D sanitary landfills on Chestnut Ridge for non- or very low-contaminated material
3. Dispose of waste in EMWMF or the future EMDF
4. Waste that doesn't meet on-site waste acceptance criteria (WAC) is shipped off-site.

Mr. Adler said the Subtitle D sanitary landfills on Chestnut Ridge south of Y-12 (not to be confused with a nearby commercial landfill also known as Chestnut Ridge) is a lined, prepared bed with a leachate collection system. He said it has much potential future capacity and perhaps could take a significant amount targeted for EMDF. There are restrictions on what can go in Chestnut Ridge, but perhaps the WAC could be modified. But Mr. Adler said the basis of planning for waste disposal is to use EMWMF or EMDF first for rad-contaminated waste, and not count on using Chestnut Ridge in case modification to its WAC is not approved.

Mr. Adler said EMDF planning is for all rad-contaminated project waste to go there, but the size of the facility can be scaled back if not all of the area is needed.

Ms. DePaoli said the RIFS considers the pros and cons of a central facility for volume reduction activities (Attachment 1, page 7). The conclusion is that such a facility is not beneficial.

Ms. DePaoli discussed water management for both EMWMF and EMDF. A focused feasibility study is planned to address alternatives for management of waste water from both facilities (Attachment 1, page 14). The feasibility study is to be completed in February 2015 and merged with the final RIFS concerning on-site versus off-site disposal into a single remedy proposed plan.

After Ms. DePaoli's presentation, committee members asked a number of questions.

Mr. Olson: What is the geologic buffer?

Ms. DePaoli: It would be native compacted clay soil that has to meet some hydraulic conductivity requirements.

Ms. Gawarecki: Is there a plan to have capacity in EMDF for material in Bear Creek Burial Grounds (BCBG)?

Mr. Adler: EMDF capacity does not assume anything from BCBG. It assumes buildings and soil from Y-12 and Oak Ridge National Lab (ORNL).

Ms. Gawarecki noted that the state prefers to excavate BCBG, while DOE would rather keep the material capped in place. She also commented that when EMWMF was proposed it was to be all that was needed for cleanup. Mr. Adler explained that at the time EM was responsible only for cleanup at East Tennessee Technology Park and EMWMF would have been sufficient for that. But EM's mission has been expanded to include Y-12 and ORNL and additional capacity is needed.

Ms. Gawarecki: Were any sites in Melton Valley considered for EMDF?

Ms. DePaoli: Melton Valley was part of the 35 sites considered originally.

Ms. DePaoli said she would provide more information about the selection process.

Ms. Smith said there was a problem of using clean fill for daily cover; that for a landfill such as this perhaps clean fill use as a daily cover wasn't such a good idea since typically daily cover is used to keep down smells (not an issue here). She said daily coverage of waste is a big part of waste disposal operations. Mr. Adler said clean fill is used primarily to fill voids. He said DOE is considering foam covers for daily coverage.

Ms. Cook: On slide 12 the cutaway drawing indicates existing grade going above the berm at one spot.

Ms. DePaoli: That part of the grade (shown in the figure is current grade); it would be cut away during construction.

Ms. Cook: Is it possible to expand the site?

Ms. DePaoli: Not really. It is constrained by EMWFMF to the west, old disposal areas to the south and natural barriers to the north and east.

Ms. Cook: Is there another option for a second facility?

Mr. Adler: If needed we could find a way, one that might even be better geologically, but it would be in an area not currently impacted by DOE (e.g., Greenfield space) that could be used for something else. When we received comments on building EMWFMF, we were encouraged to preserve greenfield and forested areas. There is no single area on the ORR to build a 200-acre facility. But we believe this location is enough to handle the balance of cleanup.

Ms. Cook: There hasn't been much guidance on individual projects and how waste is estimated. Is there a standard for estimating waste generation?

Ms. DePaoli: There were consistent methods used for estimating volumes in the Integrated Facility Disposition Project, and there is a 25 percent contingency in the 2.5 million cubic yards forecast.

Ms. Gawarecki: Do you have an idea of the lifespan of the underdrain system?

Ms. DePaoli: The Nuclear Regulatory Commission says you can assume 500 years on the liner and cap (this is the synthetics in those features, which play a large role in suppressing water infiltration into the waste), . We've looked for information on longevity of underdrain systems, but we haven't found much. The plan is to use appropriately sized rocks, but no limestone. The French drain will likely require regular maintenance.

Ms. Gawarecki: We have information on the seasonal high groundwater table, but from modeling on climate change this area is expected to have a rainfall increase beyond 55 inches per year. Is your groundwater table level projection too low?

Ms. DePaoli: We have not looked at groundwater projection increases due to climate change, but the underdrain system is expected to suppress the groundwater level under the EMDF thus accommodating some groundwater level fluctuation.

Ms. Smith: Has there been an analysis of slope capacity of the drain and what the storm capacity is?

Ms. DePaoli: We will be looking at surface water flow in detail for final design. We must do one year's worth of monitoring to help determine that and we'll calculate a 100-year storm flow.

Ms. Smith: Storm drains often overflow when capacity is exceeded. There is a need to know what happens to that water when it overflows.

Ms. DePaoli: The final design will consider the 100-year flow and drains will be large enough to handle above average storm flows.

Mr. Hicks cautioned there should be expectations of heavy storm flow more often than 100 years.

Ms. Gawarecki: With EMWFM there is no incentive for volume reduction. How can DOE incentivize volume reduction?

Mr. Adler: Cost is a major driver. Saving on costs means we can do more cleanup. There may be an opportunity at the (Subtitle D) sanitary landfill, but we'd have to reform how waste is characterized.

Discussion of possible comments or recommendation on the discussion

Mr. Hatcher said the proposed site for EMDF is focused on Option 3, and the committee probably should not try to second guess DOE on site selection.

He asked for volunteers to draft a recommendation on the proposed EMDF and its site. Ms. Cook, Ms. Gawarecki, and Ms. Smith agreed to work on a draft.

Mr. Hatcher suggested a draft be presented at the March 19 meeting.

Review draft recommendation on off-site groundwater quality assessment project – Jennifer Kasten, issue manager; Carmen DeLong, assistant issue manager

A number of comments were made on the revised draft recommendation (Attachment 2).

Ms. Sigal felt some of the wording in the recommendation portion should go in the discussion section. She said what's in the discussion should lead to wording in the recommendation section.

Mr. Olson said there appeared to be some conflicts regarding modeling in the discussion and recommendation sections. He didn't understand the use of the term 'unregulated use of harmful contaminants' since that material is regulated.

Ms. Price asked if this recommendation goes beyond recommendations in the Groundwater Strategy Document or if it supports those recommendations. If that was the case, perhaps the recommendation could simply say the board supports those recommendations. Mr. Hatcher said some of the recommendations made by Dan Goode, the board's liaison to the groundwater strategy workshops, are incorporated in the recommendation.

Mr. Adler said the three bullet points in the recommendation were in the Groundwater Strategy Document. If the board endorses what is in the report, that is helpful to DOE, he said. He said baseline groundwater data are needed to help make good cleanup decisions.

Ms. Smith's impression of the draft recommendation is that it contains good material in the recommendation section, but the discussion section probably has more detail than needed.

Ms. Staley said a good recommendation needs to be precise and concise. She said there was good information in the recommendation section, but much of it could be eliminated.

Mr. Olson said the last paragraph on the first page was important and should remain.

Ms. Gawarecki said she would like to see something ensuring funding for monitoring wells. She also thought it would be beneficial to recommend outreach about the study to affected communities and the interested public.

Ms. Sigal didn't understand the last sentence on the first page about migration of chemical species and radioisotopes to critical surrounding watersheds. Ms. Kasten said the intent of the sentence was for DOE to investigate beyond the ORR boundaries.

Mr. Hatcher said since there are so many specific comments and suggestions, he asked staff to re-send the draft recommendation to all committee members, and committee members should submit revisions to staff so another draft can be written. He also asked staff to re-circulate suggested recommendations made by Dan Goode (Attachment 3).

Topics for Top Three Issues, Board Accomplishment, or Major Board Activity for Spring Chairs' Meeting

Time did not allow for extended discussion. Mr. Hatcher showed a chart of suggestions the committee made for the Fall 2013 EM SSAB Chairs' meeting (Attachment 4).

He asked staff to provide the chart to all committee members, and committee members are to provide suggestions to staff for inclusion on a chart to provide to the ORSSAB Executive Committee for consideration.

Input on next month's topic: Update on the DOE GIS and Land Use Manager

Time did not allow for discussion.

Review Action Items

None

Action Items

1. Ms. DePaoli will provide additional information on the site selection process for the EMDF. **Complete.** Ms. DePaoli provided additional information on February 26. Information was forwarded to committee members on February, 27, 2014 (Attachment 5).
2. Staff will recirculate the draft recommendation on off-site groundwater quality assessment project to committee members for revisions. **Complete.** Sent to committee members on February 20, 2014.
3. Staff will provide suggested recommendations made by Dan Goode on the Groundwater Strategy document. **Complete.** Sent to committee members on February 20, 2014.
4. Staff will provide chart of suggested topics for the Fall 2013 EM SSAB Chairs' meeting to committee members. **Complete.** Sent to committee members on February 20, 2014.

Public Comment

None.

The meeting adjourned at 7:40 p.m.

Attachments (5) are available through the ORSSAB office.

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