



Department of Energy

Oak Ridge Operations Office
P.O. Box 2001
Oak Ridge, Tennessee 37831—

May 8, 2001

Mr. Luther Gibson, Chair
Oak Ridge Site Specific Advisory Board
Post Office Box 2001, EM-90
Oak Ridge, Tennessee 37831

Dear Mr. Gibson:

**RESPONSE TO OAK RIDGE SITE SPECIFIC ADVISORY BOARD'S REVIEW OF
DOE/OR/01-1795&D3: PROPOSAL PLAN FOR INTERIM ACTIONS IN BETHEL
VALLEY, OAK RIDGE, TENNESSEE, MAY 2000**

Thank you for your comments regarding the Bethel Valley Proposed Plan. They reflect a careful review of the document and a thoughtful assessment of the proposed actions. Your comments were considered and incorporated if appropriate into the D1 Record of Decision (ROD). All Public comments and Department of Energy's (DOE) responses were also incorporated into the Responsiveness Summary (RS) and attached to the ROD. As part of the Regulators' review, they will evaluate the public's comments and DOE's response to ensure that the comments have been handled appropriately.

Attached is the draft Responsiveness Summary sent with the D1 ROD. Because it is still in draft, it could change prior to approval and publication of the final ROD. Please contact Pat Halsey at 576-4025, if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Rodney R. Nelson".

Rodney R. Nelson
Assistant Manager for
Environmental Management

cc:

Connie Jones, EPA4
John Owsley, TDEC/DOE-O
Dave Adler, EM-913, ORO

RESPONSIVENESS SUMMARY

Comments have been consolidated to enhance readability of this section. Comments include those received in writing and those questions and comments received at the public meeting held on July 27, 2000.

General

- ✓ In general, most reviewers from the Site Specific Advisory Board (SSAB) found that the Proposed Plan (PP) adequately describes the strategic decisions required as remediation proceeds. When used in conjunction with the remedial investigation/feasibility study (RI/FS), it explains the alternatives well enough to allow thoughtful decisions and it reflects input received from the public at meetings and from informal reviews of preceding documents.

DOE Response: Comment noted.

- The PP reflects the considerable careful work expended to develop it and, I believe, the input received from the public through previous interactions. In most cases the PP illuminates clearly the strategic decisions required as remediation proceeds, and explains the alternatives well enough to allow thoughtful broad decisions.

DOE Response: Comment noted.

- Discussions at the public hearing showed that DOE and contractor staff in some cases had a good approach in mind that had not been reflected clearly in the written PP. The Record of Decision (ROD) needs to carefully include the plan actually developed, because staff changes prior to the field work can cause good ideas to be lost if they are not contained in the ROD.

DOE Response: DOE agrees that there is more information about the selected remedy than reflected in the PP. Much of the information reflected in the FS or in work conducted to specifically address this comment has been added throughout the ROD to improve understanding of the basics of the selected actions.

- The preferred remedial alternatives support appropriate Remedial Action Objectives. Except as noted below, I see no reason they would not be effective with modest likelihood of requiring the indicated contingencies.

DOE Response: Comment noted.

- The preferred alternatives outlined in the PP represent a reasonable overall approach to remediation in Bethel Valley. However, we have questions and concerns about some elements of the proposal.

DOE Response: DOE appreciates the comment. Please see the comments and responses below responding to the questions and concerns.

- U.S. Fish and Wildlife Service (Service) personnel have reviewed the *Proposed Plan for Interim Actions in Bethel Valley, Oak Ridge, Tennessee* (DOE/ORO1-1795&D3). While the Service remains concerned over the considerable uncertainty regarding the nature and extent of contamination and the ecological health of the terrestrial and aquatic biological communities in the Bethel Valley

watershed, we fully support the preferred alternatives for interim remedial actions in Central Bethel Valley, East Bethel Valley, West Bethel Valley, and Raccoon Creek.

DOE Response: The uncertainties associated with nature and extent of contamination along with ecological risk are being managed as indicated in Sect. 2.12.5 of the ROD. Additionally, necessary predesign sampling (for nature and extent) and biological studies as indicated in the GRA Logic Diagram for Sediment (for aquatic ecological risk uncertainties) are planned. Due to the limited terrestrial ecological habitat, DOE does not feel there are uncertainties with the results of the terrestrial risk assessment.

- The Citizens' Advisory Panel (CAP) initially had some difficulty accepting the proposed remediation for Solid Waste Storage Area (SWSA) 3, as the original plan was to excavate the site, leaving it available for unrestricted use. Considering, however, the overall cost and extent of remediation, the CAP accepts the final solutions offered in the PP. The CAP is especially pleased that DOE believes the groundwater problem is abating and that the protection goal is for recreational use, which exceeds the protectiveness of the End Use Working Group recommendation.

DOE Response: Comment noted.

Soil Remediation Approach

- SWSA ✓
- Fifty years from now, the Oak Ridge National Laboratory (ORNL) soil surface under the preferred alternative would be rather usable, with 50 old buildings buried a couple of feet, and surface "warm" spots ten times more radioactive than the average. While it is true that workers usually move around and tend to receive an average exposure, how does DOE plan to keep track of the location of these "warm spots," so workers will not loiter there? Signage for these spots would be a problem for generations. We think the maximum ratio of surface radioactivity in warm areas to average should be much smaller. The savings in the present proposal would be only in the short term.

We suggest that the average contamination be figured over regions no larger than an acre, so one may be confident that a worker would rarely spend his day in an area that retains a higher specific activity than the selected objectives. We also suggest that square-yard areas with above-average radioactivity exhibit an intensity no more than four times the average stated as the objective, so that even the maximum value would still be within the range of standards presently being proposed.

While the above suggestion would increase the initial remediation cost, we believe the Remedial Action Objective would then be met during practical future use of the site. With the preferred alternative interpreted as in the PP, we doubt the "clean surface" objective would be satisfied.

DOE Response: An exposure unit is a geographical area about which a receptor moves and can potentially contact contaminated soil during a certain period of time. It is assumed that the receptor can access any area within the exposure unit with equal probability. The size of the exposure unit is set by considering the future use of the land. For the industrial areas in Bethel Valley, the individual who is outside the greatest amount of time with the greatest chance for exposure to contaminated soil is currently, and is envisioned in the future, to be a maintenance-type worker who stays outdoors 2000 hours/year, for 25 years, performing ORNL S&M activities. Based on discussions with current S&M supervisors, current field personnel are generally assigned work that takes them throughout Melton and Bethel Valleys (up to 2000 acres). To be conservative, the exposure units were made much smaller than the size of the valleys. The developed portion of Bethel Valley was divided into nine exposure units ranging in size from 19 to 50 acres (average of 37 acres) of

land. If building and pavement footprints are subtracted from these total acreages, the size of the exposure unit soil area ranges from 9 to 25 acres (average of 19 acres).

A laboratory worker who spends most of his or her time indoors, but then spends 200 hours/year outdoors near or on a hot spot either through walking or through spending small amounts of time outside, is the receptor protected by a maximum level. This level is based on the assumption that a receptor is exposed to a certain small contaminated soil area (1 m² or greater) for 200 hours/year, for 25 years. This receptor would incur no more risk than the industrial worker spending 2000 hours/year outdoors over a larger area. All accessible hot spots with contamination above the maximum remediation level will be removed under the selected remedy.

The details of the remediation level approach were not presented in the PP in order to maximize the readability of the document. The details mentioned above are presented in the ROD. DOE believes that the removal of soils above a maximum remediation level, essentially regardless of size, will protect the worker from small areas of contamination. No access controls would be required.

- Is DOE aiming primarily at soils down to 10⁻² risk or 10⁻³?

DOE Response: DOE's objective is to not leave soil in place that could allow for greater than an average of 10⁻⁴ ELCR for industrial land use. Material more dangerous than that would be removed or, in limited cases, covered.

- I have two questions: (1) How do you know what is underneath the buildings? and, (2) obviously, you can't remove (contaminated soil) from underneath a building that's an operational building.

DOE Response: One of the biggest challenges associated with remediating ORNL is conducting that remediation while it remains a viable national laboratory. In most cases DOE does not have a complete data set underneath the buildings; therefore, there is incomplete information as to the extent of soil remediation that may be required under the buildings. In general, soil remediation will wait until buildings are removed (demolished). Once contaminated soil becomes accessible, the soil will be sampled before design of the remediation in that area. The amount of soil requiring remediation will be determined consistent with the remediation levels and the GRA logic diagram for soil.

- Under the PP, all areas in Bethel Valley that are currently developed but are not contaminated (such as land under office buildings and parking lots) would be designated for "unrestricted industrial use." This is the same designation as would be applied to many contaminated areas, and it is assumed to allow no excavation deeper than 10 ft. We understand that this is an assumption made for purposes of risk assessment, but we are concerned that the analytical assumption will become a permanent designation. Broad application of the "unrestricted industrial" designation is misleading, in that it suggests that there is much more contaminated land than is actually the case. Also, it may lead to misallocation of future stewardship effort, as this designation makes it appear that these areas are known to be contaminated and must be restricted to industrial use. Designations should be explicitly tied to the nature and extent of residual contamination. Can the "unrestricted industrial use" designation be subdivided into "unrestricted industrial-with residual contamination" and "unrestricted industrial use assumed-no known contamination?"

DOE Response: The more contaminated areas of ORNL have been designated for controlled industrial use and use access controls below 0.6 m (2 ft). This decision was made because of the potential costs associated with remediation to 3 m (10 ft). Other areas that are more lightly contaminated have been designated for more aggressive action, to 3 m (10 ft), because this objective

can be achieved economically. However, these unrestricted industrial areas are not necessarily clean. Therefore, some type of remediation levels needs to be assigned. Once industrial remediation levels are assigned instead of residential remediation levels, some type of institutional controls will be needed to prevent residential use. Because ORNL is an active national laboratory, the controls necessary to prevent residential use are minimal, and their application to truly clean areas does not require any additional effort or cost. Once the laboratory is no longer operational, another set of remediation levels can be selected in another decision. DOE believes further delineation of "unrestricted industrial" into contaminated and uncontaminated areas is not needed.

- Is DOE's proposed soil removal consistent with the higher risk soils shown in that drawing with all the red and orange and yellow on it [commenter is referring to the soil risk map shown in Chap. 6 of the RI/FS and shown again in the public meeting].

DOE Response: The referenced figure illustrates risk at individual points. The remediation levels are averaged over the exposure unit. Therefore, the areas requiring remediation are represented on the referenced figure by somewhere between the 10^{-4} and 10^{-3} risk contour. However, the residual risk will be averaged over the exposure unit and will be less than 10^{-4} ELCR and, for a receptor present for 200 hours at a single point, also less than 10^{-4} ELCR.

Clarification on the plan to grout the pipe bedding material

- Earlier versions of the PP had grouting the bedding material because it is a marvelous conduit for groundwater, which is contaminated, hence enhancing the spread of contamination. The current plan is to plug those channels here and there, but only where it affects surface water. This is puzzling because it is true that all the groundwater becomes surface water someplace. It seems like those channels are facilitating the spread of groundwater that is contaminated. If DOE wants to hold the line on the question of the groundwater contamination being spread, it seems like the bedding material should be plugged comprehensively. Additionally, plugging only portions of the trench may cause groundwater to move in unanticipated directions. How will the remedial design decide whether or not to plug the media channel around a certain pipeline? The preferred alternative for bedding around waste lines needs a clearer explanation. The ideas conveyed in the public meeting need to be stated in the ROD to indicate the planned criteria for various remedial actions related to these trenches.

DOE Response: The approach to grouting bedding materials did change between versions of the PP. This change was made because of two implementability concerns. First, many of the LLLW lines are in the same trench with active utilities. Grouting the bedding material would render those active lines inaccessible. Second, in some cases the bedding materials are gravel (and can be grouted) and in some cases there are no bedding materials present that can be grouted; therefore, complete grouting is not viable. Instead, DOE proposed combining trench grouting with shallow groundwater collection. In areas where plugging of a trench is proposed, the area hydraulics will be evaluated to determine if the water will be collected by an existing sump or if enhancements of the shallow groundwater collection system are required to prevent unexpected movement of the groundwater. In other areas with notable groundwater movement, additional groundwater collection is planned to control groundwater migration, and less reliance is needed on complete trench grouting. The explanation of this interconnection between trench plugging and shallow groundwater collection has been enhanced in the ROD.

Subsurface "fixed" contamination

SS AB ✓

- Perhaps some "fixed" contamination under paint should be removed during decontamination and decommissioning (D&D) before backfilling. Currently, building basements are to have loose contamination removed. Contamination under paint would be considered "fixed" under the preferred alternative. We assume buried basements will lose their paint after a few years, freeing some of the contamination. Portions of some buildings probably have walls that have been given many coats of surface treatment to "hide" alpha-particle emitting contaminants. For such buildings, we believe it would be appropriate to grind these surfaces while they are accessible. This would require sampling walls and floor of at least one radiochemical laboratory that was in a basement to determine any need to remove fixed contaminants.

DOE Response: The purpose of removing (via wiping, pressure washing, or vacuuming) the loose contamination during D&D is primarily to remove the potential for airborne contamination during construction activities and as a "best management practice." A best management practice is an activity that does not contribute toward an RAO but is done because the additional effort is minimal (pennies per square foot and low worker risk due to potential to operate at a distance). Neither the loose contamination nor the fixed contamination under the paint is contributing to an industrial risk (too deep) or a groundwater impact (insufficient volume). The fixed contamination does not contribute to the potential of airborne contamination during backfilling. The fixed contamination would require considerable effort (dollars per square foot through scabbling) to remove and would result in greater potential exposure to remediation workers. Therefore, there is insufficient justification to completely remove the material as a best management practice.

SWSA 3 Decision

- The rationale for capping SWSA 3 in West Bethel Valley, rather than excavating the waste, is neither evident nor fully explained. This site appears to have a smaller inventory than other contaminated areas and is isolated from other waste areas, so the continued presence of waste at this location would have a disproportionate impact on the cost and complexity of future stewardship. The community needs more specific information on the technical rationale for recommending that waste be left in place in this area, including some reassurance of the technical effectiveness of the proposal to intercept upgradient groundwater.

DOE Response: The technical basis for selecting capping and upgradient water diversion at SWSA 3 instead of excavation includes the status of releases from the buried waste, the nature of waste in the burial ground, and the cost effectiveness of excavation rather than capping. The ⁹⁰Sr concentrations detected in surface water in the NWT and Raccoon Creek are well below the action level for protection of recreational users of the area. This condition is not expected to change, and concentrations of contaminants in surface water have been decreasing and are expected to decrease even further following implementation of the water diversion and site capping. Much of the waste in SWSA 3 was covered with concrete as part of the burial process. The presence of concrete covering the waste both minimizes the contaminant release and makes excavation of the waste more difficult. The difference in costs between capping and excavation is more than \$90 million. Assuming that the maintenance of the cap and groundwater monitoring requirements will decrease over time as the strontium activity decays, DOE estimated that nearly 2000 years of O&M would be required before capping became as expensive as excavation. In addition, the risk to excavation workers will be difficult to control due to the uncertainty of the material placed in SWSA 3. Thus DOE, EPA, and TDEC concluded that excavation of wastes buried in SWSA 3 is not cost effective for reducing human health or environmental risk. The explanation of this rationale has been expanded in Sect. 2.12.

- ✓ • It is recognized that the manner of waste burial in WAG 3, with some concrete caps, discourages excavation. If the portions of the waste most apt to trouble future use of the site could be identified, a partial excavation would be warranted. Consideration should be given to adding a discussion of this issue to the ROD.

DOE Response: Partial excavation was not considered during alternative development or remedy selection because the WAG 3 records are not sufficiently detailed to identify the worst problem areas of WAG 3. DOE does not have a basis on which to consider partial excavation and, therefore, has not added this issue to the ROD.

- If the current preferred alternative is maintained, the planned water diversion trench should be cut deeply enough to intercept all upgradient groundwater that could reach the difficult waste.

DOE Response: The upgradient diversion channel must function both as a surface water and shallow groundwater diversion structure. There is a swale that comes off Haw Ridge to the south, and the diversion trench will need to convey the seasonal surface water flows and route the water around to the east to NWT. The trench is planned to be excavated to bedrock to capture as much groundwater as reasonably possible. Complete dewatering of the buried material may not occur but is not required because the future release potential of the burial ground is decreasing without any action.

- Several questions were received during the public meeting seeking clarification on the actions proposed in West Bethel Valley.

DOE Response: There are two major burial areas associated with West Bethel Valley: the Contractor's Landfill and SWSA 3. The proposed action caps SWSA 3. The Contractor's Landfill currently has a 0.6-m (2-ft) soil cover over it. Portions of the cover are contaminated (identified on Fig. 8 of the PP). These contaminated areas along with all contaminated soil in the area above unrestricted remediation levels would be removed. The soil cover would then be repaired. One of the contaminated soil areas is called the Closed Scrap Metal Area. Miscellaneous debris located there would also be removed.

- How did that soil become contaminated? In other words, is it a sign of there being leaching and water flow from the burial grounds in those directions? Does that suggest additional details that need to go into DOE's planning?

DOE Response: The Closed Scrap Metal Area did have some waste stored on the surface. The surface contamination inside the SWSA 3 fenced area is derived from contaminated equipment stored on the ground surface. Contaminated soil areas adjacent to the burial ground are presumed to have been created by seepage of contaminants out of the SWSA 3 waste burial trenches. This shallow groundwater seepage is expected to be controlled through diverting surface water and groundwater flows on the upslope side of the burial ground and capping to stop the infiltration of water into the waste.

Project duration and cost/funding

- How long does DOE estimate the whole project will take? How will DOE obtain the money for this project?

DOE Response: DOE estimates that the project will require through 2014 to complete remediation of accessible contamination, assuming that the funding allocations to Oak Ridge for cleanup are similar to this last year. Funding is obtained through annual appropriations from Congress.

- If DOE is going to be spreading the project over approximately 10 + years, during each year as much will be spent on O&M as on capital cost, and then the O&M continues on even after completion.

DOE Response: The annual O&M costs presented in the PP are quite high and are a notable portion of the selected remedy. As time proceeds, these costs will decrease as conditions stabilize and less monitoring is required. A tradeoff between high capital expenditures for a more complete cleanup had to be balanced against greater O&M costs.

- With respect to the contaminated buildings, if DOE is able to get the funding and either clean up the loose contamination and perhaps even remove them within say the 10- or 12-year timeframe referenced, it is fine to ignore my comment. But some of those buildings, especially in Isotope Circle, contain very high levels of loose contamination in the hot cells. I say this having been one of the people who worked on the isotope program shutdown plan and knowing they did not get the funding to do hot cell wash downs. I am not talking about stuff that is embedded in the concrete; I'm talking about loose stuff. The ventilation systems, the off gas systems for those hot cells, run on the roofs of the buildings. The HEPA filters are on the roofs of the buildings and experience, at least in other places, is that particles tend to settle out in various beds. There are particulates in the filters, which as far as I know have not been changed to put clean ones in. If we're talking 10 to 12 years, I think the important thing is to spend the money on moving forward with the cleanup. But when DOE starts talking about 20 years one begins to get concerned. What happens if a tornado comes through? What happens if a high wind comes through? The monitoring instruments in those buildings are old; they're vacuum tube technology, and one cannot buy replacement parts for them. At the time I worked on the shutdown plan, the roofs were in poor condition. They were barely able to meet containment with respect to the ventilation air pressure, so there are a lot of problems there. I understand perfectly well that tanks and pipelines are the first priority. But let's please not forget the buildings and not put them off too long. Either that or come in and do a quick clean-up of the sort that takes care of the loose stuff, so if something goes wrong DOE is not sucking a lot of stuff out of the building.

DOE Response: DOE understands the request not to delay demolition of the buildings too far into the future. DOE intends to maintain the buildings in a safe condition until the demolition can proceed. There is currently a sitewide HEPA filter system, and HEPA filters are replaced on a 7-year cycle. The S&M program is currently maintaining negative pressures on the hot cells. All remediation activities planned for Bethel Valley are important. DOE prioritized as high filling the Gunite Tanks and pipelines to limit S&M dollars associated with treatment of water collecting in the tanks and because of concerns associated with Gunite Tank shell integrity. DOE also prioritized groundwater actions high to limit the spread of contamination.

- Is any thought being given to looking at the processes proposed to see if they can be made cheaper or doing any research investigation because, obviously, the stewardship business, as it goes down through the years, is going to be pretty hard to keep coming up with money for.

DOE Response: The selected remedy does have higher O&M expenses than some of the other options, because this option involves long-term management of large volumes of water. There are two mechanisms by which more inexpensive technologies may be identified. First, the project will be bid competitively, rewarding vendors for innovative, less expensive solutions to all of the efforts. Secondly, long-term water treatment has been identified as an expensive component of stewardship activities at the ORR, and the draft Stewardship Management Plan has emphasized the need to continue technology development activities for this problem. This need has been sent to DOE's technology development program for consideration with future research opportunities. This need identification allows the entire DOE complex to consider reasonable solutions.

- Clarify that there is a difference between the PP costs for the preferred alternative for Central Bethel Valley (\$116 million) and the FS costs for Alternative C-3 for Central Bethel Valley (\$197 million).

DOE Response: The differences in costs are as a result of changes in the preferred alternative after further evaluation and negotiations between the FFA parties. These differences were highlighted on p. 25 of the PP. The key differences were a reduction in the volumes of soil removed (\$50 million reduction) and the reduction in pipeline bedding material and process waste line grouting (\$20 million reduction). Both costs are in 1998 dollars.

55A12 Page 36. In Table 8, the discount or interest rate assumed for the present worth calculation is not apparent.

DOE Response: The discount rate of 7% and an escalation range of 2.5 to 2.7% were used in the present worth calculations. More information can be found in Sect. 10.1.7 of the RI/FS.

55A8 ✓
Commitment to Stewardship

- While the DOE presentation at the public hearing indicated that stewardship issues would not be covered in the current interim ROD, the PP does include sections directly relevant to stewardship, including those on long-term effectiveness of the remedies, land use controls (LUCs), and the federal commitment to stewardship of the site. Since it is not really known that a Final ROD will occur, and the preferred alternatives will often require ongoing stewardship activities, the ORSSAB believes the Bethel Valley interim ROD should cover the general principles that guarantee effective stewardship. The following paragraphs provide some detail for this request.

- (a) Clarity is needed that maintenance of remedial structures and LUC activities are included at least for the period until a final ROD is adopted.
- (b) Maintenance of caps, trenches, and treatment facilities is described as a "continuing" activity, with no indications of criteria for adequacy or what the word "continuing" means in context. The ROD must be explicit on this matter.
- (c) LUCs are briefly listed, with reference to the Land Use Control Assurance Plan (LUCAP). (Paragraph 2.5 of that LUCAP states that the PP and ROD must contain an adequate description of the land use controls along with conditions for their use "to allow evaluation of each land use control under remedy selection criteria contained in CERCLA and the NCP.") The various types of LUC are listed only by title in the PP. The ROD should at least meet the requirements of the LUCAP in this matter.

DOE Response: (1) Sect. 2.12.3 of the ROD describes the maintenance and monitoring that will be required after completion of the selected remedy. Sect. 2.12.4 describes the LUCs required by this selected remedy. (2) Continuing maintenance is required as long as residual waste is a risk or until a final decision is made. (3) The intent of Sects. 2.12.2–2.12.4 is to provide the necessary information about the selected remedy that was used to support the evaluation during the remedy selection process. This process was conducted in the FS and the maintenance, monitoring, and LUCs required by each alternative were identified and evaluated along with the other elements of the alternatives.

As provided in the LUCAP, details for implementing and maintaining all LUCs included in the remedy encompassed by this ROD will be specified by DOE in a LUCIP submitted to EPA and TDEC for approval. The Bethel Valley LUCIP will be submitted and reviewed concurrently with the Bethel Valley RDWP.

33AB

- Other essential stewardship activities that will need to be carried out during the interim remediation should be listed in the ROD. The important record keeping, public education, and surveillance functions should be listed in the ROD. There is concern that ongoing activities not specifically mentioned in a ROD will not endure, and this PP would be the public's only opportunity to comment on the remediation program for Bethel Valley. At a minimum, we believe the following points should be included in the ROD:
 - (a) The essential classes of records to be maintained should be listed.
 - (b) A public education program should be specified to include at least a public annual progress meeting (that could also include other areas of the Reservation).
 - (c) The aspects of Bethel Valley remediation that will require routine surveillance should be listed.

DOE Response: The Bethel Valley ROD indicates that DOE and the other FFA parties are committed to ensuring that LUCs included under the selected remedy will be implemented and maintained for as long as they remain necessary to protect public health and the environment. The interim remedy will undergo routine S&M as illustrated in Sects 2.12.2 and 2.12.3 in the ROD to ensure that the remedial actions meet their individual performance measures. Some essential stewardship activities, such as listing classes of records or providing public education opportunities, are beyond the scope of the Bethel Valley ROD, and will be addressed in DOE's Stewardship Management Plan currently under development. In addition, DOE is planning the revision to the Public Involvement Plan, and these types of issues will be addressed with the public during the development of that plan.

- The CAP recommends that, in addition to the stewardship activities for remedies to be implemented, a standard paragraph be inserted into the Interim ROD to capture the principles guaranteeing effective stewardship. The CAP challenges DOE, Oak Ridge Operations, and Environmental Management (EM) to consider the following as an example, if not the actual paragraph:

"Contamination will remain in the Bethel Valley Watershed after the remedial actions described. These residuals will require monitoring, maintenance of containment structures, and restrictions of access for the foreseeable future to protect the public's health and environment. The implementation and funding of these activities is acknowledged to be the responsibility of government of the United States of America, through its designated agents or contractors, until the hazards become negligible. The local public will be involved in the oversight of these stewardship activities, by support of a citizens' group and by ensuring public input in CERCLA five-year reviews."

Please comment by adopting this or similar wording this ROD and future RODs, or justify why such a statement is omitted.

DOE Response: Similar wording has been adopted in the Declaration of the Bethel Valley ROD. The example paragraph provided speaks to the commitment of DOE to stewardship and the involvement of the public in that stewardship. Requirements for surveillance, maintenance, monitoring, operation, and control of facilities constructed as part of the interim remedy are addressed in this ROD. DOE has adopted a policy of public involvement and intends to continue pursuing public involvement. Funding commitments are not made in this ROD; DOE receives funding through annual appropriations from Congress.

- The CAP understands the LUCAP for the Oak Ridge Reservation but is concerned with the lack of information on the planned content of the Land Use Controls Implementation Plan (LUCIP), as this

document will not be developed until the Remedial Design Work Plan (RDWP) is written. Will the public be invited to review the LUCIP for this Interim ROD as it is developed for the RDWP, a post-ROD document? Because the Administrative Record ends with the ROD, the CAP is concerned about the lack of requirement for further public involvement.

DOE Response: The LUCIP submittals will be placed in the Post-Decision File where they will be accessible to the public. The LUCIP will also be incorporated into Appendix B of the LUCAP and will be revised, as necessary, to reflect approved changes to any LUCs.

- 5-5-12
- The Federal Facility Agreement for the ORR does not address public involvement in the 5-year reviews required at sites where remedial actions result in contaminants remaining above levels that allow for unlimited use. Thus, we recommend the ROD include the following provisions for public involvement:
 - (a) Public notice of forthcoming 5-year reviews and invitations to participate extended to interested citizens, community groups, and local government.
 - (b) Public meetings to provide stakeholders with information about remedial activities subject to the 5-year reviews, to explain the 5-year review process, and to gather community issues and concerns related to forthcoming 5-year reviews.
 - (c) Site visits.
 - (d) Public review and comment periods for draft 5-year review reports.
 - (e) Public notice of final 5-year review reports and the location of their availability.
 - (f) Distribution of summary fact sheets to all individuals and groups who participate in the 5-year review process.

DOE Response: DOE is planning the revision to the Public Involvement Plan, and these types of issues will be addressed with the public during the development of that plan.

- All alternatives considered would leave hazardous substances in place, which would require land use restrictions for hundreds of years or more. As the municipality with local jurisdiction over this area, the City of Oak Ridge will inevitably need to play a major role in assuring long-term stewardship. The City, therefore, needs to be a participant in developing and negotiating the LUCAP for the Oak Ridge Reservation (this plan was already agreed upon by DOE, EPA, and TDEC, without local government participation) and related plans for long-term controls.

DOE Response: DOE intends to keep the City of Oak Ridge informed of the long-term stewardship program. The LUCAP was prepared in response to EPA Region 4 requirements, and agreed upon by EPA, TDEC, and DOE. The LUCIP submittals will be placed in the post-decision file where they will be accessible to the public.

- The preferred alternatives are predicated on a long-term stewardship program that would include active control measures such as security patrols, as well as passive control measures such as placing notices on property records. We are concerned about whether it will be practicable to maintain useable records and other controls as long as they are needed, and about how the community will be assured that maintenance of these control measures, particularly the active controls, will not someday

become a financial burden on the local community. If it is difficult now for DOE to obtain sufficient federal funding to pay for remediation, it will be more difficult in the future to obtain funds for long-term stewardship. Would the less intensive remediation efforts included in the preferred alternatives be attractive financially if the true costs of long-term stewardship (including contingencies for future uncertainties) were factored into the cost analysis?

DOE Response: It is important to note that this ROD is for interim actions only and should not be construed to reflect the final actions for this site. The costs presented in this ROD include the following interim actions: maintenance, monitoring, documentation of activities, institutional controls, and water treatment. The cost estimates were prepared in accordance with CERCLA guidelines. A cost analysis was then conducted (also in accordance with CERCLA guidelines) to determine the cost-effectiveness of each alternative individually and compare the cost and effectiveness of alternatives in relation to each other.

For West Bethel Valley, DOE completed a separate analysis that considered long-term costs of cap maintenance and monitoring. The analysis concluded that a more expensive but more aggressive excavation alternative was not more cost effective. (This analysis is presented in the ROD.) For Central Bethel Valley, the alternative selection was less dependent on capital costs vs long-term costs and more dependent on what was technically feasible while keeping the laboratory operational; therefore, no separate analysis was conducted.

- Page 11, second column, Lines 21-24. While surface waters are classified by the State for the listed uses, text could be added to the ROD describing the existing restrictions on such uses on the ORR (e.g., access, fencing, guards, signs).

DOE Response: The ROD does not require implementation of restrictions on surface water use in Bethel Valley and therefore text describing the existing restrictions will not be part of the selected remedy. Remediation will be sufficient to meet the classified use of the streams. Although there may be restrictions to accessing the streams that may be in place after the remedies are implemented, they will be for security reasons and are not required by CERCLA to protect against residual contamination.

NEPA 55A3

- SSAB reviewers recognize that DOE 0451.1A (National Environmental Policy Act Compliance Program; approved 06/05/97) requires only that certain NEPA "values" (i.e., analysis of cumulative, off-site ecological and socioeconomic impacts) be incorporated, to the extent practicable, in DOE CERCLA documents. These NEPA values are meant to supplement the required CERCLA evaluation criteria. We find the PP discussion of the issues and concerns previously identified in the RI/FS as NEPA values to be consistent with the findings stated in the RI/FS.

DOE Response: Comment noted.

- Preservation of physical evidence of Oak Ridge's atomic history—and the associated potential for heritage tourism—is important to our community. Therefore, we note with concern that all of the remedial alternatives considered for Central/East Bethel Valley would include the removal of 53 buildings (not specifically identified in the PP), apparently including all Manhattan Project and early Atomic Energy Commission (AEC) structures other than the Graphite Reactor. Although the Graphite Reactor is the one building that is designated a National Historic Landmark, there are other nearby structures of historic significance that probably could be listed on the National Register of

Historic Places and that contribute to Graphite Reactor visitors' appreciation for the history of this site. Have the Tennessee Historic Commission and the Advisory Council on Historic Preservation provided opinions on the proposal to remove all of these structures (as required under the National Historic Preservation Act)? What evaluation has been done to determine whether it would be feasible to decontaminate and preserve some additional structures that have historic significance or contribute to the historic setting of the Graphite Reactor? The topics of historic preservation and cultural resource impacts (which are addressed in all NEPA documents) are missing from this PP, including the NEPA Values section, where we expected to find them.

DOE Response: Many of the buildings/structures to be removed during building remediation activities are within the ORNL Historic District, which encompasses the 2000–4000 areas of Central Bethel Valley. This ORNL Historic District has been recommended for inclusion in the National Register of Historic Places under the NHPA (see ARARs in Appendix B). Additionally, the Graphite Reactor is a National Historic Landmark. Adverse effects on historic properties will be taken into account, and measures to minimize or mitigate them will be evaluated per applicable NHPA requirements.

An architectural/historical assessment was performed for ORNL in 1993. The results of this assessment were submitted to the Tennessee SHPO. If any of the buildings to be demolished are listed as historical properties, approval is required from the SHPO. The SHPO must also be consulted regarding measures to mitigate adverse effects to historical properties. This consultation will occur during the design of each project.

The topics of historic preservation and cultural resource impacts are included in the NEPA analysis for the selected remedy in this ROD.

- There is no NEPA Values section in this PP, although some of the values in Appendix E, Applicable or Relevant and Appropriate Requirements (ARARs), and others are interspersed throughout the text. In the opinion of the CAP, the criteria discussed are inadequate in scope. This does not meet the spirit of Hazel O'Leary's *Secretarial Policy on the National Environmental Policy Act (June 13, 1994)*, which clearly states that "Department of Energy CERCLA documents will incorporate NEPA values, such as analysis of cumulative, off-site, ecological, and socioeconomic impacts, to the extent practicable."

DOE Response: Highlights of NEPA Values are provided on pages 37 and 44 of the PP. The associated text explains that a more detailed analysis can be found in the FS. The DOE is committed to complying with the Secretarial Policy and has incorporated NEPA Values into the Bethel Valley ROD. For instance, the ROD (Sect. 2.12.7) includes a table that addresses each NEPA Value as applied to the selected remedy as well as some discussion in the main text.

Maps

- The CAP is concerned that DOE continues to include poorly thought-out and executed maps in these important CERCLA documents. In the Bethel Valley Proposed Plan, "the" incorrect map has returned to page 3 after the public has repeatedly corrected it in past documents. The ORR is entirely within the City of Oak Ridge boundaries with the exception of approximately 806 acres in the northwest corner adjacent to East Tennessee Technology Park. Please use a map that represents the facts. The CAP also suggests that the DOE spend some time comparing the various maps in the proposed plan against the text. Some maps do not show all of the information given by the text, which results in confusion on the part of the reviewer.

DOE Response: The City of Oak Ridge boundaries shown on the PP map referred to the metropolitan or residential/commercial area of Oak Ridge and not to the City's corporate limits. The PP map allowed the reader to see at a glance that residential/commercial areas are not adjacent to contaminated areas on the ORR. However, the corresponding map for this ROD has been modified to show the City of Oak Ridge corporate limits rather than the metropolitan area. Other maps within the ROD have been updated to include locations of facilities or waste units mentioned in the text.

- The CAP also recommends that the DOE research a better way to include maps in CERCLA and other documents. Not all members of the public have access to documents with color maps, and the black and white copies provided by the Information Resource Center do not adequately differentiate between different-colored areas on the maps. As this information is often only presented on the map, DOE must find a better way to communicate it. Either provide all documents with color maps, or use some form of shading or pattern in black and white to allow all readers to understand the information presented.

DOE Response: Comment noted. DOE is taking the comment under advisement.

- 55AB
- Page 4, Figure 2. Recommend that the 1000 area be shown on the map.

DOE Response: Central Bethel Valley maps containing the 1000 Area have been modified to indicate that the 1000 Area is actually in West Bethel Valley.

- 55AB
- Pages 4 and 7. Recommend that First Creek and Fifth Creek be shown on Figure 2 and also on Figure 3. The Core Hole 8 plume should also be included on Figure 3. A heavy line similar to the gunite tanks line would be appropriate.

DOE Response: First and Fifth Creek have been added to the ROD figures. However, the Core Hole 8 plume was not added. Although DOE understands that this plume is mentioned in the documents, to ensure readability of the figures, the level of detail on groundwater contamination was not modified.

- 55AB
- Line 51. The "7500 Bridge" on Figure 3 should be identified or, if not possible on Figure 3, then on Figure 2.

DOE Response: The 7500 Bridge has been added, where appropriate, to figures in the ROD.

Natural Resources

- While many decisions on the Oak Ridge Reservation are implemented due to regulatory commitments associated with the Federal Facilities Agreement, the DOE, acting as a natural resource trustee, must also ensure that its actions are fully protective of the response it is entrusted to protect.

Since land use controls are ineffective in reducing exposure of site-related contaminants to ecological receptors, remedial actions must reduce ecological risks to levels that will result in the recovery and maintenance of healthy local populations and communities of biota.

DOE Response: The selected remedy is protective of the ecological receptors, reduces risks, and allows for recovery and maintenance of healthy local populations and communities. The impacted species identified in the baseline ecological risk assessment were the aquatic species in the local creeks. As noted in Sect. 2.13.1, Overall Protection of Human Health and the Environment,

“Groundwater treatment actions for mercury and removal of contaminated sediments in the streams will allow AWQC to be met and will protect the aquatic species in those streams.”

- For the Oak Ridge Reservation, a streamlined process should be developed to address natural resource trustee concerns concurrently with CERCLA investigations, documentation, and remedial action implementation. We do not believe that the watershed approach, utilized in recent years by DOE at Oak Ridge, has been effective in reducing CERCLA documentation requirements, managing uncertainty associated with remedial action decisions, and, most importantly from our perspective, ensuring ecologically safe clean-up levels or that potential exposure pathways to ecological receptors have been removed.

DOE Response: General comments on the strategy of addressing natural resource considerations as part of the existing CERCLA process should be directed to the ORR Natural Resource Trustee Council (NRTC). Comments and recommendations received on specific ORR CERCLA documents from members of the ORR NRTC are taken into consideration during finalization of these documents. Although NRTC members do not have the same role as the parties to the FFA in reviewing and concurring on documents, please be assured that the integration of NRDA into the CERCLA process is an ongoing process.

- We are pleased that the DOE recognized the Endangered Species Act as a location-specific ARAR in Appendix E; however, the absence of a specific monitoring plan to fully address the potential for remaining impacts does not ensure full compliance with the Endangered Species Act or other ARARs. The Migratory Bird Treaty Act is also a location-specific ARAR for planned remedial actions/decisions implemented on the Oak Ridge Reservation.

DOE Response: Surveys by DOE in 1994 (DOE/OR/01-1302/V1) and 1996 (ES/ER/TM-188/R1) indicated there were no threatened or endangered species or designated critical habitat identified in the Bethel Valley watershed. Therefore, a specific monitoring plan for the Endangered Species Act is not required.

The DOE will conduct post-remediation monitoring to evaluate compliance with RAOs, as specified in Sect. 2.12.3 of the ROD, to ensure that protection of human health and the environment is achieved. The monitoring includes evaluation of residual contamination levels related to ecological protection in surface water, soils, and sediments. Additionally, DOE will carefully evaluate its remediation activities to ensure full compliance with the Endangered Species Act and other ARARs in the ROD.

The DOE believes that the Migratory Bird Treaty Act (MBTA), in particular Sect. 703, taking, killing, or possessing migratory birds unlawful, is not an ARAR for actions in Bethel Valley. The MBTA Sect. 703 generally prohibits taking (e.g., killing, capturing, possessing, offering for sale, export, etc.) of migratory birds or their nests except as prescribed in hunting regulations and is not really an environmental protection statute but rather has been dubbed by legal commentators as a “hunting law.” This act has not been cited as an ARAR in other RODs on the ORR.

Miscellaneous

- SSAB
- Page 19 (Alternative C-1-No Action) and page 20 (Alternative W-1-No Action). The no-action alternative seems ambiguous in DOE CERCLA documents. Does it mean cessation of existing protective procedures as suggested in this document? Or does it mean not proceeding with any of the

other alternatives? If the former, chances are it would not be allowed by the regulators. For purposes of comparison of alternatives, the current status should be the baseline.

DOE Response: The no action alternative is cessation of existing protective procedures in both alternatives. It matches the conditions of the baseline risk assessments. This definition is necessary to demonstrate that the current protective procedures are necessary. The no action alternatives are not intended to be viable alternatives, they are developed to be a basis for comparison with other alternatives and to illustrate that basic institutional controls are needed. The alternative that is described above as not adding more actions is considered a limited action alternative. It was not evaluated for Bethel Valley.

- On December 2, 1999, U.S. Fish and Wildlife Service (Service) personnel participated in a conference call with DOE representatives regarding our comments on the *Remedial Investigation/Feasibility Study for Bethel Valley Watershed, Oak Ridge, Tennessee* (DOE/OR/01-1748/V2&D2). We expressed numerous concerns about the need for a complete characterization of the nature and extent of contamination present in the Bethel Valley watershed, and about the specific assumptions made in the ecological risk assessment. We were assured that "although the scope of additional data collection and evaluation for design purposes for ecological protection is not yet defined, input from the Service will be used and incorporated as appropriate." Unfortunately, the subject proposal is very general in terms of a post-interim remedial action-monitoring plan to address remaining uncertainties.

DOE Response: Development of the monitoring plans has not yet begun. The Service will have the opportunity to provide input in the development of a more comprehensive monitoring plan after the BV ROD has been signed and during subsequent updates of the monitoring plan.

- With this PP the DOE has abandoned the *Annotated Outlines for Documents required by the Federal Facility Agreement and CERCLA for Oak Ridge Reservation Sites, January 1993*. The FFA Project Manager's Office assures the CAP that new versions of the Annotated Outlines are out for DOE review and will soon be in place. The Annotated Outlines provide both a set of tools and a quantitative measure for ORR CERCLA documents. The CAP reserves the right to comment on the revised and updated Annotated Outlines when they are released to the public.

DOE Response: The existing annotated outline was not used for this PP as noted by the commenter. The outline is considered out of date. New versions of all annotated outlines are being generated. The new versions of the Annotated Outlines for the PP and ROD will take into account the July 1999 guidance from EPA on preparing proposed plans, records of decision, and other remedy selection decision documents. Although there is no specific requirement for public involvement with the Annotated Outlines, DOE would welcome review of the Outlines by the public.

- The CAP found it difficult to discover the documentation for the decisions reached between parties for the Federal Facility Agreement (FFA) for this PP. The Administrative Record File is deficient in this respect. The *Procedure for Environmental Restoration Administrative Records Management - 1991* states that the following should be included: DOE and regular signature correspondence, approved/signed regulator meeting minutes, regulator telephone conversations, telephone conversations (contractor level), and internal communications (contractor level). When the Administrative Record File becomes the Administrative Record (at the point the ROD is signed), DOE and the regulators must ensure that the Administrative Record is complete as specified in the cited procedure.

DOE Response: Prior to signature of the ROD, the Administrative Record was reviewed to ensure inclusion of all appropriate documents.

- DOE's follow-up action will be the groundwater ROD; it was mentioned earlier in the presentation that DOE will evaluate the effects of source removal on the groundwater. How long will it take to evaluate the effects? What kind of response do you expect to see?

DOE Response: DOE is currently anticipating developing an additional ROD for East and West Bethel Valley groundwater after 3 to 5 years of monitoring has occurred on the groundwater following implementation of the interim actions. Source control actions in the main portion of ORNL are not anticipated to be completed until the facility is no longer operational in the current 3000 Area. Therefore, the groundwater decision on this portion of the plant is delayed past 2010. It is anticipated that in all cases, the interim actions should result in a decrease in nearby groundwater concentrations within a few years. This strategy for further decision making is still under negotiation with EPA and TDEC.

- What is the estimate of the average flow in White Oak Creek?

DOE Response: In 1994, the mean flow measured at the 7500 Bridge was 5500 gal/min. However, the flow volume can normally vary from 1000 to 10,000 gal/min depending on rainfall.

- How many buildings will be left at ORNL after completion of the D&D work?

DOE Response: Upon completion of the D&D activities outlined in this ROD, more than 100 buildings including wastewater treatment plants, operational laboratories, and office spaces, will remain.

- Are any of the hot cell facilities active today?

DOE Response: None of the hot cells covered by this ROD are being used. There are a number of active hot cells at the ORNL site that UT-Battelle is maintaining.

- 559AB
- Page 2: Recommend the addition of the "Feasibility Study DOE/OR/01-1748/V1&V2&D2" to the list of references of the PP.

DOE Response: Although the PP will not be revised, the RI/FS for Bethel Valley Watershed is included in the list of references for this ROD.

- 559AB
- Recommend that the LUCAP be added to the list of references of the PP.

DOE Response: Although the PP will not be revised, the 1999 MOU between DOE, EPA, and TDEC (which includes the LUCAP) is included in the References section of this ROD.

- 53AB
- Recommend that the following be added to the Glossary: Land Use Control (LUC), Land Use Control Assurance Plan (LUCAP), and Land Use Control Implementation Plan (LUCIP).

DOE Response: The PP will not be revised.

- p. 2
- Page 19 (top of 2nd column). Suggest that "Table B.3." be added to "a and b" (a and b; Table B.3) also on pages 20 and 21. Readers need to know where "a and b" can be found.

DOE Response: The PP will not be revised.

SSAB

- Several reviewers suggested that a basic flow chart of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process would assist in understanding the schedule and sequence of activities and decisions for the watershed approach to decision making.

DOE Response: Although the PP will not be revised, this comment will be taken into consideration for future PPs.