



Department of Energy

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

July 16, 2001

Mr. Luther V. Gibson, Jr.
Oak Ridge Site Specific
Advisory Board
P.O. Box 2001, EM-90
Oak Ridge, Tennessee 37831

Dear Mr. Luther:

**ATTAINMENT PLAN FOR RISK/TOXICITY-BASED WASTE ACCEPTANCE
CRITERIA AT THE OAK RIDGE RESERVATION, OAK RIDGE, TENNESSEE
(DOE/OR/01-1909&D1)**

The U.S. Department of Energy has received comments from the Oak Ridge Site Specific Advisory Board (ORSSAB) on the subject document. Please find attached a response to comment form addressing each of those comments.

I look forward to meeting with the Waste Management Subcommittee of the ORSSAB on July 18, 2001, to address any questions regarding these responses and the latest version of the subject document. In the interim, feel free to contact me at 576-2552.

Sincerely,

A handwritten signature in cursive script that reads "Andrea B. Perkins".

Andrea B. Perkins

Enclosure

cc w/enclosure:
P. Halsey, DOE/ORO
C. Jones, EPA, Region IV
J. Owsley, TDEC-DOE-O

OAK RIDGE PROGRAM DIVISION DOCUMENT REVIEW FORM

DOCUMENT TITLE: Attainment Plan for Risk/Toxicity-Based Waste Acceptance Criteria at the Oak Ridge Reservation, Oak Ridge, Tennessee	DATE COMMENTS ARE DUE:
DOCUMENT NUMBER: DOE/OR/01-1909&D1	DATE COMMENTS TRANSMITTED: 3/20/2001
NAME OF REVIEWER: Oak Ridge Site Specific Advisory Board	
ORGANIZATION: Oak Ridge Site Specific Advisory Board	

COMMENT CODE	
D = Deficiency of some type; cite applicable regulation(s)	C = Clarification or additional information needed; response may be in summary of comment responses and/or next version of document
	E = Editorial comments will be noted and corrected, but dropped from the summary of comment responses

COMMENT NO.	SECT/PAGE	COMMENT	RESPONSE	ACCEPT/REJECT
1	General	Reasonableness of Planning Assumptions Used in Establishing WACs, Recommendations: <ul style="list-style-type: none"> • DOE is not anticipating any levels of enriched uranium in the Environmental Management Waste Management Facility (EMWMF) high enough to raise nuclear criticality safety concerns because the WAC limit that potential. However, the acceptance of classified wastes into the EMWMF necessitates addressing this issue, and the Board recommends that a chapter be added to the plan to discuss the issue of potential criticality. 	The D2 WAC attainment plan includes a physical and other WAC addressing criticality safety derived from the Nevada Test Site WAC language.	
2	General	Reasonableness of Planning Assumptions Used in	The D2 WAC attainment plan does not specify individual	

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		<p>Establishing WACs, Recommendations:</p> <ul style="list-style-type: none"> Redundant hard copy lists of materials disposed in the EMWMF will be maintained in the same manner as other Comprehensive Environmental Response, Compensation, and Liability Act documentation on the Oak Ridge Reservation. The Board recommends that this procedure be noted in the WAC Attainment Plan. 	<p>procedures, as this document is a primary FFA deliverable. As such, all changes to the plan must be formally submitted to and approved by the FFA Managers. Therefore, details that are highly subject to frequent change, such as procedure numbers, have been omitted.</p> <p>The inventory of waste disposed in the EMWMF will be maintained using both electronic files and hard copy files.</p>	
3	General	<p>Reasonableness of Planning Assumptions Used in Establishing WACs, Recommendations:</p> <ul style="list-style-type: none"> DOE needs to develop clear and readily understandable public information that explains how analytic WAC are calculated and how key assumptions were selected. 	<p>All analytic WAC are tied to the approved Remedial Investigation/Feasibility Study (RI/FS) and the subsequent FS Addendum. The D2 WAC attainment plan conservatively uses the soil WAC from the FS Addendum for all waste forms. The D2 WAC attainment plan also now provides a high-level summarization of the approved site conceptual model and risk assessment modeling process.</p> <p>A Fact Sheet will be developed summarizing the WAC attainment plan once it receives regulatory approval.</p>	
4	General	<p>Reasonableness of Planning Assumptions Used in Establishing WACs, Information Needs:</p> <ul style="list-style-type: none"> A better understanding of the original conservatism of assumptions used in determining the WAC. 	<p>The D2 WAC attainment plan conservatively uses the soil WAC from the FS Addendum for all waste forms. The D2 WAC attainment plan also now provides a high-level summarization of the approved site conceptual model and risk assessment modeling process. The conservatism of the soil WAC developed in the RI/FS and FS addendum was discussed within those documents. However, if a separate discussion is desired on the conservative elements of the analytic WAC developed is desired, this could be a topic for a future presentation to the SSAB.</p>	
5	General	<p>Reasonableness of Planning Assumptions Used in Establishing WACs, Information Needs:</p> <ul style="list-style-type: none"> A detailed description and examples of the degree of credit being sought by DOE for treated 	<p>Waste treatment credits for radionuclides and non-RCRA chemicals have been largely removed from the D2 WAC attainment plan. Treatment credits for chemicals are principally tied to RCRA prescribed best available technologies or best-demonstrated available technologies,</p>	

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		waste and how that impacts the original conservatism of assumptions.	which are administratively assumed to be effective consistent with the regulation. If treatment credit is sought for non-RCRA chemicals or radionuclides, the process of calculating treatment credits would remove the conservatism of using literature references for K_d values that are typically lower than would be expected in the wastes. However, doing so would appropriately replace this conservative assumption with measured release rate values. Note that FFA Manager approval is now required to apply any such calculated credits.	
6	General	Reasonableness of Planning Assumptions Used in Establishing WACs, Information Needs: <ul style="list-style-type: none"> A clear understanding of which WACs are final and which WACs are yet to be developed (i.e., blanks in Appendix A). 	The D2 WAC attainment plan has footnoted the final analytic WAC tables to indicate that blanks within the table represent unlimited analytic WAC due to there being no complete pathways for those chemicals and radionuclides to the defined receptor.	
7	General	Reasonableness of Planning Assumptions Used in Establishing WACs, Information Needs: <ul style="list-style-type: none"> An understanding of how future WACs will be determined in each of the WAC categories (explain process in Appendix B and how key assumptions are determined) 	The D2 WAC only uses analytic WAC developed for the soil waste form. Appendix B has been modified to reflect this change. Fundamentally, new WAC will be calculated in a manner similar to that used to develop the draft WAC in the RI/FS and the FS Addendum.	
8	General	Reasonableness of Planning Assumptions Used in Establishing WACs, Information Needs: <ul style="list-style-type: none"> An explanation of specific plans for public involvement in setting future WAC. 	Since the WAC attainment plan is a primary FFA deliverable, changes to this document will require a formal amendment to be submitted to and approved by the FFA Managers. The WAC attainment plan and any revisions to it will remain available to the public.	
9	General	Reasonableness of Planning Assumptions Used in Establishing WACs, Information Needs: <ul style="list-style-type: none"> An explanation of how the physical location of waste placement in EMWMF affects facility 	The only physical placement issue potentially affecting cell operations is the soil-to-debris ratios projected over the life of the cell. However, this is an operational issue, not a performance issue. Options for better handling the expected debris volumes are being explored, but are	

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10	General	<p>performance and how this is being considered in terms of waste streams being sent to EMWMF.</p> <p>Reasonableness of Planning Assumptions Used in Establishing WACs, Information Needs:</p> <ul style="list-style-type: none"> A copy of the Disposal Authorization Statement for the EMWMF and any associated guidance or clarifying information. 	<p>beyond the scope of the WAC attainment plan.</p> <p>A copy will be furnished.</p>	
11	General	<p>Reasonableness of the Sum of Fractions Approach to Calculating WAC Attainment, Recommendations:</p> <ul style="list-style-type: none"> DOE needs to develop clear and readily understandable public information that explains the sum of fractions approach and how it will be implemented. 	<p>A fact sheet will be developed.</p>	
12	General	<p>Reasonableness of the Sum of Fractions Approach to Calculating WAC Attainment, Information Needs:</p> <ul style="list-style-type: none"> A clearly written description of the sum of fractions approach and how it will be implemented. 	<p>The D2 WAC attainment plan has been significantly modified to ease the understanding of reviewers and implementers of this plan.</p>	
13	General	<p>Reasonableness of the Sum of Fractions Approach to Calculating WAC Attainment, Information Needs:</p> <ul style="list-style-type: none"> An explanation of how DOE will make assumptions regarding future waste loading to determine acceptance of waste exceeding the sum of fractions limit (describe the level of confidence in Appendix D information). 	<p>The volume weighted sums of fractions (VWSFs) calculations used to allow disposal of waste streams with sums of fractions greater than one will be limited to a three-year window based on Appendix E of the Federal Facilities Agreement. The confidence with which these calculations are made will be explicitly determined using a Monte Carlo analysis of waste stream information and uncertainties (volumes and concentrations) in a program specifically developed for this purpose: the Waste Acceptance Criteria Forecasting Analysis Capability System (WACFACS).</p>	

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14	General	<p>Reasonableness of the Sum of Fractions Approach to Calculating WAC Attainment, Information Needs:</p> <ul style="list-style-type: none"> A description of procedures for establishing partitioning coefficients (K_d values). 	<p>ASTM Methods will be used whenever it is desired to measure K_d values. For new WAC, literature values will be developed consistent with the methods used in the R/FS and the FS Addendum.</p>	
15	General	<p>Reasonableness of the Sum of Fractions Approach to Calculating WAC Attainment, Information Needs:</p> <ul style="list-style-type: none"> An explanation of whether or not credit is being taken for any contaminants assumed to subsequently leave the facility (i.e., through leachate). 	<p>No credit has been assumed for any contaminants leaving the facility.</p>	
16	General	<p>Reasonableness of the Sum of Fractions Approach to Calculating WAC Attainment, Information Needs:</p> <ul style="list-style-type: none"> An explanation of how extremely high concentrations of individual contaminants within a waste stream will be handled (i.e., will there be any upper limits on what will be accepted within the sum of fractions approach?). 	<p>Within the D2 WAC attainment plan, there are several limiting factors. First are the administrative WAC (e.g., 100 nCi/g of total TRUs, and a limit on short-lived radionuclides to not exceed TDEC Class C concentrations). Next are the analytic WAC, which effectively limit nuclides relative to the assumed future receptor (though many are not limited as they are not modeled as getting to the receptor within 100,000 years). Finally, there are physical and other WAC limits for radionuclides based upon the DOE-approved Auditable Safety Analysis, as well as external dose rate limits on packages. As long as waste concentrations meet all of these criteria, the wastes can be disposed.</p>	
17	General	<p>Reasonableness of the Division of Responsibilities and Accountability for Setting WAC and Ensuring WAC Attainment, Recommendations:</p> <ul style="list-style-type: none"> DOE needs to develop clear and readily understandable public information that explains the roles and responsibilities of all parties and how the disposal facility will be operated and 	<p>The D2 WAC attainment plan has been significantly modified to aid the understanding of reviewers and implementers of this plan, including clarifying the roles and responsibilities of all parties involved in the processes.</p> <p>A Fact Sheet will be developed summarizing the WAC attainment plan once it receives regulatory approval.</p>	

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18	General	<p>compliance with the WAC assured.</p> <p>Reasonableness of the Division of Responsibilities and Accountability for Setting WAC and Ensuring WAC Attainment, Information Needs:</p> <ul style="list-style-type: none"> A walk-through of a typical waste placement scenario and explanation of each role as the process proceeds, focusing on where authority for making key waste disposal decisions lies. 	<p>The D2 WAC attainment plan does more clearly delineate the entities making the key decisions, and any limits to their authority (E.g., the WAC Attainment Team's limitation to approve waste streams only if the three-year VWSFs are less than one).</p>	
19	General	<p>Reasonableness of the Division of Responsibilities and Accountability for Setting WAC and Ensuring WAC Attainment, Information Needs:</p> <ul style="list-style-type: none"> A discussion of who will decide the composition of the WAC Attainment Board and how DOE and management-and-integration contractor roles will work. 	<p>The WAC Attainment Board concept, including direct DOE and regulator involvement, has been replaced by a WAC Attainment Team, consisting of only M&I personnel. The D2 WAC attainment plan details the types of expertise needed for the WAC Attainment Team, and specifies its roles, responsibilities, and decision authority.</p>	
20	General	<p>Reasonableness of the Division of Responsibilities and Accountability for Setting WAC and Ensuring WAC Attainment, Information Needs:</p> <ul style="list-style-type: none"> An explanation of what level of oversight and audit will be performed by the regulators of the WAC Attainment Board and other WAC attainment activities. 	<p>DOE, EPA, and TDEC will audit and oversee all WAC Attainment Team decisions, as well as all other aspects of WAC attainment by the response action projects and the EMWTF operations subcontractor.</p>	

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