



redisposal of LLW should take into account RCRA requirements for disposal. Cost of transportation/disposal of the TRU-contaminated waste should not be included (JIO will provide this).

Cost estimates should be for the BTW component only; alternatively, a percentage estimate can be shown in a manner similar to item 1 above. Cost estimates should be in FY87 dollars.

3. For the exhumation scenario, please provide us with the estimated volume of TRU waste that will require transportation/disposal. This estimate should be consistent with the IDB figures for BTW at your site; either the same number or an explanation of how the numbers relate.
4. Please provide more detail regarding proposed schedules for pre-remedial action activities. At the minimum, please provide start-finish dates for each phase (1-3 CERCLA or equivalent). Please put schedule information on Table 1.
5. Are your BTW sites in compliance with EPA monitoring requirements? If not, what will be required to bring you into compliance? When will you be in compliance, and what is the budget to achieve compliance (please present this for each year).

The program will conduct a workshop on August 24, 1987 at the downtown Marriott Hotel in Denver, Colorado. The workshop will be held in conjunction with the National LLW Participants Meeting. A block of rooms is being held for the LLW meeting under the identification of DOE/EG&G meeting. Attached is a proposed agenda for the workshop. Your attendance is crucial to the Phase II effort in Buried Waste.

Enclosed is a copy of the comment resolutions for the Buried Waste Implementation Plan. Please advise us if you have any problems with the resolution.



J. A. Detamore  
Manager  
Joint Integration Office

Distribution

L. D. Bates	-ORNL
T. L. Clements	-INEL
D. B. Helton	-SRP
F. E. Sharples	-ORNL
R. W. Vocke	-LANL
R. D. Wojtasek	-Hanford

TABLE 1: Pre-Remedial Action Activities (Buried TRU Waste)

NOTE: Use year-of-expenditure dollars

<u>Start</u>	<u>Finish</u>	<u>Total Item Budget</u>	<u>FY 87</u>	<u>FY 88</u>	<u>FY 89</u>	<u>FY 90</u>	<u>FY 91</u>	<u>. . . (as appropriate)</u>
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Our Name for Activity

Site's Name for Activity

REMEDIATION ACTION ACTIVITIES

Identify Sites (records search, notification).

Collect existing data to characterize waste & site environment.

Determine if data is adequate to determine if there is a release or a release potential.

Perform site inspection/sample collection (if required).

Determine if there is a release or a release potential.

Apply HRS.

(Decision point).

TABLE 1: Pre-Remedial Action Activities (Buried TRU Waste) Cont'd

NOTE: Use year-of-expenditure dollars

Site's Name for Activity	Start	Finish	Total Item Budget	FY 87	FY 88	FY 89	FY 90	FY 91 . . . (as appropriate)
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Our Name  
for Activity

Perform remedial  
investigation plan.

Collect remedial  
investigation data &  
characterise extent of  
problem.

(Decision point).

Develop remedial action  
alternatives.

Screen remedial action  
alternatives.

Perform analysis of remaining  
alternatives including  
environmental consequences.

Select remedy.

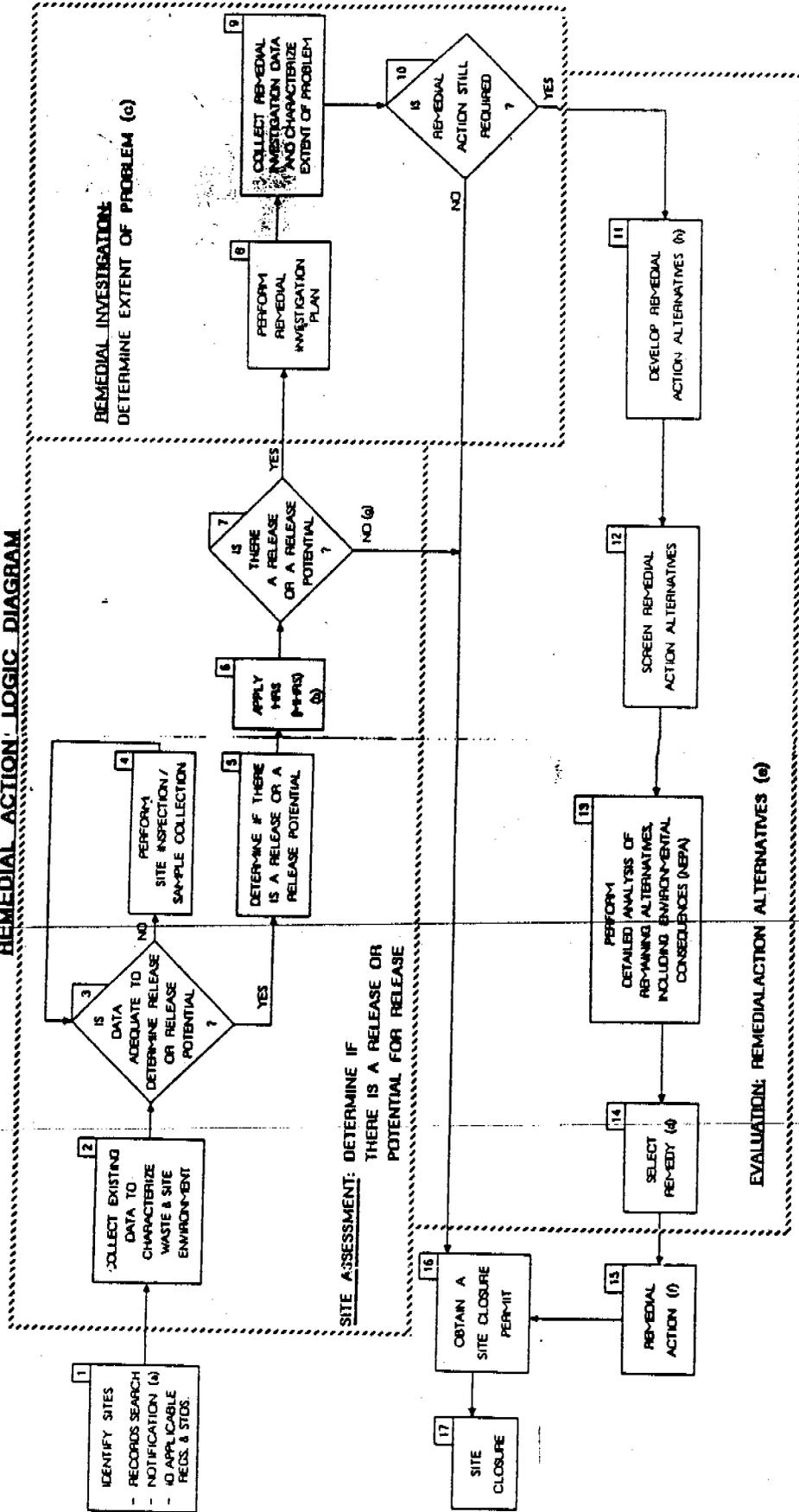
OTHER ACTIVITIES

Site surveillance

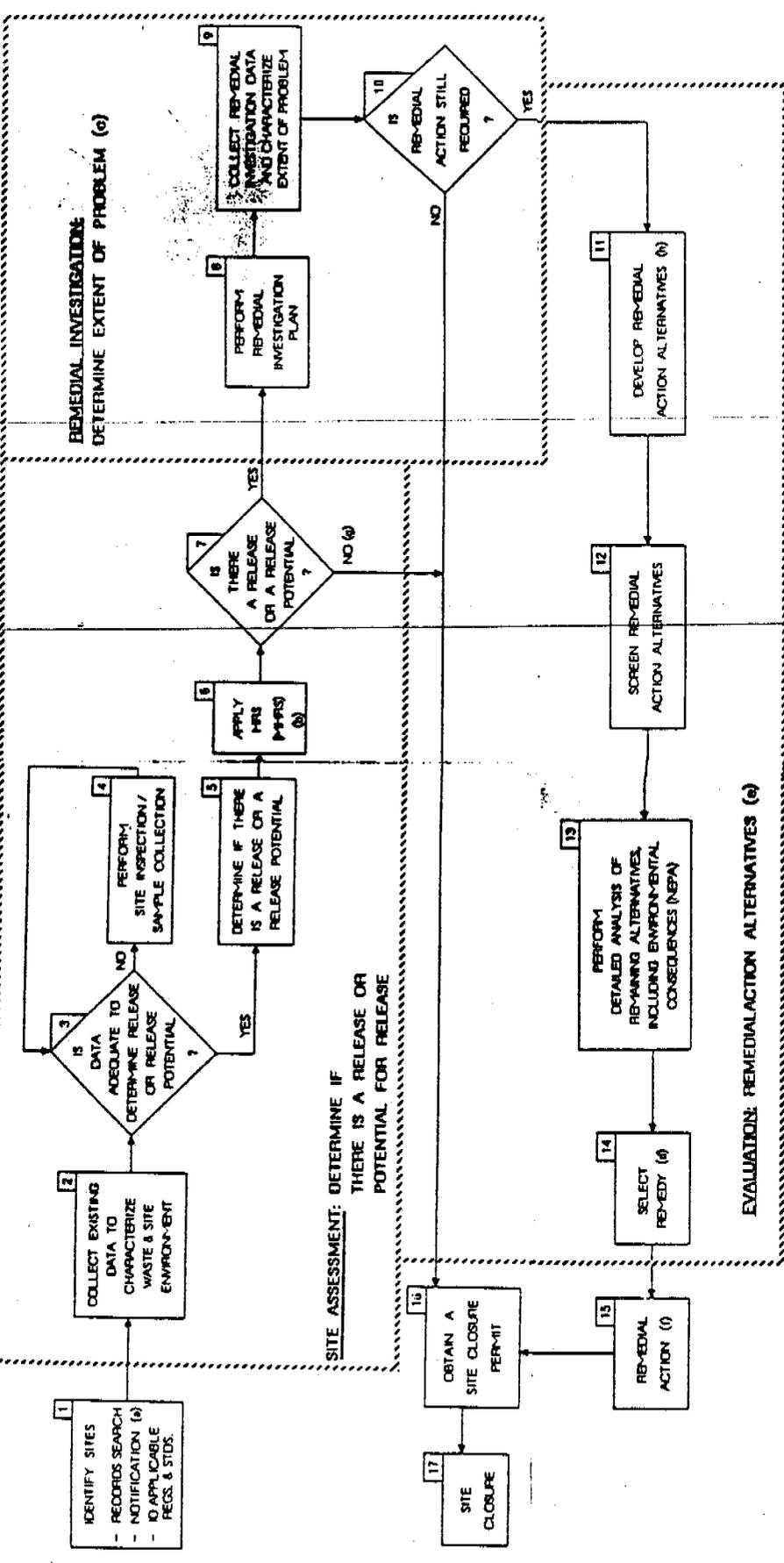
Interim corrective actions

Technology development

**REMEDIAL ACTION LOGIC DIAGRAM**



**REMEDIAL ACTION LOGIC DIAGRAM**



NUMBERS 1 - 14 ARE FOR JOG USE

RESOLUTION OF LOS ALAMOS COMMENTS ON  
THE COMPREHENSIVE IMPLEMENTATION PLAN FOR  
DOE DEFENSE BURIED TRU CONTAMINATED WASTE

Los Alamos provided written comments (dated 5/20/87), and subsequent verbal comments. Both are documented in this memo.

Response to their written comments are as follows:

Comment: Page ii.

Add "for the six BTW sites" to the first paragraph.

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Response: Done

Comment: Page iv.

Change 9200 Ci to 9230 Ci.

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Response: Done

Comment: Page 9

Add "for the six BTW sites" to the first sentence of the second paragraph, delete the last four lines of that paragraph, and combine the third paragraph with the second.

Response: Done

Comment: Page 13.

Add "average annual" to the third sentence and change "rainfall" to "precipitation".

Response: Done

Comment: Page 13, second paragraph.

Delete "sediments of" from the first sentence.

Response: Done

Comment: Substitute a new table for Table IV.C.1.

Response: Done

Comment: Page 18, first paragraph.  
Change June 1987 to August 1987.

Response: Done

Comment: Page 45.  
Change the completion date for Phase 2, Installation Generic Monitoring Plan, from 6/87 to 8/87.

Response: Done

Comment: Page 51.  
Change 9200 Ci to 9230 Ci.

Response: Done

Subsequently the amended LANL site long range plan was received, dated May 22, 1987, and some additional questions were raised. Following is Bob Vocke's response to those questions, obtained by telephone on June 9, 1987:

Question: J10 intends to remove reference to preferred alternatives from the text of the report.

Response: This is acceptable to Los Alamos.

Question: When is the completion date for Phase 2b of the CEARP.

Response: 9/90

Question: Can we remove the sentence on page 13 of our report which indicates that information regarding site AB is still being prepared?

Response: Yes.

Question: Is the paragraph we propose inserting on page 17 of our report regarding area AB acceptable? (This was read to Bob over the phone).

Response: Yes.

Question: Page 2 of the LANL Site Long Range Plan.  
There are two typographical errors: "mi<sup>2</sup>" should have been "km<sup>2</sup>", and the third line of paragraph 2 has a typographical error regarding the plateau height above the Rio Grande, which we agreed should read "100 to 300 meters". I suggested, and Bob agreed, that we insert an errata sheet at the beginning of the appendices.

RESOLUTION OF INEL COMMENTS ON  
THE COMPREHENSIVE IMPLEMENTATION PLAN FOR  
DEFENSE BURIED TRU CONTAMINATED WASTE

Response to specific comments dated May 19, 1987:

Comments 1, 3, 5, 6, and 17.

Replace "interim compliance agreement" with "memorandum of agreement".

Response: Done

Comment 2, 12, 13: Please reverse the order of the management alternatives to "exhume, improve in situ confinement, and leave-as-is."

Response: No change: the order was determined to be most appropriate for the system-wide buried waste plan, and to change the order for INEL would be awkward in the main part of the report, though it is perfectly acceptable for Idaho to use whatever order they wish in their own appendix.

Comment 4: Page 9.

Delete "E&G Idaho, Inc." from the first sentence of Section 2.

Response: Done.

Comment 7: Page 10, third line.

Delete "(the MOA only required addressing non-radioactive constituents)".

Response: Done.

Comment 8: Page 10, second paragraph.

Reword the fourth sentence.

Response: Done.

Comment 9: Page 19, Section 2.

Change the acreage of the RWMC to 144 and date of establishment of the RWMC to 1952.

Response: Done.

Comment 10: Page 19, Section 2.

Need a clarifying sentence "Receipt and disposal of solid TRU waste began in 1954".

Response: Done.

Comment 11: Page 19.

Change the mass of disposed TRU elements to 357 Kg.

Response: Done.

Comment 14: Page 23.

Add the annual cost for environmental monitoring to the first two alternatives.

Response: Done.

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Comment 15: Page 23, Section 6.

Need a clarifying sentence "This estimate is based on either in situ grouting or in situ vitrification as the selected improved confinement technique".

Response: No change: This was explained in previous sentence.

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Comment 16: Page 23, Section 6.

Delete the last sentence of the fifth paragraph regarding monitoring costs for the exhumation scenario, since monitoring will not be required.

Response: Done.

Comment 18: Page 53.

Delete the information contained in the parentheses: "additional information has been requested from INEL".

Response: Done.

In addition to these comments, we received a DOE-ID comment by phone questioning whether we should change the fourth paragraph on page i to reflect the revised DOE byproducts definition, and this paragraph has been reworded.

On June 10, 1987, Mike Raudenbush and Tom Clements had a phone conversation during which the following additional resolutions were agreed upon:

- o The INEL appendix states that there are 57,000 m<sup>3</sup> of TRU waste buried at RWMC, and our report and the IDB give 57,100. Clements stated that the correct figure is 57,100.

- o Page C-3 of the INEL report gives a value for total TRU waste emplaced in the burial sites of 61,989 m<sup>3</sup>. Clements explained that this includes waste which was subsequently retrieved, and the difference between this and 57,100 is the amount retrieved.
- o The INEL appendix gives the contaminated soil low estimate of 56,640 m<sup>3</sup>, versus 56,600 m<sup>3</sup> in our report, and Clements said this is due to rounding and he does not care which number we use.
- o On page 30 of the INEL appendix it is stated that RWMC RCRA characterization will cost \$500,000. On page 34 it is stated that data gathering, analysis, and field testing related to the RWMC MOA activities will account for \$130,000. The difference is between actual budget estimates (\$130,000) and total program cost estimates (\$500,000). In other words, the figure of \$500,000 includes the \$130,000 plus additional activities.
- o The "Environmental Surveillance" entry in the Cost Table on page 46 is part of the \$1,000,000/yr estimate for continuing remedial corrective action and environmental surveillance. The balance is for grading and another remedial corrective action.
- o The figures on page 46 do not include the \$500,000 estimate for RWMC RCRA characterization.
- o The \$14.9 million estimate for pre-remedial action in Table 3 of our report does not directly correlate with the INEL appendix because the INEL appendix does not carry buried waste studies and RWMC environmental surveillance through FY94. \$14.9 million is the correct number through 1994 for pre-remedial action.
- o We rewrote the Section IV-B-2, which is a summary of INEL Activities, and I read this section to Clements. We made several changes and then agreed that it read correctly.
- o We discussed the third paragraph of Section IV D-5 and agreed to delete the last sentence regarding the unsatisfactory performance of in situ grouting

INEL feels very strongly about us using their precise words from their appendix in the NEPA strategy section, so this has been done. The basic problem with NEPA regarding RWMC is that the remedial action program is still not clearly defined, so it is impossible to clearly define the associated NEPA strategy, and until this is done INEL must remain necessarily vague.

RESOLUTION OF ORNL (HAZWRAP) COMMENTS ON  
THE COMPREHENSIVE IMPLEMENTATION PLAN FOR  
DEFENSE BURIED TRU CONTAMINATED WASTE

Frances Sharples responded to our Buried Waste Plan on May 15th with a one page letter in which she suggested that the last appendix (Appendix 6) be omitted because the text has been outdated by the Superfund Amendments and Reauthorization Act. In subsequent conversations with DOE, JIO, and Fran, we agreed to do this, but are in the process of updating the logic diagram (Figure 3.2) to use in Phase 2 of the Buried Waste Plan.

RESOLUTION ON ASG COMMENTS OF  
THE COMPREHENSIVE IMPLEMENTATION PLAN FOR  
DEFENSE BURIED TRU CONTAMINATED WASTE

ASG provided comments on May 12, 1987. Resolution of many of ASG's comments would require returning to the sites for additional information. Therefore, because these comments were received at a time when the sites had finished their last review of the document, and because we feel that some ASG comments, while valid, are beyond the scope of our document, our strategy was to only use those ASG comments which directly challenge the validity of our assertions.

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General Comment 1: You may want to consider additional discussion of why there is not contaminated soil at some of the sites.

Response: We are only putting into the report that information received from the sites in their appendices to our report, and we accept the information that some of the sites have no liquid disposal sites.

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General Comment 2: Use one or the other system of measurement (SI or English).

Response: DOE/JIO made the decision to use whichever specific unit is most widely recognized, even if it means mixing SI and English units. For example, we use miles for distance and cubic meters for volume, but we do not use kilometers or cubic feet.

General Comment 3: Use "waste disposal units" in referring to specific sites where buried TRU waste exists.

Response: We initially accepted this suggestion, but several of the sites objected based on the confusion with "solid waste disposal unit", or other EPA regulatory jargon. Therefore, no change has been made.

General Comment 4: Even though some data is presented as "order of magnitude", we use two or three significant figures.

Response: No change: by using several significant figures, it allows the sites to validate that their specific information was indeed utilized in the report, and while we agree with the engineering sensibility of this comment, the use of several significant figures aids in the traceability of data sources.

Specific Comment 1: Add the Ci content of contaminated soil to our report.

Response: Done

Specific Comment 2: Add the function and responsibilities of USGS in the MOA at INEL.

Response: No change: not considered to be essential information for this report.

Specific Comment 3: Anticipate the question whether corrective action is planned or needed in respect to the migration of americium and plutonium at area T at LANL.

Response: No Change: This information exceeds the requirements of this report.

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Specific Comment 4: Mention the distance from the RWMC to public land; change the terminology "small valley".

Response: No change: Neither piece of information is considered to be essential.

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Specific Comment 5: Clarify whether the surface drainage at INEL can accommodate the maximum flood.

Response: No change: This information is not considered essential.

Specific Comment 6: List the SRP HRS scores, which were mentioned on page 44 of our own as being available 2/87.

Response: Done

Specific Comment 7: This comment concerned difficult to certify waste, and therefore was not made part of the Buried Waste Plan.

Specific Comment 8: Mention the start-up of the PREPP facility and the outlook for supercompaction.

Response: No change: We feel these two subjects have been adequately addressed in the report as it stands.

Comments on Appendices:

ASG commented on the draft appendices, which were subsequently revised by the sites. Because the ASG comments were received about the same time as the revised appendices from the sites, we had no way of communicating with the sites to request the suggestions made by ASG.

Comment 1: Appendix 1, p. 16 (LANL). Add additional scope discussion to Phase 2b at LANL.

Response: LANL's recent input did not add any additional scope for Phase 2b, but we feel the scope as it exists is sufficient.

Comment 2: Appendix 2, p. 14 (INEL). Typographical error.

Response: INEL changed this.

Comment 3: Appendix 2, p. 15 (INEL). Add citations from USGS staff reports to the discussion of the INEL monitoring program.

Response: INEL did not add any additional USGS citations, but we feel the discussion is adequate as it stands.

Comment 4: This comment applies to special case waste, and therefore is not addressed.

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Comment 5: INEL should be commended for their input.

Response: Done.

Comment 6: Appendix 4, p. 21 (Hanford). Why does Hanford mention dialogue with NRC?

Response: We have raised this issue several times with Hanford, and they are intent on leaving it in.

Comment 7: Appendix 5 (SRP). The date of Federal Register Notice of the draft SRP EIS should be added.

Response: We feel this level of detail is not necessary that SRP's schedule input is satisfactory as it stands.

Comment 8: Appendix 5, Table I (SRP). There is inconsistency between Table I of the SRP input and our volume estimates for SRP buried TRU waste.

Response: We have raised this issue with SRP and have been unable to elicit a response.

In a final review of ASG's report, I found three inconsistencies with our report:

- o On page 14 ASG states that ORNL corrective measures studies will be completed in 1991. ORNL has changed that to 1992, but the change was made after ASG went to press.
- o ASG does not mention CEARP, which is the cornerstone of the LANL program.
- o ASG cost figures are different than ours, but that is because ASG made different cost assumptions. ASG assumed a "no-action" alternative (\$16 m) for Hanford's Alternative 1 (we assumed a "minimum acceptable alternative" [\$208 m]) and a "minimum acceptable alternative" for Alternative 2 (we used the "reference alternative" at \$238 m)

I called these changes in to Julie D'Ambrosia and John Sease on June 12, 1987.

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RESOLUTION OF ORNL COMMENTS ON  
THE COMPREHENSIVE IMPLEMENTATION PLAN FOR  
DEFENSE BURIED TRU CONTAMINATED WASTE

The following are responses to the ORNL comments on the Buried Waste Plan.

Comment 1: Justify all pages to left/right margins.

Response: The report will be prepared in accordance with standard J10 report procedures.

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Comment 2: Change "75" to "65" BTW sites and delete the statement about "poor ion exchange properties of the soil".

Response: Done.

Comment 3: Delete "less than" from the ORNL alpha curie estimates.

Response: Done.

Comment 4: Change the completion of Phase 3 to 3/92.

Response: Done.

Comment 5: Change ORNL cost estimates.

Response: Done.

Comment 6: Delete the footnote on Table 3 to the effect that cost estimates are for the entire remedial action program.

Response: Done.

Comment 7: Delete the footnote on the Cost Table regarding the exhumation scenario including transportation and disposal costs and the extent to which BTW and LLW can be separated.

Response: Done.

Comment 8: On page 11 change "corrective measures studies" to "corrective measure study".

Response: Done.

Comment 9: On page 11 change the discussion of ORNL as expected alternative.

Response: Reference to a preferred alternative has been deleted.

Comment 10: Same as Comment 2.

Comment 11: Typo on page 28.

Response: Done.

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Comment 12: Replace Figure IV.E.1 with the figure from the current ORNL input.

Response: Done.

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Comment 13: ~~Change schedules to reflect the current ORNL input.~~

Response: Done.

Comment 14: On page 31 revise the discussion of costs to reflect the current ORNL report.

Response: Done.

Comment 15: Same as Comment 14.

Comment 16: Same as Comment 12.

Oak Ridge also expressed concern about the status of review of their input. In a conversation with John Trabalka on June 12th, he said that this issue had been resolved and that he was sending us a revised cover page deleting the word "draft".

In addition to these comment responses, on June 12, 1987, I had a conversation with Trabalka in which I discussed several additional changes we are making to the document:

- o He agreed that it was okay to delete reference to a specific preferred alternative in our report.
- o There was some confusion regarding whether there were five or four categories of BTW sites. The correct number is five, which includes the hydrofracture facility.

- o He verified that the NEPA section as we have it in our present report is acceptable despite the fact that it varies slightly from the section in the Oak Ridge input.
  - o We discussed some changes to schedule dates on page 46 and agreed on the numbers that will be on the final report, which will be consistent with the Oak Ridge appendix.
  - o The ASG report has the CMS completed in 1991, and the correct number, consistent with both the Oak Ridge report and our report, is 1992.
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RESOLUTION OF SRP COMMENTS ON  
THE COMPREHENSIVE IMPLEMENTATION PLAN FOR  
DEFENSE BURIED TRU CONTAMINATED WASTE

The following are specific responses to Savannah River's comments received June 10, 1987.

Comment 1: Inventory numbers are consistent with the 1987 IDB submittal.

Response: I spoke with Donnie Helton on June 12th, and Donnie stated that he put that comment in just to confirm that the numbers were consistent.

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Comment 2: Change cost numbers in Table 3.

Response: This has been done with the following additional clarifications received from Donnie: the word "lap" should have been "cap". The exhumation scenario includes the segregation of TRU from LLW and redisposal of LLW.

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Page 2 Comment 3: Change the wording regarding the EIS and CERCLA procedure on page iii.

Response: Done, except that the 12/87 date for ROD was a typo (per Donnie) and should be 11/87.

Page 2 Comment 4: Change the SRP ROD date to 11/87.

Response: Done.

Page 2 Comment 5: Change the wording for the SRP preferred management alternative.

Response: We have deleted reference to preferred alternatives, and Donnie concurs in this.

Page 2 Comment 6: Change the wording regarding area 643-28G.

Response: Done.

Page 2 Comment 7: Change the wording regarding area 643-7G.

Response: Done.

Page 2 Comment 8: Deleted.

Page 2 Comment 9: Same as Page 2 Comment 2.

Page 2 Comment 8: Same as Comment 2 plus change the wording of the relationship of EIS to CERCLA Phase 2.

Response: Done.

In addition, I spoke with Donnie on the phone on June 12, and he stated that the HRS score for the BTW sites has been completed and the score was U. I also asked him about the apparent inconsistency between the issuance of an ROD with a "preferred alternative" identified, followed by CERCLA Phase 3, in which alternatives must be evaluated. Donnie stated that he recognized the inconsistency, and he suspected that the ROD would not include a preferred alternative, but he does not want the words changed in the report.

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RESOLUTION OF HANFORD COMMENTS ON  
THE COMPREHENSIVE IMPLEMENTATION PLAN FOR  
DEFENSE BURIED TRU CONTAMINATED WASTE

The following are specific resolutions to Hanford's comments dated May 20, 1987. Most of these comments are editorial in nature, and changes have been made to the report. In order to save time and effort, I have lumped all these together in a single response: all comments of a clarifying or editorial nature were accepted and changes made. This includes all comments except those specifically addressed below:

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Comment 2: Add clarification regarding the decision to change the cut-off limit for TRU waste.

Response: Done.

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Comment 3: Change the wording in the second paragraph page i to clarify the decision dates for solid and liquid waste disposal retrievability.

Response: This change was made but using different wording than suggested by Hanford.

Comment 4: Change the wording on the fourth paragraph page i to reflect the new byproduct rule.

Response: This paragraph was rewritten.

Comment 6: Same as Comment 4.

Comment 41: Change wording on page 37.

Response: This change was made except reference to shipping the waste to WIPP was changed to shipping the waste to WIPP or another TRU-waste geologic repository, in order not to imply that a decision had been made to ship the waste to WIPP.

I spoke with Nick Kirsch on June 12th, received additional schedule information for the Reference Alternative Schedule Table, which was included in the report.

Footnotes to Remedial Action Decision Logic Diagram

- (a) CERCLA 103 (c) required notification to EPA by 1/9/82 (?) for any facility that managed hazardous waste. RCRA 3004 (u) requires presentation of information on all solid waste management units at a facility as part of a Part B permit application.
- (b) Application of HRS is required for all CERCLA-regulated sites. For RCRA-regulated sites, HRS may still be applied (proposed 5/13/87).
- (c) "Remedial Investigation" in CERCLA; "Facility Investigation" in RCRA; "Phase II, Confirmation/Qualification" in DOE Order 5480.14.
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- (d) CERCLA requires that remedy selection be cost effective, RCRA does not.
- (e) "Feasibility Study" in CERCLA; "Corrective Measures Study" in RCRA; "Phase III: Engineering Assessment" in DOE Order 5480.14. CERCLA requires that one alternative from each of 5 categories be examined:
- 
- treatment/disposal at an offsite facility approved by EPA
  - an alternative which attains EPA standards
  - an alternative which exceeds EPA standards
  - an alternative which does not attain standards but improves the situation
  - no action

The environmental impact of each alternative must be evaluated. This should be done in compliance with NEPA procedures.

- (f) "Remedial Action Design and Construction" in CERCLA; "Corrective Measures" in RCRA; "Phase IV and V: Remedial Action and Compliance/Verification" in DOE Order 5480.14.
- (g) No remedial action required
- (h) Defense identified waste alternatives

WORKSHOP

PHASE 2 BURIED TRU WASTE PLAN

PROPOSED AGENDA  
AUGUST 24, 1987: DENVER, COLORADO

8:00 - 8:30	Coffee and Donuts	
8:30 - 9:00	Introductions, Purpose of Workshop	M. H. McFadden
9:00 - 11:00	Individual Site Presentations on Current Buried TRU Waste Status, Plans (15 minutes per site, followed by discussion)	
	- Los Alamos	
	- INEL	
	- Oak Ridge	
	- Hanford	
	- SRP	
11:00 - 12:00	Review Site Inputs on Phase 2: Issues and Clarifications	
12:00 - 1:30	Lunch	
1:30 - 2:30	Continue discussion of Phase 2 Inputs	
2:30 - 3:30	Review Remedial Action Logic Diagram, Amend as Required	
3:30 - 4:00	Discussion on HEPA Strategy	
4:00 - 4:30	Open for Additional Items	
4:30	End	