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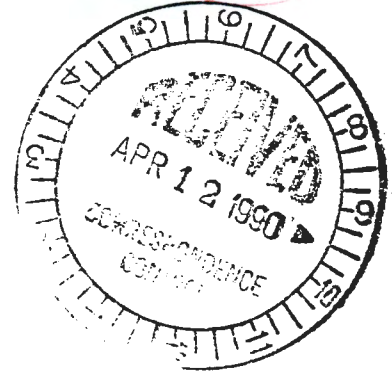
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**START**

March 28, 1990

Michael Thompson  
Operable Unit Manager  
U.S. Department of Energy  
P.O. Box 550  
Richland, Washington



RE: PROGRAMMATIC COMMENTS ON  
100-HR-3 OPERABLE UNIT WORK PLAN

Dear Mr. Thompson:

Attached are programmatic comments on the 100-HR-3 Operable Unit Work Plan. These comments are to assure the subject work plans are sufficiently comprehensive to satisfy CERCLA, RCRA, the state Hazardous Waste Management Act (70.105 RCW), and the state Model Toxics Control Act (70.105D RCW), as required by the Hanford Federal Facility Agreement and Consent Order.

In general, these comments focused on outstanding issues not already addressed in previous documents or discussions among the parties, including previous comments relevant to the 100-HR-1 Work Plan. This document also serves to compliment technical comments submitted to USDOE in October, 1989, and is based on proposed revisions to the NCP published in the Federal Register on December 21, 1988.

A recent, parallel effort conducted by USDOE, Richland Operations, regarding related programmatic issues has resulted in a draft document entitled, "A Critique on the Preparation of Hanford RI/FS and RFI/CMS Work Plans". Many concerns Ecology has for improving work plans, e.g., work plan organization and format, information and reference sources, and operable unit interactions, were discussed in the "Critique". Ecology submitted responses to this document February 13, 1990.

In addition, Ecology and EPA submitted a "Position Paper on Operable Unit Work Plan Integration" on January 17, 1990, which also addresses programmatic concerns. Much progress appears to be taking place conceptually toward refining work plans consistent with these documents.

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Thompson, M.  
March 28, 1990

Consistent with the Hanford Federal Facility Agreement and Consent Order, responses to these comments are due no later than May 28, 1990. It is hoped early resolution of all outstanding issues associated with the 100-HR-3 Work Plan will allow field work to begin at the earliest possible date.

Sincerely,



Larry Goldstein  
Operable Unit Manager  
Hanford Project

cc: Paul Day, EPA  
Jim Goodenough, USDOE  
[REDACTED], WHC  
Administrative Record File

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PROGRAMMATIC COMMENTS ON  
100-HR-3 OPERABLE UNIT WORK PLAN

1. Recommendation: Section 1.0, second paragraph, p. WP-1

Underline references to the Hanford Federal Facility Agreement and Consent Order. Delete the abridged "Tri-Party Agreement" citation from the work plan.

2. Deficiency: Section 1.1, first paragraph, p. WP-1

The discussion on CERCLA Preliminary Assessment and Site Inspection should reference the comparable RCRA Facility Assessment (RFA) process. A brief description of similar objectives for assessments under each program would provide continuity and assure the reader there is consistency between the two programs. Note that the Action Plan, Figure 7-2, indicates the first step in RCRA past practice investigations is the RFA.

Recommendation:

Describe how the identification and documentation of solid waste management units (SWMU) and suspected releases associated with those units are objectives of an RFA. Describe how these objectives were initially satisfied through the comparable CERCLA PA/SI and RCRA 3004(u) reporting requirements, including publication of the Hanford Site Waste Management Units Report (May 1987).

Provide the citation for this document in Section 8.0, References.

Describe how the intent of the RFA is satisfied in that preliminary data indicated a RCRA Facility Investigation was warranted, and is the subject of this work plan. See comment #3 for similar concerns.

3. Deficiency: Figure 1., p. WP-2

This figure does not contain the RCRA Facility Assessment activity and the necessary link to "Scoping".

3. Cont.

Recommendation:

Include the RFA activity in the figure with a link to the box titled, "Scoping." See comment #2.

4. Deficiency: Section 1.2, p. WP-3

The only description of scoping activities in the work plan appear to be this single paragraph section (Table 1 and Figure 1 not withstanding). The paragraph neglects to define what scoping is, how scoping fits into either the RCRA or CERCLA corrective action process, and how regulatory requirements for site-wide, or unit-specific scoping are being satisfied by implementing this work plan.

Section 7.2.2 of the Action Plan contains a general description, and specific objectives for operable unit scoping activities, that are not referenced or addressed.

Recommendation:

Provide text that describes how the objectives for scoping requirements are being met. This information could include reference to the preliminary evaluation and analysis of data presented in Chapters 2 and 3 of this work plan.

This section should include a description of the Hanford Site Integration Strategy, which emphasizes a survey approach for investigating ground water aggregate units, with an initial focus on interim actions. This text should include a general overview of site characterization.

It could also describe how various corrective measure alternatives development, screening and analyses will be evaluated consistent with the strategy.

Reference specific sections in the work plan to give the reader an understanding of where, how and when new data will be generated and acted upon.

This section should also include a comprehensive summary of field screening activities, e.g. soil gas survey, and describe how and when new data will be incorporated into the work plan, as required by Section 7.3.2 of the Action Plan.

5. Deficiency: Section 1.5, first paragraph, WP-4

This section has an inadequate description of authorities and processes for permit modification, documentation and public involvement.

Recommendation:

Expand this section to address the deficiencies noted. Summarize how permit modifications are made, noting that the permit establishes enforceable schedules for required corrective measures at individual units and affected areas.

Include reference to chapters 173-303-830 WAC, Permit changes; and 173-303-840 WAC, Procedures for decision-making.

6. Deficiency: Section 1.5, second paragraph, WP-4

The first sentence of this paragraph provides no description of how and why determinations were made concerning those media addressed in the work plan. There is no cross-reference to source unit work plans for parallel and complimentary investigations. This section should prepare the reader for more detailed discussions concerning operable units integration found in Sections 2.1., 3.1, and 4.2.

Recommendation:

A full description of the logic and methodology for combining the work plans, including all those source units within the 100-HR-3 Operable Unit, should be provided. The reader should gain an understanding of why media have been segregated for investigative purposes, why there are two types of operable units, and how data will be integrated in the decision-making process.

Take this paragraph out of Section 1.5 and put it in Section 1.6, building on the outline of information already provided.

7. Deficiency: Section 1.5, third paragraph, p. WP-4

The ARARs process identified in CERCLA 121(d), and the Action Plan, Section 7.5, assures analysis and implementation of state remedial action statutes as

7. Cont.

appropriate. This would include 173-340-350 WAC, "State Remedial Investigation/Feasibility Study", to assure consistency with substantive Washington state requirements during the Hanford RI/FS process.1

Recommendation:

Add a fourth bullet citing the enabling state statute for remedial actions, "Model Toxics Control Act, Ch. 70.105D RCW".

8. Deficiency: Section 1.5, third paragraph, p. WP-4

A reference is needed in order to direct the reader to a RCRA guidance document containing RCRA corrective action terminology cited in Sections 1.0 and 1.8.

Recommendation:

Add a fifth bullet that cites Interim RCRA Facility Investigative Guidance, EPA 530/SW-89-031 (May 1989).

Provide the citation for this document in Section 8.0, References.

9. Deficiency: Table 1., p. WP-5

There is insufficient text to support this table. For example, it is not clear why "contaminated soils" are being addressed in the 100-HR-1 work plan, and "soils" addressed in the 100-HR-3 work plan.

Recommendation:

See Comment #6 for concepts that must be developed to correct the deficiency. The text, for example, in addition to a general description of the logic and complimentary methodology for investigating soils in two operable units, could cite the reasons given in Section 5.3.3 for proposed soil investigations.

10. Deficiency: Section 1.7, p. WP-5

The Project Goals are incomplete and too narrow in scope.

Recommendation:

Incorporate the Hanford Site Integration Strategy noted in Comment #4 into this discussion, i.e., bring this section up-to-date.

Change the second bullet as follows: "assess existing and potential threats to the public and surrounding environment from the discharge of contaminated groundwater into the Columbia River releases of hazardous substances from the operable unit."

11. Deficiency: Section 1.8, seventh paragraph, p. WP-6

The project schedules defined in the work plan lack sufficient level of detail, internal integration necessary to support multiple activities leading to the Phase I RFI Report, and external integration. Additional details will have to be provided prior to work plan approval.

Recommendation:

Once the preliminary schedules are approved, modifications to target dates are almost a certainty. Explain briefly how these decisions are made and reference Sections 11 and 12 of the Action Plan.

12. Recommendation: Section 1.8, tenth paragraph, p. WP-7

Update the text concerning the status and availability of the "Community Relations Plan".

13. Deficiency: Section 3.1.4, first paragraph, p. WP-56

The Surface Environmental Monitoring Project is referenced in this section, with little explanation of what the project is, or what other media are monitored in addition to the Columbia River and sediments. Are there other sections in the work plan where additional information can be found? The Data Management Plan should be clear where the data reside and how it will be accessed by EPA and Ecology.

13. Cont.

Recommendation:

Provide additional information on this management system.

Note that the Surface Environmental Monitory Project is a part of the Program Data Management System and reference DMP-8.

14. Deficiency: Section 3.1.4, first paragraph, p. WP-56

This paragraph acknowledges the limitations of historical monitoring for contaminant loading; a positive step toward creating a better monitoring system. Having raised the issue, the reader should be directed to where more information can be found that defines the rationale and proposed methodology for filling this major data gap.

Recommendation:

Cite specific references in this work plan that address the problem, e.g. Sections 4.2.1.1, Task 5; 5.3.5.3, Task 5c.

15. Deficiency: Section 3.1.4.2, fourth paragraph, p.WP-60

Given the imperfect database, inherent uncertainty associated with statistical analyses, and the proposed costs for conducting a thorough operable unit characterization, it is premature, and inconsistent to conclude "there is no indication of any significant deterioration of water quality along the Hanford Reach of the Columbia River resulting from Hanford operations."

Recommendation:

Delete this determination.

16. Deficiency: Section 3.2, first paragraph, p.WP-69

The ARARs process identified in CERCLA 121(d), and the Action Plan, Section 7.5, assures analysis and implementation of state remedial action statutes as appropriate. This would include 173-340 WAC, to assure consistency with substantive Washington state requirements for cleanup of the Hanford Site.



16. Cont.

Recommendation:

Cite state regulations, including chapters 173-303-610, and 173-303-645 WAC, and chapters 173-340-720 thru 173-340-760 WAC in this discussion.

17. Deficiency: Section 3.2.1, p. WP-70

This section does not clearly describe when chemical-specific requirements are defined in the RFI/CMS process.

Recommendation:

Include additional text that explains chemical-specific requirements are identified following site characterization, and when sufficient information exists to make initial judgments about the hazardous substances present at the site. These requirements are determined upon completion of the Phase I RFI Report.

18. Deficiency: Section 3.2.1.2, first and second paragraphs, p. WP-70

These paragraphs are incomplete and misleading in that they fail to list applicable state standards. See #19 for further discussion. For example, nitrate should be listed as a dangerous constituent in accordance with 173-303-645(5)(a) WAC.

Recommendation:

Add to the second paragraph, after first sentence, "In addition, state standards for ground water protection are applicable requirements as defined under CERCLA 121(d). These standards, for example include numeric criteria for nitrate."

19. Deficiency: Section 3.2.1.2, third paragraph, p. WP-70

This paragraph regarding the universe of regulated constituents, fails to cite other federal and state regulations, and the guidance contained within the Hanford Federal Facility Agreement and Consent Order, that are potentially applicable as ARARs.

19. Cont.

ARARs must be developed in accordance not only with CERCLA guidance but also in accordance with Section 5.4 of the Hanford Federal Facility Agreement and Consent Order, which specifies, "The corrective action process selected for each operable unit shall be sufficiently comprehensive to satisfy the technical requirements of both statutory authorities and the respective regulations." Groundwater protection standards therefore apply to all hazardous substances, defined under CERCLA 101(14), which include radioactive materials.

Recommendation:

Re-write this paragraph to incorporate requirements defined in the Hanford Federal Facility Agreement and Consent Order.

Add new third sentence referencing applicable requirements for all hazardous substances.

Include the following relevant regulations in the text:

173-303-145 WAC, which addresses the clean up of all released hazardous substances

173-303-283 WAC, which addresses requirements for best available technology to prevent degradation of the environment for all interim status facilities

173-303-645 WAC which defines dangerous constituents

Delete the last sentence.

20. Deficiency: Section 3.2.1.3, p. WP-70 to 71.

This section addressing other potentially relevant water protection standards is inaccurate as these standards are placed in terms of "relevant" under rather than the appropriate "applicable" requirements of CERCLA 121(d) and 70.105D RCW. See comments #18 and #19 above.

Recommendation:

Re-write to incorporate appropriate sections, e.g. text on radioactive substances and Table 18, into Section 3.2.1.2 which addresses applicable requirements.

21. Deficiency: Section 3.2.3, first bullet, p. WP-72

Applicable state regulations should be cited, since as noted, location-specific requirements are identified upon completion of the Phase I RFI Report. The citation in the work plan is appropriate.

Recommendation:

Add to the first bullet a citation for the Shoreline Management Act, Ch. 90.58 RCW, and implementing regulations, Ch. 173-14 through 173-22 WAC.

22. Deficiency: Section 3.3.1, p. WP-73 to 75

Although implied by the text and Figure 22., the important concept of multiple pathways and synergistic effects of contaminants is not clearly presented.

Recommendation:

Cite 40 CFR 300.430(e)(2)(a)(3) and 173-340-700(11) and 173-303-720(5) WAC which requires activities to assess the extent and potential effects of contamination, and requires alternatives to be developed that protect human health and the environment by mitigating risks posed by multiple contaminants or multiple pathways of exposure. Develop text to address the requirement and incorporate into this section.

23. Deficiency: Section 3.3.1.1, p. WP-73

Discussion of pathways references the 100-HR-1 Work Plan but is not specific as to where this information is to be found.

Recommendation:

Add section-specific 100-HR-1 Work Plan cross-reference.

24. Deficiency: Section 3.3.3, p. WP-76

Bioaccumulation factors are discussed in this section, but there is no specific discussion on the cumulative effects of multiple pathways on contaminant characteristics.

24. Cont.

Recommendation:

See comment #22.

25. Deficiency: Section 3.4.1., Table 24, p. WP-82

Table 24 lists corrective action objectives pertaining to "... extraction/injection wells." This appears to be the only reference to this type of unit in the work plan. Lack of specificity makes evaluating the general corrective actions for these units difficult.

Are some of these facilities, e.g. french drains, reverse wells, currently regulated by the Underground Injection Control Program under the Safe Drinking Water Act (1421)?

Recommendation

Provide additional text regarding these wells, including their status under the Underground Injection Control Program.

26. Deficiency: Section 4.2.2, second paragraph, p. WP-97

The criteria listed for the development, screening and evaluation of corrective action alternatives are too generalized and incomplete. They are also misleading.

Recommendation:

Re-write as follows: "The development, screening and evaluation of corrective action alternatives in the CMS will rely on RFI data from this and the previously identified companion operable units. These data will be evaluated as to effectiveness in overall protection of human health and the environment, and compliance with applicable federal and state laws. Further information on this topic can be found in Sections 5.5 and 5.7. ~~available technology, standard costing, and professional judgement.~~

27. Deficiency: Section 5.3.4, fourth paragraph, p. WP-101

Agreement among the parties has occurred regarding criteria and management of purge waters since this work plan was written.

Recommendation:

Update this section to include a summary of why a plan was needed for purge water, and the highlights of the "Purgewater Strategy Plan".

28. Deficiency: Section 5.3.4.7, p. WP-116

This section should include a discussion on how analyses of cumulative effects on the fate and transport of constituents in different hydrogeologic regimes will be modeled and analyzed.

Recommendation

Add text to address the concern. Cite and use Guidelines for the Health Risk Assessment of Chemical Mixtures, Federal Register 51 (185:34014-34025) in developing this topic.

Provide a citation in Section 8.0, References.

Provide text to tie this section to Section 5.3.9, Baseline Risk Assessment.

29. Deficiency: Section 5.3.9, p. WP-132

This section should reference back to the modeling text at Section 5.3.4.7 and discuss how the analyses of cumulative effects on the fate and transport of constituents is factored into the baseline risk assessment.  
See comment #22.

Recommendation:

Add text to address the concern. Cite and use Guidelines for the Health Risk Assessment of Chemical Mixtures, Federal Register 51 (185:34014-34025) in developing this topic.

30. Deficiency: Section 5.3.9.2, p. WP-134

Although it can be inferred from the conceptual model presented earlier in the work plan, and the discussion within this section, it is not clear that cumulative or synergistic impacts of contaminants will be adequately addressed. A reading of Section 5.3.9.2 suggests that cumulative effects will not be studied as the discussion on exposure assessment and toxicity are presented in terms of individual contaminant behavior. See comment #22.

Recommendation:

Add text that describes other activities that will be conducted to develop this component of risk assessment.

If this information is to be produced in a parallel document, e.g. Performance Assessment, then reference it, and describe how the latter study will be incorporated in a timely fashion into 100-HR-3 work plan implementation.

31. Deficiency: Section 5.5.2, p. WP-140

The criteria listed for evaluating and defining alternatives that meet corrective action objectives are too generalized and incomplete. They are also misleading.

Recommendation:

Re-write this section to reflect the following priorities:

- Overall protection of human health and the environment
- Compliance with ARARs
- Technical Effectiveness
- Implementability
- Cost Evaluation

These paragraphs can be brief summaries that accurately reflect the hierarchy of criteria defined in EPA and state guidance. This section should also provide a lead-in to the more detailed discussion on this topic found in Section 5.7.2.

The text in the first paragraph detailing criteria for evaluating treatment process options would be better placed in Implementability Evaluation. In its place should be a

31. Cont.

summary of the analysis of alternatives and selection of remedy. Note in the text that the first two criteria are requirements under federal law.

Technical Effectiveness can include brief discussions on short-term effectiveness, e.g., an interim action's consistency with permanent remedial actions; and long-term effectiveness.

Implementability includes ability to construct, operate and maintain the technology, including long-term monitoring; and technical impracticability.

The text regarding "Institutional controls" is ambiguous and unfocused. Is the point a question of physical or encumbered access to a facility, or to address general support services administrative problems? Do these controls include for example, unanticipated notices-of-deficiencies for permit application approval? Provide a re-write of this section.

Cost Evaluation can be a straight-forward summary of how design, capital, and maintenance and operating costs are evaluated for each alternative.

32. Deficiency: Section 5.7.2, p. WP-147-148

The evaluation criteria are not listed in priority order according to EPA and state guidance. Key authorities and issues are missing.

Recommendation:

An introductory section describing the purpose of the analysis, and the assumptions used; and the guidance documents relied upon in applying the criteria, should be provided.

Reorder the criteria and incorporate new text to address the issues noted, as follows:

- Overall protection of human health and the environment.
  - o requirements under CERCLA (104) and 70.105D RCW
  
- Compliance with corrective action requirements
  - o requirements under CERCLA (121) and 70.105D RCW

32. Cont.

Long-term effectiveness

- o criterion of permanently effective treatment
- o measuring the effectiveness of stabilization technologies

Reduction in toxicity volume, or mobility

Short-term effectiveness

- o interim actions and Hanford Site Strategy guidance documents
- o how will potential for emerging technologies be evaluated against short-term adequacy?

Implementability

- o delete, "availability of approvals from and coordination with other agencies; and "availability of any necessary onsite and/or offsite treatment, storage and disposal services and capacity". These criteria are satisfied by the Hanford Federal Facility Agreement and Consent Order, and unwarranted concerns.

Cost

- o cost-effectiveness is a criterion applied to each preferred alternative that meets statutory requirements

State Acceptance

- o is not accurately described as a "preliminary assessment", as this activity occurs during selection of remedy and the ROD being drafted. The "Community Relations Plan" provides for rigorous public involvement in the decision-making process
- o short and long-term land uses, and point-of-compliance will be focal points in determining cleanup levels

Community acceptance

- short and long-term land uses, and point-of-compliance will be focal points in determining cleanup levels



33. Deficiency: Section 6.0, fourth paragraph, p. WP-150

This paragraph and the schedules presented in Figures 30 and 31 are unacceptable due to lack of objective and task-specific definitions and timeframes for completion. It also must be fully integrated with source operable unit work plan schedules.

See comment #11 above.

Recommendation:

Provide new schedules with a format and level of detail consistent with the approved 300-FF-1 and 300-FF-5 Work Plans.

**CORRESPONDENCE DISTRIBUTION COVERSHEET**

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**Subject:** PROGRAMMATIC COMMENTS ON 100-HR-3 OPERABLE UNIT WORK PLAN

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