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EPA and Ecology Response to
DOE's Change Request Package for Hanford Past-Practice Milestones
Change Control Form Number M-12-90-3



April 5, 1991

(Rev. 3)

[NOTE: This paper represents a cooperative, good faith effort on the part of EPA and Ecology to provide a framework on how the past-practice investigation process could be conducted more efficiently at Hanford. However, the issues are complex and the options are numerous. Therefore, it is reasonable to assume that there will be less than total agreement between EPA and Ecology on every detail or concept presented. Certain issues can only be resolved through the process of three-party discussions.]

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EPA and Ecology have discussed the referenced change request on several occasions and on two occasions with DOE-RL. The change request, as submitted by DOE-RL on February 6, 1991, proposes to replace all future past-practice work plans with a new process. This is not acceptable, and therefore EPA and Ecology are disapproving the change request. The DOE proposal failed to justify the need to replace or delay cleanup processes established in the Tri-Party Agreement. However, EPA and Ecology believe that some efficiencies can be gained over the existing past-practice investigation process by incorporating portions of the DOE proposal and by adding new provisions. Any changes to the existing process and schedules must be made in consideration of long-term solutions, including DOE's commitment to fully fund and implement the required work in a timely manner. We are interested in an approach by which DOE can maximize efficiency and keep projects on schedule with full funding. EPA and Ecology believe that deficiencies in funding or the unwillingness to place appropriate funds on cleanup activities cause DOE to request these schedule changes, although DOE has not formally declared that schedule delays are necessary due to the lack of applied funds.

EPA and Ecology recognize that improvements can be made to the current Tri-Party Agreement approach of investigating and cleaning up past-practice waste sites at Hanford. To that end, we have been working closely with DOE over the past year to streamline the existing methodology. This has resulted in a general approach (the "Hanford Past-Practice Work Plan Strategy"), which has received input from all three parties, although specific implementation of a new approach has had little discussion and was not formally proposed prior to February 6. This strategy has not been approved by EPA or Ecology and will require modification based upon the concepts provided in this response. The February 6 change request was DOE's first attempt toward an implementation strategy. Although that change request was not acceptable, EPA and Ecology believe that the three parties can work together to construct an acceptable strategy in a short period of time.

The EPA and Ecology believe it is important to include new provisions to ensure that activities necessary for timely project completion are implemented as planned. The points listed below indicate EPA's and Ecology's approach to implementation of a streamlined approach to past-practice work at Hanford. These points are organized in terms of 1) general topics/issues, 2) a 100-Area approach, and 3) a 200-Area approach. In some cases, specific recommendations are offered, while in others, EPA and Ecology have identified areas that need to be negotiated with DOE.

It will be DOE's responsibility to provide the resources necessary for implementation of this methodology. There has been no attempt to fit the necessary work into DOE-RL's environmental restoration budget, either for the current fiscal year or beyond. However, it should be noted that this methodology will result in reduced costs and increased efficiencies in several areas. These points identify what EPA and Ecology believe are the minimal requirements for a successful program.

GENERAL TOPICS / ISSUES

1. EPA and Ecology are willing to adjust both M-12 and M-13 to some extent, but only under conditions that will lead to efficiencies and keep long-term schedules intact and enforceable. In other words, any adjustments to near-term schedules must not result in records of decision beyond those dates scheduled or anticipated under the current schedules.

For M-12, EPA and Ecology insist that all work plans through 200-UP-2 (due June 30, 1991) be submitted as per the current Tri-Party Agreement schedule. EPA and Ecology are willing to defer submittal of the following work plans into M-13, as the first work plans to be submitted under that milestone:

<u>Operable Unit</u>	<u>Milestone Number</u>	<u>Current Due Date</u>
100-BC-2	M-12-16	August 1991
200-BP-5	M-12-17	October 1991
100-DR-2	M-12-18	December 1991
200-ZP-1	M-12-19	February 1992
100-KR-2	M-12-20	April 1992

By deferring these work plans (not deleting them), EPA and Ecology recognize claims by DOE-RL that its funds are inadequate to both develop further work plans and to implement approved work plans, as well as carrying out other work required by the Tri-Party Agreement. We are only willing to defer development of work plans if DOE agrees and demonstrates that funding is inadequate to carry out its responsibilities under the Tri-Party Agreement. By deferring the submittal of certain work plans, EPA and Ecology are giving DOE the opportunity to use existing funding to concentrate on implementing field activities and the aggregate area management approach in a manner agreed to

by all parties. During the delay period, EPA and Ecology expect DOE to secure funding necessary to develop the deferred work plans and to carry out all work required by those plans in a timely manner.

For M-13, (submittal of 6 work plans per year), As a component of an acceptable change package, EPA and Ecology are willing to defer the start date of M-13-00 (currently scheduled to begin in calendar year 1992) until January 1993. The first five work plans to be submitted after January 1993 would be the above mentioned work plans that were deferred from M-12. A specific date for submittal of each work plan will be established as part of the annual update to the work schedule (Appendix D of the Action Plan). This will allow DOE to focus available funding on the work at hand, and provide time to secure the additional funding necessary to develop and implement these plans.

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2. For future work plans, i.e., those contained in M-13-00, it should be possible to obtain approved work plans with a reduced effort on the part of all parties. Additionally, the scope of the field work that will be required by each of these future work plans should be reduced to some extent from the level required for the first several work plans. This is achievable through a focused RI/FS process, where we build on a base of knowledge that is continually developing. As an example, the 100-BC-1 operable unit will undergo a rigorous RI/FS process. The RI/FSs for those adjacent operable units (100-BC-2, 100-BC-3, and 100-BC-4) can be tailored in consideration of what was learned at 100-BC-1. EPA and Ecology envision a "focused" or "streamlined" RI/FS, wherever possible, in terms of both the work plan and the investigation for such future operable units. Close coordination with the regulators during all phases of work plan development is necessary for this to occur.

3. The RI/FSSs for the four currently approved work plans will be fully funded, implemented, and completed in accordance with the currently approved schedules. Additional interim milestones will be developed, in accordance with Section 11 of the Action Plan, in the near term to ensure progress toward timely completion of these RI/FSSs.
4. EPA and Ecology have been pursuing DOE and WHC to construct a site-wide (or at least area-wide) groundwater model, to better understand the flow system as a whole at Hanford. EPA and Ecology propose that a new major milestone, along with interim milestones to ensure progress, be established. EPA and Ecology believe that this effort should not be funded solely through the environmental restoration budget, since benefits will be shared by other programs.
5. One of the problems EPA and Ecology have observed with implementation of the environmental restoration program is the lack of direct oversight to planning and coordination of field activities, support services, and the budget. To date, it appears that each RI/FS project has its own schedule and management structure which is independent of other projects. EPA and Ecology believe that better project coordination will enhance the ability to stay on schedule. This issue will become more complex as more projects are added to the system. Therefore, EPA and Ecology are identifying this as a problem that needs attention by DOE, as the remedy must come from within DOE.

One possible solution to this problem is for DOE to create a "coordinator role", within DOE-RL Environmental Restoration Division. The purpose should be to ensure that all ER work required by the TPA is accomplished in an efficient, coordinated manner. Functions such as assurance of consistency in preparation of primary documents, data compilation from a wide range of sources, coordination of

activities to ensure available drill rigs, field equipment, specialized personnel, and laboratories should be included.

6. DOE and WHC have been attempting to conduct a performance assessment on a site-wide basis for the past two years. However, funding has not allowed this to be a priority. We would propose a new major milestone, with interim milestones to measure progress on this issue. EPA and Ecology believe that this effort should not be funded solely through the environmental restoration budget, since benefits will be shared by other programs. To clarify the definition of performance assessment, we have attached a short description of the performance assessment task, as we understand it, to provide a common definition for all parties and to outline the objectives of performance assessment.
7. It is EPA's and Ecology's understanding that DOE and WHC have been attempting to conduct a soil and groundwater background study on an area-wide basis (e.g., 100-Area, 200-Area, etc.) for the past two years. However, the results of this study have not yet been finalized. EPA and Ecology recently received a draft copy of the document, "Characterization and Use of Soil and Groundwater Background for the Hanford Site", WHC-MR-0246, dated March 1991. We would propose a new major milestone, with interim milestones to denote progress toward finalizing this document. This would result in an improvement to the current process of establishing background on an operable unit or an individual waste site basis and would require less effort and dollars in the long run. This document will be subject to approval by EPA and Ecology and will be included in Appendix F of the Action Plan.
8. Currently, the RI Phase 1 Report is listed as a secondary document. Due to our experience with lack of agreement with DOE and its contractors over the 1100-EM-1 operable unit

baseline risk assessment (which is contained in the Phase 1 Report), EPA and Ecology will insist that the RI Phase I Report be changed to a primary document.

As currently provided in Table 9-1 and Section 11.5 of the TPA Action Plan, EPA or Ecology may identify other supporting documents as primary documents. These documents could be supporting documents under the RI/FS (or RFI/CMS) process or they could be documents related to broader activities, such as the AAMS process.

9. One objective of the AAMSS and Phase I of the remedial investigations, including screening activities, is identification of potential sites for expedited response actions. In order for priority abatement actions to be initiated and completed, adequate funding must be available.

DOE must commit to the implementation of any expedited actions as additions to the Tri-Party Agreement, without an impact to existing milestones. If the amount of funding allocated for expedited response actions in a fiscal year should be inadequate to meet identified objectives, DOE must take all necessary steps to obtain additional funding.

100-AREA APPROACH

EPA and Ecology are willing to adjust some schedules to gain efficiencies and to speed up the overall cleanup in the 100-Area. As a condition to modifying current schedules, the revised approach would have to include the following elements:

1. As a component of an acceptable change package, EPA and Ecology would accept deferred submittal of the 100-BC-2, 100-DR-2, and 100-KR-2 work plans until calendar year 1993, when they would apply toward the completion of M-13-00.
2. All of the field screening, scoping, and non-intrusive activities (as defined in the Figure 7-4 of the TPA Action Plan) that have been identified in work plans and that should have been accomplished for all source term waste sites during preparation of the 100-Area work plans through 100-FR-1 must be conducted immediately. Some of these activities are safety related and must be completed before other field activities can occur.

Scoping for the groundwater operable units (100-HR-3, 100-BC-5, 100-KR-4, 100-NR-1, and the groundwater portion of 100-FR-1) would consist primarily of review of existing information and non-intrusive work. Since there is a limited amount of groundwater data in much of the 100-Area, the scoping would be supplemented with existing information available from other sources, even if those sources are outside the currently identified groundwater operable unit boundaries.

The three parties would work closely together during all scoping activities, assessing data and making modifications to work plans, as necessary. Groundwater operable unit scoping would be planned to coincide with the river impact study and would provide data, along with source term scoping

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information, on which to begin the 100-Area combined risk assessment.

3. Over the next few weeks, the parties will meet to rescope the current 100-Area work plans that have been (or are being) prepared. The rescoping will be aimed at placing the initial focus of the intrusive investigations on the highest priority waste sites within each operable unit for which a work plan has been prepared. We believe the collective knowledge of the three parties and the information contained in the work plans, is sufficient to identify the high priority waste sites.

Rescoping will allow DOE to place resources on the investigation in phased approach, with the highest priority waste sites in each operable unit at the beginning of the process (RI Phase 1), and the lower priority waste sites deferred to a later phase (RI Phase 2). This will result in information and data on the more critical waste sites at an earlier point in time, which will enable us to arrive at an earlier record of decision for higher priority waste sites or for an entire operable unit. This concept of a "focused" record of decision could apply to similar waste sites contained in different operable units. This methodology will also give us more accurate information to support initiation of expedited response actions at the higher priority waste sites.

It is likely that additional data needs will be identified during the RI Phase I. Depending on the scope of the data needed, it could be collected during RI Phase II or, perhaps, as an addendum to the Phase I investigation. For the groundwater operable units, the same concept would apply -- focus the first investigation where we know problems exist, providing enough information to arrive at a record of decision and/or to support an expedited response action.

In the RI Phase II, follow-up investigations of the higher priority sites would be accomplished and investigations of lower priority sites would be implemented in a streamlined manner, based on experience gained in Phase I. The goal during Phase II would be to extrapolate the information learned about the higher priority sites to similar lower priority sites, as well as to fill data gaps.

This approach combines the advantages of investigating high priority units of similar type and history ahead of lower priority units, while keeping the current operable unit concept intact. We can also take advantage of the significant amount of work accomplished in the preparation of the various work plans, even though some effort to rescope the work plans will be necessary.

Three-party agreement on the details of how each work plan will be rescoped will be achieved in accordance with the following schedule:

<u>Operable Unit</u>	<u>Conceptual Agreement</u>	<u>Submit Rescoped Work Plan/Schedule</u>
100-HR-1	5/8/91	6/8/91
100-DR-1	5/8/91	6/8/91
100-HR-3	5/8/91	6/8/91
100-BC-1	5/15/91	6/15/91
100-BC-5	5/15/91	6/15/91
100-KR-1	5/15/91	6/15/91
100-KR-4	5/15/91	6/15/91
100-NR-1	6/1/91	7/1/91
100-NR-3	6/1/91	7/1/91
100-FR-1	8/1/91	9/1/91

4. Based on the completion of rescoping the work plans, as described above, a detailed integrated schedule for completion of all investigative work in the 100-Area must be developed. Consideration and scheduling of all necessary resources must be made, including items such as drilling rigs, specialized staff expertise, laboratory capability and capacity, etc. This schedule must be used to construct the individual operable unit work plan schedules to be submitted with the rescoped work plans as indicated above. Prior to approval, each of the individual work plan schedules will have numerous interim milestones established, in order to track and ensure progress of the various tasks. The integrated schedule must accommodate the September 2005 date (M-15-00) for completion of all RI/FSSs.

5. EPA and Ecology expect that this integrated system will result in earlier records of decision than are achievable under the current system. Since we do not have approved schedules for the 100-Area work plans, we do not have a baseline to measure against. Therefore, the schedules to be constructed for each of the 100-Area work plans must be aggressive toward the goal of early records of decision.

With the increased scoping activities prior to initiating intrusive field work, EPA and Ecology believe that DOE should be able to complete an RI/FS (or RFI/CMS) project within 48 months after beginning the intrusive field work. Closer coordination between DOE and the lead regulatory agency should lead to shorter document preparation and review times.

6. DOE will conduct a focused study to determine the effect of the Columbia River on the hydrology and contaminant migration within the 100-Area operable units. This study will maximize the use of currently available information and will focus on the areas of highest contamination and

concern. However, EPA and Ecology recognize that some data from outside the currently defined operable units will be necessary for completion of this study.

The objectives, scope, design, and duration of the study shall be agreed to by the three parties no later than April 22, 1991. Information obtained from this study will be used to support a combined or cumulative risk assessment of the 100-Area, in terms of the Columbia River as a route of exposure to contaminants.

7. DOE will conduct a combined risk assessment for the 100-Area, as noted above. This risk assessment will include the Columbia River as a primary pathway for contaminant migration, as well as other exposure scenarios that consider various potential land use alternatives. It will consider both ecological and human health impacts.

Information gathered during the first few operable unit remedial investigations, including area wide scoping activities, will be considered in this risk assessment. Timing for the risk assessment will be established in consideration of the integrated schedule for the 100-Area, as mentioned above, with the intention of completing the first phase as quickly as possible.

The information gathered during investigations of later operable units will be used to supplement the combined risk assessment and remedial actions will be modified accordingly. We would not expect the later operable units to significantly impact the risk assessment, since they are lower priority units to begin with.

This combined risk assessment will replace individual risk assessments for each 100-Area operable unit, resulting in a comprehensive approach to cleanup of the various sites and

groundwater. Benefits achieved via expedited response actions will be factored into the risk assessment, if such actions can demonstrate that improvements have already occurred.

8. DOE would not develop new Feasibility Study reports on an operable unit basis. Rather, it would conduct three stand alone or "base" FS reports for the entire 100-Area. These reports would consider 1) source operable units (except N-Area), 2) groundwater operable units, and 3) N-Area, as it is distinctly different from the other 100-Areas.

It is expected that these reports will be based on information obtained as the priority investigations proceed in each operable unit, for various categories of waste sites. This methodology will work, since the feasible alternatives for remediation of similar waste sites which received similar types and volumes of wastes should be the same, even if the waste sites are in different operable units. Any additional information from the later operable units would serve to supplement or confirm the content of the three base FS reports.

DOE would begin assembly of the base FS reports as soon as the scoping activities are underway and would complete them as soon as the data allow, in accordance with the integrated schedule for the 100-Area operable units. It is important that the base FS reports be scheduled and completed in a timely manner, to accommodate schedules for early records of decision, remedial design, and remedial action.

200-AREA APPROACH

The Aggregate Area Management Study (AAMS) approach, as outlined in the "Hanford Past-Practice Work Plan Strategy", has a different application at the 200-Area than at the 100-Area for a number of reasons. It is important to understand that the AAMS for the 200-Area is not an end unto itself, but rather a tool that will lead to increased efficiencies in the past-practice investigation process and, ultimately faster records of decision. As previously stated, EPA and Ecology do not concur with DOE's proposal to delete all work plan milestones. EPA's and Ecology's approach to implementation of the AAMS concept in the 200-Area is as follows:

1. EPA and Ecology agree to defer submittal of RI/FS work plans for the 200-BP-5 and 200-ZP-1 operable units into M-13.
2. DOE will conduct a series of AAMSs to cover all source terms in the entire 200-West Area and the 200-East Area (not including 200-BP-1 -- information from the 200-BP-1 RI/FS will feed into the appropriate AAMS). The 200-Area, even when divided into East and West, is too large to accommodate a single AAMS for all source terms. However, eight well defined areas within the 200-Area exist that would be suitable for the scale of an AAMS. These areas or waste area groups are as follows:
 - a. B-Plant
 - b. PUREX
 - c. Semi-works
 - d. 200-Area North
 - e. Redox
 - f. T-Plant
 - g. U-Plant
 - h. Z-Plant

The eight areas identified are subject to discussion, and perhaps there is a better way to categorize them, to ensure that such waste area groups as burial grounds are included.

The groundwater beneath the 200-Area would be divided into two separate AAMS projects -- one for 200-East and one for 200-West. As the existing groundwater information and vadose zone information is assimilated, it should provide a good information source to substantiate the definition of specific groundwater operable units within the 200-Area. As such groundwater operable units are identified, they will be prioritized and added to the Action Plan work schedule. Information collected under the groundwater AAMS projects will be integrated into the site-wide (or area-wide) groundwater flow model.

The design of the AAMSS will be fashioned after the guidelines in the strategy document, although this document has not yet been finalized or approved by the parties. Existing information will be used wherever possible, in consideration of data quality objectives. A limited amount of new intrusive work (such as installation of groundwater wells or vadose borings) will be necessary to achieve the desired result of the AAMS. Efforts to connect known subsurface contamination to sources will be made, followed by detailed mapping of the contaminant plumes. A search of available and applicable process information and records will be made to more accurately predict the contaminants of concern. The design will have to be agreed to by the three parties. We believe the general design of the AAMSS can be agreed upon by the end of the 45-day public comment period on the change packages and can be implemented immediately thereafter.

A new major milestone for completion of the AAMSS by September 1992 will be established and issued for public

comment as part of the EPA's and Ecology's response to the currently proposed change packages. Several interim milestones will need to be established for tracking and to ensure progress toward completion of the major milestone.

ATTACHMENT

PERFORMANCE ASSESSMENT

April 5, 1991

This writeup represents a brief summary of the scope of a performance or risk assessment milestone discussed in the general topics/issues of the EPA and Ecology change package response. The purpose is to provide the three parties with a definition and common basis of understanding of performance assessment.

The current past-practice strategy, as well as all other waste management projects ongoing at Hanford place little emphasis on performance or risk assessment. The lack of a technically defensible flow and transport analysis in the Liquid Effluent Study and the omission of residential and agricultural pathway analysis in the 1100 Area baseline risk assessment are examples of deficiencies identified in initial submittals of performance and risk assessment documentation. In addition, environmental evaluations have not traditionally been performed as a part of the risk or performance assessment process at Hanford. These capabilities are required to make sound risk based decisions for the management of active and inactive Hanford waste sites.

DOE has expressed a desire to establish cleanup and waste management priorities at Hanford on a risk basis yet has not placed an emphasis on development of accepted methods of evaluating human health and environmental risk from various Hanford waste forms. EPA and Ecology do not support the current DOE-HQ prioritization system nor the current application of this system to Hanford. EPA guidance documents should provide the basic requirements for the evaluation of performance and risk assessment, but application of the principles to Hanford and

development of an accepted methodology to support risk management decisions are not currently available nor do they appear to be forthcoming.

A milestone to address performance or risk assessment will contain interim milestones for completion of Hanford specific guidance documents for the following risk assessment components:

Pathway Analysis and Scenario Development

- Human health
- Environmental Evaluation

Flow and Transport Analysis Methodology

- Unsaturated
- Saturated

Waste Form Release Analysis

- Liquid Discharges
- Solid Waste Burial Grounds
- Grout
- Single- and Double-Shell Tanks (including piping), and
- Buried Drums

Remedial Technology Evaluation Capability

- Containment Technologies (Barriers & Liners)
- Groundwater Treatment (Pump & Treat, In-Situ, Slurrywall, etc.)
- Solidification (In-Situ Vitrification, Grouting, etc.)

A summary description of EPA Superfund guidance documents is as follows:

Risk Assessment Guidance for Superfund - Volume I, Human Health Evaluation Manual - Part A (HHEM) - EPA/540-1-89-001: provides guidance on how to conduct the human health portion of the baseline risk assessment.

Risk Assessment Guidance for Superfund - Volume II, Environmental Evaluation Manual - EPA/540/1-89-001 and the companion manual, Ecological Assessment of Hazardous Waste Sites: A Field and Laboratory Resource - EPA/600/3-89/013: provides guidance on conducting the environmental portion of the baseline risk assessment.

Other pertinent guidance includes: Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA (RI/FS Guidance - EPA/540/G-89/004: describes how the baseline risk assessment fits into the overall RI/FS process.

Guidance On Preparing Superfund Decision Documents (ROD Guidance) - EPA/624/1-87/001: provides information on how to document the results of the baseline risk assessment in the ROD.