9
2

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10 HANFORD PROJECT OFFICE
712 SWIFT BOULEVARD, SUITE 5
RICHLAND, WASHINGTON 99352

October 31, 1996

Glenn Goldberg
U.S. Department of Energy
P.O. Box 550, H0-12
Richland, WA 99352

Re: 100-BC-1, 100-DR-1, 100-HR-1 Operable Unit Record of Decision Draft Amendment

Dear Mr. Goldberg:

Enclosed for your review is a copy of the draft Amendment for the September 1995 Record of Decision (ROD) for the 100-BC-1, 100-DR-1, 100-HR-1 Operable Units. This Amendment is the reformatted draft Explanation of Significant Differences (ESD) and contains the same actions as the previously submitted draft ESD. As we have discussed, the U.S. Environmental Protection Agency determined that due to the magnitude of the change of scope and cost to the initial ROD, a ROD Amendment was the most appropriate decision document. 42292

Please contact me at (509)-376-6623 at your earliest convenience to discuss any comments you may have on this document.

Sincerely,

Kevin J. Oates
Environmental Scientist

Enclosure

cc: Keith Holliday, Ecology
Administrative Record (100-BC-1, DR-1, HR-1 Operable Units)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10, HANFORD PROJECT OFFICE
712 Swift Boulevard, Suite 5
Richland, Washington 99352

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
P.O. Box 550
Richland, Washington 99352

WASHINGTON STATE DEPARTMENT OF ECOLOGY
1315 W. 4th Avenue
Kennewick, Washington 99336-6018

Proposed Amendment to the September 1995 Record of Decision for the 100-BC-1, 100-DR-1, 100-HR-1 Operable Units, Hanford Site, Benton County, Washington

PURPOSE

The U.S. Environmental Protection Agency (EPA), the U.S. Department of Energy (DOE), and the State of Washington, Department of Ecology (Ecology) are proposing an amendment to the September 1995 Record of Decision (ROD) for the 100-BC-1, 100-DR-1, 100-HR-1 Operable Units at the Hanford Site. This Proposed Amendment would include 34 additional liquid radioactive waste disposal sites in the 100 Area for remediation, and updates the costs estimates for the remediation project.

EPA invites you to review this proposed amendment and to send any written comments by XXX, 1996 to:

Kevin Oates, Project Manager
USEPA
712 Swift Blvd, Suite 5
Richland, WA 99352

PUBLIC PARTICIPATION ACTIVITIES

A public comment period will be held from XXX to XXX, 1996. This proposed amendment has been discussed with the Hanford Advisory Board, Environmental Restoration Committee meetings in July and August, 1996. An additional public meeting will be held on XXXX if a written request is received by Kevin Oates before XXX. After considering all comments, EPA may either issue the proposed amendment, issue an amendment modified by the public comments received, or retain the original selected remedy. The decision reached will be announced to the public and will include a responsiveness summary with responses to issues raised by the public. All submitted written comments will be placed in the Administrative Record for the 100 Area. Locations for the Administrative Record, which contains supporting documents and information about the sites, are listed on the last page of this announcement.

SUMMARY OF SITE HISTORY

The Hanford 100 Area lies at the north end of the Hanford Site in Benton County, Washington state, along the southern shoreline of the Columbia River as shown in Figure 1. The 100 Area NPL Site is comprised of six non-contiguous reactor areas containing the nine retired plutonium production reactors and their ancillary facilities. Large amounts of cooling water flowed through the reactor cores and became contaminated with radionuclides and other waste. Soil and underlying groundwater were contaminated when cooling water was disposed in cribs and trenches, and leaked from water transfer systems. In addition, solid wastes contaminated with radionuclides and other hazardous materials were buried in unlined trenches.

A ROD was issued in September 1995 for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units to address actual or threatened releases at radioactive effluent disposal sites. The ROD identified 37 high-priority waste sites which had received liquid radioactive effluent discharges. The selected interim remedy for the 37 sites is to remove, treat as appropriate or required, and dispose of the waste. A cleanup contract for the first 8 sites in the 100-BC-1 operable unit was awarded in June of 1996. Full scale cleanup and disposal at the ERDF began in July of this year.

DESCRIPTION OF THE CHANGES

This ROD Amendment is being proposed for the following reasons:

- To expand the scope of the remedial action to include 34 additional sites within the 100 Area. These sites received similar discharges of radioactive liquid effluent as the original 37 high priority liquid radioactive waste disposal sites presented for remediation in the September 1995 ROD. The additional sites pose a similar level of risk to human health and the environment that requires remediation. The additional sites are in the 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-HR-1, 100-KR-1, and 100-KR-2 Operable Units. The estimated cost of remediation and disposal at the onsite Environmental Restoration Disposal Facility (ERDF) of the 34 additional sites

is approximately $112M. Table 3 at the end of this document provides a brief description of the additional sites.

- Cost evaluations during remedial design for the original 37 sites identified significant opportunities for streamlining and coordination of remediation activities. Those evaluations, together with lessons learned from demonstration projects and an expedited response action, resulted in reductions to cost estimates for remediation of 100 Area waste sites. The most significant areas identified for cost savings included reduction in contaminated soil volume estimates, and reduction in sampling and analysis costs. Preliminary cost estimates for the original 37 sites in the September 1995 ROD totalled $491 million. The current cost estimate for remediation and disposal of the same 37 waste sites is approximately $82 million.

In addition, this proposed amendment will document the status of treatment for volume reduction, and revegetation efforts at 100 Area liquid waste disposal sites. Summaries for both activities are discussed in the next section.

Tables 1 and 2 present a summary of the scope and cost changes from the 1995 ROD and this proposed amendment.

TABLE 1. ESTIMATES FROM THE 1995 ROD

NUMBER OF SITES	VOLUME FOR DISPOSAL	COST OF SITE REMEDIATION	COST OF DISPOSAL	TOTAL
37				$491M

TABLE 2. PROPOSED AMENDMENT ESTIMATES

NUMBER OF SITES	VOLUME FOR DISPOSAL	COST OF SITE REMEDIATION	COST OF DISPOSAL	TOTAL
37-Initial	535,000 LCY *	$49,236,000	$32,997,000	$82,233,000
34-Additional	668,000 LCY *	$71,346,000	$41,171,000	$112,517,000
71-Total	1,203,000 LCY *	$120,582,000	$74,168,000	$194,750,000

* *Loose Cubic Yards*

CLEANUP APPROACH REMAINS UNCHANGED

The cleanup goals for the 1995 ROD and this proposed amendment are to remediate liquid waste disposal sites to levels that will allow for unrestricted use of the land, to protect groundwater in the 100 Area, and to protect the Columbia River. Some restrictions to groundwater use are expected to continue during and after cleanup activities.

The remedy selected in the September 1995 ROD relies on the selection of the same remedy at multiple similar sites within the 100 Area. We call this approach the "Plug-in Approach". The approach combines historical information on former process operations with limited investigations on the nature and extent of contamination to determine which sites have similar types and patterns of contamination. We then use our experience gained during cleanup of similar sites within the 100 Area to undertake cleanup on additional sites without expending resources to further characterize these sites.

A summary of the key points of the selected remedy in the ROD is presented below.

- *"Remove contaminated soil, structures and debris from 100 Area source waste sites using the Observational Approach."* The Observational Approach uses screening for contaminants during remediation to guide the extent of excavation. Remediation proceeds until it can be demonstrated through a combination of field screening and confirmational sampling that cleanup goals have been achieved.

- *"Treatment, by thermal desorption to remove organics and/or soil washing for volume reduction, or as needed to meet waste disposal criteria."* At the completion of treatability studies during remedial design, it was found that treatment for volume reduction will not be cost effective for liquid radioactive waste disposal sites. Therefore, treatment will only be implemented to meet waste disposal criteria.

- *"Disposal of contaminated materials at ERDF."* The ERDF began receiving wastes in July of 1996. The inclusion of additional waste sites for remediation is consistent with the goals for disposal at the ERDF, and will allow for better planning of the transportation and disposal activities at the ERDF in future years.

- *"Backfill of excavated areas followed by revegetation."* Revegetation is not required as part of the remedy for protection of human health and the environment. Revegetation will help stabilize the surface of excavated areas to reduce windblown dust and will help re-establish habitat. Revegetation activities in the 100 Area will be conducted in accordance with the 100 Area Mitigation Action Plan that has been developed by DOE in conjunction with natural resource trustees and other stakeholders.

COMPARISON OF ALTERNATIVES

EPA uses the following nine criteria for evaluating cleanup alternatives and, when modifications of the remedy are proposed, compares the proposal against the original decision using the same nine criteria. The evaluation criteria fall into three categories; Threshold, Balancing, and Modifying. A brief description of the criteria and how they are used is presented below.

Threshold

1. Overall Protection of Human Health and the Environment - How well does the alternative protect human health and the environment, both during and after construction?

2. Compliance with Federal or State Environmental Standards (ARARs) - Does the alternative meet all applicable or relevant and appropriate state and federal laws?

Balancing

3. Long-term Effectiveness and Permanence - How well does the alternative protect human health and the environment after completion of the cleanup? What, if any, risks will remain at the site?

4. Reduction of Toxicity, Mobility, and Volume Through Treatment - Does the alternative effectively treat the contamination to significantly reduce the toxicity, mobility, and volume of the hazardous substance?

5. Short-Term Effectiveness - Are there potential adverse effects to either human health or the environment during construction or implementation of the alternative? How fast does the alternative reach cleanup goals?

6. Implementability - Is the alternative both technically and administratively feasible? Has the technology been used successfully on other similar sites?

7. Cost - What are the estimated costs of the alternative?

Modifying

8. State Acceptance - What are the State's comments or concerns about the alternatives considered and about EPA's preferred alternative? Does the State support or oppose the preferred alterative?

9. Community Acceptance - What are the community's comments or concerns about the preferred alternative? Does the community generally support or oppose the preferred alternative?

Comparison of the ROD Selected Remedy to the Proposed Amendment

The following discussions compare how the evaluation criteria for the changes to the ROD compare to the original decision. It is important to note that the additional sites being proposed for cleanup are very similar to the sites selected in the original ROD. Both groups of sites were evaluated in feasibility study reports that support the cleanup actions. Another key point is that the evaluations that support the initial cleanup decision still holds and does not change.

1. Overall Protection of Human Health and the Environment

Both the existing ROD and the proposed amendment meet the threshold criterion of protection of human health and the environment. The approach to remediation of contaminated sites, as well as the cleanup goals, are the same for both. A key provision for the protection of human health is the proposed radionuclides standards for residential soils of 15mrem/year above background.

2. Compliance with Federal or State Environmental Standards (ARARs)

The existing ROD and the proposed amendment will both comply with ARARs. The key ARARs are; the Model Toxics Control Act for metals and organics in soils; Safe Drinking Water Act Maximum Contaminant Levels for groundwater; and, Clean Water Act criteria for the Columbia River.

3. Long-term Effectiveness and Permanence

The existing ROD and the proposed amendment have the same approach to remediation of the waste sites and the same remediation goals. Therefore, both will be protective of human health and the environment after cleanup goals are met. The remediation of 34 additional sites will increase the overall long-term effectiveness of the remedy in the 100 Area.

4. Reduction of Toxicity, Mobility, and Volume Through Treatment

The existing ROD and the proposed amendment have the same approach to remediation of the waste sites and the same remediation goals. The completion of soil reduction treatment studies have shown that volume reduction is not cost effective for the liquid radioactive waste disposal sites. However, treatment for reduction of toxicity, particularly to meet Land Disposal Restrictions, may be required at some sites.

5. Short-Term Effectiveness

The existing ROD and the proposed amendment have the same approach to remediation of the waste sites. Both are similar with respect to meeting this criteria. However, the proposed

amendment will add additional sites for remediation, which will increase the overall amount time for completion of the remediation.

6. Implementability

The existing ROD and the proposed amendment have the same approach to remediation of the waste sites. Therefore, both are essentially the same with respect to meeting this criteria. However, the addition of 34 more sites will allow for better long term planning of construction, transportation, and disposal activities.

7. Cost

The September 1995 ROD estimated cost of remediation of the original 37 sites was $491M. The updated estimate for those 37 sites is $82M. The proposed amendment would also add 34 more sites at an estimated cost of $112M. The proposed amendment represents an 83% reduction in the estimated cost for the original 37 sites, and a 60% total reduction from the September 1995 ROD. The TriParties will continue to work towards further streamlining activities in order to focus resources on cleanup.

8. State Acceptance

The State of Washington has concurred with this proposed amendment. The State will formally issue its position regarding acceptance of the amendment after public comments have been received and considered.

9. Community Acceptance

Community acceptance will be determined after evaluating comments received during the public comment period for this proposed ROD amendment.

STATUTORY DETERMINATION

The modified remedy would satisfy the provisions of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121. EPA and the State of Washington, Department of Ecology, believe that the modified remedy would remain protective of human health and the environment, comply with applicable or relevant and appropriate federal and state requirements, and be cost-effective. The remedy utilizes treatment and resource recovery technologies to the maximum extent practicable at this site.

Waste sites in the 100-DR-2 Operable Unit are included in this proposed action. Wastes from remediation of this RCRA Past Practice unit can be disposed of at the ERDF according to the provisions made in the August 1, 1996 Explanation of Significant Differences for the January 20, 1995 ERDF ROD. No redesignation of regulatory pathway from RPP to CPP is

required prior to disposal of wastes from this OU at ERDF, or for other OU's in future CERCLA decision documents.

ADMINISTRATIVE RECORD LOCATIONS

ADMINISTRATIVE RECORD (Contains project documents)

U.S. Department of Energy
Richland Operations Office
Administrative Record Center
2440 Stevens Center
Richland, Washington 99352

INFORMATION REPOSITORIES (Contain limited documentation)

University of Washington
Suzzallo Library
Government Publications Room
Mail Stop FM-25
Seattle, Washington 98195

Gonzaga University
Foley Center
E. 502 Boone
Spokane, Washington 99258

Portland State University
Branford Price Millar Library
Science and Engineering Floor
SW Harrison and Park
P.O. Box 1151
Portland, Oregon 97207

DOE Richland Public Reading Room
Washington State University, Tri-Cities
100 Sprout Road, Room 130
Richland, Washington 99352