



Department of Energy

Richland Field Office
P.O. Box 550
Richland, Washington 99352

9205271

92-EPB-054

AUG 12 1992

Mr. Paul T. Day
Hanford Project Manager
U.S. Environmental Protection Agency
Region 10
712 Swift Blvd., Suite 5
Richland, Washington 99352



Mr. David B. Jansen, P.E.
Hanford Project Manager
State of Washington
Department of Ecology
P. O. Box 47600
Olympia, Washington 98504-7600

Dear Messrs. Day and Jansen:

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)/STATE OF WASHINGTON DEPARTMENT OF ECOLOGY (ECOLOGY) COST REVIEW/U.S. ARMY CORPS OF ENGINEERS (USACE) COST REVIEW RESPONSES

Attached are the U.S. Department of Energy, Richland Field Office's responses to the EPA/Ecology Cost Evaluation Project dated October 1990 and the USACE Hanford Site Environmental Restoration Cost Analysis and Review dated July 1990.

If you have any questions, please contact me or Mr. Fred R. Serier of my staff on (509) 376-8517.

Sincerely,

E. A. Bracken, Director
Environmental Restoration Division

ERD:FRS

Attachment
As stated

cc w/att:
R. D. Lerch, WHC
R. D. Wojtasek, WHC
D. J. Cannon, USACE
D. Nylander, Ecology



State of Washington Department of Ecology Observations and Findings:

1. Inadequate DOE oversight of contractors' programmatic and budgetary decisions.

Response:

The U.S. Department of Energy, Richland Field Office (RL) has taken steps to improve oversight of contractors' programmatic and budgetary decisions. For example, since the State of Washington Department of Ecology (Ecology) cost evaluation, the RL Environmental Restoration Division (ERD) has added staff to provide for improved Environmental Restoration (ER) Program oversight. The staff additions include a single point of contact for development of Hanford ER cost estimates and baseline documentation. In addition, RL directed the Westinghouse Hanford Company (WHC) ER Program to construct an overall Baseline Summary Document and 14 Subproject Baseline Summary Books. The Baseline Summary Document includes the specific objectives, priorities, assumptions, and strategies that drive the Hanford ER cost estimates and programmatic and budgetary decisions. The 14 ER subprojects represent 80% of the proposed fiscal year (FY) 1994 budget. In FY 1993, a Subproject Baseline Summary Book will be produced for every Hanford ER Activity Data Sheet (ADS). This new documentation is the basis for the Hanford ER ADSs and provides a much more effective method for review and oversight of the ER budget and cost estimating data.

Following production of the first drafts of the baseline documentation, RL and U.S. Department of Energy-Headquarters (DOE-HQ) conducted several reviews, identified areas needing improvement and directed WHC to update and improve the documentation. Since then, the ER baseline documentation has been revised and subjected to a validation review by a DOE-HQ PR-20 review team. Although the results of the validation review are not yet available, it was clear during the reviews that improved DOE oversight is having an impact on the quality of Hanford ER cost estimates and the programmatic and budgetary process.

2. Excessive, and yet ineffective, internal reviews of budgets, permit applications, and closure plans by contractors.

Response:

For a document such as the 305-B permit application referenced in the Ecology evaluation report, a number of internal reviews were conducted by Pacific Northwest Laboratory (PNL) and was considered to be required by their internal policy. The PNL review included technical reviews that are required for confirmation that all matters relating to permitting, regulatory considerations, procedures, etc. have been properly considered and documented. An editorial review is required to assure grammatical and format quality. Legal reviews are required prior to upper management signoff. Clearance reviews are required to assure that patent, classification, and other document clearance issues are addressed. Also, a document of this nature requires approval by the

Director of PNL. At a minimum, the responsible section manager, department manager, and center manager must be confident that the material contained in the report is of sufficient quality. These reviews do not normally require much time but are, nevertheless, necessary.

Since the Ecology evaluation, the number of reviewers involved in closure plans and permit applications has been reduced. It should be noted, however, that because of the importance of the data included in a closure plan or permit application several internal organizations (e.g., Safety, Quality Assurance (QA), General Counsel, Facility Operations, etc.) are still required to review the documentation.

RL is in the process of improving the quality of internal reviews of budget and baseline data. For example, WHC (at RL's direction) is in the process of generating a set of procedures documenting the process by which Hanford ER budget and baseline submissions are constructed. One of these procedures will address internal validation of ER budget and baseline data. A systematic, formal, proceduralized process for budget and baseline data production will result in more effective internal reviews of ER cost data.

3. Inadequate analysis of costs and feasibility by contractors prior to decision-making.

Response:

WHC is now doing informal cost/benefit analyses associated with closures to assure that cost and feasibility are appropriately factored into decision making being done by RL's contractors. Since the Ecology evaluation, the 2727-S issue (specifically discussed in the Ecology evaluation report) has been revisited by RL and the facility has been determined to be no longer needed. The 2727-S facility will be disposed of according to regulations.

RL agrees that detailed written/documented cost comparisons were not generated for all decisions regarding the 305-B unit. However, the decisions were made following numerous internal reviews and discussions with PNL management to form and confirm the basis for them. Operating costs were based on historical costs and trends as well as projected future waste fees provided by other Hanford contractors. It was obvious from the projected future cost impacts that the decision to permit 305-B would be cost effective. While a detailed cost comparison was not generated nor formally documented, it was not considered cost effective at the time to do so.

U.S. Environmental Protection Agency Observations and Findings:

1. First, it was apparent that many of the costs were not substantiated. ...the reviewers were unable to document any effort by which WHC challenged the costs provided from one branch to another.

Response:

RL is taking steps to improve the quality of internal reviews of budget and baseline data. For example, RL has directed WHC to produce a set of procedures to document the process by which Hanford ER budget and baseline submissions are constructed. One of these procedures will address internal validation of ER budget and baseline data. A systematic, formal, proceduralized process for budget and baseline data production will result in more effective internal reviews of ER cost data.

2. ...many of the operating requirements, procedures, and orders generated by both DOE and its contractors may need to change. EPA ... recommends that DOE and WHC institute a review process... . It may be possible to streamline, tailor, or even eliminate certain requirements that currently apply to these activities.

Response:

RL agrees with the need to continually evaluate requirements to eliminate ineffective, inappropriate, or outdated requirements to the extent possible. An example of reduced requirements is the reduced number of internal WHC organizations now involved in the review of closure plan and permit application documentation.

Another example is the effort associated with the production of the Environmental Restoration Remedial Action Quality Assurance Requirements Document (QASR). The QASR is the result of an extensive review of the body of quality related requirements that could be applied to the ER scope of work. The document consolidates QA requirements from numerous source documents into one set of requirements for use in the development of Hanford ER Program participant QA Program Plans (QAPPs). It is RL's intent that, for the ER Program, each participant will review their scope of work and the requirements identified in the QASR then utilize their QAPP to document the appropriateness of each requirement for each specific piece of work. This approach will result in an appropriate application of requirements to the work to be accomplished.

3. With the exception of the 300 Area Process Water Treatment Plant, DOE and WHC were frequently not able to provide defensible and detailed bases for their cost estimates.

Response:

RL and WHC are continuing to improve their capabilities associated with the production of cost estimates and defensible and detailed bases for

those estimates. Since the U.S. Environmental Protection Agency (EPA) cost evaluation, RL has directed the WHC ER Program Office to construct an overall Baseline Summary Document and 14 Subproject Baseline Summary Books. The Baseline Summary Document includes the specific objectives, priorities, assumptions and strategies that drive the Hanford ER cost estimates and also the programmatic and budgetary decisions. The 14 ER subprojects represent 80% of the proposed FY 1994 budget. In FY 1993, a Subproject Baseline Summary Book will be produced for every Hanford ER ADS. This new documentation is the basis for the Hanford ER ADSs and provides a much more defensible and detailed bases for ER cost estimates.

Following production of the first drafts of the baseline documentation, RL and DOE-HQ conducted several reviews, identified areas needing improvement, and directed WHC to update and improve the documentation. Since then, the ER baseline documentation has been revised and subjected to a validation review by a DOE-HQ PR-20 review team. The bases for Hanford ER cost estimates have significantly improved since the EPA cost evaluation.

In addition, since the EPA evaluation, RL ERD has added a staff member to oversee and coordinate Hanford ER program cost estimate and baseline documentation production and validation. Likewise, the WHC ER Program Office, based on RL's direction, is adding a cost estimating and baseline organization. RL has directed WHC to produce a set of procedures to document the process by which Hanford ER budget and baseline submissions are constructed. Also, RL, working with WHC, is in the process of establishing an automated cost estimating capability that will utilize an existing, proven cost estimating software. Hanford ER Program cost estimates are expected to continue to improve as the procedures and capabilities discussed above are realized.

4. The RI/FS cost model is of limited use in its present form because specific adjustments must be made for each operable unit. The current model does not include the sensitivity necessary for these adjustments. The model was a good first attempt to document cost projections and provide continuity, but the model should be expanded to include more detail on the assumptions, to document the assumptions for each subtask, and to provide increased sensitivity to deal with the variability of each operable unit. The level of effort, labor costs, and the time frames associated with various tasks appeared to be high, (e.g. the costs associated with the 200-BP-1 Operable Unit RI/FS).

Response:

RL agrees with the need to continue to improve the capabilities of the Remedial Investigation/Feasibility Study (RI/FS) cost model. Since the EPA evaluation, the model has been updated and improved upon in support of the production of the Hanford ER subproject baseline summary books and the ADSs. WHC is establishing per RL's direction an ER cost estimating and baseline organization that will be responsible for the continued improvement of the RI/FS cost model as well as the production

of detailed cost estimates. RL is currently working with the U.S. Army Corps of Engineers (USACE) to determine to what degree the USACE could work with WHC to make improvements to the model.

Table 1 has been included to compare FY 1990 and FY 1992 cost estimates and actual costs on the 200-BP-1 and 100-HR-1 Operable Units. (100-HR-1 is addressed in a later USACE finding.) As an aid to comparison, the FY 1992 estimate on this table has been adjusted downward slightly to reflect a revised approach (since FY 1990) for calculation of escalation and contingency. Both estimates use and consider actual costs that were available at the time the estimates were created, and use the estimation ground rules and work scope assumptions that were in effect at that time, e.g., standard RI/FS guidance, Hanford Past Practices Strategy, Aggregate Area Management Strategy, etc.

Although the EPA stated that the estimated cost for 200-BP-1 appeared to be high, actual experience has shown that the estimate for characterization created in FY 1990 was low. 200-BP-1 is the first of about 30 operable units that are located in a radiation zone where greater than 10 mr samples must be handled, and as a result, some first time problems associated with drilling, sampling, and analysis have been encountered. The operable unit models and the operable unit matrix which calculates drilling and analysis cost for each operable unit has been modified so that the FY 1992 estimates reflect actual experiences. Because of the increasing costs, other ways to characterize 200 Area operable units are being studied to look for acceptable ways to reduce the overall cost of characterization. A Value Engineering (VE) study on well drilling was completed in FY 1991 with a March, 1992 update. This VE study has resulted in improvements in efficiency, development and use of new technology and improved productivity. An Aggregate Area Management Strategy is also currently being reviewed, and appears to be an acceptable way to decrease costs for characterizing operable units in the 200 Areas and other radiation zones without sacrificing quality.

Although Table 1 indicates that actual costs for the 100-HR-1 Operable Unit have been lower than were estimated in FY 1990, the reason for the lower cost is a significant revision of scope through negotiation between Ecology, EPA, and RL. The baseline cost estimate created in FY 1990 did not assume future scope revisions that were not fully defined and agreed to by the regulators at that time. One of the biggest challenges associated with estimating outyear cost for Hanford cleanup work is the scientific/regulatory nature of the work and the associated uncertainty of the work scope.

Table 1

FY 1990 and FY 1992 Cost Estimate Comparison
for Operable Units 200-BP-1 and 100-HR-1

Description	Category	FY 1988	FY 1989	FY 1990	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	Totals	Totals Adjusted
200-BP-1, 1990 Estimate	Estimate	780.0	484.0	2753.0	5724.0	3317.0	6982.0	6096.0	3515.0	757.0			* 30622.5	30622.5
	Actuals	94.3	1384.2	4287.0	8963.5									
200-BP-1, 1992 Estimate	Estimate					9350.0	8122.4	7590.5	1734.3	611.4			* 42147.6	*** 41612.3
	Actuals	94.3	1384.2	4297.0	8963.5									
													FY90 - FY92 Estimate	→ -10989.8
100-HR-1, 1990 Estimate	Estimate	402.0	584.0	2002.0	6128.0	7254.0	6103.0	2187.0	333.0				* 24796.2	24796.2
	Actuals	0.0	789.2	805.0	824.7									
100-HR-1, 1992 Estimate	Estimate					2343.0	3898.8	3341.8	2631.0	876.3			** 15509.7	*** 14921.9
	Actuals	0.0	789.2	805.0	824.7									
													FY90 - FY92 Estimate	→ 9874.3

* Based upon R/WFS Guidance Strategy

** Based Upon Past Practice Strategy

*** Adjusted for Difference in Contingency and Escalation

5. EPA did not find major discrepancies in the capital cost projections for construction of the 300 Area Process Water Treatment Plant.

EPA believes that there is some danger in limiting the design to 300 gallons per minute (gpm), even though WHC hopes to achieve a flow rate of approximately 200 gpm by May 1993.

Additionally, there was apparently no attempt to coordinate process water treatment and contaminated groundwater treatment. Although the analysis of a combined treatment system was not required by the Tri-Party Agreement, EPA recommends that DOE consider a combined system for treatment of effluent and contaminated groundwater. This may or may not be feasible, but EPA recommends that it be considered as a potential cost-effective measure which could eliminate a separate treatment system for groundwater treatment.

Response:

Given the new mission of the Hanford Site, and further evaluations of 300 Area process water discharges, flow rates are calculated to be in the range of 50 to 150 gpm, with a low probability that it would peak at even the 200 gpm level. As a result of these estimates, the 300 gpm design basis is appropriate.

RL and WHC have not studied the feasibility of a combined system for treatment of 300 Area effluent and contaminated groundwater. Groundwater contamination characterization data and subsequent feasibility analyses and decision making would be required prior to conducting a study of the feasibility of a combined system. Groundwater characterization data necessary for such a study will not be available until 1993.

6. The review of the laboratory analysis costs was particularly difficult for EPA, since WHC could not provide detailed cost factors related to laboratory analysis.

It appeared that the cost of analyzing nonradioactive samples onsite at Hanford at this time is about twice what it costs in the private sector.

EPA was not convinced that DOE and WHC had done a thorough job of cost benefit analysis for the proposed laboratory upgrade program. It appeared that presently, and even after the laboratory upgrades are completed at a substantial expense, it may be less expensive to have samples with radioactivity levels of less than 1 mR/hour analyzed at private laboratories offsite. EPA recommends that this issue be studied carefully, including one scenario for laboratory upgrades focusing on samples greater than 1 mR/hour.

Response:

The base costs used in the RI/FS Cost Model are predicated on the Laboratory Source Price List provided to the WHC Office of Sample

Management by the offsite, commercial laboratories who are currently providing analytical support services to the ER site characterization effort. These commercial laboratory contracts were selected by a technical and cost competitive bid process. The base cost is used in the cost model to calculate an estimated cost per sample. Multiplying the cost per sample by the projected sample-load requirements produces the estimated analytical funding requirements used in the ER ADS planning. Detailed cost data is considered business sensitive due to the competitive nature of the industry. The cost data is available for review on a case-by-case basis.

The latest available cost data indicates that the costs of <1mR/hr sample analyses at the Waste Sampling and Characterization Facility (WSCF) (Hanford Federal Facility Agreement and Consent Order [Tri-Party Agreement] milestone M-14) versus commercial laboratories is comparable. This is due to slightly higher operating costs onsite being offset by higher costs commercially associated with transportation, sample disposal, and quality oversight activities.

High radioactivity laboratories at Hanford (e.g., 222-S and 325) are considerably more expensive to operate due to the associated hazards and applicable DOE operational requirements. For these reasons, the bulk of the low radioactivity samples are being processed at commercial analytical laboratories.

WSCF will analyze samples requiring fast turnaround times (<3 days) to support the liquid effluent treatment facilities and to also provide quality assurance oversight of the commercial laboratories.

The laboratory upgrade program is focused on high radioactivity sample analysis support and automation of data handling. Programs include tank characterization, tank safety, the Grout Program, 242-A Evaporator and waste pretreatment. There is essentially no commercial laboratory capacity to support high activity sample analysis.

U.S. Army Corps of Engineers Observations and Findings:

1. Costs to implement work plan 100-HR-1 are excessive in view of the effort involved.

Response:

The USACE recommended that RL consider (1) fixed price contracting and (2) a source other than WHC for RI/FS implementation. Information provided by the USACE in their cost study and subsequent correspondence reveals major differences of opinion as to the level of effort required in (1) contractor management and in (2) conducting field activities necessary to comply with the regulatory agency approved work plan. Even though the USACE acknowledged they erroneously underestimated the contractor management cost, DOE does not feel USACE has adequately covered the scope of these two functions. Even though DOE's cost estimates are based on actual cost data for performing similar work, numerous assumptions must be made concerning the scope of characterization since there is not sufficient historical data to determine the extent of contamination in the operable units. RL plans to use independent sources to review the individual cost estimates for investigation and characterization of the operable units to assure their validity.

Due to the unknown contamination characteristics and levels at the numerous waste sites at Hanford, it is not feasible to prepare a definitive scope of work for the specific operable unit work plans suitable for fixed price contracting. DOE is currently planning to utilize an Environmental Restoration Management Contractor (ERMC) to conduct the RI/FS work in the future.

Although Table 1 indicates that actual costs for the 100-HR-1 Operable Unit have been lower than were estimated in FY 1990, the reason for the lower cost is due to a significant reduction of workscope through negotiation between Ecology, EPA and RL. The baseline cost estimate created in FY 1990 could not assume future scope revisions that were not fully defined and agreed to by the regulators at that time.

The new approach for 100-HR-1 is the Hanford Past Practices Strategy. This approach is currently being planned for all operable units in the 100 Area. The Past Practices Strategy relies on existing data, a waste site priority system based upon risk, and an early interim Record of Decision allowing early cleanup based on using the interim response measures approach. The Past Practices Strategy basically only requires one phase of samples, and saves dollars by not implementing the more costly two-phased approach called out in the standard RI/FS guidance. The FY 1990 100-HR-1 estimate was generated based upon the two-phase standard RI/FS guidance, and the FY 1992 estimate was generated based upon the Hanford Past Practices Strategy. The net result between these two estimates is that the FY 1992 estimate is about 10 million dollars lower than the FY 1990 estimate.

2. The RL estimate of cost for generic RI/FS work plans is approximately twice the actual USACE cost experience for comparable documents.

Response:

The USACE recommended that RL use USACE or a fixed-price contractor managed by RL to do work plans. DOE has checked with other DOE offices as well as EPA Headquarters concerning the use of fixed price contracts for both the development and accomplishment of work plans and RI/FSs. Our research has revealed that no one other than USACE is using the firm fixed price contracting strategy for these endeavors. This strategy has been tried but found to be cost prohibitive in the long run. The primary problem stems from the uncertainties of characterizing waste sites. It has been the experience of others that the need for frequent modifications to the fixed price contract as unforeseen circumstances develop results in higher cost.

Beginning in FY 1991, USACE was assigned the responsibility to complete the characterization and remediation of the 1100-EM-1 Operable Unit. In the future, the USACE could decide to use fixed price contracting to prepare work plans, although DOE does not consider this method feasible due to uncertainties of scope.

Table 2 records the actual costs to date for preparing and approving operable unit work plans. The USACE reported that these work plans should cost approximately \$300K each. As can be seen in the table, the longer the review time the higher the cost. This would rule out using the fixed price contracting methodology for work plan preparation because of the uncertainties regarding regulator approval. Additionally, the internal administrative costs in managing these contracts with multiple change orders would more than offset any potential savings from a fixed price approach.

The actual cost of operable unit RI/FS work plans is considerably higher than what the USACE has experienced due to multiple changes and long review periods. For example, the 100-HR-1 & 3 work plans were submitted to the regulators for review and approval on or about June 1989, but as of this date have not been approved by the regulators authorizing the start of characterization. As a result, more economical ways are being developed to characterize operable units. The savings to be derived from actual drilling, sampling, and other characterization activities will more than offset the higher costs for work plan preparation and approval. As an example, 100-HR-1 is estimated to save approximately 10 million dollars. This savings includes the 1.6 million already spent on preparation, comment coordination, incorporation, and approval of the work plans by the regulators. Although the delay of regulator approval has increased work plan cost, this added cost has been more than offset by the implementation of the Hanford Past Practices Strategy for the operable units in the 100 (Hanford Reactor) Area.

Table 2

**FY 1990 and FY 1992 Actual Costs
for Operable Unit Work Plans**

<u>Operable Unit</u>	<u>Date of Draft</u>	<u>Rescoped</u>	<u>Date of Work</u>	<u>Actual Work Plan Preparation and Review Costs</u>				<u>Total</u>	
	<u>Work Plan Submittal</u>	<u>Work Plan Submittal</u>	<u>Plan Approval</u>	<u>FY1988</u>	<u>FY1989</u>	<u>FY1990</u>	<u>FY1991</u>		<u>FY1992</u>
200-BP-1	Feb-89		Mar-90	94.3	685.4	125.1			904.8
300-FF-1	Mar-89		Jun-90		424.8	175.5			600.3
300-FF-5	Sep-89		Jun-90		348.4	241.1			589.5
100-HR-1	Jun-89	Sep-91			623.6	805	90.5	125.2	1644.3
100-HR-3	Jun-89	Sep-91			698.2	278.2	113.4	132.1	1221.9
100-BC-1	Jun-90	Sep-91				828	71.6	136	1035.6
100-BC-5	Jun-90	Sep-91				672.7	251.6	77.2	1001.5
100-DR-1	Oct-89	Sep-91			347.5	298.1	122.9	131.5	900
100-KR-1	Aug-90	Oct-91				729.4	44.7	147.6	921.7
100-KR-4	Aug-90	Oct-91				654.1	126.7	92.6	873.4
100-NR-1	Dec-90	Dec-91			1.8	802.4	283.6	204.2	1292
100-NR-2	Dec-90	Dec-91				511.9	224.7	136.7	873.3
100-FR-1	Apr-91	Nov-91				386.9	108	153	647.9
100-FR-3								32.1	32.1

3. Independent government cost estimates should be developed to assure that environmental restoration costs are fair and reasonable.

Response:

The USACE recommended that RL develop a staff capability to prepare independent government estimates. DOE uses both in-house staff and independent contractors to review cost estimates for design and construction project work. This capability is being developed for the Hanford ER Program.

4. Use of a validated cost model is appropriate for the large and complex environmental restoration program at the Hanford site.

Response:

The USACE recommended that the RI/FS cost model be validated through an independent source. DOE agrees and has directed WHC to increase ER cost modeling development and capability. Included within this increased development would be an independent validation process.

5. A proactive system for controlling costs does not exist.

Response:

Since the USACE review, RL has implemented a Site Management System (SMS) that provides a structure for controlling costs through the definition and integration of program scope, schedules and cost baselines. Changes to the integrated baseline will be rigidly controlled through a formal change control process. The SMS structure allows program managers to manage more effectively and be accountable to their program baselines. In addition, RL ERD has added a staff member to oversee and coordinate Hanford ER program cost estimates and baseline documentation production and validation. Furthermore, RL has directed the WHC ER Program Office to add a cost estimating and baseline organization and establish the necessary procedures that document the process by which Hanford ER budget and baseline submissions are constructed. Also, RL is in the process of establishing an automated cost estimating capability within WHC that will utilize an existing, proven cost estimating software. Hanford ER Program cost estimates are expected to continue to improve as the procedures and capabilities discussed above are realized. With the implementation of the Site Management System (SMS), increased oversight and augmented cost estimating capability, it is RL's opinion that the administrative checks are in place to control and track costs of the ER program.

6. Value engineering is an ideal rather than a viable program at the Hanford site.

Response:

RL and WHC have an aggressive value engineering Program at Hanford. DOE orders and WHC procedures require value engineering (VE) techniques. Two value engineering studies have been conducted for Hanford ER Program work since the USACE review, i.e., well drilling and information management. WHC and KEH have completed a VE study on well drilling. The study was completed in FY 1991 with a March 1992 update. To date, the VE study on well drilling has resulted in improvements in efficiency, development and use of new technology and improved productivity through WHC/KEH teamwork. The VE process will continue in an effort to continue to reduce and control drilling costs. A VE study was also conducted in May, 1992 on the ER Information Management System (IMS). The study was used as a tool for developing the logic to integrate records management, data management and document control. The information from the Functional Analysis System Techniques (FAST) diagram will be used as a foundation for the IMS plan currently under development.

7. Complex and parallel management and QA/QC structures are a major cost generator and do not improve product quality at the Hanford site.

Response:

The USACE recommended streamlining the organizational structure to reduce Quality Assurance (QA)/Quality Control (QC) costs. DOE's policy is to hold performing organizations responsible for achieving product quality. Because DOE contracts for the management and operations of facilities and programs, they must hold those contractors accountable for performing their QA functions. Centralizing all QA functions within DOE could reduce DOE contractor's QA responsibility.

8. QA reports provide an audit trail rather than quality product assurance.

Response:

The USACE recommended that independent random sample tests/inspections be conducted to verify results and require that reports include claim related information. DOE relies on its Management and Operating (M&O) contractors to perform sample analysis work either in house or through subcontractors. Because of DOE staffing limitations, DOE's QA role is to assure that the M&O contractors are carrying out their QA responsibility associated with independent random sampling and inspections.

9. Duplication of QA/QC elements and inadequately defined responsibilities among the organizations does not improve product quality.

Response:

The USACE recommended that all quality assurance duties should be performed by one organization, preferably RL. DOE's policy is to hold those organizations responsible for performing work to be responsible for achieving product quality. Because DOE contracts for the management and operations of facilities and programs, they must hold those contractors accountable for performing their QA functions. Centralizing all QA functions within DOE could reduce DOE contractor's QA responsibility.

10. Construction site managers ability to manage onsite activity is compromised by offsite control of QA.

Response:

The USACE recommended that responsibility for QA activities be assigned to a Government (RL) onsite construction manager. It is DOE policy and nuclear industry practice to assign responsibility for QA/QC to those who are actually doing the work. QA verification is performed by an independent organization not subject to cost and schedule pressures. Assigning all QA responsibility to the onsite construction manager would

violate this policy and remove responsibility from the performing contractor.

11. Change order authority for onsite construction managers is unnecessarily low.

Response:

In order for DOE to maintain direct control over changes to technical, cost, and schedule baselines, the level of change authorization delegated to contractors is dependent on the nature and scope of the project. The Grout Program, which was the USACE's basis for this recommendation, manages change control, including thresholds, through an approved Project Management Plan.

12. There is no scientific or regulatory basis for design of a grout disposal system with a 10,000-year life.

Response:

The design of the grout disposal system is based on calculations of 40-50 years of operations as delineated in the Final Safety Analysis Report. The 10,000 year evaluation period of the grout facility is a goal for performance assessment which is conducted in accordance with DOE Order 5820.2a. The performance assessment is conducted against reasonable event occurrences only.

13. A comprehensive NEPA based land use plan does not exist. Environmental restoration decisions are not being based on land use plans.

Response:

The USACE recommended preparation of an Environmental Impact Statement (EIS) to develop land use plans and companion ER decisions. DOE agrees and has initiated action to proceed with the preparation of the Hanford Remedial Action (HRA) EIS. In support of the HRA EIS, DOE has requested assistance in the development of EIS alternatives from a working group including members of the public, state and local government, interest groups, indian tribes, etc.

14. Failure of regulators to review RI/FS documents within Tri-Party Agreement time frames is delaying projects and increasing costs.

Response:

The USACE recommended use of the dispute resolution procedure in the Tri-Party Agreement to develop an agreement that would allow RL to exercise some form of cost control over this process. The dispute resolution procedure is a good tool when issues cannot be resolved through an informal resolution process. DOE explores every avenue feasible to resolve issues at the lowest management level before going to formal dispute resolution.

15. Grout disposal program costs are expected to continue to increase.

Response:

The grout program has achieved reasonable design stability, and has curtailed significant cost increases. The Office of Management and Budget has conducted a cost review and has determined that the project's costs and forecasts are within reasonable limits, and have been stabilized.

CORRESPONDENCE DISTRIBUTION COVERSHEET

Author E. A. Bracken, RL (K. N. Jordan, 6-1122)	Addressee P. T. Day, EPA D. B. Jansen, Ecology	Correspondence No. Incoming: 9205271 XREF:9204783B R1
--	---	--

Subject: U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)/STATE OF WASHINGTON
 DEPARTMENT OF ECOLOGY (ECOLOGY) COST REVIEW/U.S. ARMY CORPS OF
 ENGINEERS (USACE) COST REVIEW RESPONSES

INTERNAL DISTRIBUTION

Approval	Date	Name	Location	w/att
		Correspondence Control		X
		President's Office	B3-01	
		G. D. Carpenter	B2-16	X
		C. C. Chamberlain-Dow	L4-92	X
		C. K. DiSibio	B3-03	X
		C. J. Geier	B2-19	X
		M. C. Hughes	L4-88	X
		K. N. Jordan	L4-92	X
		R. E. Lerch, Assignee	B2-35	X
		P. E. Lewis	L4-92	X
		H. E. McGuire, Level 1	B3-63	X
		E. C. Stevens	L4-91	X
		R. D. Wojtasek	L4-92	X
		EDMC	H4-22	X

lgj, 6-3857



gjr